

Hospital list

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Addenbrook NHS Trust	Cambridge University Hospitals NHS Trust	East of England	PPU	No	[X]	[X]
Aspen	Claremont Hospital	Yorkshire and the Humber	Private hospital	No	[X]	[X]
Aspen	Highgate Hospital	London†	Private hospital	No	[X]	[X]
Aspen	Holly House Hospital	East of England	Private hospital	Yes	[X]	[X]
Aspen	Parkside Hospital	London	Private hospital	No	[X]	[X]
BMI	Albyn	Scotland	Private hospital	Yes	[X]	[X]
BMI	Alexandra	North-West	Private hospital	Yes	[X]	[X]
BMI	Bath Clinic	South-West	Private hospital	Yes	[X]	[X]
BMI	Beardwood	North-West	Private hospital	Yes	[X]	[X]
BMI	Beaumont	North-West	Private hospital	Yes	[X]	[X]
BMI	Bishops Wood	London	PPU	Yes	[X]	[X]
BMI	Blackheath	London†	Private hospital	Yes	[X]	[X]
BMI	CCH	London	Private hospital	Yes	[X]	[X]
BMI	Carrick Glen	Scotland	Private hospital	No	[X]	[X]
BMI	Cavell (aka Enfield)	London	Private hospital	Yes	[X]	[X]
BMI	Chaucer	South-East	Private hospital	Yes	[X]	[X]
BMI	Chelsfield Park	London	Private hospital	Yes	[X]	[X]
BMI	Chiltern	South-East	Private hospital	Yes	[X]	[X]
BMI	Coombe Wing	London	PPU	No	[X]	[X]
BMI	Droitwich Spa	West Midlands	Private hospital	Yes	[X]	[X]
BMI	Duchy (aka Harrogate)	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
BMI	Edgbaston	West Midlands	Private hospital	No	[X]	[X]
BMI	Esperance	South-East	Private hospital	Yes	[X]	[X]
BMI	Fawkham Manor	South-East	Private hospital	Yes	[X]	[X]
BMI	Fernbrae	Scotland	Private hospital	No	[X]	[X]
BMI	Fitzroy Square	London†	Private hospital	No	[X]	[X]
BMI	Foscote	South-East	Private hospital	Yes	[X]	[X]
BMI	Gisburne Park	North-West	Private hospital	No	[X]	[X]
BMI	Goring Hall	South-East	Private hospital	Yes	[X]	[X]
BMI	Hampshire Clinic	South-East	Private hospital	Yes	[X]	[X]
BMI	Harbour	South-West	Private hospital	Yes	[X]	[X]
BMI	Highfield	North-West	Private hospital	Yes	[X]	[X]
BMI	Huddersfield	Yorkshire and the Humber	Private hospital	No	[X]	[X]
BMI	Kings Oak	London	PPU	Yes	[X]	[X]
BMI	Kings Park	Scotland	Private hospital	No	[X]	[X]
BMI	Lancaster	North-West	Private hospital	No	[X]	[X]
BMI	Lincoln	East Midlands	Private hospital	Yes	[X]	[X]
BMI	London Independent	London†	Private hospital	Yes	[X]	[X]

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
BMI	Manor	East of England	Private hospital	Yes	[X]	[X]
BMI	McIndoe	South-East	PPU	No	[X]	[X]
BMI	Meriden	West Midlands	PPU	Yes	[X]	[X]
BMI	Mount Alvernia	South-East	Private hospital	Yes	[X]	[X]
BMI	Park	East Midlands	Private hospital	Yes	[X]	[X]
BMI	Princess Margaret	South-East	Private hospital	Yes	[X]	[X]
BMI	Priory	West Midlands	Private hospital	Yes	[X]	[X]
BMI	Ross Hall	Scotland	Private hospital	Yes	[X]	[X]
BMI	Runnymede	South-East	PPU	No	[X]	[X]
BMI	Sandringham	East of England	PPU	Yes	[X]	[X]
BMI	Sarum Road	South-East	Private hospital	Yes	[X]	[X]
BMI	Saxon Clinic	South-East	Private hospital	Yes	[X]	[X]
BMI	Sefton	North-West	PPU	No	[X]	[X]
BMI	Shelburne	South-East	PPU	Yes	[X]	[X]
BMI	Shirley Oaks	London	Private hospital	Yes	[X]	[X]
BMI	Sloane	London	Private hospital	Yes	[X]	[X]
BMI	Somerfield	South-East	Private hospital	Yes	[X]	[X]
BMI	South Chesire	North-West	PPU	Yes	[X]	[X]
BMI	St Edmunds	East of England	Private hospital	Yes	[X]	[X]
BMI	The Garden	London	Private hospital	No	[X]	[X]
BMI	The Ridgeway	South-West	Private hospital	Yes	[X]	[X]
BMI	Thornbury	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
BMI	Three Shires	East Midlands	Private hospital	Yes	[X]	[X]
BMI	Werndale	Wales	Private hospital	No	[X]	[X]
BMI	Weymouth Hospital	London†	Private hospital	No	[X]	[X]
BMI	Winterbourne	South-West	Private hospital	Yes	[X]	[X]
BMI	Woodlands	North-East	Private hospital	Yes	[X]	[X]
Belfast Trust	Belfast City Hospital	Northern Ireland	PPU	No	[X]	[X]
Belfast Trust	Mater Hospital	Northern Ireland	PPU	No	[X]	[X]
Belfast Trust	Musgrave Park Hospital	Northern Ireland	PPU	No	[X]	[X]
Belfast Trust	Royal Group of Hospitals	Northern Ireland	PPU	No	[X]	[X]
Bridgend Clinic	Bridgend Clinic	Wales	PPU	No	[X]	[X]
Brighton Sussex Trust	Princess Royal Hospital (incl Hurstwood Park Neurosciences)	South-East	PPU	No	[X]	[X]
Brighton Sussex Trust	Royal Sussex County Hospital (incl Royal Alexandra Children's)	South-East	PPU	No	[X]	[X]
Circle	Circle Bath	South-West	Private hospital	Yes	[X]	[X]
Circle	Circle Reading	South-East	Private hospital	No	[X]	[X]
EN Hertfordshire Trust	Hertford County Hospital	East of England	PPU	No	[X]	[X]
EN Hertfordshire Trust	Lister Hospital	East of England	PPU	No	[X]	[X]
EN Hertfordshire Trust	Mount Vernon Cancer Center	London	PPU‡	Yes	[X]	[X]
EN Hertfordshire Trust	Queen Elizabeth II	East of England	PPU	No	[X]	[X]
Fairfield Independent Hospital	Fairfield Independent Hospital	North-West	Private hospital	No	[X]	[X]
Firmley Park	Parkside Suite	South-East	PPU	No	[X]	[X]
Gloucestershire Hospitals	Cheltenham General Hospital	South-West	PPU	No	[X]	[X]

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Gloucestershire Hospitals	Gloucestershire Royal Hospital	South-West	PPU	No	[X]	[X]
Great Western	The Shalbourne Suite	South-West	PPU	Yes	[X]	[X]
Guys & St Thomas Trust	Guy's Nuffield House	London†	PPU	Yes	[X]	[X]
Guys & St Thomas Trust	St Thomas	London†	PPU	Yes	[X]	[X]
HCA	Harley Street Clinic	London†	Private hospital	Yes	[X]	[X]
HCA	Lister Hospital	London†	Private hospital	No	[X]	[X]
HCA	London Bridge Hospital	London†	Private hospital	No	[X]	[X]
HCA	London Oncology Clinic	London†	Private hospital‡	Yes	[X]	[X]
HCA	NHS Ventures—Queens	London	PPU	Yes	[X]	[X]
HCA	NHS Ventures Christie Clinic	North-West	PPU‡	Yes	[X]	[X]
HCA	NHS Ventures UCLH	London†	PPU‡	Yes	[X]	[X]
HCA	Portland Hospital	London†	Private hospital	No	[X]	[X]
HCA	Princess Grace Hospital	London†	Private hospital	No	[X]	[X]
HCA	Wellington Hospital	London†	Private hospital	No	[X]	[X]
HMT Hospitals	Sancta Maria Hospital	Wales	Private hospital	No	[X]	[X]
HMT Hospitals	St Hugh's Hospital	Yorkshire and the Humber	Private hospital	No	[X]	[X]
Hospital of St John & St Elizabeth	Hospital of St John & St Elizabeth		Private hospital	No	[X]	[X]
Imperial College Healthcare NHS Trust	Queen Charlottes & Chelsea Hospital (incl Robert & Lisa Sainsbury Wing)	London†	PPU	Yes	[X]	[X]
Imperial College Healthcare NHS Trust	The Lindo Wing	London†	PPU	No	[X]	[X]
Imperial College Healthcare NHS Trust	The Thames View	London†	PPU	Yes	[X]	[X]
King Edward VII's Hospital Sister Agnes	King Edward VII's Hospital Sister Agnes	London†	Private hospital	Yes	[X]	[X]
King's College Hospital NHS Foundation Trust	King's College Hospital NHS Foundation Trust	London†	PPU	Yes	[X]	[X]
Kingsbridge Private Hospital	Kingsbridge Private Hospital	Northern Ireland	Private hospital	No	[X]	[X]
Maidstone	Tunbridge Wells Suite	South-East	PPU	No	[X]	[X]
NHS Lothian	NHS Lothian	Scotland	PPU	No	[X]	[X]
NW Independent Hospital	NW Independent Hospital	Northern Ireland	Private hospital	No	[X]	[X]
Newcastle Trust	Freeman Hospital	North-East	PPU	Yes	[X]	[X]
Newcastle Trust	Royal Victoria Infirmary	North-East	PPU	No	[X]	[X]
NorthWest London Hospitals NHS Trust	Northwick Park & St Marks Hospitals	London	PPU	No	[X]	[X]
Nuffield	Bournemouth Hospital	South-West	Private hospital	Yes	[X]	[X]
Nuffield	Brentwood Hospital	East of England	Private hospital	Yes	[X]	[X]
Nuffield	Brighton Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Bristol Hospital	South-West	Private hospital	Yes	[X]	[X]
Nuffield	Cambridge Hospital	East of England	Private hospital	Yes	[X]	[X]
Nuffield	Cheltenham Hospital	South-West	Private hospital	Yes	[X]	[X]
Nuffield	Chester Hospital	North-West	Private hospital	Yes	[X]	[X]
Nuffield	Chichester Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Derby Hospital	East Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Exeter Hospital	South-West	Private hospital	Yes	[X]	[X]

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Nuffield	Glasgow Hospital	Scotland	Private hospital	Yes	[X]	[X]
Nuffield	Guildford Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Haywards Heath Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Hereford Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Ipswich Hospital	East of England	Private hospital	Yes	[X]	[X]
Nuffield	Leeds Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Nuffield	Leicester Hospital	East Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Newcastle Hospital	North-East	Private hospital	Yes	[X]	[X]
Nuffield	North Staffs Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Oxford Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Plymouth Hospital	South-West	Private hospital	Yes	[X]	[X]
Nuffield	Shrewsbury Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Taunton Hospital	South-West	Private hospital	Yes	[X]	[X]
Nuffield	Tees Hospital	North-East	Private hospital	No	[X]	[X]
Nuffield	Tunbridge Wells Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Vale Hospital	Wales	Private hospital	Yes	[X]	[X]
Nuffield	Warwickshire Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Nuffield	Wessex Hospital	South-East	Private hospital	Yes	[X]	[X]
Nuffield	Woking Hospital	South-East	Private hospital	No	[X]	[X]
Nuffield	Wolverhampton Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Nuffield	York Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Oxford Radcliff Trust	Churchill Hospital	South-East	PPU	No	[X]	[X]
Oxford Radcliff Trust	Horton Hospital	South-East	PPU	No	[X]	[X]
Oxford Radcliff Trust	JR Hospital	South-East	PPU	No	[X]	[X]
Plymouth Hospitals NHS Trust	Meavy Clinic	South-West	PPU	Yes	[X]	[X]
Ramsay	Ashtead Hospital	South-East	Private hospital	No	[X]	[X]
Ramsay	Berkshire Independent Hospital	South-East	Private hospital	No	[X]	[X]
Ramsay	Duchy Hospital	South-West	Private hospital	Yes	[X]	[X]
Ramsay	Euxton Hall Hospital	North-West	Private hospital	No	[X]	[X]
Ramsay	Fitzwilliam Hospital	East of England	Private hospital	Yes	[X]	[X]
Ramsay	Fulwood Hall Hospital	North-West	Private hospital	No	[X]	[X]
Ramsay	Mount Stuart Hospital	South-West	Private hospital	No	[X]	[X]
Ramsay	New Hall Hospital	South-West	Private hospital	Yes	[X]	[X]
Ramsay	North Downs Hospital	South-East	Private hospital	No	[X]	[X]
Ramsay	Nottingham Woodthorpe Hospital	East Midlands	Private hospital	No	[X]	[X]
Ramsay	Oaklands Hospital	North-West	Private hospital	No	[X]	[X]
Ramsay	Oaks Hospital	East of England	Private hospital	Yes	[X]	[X]
Ramsay	Park Hill Hospital	Yorkshire and the Humber	Private hospital	No	[X]	[X]
Ramsay	Pinehill Hospital	East of England	Private hospital	Yes	[X]	[X]
Ramsay	Renacres Hospital	North-West	Private hospital	Yes	[X]	[X]
Ramsay	Rivers Hospital	East of England	Private hospital	No	[X]	[X]
Ramsay	Rowley Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Ramsay	Springfield Hospital	East of England	Private hospital	Yes	[X]	[X]
Ramsay	West Midlands Hospital	West Midlands	Private hospital	No	[X]	[X]
Ramsay	Winfield Hospital	South-West	Private hospital	No	[X]	[X]

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Ramsay	Woodland Hosptial	East Midlands	Private hospital	Yes	[X]	[X]
Ramsay	Yorkshire Clinic	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	Brompton	London†	PPU	No	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	Harefield	London	PPU	No	[X]	[X]
Royal Free London NHS Foundation Trust	Royal Free Private Patients	London†	PPU	Yes	[X]	[X]
Royal Surrey	Royal Surrey	South-East	PPU	No	[X]	[X]
Spire	Alexandra Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Bristol Hospital	South-West	Private hospital	Yes	[X]	[X]
Spire	Bushey Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Cambridge Lea Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Cardiff Hospital	Wales	Private hospital	Yes	[X]	[X]
Spire	Cheshire Hospital	North-West	Private hospital	Yes	[X]	[X]
Spire	Clare Park Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Dunedin Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Elland Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Spire	Fylde Coast Hospital	North-West	Private hospital	Yes	[X]	[X]
Spire	Gatwick Park Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Harpenden Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Hartswood Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Hull and-East Riding Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Spire	Leeds Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Spire	Leicester Hospital	East Midlands	Private hospital	Yes	[X]	[X]
Spire	Little Aston Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Spire	Liverpool Hospital	North-West	Private hospital	Yes	[X]	[X]
Spire	Manchester Hospital	North-West	Private hospital	No	[X]	[X]
Spire	Methley Park Hospital	Yorkshire and the Humber	Private hospital	Yes	[X]	[X]
Spire	Murrayfield Hospital	Scotland	Private hospital	Yes	[X]	[X]
Spire	Norwich Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Parkway Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Spire	Portsmouth Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Regency Hospital	North-West	Private hospital	No	[X]	[X]
Spire	Roding Hospital	London	Private hospital	Yes	[X]	[X]
Spire	South Bank Hospital	West Midlands	Private hospital	Yes	[X]	[X]
Spire	Southampton Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	St Saviours Hospital	South-East	Private hospital	No	[X]	[X]
Spire	Sussex Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Thames Valley Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Tunbridge Wells Hospital	South-East	Private hospital	Yes	[X]	[X]
Spire	Washington Hospital	North-East	Private hospital	Yes	[X]	[X]
Spire	Wellesley Hospital	East of England	Private hospital	Yes	[X]	[X]
Spire	Wirral Hospital	North-West	Private hospital	Yes	[X]	[X]
Spire	Yale Hospital	Wales	Private hospital	Yes	[X]	[X]

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
St Joseph's Hospital	St Joseph's Hospital	Wales	Private hospital	No	[X]	[X]
St Anthony's Hospital	St Anthony's Hospital	London	Private hospital	No	[X]	[X]
The Bupa Cromwell Hospital	The Bupa Cromwell Hospital	London†	Private hospital	Yes	[X]	[X]
The London Clinic	The London Clinic	London‡	Private hospital	Yes	[X]	[X]
The New Victoria Hospital	The New Victoria Hospital	London	Private hospital	No	[X]	[X]
The Royal Marsden NHS Foundation Trust	Private Care Chelsea	London†	PPU	Yes	[X]	[X]
The Royal Marsden NHS Foundation Trust	Private Care Sutton	London	PPU	Yes	[X]	[X]
The Spencer Private Hospital	QEQM Hospital	South-East	PPU	No	[X]	[X]
The Spencer Private Hospital	William Harvey Hospital	South-East	PPU	No	[X]	[X]
Ulster Independent Clinic	Ulster Independent Clinic	Northern Ireland	Private hospital	No	[X]	[X]
Western Sussex Trust	St Richards	South-East	PPU	No	[X]	[X]
Western Sussex Trust	Worthing Hospital	South-East	PPU	No	[X]	[X]

Source: CC analysis.

*Indicates that the hospital was deemed to face sufficient competitive constraints in our preliminary local assessment following the initial filtering.

†Indicates that the hospital lies within the central London NUTS1 region (which itself lies within the London NUTS2 region).

‡Indicates a specialized private hospital or PPU.

Note: Region definitions are the NUTS2 geographic delineation.

Local competitive assessment



Local assessment of hospital characteristics

Region	Operator name	Hospital name	Private/ PPU	General/ Specialised	Range of 17 Sept	Offers oncology	ICU level	Columns 9–24*	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
East Midlands	BMI	Lincoln	Private	General	17	Yes	No	☒	HMT Hospitals, St Hugh's	34.4	BMI, Park	36.1
East Midlands	BMI	Park	Private	General	17	Yes	Level 2	☒	Ramsay, Nottingham Woodthorpe	4.7	Nuffield, Derby	26.8
East Midlands	BMI	Three Shires	Private	General	16	Yes	Level 2	☒	Ramsay, Woodland Hospital	15.4	BMI, Manor	18.6
East Midlands	Nuffield	Derby	Private	General	17	Yes	Level 2	☒	Ramsay, Nottingham Woodthorpe	22.5	Spire, Little Aston	26.8
East Midlands	Nuffield	Leicester	Private	General	17	Yes	Level 2	☒	Spire, Leicester	3.6	BMI, Meriden	25.4
East Midlands	Ramsay	Nottingham	Private	General	15	No	Level 2	☒	BMI, Park	4.7	Nuffield, Derby	22.5
East Midlands	Ramsay	Woodthorpe	Private	General	15	Yes	Level 2	☒	BMI, Three Shires	15.4	Spire, Leicester	22.9
East Midlands	Spire	Woodland Hospital Leicester	Private	General	17	Yes	Level 2	☒	Nuffield, Leicester	3.6	Ramsay, Woodland Hospital	22.9
East of England	Addenbrook NHS Trust	Cambridge University NHS	PPU	General	16	No	Level 3	☒	Nuffield, Cambridge	2.3	Spire, Cambridge Lea	6.6
East of England	Aspen	Holly House	Private	General	15	Yes	Level 2	☒	Spire, Roding	3.7	BMI, Cavell (aka Enfield)	7.2
East of England	BMI	Manor	Private	General	17	Yes	No	☒	BMI, Saxon Clinic	17.7	BMI, Three Shires	18.6
East of England	BMI	Sandringham	PPU	General	15	Yes	No	☒	Ramsay, Fitzwilliam	38.4	Spire, Norwich	42.6
East of England	BMI	St Edmunds	Private	General	16	Yes	No	☒	Ramsay, Oaks	29	Spire, Cambridge Lea	30.1
East of England	EN Hertfordshire Trust	Hertford County	PPU	General	0	No	Level 3	☒	EN Hertfordshire Trust, Queen Elizabeth II	5	EN Hertfordshire Trust, Lister	12
East of England	EN Hertfordshire Trust	Lister	PPU	General	11	No	Level 3	☒	Ramsay, Pinehill	4.4	EN Hertfordshire Trust, Hertford County	12
East of England	EN Hertfordshire Trust	Queen Elizabeth II	PPU	General	14	No	Level 3	☒	EN Hertfordshire Trust, Hertford County	5	BMI, Kings Oak	11.9
East of England	Nuffield	Brentwood	Private	General	17	Yes	Level 2	☒	Spire, Hartswood	2.2	HCA, NHS Ventures— Queens	7.4
East of England	Nuffield	Cambridge	Private	General	17	Yes	No	☒	Addenbrook NHS Trust, Cambridge University NHS Trust	2.3	Spire, Cambridge Lea	4.3
East of England	Nuffield	Ipswich	Private	General	17	Yes	Level 2	☒	Ramsay, Oaks	22.4	BMI, St Edmunds	33.3
East of England	Ramsay	Fitzwilliam	Private	General	17	Yes	Level 2	☒	Papworth Hospital NHS Foundation Trust, Papworth Clinic	26.7	Ramsay, Woodland Hospital	30.6
East of England	Ramsay	Oaks	Private	General	17	Yes	Level 2	☒	Nuffield, Ipswich	22.4	Ramsay, Springfield	23.2
East of England	Ramsay	Pinehill	Private	General	17	Yes	Level 2	☒	EN Hertfordshire Trust, Lister	4.4	Spire, Harpenden	15.4
East of England	Ramsay	Rivers	Private	General	12	No	Level 2	☒	EN Hertfordshire Trust, Hertford County	12.8	Aspen, Holly House	15.2
East of England	Ramsay	Springfield	Private	General	16	Yes	Level 2	☒	Nuffield, Brentwood	12.8	Spire, Hartswood	14.9
East of England	Spire	Bushey	Private	General	17	Yes	Level 2	☒	North West London Hospitals NHS Trust, Northwick Park & St Marks	4.7	BMI, CCH	6.1
East of England	Spire	Cambridge Lea	Private	General	17	Yes	Level 3	☒	Nuffield, Cambridge	4.3	Addenbrook NHS Trust, Cambridge University NHS Trust	6.6
East of England	Spire	Harpenden	Private	General	17	Yes	Level 2	☒	EN Hertfordshire Trust, Queen Elizabeth II	13.4	Ramsay, Pinehill	15.4

Region	Operator name	Hospital name	Private/ PPU	General/ Specialised	Range of 17 Sepc	Offers oncology	ICU level	Columns 9–24*	Name and distance of closest hospital (miles)	Name and distance of second closest hospital (miles)		
East of England	Spire	Hartswood	Private	General	17	Yes	Level 2	☒	Nuffield, Brentwood	2.2	HCA, NHS Ventures— Queens	6.7
East of England	Spire	Norwich	Private	General	17	Yes	Level 2	☒	BMI, Sandringham	42.6	BMI, St Edmunds	45.4
East of England	Spire	Wellesley	Private	General	17	Yes	Level 2	☒	Ramsay, Orwell Private Patient Unit (PPU)	14.4	Nuffield, Brentwood	21
Greater London	Aspen	Parkside	Private	General	16	No	Level 2	☒	The New Victoria Hospital, The New Victoria	3.1	Imperial College Healthcare NHS Trust, The Thames View	3.8
Greater London	BMI	Bishops Wood	PPU	General	17	Yes	Level 2	☒	EN Hertfordshire Trust, Mount Vernon Cancer Centre	0.1	Royal Brompton and Harefield NHS Foundation Trust, Harefield	1.9
Greater London	BMI	Cavell (aka Enfield)	Private	General	16	Yes	Level 2	☒	BMI, Kings Oak	0.6	Aspen, Holly House	7.2
Greater London	BMI	CCH	Private	General	17	Yes	Level 3	☒	North West London Hospitals NHS Trust, Northwick Park & St Marks	1.3	Spire, Bushey	6.1
Greater London	BMI	Chelsfield Park	Private	General	17	Yes	Level 2	☒	BMI, Sloane	8.7	BMI, Fawkham Manor	9.3
Greater London	BMI	Coombe Wing	PPU	General	13	No	Level 2	☒	The New Victoria Hospital, The New Victoria	1.5	Aspen, Parkside	4.6
Greater London	BMI	Kings Oak	PPU	General	17	Yes	No	☒	BMI, Cavell (aka Enfield)	0.6	Aspen, Holly House	7.8
Greater London	BMI	Shirley Oaks	Private	General	17	Yes	Level 2	☒	BMI, Sloane	4.1	King's College Hospital NHS Foundation Trust, King's College NHS Foundation Trust	7.6
Greater London	BMI	Sloane	Private	General	17	Yes	No	☒	BMI, Shirley Oaks	4.1	BMI, Blackheath	5.3
Greater London	BMI	The Garden	Private	General	16	No	Level 2	☒	Aspen, Highgate	3.8	Royal Free London NHS Foundation Trust, Royal Free Private Patients	4.2
Greater London	EN Hertfordshire Trust	Mount Vernon Cancer Centre	PPU	Specialised	1	Yes	Level 3	☒	BMI, Bishops Wood	0.1	Royal Brompton and Harefield NHS Foundation Trust, Harefield	1.8
Greater London	HCA	NHS Ventures— Queens	PPU	General	10	Yes	Level 3	☒	Spire, Hartswood	6.7	Nuffield, Brentwood	7.4
Greater London	North West London NHS Trust	Northwick Park & St Marks	PPU	General	12	No	No	☒	BMI, CCH	1.3	Spire, Bushey	4.7
Greater London	Royal Brompton & Harefield NHS	Harefield	PPU	General	1	No	Level 3	☒	EN Hertfordshire Trust, Mount Vernon Cancer Centre	1.8	BMI, Bishops Wood	1.9
Greater London	Spire	Roding	Private	General	17	Yes	Level 2	☒	Aspen, Holly House	3.7	HCA, NHS Ventures— Queens	7.5
Greater London	St Anthony's Hospital	St Anthony's	Private	General	16	No	Level 3	☒	The Royal Marsden NHS Foundation Trust, Private Care Sutton	3.6	The New Victoria Hospital, The New Victoria	4.8
Greater London	The New Victoria Hospital	The New Victoria	Private	General	11	No	No	☒	BMI, Coombe Wing	1.5	Aspen, Parkside	3.1
Greater London	The Royal Marsden NHS Trust	Private Care Sutton	PPU	General	7	Yes	Level 2	☒	St Anthony's Hospital, St Anthony's	3.6	The New Victoria Hospital, The New Victoria	7.1
North-East	BMI	Woodlands	Private	General	16	Yes	Level 2	☒	Nuffield, Tees	13.4	Spire, Washington	31.4
North-East	Newcastle Trust	Freeman	PPU	General	8	Yes	Level 3	☒	Nuffield, Newcastle	2.6	Newcastle Trust, Royal Victoria Infirmary	3.2
North-East	Newcastle Trust	Royal Victoria Infirmary	PPU	General	8	No	Level 3	☒	Nuffield, Newcastle	1.3	Newcastle Trust, Freeman	3.2
North-East	Nuffield	Newcastle	Private	General	17	Yes	No	☒	Newcastle Trust, Royal Victoria Infirmary	1.3	Newcastle Trust, Freeman	2.6
North-East	Nuffield	Tees	Private	General	16	No	No	☒	BMI, Woodlands	13.4	Spire, Washington	28

Region	Operator name	Hospital name	Private/ PPU	General/ Specialised	Range of 17 Sepc	Offers oncology	ICU level	Columns 9–24*	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
North-East	Spire	Washington	Private	General	17	Yes	Level 2	☒	Nuffield, Newcastle	10.2	Newcastle Trust, Royal Victoria Infirmary	10.6
North-West	BMI	Alexandra	Private	General	17	Yes	Level 3	☒	HCA, NHS Ventures Christie Clinic	2.8	Spire, Manchester	5.7
North-West	BMI	Beardwood	Private	General	17	Yes	Level 2	☒	Ramsay, Fulwood Hall	8.7	Ramsay, Euxton Hall	12.8
North-West	BMI	Beaumont	Private	General	17	Yes	No	☒	Ramsay, Euxton Hall	10.3	Ramsay, Oaklands	14.1
North-West	BMI	Gisburne Park	Private	General	12	No	No	☒	BMI, Beardwood	18.5	Ramsay, Fulwood Hall	25.1
North-West	BMI	Highfield	Private	General	17	Yes	No	☒	Ramsay, Oaklands	13.4	Spire, Manchester	14.4
North-West	BMI	Lancaster	Private	General	14	No	No	☒	Ramsay, Fulwood Hall	21.1	Spire, Fylde Coast	22.3
North-West	BMI	Sefton	PPU	General	15	No	No	☒	Spire, Liverpool	7.6	Fairfield Independent Hospital, Fairfield Independent	8.7
North-West	BMI	South Cheshire	PPU	General	17	Yes	Level 3	☒	Nuffield, North Staffs	19	Spire, Regency	22.7
North-West	Fairfield Independent Hospital	Fairfield	Private	General	12	No	No	☒	BMI, Sefton	8.7	Spire, Liverpool	14.4
North-West	HCA	NHS Ventures Christie Clinic	PPU	Specialised	2	Yes	Level 3	☒	BMI, Alexandra	2.8	Spire, Manchester	2.9
North-West	Nuffield	Chester	Private	General	17	Yes	Level 2	☒	Spire, Yale	10.8	Spire, Wirral	16.5
North-West	Ramsay	Euxton Hall	Private	General	15	No	No	☒	BMI, Beaumont	10.3	Ramsay, Fulwood Hall	11.4
North-West	Ramsay	Fulwood Hall	Private	General	16	No	Level 2	☒	BMI, Beardwood	8.7	Ramsay, Euxton Hall	11.4
North-West	Ramsay	Oaklands	Private	General	14	No	Level 2	☒	Spire, Manchester	5.4	HCA, NHS Ventures Christie Clinic	7.8
North-West	Ramsay	Renacres	Private	General	17	Yes	No	☒	BMI, Sefton	12.2	Fairfield Independent Hospital, Fairfield Independent	14.9
North-West	Spire	Cheshire	Private	General	17	Yes	Level 2	☒	BMI, Alexandra	18	HCA, NHS Ventures Christie Clinic	18.6
North-West	Spire	Fylde Coast	Private	General	17	Yes	Level 2	☒	Ramsay, Fulwood Hall	16.9	BMI, Lancaster	22.3
North-West	Spire	Liverpool	Private	General	17	Yes	Level 2	☒	BMI, Sefton	7.6	Spire, Wirral	13.7
North-West	Spire	Manchester	Private	General	16	No	Level 2	☒	HCA, NHS Ventures Christie Clinic	2.9	Ramsay, Oaklands	5.4
North-West	Spire	Regency	Private	General	16	No	Level 2	☒	BMI, Alexandra	13.9	HCA, NHS Ventures Christie Clinic	16.5
North-West	Spire	Wirral	Private	General	17	Yes	Level 2	☒	Spire, Liverpool	13.7	BMI, Sefton	14.5
Northern Ireland	Belfast Trust	Belfast City	PPU	General	16	No	Level 3	☒	Kingsbridge Private Hospital, Kingsbridge Private	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Mater	PPU	General	16	No	Level 3	☒	Kingsbridge Private Hospital, Kingsbridge Private	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Musgrave Park	PPU	General	16	No	Level 3	☒	Belfast Trust, Mater	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Royal Group of Hospitals	PPU	General	16	No	Level 3	☒	Ulster Independent Clinic, Ulster Independent Clinic	0	BMI, Carrick Glen	59.9
Northern Ireland	Kingsbridge Private Hospital	Kingsbridge Private	Private	General	10	No	No	☒	Belfast Trust, Musgrave Park	0	BMI, Carrick Glen	59.9
Northern Ireland	NW Independent Hospital	NW Independent	Private	General	9	No	No	☒	Nuffield, Glasgow	142	BMI, Ross Hall	146
Northern Ireland	Ulster Independent Clinic	Ulster Independent Clinic	Private	General	13	No	No	☒	Belfast Trust, Royal Group of	0	BMI, Carrick Glen	59.9
Scotland	BMI	Albyn	Private	General	17	Yes	Level 2	☒	BMI, Fernbrae	68.9	BMI, Kings Park	118
Scotland	BMI	Carrick Glen	Private	General	14	No	Level 2	☒	BMI, Ross Hall	35.8	Nuffield, Glasgow	42.3
Scotland	BMI	Fernbrae	Private	General	16	No	No	☒	BMI, Kings Park	54.6	Spire, Murrayfield	58.3
Scotland	BMI	Kings Park	Private	General	15	No	No	☒	Nuffield, Glasgow	30	Spire, Murrayfield	33.2
Scotland	BMI	Ross Hall	Private	General	17	Yes	Level 3	☒	Nuffield, Glasgow	5.8	BMI, Kings Park	33.3

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Scotland	NHS Lothian	NHS Lothian	PPU	General	11	No	Level 3	[X]	Spire, Murrayfield	3.3	BMI, Kings Park	35.6
Scotland	Nuffield	Glasgow	Private	General	17	Yes	Level 2	[X]	BMI, Ross Hall	5.8	BMI, Kings Park	30
Scotland	Spire	Murrayfield	Private	General	17	Yes	Level 2	[X]	NHS Lothian, NHS Lothian	3.3	BMI, Kings Park	33.2
South-East (East)	BMI	Chaucer	Private	General	17	Yes	Level 2	[X]	The Spencer Private Hospital, William Harvey	16.1	The Spencer Private Hospital, QEOM	18.1
South-East (East)	BMI	Esperance	Private	General	17	Yes	Level 2	[X]	Spire, Sussex	20.1	Brighton Sussex Trust, Sussex Eye (Eye)	20.6
South-East (East)	BMI	Fawkham Manor	Private	General	17	Yes	Level 2	[X]	BMI, Chelsfield Park	9.3	BMI, Sloane	15.8
South-East (East)	BMI	Goring Hall	Private	General	17	Yes	Level 2	[X]	Western Sussex Trust, Worthing	3.4	Brighton Sussex Trust, Royal Sussex County (incl Royal Alexandra Children's)	14.7
South-East (East)	BMI	McIndoe	PPU	General	7	No	No	[X]	Spire, Tunbridge Wells	9.9	Spire, Gatwick Park	11.9
South-East (East)	BMI	Somerfield	Private	General	17	Yes	Level 2	[X]	Spire, Alexandra	6.8	Maidstone, Tunbridge Wells Suite	15.2
South-East (East)	Brighton Sussex Trust	Princess Royal	PPU	General	16	No	Level 3	[X]	Nuffield, Haywards Heath	1.7	Brighton Sussex Trust, Royal Sussex County (incl Royal Alexandra Children's)	16.1
South-East (East)	Brighton Sussex Trust	Royal Sussex County	PPU	General	16	No	Level 3	[X]	Brighton Sussex Trust, Sussex Eye (Eye)	0	Nuffield, Brighton	2.2
South-East (East)	Maidstone	Tunbridge Wells Suite	PPU	General	12	No	Level 3	[X]	Nuffield, Tunbridge Wells	2.4	Spire, Tunbridge Wells	6.5
South East (East)	Nuffield	Brighton	Private	General	17	Yes	Level 2	[X]	Brighton Sussex Trust, Royal Sussex County (incl Royal Alexandra Children's)	2.2	Brighton Sussex Trust, Sussex Eye (Eye)	2.3
South-East (East)	Nuffield	Haywards Heath	Private	General	17	Yes	Level 2	[X]	Brighton Sussex Trust, Princess Royal (incl Hurstwood Park Neurosciences)	1.7	Brighton Sussex Trust, Royal Sussex County (incl Royal Alexandra Children's)	15.7
South-East (East)	Nuffield	Tunbridge Wells	Private	General	16	Yes	Level 2	[X]	Maidstone, Tunbridge Wells Suite	2.4	Spire, Tunbridge Wells	4.4
South-East (East)	Ramsay	Ashtead	Private	General	15	No	Level 2	[X]	St Anthony's Hospital, St Anthony's	6.7	The Royal Marsden NHS Foundation Trust, Private Care Sutton	7.2
South-East (East)	Ramsay	North Downs	Private	General	13	No	Level 2	[X]	The Royal Marsden NHS Foundation Trust, Private Care Sutton	10.5	BMI, Shirley Oaks	10.5
South-East (East)	Spire	Alexandra	Private	General	17	Yes	Level 2	[X]	BMI, Somerfield	6.8	BMI, Fawkham Manor	16.6
South-East (East)	Spire	Gatwick Park	Private	General	17	Yes	Level 2	[X]	BMI, McIndoe	11.9	Ramsay, North Downs	13.5
South-East (East)	Spire	St Saviours	Private	General	16	No	Level 2	[X]	The Spencer Private Hospital, William Harvey	10.6	BMI, Chaucer	19.5
South-East (East)	Spire	Sussex	Private	General	17	Yes	No	[X]	BMI, Esperance	20.1	Maidstone, Tunbridge Wells Suite	24.7
South-East (East)	Spire	Tunbridge Wells	Private	General	17	Yes	Level 2	[X]	Nuffield, Tunbridge Wells	4.4	Maidstone, Tunbridge Wells Suite	6.5
South-East (East)	The Spencer Private Hospital	QEOM	PPU	General	N/A	No	Level 3	[X]	BMI, Chaucer	18.1	The Spencer Private Hospital, William Harvey	31.4
South-East (East)	The Spencer Private Hospital	William Harvey	PPU	General	N/A	No	Level 3	[X]	Spire, St Saviours	10.6	BMI, Chaucer	16.1

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South-East (East)	Western Sussex Trust	Worthing	PPU	General	14	No	Level 3	☒	BMI, Goring Hall	3.4	Brighton Sussex Trust, Royal Sussex County (incl Royal Alexandra Children's)	11.7
South-East (West)	BMI	Chiltern	Private	General	17	Yes	Level 2	☒	BMI, Shelburne	8.8	BMI, Bishops Wood	14.5
South-East (West)	BMI	Foscote	Private	General	15	Yes	No	☒	Oxford Radcliff Trust, Horton	0.4	Nuffield, Warwickshire	23.9
South-East (West)	BMI	Hampshire Clinic	Private	General	17	Yes	Level 3	☒	Spire, Clare Park	13.1	Circle, Circle Reading	14.3
South-East (West)	BMI	Mount Alvernia	Private	General	17	Yes	No	☒	Royal Surrey, Royal Surrey	2.8	Nuffield, Guildford	3.3
South-East (West)	BMI	Princess Margaret	Private	General	17	Yes	No	☒	Spire, Thames Valley	6.3	BMI, Runnymede	9.7
South-East (West)	BMI	Runnymede	PPU	General	16	No	Level 2	☒	Nuffield, Woking	3.9	BMI, Princess Margaret	9.7
South-East (West)	BMI	Sarum Road	Private	General	17	Yes	Level 2	☒	Nuffield, Wessex	6.4	Spire, Southampton	11.9
South-East (West)	BMI	Saxon Clinic	Private	General	17	Yes	No	☒	BMI, Manor	17.7	BMI, Three Shires	21.4
South-East (West)	BMI	Shelburne	PPU	General	17	Yes	No	☒	BMI, Chiltern	8.8	Spire, Thames Valley	14.2
South-East (West)	Circle	Circle Reading	Private	General	13	No	Level 2	☒	Ramsay, Berkshire Independent	2.7	Spire, Dunedin	2.9
South-East (West)	Frimley Park	Parkside Suite	PPU	General	14	No	Level 3	☒	Nuffield, Woking	9.7	Spire, Clare Park	10.6
South-East (West)	Nuffield	Chichester	Private	General	17	Yes	No	☒	Western Sussex Trust, St Richards	1.1	Spire, Portsmouth	9.9
South-East (West)	Nuffield	Guildford	Private	General	17	Yes	Level 2	☒	Royal Surrey, Royal Surrey	0.6	BMI, Mount Alvernia	3.3
South-East (West)	Nuffield	Oxford	Private	General	17	Yes	Level 3	☒	Oxford Radcliff Trust, JR	0.6	Oxford Radcliff Trust, Churchill	0.8
South-East (West)	Nuffield	Wessex	Private	General	17	Yes	Level 2	☒	BMI, Sarum Road	6.4	Spire, Southampton	6.6
South-East (West)	Nuffield	Woking	Private	General	16	No	No	☒	BMI, Runnymede	3.9	BMI, Mount Alvernia	7.7
South-East (West)	Oxford Radcliff Trust	Churchill	PPU	General	7	No	Level 3	☒	Nuffield, Oxford	0.8	Oxford Radcliff Trust, JR	1.1
South-East (West)	Oxford Radcliff Trust	Horton	PPU	General	11	No	Level 3	☒	BMI, Foscote	0.4	Nuffield, Warwickshire	24
South-East (West)	Oxford Radcliff Trust	JR	PPU	General	13	No	Level 3	☒	Nuffield, Oxford	0.6	Oxford Radcliff Trust, Churchill	1.1
South-East (West)	Ramsay	Berkshire Independent	Private	General	14	No	Level 2	☒	Spire, Dunedin	1	Circle, Circle Reading	2.7
South-East (West)	Royal Surrey	Royal Surrey	PPU	General	10	No	Level 3	☒	Nuffield, Guildford	0.6	BMI, Mount Alvernia	2.8
South-East (West)	Spire	Clare Park	Private	General	16	Yes	Level 2	☒	Firmley Park, Parkside Suite	10.6	Royal Surrey, Royal Surrey	12.1
South-East (West)	Spire	Dunedin	Private	General	17	Yes	Level 2	☒	Ramsay, Berkshire Independent	1	Circle, Circle Reading	2.9
South-East (West)	Spire	Portsmouth	Private	General	17	Yes	Level 2	☒	Nuffield, Chichester	9.9	Western Sussex Trust, St Richards	10
South-East (West)	Spire	Southampton	Private	General	17	Yes	Level 3	☒	Nuffield, Wessex	6.6	BMI, Sarum Road	11.9
South-East (West)	Spire	Thames Valley	Private	General	17	Yes	Level 2	☒	BMI, Princess Margaret	6.3	Royal Brompton and Harefield NHS Foundation Trust, Harefield	8.8
South-East (West)	Western Sussex Trust	St Richards	PPU	General	14	No	No	☒	Nuffield, Chichester	1.1	Spire, Portsmouth	10
South-West	BMI	Bath Clinic	Private	General	17	Yes	Level 2	☒	Circle, Circle Bath	6.6	Nuffield, Bristol	15.3
South-West	BMI	Harbour	Private	General	17	Yes	Level 2	☒	Nuffield, Bournemouth	5.6	BMI, Winterbourne	24.7
South-West	BMI	The Ridgeway	Private	General	17	Yes	Level 2	☒	Great Western, The Shalbourne Suite	4.4	Gloucestershire Hospitals, Cheltenham General	32.8
South-West	BMI	Winterbourne	Private	General	15	Yes	No	☒	BMI, Harbour	24.7	Nuffield, Bournemouth	29.4
South-West	Circle	Circle Bath	Private	General	14	Yes	Level 2	☒	BMI, Bath Clinic	6.6	Nuffield, Bristol	19.3
South-West	Gloucestershire	Cheltenham	PPU	General	15	No	Level 3	☒	Nuffield, Cheltenham	2.8	Gloucestershire Hospitals, Gloucestershire Royal	9
South-West	Gloucestershire	Gloucestershire General	PPU	General	14	No	Level 3	☒	Ramsay, Winfield	1.7	Nuffield, Cheltenham	6.2
South-West	Great Western	The Shalbourne Suite	PPU	General	15	Yes	Level 3	☒	BMI, The Ridgeway	4.4	Gloucestershire Hospitals, Cheltenham General	32.7
South-West	Nuffield	Bournemouth	Private	General	17	Yes	Level 2	☒	BMI, Harbour	5.6	Ramsay, New Hall	23.9

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South-West	Nuffield	Bristol	Private	General	17	Yes	No	[X]	Spire, Bristol	1.2	BMI, Bath Clinic	15.3
South-West	Nuffield	Cheltenham	Private	General	17	Yes	Level 2	[X]	Gloucestershire Hospitals, Cheltenham General	2.8	Ramsay, Winfield	6.1
South-West	Nuffield	Exeter	Private	General	17	Yes	Level 2	[X]	Ramsay, Mount Stuart	20.9	Nuffield, Taunton	37.2
South-West	Nuffield	Plymouth	Private	General	17	Yes	Level 2	[X]	Plymouth Hospitals NHS Trust, Meavy Clinic	0.1	Ramsay, Mount Stuart	34.2
South-West	Nuffield	Taunton	Private	General	17	Yes	No	[X]	Nuffield, Exeter	37.2	Circle, Circle Bath	43.2
South-West	Plymouth NHS Trust	Meavy Clinic	PPU	General	17	Yes	Level 2	[X]	Nuffield, Plymouth	0.1	Ramsay, Mount Stuart	32.6
South-West	Ramsay	Duchy	Private	General	16	Yes	Level 2	[X]	Nuffield, Plymouth	55.5	Plymouth Hospitals NHS Trust, Meavy Clinic	55.6
South-West	Ramsay	Mount Stuart	Private	General	14	No	Level 2	[X]	Nuffield, Exeter	20.9	Plymouth Hospitals NHS Trust, Meavy Clinic	32.6
South-West	Ramsay	New Hall	Private	General	14	Yes	Level 2	[X]	Nuffield, Bournemouth	23.9	Spire, Southampton	24.1
South-West	Ramsay	Winfield	Private	General	16	No	Level 2	[X]	Gloucestershire Hospitals, Gloucestershire Royal	1.7	Nuffield, Cheltenham	6.1
South-West	Spire	Bristol	Private	General	17	Yes	Level 3	[X]	Nuffield, Bristol	1.2	BMI, Bath Clinic	16.4
Wales	BMI	Werndale	Private	General	15	No	No	[X]	HMT Hospitals, Sancta Maria	34.7	Bridgend Clinic, Bridgend Clinic	54.9
Wales	Bridgend Clinic	Bridgend Clinic	PPU	General	12	No	No	[X]	Nuffield, Vale	14.2	HMT Hospitals, Sancta Maria	23.4
Wales	HMT Hospitals	Sancta Maria	Private	General	12	No	No	[X]	Bridgend Clinic, Bridgend Clinic	23.4	BMI, Werndale	34.7
Wales	Nuffield	Vale	Private	General	17	Yes	Level 2	[X]	Spire, Cardiff	13.4	Bridgend Clinic, Bridgend Clinic	14.2
Wales	Spire	Cardiff	Private	General	17	Yes	Level 3	[X]	St Joseph's Hospital, St Joseph's	10.2	Nuffield, Vale	13.4
Wales	Spire	Yale	Private	General	17	Yes	Level 2	[X]	Nuffield, Chester	10.8	Spire, Wirral	24.5
Wales	St Joseph's Hospital	St Joseph's	Private	General	12	No	Level 2	[X]	Spire, Cardiff	10.2	Nuffield, Vale	22.7
West Midlands	BMI	Droitwich Spa	Private	General	17	Yes	Level 2	[X]	Spire, South Bank	7.6	BMI, Priory	18.5
West Midlands	BMI	Edgbaston	Private	General	16	No	Level 2	[X]	BMI, Priory	1.2	Ramsay, West Midlands	7.3
West Midlands	BMI	Meriden	PPU	General	17	Yes	Level 2	[X]	Nuffield, Warwickshire	12.5	Spire, Parkway	18.2
West Midlands	BMI	Priory	Private	General	16	Yes	Level 3	[X]	BMI, Edgbaston	1.2	Spire, Parkway	8.3
West Midlands	Nuffield	Hereford	Private	General	17	Yes	No	[X]	Spire, South Bank	25.8	Gloucestershire Hospitals, Gloucestershire Royal	30.8
West Midlands	Nuffield	North Staffs	Private	General	16	Yes	No	[X]	Ramsay, Rowley	15.7	BMI, South Cheshire	19
West Midlands	Nuffield	Shrewsbury	Private	General	17	Yes	No	[X]	Spire, Yale	32.2	Nuffield, Wolverhampton	34
West Midlands	Nuffield	Warwickshire	Private	General	17	Yes	Level 2	[X]	BMI, Meriden	12.5	Spire, Parkway	22.6
West Midlands	Nuffield	Wolverhampton	Private	General	17	Yes	No	[X]	Ramsay, West Midlands	13.5	Spire, Little Aston	15.2
West Midlands	Ramsay	Rowley	Private	General	15	Yes	No	[X]	Nuffield, North Staffs	15.7	Nuffield, Wolverhampton	19
West Midlands	Ramsay	West Midlands	Private	General	15	No	Level 2	[X]	BMI, Edgbaston	7.3	BMI, Priory	8.6
West Midlands	Spire	Little Aston	Private	General	17	Yes	Level 2	[X]	BMI, Priory	13.7	BMI, Edgbaston	13.8
West Midlands	Spire	Parkway	Private	General	17	Yes	Level 3	[X]	BMI, Priory	8.3	BMI, Edgbaston	9.5
West Midlands	Spire	South Bank	Private	General	17	Yes	Level 2	[X]	BMI, Droitwich Spa	7.6	Ramsay, West Midlands	23.8
Yorkshire & The Humber	Aspen	Claremont	Private	General	11	No	Level 2	[X]	BMI, Thornbury	0.9	Ramsay, Park Hill	26.8
Yorkshire & The Humber	BMI	Duchy (aka Harrogate)	Private	General	17	Yes	No	[X]	Spire, Leeds	14.2	Nuffield, Leeds	15.8
Yorkshire & The Humber	BMI	Huddersfield	Private	General	16	No	No	[X]	Spire, Elland	4.5	Ramsay, The Lodge (incl Yorkshire clinic)	18.2
Yorkshire & The Humber	BMI	Thornbury	Private	General	17	Yes	Level 3	[X]	Aspen, Claremont	0.9	Ramsay, Park Hill	25.8
Yorkshire & The Humber	HMT Hospitals	St Hugh's	Private	General	12	No	No	[X]	Spire, Hull and East Riding	26.8	BMI, Lincoln	34.4

<i>Region</i>	<i>Operator name</i>	<i>Hospital name</i>	<i>Private/ PPU</i>	<i>General/ Specialised</i>	<i>Range of 17 Sepc</i>	<i>Offers oncology</i>	<i>ICU level</i>	<i>Columns 9–24*</i>	<i>Name and distance of closest hospital (miles)</i>		<i>Name and distance of second closest hospital (miles)</i>	
Yorkshire & The Humber	Nuffield	Leeds	Private	General	17	Yes	Level 3	[X]	Spire, Leeds	3.6	Spire, Methley Park	8.5
Yorkshire & The Humber	Nuffield	York	Private	General	17	Yes	Level 2	[X]	BMI, Duchy (aka Harrogate)	22.5	Spire, Leeds	24.2
Yorkshire & The Humber	Ramsay	Park Hill	Private	General	15	No	No	[X]	Spire, Methley Park	22.9	BMI, Thornbury	25.8
Yorkshire & The Humber	Ramsay	Yorkshire Clinic	Private	General	17	Yes	Level 2	[X]	Nuffield, Leeds	12.6	Spire, Leeds	16.2
Yorkshire & The Humber	Spire	Elland	Private	General	17	Yes	Level 2	[X]	BMI, Huddersfield	4.5	Ramsay, The Lodge (incl Yorkshire clinic)	17.5
Yorkshire & The Humber	Spire	Hull and East Riding	Private	General	17	Yes	Level 2	[X]	HMT Hospitals, St Hugh's	26.8	Nuffield, York	37
Yorkshire & The Humber	Spire	Leeds	Private	General	17	Yes	Level 2	[X]	Nuffield, Leeds	3.6	Spire, Methley Park	10.4
Yorkshire & The Humber	Spire	Methley Park	Private	General	17	Yes	Level 2	[X]	Nuffield, Leeds	8.5	Spire, Leeds	10.4

Source: CC analysis.

*Columns 9–24 which have been excised include:

1. Total admission 2011
2. Inpatient admission 2011
3. Total revenue (£m)
4. Inpatient revenue (£m)
5. Shared insured admission
6. Share self-pay admission
7. Share NHS admission
8. Share overseas admission
9. Catchment area
10. Fascia count (16 specialties)
11. Fascia count (oncology)
12. Individual LOCI (revenue based)
13. Network LOCI (patient based)
14. Network LOCI (revenue based)
15. Network effect

Price-concentration analysis for self-pay patients

Introduction

1. This appendix sets out our quantitative assessment of the effects of local concentration on prices paid by self-pay patients. We have focused on the prices paid for inpatient hospital services, excluding consultant fees ('self-pay prices'). To assess this issue, we have undertaken a regression analysis, also known as price-concentration analysis (PCA), of the data provided to us by hospital operators. Our analysis has sought to evaluate the relationship between price and concentration (the 'price-concentration relationship') while accounting for other factors so that a like-for-like comparison is achieved.
2. The appendix is structured as follows. The first section sets out the hypothesis of interest, and provides some brief context. The second section describes the data used and definitions of the key measures, namely price and concentration. The following three sections discuss the PCA itself, and cover the methodology, results and a further assessment of the results. We then comment on the econometric evidence submitted to us by BMI. Our conclusions are summarized in the final section. An annex provides details of our cleaning and processing of the data provided to us by parties.

Hypothesis of interest

3. The hypothesis that we have tested is that hospital operators are currently able to levy higher self-pay prices in local areas where they face fewer competitive constraints. If this hypothesis holds, then all else equal, higher self-pay prices are expected in such areas. It would also imply that self-pay prices may be reduced if more competition were present in certain local areas.

4. Our interest has been in the relationship between price and local concentration in broad terms. The heterogeneous nature of the private healthcare industry—in treatments, in providers, and in regions—suggests that there are likely to be differences and nuances in the price-concentration relationship for particular segments of the industry, but these are not of direct interest. These differences are considered in this appendix, but only with a view to whether they indicate that our general analysis is misleading. The main focus throughout the appendix is therefore on the broad relationship that is representative of the industry in general.
5. Our understanding of the industry, based on our review of the qualitative evidence submitted to us and our discussions with the parties, has provided support for this hypothesis. In particular, hospital operators have told us that self-pay prices are set locally, at the hospital level rather than group level, and with local competitive conditions in mind. This is something that we have also found support for in internal documents, including business plans, results of mystery shopping exercises, and in specific guidance for setting prices. We have also been told of prices being adjusted directly in response to changes in competitive conditions. We interpret this evidence to suggest that the main hospital operators do set self-pay prices according to local concentration (amongst other factors), and believe it is in their interest to do so.
6. The parties have drawn to our attention certain factors that may constrain their ability to raise self-pay prices in local areas. In particular, they noted the role of the NHS and the preferences of self-pay patients with regard to distance. These are factors argued to mitigate the effect of local concentration on self-pay price. The NHS was said to constrain self-pay pricing in local areas because patients have a free-at-point-of-delivery alternative in nearby NHS hospitals. With regard to distance, the parties have noted that our survey of self-pay patients indicated an average travel time of 44

minutes (ie are willing to travel significant distances for treatment).¹ We have not found the limited evidence submitted in relation to these points compelling,² and note that both the role of the NHS and distance travelled for treatment are taken into account in our analysis that follows.³

Data and key measures

7. The main source of data for this analysis is invoice-level data that was provided to us by the five main hospital operators.⁴ We have used this to construct measures for self-pay prices and local concentration.
8. The invoice data provides detailed information on the hospital visits of self-pay patients. In particular, it includes details of the hospital visited, the treating consultant, the treatment received, and the prices paid. We have cleaned and consolidated the data from the separate hospitals operators to produce a single dataset of self-pay patient episodes. We refer to this as the hospital dataset. An episode is defined as a single visit to hospital. The hospital dataset covers the period 2006 to mid-2012, and includes information on inpatient episodes at 147 hospital sites. Consistent with our other local analysis, we use data covering the period 2009–2012 for the analysis contained in this appendix.
9. In the following three subsections we describe the price measure, the concentration measures, and the treatments that our analysis has focused on.

¹ See results of the CC [patient survey](#), slide 48, question E1b.

² For example, in relation to the NHS, we do not find the limited evidence to support that it acts as a competitive constraint on any of the private hospitals under analysis. We note that the internal documents we have received show that there is a degree of interaction between NHS and the private healthcare industry—for example, because consultants often split their work between NHS and private hospitals—but the evidence does not indicate that the NHS strategically interacts or competes with private hospitals for patients. For example, we have not received compelling evidence that shows that private hospitals monitor the NHS product and quality offering, or consider any reduction in waiting time at NHS hospitals to influence price outcomes for PMIs or self-pay patients.

³ In particular, we include a control variable that measures the average NHS waiting time in the local area, and the LOCI takes into account the different distances that self-pay patients travel for treatment.

⁴ BMI, HCA, Nuffield, Ramsay and Spire.

Price measure

10. We use a measure of the ‘episode price’ paid by self-pay patients. This is defined as the price paid by a self-pay patient for hospital services, excluding the cost of consultant fees and ancillary items.⁵ Each episode relates to a specific treatment received by a patient, and thus our prices are for hospital services associated with known procedures such as a hip replacement (the particular classification of treatments is discussed at the end of this subsection).⁶ We refer to this definition simply as ‘price’ for the remainder of this document.
11. A characteristic of our price measure is that it contains significant variation. This is true even when comparing prices for a specific treatment at a specific hospital site. Two factors that drive this variation include:
 - (a) the bundle of hospital services included in the episode—for example, the number of nights’ accommodation, a prosthesis if required (and the particular prosthesis used), the amount of drugs and treatments required; and
 - (b) the agreed price or discount between the patient and the hospital—for example, the hospital may propose a bespoke price to the patient after an initial consultation, or modify an initial shelf price following a negotiation or price match.
12. In addition, there is also some variation in the prices that is introduced through the recording of data by hospital operators. This could include data entry errors (eg erroneous price records, incorrect categorization of treatments etc), but also more systematic differences such as how refunds, ancillary items and multiple treatments are recorded in the data. We have cleaned and processed the data in a way that

⁵ There are some known differences in this definition across the data for each hospital operator. However, these differences are limited to factors that are not expected to influence prices in a substantive manner; for example, for BMI data we could not exclude ancillary items (eg food and drinks, telephone calls) but these are generally a small proportion of the total episode price.

⁶ We also considered the possibility of more granular price measures—for example, the price for particular line items—but differences in data recording conventions between hospital operators did not permit a practical or consistent categorization of the data in this way. One of the key limitations is that certain hospital operators only record the total episode price for each patient, and do not provide a breakdown into the line item prices. More aggregated price measures such as average prices across bundles of procedures or patient episodes were considered less preferable on the basis that mix may introduce artificial variation in the observed price data.

minimizes any impact of these differences. This process is described in Annex A at the end of this document.

13. The parties have argued that the price variation caused by the data recording issues noted above, and our cleaning of the data in this regard, may distort our analysis. We acknowledge that some differences are likely to remain between the data for each operator, and that these differences are not always observed, but we do not consider these likely to materially affect our analysis. For example, because some of the known differences are a very small proportion of price (eg, ancillary items), and other differences that have been suggested (eg patients receiving multiple treatments in one visit but these not all being recorded in the data) are likely to be mitigated by specific steps of our data cleaning (eg we have taken a careful approach to removing the episodes observed with multiple treatments, and then removing outlying price observations from the remaining episodes)⁷ and our regression analysis (eg through the use of operator dummies). For any unaccounted issues to potentially distort our analysis, the differences would have to affect the data in a way that is correlated with both price and concentration. We have not heard arguments or received evidence to suggest that this may be the case.

Concentration measure

14. We have used two concentration measures in this inquiry: LOCI and fascia count. Both of these measures are used in the PCA. We briefly describe each measure in turn.

LOCI

15. We have constructed a measure of concentration that we refer to as LOCI. The details of the LOCI methodology are set out in Appendix 6.4. The LOCI measure

⁷ See Annex A for more details.

described in that appendix uses the Healthcode data on insured patient visits. We refer to that measure as the insured LOCI. In this appendix, and for the regression analysis, we apply the same methodology as in Appendix 6.4 but use the hospital dataset (ie on self-pay patients). We refer to this measure as the self-pay LOCI. Both the insured LOCI and self-pay LOCI incorporate the network effect adjustment described in Appendix 6.4 (paragraphs 26–30), and are based on data for inpatients visits over the period 2009 to 2012 for the set of 16 specialties plus oncology.

16. In an earlier version of this analysis, we had used the insured LOCI as the concentration measure in the regression analysis. We had argued that this was appropriate because of the likely correlation between the insured LOCI and self-pay LOCI, and because a self-pay LOCI may be less accurately measured due to data shortages. Following comments from the parties, and our own further analysis (discussed below), we have constructed a self-pay LOCI and consider that the data shortages associated with this measure are not a serious concern. Thus, while we observe that the insured LOCI and self-pay LOCI are highly correlated, we agree with the parties that the self-pay LOCI is the more appropriate measure of local concentration—because it reflects self-pay local concentration rather than insured local concentration—than the insured LOCI.
17. The data shortages referred to above occur because the hospital dataset does not contain self-pay patient episodes from all hospitals. Such ‘missing invoices’ may bias the estimates of submarket patient shares used in the calculation of the LOCI measure. This issue is also discussed in Appendix 6.4. In principle, concerns over missing invoices may appear more acute for the self-pay LOCI, as compared with the insured LOCI, because more hospitals are omitted from the hospital dataset compared to the Healthcode data (used for the insured LOCI). To assess the likely scale of any bias arising from the missing self-pay invoices we have used the

aggregated data on self-pay admissions that was sent to us in response to the Market Questionnaire. This is the most complete information on self-pay patient numbers that is available. For each region of the UK, we have compared the total self-pay admissions in 2011 with the self-pay admissions in 2011 that occurred at hospitals included in the hospital dataset. The results of this comparison are shown in Table 1.

TABLE 1 **Estimates of missing self-pay invoices**

<i>Region</i>	<i>Self-pay admissions at hospitals not included in the hospital dataset</i>	<i>Self-pay admissions at all hospitals</i>	<i>Missing self-pay Invoices %</i>
East Midlands	0	5,640	0
East of England	957	13,051	7
London	20,999	38,152	55
North-East	0	1,834	0
North-West	0	9,236	0
Northern Ireland	991	991	100
Scotland	0	5,854	0
South-East	2,595	25,088	10
South-West	0	11,069	0
Wales	0	3,296	0
West Midlands	0	8,556	0
Yorkshire and The Humber	0	6,936	0
All regions	25,542	129,703	20
All regions excl London and Northern Ireland	3,552	90,560	4

Source: CC analysis.

Note: Numbers may not sum due to rounding. Data on self-pay admissions not available for 47 of 219 hospitals and this may mean some of the estimated proportions are understated. However, since 37 of these 47 hospitals are located in London or Northern Ireland, and 27 of these 47 hospitals are PPUs (which typically have lower levels of self-pay admissions than private hospitals), these omissions are not expected to materially change the estimated proportions of missing invoices in most regions. Regions are defined by the NUTS1 classification.

18. Table 1 shows that the percentage of missing invoices for the self-pay LOCI calculation is around 20 per cent for the UK as a whole. It also shows the regional breakdown: the highest proportions of missing invoices are in London (55 per cent) and Northern Ireland (100 per cent). The proportions are higher in these regions because of the higher number of independents and PPUs in London, and the fact that the main five hospital operators are not present in Northern Ireland. The final row in Table 1 shows that after excluding London and Northern Ireland, the proportion of missing invoices is around 4 per cent. These figures suggest that while there are missing invoices and thus the LOCI measure will be less accurate in the regions with a large proportion of missing invoices, the impact is expected to be limited for the

majority of regions,⁸ except for London (and Northern Ireland, but this is not included in the PCA).^{9,10}

Fascia count

19. As described in Appendix 6.5, we have defined fascia count measures as the count of general private hospital and PPU fascia. This has been computed for three distance bands from the focal hospital: 0–9 miles, 9–17 miles and 17–26 miles. These distance bands are defined by road distance, and were chosen around a benchmark distance of 17 miles.^{11,12} The data shortages noted above in relation to the LOCI measure do not affect the fascia count measures.

Treatments

20. The private healthcare industry is characterized by a significant degree of heterogeneity in the treatments that patients receive. In the hospital dataset, episodes each relate to different inpatient treatment (eg hip operation, gallbladder removal etc). Each treatment is defined by its 'CCSD code', a five-digit code that has a corresponding description. The coding system only covers surgical procedures (and so does not cover the majority of outpatient services). The majority of episodes are recorded with a single CCSD code. To a lesser degree we also observe episodes that are recorded with multiple CCSD codes. We have cleaned the data so that only episodes with a single CCSD code remain and we describe this process in Annex A.

⁸ There are two factors that lead us to this conclusion. First, most hospitals draw patients from many submarkets and if the missing invoices only affect a relatively small number of these then any impact on the hospitals' overall LOCI measure may be limited. Second, changes in the shares for submarkets located at distance from the focal hospital will only have a small impact on the focal hospital's overall LOCI measure because of the weighting scheme. It is therefore unlikely that small proportions of missing invoices will have a large impact on a hospital's LOCI.

⁹ We have also considered any impact on the self-pay LOCI calculations as a result of our data cleaning, and in particular the episodes that we have excluded because of the irregular pricing information (see Annex A for more details). To assess this issue, we have compared the self-pay LOCI described in the text with a self-pay LOCI constructed using the hospital dataset but with no cleaning of irregular episodes applied (ie we reintroduced the irregular priced episodes). We observe that these two self-pay LOCI measures are very highly correlated (0.99) and conclude from this that our data exclusions are unlikely to have materially affected the self-pay LOCI calculations.

¹⁰ We have tested the results presented later in this paper to the exclusion of London. We find that the results are robust to such exclusions and from that infer that the missing invoices in London do not materially affect our analysis.

¹¹ This is the average catchment area for the hospitals in Great Britain.

¹² For the purposes of the regression analysis we did consider variations around these distance bands, but have found such changes to have no material effect on the results.

After cleaning the hospital dataset there remain 54 separate CCSD codes ('treatments').

21. The number and heterogeneity of treatments raises a number of practical questions—how many treatments to consider, which treatments are suitable and so on. In principle treatments could each be analysed individually to assess the price-concentration relationship. For 54 treatments we did not consider this a practical solution, nor would the disaggregated results produced easily serve to address our main hypothesis—that is, regarding a broad price-concentration relationship across the industry as a whole. Moreover, certain treatments are simply better candidates for assessment than others. Taking both of these issues into account, as explained below, we consider it reasonable to focus our assessment on a small number of treatments that are both representative of acute self-pay inpatient treatments and also well-suited for our analysis.
22. The treatments that we focus on, referred to as the 'focal treatments', are the top four inpatient treatments by patient numbers. In determining this, we have excluded cosmetic procedures (eg breast enhancement), procedures that are in certain cases cosmetic or non-acute (eg rhinoplasty or gastric banding), and procedures that are in certain cases offered as a day-patient service rather than an inpatient service (eg cataract surgery or hernia surgery). The four focal treatments are: hip replacement (W3712), knee replacement (W4210), prostate resection (M6530) and gallbladder removal (J1830).^{13,14} The focal treatments account for almost 60 per cent of inpatient patient visits, and over 60 per cent of inpatient revenue. We see the benefits for our analysis of focusing on these four treatments as follows:

¹³ These are abbreviated descriptions. Full descriptions are provided below in Tables 2 and 3.

¹⁴ In an earlier version of this analysis we had considered eight treatments. Following comments made by the parties, we have excluded four of these original treatments from our analysis. We excluded gastric banding and rhinoplasty following trauma on the basis that these treatments contained a mixture of patients, some receiving acute treatments and some receiving cosmetic (non-acute) treatments. We excluded cataract surgery and hernia surgery on the basis that these treatments also contained a mixture of patients, some receiving inpatient treatment and some receiving daycase treatment.

- (a) The focal treatments are important to hospital operators in terms of revenue, which may make it more likely, as compared with less important treatments that hospitals set prices in a profit-maximizing manner (eg responding to local conditions).
- (b) The focal treatments are provided at more hospital sites (over 100 for each focal treatment) than other treatments which means that the data we analyse contains the maximum variation in the levels and range of local concentration.¹⁵
- (c) The patient numbers for each focal treatment is high (over 1,000 patients per focal treatment, and on average nine or more patients per focal treatment at each hospital site), which means that prices at each hospital are observed for many patients, reducing the likelihood that the price paid by any particular patient has the potential to obscure or distort the analysis.¹⁶

23. As described in Section 5, treatments in general have very little substitutability on the demand side, but a degree of substitutability on the supply side. This supply-side substitutability is enhanced when hospitals already provide the relevant specialties. Since the majority of hospitals provide the four focal treatments, and the relevant specialties, we therefore think it is reasonable to pool the four focal treatments together in the regression analysis. The self-pay LOCI measure is expected to reflect concentration in the local area that is relevant for all of the four focal treatments. We test later whether the pooling of data distorts our results in any way. Tables 2 and 3 below provide a summary of the top ten treatments in our hospital dataset.

¹⁵ This variation is useful because our analysis effectively compares episode price outcomes with levels of local concentration. More levels of local concentration and more variation in local concentration allow the analysis to make more comparisons which is beneficial when trying to identify a relationship between the two variables.

¹⁶ For example, if we were to observe the episode price for only a single patient at each hospital site, the price variation caused by individual circumstances (as described earlier) may be such that any influence of local concentration on price is impossible to determine.

TABLE 2 Summary of top ten treatments by patient volumes in cleaned hospital dataset, 2009–2012

CCSD code	Description	Specialty	Patients (obs)	Revenue £	Number of hospital sites	Average patients per hospital site
W3712	Primary total hip replacement with or without cement	Trauma and orthopaedics	4,899	41,372,910	138	36
W4210	Total prosthetic replacement of knee joint, with or without cement, +/- patella	Trauma and orthopaedics	2,653	24,139,688	127	21
M6530	Endoscopic resection of prostate (tur) (including cystoscopy)	Urology	1,502	5,581,510	127	12
J1830	Laparoscopic cholecystectomy	General surgery	1,187	4,150,573	125	9
Q0740	Total abdominal hysterectomy (+/- oophorectomy)	Obstetrics and gynaecology	757	3,327,136	129	6
P2380	Anterior (+/- posterior) colporrhaphy with vaginal hysterectomy (including primary repair of enterocele)	Obstetrics and gynaecology	712	3,242,724	121	6
V2540	Posterior excision of disc prolapse including microdiscectomy (lumbar region)	Trauma and orthopaedics	670	2,898,419	81	8
P2310	Anterior +/- posterior colporrhaphy (including primary repair of enterocele) (including cystoscopy)	Obstetrics and gynaecology	589	2,044,081	122	5
J1880	Laparoscopic cholecystectomy with peri-operative cholangiogram	General surgery	566	2,058,677	78	7
V2560	Decompression for central spinal stenosis (1 or 2 levels)	Trauma and orthopaedics	454	2,293,732	80	6
	Focal treatments (W3712, W4210, M6530, J1830)		10,241	75,244,681		
	Top 10 treatments (each shown above)		13,989	91,109,450		
	All treatments		17,446	114,206,496		

Source: CC analysis.

Note: See Annex A for details of our data cleaning and processing.

TABLE 3 Episode price summary statistics of top ten treatments by patient volumes in hospital dataset, 2009–2012

CCSD code	Description	Average price £	Median price £	Min price £	Max price £	Std deviation
W3712	Primary total hip replacement with or without cement	8,445	8,352	5,818	11,917	997
W4210	Total prosthetic replacement of knee joint, with or without cement, +/- patella	9,099	9,100	5,270	15,215	1,121
M6530	Endoscopic resection of prostate (tur) (including cystoscopy)	3,716	3,663	2,075	6,500	481
J1830	Laparoscopic cholecystectomy	3,497	3,500	1,890	5,917	557
Q0740	Total abdominal hysterectomy (+/- oophorectomy)	4,395	4,400	1,995	9,889	796
P2380	Anterior (+/- posterior) colporrhaphy with vaginal hysterectomy (including primary repair of enterocele)	4,554	4,532	2,744	6,375	655
V2540	Posterior excision of disc prolapse including microdiscectomy (lumbar region)	4,326	4,239	2,096	7,926	984
P2310	Anterior +/- posterior colporrhaphy (including primary repair of enterocele) (including cystoscopy)	3,470	3,434	1,645	6,011	787
J1880	Laparoscopic cholecystectomy with peri-operative cholangiogram	3,637	3,629	2,348	5,234	571
V2560	Decompression for central spinal stenosis (1 or 2 levels)	5,052	5,083	2,500	7,999	1,201

Source: CC analysis.

Note: See Annex A for details of our data cleaning and processing.

Econometric methodology

24. Assessing the price-concentration relationship involves comparing price outcomes with local concentration. A hypothetical ideal would be between price outcomes at hospitals that are comparable in all respects except for the level of local market concentration faced. Any price difference between such hospitals could then be attributed to a price-concentration relationship. However, when hospitals are not like-for-like, simple price comparisons may be misleading. PCA addresses this issue by using regression analysis to estimate the price-concentration relationship while controlling for the differences between hospitals and local areas. In effect, the price-concentration relationship is estimated while other factors are 'held fixed'. This section sets out the econometric model that we use, and the factors ('control variables') that we seek to hold fixed while evaluating the relationship of interest.

Model

25. We have taken a 'reduced-form' approach to the PCA.¹⁷ We estimate the following equation:

(Equation 1)
$$\ln(\text{price}_i) = \beta \cdot \text{concentration}_i + \gamma \cdot X_i + u_i$$

26. In this equation, price_i is the price paid for private hospital services by patient i , and concentration_i is a measure of local market concentration faced by the hospital that patient i visited.^{18,19} The term X_i contains other measurable factors that are specific to patient i 's hospital visit and expected to affect the price paid by patient i .²⁰ Factors contained in X_i are referred to as the 'control variables', while concentration_i and X_i collectively are referred to as the 'covariates'. The term u_i represents all 'unobserved' factors that affect prices but that are not included in X_i . The two terms β and γ

¹⁷ By reduced form we refer to an approach that does not rely on a particular underlying economic model that is assumed to hold.

¹⁸ The concentration measure may be one variable (eg LOCI) or more than one variable (eg fascia count at different distance bands).

¹⁹ The concentration variable therefore varies by hospital site but does not vary between patients that visit the same hospital site.

²⁰ X_i is a vector that contains several variables.

represent the ‘parameters’ that characterize the relationship of each covariate with price.

27. Data on patients can be used to estimate the parameters of Equation 1. In order to do this it is necessary to make certain assumptions. We begin by making two key assumptions:

Assumption 1: the equation is a reasonable approximation of the relationship between prices and the covariates; and

Assumption 2: the covariates are exogenous (or equivalently, that the covariates are uncorrelated with the unobserved term, u_i).

28. The first assumption relates to the particular form of Equation 1, which links the natural logarithm of price to the covariates in a certain way. We use this representation as it produces a model that is simple to interpret and estimate. The natural logarithm allows the analysis to characterize the proportional relationship between prices and concentration through a single parameter (β). This proportional relationship is an average across all treatments and operators that are included in the analysis—ie it corresponds to the general relationship that we seek to understand.
29. The second assumption implies that the covariates, and concentration in particular, are not correlated with any other factors that are not included in the covariates (ie that are included as part of the unobserved term). We first present results under this assumption, and then consider our results under an alternative assumption.
30. If these assumptions hold, then estimates of the parameter β can be interpreted as the causal effect of concentration on price. Because of the log-linear form of Equation 1, 100β will indicate the expected percentage response (all else equal) in self-pay

prices following a ‘one unit’ change in concentration.²¹ For fascia count as the concentration measure, a ‘one unit’ change in concentration reflects an additional competitor within the relevant distance band. For LOCI as the concentration measure, a ‘one unit’ change in concentration reflects a change in market structure between monopoly and perfect competition; while this is a useful benchmark, such a change in market structure is extreme and unlikely ever to occur in practice.²²

31. Under Assumption 1 and 2 stated above, ordinary least squares estimation (OLS) can be used to estimate the parameters (β , γ) in Equation 1. We proceed under these assumptions at first, and then give more specific attention to Assumption 2, and estimation under an alternative assumption using instrumental variable estimation (IV). To perform the estimation, data is required on the prices, concentration and the control variables for each patient visit. We use data on the price and concentration variables described above (episode prices, self-pay LOCI and fascia count), and data on the control variables that are described below.

Control variables

32. Equation 1 specified a group of control variables, X_i . This group of variables should include the factors that are expected to affect prices, as well as being correlated with the concentration measures. If factors that meet these conditions are not included in the variables, Assumption 2 is less likely to hold. Factors that affect supply and demand conditions for private healthcare services are typical candidates for control variables.
33. We have considered the following control variables:

²¹ The effect is only approximately equal to the percentage change due to the properties of the natural logarithm function.

²² Moreover, there are no hospitals in our dataset with a LOCI of zero or a LOCI of one.

- (a) year dummies, to account for differences in average price over time (eg due to inflation);²³
- (b) operator dummies, to account for any differences between the five large hospital groups (eg as a result of price differences, quality differences, minor differences in the data definitions);
- (c) treatment dummies, to account for differences in average price between the treatments;
- (d) patient age, patient gender and the number of nights per episode, to account for differences in the individual circumstances of each patient;²⁴
- (e) average direct cost of the hospital (logged), to account for differences in input or labour costs;^{25,26}
- (f) a dummy indicating provision of critical care level 3 (CCL3), to account for differences associated with hospitals providing this level of care (eg as a result of perceived or actual differences in quality of service, or case mix);²⁷
- (g) regional dummies, to account for any differences in supply and/or demand conditions that vary by region of the country;²⁸
- (h) local area characteristic variables, including average age in the population, average disposable income in the population, population density and the average

²³ We note, however, that self-pay prices for the focal treatments have in general remained at similar levels over time.

²⁴ The number of nights per episode will to a degree proxy for the severity of a particular treatment. For example, patients receiving hospital services that stay a larger number of nights are likely to be those having treatment for a more complex or severe diagnosis.

²⁵ This is calculated as the total direct cost of each hospital site, divided by the total number of patients (itself the sum of inpatient, day-patient and outpatient visits). In the working paper version of this analysis, we had used only 2011 data; we now use cost and patient data covering the period 2009–2011. Cost data was available for almost all hospitals in our analysis. For hospitals with missing cost data, we have imputed the data on the basis of hospitals owned by the same operator in the same region and year; if data for the desired year is not available, we use the average for the operator and region over years that are available.

²⁶ Average direct cost will also proxy for differences in quality, to the extent that these are reflected in differences in average costs.

²⁷ We assume that if a hospital has beds for critical care level 3, then it can provide that level of care.

²⁸ Differences specific to each region might include demand and supply conditions such as population, demographics, and the supply of NHS services. These regional dummies are measured at the NUTS1 and NUTS2 level. NUTS1 contains 11 categories and NUTS2 contains 34 categories. NUTS stands for 'Nomenclature of Territorial Units for Statistics' and is a delineation of geographic areas developed and regulated by the EU. There are three NUTS delineations, from NUTS1 (most aggregated) to NUTS3 (most disaggregated). A map of UK NUTS regions can be found at: <http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html>.

NHS waiting time, to proxy for local differences in supply and demand conditions.²⁹

34. We have used a range of data sources to construct these control variables.³⁰
35. The intended role of the regional dummies and the local area characteristic variables is primarily to control for differences in local levels of self-pay demand.³¹ All else equal we would expect higher prices in areas of high demand and thus we wish to control for this effect in our analysis. Regional dummies and local area characteristic variables are two ways to do this. The regional dummies have the advantage that they will pick up any differences in self-pay demand between regions regardless of the precise economic source of these differences, and thus do not rely on our ability to measure self-pay demand factors. However, the disadvantage of including regional dummies is that, if used at a very granular level, they can absorb much or all of the useful variation in prices between hospitals, and leave no between-hospital price variation for us to evaluate against local concentration. As a result the regional dummies are effective, but may not be best suited to controlling for very local differences in self-pay demand. In contrast, the local area characteristic variables are direct attempts to measure the economic factors that we think will proxy for local levels of self-pay demand. Relative to the regional dummies, these variables have the advantage that they can be measured at a more local level and do not absorb the

²⁹ These variables are measured at the NUTS3 level. We use this granular geographic delineation to pick up the differences in the neighbour of each hospital, rather than more broad differences that the regional dummies (at NUTS1 or NUTS2) will reflect. The population density and age variables are based on one cross-section of data (2011) and do not vary by year. The income and NHS waiting time variable vary by region and year; these variables were not available for 2012, and the data was imputed using 2011 data. The NHS waiting time variable is not available for Scotland and certain NUTS3 regions in Wales (3 regions) and the East Midlands (2 regions).

³⁰ The data for variables (a) to (d) above comes directly from the hospital dataset. The data for the cost variable (e) has been submitted to us by the five large hospital operators in response to the Financial Questionnaire and we have cleaned and matched this data to the hospital dataset. The CCL3 dummy, (f), was constructed based on the information provided to us by hospital operators in response to the Market Questionnaire. The regional dummies, (g), have been created by linking the postcode of each treating hospital to the appropriate geographic classification. This linking was done using data provided by the Office for National Statistics (ONS). The local area characteristic variables, (h), have been constructed using 2011 Census data (age, population density), ONS data (gross disposable household income) and summary data received from Health Episode Statistics (average NHS waiting time for the specialties considered in our analysis).

³¹ The regional dummies may also control for some differences in regional costs, to the extent that such differences are not reflected in the average direct cost variable.

price variation that we wish to compare with local concentration. A disadvantage of this approach, however, is that the measures are likely to be only imperfect proxies and thus may not reflect all of the local differences. We have therefore investigated the separate and combined use of both approaches (regional dummies and local area characteristic variables).

36. The parties have argued that the control variables we have used are not sufficient to explain the variation in episode prices, or to estimate the price-concentration relationship without bias. BMI also queried our interpretation of the parameter β , and in particular whether it reflects a causal relationship—ie the impact of local concentration on price. We note three points in response to these arguments. First, the role of the control variables is not to explain all of the variation in episode prices (nor is that a realistic goal), but only the variation that is sufficient to estimate without bias the relationship of interest. Second, if a model has an inadequate range of control variables, commonly known as being affected by omitted variable bias, this will cause Assumption 2 to fail. This possibility is explicitly tested for later in this appendix (when we apply IV techniques). Third, when Assumption 2 does hold (or the alternative assumptions used by the IV techniques hold), we think that our causal interpretation of the parameter β (see paragraph 30) is appropriate.

Results

37. This section sets out the results of estimating Equation 1. We use the data described in the previous section. Estimation is considered first under Assumptions 1 and 2 (OLS estimation) and then under an alternative to Assumption 2 (IV estimation).
38. The estimated coefficients remarked on in this section should be interpreted as described in paragraph 30 above. We also comment on the ‘statistical significance’ of the estimates. Estimates that are statistically insignificant are not sufficiently precise

(as a result of statistical sampling error) to rule out a true parameter value of zero—ie the estimation results cannot reject the possibility that there is no true relationship between price and concentration.^{32,33}

OLS estimation

39. We first consider the results using self-pay LOCI as the concentration measure, and then using fascia count as the concentration measure. For each, we consider different specifications of the control variables.

LOCI

40. Table 4 below sets out the results of the regressions using LOCI as the concentration measure. Specification L1 includes year, operator and treatment dummies, and patient-level variables (age, gender, length of stay). Specification L2 and L3 control for additional factors. Specification L2 additionally includes the cost variable, the CCL3 dummy and the NUTS2 regional dummies. Specification L3 is the same as L2, but uses the NUTS1 regional dummies (instead of NUTS2) and also includes the local area characteristics variables (average age, population density, income and NHS waiting time).

³² Equally, statistically insignificant estimates are not sufficiently precise to rule out a true parameter value that lies between the estimated value and zero, or indeed that is larger in magnitude than the estimate value.

³³ Statistical significance calculations rely on the estimated standard errors from the regression. In relation to our standard error calculations, BMI noted that we had rightly been careful to use a technique known as ‘clustering’ (by hospital site) when calculating standard errors, but that it was likely that our approach in this regard has only succeeded in only partially reducing ‘Moulton bias’ since the observations across hospitals will presumably not in truth be wholly independent as is required by the resulting estimators of standard errors. As such BMI considered that our estimated standard errors are likely be too small—and so will tend to indicate that relationships are statistically significant when in truth they are not. We tested alternative assumptions in relation to this comment, such as clustering at the regional level (which would allow for correlations between the unobservable terms at different hospital sites), but we did not find that this materially affected our results.

TABLE 4 OLS regression results, LOCI

	L1		L2		L3	
	Coeff	Std error	Coeff	Std error	Coeff	Std error
Self-pay LOCI	-0.0437	0.0387	-0.0612	0.045	-0.0943*	0.054
Year dummy: 2010	0.0127**	0.0063	0.0134**	0.006	0.0125*	0.007
Year dummy: 2011	0.0529***	0.0081	0.0552***	0.0071	0.0549***	0.0081
Year dummy: 2012	0.0685***	0.0091	0.0755***	0.0269	0.0639	0.0476
Operator dummy: HCA	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Nuffield	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Ramsay	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Spire	[X]	[X]	[X]	[X]	[X]	[X]
Treatment dummy: prostate resection	0.0492***	0.0129	0.0470***	0.0124	0.0573***	0.0128
Treatment dummy: hip replacement	0.8604***	0.0155	0.8631***	0.0135	0.8744***	0.0141
Treatment dummy: knee replacement	0.9377***	0.0175	0.9406***	0.016	0.9493***	0.0168
Patient sex	-0.0078**	0.0035	-0.0076**	0.003	-0.0099***	0.0034
Patient age	-0.0003*	0.0002	-0.0003*	0.0001	-0.0003*	0.0002
Episode number of patient nights	0.0054***	0.002	0.0053***	0.0019	0.0050**	0.0021
ln(average direct cost)			-0.0016	0.008	0.0024	0.0144
CCL3 provision dummy			0.0536**	0.0215	0.0500*	0.0269
Average age (NUTS3)					-0.0021	0.0056
Average GDHI (NUTS3)					-0.0004	0.0047
Average NHS wait (NUTS3)						0.0004
Average population density (NUTS3)					-0.001	0.0009
Constant	[X]	[X]	[X]	[X]	[X]	[X]
R-squared	0.91		0.92		0.91	
N	12304		12274		10874	
			Yes		Yes	
Regional dummies?	No		(NUTS2)		(NUTS1)	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Base categories for dummy variables are BMI, 2009 and removal of gallbladder. Standard errors are clustered by hospital site. Blank entries indicate that the covariate is not included in the specification. ***/**/* indicates statistical significance at the 1%/5%/10% level.

41. Using specification L1 the estimated coefficient on the self-pay LOCI variable (ie, the estimate of β from Equation 1) is -0.0437. This estimate is statistically insignificant. Specifications L2 and L3, which control for additional factors, have estimated coefficients that are also negative but are larger in magnitude (-0.0612 and -0.0943, respectively). The estimated coefficient for specification L2 is statistically insignificant, but the estimated coefficient for specification L3 is statistically significant.
42. These estimates suggest that under Assumption 1 and 2, and using self-pay LOCI as the concentration measure, the estimated price-concentration relationship is of the expected direction (higher self-pay LOCI is associated with lower prices), but is only statistically significant for specification L3. The higher magnitude estimates in specification L3 and L2, relative to L1, is consistent with the regional dummies and

local area characteristics accounting for demand-side factors that are positively correlated with concentration. Specification L3 is preferred to L1 and L2, on the grounds that it controls for more factors than L1, but does so in a more parsimonious way than L2.

Fascia count

43. Table 5 reports results of the specifications that use the fascia count variables as the concentration measure. These are the same three specifications as in Table 4 but replacing the self-pay LOCI with the (three) fascia count concentration measures.

TABLE 5 OLS regression results, fascia count

	FC1		FC2		FC3	
	Coeff	Std error	Coeff	Std error	Coeff	Std error
Fascia count (0–9 miles)	–0.0088	0.0081	–0.0097	0.0082	–0.003	0.0093
Fascia count (9–17 miles)	0.0011	0.0021	0.0024	0.0025	0.0035	0.0028
Fascia count (17–26 miles)	0.0004	0.002	0.0024	0.0025	0.0011	0.0029
Year dummy: 2010	0.0123*	0.0063	0.0135**	0.006	0.0139*	0.0072
Year dummy: 2011	0.0524***	0.008	0.0553***	0.007	0.0559***	0.0082
Year dummy: 2012	0.0684***	0.009	0.0753***	0.0256	0.0631	0.0462
Operator dummy: HCA	[<]	[<]	[<]	[<]	[<]	[<]
Operator dummy: Nuffield	[<]	[<]	[<]	[<]	[<]	[<]
Operator dummy: Ramsay	[<]	[<]	[<]	[<]	[<]	[<]
Operator dummy: Spire	[<]	[<]	[<]	[<]	[<]	[<]
Treatment dummy: prostate resection	0.0500***	0.0127	0.0482***	0.0123	0.0576***	0.0128
Treatment dummy: hip replacement	0.8595***	0.0153	0.8624***	0.0134	0.8733***	0.0143
Treatment dummy: knee replacement	0.9371***	0.0173	0.9403***	0.0158	0.9478***	0.017
Patient sex	–0.0076**	0.0034	–0.0071**	0.0029	–0.0097***	0.0034
Patient age	–0.0003*	0.0002	–0.0003*	0.0001	–0.0003*	0.0002
Episode number of patient nights	0.0055***	0.002	0.0053***	0.0018	0.0051**	0.0021
ln(average direct cost)			–0.0014	0.0074	0.0033	0.014
CCL3 provision dummy			0.0583***	0.022	0.0529*	0.0277
Average age (NUTS3)					0.0025	0.0052
Average GDHI (NUTS3)					–0.0036	0.0052
Average NHS wait (NUTS3)						0.0004
Average population density (NUTS3)					–0.0009	0.0009
Constant	[<]	[<]	[<]	[<]	[<]	[<]
R-squared	0.91		0.92		0.91	
N	12304		12274		10874	
Regional dummies?	No		Yes (NUTS2)		Yes (NUTS1)	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Base categories for dummy variables are BMI, 2009 and removal of gallbladder. Standard errors are clustered by hospital site. Blank entries indicate that the covariate is not included in the specification. ***/**/* indicates statistical significance at the 1%/5%/10% level.

44. Using specification FC1 the estimated coefficient on the nearby fascia count variable is -0.0074 , and the estimated coefficients at further distance bands are of smaller magnitudes. None of these estimated coefficients are statistically significant. Specifications FC2 and FC3, which add more covariates to specification FC1, report similar results.
45. The estimation results using LOCI and fascia count are therefore similar for specifications L1 and L2, and FC1, FC2 and FC3. These specifications estimate a relationship of the expected sign (less-concentrated local areas are associated with lower prices) but the estimated relationships are statistically insignificant. Specification L3 also estimated a relationship that is of the expected sign, but in this case the estimated coefficient is statistically significant.

IV estimation

46. The previous estimates assumed that Assumption 2 held. We now consider Assumption 2 in more detail. The assumption requires that the covariates (concentration and the control variables in Equation 1) are uncorrelated with other factors that are unobserved (all factors in the u_i in Equation 1). If this assumption does not hold, one or more covariates is said to be endogenous. This might happen if there are factors directly affecting prices that are also correlated with concentration but not included in the covariates ('omitted variables'). Depending on the nature of the endogeneity—the cause, the interrelationship between price and the covariates, and the degree of endogeneity—the resulting bias may be upwards, downwards or of a negligible magnitude.
47. In PCA studies it is often considered whether the concentration measure, LOCI or fascia count, suffer from endogeneity. This can be motivated by the reasoning given above regarding omitted variables and it is this potential source of endogeneity that

we focus on here.³⁴ For this to cause meaningful bias in the estimated relationship, there would need to be an omitted factor that directly and substantially affects prices and that is also correlated with LOCI (either through simple correlation, or because the factor directly affects LOCI as well as price). We have considered this possibility for our analysis, and focus throughout this section on the preferred specifications from the previous section (L3 and FC3).

48. In the current case, factors that might cause endogeneity are, for example, omitted supply and demand factors. We have attempted to control for such differences through the control variables, and specifically the regional dummies and the local area characteristic variables. The inclusion of regional dummies rules out problems arising because of differences between regions, and thus any omitted variables must vary within regions. Local area characteristic variables have been used to control for such differences, however, it is possible that these variables do not fully account for all relevant factors.
49. We considered that it is from the demand side that endogeneity bias is more likely to arise. This may occur if hospitals located within a region face different levels of self-pay demand. The differences must be within-region, as any between-region variation will be accounted for in the regional dummies. Moreover, these differences must not be reflected in our local area characteristic variables (age, income, population density and NHS waiting times). This is plausible since we are concerned with self-pay demand, but we cannot observe or measure this directly and thus there may be unobservable differences between local areas.
50. On the supply side, the parties have argued that our cost variable is measured with significant error (for example, because it is measured over all treatments, and day

³⁴ Other sources of endogeneity, such as measurement error and simultaneity bias, can both be expressed as problems of omitted variables.

case and outpatients as well as inpatients, and because it does not control for case mix) and as a result does not adequately account for cost differences. We agree that a disaggregated cost measure would be preferable if it were to be available (it is not), but we consider that in conjunction with the CCL3 dummy and regional dummy variables, the three variables are sufficient to account for the salient cost differences between hospitals. For example, even if the cost variable does not measure perfectly all differences in cost, the regional dummies will pick up any cost differences between geographic regions. Consequently we do not think that there are likely to be problematic omitted variables on the supply side.

51. To test and, if necessary, correct for endogeneity we have used an instrumental variables (IV) approach. This approach requires additional variables, known as instruments, to be used in the regression. For the IV approach and associated instruments to adequately correct and test for endogeneity, the instruments must satisfy a number of conditions. The three conditions required of instruments are:
 - (a) the instruments should be correlated with the potentially endogenous variable (LOCI in the baseline specification)—instruments that meet this condition are said to be ‘relevant’;³⁵
 - (b) the instruments should be uncorrelated with the unobserved term in Equation 1— instruments that meet the second condition are said to be ‘exogenous’; and
 - (c) the instruments should themselves be excluded from the covariates in the price equation—instruments that meet this condition are said to be ‘excluded’.
52. Condition (b) above is the IV-analogue of Assumption 2 (for OLS). If the instruments do not satisfy the conditions above, and in particular condition (a) and (b), the IV technique does not guarantee improvements to the specification.

³⁵ To be precise, this correlation should be conditional on the exogenous covariates.

53. We have considered three instruments. Two are based on the distances between hospitals, namely: the distance to the nearest rival hospital (IV1); and, the distance to the nearest hospital under common ownership (IV2). The third is based on the insured market, and is the insured LOCI (IV3). We now discuss whether these variables meet the required conditions set out above.
54. Condition (a), that the instruments are relevant, is a matter that can be directly tested in the estimation. We therefore defer this discussion and return to it after the estimation results.
55. Condition (b), that the instrumental variables are exogenous, requires the variables to be uncorrelated with any of the presumed causes of endogeneity. As argued above, there may be within-region and unobservable differences in demand that substantially affect prices charged and are not included in the regression. If these within-region unobservable differences were also correlated with the self-pay LOCI, endogeneity bias may arise.
56. We first consider the distance instruments, and hypothesize that these distances are unrelated to elements of unobservable demand for self-pay treatment. This would be true if knowledge of the distance between (rival or non-rival) hospitals held no information about the likely level of local demand for self-pay treatment. We note that this would hold if hospital locations were determined on the basis of the local insured population, and that this insured population did not necessarily inform the local level of self-pay demand. Moreover, even if the distances between any two hospital sites may not obviously satisfy this requirement—for example, because hospitals are more closely located in areas of high self-pay demand—the relative location of rival hospitals and/or non-rival hospitals may satisfy this requirement if the particular

ownership of hospitals (as a result of past mergers and acquisitions) is unrelated to within-region differences in self-pay demand.

57. We next consider the insured LOCI instrument. For this to be exogenous, we require that a hospital's insured LOCI (ie its weighted average market share of insured patients) be unrelated to the local level of self-pay demand. Given the arguments above, namely that hospital location may be determined by the local insured demand rather than the local self-pay demand, and that hospital ownership (as a result of past mergers and acquisitions) is unlikely to be related to local self-pay demand, we also think it reasonable to assume that a hospital's local strength in the insured market is unrelated to the local levels of self-pay demand. Put differently, even if the insured LOCI and self-pay LOCI are closely related, knowledge of a hospital's insured LOCI does not necessarily provide information about the level of demand for self-pay treatment in the local area.
58. Condition (c) will hold if the distance instruments or the insured LOCI instrument are not thought to directly affect prices in Equation 1. For the distance variables, this would hold if the concentration measures we use capture all of the pricing power possessed by a hospital, and the distance measures did not themselves reflect another dimension of local concentration. Several parties have argued that the distance instruments are themselves relevant to local concentration and patients' price-sensitivity, and are thus not valid instruments because the variables should feature in the pricing equation. While we recognize that distance does play a role in differentiating hospitals, we consider that because the self-pay LOCI incorporates geographic relationships between hospitals in its calculation (see Appendix 6.4 for a discussion of the weighting scheme in LOCI and how it relates to distance), it is reasonable to exclude the distance variables from Equation 1 and assume condition

(c) holds.³⁶ For the insured LOCI instrument, after inclusion of our concentration measures (self-pay LOCI or fascia count), we do not see a reason for including insured LOCI in the price equation.

59. Tables 6 and 7 below show the results of four specifications using different choices of the three instruments. The first three specifications in each table use each instrument separately. The final specification in each table uses a combination of two instruments. Each specification includes the covariates that mirror specifications L3 and FC3. For the fascia count models we have included the fascia count measure only for the closest distance band.³⁷

TABLE 6 IV regression results, LOCI

	L4		L5		L6		L7	
	Coeff	Std error	Coeff	Std error	Coeff	Std error	Coeff	Std error
Self-pay LOCI	-0.3030***	0.1066	-0.3151	0.33541	-0.1361**	0.0585	-0.1539***	0.0574
R-squared	0.91		0.91		0.91		0.91	
N	10874		10874		10874		10874	
Test of null hypothesis that instruments are irrelevant (F-statistic)	28.51		2.640		602.59		309.25	
Test of null hypothesis that the covariates are exogenous (p-value)	0.04		0.46		0.07		0.02	
Test of null hypothesis that the instruments are exogenous (p-value)	n/a		n/a		n/a		0.11	
Instruments	IV1		IV2		IV3		IV1, IV2	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables not shown but are the same as specifications L3 and FC3. Standard errors are clustered by hospital site. IV estimates using two-step GMM with regional dummies partialled out. Estimates using 2SLS are similar (with and without partialling out the regional dummies). All diagnostic tests are those reported by Stata command ivreg2. ***/**/* indicates statistical significance at the 1%/5%/10% level.

³⁶ The argument that distance should feature in the price equation would result in an equation with two distinct concentration measures. The same argument would also imply that we should include fascia count measures in the same equation, as well as LOCI and the distance variables, since all are measures of concentration. In order to keep the model simple and coherent, and following standard practice, we think it is reasonable to test one concentration measure at a time. Even if distance is considered a measure of local concentration, we do not think it is preferable to either LOCI or fascia count.

³⁷ This is done because it is not possible to estimate a model with more endogenous variables than instruments. For the specifications with one instrument this restricts us to using only one fascia count measure. For the specifications with two instruments, we have the option of using two concentration measures but we find that the instruments are weak for fascia count variables at further distance bands. In all cases we therefore use only the fascia count measure for the closest distance band. Notwithstanding this, we note that the results are similar if we include the fascia count measures at further distance bands (using two instruments, or even using all three instruments).

TABLE 7 IV regression results, fascia count

	FC4		FC5		FC6		FC7	
Fascia count (0–9 miles)	–0.0434**	0.0172	–0.0711	0.0872	–0.0381**	0.0165	–0.0407***	0.0136
R-squared	0.91		0.9		0.91		0.91	
N	10874		10874		10874		10874	
Test of null hypothesis that instruments are irrelevant (F-statistic)	27.58		1.67		34.61		31.82	
Test of null hypothesis that the covariates are exogenous (p-value)	0.01		0.33		0.02		0.00	
Test of null hypothesis that the instruments are exogenous (p-value)	n/a		n/a		n/a		0.79	
Instruments	IV1		IV2		IV3		IV1, IV2	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables not shown but are the same as specifications L3 and FC3. Standard errors are clustered by hospital site. IV estimates using two-step GMM with regional dummies partialled out. Estimates using 2SLS are similar (with and without partialling out the regional dummies). All diagnostic tests are those reported by Stata command ivreg2. ***/**/* indicates statistical significance at the 1%/5%/10% level.

60. The first point to note from Tables 6 and 7 relates to condition (a) of the instruments.

This condition—that the instruments are relevant—is tested and the results are reported in the first row of statistical tests (‘Test of null hypothesis that instruments are irrelevant (F-statistic)’). A common benchmark for this test that indicates the instruments are relevant is an F-statistic of 10 or higher. On this basis, we observe that the distance to non-rival hospitals is not a relevant instrument and thus we reject specifications L5 and FC5 on this basis.

61. We now consider the remaining specifications. For the LOCI specifications in Table 6 the estimated coefficients are –0.3030 (L4), –0.1361 (L6) and –0.1539 (L7). Each of these estimated coefficients is statistically significant. For the fascia count specifications the estimated coefficients are –0.0434 (FC4), –0.0381 (FC6) and –0.407 (FC7). These estimated coefficients are also statistically significant. In comparison with the OLS estimates, the IV estimates are larger in magnitude and are all statistically significant (which was only the case for specification L3 earlier).

62. The second and third statistical tests reported in Tables 6 and 7 provide further information regarding the relationship between the OLS and IV results. The second

statistical test in the tables ('Test of null hypothesis that the covariates are exogenous (p-value)') indicates that for the LOCI and fascia count specifications, the IV estimates are preferable to the OLS estimates.³⁸ The third statistical test in the tables ('Test of null hypothesis that the instruments are exogenous (p-value)'), which can only be performed for the specifications L7 and FC7, indicates that the instruments are valid (ie that condition (b) discussed earlier holds).³⁹

63. In summary, the IV estimates indicate a price-concentration relationship that is larger in magnitude than the OLS estimates, and the IV estimates are statistically significant while the OLS estimates are only statistically significant for the LOCI specification (L3). The higher magnitude IV estimates, relative to the OLS estimates, is consistent with endogeneity arising from omitted demand-side variables (as suggested earlier). The statistical tests that we have undertaken indicate that the instruments are both relevant (condition (a) from earlier) and valid (condition (b) from earlier). These statistical tests also indicate that the IV estimates are preferable to the OLS estimates. Of the different IV specifications considered in Tables 6 and 7, we prefer those specifications that use both instruments together (specifications L7 and FC7) on the basis that these estimates are more efficient. Using these specifications, the estimated coefficients on the LOCI variable is -0.1539 and the estimated coefficient on the (nearest) fascia count variable is -0.0407 .

Further assessment

64. We now consider in more detail the results from the preceding two sections, namely the OLS and IV estimates. These results estimate the price-concentration relationship as an average over the focal treatments and hospital operators in the dataset. It

³⁸ This is indicated by the relatively small p-values, where a typical benchmark is taken to be 0.05 and p-values around or below this level indicate rejection of the null hypothesis, suggesting that IV estimates are preferable to OLS estimates.

³⁹ This is indicated by the relatively large p-values, where a typical benchmark is taken to be 0.05 and p-values above this level indicate no rejection of the null hypothesis, and suggests the instruments are valid. This test can only be performed when there are more instruments than endogenous variables, and the test assumes that at least one of these instruments is valid.

was noted at the start of this appendix that it is this broad relationship that is of primary interest. The assessment in this section is concerned with whether the empirical choices that we have made may have distorted these results—ie whether the results are robust to these choices.

65. As part of the further assessment, we have considered estimates at a more disaggregated level than in the previous section. The purpose of this is to assess whether our results are robust (in the sense described above) rather than because the disaggregated results are of direct interest in themselves. We therefore focus the discussion on differences to the results presented above, and do not provide a detailed discussion of every estimate.
66. Our further assessment has considered three groups of issues: our approach to focal treatments and pooling of treatments ('treatment-level assessment'); the specification of the model and Assumption 1 ('functional form'); and, the differences between hospital operators ('operator-level assessment'). While the earlier results indicate that IV estimates should be preferred to OLS estimates, we present here both OLS and IV estimates for completeness. All estimates relate to specifications L3 (OLS) and L7 (IV). Fascia count specifications are not presented for brevity but the results are qualitatively similar to the LOCI results in terms of the conclusions we take from them. We also omit the detailed specification tests.
67. Throughout the following section we refer to the 'main results' from the previous section. By this, we refer to the estimates from OLS specifications L3 and FC3, and from IV specifications L7 and FC7.

Treatment-level analysis

68. In this section, we consider whether pooling the four focal treatments together may have distorted our analysis. We assess three arguments for this. First, the specifications may not have allowed for sufficient flexibility to pick up differences between treatments. Second, the use of a self-pay LOCI defined using all treatments may not reflect the true concentration at the specialty or treatment level (eg because the degree of supply-side substitution we noted earlier is not sufficient to fully constrain local pricing). Third, the price-concentration relationship for the focal treatments may not be representative of the price-concentration relationship for other treatments.

69. To assess the first argument, we have repeated our analysis but for each treatment separately.⁴⁰ The results of this analysis are reported in Table 8.

TABLE 8 OLS and IV regression results, LOCI, by treatment

	J1830		M6530		W3712		W4210	
	Coeff	Std error	Coeff	Std error	Coeff	Std error	Coeff	Std error
OLS								
Self-pay LOCI	-0.0764	0.0971	-0.073	0.0595	-0.0645	0.0675	-0.1937***	0.0634
R-squared	0.25		0.28		0.22		0.26	
N	1279		1693		5003		2899	
IV								
Self-pay LOCI	-0.2013**	0.0909	-0.1215*	0.0699	-0.1249	0.0775	-0.2206***	0.0666
R-squared	0.16		0.21		0.17		0.22	
N	1279		1693		5003		2899	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables and instruments not shown but are the same as specification L3 for the OLS specification and L7 for the IV specification. IV estimates using two-step GMM with regional dummies partialled out. Standard errors are clustered by hospital site. ***/**/* indicates statistical significance at the 1%/5%/10% level.

70. The coefficient estimates in Table 8 show similar characteristics to those in the main results. In particular, the estimates are all negative, and the IV estimates are larger in magnitude than the OLS estimates. The estimated coefficients do vary by treatment, but it is clear that the estimated coefficients for focal treatments when pooled are an

⁴⁰ We note that this approach is equivalent to interacting the treatment dummies with all of the other variables in the regression and then running a regression across pooled across treatments and including all of these interacted terms. This is therefore a more flexible approach than interacting only the LOCI variable (and not other variables) with the treatment dummies, as some parties have advocated.

average of these treatment-level estimates.⁴¹ The statistical significance also varies between treatments, however, this is expected given that statistical significance is driven by both the estimated coefficients (which vary by treatment) and other factors including the number of observations per treatment (which varies by treatment). Looking at the standard errors associated with the estimates indicate that these estimates are less precise than those for the focal treatments when pooled. While indicating some variation by treatment we take these results to support our main results and our approach to pooling together the focal treatments.⁴²

71. To assess the second argument, we have repeated the analysis, but focusing only on hip and knee replacements, and replaced the self-pay LOCI defined using all treatments with a self-pay LOCI defined only using patients admitted for trauma and orthopaedic treatments (the specialty to which hip and knee replacements belong).

Table 9 illustrates the results of this analysis.

TABLE 9 OLS and IV regression results, LOCI and fascia count, orthopaedic-specific analysis

	OLS		IV	
	Coeff	Std error	Coeff	Std error
Self-pay LOCI	-0.0963	0.0608	-0.1377**	0.0656
R-squared	0.22		0.19	
N	7902		7902	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables and instruments not shown but are the same as specification L3 for the OLS specification and L7 for the IV specification. IV estimates using two-step GMM with regional dummies partialled out. Standard errors are clustered by hospital site. ***/**/* indicates statistical significance at the 1%/5%/10% level.

72. In a similar way to the treatment-level results, we find that the orthopaedic-specific results provide support to our earlier results, in that they produce qualitatively similar estimates—OLS and IV estimates are negative, with the IV estimates being of a larger magnitude and statistically significant. We take this to indicate that our approach to using a general ‘all treatment’ LOCI has not distorted the analysis.

⁴¹ It is not strictly a simple or weighted average, because the two models are not identical in terms of covariates.

⁴² In particular, computing 95 per cent confidence intervals for each treatment-level estimate (which are approximately equal to the coefficient plus or minus 1.96 times the standard errors), shows that the main findings lie within the confidence interval for each treatment.

73. The final issue we address in this section is the choice of focal treatments. To assess whether our results based on these focal treatments are representative of the relationship for other treatments, we now include all treatments in the data for analysis.⁴³

The results of this exercise are shown in Table 10.

TABLE 10 OLS and IV regression results, LOCI and fascia count, all-treatment analysis

	OLS		IV	
	Coeff	Std error	Coeff	Std error
Self-pay LOCI	−0.1037**	0.0445	−0.1394***	0.0464
R-squared	0.88		0.11	
N	18873		18873	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables and instruments not shown but are the same as specification L3 for the OLS specification and L7 for the IV specification, with the addition of extra treatment dummies for non-focal treatments. IV estimates using two-step GMM with regional dummies and treatment dummies partialled out. Standard errors are clustered by hospital site. ***/**/* indicates statistical significance at the 1%/5%/10% level.

74. The results in Table 10 support the main results presented earlier. These results suggest that the broad relationship that we estimate is representative for treatments outside of the focal treatments.

Functional form assessment

75. We now turn to more technical issues, and consider Assumption 1 in the methodology section of this paper. This assumption stated that Equation 1 was a reasonable approximation of the relationship between price and the covariates. The representation in that equation uses the natural logarithm (on the basis that it was able to represent the price-concentration relationship in a simple manner) and the chosen set of control variables (which has focused on those included in specification L3 and FC3 in this section). In this section we consider alternatives to these choices—namely, we consider a linear (rather than logarithmic) specification, and alternative combinations of control variables.

⁴³ For the reasons noted earlier when first discussing focal treatments (paragraphs 20–22) the focal treatments are not only important in terms of patients and revenue, but they are also suitable for our analysis. It is for this reason that we do not consider estimating the model on a group of treatments that excludes the focal treatments, and instead add more treatments to the model for this assessment.

76. The results of the linear specifications are reported in Table 11. These specifications are estimated at the treatment level.⁴⁴

TABLE 11 OLS and IV regression results, LOCI, linear specification by treatment

	J1830		M6530		W3712		W4210	
	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>
OLS								
Self-pay LOCI	-280	334	-259	228	-516	572	-1767***	583
Effective percentage	-0.08		-0.07		-0.06		-0.19	
N	1279		1693		5003		2899	
R-squared	0.24		0.28		0.21		0.27	
IV								
Self-pay LOCI	-738**	302	-453*	269	-1021	661	-1974***	621
Effective percentage	-0.21		-0.12		-0.12		-0.21	
R-squared	0.16		0.21		0.15		0.23	
N	1279		1693		5003		2899	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables not shown but are the same as specification L3. Standard errors are clustered by hospital site. IV estimates using two-step GMM with regional dummies partialled out. All diagnostic tests are those reported by ivreg2. ***/**/* indicates statistical significance at the 1%/5%/10% level.

77. Table 11 shows results that are comparable to Table 8, but using a linear specification instead of a natural logarithm specification. We have computed the 'effective percentage' which gives the estimated coefficients in the linear specification in comparable terms to the estimated coefficient in the natural logarithm specification.⁴⁵ Comparing the effective percentage estimates from Table 11 above with Table 8 shows that the results are similar in magnitude. We take these results to indicate that the natural logarithmic specification used in the main results is reasonable, and we prefer that specification to the linear specification as it allows us to pool the treatments and estimate an average percentage effect across the four focal treatments.

78. We now consider the choice control variables. We have considered alternative sets of control variables to those favoured so far (ie in line with specification L3 and L7).

⁴⁴ A linear specification when pooled over different treatments is unlikely to form a reasonable approximation to the price-concentration relationship because the linear specification will produce a parameter that is the average level-difference in prices, but the price levels of each treatment are very different.

⁴⁵ The effective percentage is calculated by multiplying the estimated coefficient from the linear specification by the mean episode price for the relevant treatment.

79. The parties also ran sensitivity tests relating to the choice of control variable during the Data Room exercise. Spire included an additional group of control variables that were interactions between the treatment and the operator dummies. We include this in our assessment below. Several parties also suggested that our assessment of functional form should include a particular statistical test, namely the Ramsay RESET test. This is a test of whether the estimated relationship (ie Equation 1) might be improved by allowing for more flexible but also more complex (non-linear) relationships between prices and the covariates. In practice, this involves adding additional covariates that are either squared (and/or higher power) versions of the existing covariates, and/or interactions between the existing covariates.⁴⁶ In response to this suggestion we have included in our assessment more flexible and complex specifications. For the reasons explained below, however, we do not rely on the RESET test itself.
80. The parties have applied the RESET test and focused on whether the test result is a 'pass' or 'fail'. In our view, this approach does not address the issue at hand—that is, whether our main results are robust to the consideration of more flexible and complex specifications, and/or whether our specification can be improved. We also note that the RESET test is an exhaustive and data-driven test that is very demanding of the data in this case. By this, we refer to the way in which the test includes additional covariates that are squared, cubic and quartic in the original covariates, as well as interacted versions of these covariates and their higher powers. The parties have not argued why such complex relationships are to be expected, or, moreover, why not accounting for these potential complexities would bias the price-concentration relationship that we have estimated. Finally, we find that the RESET test cannot be applied to specifications L7 and FC7. In these cases, the software program returns

⁴⁶ The Ramsay RESET does this by including as covariates either: squares (and/or higher powers) of predicted values from the original model; or, by directly including squares (and/or higher powers) of and interactions between the existing covariates. In either case, the test amounts to testing the joint statistical significance of these additional covariates that are added to the original model.

an error message indicating that the specification contains too many interrelated variables. This is a likely consequence of the exhaustive nature of the test noted above.⁴⁷

81. With these drawbacks of the RESET test in mind, we have assessed the issue raised by the parties—which we interpret to be one of robustness to more flexible and complex specifications—but in a manner that is feasible and appropriate given the context. To do this, we have tested the robustness of our main results (ie the estimated price-concentration relationship) to the inclusion of additional covariates (squared terms, and interaction terms) but only when we consider such covariates to be potentially relevant and meaningful.⁴⁸

82. Table 12 shows the results of our assessment. The first row shows the results using the specifications from earlier (L3 and L7). Rows further down in the table relate to alternative sets of control variables, and the first column indicates the modifications to the control variables that we have made in each case. Looking down the coefficient columns, we find that the estimated coefficients are relatively stable across different choices of control variables.

⁴⁷ The Stata command (ivreset) returns the error: 'Error—collinearities in augmented regression equation. If using higher order polynomials, try reducing the order. too many variables specified.

⁴⁸ Additional interaction terms include operator and treatment interactions, treatment and length of stay interactions, and treatment and age interactions. Additional squared terms are for patient age, number of nights, average direct cost, and each local area characteristic variable. We do not consider any cubic or quartic terms, or non-linear specifications of the LOCI variable; no economic rationale has been put forward for including such terms, and we consider them unnecessarily complex.

TABLE 12 OLS and IV regression results, LOCI, different control variables

Control variables	Concentration variable	OLS		IV	
		Coefficient	Std error	Coefficient	Std error
As per L3 (OLS) or L7 (IV)	Self-pay LOCI	-0.0940*	0.0542	-0.1513***	0.0579
Exclude CCL3 dummy	Self-pay LOCI	-0.08	0.0554	-0.1518***	0.0588
Exclude average direct costs	Self-pay LOCI	-0.0995*	0.0539	-0.1580***	0.0579
Exclude local area characteristics	Self-pay LOCI	-0.0842**	0.0425	-0.1342***	0.0445
Exclude regional dummies	Self-pay LOCI	-0.1017**	0.0503	-0.1497***	0.0534
Change to NUTS2 regional dummies	Self-pay LOCI	-0.0557	0.0499	-0.1297**	0.0528
Exclude local area characteristics except income	Self-pay LOCI	-0.0857**	0.0428	-0.1402***	0.0452
Include additional interactions	Self-pay LOCI	-0.1011*	0.055	-0.1659***	0.0599
Include additional squared terms	Self-pay LOCI	-0.0900*	0.0476	-0.1372***	0.0516
Include additional interactions and additional squared terms	Self-pay LOCI	-0.0870*	0.0482	-0.1364**	0.0531

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables not shown but are the same as specification L3. Standard errors are clustered by hospital site. IV estimates using two-step GMM with regional dummies partialled out. ***/**/* indicates statistical significance at the 1%/5%/10% level. Additional interaction terms include operator and treatment interactions, treatment and length of stay interactions, and treatment and age interactions. Additional squared terms are for patient age, number of nights, average direct cost, and each local area characteristic variable.

Operator-level analysis

83. We now consider the analysis at the operator level. In a similar way to the treatment-level analysis considered earlier, we are interested in whether the results at the operator-level contradict our main results.

84. The parties have made several arguments in relation to the operator-level results. In particular, they have argued that: our results are not robust when considered at the operator-level; our results are driven by only one operator; and, for conclusions to be reached regarding the general price-concentration relationship, the operator-level estimates should be statistically significant. In the Data Room, the parties have also re-run our analysis but excluded all episodes from certain operators, and argued that our results are not robust to such exclusions. We disagree with these arguments for the following reasons.

85. First, the estimated relationship when pooled across operators is an estimate of the price-concentration relationship at a general level. The main results set out above indicate that there is evidence of a general relationship, and we have explained that

this is an average across operators and focal treatments. To that extent, the main results are representative of the behaviour of all hospitals and operators included in the analysis.

86. Second, we have not received evidence to suggest that there would be meaningful differences in the price-concentration relationship between operators. Thus any attempts to estimate separate relationships for each operator (or to exclude certain operators from the analysis) are not based on any expectation, intuition or economic rationale. With this in mind, we think that the approach of pooling the operators together is reasonable.
87. Third, while we agree that the operator-level analysis could in principle be used to assess potential differences between operators in the price-concentration relationship, this is a more ambitious task than the one we set out to achieve. As we explain below, estimates at the operator level (from the 'operator-level approach') are always likely to be less precise than our main results based on all operators (the 'pooled approach'). This means that the operator-level approach is less likely to deliver statistically significant estimates, and limits the conclusions that we can draw from the results at the operator-level. It does not imply that our main results are not representative or relevant for certain operators.
88. The difference between the pooled approach and the operator-level approach is in the comparisons implicit in each analysis. In the pooled approach our analysis compares information on local concentration and prices for all of the hospital sites included in the hospital dataset. In contrast, to identify operator-specific relationships the operator-level approach compares information only for hospitals that belong to each operator. Thus the pooled approach (which compares between all hospitals,

rather than only those owned by a single operator) uses more information, or comparisons, to form the estimated price-concentration relationship.

89. This additional information is useful because it is the different levels in local concentration that our analysis uses to identify the price-concentration relationship. Including more hospitals provides more observations of local concentration (and the associated price outcomes) to compare among. Excluding hospitals or looking only at a subset of hospitals (eg belonging to one operator) reduces the useful information contained in the data for our analysis. Moreover, while we do have a relatively high number of observations (several thousand patient visits), the number of distinct observations of local concentration is limited by the number of hospitals in the hospital dataset (130 distinct observations), and this is substantially reduced when considering only individual operators (to between 2 and 45 distinct observations, depending on operator). The operator-level approach is therefore inevitably based on a substantially lower number of distinct observations of local concentration than the pooled approach. Increasing the number of observations typically increases the precision of the estimates, and thus the pooled approach is expected in general to be more precise than the operator-level approach.⁴⁹

90. In relation to the parties' arguments that the results are not robust if certain operators are excluded from the data, we have not heard any reasoning for why such portions of the data should be excluded. We also note that: in general it is not unusual for estimation results to change if large and relevant parts of a sample are removed or modified; and, by excluding parts of the data, the interpretation of what is being estimated also changes (ie it may no longer be estimating the general relationship

⁴⁹ Another factor relates to the comparisons made in the operator-level analysis. Because it relies only on comparisons between hospitals owned by one operator, it precludes the analysis from making any comparisons between the local concentration and prices of hospitals not owned by the same operator. It therefore does not use any between-operator variation. We think that the comparisons between operators are important since these are the outcomes directly as a result of competitive interaction. The operator-level approach therefore excludes potentially important comparisons from the analysis.

that we are interested in). As a result, we do not consider the results submitted by the parties in this regard to be informative.

91. Table 13 shows the estimates at the operator-level. These are achieved by applying the same model specification (ie L3 and L7) to the data for each operator separately.⁵⁰ HCA is omitted from the analysis because of the small sample of data available.

TABLE 13 OLS and IV regression results, LOCI, by operator

	<i>BMI</i>		<i>Nuffield</i>		<i>Ramsay</i>		<i>Spire</i>	
	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>	<i>Coeff</i>	<i>Std error</i>
OLS								
Self-pay LOCI	-0.0974	0.0962	-0.3109***	0.0802	-0.1153	0.197	0.0464	0.1046
R-squared	0.92		0.96		0.96		0.93	
N	2820		3949		806		3051	
IV								
Self-pay LOCI	-0.1491	0.1143	-0.2864***	0.0694	-0.2678	0.2148	0.019	0.0984
R-squared	0.91		0.96		0.95		0.92	
N	2820		3949		806		3051	

Source: CC analysis.

Note: Numbers may not sum due to rounding. Controls variables not shown but are the same as specification L3. Standard errors are clustered by hospital site. IV estimates using two-step GMM with regional dummies partialled out. ***/**/* indicates statistical significance at the 1%/5%/10% level.

92. As with the treatment-level analysis, the estimated coefficients at the operator level show some variation and this variation can be seen to lie around the estimate from the main results. Looking at the IV estimates, the Nuffield estimate is negative and statistically significant, while the BMI and Ramsay estimates are both negative and statistically insignificant. Spire, in contrast, has a positive estimate that is statistically insignificant.
93. Looking at the standard errors of the estimates at the operator level, we note that these are all higher than for the estimates that pooled all operators (see specification L7). This shows that the estimates at the operator level are less precise than those

⁵⁰ We note that this approach is equivalent to interacting the operator dummies with all of the other variables in the regression and then running a regression across pooled across operators and including all of these interacted terms. This is therefore a more flexible approach than interacting only the LOCI variable (and not other variables) with the operator dummies, as some parties have advocated.

when the operators are pooled. The lack of precision associated with these estimates makes it difficult to draw conclusions about the estimated relationship at the operator level. However, we do not think that the results do not contradict our main results.⁵¹

94. As explained above, not finding a negative and statistically significant relationship for certain operators may simply be a consequence of the operator-level approach which is less likely to deliver reliable estimates than the pooled approach. This is principally on account of the reduced number of hospital sites considered in the operator-level analysis. Other empirical issues that may also play a role include: the sample sizes (irrespective of the number of hospitals); the number of price observations per hospital site by operator; and, any measurement error in prices (and other variables) by operator. Another factor that may play a role includes that the different operators have a different mix of treatments and we have already observed earlier that the price-concentration relationship may not be the same for all treatments. Our operator-level analysis does not distinguish which of these factors drives differences in the estimated relationships at the operator level, and/or may hinder the ability of our analysis to delineate between the particular price-concentration relationships for each operator.

95. We also note that the fascia count specifications when applied at the operator level (not presented) have estimated coefficients that are more consistent across operators than the LOCI specifications. The estimates from the fascia count specifications are all negative, and are statistically significant for BMI, Nuffield and Ramsay.⁵² The difference between the LOCI and fascia count specifications at the

⁵¹ In particular, computing 95 per cent confidence intervals for each operator-level estimate (which are approximately equal to the coefficient plus or minus 1.96 times the standard errors), shows that the main findings lie within or near the boundary of the confidence interval for each operator.

⁵² The coefficients estimates on the nearest fascia count measure are -0.0471, -0.0624, -0.0668 and -0.0127 for BMI, Nuffield, Ramsay and Spire, respectively.

operator level is in contrast to our other results (eg at the treatment level) which typically find specifications results to be broadly aligned.

96. Given the above considerations, we take two conclusions from the operator-level analysis: first, we have not found evidence to contradict our main results, and this appears to be mainly on account of the imprecise estimates; and second, the lack of precision also means we are not able to draw distinctions in the price-concentration relationship between operators.

Econometric evidence submitted to us by the parties

97. BMI submitted its own econometric evidence to us during the course of this inquiry. We provide a summary here of the parts of that evidence that relate to self-pay price outcomes, and consider how it relates to our main results above. Several other parties also submitted responses to our econometric analysis following the Data Room exercise. We have taken into account these responses in our analysis and the preceding discussion, and so do not discuss these submissions separately in this section.
98. The BMI analysis submitted to us assesses (self-pay) price and non-price outcomes at BMI hospitals that are classified as either solus or non-solus.⁵³ The hypothesis that outcomes are similar in both environments is tested. For self-pay prices, the analysis considered seven treatments based on the OFTs 'indicator treatments', but found that sufficient data was only available for five of these treatments to be analysed. These five treatments do not match with our focal treatments, but they do include the same hip replacement treatment that we consider (W3712). For non-price outcomes, a range of measures were considered including quality, investment, capacity

⁵³ There are two definitions used. One based on a 30 minute drive time, and another based on the postcode areas that 80 per cent of patients originate from.

utilization and margins. As noted above, we focus here only on the analysis of self-pay price outcomes as this is the part relevant to our own assessment.

99. The self-pay analysis involved regressions with average yearly hospital episode price as the dependent variable, and as independent variables a solus dummy variable and control variables for volumes, population and average direct cost. The specification is linear and the analysis is conducted at the treatment level (and necessarily the operator level since only the operators' own data was available to them).
100. The submission summarized its findings in relation to self-pay outcomes as follows:
[✂].
101. While we do not agree with all aspects of the submitted analysis, we do find it a useful addition to the evidence. We do not provide a full critique of the analysis here but do note some key points. One particular reservation we have is that the analysis relies on a sharp distinction between solus and non-solus hospitals. The submission does not present results showing how changes to this distinction (eg for borderline cases) affects the results. We also note that the submission: acknowledges that omitted variable bias (despite the control variables) may affect the self-pay price regression results but does not address this issue analytically; acknowledges the presence of irregular episode prices but only addresses this analytically (by using the median hospital price instead of the mean hospital price) for a selection of models (the 'baseline regressions' referred to in the quote above, but not the 'more ambitious regression approach'); and is limited to a single hospital operator's data.
102. We have reviewed the estimation results in relation to self-pay outcomes, and come to a different interpretation to that offered by BMI in their submission (and quoted

above). In reaching this view, we have not attached any weight to the results for one of the five treatments because it has a very small sample size (26 observations), and therefore base our interpretation on the remaining four treatments (each of which typically had 200–300 observations available for analysis). We also focus on the results that are averaged across hospitals rather than the specifications that deal with individual hospital estimates (ie not the results referred to in the above quote as ‘a particular subset’). From the statistically significant estimates presented in the paper, we interpret the results to support that [REDACTED].⁵⁴

103. [REDACTED]

Conclusions

104. This appendix has set out our analysis that has tested the hypothesis that higher levels of local concentration typically leads to higher self-pay prices for patients. Under this hypothesis, areas where local concentration is high (ie there are few competing hospitals), self-pay prices are expected to be higher.

105. Our understanding of the industry and our review of the qualitative evidence suggests that such outcomes are likely to be the case. In particular, hospital operators have told us that self-pay prices are set locally and with the local competitive conditions in mind. We have also found support for this in internal documents, including business plans, results of mystery shopping exercises, and in specific guidance for setting self-pay prices. In one example we were told of self-pay prices being reduced directly in response to market entry.

106. We have used regression techniques to isolate the relationship between self-pay prices and concentration, while holding other factors fixed. Our preferred approach

⁵⁴ [REDACTED]

uses a pooled group of four focal treatments, and pooled data across the five main hospital operators. The results of this analysis show that there is a relationship between self-pay prices and local concentration and imply that, all else equal, self-pay prices are higher in more concentrated local areas. This is a general result across the treatments and operators considered.

107. The magnitude of the estimated relationship varies according to the particular specification that is adopted. Our preferred estimate (specifications L7) imply that increases in LOCI of around 0.2 are expected, on average, to lead to reductions in self-pay prices of around 3 per cent. The preferred fascia count model (specification FC7) imply a similar relationship, suggesting that one additional fascia located within 9 miles may be expected to lead to, on average, lower self-pay prices by around 4 per cent.
108. In a further assessment of the main results, we have considered whether our approach to the regression analysis is robust to various modifications. As part of this, we have considered disaggregated results at the treatment and operator level. The disaggregated results do indicate some differences at the treatment and operator level, but these differences do not contradict the main results described above. The further assessment also indicated that the estimated relationship is relevant for treatments beyond the focal treatments. While our preferred estimates are noted above, the further analysis highlighted that other specifications and subsets of the data support a range of estimates. These estimates range from around 2 per cent to around 6 per cent, for either a change in LOCI of 0.2 or an additional fascia within the nearest distance band. Econometric analysis submitted by BMI [§].
109. We therefore conclude that there is evidence of a general price-concentration relationship for self-pay patients. The consequence of this is that self-pay prices in

certain local areas are at levels higher than would be the case if there were lower levels of local concentration.

Data processing

1. This annex provides details of the data cleaning that has been undertaken to construct our two datasets for analysis—the hospital dataset and the Healthcode dataset.
2. In both cases, information has been provided to us in the form of row-by-row invoice data. This means that each row in the data corresponds to a patient's purchase of a single item or service from a hospital. During a single hospital visit (an 'episode') a patient may receive many such items or services and therefore the data contains many rows of information for each episode. Across the different datasets we have received there are no standardized descriptions or codes available for each hospital item or service provided, and in some datasets, only the total price for all items and services received was available (ie the line item prices are not available). Our data-cleaning process has therefore sought to standardize the definitions of the variables across each dataset, and consolidate the information to a level of aggregation where each row corresponds to a definition that is consistent across datasets.
3. We have consolidated the data to an episode level, where an episode is defined as a single patient visit. In the data this is defined as a unique combination of patient identifier—discharge date—visit type—package indicator—date of birth—gender. The final datasets contain one row per episode, with aggregated information relating to that episode (eg the type of visit, the treating hospital, the particular treatment that was received, the primary specialty of the treating consultant, and the total episode price paid for all hospitals services). Each episode has a corresponding treatment and the primary specialty of the treating consultant. These two dimensions—treatment and specialty—are how we classify the data for most of our analyses. The key variable that has been created in this process is the episode price. This is the

total price paid by a patient for all hospital services received during that episode. It excludes consultant fees and ancillary services; to remove these items we have followed advice given to us by the parties.¹

4. During the process of consolidating the data we have noticed certain irregularities in the data. For example, episodes with missing information, episodes with admission dates occurring after discharge dates, and prices that were either unrealistically low or unexpectedly high. We have therefore applied a number of filters to the datasets in order to remove these irregularities so that they do not in any way distort our analysis. We have made exclusions for the following reasons:
 - (a) package episodes for which we could not identify the relevant consultant fee to remove (referred to below as ‘package without part 2’);
 - (b) package episodes for which there were inconsistencies in the price information between the two data sources submitted by hospital groups (‘part 1 and part 2 inconsistencies’);²
 - (c) episodes with admission dates occurring after discharge dates (‘date inconsistencies’);
 - (d) episodes with missing information for any of the following variables: patient identifier, type of visit, discharge date, package indicator, hospital postcode, gender, age (‘missing data’); and
 - (e) episodes with negative or zero episode prices.
5. After making these exclusions, we have then limited the data to the episodes that our analysis focuses on. This means excluding outpatient or day-case episodes, episodes relating to specialties outside of the 16 specialties and oncology, episodes

¹ In the case of consultant fees for non-package deals, the consultant fees were removed from the data before summing the cost of hospital services; for package deals, the consultant fees were extracted from the total package price using ‘Part 2’ of the DQ. In the case of ancillary services, where possible, these were removed from the row-by-row invoice data before summing the costs of other hospital services.

² Hospital groups submitted ‘part 1’ data and ‘part 2’ data. The former contained the prices for hospital services, and the latter contained invoices relating to consultant fees. For certain episodes both part 1 and part 2 contained prices for hospital services, and we have excluded episodes where the price of hospital services reported in part 1 and part 2 did not match.

for non-acute treatments, episodes outside of the period 2009 to 2012, and episodes at hospitals outside of the 219 selected hospitals. These exclusions are collectively referred to as 'irrelevant data'.

6. Table A1 below shows the number of exclusions made to the data for each category.

TABLE A1 **Cleaning of the hospital datasets**

	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>Healthcode</i>
Total episodes	1,404,122	550,238	933,968	59,062	940,902	14,566,178
Package without part 2	83,973	0	184,424	8,813	52,587	0
Part 1 and part 2 inconsistencies	322	0	0	56	0	0
Date inconsistencies	55	0	0	0	18	78,816
Missing data	10,368	652	7,199	22	5,652	2,062
Negative or zero prices	76,767	165,785	18,013	2,365	118,021	39,402
Irrelevant data	1,193,558	376,508	697,476	38,534	728,023	13,854,248
Total episodes after cleaning	39,079	7,293	26,856	9,272	36,601	591,650

Source: CC analysis.

Note: Numbers may not sum due to rounding. Exclusions are sequential, from the top to the bottom of the table. There were also a small number of exclusions made to the data following early discussions with parties; these exclusions are not shown in Table 11 (ie the 'Total episodes' figure is after these initial exclusions).

7. The cleaned hospital and Healthcode datasets therefore have sample sizes of 119,101 episodes (the sum of episodes from five operators' data) and 591,650 episodes over the period 2009 to 2012, respectively. The former relates to episodes for self-pay patients and the latter for insured patients. These are the samples of data used to create the catchment areas and the LOCI measures.

8. The final stage of data preparation relates only to the hospital dataset and our selection of treatments and episode prices that feature in the PCA. In examining the price data for such episodes, we noted wide variation in the prices charged, even when evaluating episode prices for a single treatment at a single hospital site. Some of this price variation is expected (eg due to differences in prosthesis or differences in patient requirements during a long hospital stay) but at least some of the variation is driven by factors that may potentially distort our analysis. Examples of factors that could cause this type of variation include IT, accounting or recording practices (eg

refunds, data entry errors, cross-invoice recording) and particularly unusual patient circumstances (eg very complex episodes requiring multiple treatments). We have also sought to remove episodes that we cannot categorize to one particular treatment (ie CCSD code). We have therefore made the following exclusions:

- (a) episodes with missing CCSD codes (referred to below as ‘missing CCSD’);
- (b) episodes with invalid or more than one CCSD code (‘invalid CCSD’);
- (c) irregular episodes, defined as either: episodes with a CCSD code performed by a consultant with an atypical primary specialty;³ episodes with a CCSD code that is uncommon in the data for a particular operator;⁴ episodes with a low price that is less likely to be credible;⁵ or episodes with prices that appear extreme.⁶

9. In addition, we have also excluded treatments for which the episode prices may be less representative of the inpatient segment of the industry or less comparable between patients. In particular, we have excluded procedures that are in certain cases cosmetic or non-acute (eg rhinoplasty or gastric banding), and procedures that are in certain cases offered as a daypatient service rather than an inpatient service (eg cataract surgery or hernia surgery). We refer to these treatments below as ‘mixed’.⁷

10. Table A2 below shows the number of exclusions made to the data for each category.

³ For the majority of treatments, a single primary specialty is common in the data (eg if the treatment is hip replacement, the specialty is typically ‘Trauma and Orthopaedics’), but in some instances an alternative primary specialty is listed. We have excluded episodes with these less-common primary specialties.

⁴ Episodes associated with operator-treatment combinations that have less than 30 observations in the data. (In the AIS we had previously applied this rule to hospital site-treatment combinations.) The main purpose of these exclusions is to ensure that the methodology for making exclusions relating to low or extreme prices can be applied more reliably. Both cases rely on making exclusions relative to the distribution of prices, and so if that distribution is based on a very small amount of data, it is difficult to determine with a systematic rule which parts of the data are ‘extreme’. These episodes also represent a small minority of the data and are therefore not thought to be important.

⁵ It is observed that certain episode prices observations lie very close to zero, or are very low relative to the majority of prices for that treatment. These episode prices observations likely contain some kind of discount, rebate or credit associated with them and are unlikely to represent the typical price for a particular treatment. We exclude such observations if they have an episode price that is less than 50 per cent of the median price for that treatment-operator combination.

⁶ A price is considered extreme if it is less (or greater) than the lower (upper) quartile plus (minus) 1.5 times the inter-quartile range.

⁷ Treatments that are sometimes cosmetic and non-acute were identified on the basis of a list provided by Spire. Treatments that are sometimes offered as a daypatient service were identified as those having a proportion of daypatient episodes that exceeds 5 per cent.

TABLE A2 **Cleaning of the hospital datasets**

	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>
Total episodes after cleaning, excluding specialized hospitals	39,079	7,250	26,856	9,242	36,601
Missing or invalid CCSDs	11,657	1,057	7,225	2,177	7,428
Multiple CCSDs	7,642	0	0	2,301	6,383
Irregular episodes	6,758	4,805	5,359	2,118	7,439
Mixed treatments (incl. acute/non-acute and day case/inpatient)	7,125	790	7,289	1,274	8,795
Total episodes available for the PCA	5,897	598	6,983	1,372	6,556

Source: CC analysis.

Note: Numbers may not sum due to rounding.

11. The number of episodes that we consider for the PCA is therefore 21,406 (the sum of the number of episodes for each operator).

Central London

1. This appendix sets out our analysis in relation to the provision of private healthcare in central London. For the purposes of our analysis, we refer to ‘central London’ as the area inside the north and south circular roads, and ‘Greater London’ as the area outside central London but within the London Government Office Region.^{1,2} We use the term ‘London’ to refer to the combined areas of central London and Greater London.

2. This appendix covers: an overview of the characteristics of private healthcare provision in central London; a shares-of-supply analysis for central London hospital operators; a shares-of-capacity analysis for central London hospital operators; and, an analysis of HCA’s vertical integration with GP practices. We have considered central London as a separate geographic market when undertaking our shares-of-supply and shares-of-capacity analysis (see paragraphs 5.59 to 5.61). Annex A describes the parties’ views in relation to competition in London.

Characteristics of private healthcare provision in central London

3. This section considers a number of characteristics of private healthcare provision in central London. We first discuss private hospitals and PPUs, and then the patients and customers.

¹ Government Office Regions are defined by the ONS and a map can be found at: www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html.

² In terms of private hospital and PPU locations, our definition of central London and Greater London coincides with the NUTS2 regions ‘Inner London’ and ‘Outer London’, respectively. NUTS stands for ‘Nomenclature of Territorial Units for Statistics’ and is a delineation of geographic areas developed and regulated by the EU. There are three NUTS delineations, from NUTS1 (most aggregated) to NUTS3 (most disaggregated). A map of UK NUTS regions can be found at: www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html.

Private hospitals and PPUs

4. As set out in Section 5, our competitive assessment is based on 219 private hospitals and PPUs. Of this total, 26 are located in central London. These are as follows:
 - (a) HCA operates eight hospitals: it owns seven private hospitals and manages one PPU;
 - (b) BMI owns and operates four private hospitals;
 - (c) Aspen owns and operates one private hospital;
 - (d) there are four hospitals owned and operated by independents: the Bupa Cromwell Hospital, the Hospital of St John and St Elizabeth, the King Edward VII's Hospital Sister Agnes, and TLC;
 - (e) there are nine PPUs (excluding the PPU managed by HCA) owned and operated by several NHS Foundation Trusts (Foundation Trusts).
5. There are a further 18 private hospitals and PPUs in Greater London; these hospitals are not considered in this appendix. A full list of the 26 hospitals in central London and the 18 hospitals in Greater London is provided as part of the full list of 219 hospitals in Appendix 6.6.

Characteristics of private hospitals in central London

6. A key factor that attracts patients to central London is the perception that quality of care is very high in the capital. Several parties have made this point and we highlight some examples here.
7. For example, when asked why patients choose to be treated in London, TLC stated that there was a perception among patients that standards in London were generally higher:

But on the whole people who live or work in London perceive the best will be offered in London and therefore look to London for their treat-

ment ... think in terms of the investment in the facilities and the scope of back-up that you can provide, it's much greater. A lot of people are not well informed, because they don't access private healthcare until something goes wrong, and therefore you look to your local hospital. But for those who search the internet and really look into their condition, it is probable that you will find yourself being drawn into central London.

8. HCA also commented that London was regarded as a global centre of excellence, especially for 'high end' tertiary care, which attracted patients from around the world. The Federation of Independent Practitioner Organisations (FIPO) was of the view that patients were attracted to London due to its international reputation and the high quality of consultants.
9. HCA said that it had a strong focus in 'tertiary' clinical specialisms, which it described as the treatment of serious complex medical conditions with a high level of acuity requiring specialist investigation, treatment and care in facilities with advanced equipment, highly-trained staff and 24/7 life support back-up capabilities. HCA suggested that examples of tertiary care included cancer treatment, neurosurgery, cardiac surgery, advanced neonatal services and other complex medical and surgical interventions.
10. HCA also commented that it had invested heavily in diagnostic and treatment facilities and intensive care facilities to support this focus on tertiary/high acuity services. It also noted that it provided the clinical environment which could support higher levels of patient dependency, such as level 3 intensive care units. It said that this investment had attracted leading consultants from major London teaching hospitals.

11. AXA PPP argued that patients were attracted to seek treatment in central London, due to a 'Harley Street effect', a point that was separately made by FIPO.
12. The CC patient survey also indicated that London hospitals were viewed differently. For example, the survey indicated that patients treated at Greater and central London hospitals³ were more likely to say that they chose private treatment to access the expertise of private hospitals/private consultants (27 per cent compared with 7 per cent on average).⁴ Patients in London were also more likely to say that the most important reasons for choosing the private consultant were the consultant's reputation (46 per cent compared with 36 per cent on average), the consultant's clinical expertise (43 per cent compared with 38 per cent on average) and the geographic location of the consultant (32 per cent compared with 25 per cent on average).⁵
13. The CC patient survey also showed that patients in London were more likely to have engaged in some research ahead of their treatment. Patients in London were more likely than average to have looked up any information online (63 per cent compared with 47 per cent on average), and in particular more likely to have looked up the websites of private consultants (41 per cent compared with 25 per cent on average), of private hospitals/PPUs (36 per cent compared with 24 per cent on average) and other websites (eg Google search) (20 per cent compared with 12 per cent on average).⁶

Characteristics of PPUs in central London

14. NHS PPUs have a greater presence in central London than in elsewhere in the UK, and the London PPUs are also typically larger. Lang & Buisson noted that: nine of

³ Sample size 118 patients.

⁴ www.competition-commission.org.uk/our-work/directory-of-all-inquiries/private-healthcare-market-investigation/analysis/surveys, CC patient survey: QB1, Slide 25, Table B1.

⁵ www.competition-commission.org.uk/our-work/directory-of-all-inquiries/private-healthcare-market-investigation/analysis/surveys, CC patient survey: QC6, Slide 32, Table C6.

⁶ www.competition-commission.org.uk/our-work/directory-of-all-inquiries/private-healthcare-market-investigation/analysis/surveys, CC patient survey: QF1, Slide 63, Table 133.

the ten NHS Trusts (that operate PPUs) with the highest revenue from private patients are located in London, and that London PPUs also account for a significant proportion (44 per cent) of the UK's dedicated private patient beds within NHS facilities.^{7,8}

15. As noted above, there are nine PPUs included in our analysis of central London (excluding the PPU managed by HCA). These PPUs are owned and operated by the following Foundation Trusts:
 - (a) Guy's & St Thomas' (two general PPUs);
 - (b) Imperial College Healthcare (three general PPUs and one specialised PPU);
 - (c) King's College Hospital (one general PPU);
 - (d) Royal Brompton & Harefield (one general PPU);
 - (e) Royal Free London (one general PPU); and
 - (f) The Royal Marsden (one general PPU).
16. HCA have noted that the central London teaching hospitals (Guy's and St Thomas', St Bartholomew's, King's College, University College Hospital, Royal Marsden) boasted a strong global reputation and had contributed to London's position as a global medical centre of excellence with well-established tertiary care services. In relation to consultants, HCA suggested that a distinguishing characteristic of London was the large pool (approximately 7,500) of NHS consultants, including many eminent specialists at the top of their field. On a similar note, FIPO referred to the 'gilded London teaching hospitals'. TLC also noted that nearly all of its consultants worked at teaching hospitals in central London.
17. The level of private work that PPUs can undertake is regulated and limited by a revenue cap. This level of this cap is set to be increased under recent legislation.

⁷ Lang & Buisson, Private Acute Medical Care UK Market Report 2012, Table 4.2.

⁸ Lang & Buisson, Private Acute Medical Care UK Market Report 2012, Table 4.3.

Prior to the 2012 Act, legislative restrictions limited the amount of income that Foundation Trusts could earn from private patient work. This private patient income cap meant that Foundation Trusts could not exceed the proportion of the total income that they derived from private charges in 2002/03 (the year before the first Foundation Trusts were authorized),⁹ and varied from about 1.5 per cent to about 30 per cent. Under the 2012 Act, the cap has been lifted so that Foundation Trusts are now permitted to receive up to 49 per cent of their total income from private sources. However, if a Foundation Trust proposes to increase the proportion of its total income that comes from private sources by more than 5 per cent, it requires majority approval by its council of governors. We discuss the revenue cap the implications of the 2012 Act further in Appendix 3.1.

Patients and customers

18. London has a population of around 8.2 million, 4.9 million of whom live outside central London and 3.2 million live within central London.¹⁰ In addition, a unique aspect of working patterns in the capital is that a further 1 million people commute into central London on a daily basis for work.¹¹
19. London has a high level of PMI penetration, making it an important area for PMIs. The last known accurate measure suggested that London had a PMI penetration rate of 17.5 per cent in 2006. This compared to a UK wide rate of 12 per cent, but with a number of other parts of the country exhibiting much lower penetration, many as low as 5 to 10 per cent. Only the South-East had a higher PMI penetration rate at 18.5 per cent.¹²

⁹ www.foundationtrustnetwork.org/influencing-and-policy/system-reform/ppic/.

¹⁰ All demographic data has been sourced from the ONS and is based on the 2011 census:

www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-284349.

¹¹ <http://londontransportdata.wordpress.com/>.

¹² Source: L&B UK Health Cover 2012, estimated from the Family Resource Survey 2004–2005 (DWP), after applying UK growth rates (persons covered) 2004–2006 to all regions.

20. In the following subsections we present evidence on the characteristics of patients and customers in London.

Patient demographics

21. TLC has submitted to us that there are differences in patient characteristics between central London, Greater London and the rest of the UK. We have analysed the Healthcode data and confirmed this result. Table 1 below shows that both self-pay and insured patients in central London tend to be younger and are more likely to be males. The difference is most pronounced for self-pay patients.

TABLE 1 **Patient demographics, insured and self-pay inpatients, 2011**

	<i>Central London</i>	<i>Greater London</i>	<i>Rest of UK</i>
<i>Mean age (insured)</i>	54	57	56
<i>Mean age (self-pay)</i>	52	59	58
<i>Male proportion (insured)</i>	48	44	45
<i>Male proportion (self-pay)</i>	41	33	33

Source: CC analysis.

Procedures and specialties performed

22. TLC has also submitted to us that there are differences in the mix of specialties and level of acuity between central London, Greater London and the rest of the UK. We have analysed the data available to us from the MQ and confirmed this for the mix of inpatient specialties. Table 2 below shows the number of proportions of inpatients according to the primary specialty of the consultant for central London, Greater London and the rest of the UK.

TABLE 2 **Mix of specialties, insured and self-pay inpatients, 2011**

<i>Consultant specialty</i>	<i>per cent</i>		
	<i>Central London</i>	<i>Greater London</i>	<i>Rest of UK</i>
Trauma and orthopaedics	26.6	26.5	34.9
General surgery	18.2	22.1	21.9
Obstetrics and gynaecology	10.1	11.2	11.1
Cardiology	7.7	2.7	1.3
Urology	6.9	9.6	7.4
Otolaryngology	6.2	5	5.8
Neurology	6	1.4	2.8
General internal medicine	5	10.8	2.5
Oncology	3.9	3.3	2.2
Plastic surgery	2.3	2.1	5.9
Clinical radiology	1.9	0.6	1.1
Gastroenterology	1.8	2	0.6
Oral and maxillofacial surgery	1	1.1	0.9
Ophthalmology	1	0.6	1.2
Anaesthetics	0.9	0.6	0.3
Rheumatology	0.2	0.4	0.1
Dermatology	0	0.1	0

Source: CC analysis.

Note: Data not available for all hospitals, including certain central London private hospitals and PPUs (Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden).

23. The table above highlights that there are differences in the specialty mix for inpatients between central London and Greater London, and central London and the rest of the UK. Examples include:

- (a) Trauma and orthopaedics account for 27 per cent of inpatient episodes in central London, a similar level in Greater London, but around 35 per cent of patient episodes in the rest of the UK.
- (b) Cardiology accounts for around 8 per cent of inpatient episodes in central London, but around 3 per cent of patient episodes in Greater London and around 1 per cent in the rest of the UK.
- (c) Neurology accounts for around 6 per cent of inpatient episodes in central London, but around 1 per cent of patient episodes in Greater London and around 3 per cent of patient episodes in the rest of the UK.

Corporate PMI customers

24. One of the issues identified by parties was the significant number of corporate customers located in London, or corporate customers that made regular use of

central London hospitals (see Annex A, paragraphs 42 to 48). In 2011, approximately 60 per cent of PMIs' hospital expenditure was incurred by policyholders that were members of a corporate scheme.¹³

25. HCA also noted that the larger presence of major corporates in the London region meant that PMI corporate policies accounted for a higher share of PMI sales.
26. Our analysis of corporate PMI customers has been met with data shortages. We have not been able to identify the overall size of the corporate market in London from an insurer's perspective or how this compares nationally. Only data provided by Bupa was at a sufficiently disaggregated level to allow us to isolate and estimate its corporate expenditure at central London hospitals. Table 3 below presents Bupa's analysis.

TABLE 3 Bupa hospital expenditure—by customer type

	Corporate policyholders*	Individual policyholders
Central London expenditure† (£m)	[redacted]	[redacted]
UK expenditure (£m)	[redacted]	[redacted]
Central London (%)	[redacted]	[redacted]

Source: Bupa.

*[redacted]
†[redacted]

27. Table 3 above suggests that Bupa's hospital expenditure is, in total across the UK, broadly balanced between corporate and individual policy holders. Looking at the central London proportions, while corporate policy holders account for a substantial proportion (close to a [redacted]), [redacted] proportion of its personal customers use central London hospitals. This illustrates the importance of the London market to PMIs ([redacted]) but does not indicate that the market is driven primarily by corporate customers.

¹³ CC analysis.

Patient travel patterns

28. The results of our catchment area analysis (see Appendix 6.5) did not immediately reveal that London hospitals had a substantively different catchment area to hospitals in other regions of the UK on average. We reported the median catchment area of London hospitals to be 15 miles as compared with the UK average of 17 miles.
29. In Table 4 below we present more detailed results for our catchment area analysis in relation to London. The table shows our catchment area results for London, but split between central London and Greater London. It also shows the catchment area results for the rest of the UK for comparison, as well as catchment area results based on higher percentages of patients (90 per cent, and 95 per cent) than we used for our local competitive assessment (80 per cent). Each figure in the table is the median hospital's catchment area for the region.

TABLE 4 **Median catchment areas, split by central London, Greater London and rest of UK**

	<i>80 per cent catchment area miles</i>	<i>90 per cent catchment area miles</i>	<i>95 per cent catchment area miles</i>
Central London	24	47	77
Greater London	8	11	16
Rest of UK	18	22	29

Source: CC analysis.

Note: Data not available for all hospitals, including certain central London private hospitals and PPU's (Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden).

30. Table 4 above shows that the catchment areas for central London and Greater London are very different in size. Central London hospitals have an 80 per cent catchment area that is, at the median, three times as large as hospitals in Greater London (24 versus 8 miles). For wider catchment areas, based on 90 per cent and 95 per cent of insured patients, the difference between central London and Greater London is even larger (almost five times as large).
31. Our analysis disaggregated in this way shows that central London hospitals attract patients from a very wide geographic area. In addition, our analysis shows that this

area is significantly larger in size than the area that Greater London hospitals attract patients from. This suggests a marked difference in patient travel patterns between those attending central London hospitals and those attending Greater London hospitals.

32. To further assess this issue, we have looked at the travel patterns of patients who have a home address in central London or Greater London. For each group, patients with a home address in central London and patients with a home address in Greater London, we have calculated the proportion of patients who attend hospitals located in central London and Greater London. Table 5 below shows the results of this analysis.

TABLE 5 **Patient travel patterns between central and Greater London, insured and self-pay inpatients, 2011**

	<i>Percentage attending central London hospitals</i>	<i>Percentage attending Greater London hospitals</i>
Patients resident in central London	94.5	5.5
Patients resident in Greater London	53.4	46.6

Source: CC analysis.

33. Table 5 above shows that around 95 per cent of patients resident in central London chose to travel to a hospital in central London, while only around 5 per cent chose to travel to a hospital in Greater London. For patients resident in Greater London, the balance is very different: around 54 per cent of patients chose to travel to a Greater London hospital, and around 46 per cent chose to travel to a central London hospital. Thus over half of patients resident in Greater London chose to attend a central London hospital, yet only 5 per cent of central London patients attended hospitals in Greater London. Patients in both groups appear significantly more willing to receive treatment in central London.

34. We note that the volume of commuters and transport network in London is likely to contribute to these patient movements. For example, patients in Greater London that

commute to central London for work may find central London hospitals are more convenient (for example, because patients travel to the hospital from work, or because the public transport options are convenient and known). Moreover, the public transport links are better between Greater London and central London as compared with between different areas of Greater London (eg east to west).

Shares-of-supply analysis

35. This section sets out our analysis of shares-of-supply for the hospitals located in central London. This analysis has been conducted at an aggregate level (across all specialties and all treatments), and a disaggregated level (for particular segments, eg high complexity treatments). Hospitals belonging to a single operator are considered together in line with the fascia count and LOCI filters.

Aggregate shares-of-supply

36. Table 6 below shows the shares-of-supply in central London in terms of inpatient admissions and inpatient revenue, as well as total admissions (inpatient plus day-case) and total revenue (inpatient plus day-case plus outpatient).

TABLE 6 Central London aggregate shares-of-supply, 2011

	<i>per cent</i>			
	<i>Inpatient admissions</i>	<i>Inpatient revenue</i>	<i>Total admissions</i>	<i>Total revenue</i>
HCA	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]
BMI	[X]	[X]	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]	[X]	[X]
Aspen	[X]	[X]	[X]	[X]
Hospital of St John & St Elizabeth	[X]	[X]	[X]	[X]
King Edward VII's Hospital Sister Agnes	[X]	[X]	[X]	[X]
Total private hospitals	85	89	86	86
Imperial College Healthcare NHS Trust	[X]	[X]	[X]	[X]
Royal Free London NHS Foundation Trust	[X]	[X]	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	[X]	[X]	[X]	[X]
The Royal Marsden NHS Foundation Trust	[X]	[X]	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]	[X]	[X]
Guy's & St Thomas' Trust	[X]	[X]	[X]	[X]
Total PPU's	15	11	14	14

Source: CC analysis.

Note: Total admissions includes inpatient and day-case. Total revenue includes inpatient, day-case and outpatient.

37. The shares-of-supply results in Table 6 indicate that central London is a highly concentrated market. HCA has a share-of-supply in central London of [%] by admissions (inpatient or total) and a share-of-supply of [%] by revenue (inpatient or total). TLC has the next largest shares, at around [%]. All other providers have a share below 10 per cent, and all PPUs have a share of 5 per cent or lower.

Disaggregate shares-of-supply

38. We have also considered the shares-of-supply at a disaggregated level. This has been used to inform whether HCA's position is strong in certain specialties or particular product segments. It has also been used to inform the closeness of competition between HCA and its rival operators.
39. To capture these different product segments we have analysed shares-of-supply in:
- (a) each specialty (Table 7);
 - (b) hospitals that have beds for critical care level 3 (CCL3)—these hospitals may be those that undertake a more complex mix of treatments and/or specialties (Table 8); and
 - (c) tertiary treatments—these treatments, that require a referral from a consultant to another consultant, may be interpreted as more complex treatments (Table 9).¹⁴
40. We present the results of our shares-of-supply analysis in relation to each of these disaggregated segments below.

¹⁴ Our definition of tertiary treatments is based on information provided by Spire, who provided us with a list of tertiary treatments performed at their hospitals. Spire noted that there are a number of different approaches to defining tertiary care and that the provision of this information necessarily involved an element of subjective judgement by the individual Hospital Directors because there is no universally accepted definition of tertiary care and individual Hospital Directors may have different views on what amounts to tertiary care at their hospitals.

Individual specialties

41. Table 7 below shows shares-of-supply by specialty, on the basis of total admissions, for the central London providers. Revenue shares are similar but are not shown for brevity.

TABLE 7 Central London shares-of-supply by specialty, 2011

				Total admissions				per cent
	HCA	TLC	BMI*	Bupa Cromwell	St John & St Elizabeth	Other private hospitals†	PPUs‡	Specialty admissions as proportion of all admissions
Oncology	[X]	[X]	[X]	[X]	[X]	[X]	27.4	14.3
Trauma and orthopaedics	[X]	[X]	[X]	[X]	[X]	[X]	1.9	11.8
Gastroenterology	[X]	[X]	[X]	[X]	[X]	[X]	1.7	10.6
Obstetrics & gynaecology	[X]	[X]	[X]	[X]	[X]	[X]	12.1	7.6
General surgery	[X]	[X]	[X]	[X]	[X]	[X]	7.9	7.3
Cardiology	[X]	[X]	[X]	[X]	[X]	[X]	20.0	5.0
Plastic surgery	[X]	[X]	[X]	[X]	[X]	[X]	3.2	4.9
Urology	[X]	[X]	[X]	[X]	[X]	[X]	4.7	4.3
Ophthalmology	[X]	[X]	[X]	[X]	[X]	[X]	3.7	4.0
General medicine	[X]	[X]	[X]	[X]	[X]	[X]	18.7	2.4
Oral & maxillofacial surgery	[X]	[X]	[X]	[X]	[X]	[X]	1.5	1.6
Anaesthetics	[X]	[X]	[X]	[X]	[X]	[X]	1.9	1.5
Otolaryngology	[X]	[X]	[X]	[X]	[X]	[X]	8.5	1.4
Neurology	[X]	[X]	[X]	[X]	[X]	[X]	28.6	1.2
Clinical radiology	[X]	[X]	[X]	[X]	[X]	[X]	4.0	0.5
Dermatology	[X]	[X]	[X]	[X]	[X]	[X]	15.2	0.3
Rheumatology	[X]	[X]	[X]	[X]	[X]	[X]	4.5	0.1

Source: CC analysis.

*Data is not available for some BMI hospitals for dermatology, obstetrics and gynaecology, ophthalmology, trauma and orthopaedics and urology.

†Other private hospitals include Aspen and King Edward VII's Hospital Sister Agnes. Data for Aspen is not available for ophthalmology and rheumatology.

‡PPUs include the 6 PPU's presented in Table 6 above. Data on admissions is not available for some PPU's for some specialties. The missing data for the 6 PPU's combined is estimated to be around 3 per cent of all central London admissions. Note: N/A = not available. Total admissions includes inpatient and day-case admissions.

42. The analysis presented in Table 7 above shows that:
- (a) HCA has a share of [X] in specialties that might be considered more complex (oncology and cardiology);
 - (b) HCA has a share of [X] in the four largest specialties by admissions (oncology, trauma and orthopaedics, gastroenterology, obstetrics and gynaecology);
 - (c) HCA has a share [X] in [X] of 17 specialties considered;
 - (d) HCA has a share [X] in certain specialties (anaesthetics, dermatology) but these specialties are typically small segments of the market;

- (e) TLC has a share of [X] in certain specialties (ophthalmology, oral and maxillofacial surgery, otolaryngology);
- (f) Aspen (not shown) has a share of [X] in plastic surgery;
- (g) individual PPUs (not shown) have a high share in certain specialties (eg The Royal Marsden has a share of [X] in oncology).

43. We can see that there are several providers in London offering most specialties. However, looking at the provider shares for each specialty shows that HCA has a significantly stronger market position than other providers in many specialties. While not always the case, our analysis indicates that for a smaller number of specialties TLC has the highest share or the second largest share. Following TLC, the next largest shares are often represented by BMI or Bupa Cromwell. The disaggregated shares-of-supply by specialty are therefore largely in line with the results of aggregated shares-of-supply analysis.

Critical care level 3

44. Table 8 below the revenue shares-of-supply, on the basis of total admissions and revenue, for only those central London providers that have CCL3 beds. We note that these shares-of-supply include all treatments and specialties and not only those requiring CCL3.

TABLE 8 Central London shares-of-supply for hospitals with intensive care at critical care level 3, 2011

	<i>per cent</i>	
	<i>Total admissions</i>	<i>Total revenue</i>
HCA	[X]	[X]
TLC	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]
BMI	[X]	[X]
Total CCL3 private hospitals	83.2	84.3
The Royal Marsden NHS Foundation Trust	[X]	[X]
Royal Free London NHS Foundation Trust	[X]	[X]
Imperial College Healthcare NHS Trust	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	[X]	[X]
Total CCL3 PPUs	16.8	15.7

Source: CC analysis.

Note: Total admissions include inpatient and day-case. Total revenue includes inpatient, day-case and outpatient.

45. Table 8 shows that, among those hospitals that provide critical care level 3, HCA has a large share-of-supply. The HCA share is [X], and the next largest share (around [X] by admissions and [X] by revenue) is represented by TLC. Bupa Cromwell has the third largest share at around [X] per cent, and the remaining operators have shares that are less than 6 per cent.

Tertiary treatments

46. Table 9 below shows the shares-of-supply for tertiary treatments, on the basis of inpatient admissions and revenue, at central London hospitals.¹⁵

TABLE 9 Shares-of-supply for tertiary treatments based on Healthcode data, 2011

	<i>% share of central London inpatient admissions</i>	<i>% share of central London inpatient revenue</i>
BMI	[X]	[X]
Guy's & St Thomas' Trust	[X]	[X]
HCA	[X]	[X]
Hospital of St John & St Elizabeth	[X]	[X]
King Edward VII's Hospital Sister Agnes	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]
TLC	[X]	[X]

Source: CC analysis.

Note: Treatment-level data not available for Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden. Shares-of-supply shown for providers may therefore be overstated.

47. Table 9 shows that HCA has a share-of-supply among providers of tertiary treatments of [X] by admissions and [X] by revenue. The second largest provider, after HCA, is TLC, with a share-of-supply of [X].

Shares-of-capacity analysis

48. The analysis of hospitals share of capacity informs us whether other hospitals in central London can absorb HCA patients if PMIs were to direct volumes from HCA to

¹⁵ We conduct this analysis, which is at the treatment-level, on the basis of inpatients admissions and revenue (rather than total admissions and revenue) in keeping with our other treatment level analyses.

other hospitals. If this is the case, then these alternative hospitals may offer a credible alternative to HCA for PMIs.

49. Table 10 below shows the shares-of-capacity for private hospitals in central London. All measures are based on installed capacity. PPUs are omitted from the analysis as we do not have reliable data available for these providers.

TABLE 10 Installed capacity in private hospitals in central London excluding PPUs, 2011

	<i>Overnight</i>		<i>Theatres</i>		<i>Consulting rooms</i>		<i>Critical care beds level 3</i>	
	<i>Numbers</i>	<i>%</i>	<i>Numbers</i>	<i>%</i>	<i>Numbers</i>	<i>%</i>	<i>Numbers</i>	<i>%</i>
<i>Aspen</i>								
Highgate Hospital	28	2.2	3	3.8	12	2.8	0	0
<i>BMI</i>								
Blackheath	69	5.3	4	5	21	4.9	0	0
Fitzroy Square	16	1.2	1	1.3	7	1.6	0	0
London Independent	58	4.5	4	5	10	2.3	6	7.1
Weymouth	10	0.8	4	5	0	0.0	0	0
Total BMI	153	11.8	13	16.3	38	8.8	6	7.1
<i>HCA</i>								
Harley Street Clinic	104	8	4	5	51	11.9	20	23.5
Lister Hospital	74	5.7	4	5	31	7.2	2	2.4
London Bridge Hospital	111	8.6	7	8.8	56	13.0	8	9.4
Portland Hospital	87	6.7	4	5	39	9.1	3	3.5
Princess Grace Hospital	114	8.8	8	10	38	8.8	4	4.7
Wellington Hospital	226	17.5	11	13.8	20	4.7	20	23.5
Total HCA	716	55.3	38	47.6	235	54.7	57	67
St John & St Elizabeth	49	3.8	5	6.3	36	8.4	0	0
King Edward VII's Sister								
Agnes	60	4.6	3	3.8	6	1.4	4	4.7
The Bupa Cromwell	118	9.1	5	6.3	29	6.7	7	8.2
TLC	170	13.1	13	16.3	74	17.2	11	12.9
Total	1,294		80		430		85	

Source: CC analysis.

Note: Data on HCA London Oncology Centre is unavailable.

50. Table 10 shows that HCA owns 55 per cent of all installed overnight bed capacity in central London (excluding PPUs). The results are similar for theatres (48 per cent) and consulting rooms (55 per cent). In the case of beds for critical care level 3, HCA has an even higher share of installed capacity, at 67 per cent. The second largest competitor in terms of installed capacity (excluding PPUs) is TLC, and accounts for 13 per cent of overnight beds, 16 per cent of theatres, 17 per cent of consulting rooms, and 12 per cent of beds for critical care level 3. The third largest competitor is

BMI, and (excluding PPUs) accounts for 12 per cent of overnight bed capacity, 16 per cent of theatre capacity, 9 per cent of consulting room capacity and 7 per cent of beds for critical care level 3.

Vertical integration

51. HCA has ownership links with three GP practices that operate in London. We have considered whether these ownership links may restrict or distort competition between hospital operators in London. We have assessed the nature of the ownership links, HCA's incentives for making the acquisitions and the scale of the vertical integration relative to the number of GPs in London. HCA have submitted analysis to us on the potential effects of the vertical agreement and we also summarize that evidence here.
52. We have considered whether these commercial ties may limit the ability of other hospital operators to exert a competitive constraint on HCA. This could occur if the vertical integration creates a mechanism whereby HCA can use its influence in the GP market to foreclose its rival hospitals. These concerns centre on the possibility that HCA-owned GP care facilities might refer patients predominantly, or disproportionately, to its own hospitals. This would limit the competitive constraint exerted on HCA by other hospital operators.
53. HCA has noted that other hospital operators also offer or operate GP services in London, including Nuffield, BMI, Aspen, TLC and The Hospital of St John and St Elisabeth. We have focused our assessment of vertical relationships below on HCA only.

54. HCA has equity ownership in three GP practices. It owns 90 per cent of Roodlane Medical Limited (Roodlane),¹⁶ 70 per cent of Blossoms Healthcare LLP (Blossoms)¹⁷ and 100 per cent of General Medical Clinics Plc (GMC).^{18,19} Roodlane is based at four locations in London and one location in Glasgow. Analysis of GP referrals to HCA hospitals that was conducted by BCG for HCA (as part of a high-level management overview) suggested that in 2010 Roodlane was the [X] of GP referrals.²⁰ HCA submitted analysis suggesting that GP referrals from Roodlane to HCA hospitals estimated that [X] of referrals to HCA hospitals may originate from Roodlane.²¹ Blossoms has locations in London, Birmingham and Edinburgh, and it is responsible for fewer GP referrals to HCA than Roodlane (it is ranked [X] in the list of referring GP practices). GMC operates from four locations in London. In addition, HCA licenses consultant rooms to a number of GPs who practice within some of its inpatient and/or outpatient facilities. HCA states that it has no ownership interest or rights in these GP practices.

Nature of the HCA agreements

55. HCA states that it does not impose any requirements or obligations on, or offer any incentives or inducements to, GPs to refer patients to HCA facilities. In particular we have been told by HCA that the agreements in place with Roodlane, Blossoms and GMC contain no referral obligations or incentives, and that member doctors must act in the patients' best interests when recommending treatments and referrals.

56. HCA's acquired its ownership interest in Roodlane in August 2011. We note that in the original shareholders' agreement at Roodlane contained a general obligation on

¹⁶ Acquisition on 08/2011.

¹⁷ Acquisition on 04/2012.

¹⁸ Acquisition on 07/2012.

¹⁹ We note that Roodlane Medical is a business name of Roodlane Medical Limited and General Medical Clinics Limited.

²⁰ HCA informed the CC that this analysis was subject to error and should not be relied on due to (a) the data not covering all patient records, (b) the fact that it included overseas patients, who may be more likely to use central London GPs, (c) the fact that the exercise manually matched GP names to GP practices and so could be prone to error, and (d) the analysis used data that was assumed to represent a referral rather than being based on actual referrals. We note these criticisms and that the analysis is not a precise reflection of actual referrals.

²¹ This analysis also relied on a series of assumptions which may affect the robustness of this finding.

the part of the doctor shareholders concerned '[X]'. HCA have told us that it and the doctors holding an equity stake in Roodlane entered into a deed of variation to this shareholders' agreement. The variation, dated 27 April 2012, stated that the doctor shareholders would exercise their own independent clinical judgement in the selection of appropriate treatments, facilities and hospitals and would not be subject to the control or direction of HCA with respect to such judgements or the selection of hospitals.

Incentives for HCA acquisitions

57. We have also reviewed internal documents provided by HCA regarding the acquisitions and its incentives for making the acquisitions. HCA has argued, in response to the AIS, that the acquisitions of Roodlane, Blossoms and GMC were investments that expanded the scope of care to patients and that the key rationale for investing in primary care is driven by growth opportunities in the primary care sector, including a trend towards care being provided in a primary care setting rather than secondary care.
58. However, an internal document from HCA, on managed care outlook in 2009, indicates that one of HCA's incentives to acquire the GP practices was to protect its main referral sources from potential interventions by PMIs. In the document, HCA identified four main risks it faced with Bupa. One of the risks mentioned was 'Bupa attacks on HCA's key referral source: (General Medical Clinics, Blossoms, Roodlane, Bupa Wellness)'. In relation to these insurer interventions, HCA have argued that such interventions have led to a lack of transparency over how referral decisions are being made by insurers (for example, whether they are being driven by cost factors over quality of care) and, in some cases, referrals being made to the wrong consultant specialist. HCA also highlighted that insurers such as Bupa and AXA PPP have a significant and growing presence in the primary care sector.

Scale of HCA's vertical integration

59. We have also analysed the size of the GP market in London and the number of GPs operating out of HCA-owned practices. HCA have told us that there were around [REDACTED] GPs (of which [REDACTED] were part-time) employed across the three GP practices and that there were [REDACTED] GPs with licence arrangements for the use of rooms within HCA's facilities. It also noted that not all of these GPs were based in London as some of the GP practices had sites located outside of London. HCA have also provided two estimates relating to the number of total GPs that might be considered as relevant benchmarks:
- (a) BCG estimated in 2010 that was approximately 9,000 (NHS and private) GPs that make referrals to HCA hospitals, and that approximately 2,000 GPs account for [REDACTED] per cent of HCA's referrals; and
 - (b) research commissioned by the OFT in 2011 estimated that there were around 6,000 GPs in London.²²
60. Relative to these estimates, the number of GPs with commercial links to HCA (either because HCA owns the GP practice or because the GP operates out of HCA facilities) is between [REDACTED].²³

HCA analysis of referrals

61. HCA have also submitted to us an analysis of referral patterns from HCA-owned GP practices to HCA before and after the HCA acquisitions.²⁴ Table 10 below shows the estimated referrals to HCA facilities as a proportion of total referrals at the GP practices.

²² The research by GHK states there are 42,540 GPs in the UK, of which 14 per cent are based in London.

²³ [REDACTED]

²⁴ [HCA response to AIS](#).

TABLE 10 **Estimated referrals to HCA facilities as a proportion of estimated total referrals made by primary care facilities, all patients (inpatients, outpatients and day-case)**

	<i>per cent</i>					
	<i>Six months before</i>	<i>Six months after</i>	<i>Nine months before</i>	<i>Nine months after</i>	<i>12 months before</i>	<i>12 months after</i>
Roodlane	[X]	[X]	[X]	[X]	[X]	[X]
GMC	[X]	[X]	[X]	[X]	[X]	[X]
Blossoms	[X]	[X]	[X]	[X]	[X]	[X]

Source: HCA analysis.

Notes:

1. Data in the table was not available for certain time periods because HCA acquired its ownership interest more recently than the period indicated.
2. N/A = Not available.

62. Table 10 above shows that for Roodlane and GMC, referrals to HCA represented [X]. At Blossoms, [X]. For all three GP practices, the analysis indicates that the referral rate to HCA has [X].

Parties' views

1. In this section we consider the views of hospital operators and PMIs regarding the nature of competition in central and Greater London and the competitive constraints faced by HCA in particular.
2. We have received representations from most PMIs that there is a lack of competition in central London. However, in response HCA argued that it faced competition from other hospitals in and around London as well as PPUs.
3. A detailed summary of the parties' views is provided under the following sections:
 - (a) London's distinguishing characteristics;
 - (b) closeness of competition in London;
 - (c) constraints that could prevent PMIs switching hospital provider—capacity;
 - (d) constraints that could prevent PMIs switching hospital provider—customer demand;
 - (e) the consequences of a dispute between HCA and an insurer; and
 - (f) redirection of policyholders away from HCA facilities.

London's distinguishing characteristics

4. In line with the analysis set out earlier in this paper, several parties argued that there were certain characteristics that distinguished private healthcare in central London. AXA PPP stated:

in our view central London has the features of a distinct market given the reputational draw of certain facilities and consultants, the fact that new technology will tend to be introduced in London before other locations and/or may only be justified in London due to the concentration of population and specialist consultants, the importance of London facili-

ties to large corporate customers, and the fact that many customers living both within and outside London prefer to be treated within central London.

5. TLC stated:

In The Clinics opinion the central London Market for private healthcare has a number of features which distinguish it from private healthcare in other parts of the country. These include: a focus on acute care and complex and tertiary surgery (e.g. cardiac, neurosurgery and oncology services); world renowned consultants and facilities; a higher proportion of self-paying patients (including many overseas patients) and a patient population drawn from outside the local area; the presence of HCA and dominant local competitor; high capital and operating costs and limited opportunities for expansion in the immediate area.

Closeness of competition in London

Insurer views

6. PMIs argued that there was a relatively small cohort of close competitors in central London. In their view, hospitals outside central London, including Greater London and those on the fringes of London, did not provide enough of an alternative from their perspective to provide a constraint. PPU did not represent a close alternative.

Competition in central London

7. While accepting that other hospitals in London competed to some degree with HCA, AXA PPP argued that HCA overstated this competition. AXA PPP argued that hospitals in London could instead be split between 'elite' and 'non-elite' hospitals, elite hospitals being those that provided the strongest professional reputation for a broad range of treatments and which it believed were more important for its clients,

though not necessarily ‘must have’ (see paragraph 42 for AXA PPP definition of ‘must-have’ hospitals in central London). AXA PPP argued that the London hospitals could be divided along the following lines:

Elite London hospitals

Non-HCA

BMI Weymouth Street
BUPA Cromwell Hospital
Hospital of St John & St Elizabeth
King Edward VII's Hospital Sister Agnes
The London Clinic
Parkside Hospital (Acute)
Royal Marsden Hospital²⁶

HCA

Harley Street @ UCLH²⁵
Harley Street Clinic
Lister Hospital
London Bridge Hospital
Portland Hospital
Princess Grace Hospital
Wellington Hospital

London non-elite

BMI Fitzroy Square Hospital
BMI London Independent Hospital
BMI The Blackheath Hospital
BMI The Garden Hospital
Highgate Private Hospital
London Day Surgery Centre
London Radiosurgical Centre
St Anthony's Hospital

8. AXA PPP argued that for patients resident in central London competition was closest between the elite hospitals on this list. Based on defining an elite central London market according to the hospitals shown above, AXA PPP stated that [X] of all the treatments in central London for patients living in central London that it funded occurred in these elite hospitals. AXA PPP also stated that [X] of the treatment in the elite hospitals it funded occurred in HCA hospitals.

Competition from hospitals outside central London

9. Bupa argued that the fact that a number of patients travelled into central London for treatment did not mean that central London hospitals faced strong competition for these patients from hospitals on the periphery:

Commuting patterns into central London overstate the catchment areas over which central London hospitals ‘compete’. A significant number of

²⁵ PPU.

insured customers travel into central London every day to work. For these customers it may appear that hospitals closer to their home postcodes are possible alternatives for inpatient treatment. However, for many their local hospital may continue to be a weak alternative because they will begin their treatment journey with a consultant located inside central London who, being close to their place of work, is convenient to meet during the working day for the first consultation or diagnostic. Once the patient has met the consultant it becomes highly likely that they will receive inpatient care at a facility at which that consultant has practicing privileges. Therefore, while it appears that the patient has 'chosen' to have inpatient care inside central London (far away from their home postcode) this does not reflect the central London hospital being superior but rather that the patient was seeking convenient outpatient/diagnostic care inside central London.

Competition from PPUs

10. AXA PPP argued that it did not consider most NHS PPUs in London to be significant competitors currently, noting that investment in these facilities had been variable, with many being little more than a private room in an NHS environment while others offered facilities more directly comparable with a private hospital. Moreover, as they shared clinical resources, such as theatres, with the NHS, this could mean that private patients' theatre lists had to wait behind NHS patients with higher clinical priorities and private surgery could get cancelled as a result. AXA PPP also suggested that specialists had a bias towards avoiding treating their private patients in the NHS facility they worked in. However, AXA PPP also stated that there was potential for a limited number of PPUs, notably those linked to prestigious hospitals, to remain or become significant competitors in the central London 'elite' market in the

future (see paragraph 7 above for AXA PPP's description of elite hospitals). These are:

Charing Cross Hospital	Royal Brompton Hospital
Chelsea & Westminster Hospital	Royal Free Hospital
Guy's and St Thomas'	Royal Marsden Hospital (Fulham)
Hammersmith Hospital	St Bartholomew's Hospital
Harley St @ UCH	St Mary's—Lindo wing
Kings College Hospital	

11. AXA PPP, however, excluded a number of PPUs with strong but limited areas of specialism (such as the Great Ormond Street Hospital, Moorfields Eye Hospital and The Heart Hospital) since it considered that, from an insurer's perspective, in order to provide an effective alternative to HCA they would, even taken together, need to provide a much broader range of specialism than they did today.
12. While AXA PPP believed that these hospitals had the potential to develop as stronger competitors, it had particular concerns that HCA might inhibit this development by bidding to run the facilities itself. AXA PPP noted that NHS Trusts which outsourced management of their private facilities were attracted to bidders who were likely to generate the most income for the Trust, which it suggested tended to be the high-charging providers such as HCA. It cited the example of HCA's plan to take over Guy's and St Thomas' PPU which could otherwise emerge as competitor to the London Bridge.
13. WPA noted that with the exception of hospitals such as the Royal Marsden, which were slightly unusual because they were world-renowned centres, it did not regard PPUs as viable alternatives to private hospitals. It also expressed a concern that when HCA took over the running of an NHS PPU they tended to be much more expensive.

14. Aviva also argued that PPUs were not currently a competitive constraint on private hospitals and often did not feel like a private hospital experience. It noted, however, that this might change with the lifting of the private patient cap as hospitals might start to set them up differently.²⁶ The exception it noted in London was the good reputation of Guy's, which it thought HCA had expressed an interest in running. Aviva did also note that in the case of some complex surgery a consultant may recommend the use of a PPU due to the availability of NHS intensive care facilities.

Hospital views

15. HCA argued that London was one of the most competitive parts of the UK. There were a significant number of competitors in both central London and Greater London, including private hospitals and PPUs with a world-class reputation, which represented a competitive constraint.

Competition in central London

16. As regards its 'main competitors' in central London, HCA stated:
- I think that in central London the private hospitals are, of course, London Clinic and Cromwell. They are probably the most formidable competitors that we face. We also have King Edward VII, St John and Lizzies and the BMI hospital, the London Independent. There are six of those private hospitals in the central London area that are our main competitors.
17. HCA also identified NHS PPUs as a second group of competitors in central London that it thought were very competitive.

²⁶ Under the Health and Social Care Act 2012 NHS foundation trusts will be able to earn up to 49 per cent of their income from private patients, a significant increase from the current cap.

18. TLC argued that, including itself, competition for private patient activity in central London was primarily concentrated within 11 central London private (ie non-NHS) hospitals. This includes six HCA hospitals,²⁷ three charitable hospitals (TLC, the Hospital of St John and St Elizabeth and the King Edward VII's hospital) and two others (Bupa Crowell Hospital and BMI Weymouth Clinic).
19. However, [REDACTED].

Competition from hospitals outside central London

20. HCA argued that hospitals outside central London competed strongly for its patients. It suggested that there was a higher propensity to use public transport in and around London, and evidence from the National Transport Survey²⁸ showed that Londoners were prepared to travel longer for healthcare services than individuals in other parts of the country. HCA told us that it could and did not distinguish, in its pricing or other aspects of its offering, between patients in central London and patients in Greater/Outer London postcodes. Therefore, in its view, the alternative hospital choices available to a large portion of HCA's customer base located outside central London necessarily influenced HCA's competitive behaviour in a way that improved outcomes for all HCA's customers regardless of where they are located.
21. In addition to the hospitals in central London that HCA identified as its main competitors and central London NHS PPUs, HCA also identified hospitals around the edge of London as a third group of competitors. The final group of competitors HCA identified were international hospitals in other healthcare destinations such as Germany, the USA, Singapore and Thailand, which competed for international patients.

²⁷ HCA 1. The Wellington 2. Harley Street Clinic 3. The Portland 4. Princess Grace 5. London Bridge Hospital 6. Lister Hospital.

²⁸ www.gov.uk/government/organisations/departments-for-transport/series/national-travel-survey-statistics.

22. When discussing how effective a competitor it was, [X] noted that the extent it could compete with hospitals in central London had to be considered on a procedure-by-procedure basis. In this regard [X] stated:

We can credibly compete with the comparable offer in London and, where we have more complex offers in certain hospitals, [X], on those service lines we can effectively compete. We do not compete on a broad band basis at each of those individual hospitals for all of the services that the London hospitals offer.

23. [X] noted that it considered HCA was a strong competitor as many patients who lived in the outer area of London opted to be treated in central London in HCA hospitals. It suggested that this was often commuters but also patients who were not regular commuters into London that chose to be treated in central London. [X] also noted that the OFT's view [X], was that analysis of patient postcodes suggested that HCA was a strong competitor in what might otherwise be regarded as these hospitals' primary catchment. [X] view was that this applied all the way around London.

24. [X] noted that it could not compete for patients located in central London that wanted to be treated in central London. However, it identified two other groups it was seeking to attract:

In the kind of Greater London space there are about 5 million people. They have a choice to make. They can move out of London or into London and we would like to equip our hospitals on the periphery to be able to attract some of those. Then we have the 1.6 million commuters that come into London every day to work and then go back out. Many of them pass our [X] sites.

25. However, [REDACTED] also noted that although patients would travel for surgery, they would not travel for a consultation and a lot of consultations happened 9 am to 8 pm Monday to Friday. [REDACTED]
26. [REDACTED] explained that it had tried to put outpatient consulting rooms in central London ([REDACTED]) as a way to attract patients to the [REDACTED]. However, this was not a success.
27. When asked why it thought PMIs were not doing more to encourage patients to be treated in outer London facilities, Aspen noted that traditionally there had been an aura around Harley Street. Also, the insurance companies had found it difficult to direct patients to outside central London: 'I suspect that it's not that easy for them to openly direct. They have tried via various networks etc, but have never been able to do it to any great extent, to our knowledge.'
28. HCA stated that it competed for patients located outside of London. It also stated that these hospitals primarily competed for local patients: 'in the south east (outside Greater London) there are 44 independent hospitals operated by seven different organizations. These providers primarily compete for local consumers who may choose a London provider as an alternative'.

Competition from PPUs

29. HCA argued that central London PPUs represented strong competitors. It noted that although some of these facilities were 'niche' players, these hospitals often had global reputations (eg the Royal Marsden and Great Ormond Street). HCA also stated that other hospitals, including, among others, the Royal Free and the cluster of PPUs operated by Imperial and Kings College Healthcare Foundation Trust, offered a broader range of services which overlapped with its own services. It noted that the

most significant competitive threat came from PPU's expertise in high acuity tertiary specialties.

30. HCA also argued that PPUs in London, as well as already being a significant competitor to private hospitals, represented a 'sleeping giant' of potential competition that had yet to be fully realized, and which 'poses a serious threat to the continued existence of non-NHS private healthcare providers'. HCA commented that not all PPUs were as competitive as they might be. However, when it had gone into partnership with UCH, it had been able to increase its market share, suggesting that PPUs could be more formidable competitors. HCA said that it was looking for more partnerships, provided the proposed joint venture was consistent with HCA's objective and strategy. It noted that the fact that PPUs were now partnering with private providers was 'double edged', as on the one hand it represented an opportunity, but on the other a threat, if competitors partnered with the PPU. Although PPUs currently accounted for less than 10 per cent of inpatient and day-patient admissions in London, HCA's expectation was that this would [X] over the next five years.
31. HCA also provided a comment on an Aviva comment, pointing out that a number of PPUs were included on Aviva's 'Key List' of hospitals, suggesting that Aviva must therefore regard these PPUs as directly competing alternatives. HCA also pointed out that Aviva sold a 'Trust Care' product, demonstrating that an insurer could develop a low-cost product based exclusively on PPUs. HCA also made the point that central London PPUs were included in policies sold by Bupa, AXA PPP and PruHealth that did not include all HCA hospitals.
32. However, TLC argued that the London PPUs were not close competitors because they did not offer comparable services to central London private hospitals:

PPUs by definition operate as part of an NHS Hospital and thus are unable to accommodate consultants working for other NHS Trusts or private hospitals. The service they offer also falls below that expected at private hospitals both in terms of the 'customer experience' but also access to dedicated facilities on a timely basis. The weakness of competition from PPUs is most marked in relation to tertiary [care] of PMI funded patients (e.g. specialist oncology treatment) which is dominated by HCA with The [London] Clinic and the other private hospitals taking a smaller share.

33. In response to questions about PPU capacity, Kings College Hospital NHS Foundation Trust noted that there were 18 theatres and 72 Level 3 critical care beds across the trust. Priority is given to NHS patients so that NHS care is not compromised. The PPU access to these facilities is flexed accordingly.

Constraints that could prevent PMIs switching hospital provider—capacity

Insurer views

34. PMIs argued that one of the reasons they were in a weak position when negotiating with HCA was that they would need to find alternative capacity to absorb their patients were they to delist HCA.
35. AXA PPP tried to estimate the impact of delisting HCA (see paragraph 56 below). This modelling assumed that redirecting treatment to other hospitals was feasible, but noted that it would need to redirect [X] patients and it did not know if there would be available capacity in practice.

36. We also found some evidence from Bupa internal documents to suggest that it had considered this. In preparing for its recent negotiation with HCA, Bupa discussed this issue:

Removing HCA completely from the BHW networks would require alternative provision to be found elsewhere ...

[REDACTED]

37. When planning for its negotiation with HCA in 2010, Bupa noted that HCA had a particularly strong position in some specialties in London, such as [REDACTED]. It also noted that HCA were able to attract and retain consultants who practised in [REDACTED], since there were few private patient alternatives available for these doctors to use. AXA PPP noted that of the patients living in central London having treatment in the elite hospitals, [REDACTED] of the 'complex stays' occurred in an HCA facility.

Hospital views

38. TLC also suggested that there might be capacity constraints that would stop an insurer delisting HCA:

I think the difficulty for insurance companies is if they were to exclude HCA from their network, it would be difficult for all of that work to be absorbed by any one or two other providers. So that makes it difficult. ... we need to be competitively priced in order to keep in those networks. So although we couldn't absorb all the work HCA do, if we were excluded from insurer networks they could absorb all the work that we do.

39. HCA noted that the number of competitors changed as acuity increased. However, it stated that hospitals did not necessarily require level 2 or level 3 critical care support to do high acuity work, due to the ability to transfer patients to the NHS if necessary.

40. When asked whether it considered that there would be enough capacity at rival hospitals were an insurer to exclude HCA for any reason, particularly for high acuity or specialist services, HCA responded that it thought that there would be. It did, however, note that this would depend on the 'elasticity of supply' at rival hospitals such as PPUs, which in the short term it recognized could be quite low. HCA noted that this was not something it had ever had to consider or put to the test.

Constraints that could prevent PMIs switching hospital provider—customer demand

Insurer views

41. PMIs also suggested that one of the challenges they faced when negotiating with HCA was that it would be extremely difficult to delist HCA, even for a short time, due to the demands of customers, in particular corporate customers which wished to retain access for their policyholders.
42. AXA PPP argued that a PMI policy purporting to offer a full network that only included one of the seven core London hospitals would not be seen as a credible policy. In its view, professional groups based in London required access to these hospitals in their PMI policies.

Within London, certain hospitals are clearly 'must have' for servicing Corporate Customers which have employees in the south-east. Another advantage is that senior decision-makers are often based in London and have a desire to achieve the 'best' access for themselves.

We defined the 'must have' private hospitals as comprising those healthcare facilities offering the strongest professional reputation for a broad range of treatments and those which we believe are a 'must have' for our large corporate clients. We believe there to be seven such facilities, six of which are owned by HCA in addition to the London Clinic.

43. Bupa emphasized that its [REDACTED].
44. Bupa argued that measures such as network LOCI would underestimate HCA's market power [REDACTED].
45. Aviva also stressed that its largest corporate clients in London had all chosen products that allowed access to HCA facilities. It said that corporate clients regarded HCA hospitals as must have. It contrasted HCA's position with that of TLC, which would not be in the same position as HCA in a negotiation and offered lower prices accordingly (which meant it was listed on Aviva's standard 'Key' network). In practice, Aviva felt that its options in London were very limited and HCA had a monopoly over the areas it specialized in.
46. PruHealth noted that the corporate market was largely intermediated and brokers often insisted that their clients had access to HCA hospitals.
47. When planning for its ongoing negotiation with HCA, Bupa analysed demand for HCA services from corporate customers, noting that a number of large corporate customers had a strong preference for its services.
- The majority of the spend with HCA comes from BHW [Bupa Health & Wellbeing] corporate clients with [REDACTED] of their BHW revenue coming from [REDACTED] of BHW's corporate clients ...
- [REDACTED]
48. Bupa also analysed the share of its corporate spending with different HCA hospitals (Figure A1). This suggested that the [REDACTED] accounted for a significant proportion of this.

FIGURE A1

Bupa spend at HCA hospitals

[✂]

Source: Bupa.

49. Aviva argued that it could not tie back the prices charged by HCA to differentiated quality outcomes or service it provided to its customers.

Hospital views

50. HCA argued that the CC survey of corporate PMI holders did not support the view that London corporate customers required access to HCA hospitals.
51. While HCA agreed that there was a high level of corporate penetration in London and the South-East, it suggested that this gave Bupa additional bargaining power as the Bupa share of corporate PMI policies was particularly high.
52. HCA also argued that any perception that its facilities were strongly demanded by PMI clients simply reflected the quality of the service HCA provided. HCA stressed that many of its hospitals were centres of excellence which offered some of the most advanced treatments in the UK (including the NHS) and international reputations in key specialisms. It suggested that this was accepted by BUPA:
- We ask them this question almost every time we meet now ... Why do you think that with 29 per cent of the beds we are getting more than 29 per cent of your customers coming in? Essentially, they say that it is because you run really good hospitals. We say that, yes, we think that that is how it should be.
53. [✂] also noted that HCA had excellent quality hospitals which operated a high level of complexity.

The consequences of a dispute between HCA and an insurer

Insurer views

54. PMIs argued that the lack of alternatives and the various constraints on switching provider meant that it would be very costly were they to remove HCA from their network, leaving them in a weak negotiating position.
55. AXA PPP provided analysis which purported to show the impact of delisting HCA on its business. AXA PPP noted that it would make significant savings if it was able to direct patients to alternative facilities. However, it would face a significant price increase for any patients who continued to be treated at HCA facilities (which it estimated would be a [REDACTED] increase if prices were increased to rack rate). AXA PPP estimated that there would be at least [REDACTED] of patients that it would not be able to redirect to other hospitals, even in the medium term.²⁹ Based on a steady state (ie not taking into account increased lapses due to HCA being omitted from the network), AXA PPP estimated that it would lose [REDACTED] in the first year, and would need to redirect [REDACTED] of the treatment in future years to break even on an annual basis.
56. However, if HCA was excluded from the AXA PPP network, AXA PPP argued that it would need to reduce its premiums to retain business, particularly in the London region. AXA PPP also believed that in practice it would lose a significant volume of customers to other PMIs (many of which would continue to use HCA facilities). AXA PPP provided the results of its modelling to show the effect on its business, depending on the extent of any reactions from corporate customers. As set out in Table A1, AXA PPP argued that it would lose between [REDACTED] and [REDACTED] in the first year, [REDACTED].

²⁹ [REDACTED]

57. A 2010 internal Bupa document setting out internal thinking as it prepared for negotiations with HCA summarizes [REDACTED].
58. Discussing upcoming negotiations with HCA, minutes from the Bupa board meeting cite Bupa's then Managing Director explaining that [REDACTED].
59. As can be seen in Figure A2, analysis conducted by Bupa's advisers helping it prepare to enter into its most recent round of negotiations during 2012 suggest that Bupa thought it would be able to redirect [REDACTED]

FIGURE A2

Bupa analysis of delisting HCA

[REDACTED]

Source: Bupa.

FIGURE A3

Bupa analysis of delisting on corporate clients

[REDACTED]

Source: Bupa.

60. Figure A4 is another presentation prepared in 2012 by Bupa's advisers to assist preparations for Bupa's most recent negotiations with HCA. This evaluates where demand for HCA services derives, and shows which Bupa clients spend the most at HCA. This also shows what proportion of the company's overall spend HCA represents.

FIGURE A4

Bupa ‘top 20’ corporate spend with HCA

[✂]

Source: Bupa.

Hospital view

61. HCA argued that PMIs were in a strong bargaining position and the size of PMI provider was an important determinant of the scale of discounts it received, with Bupa in particular able negotiate significant discounts.
62. HCA argued that it faced a ‘critical dependency’ on the revenue stream of the top four PMIs, which accounted for 90 per cent of the PMI market. Bupa and AXA PPP, in themselves, accounted for two-thirds of the PMI market, and their bargaining power was commensurately higher. Bupa accounted for [✂] of HCA’s total revenue and Bupa and AXA PPP collectively accounted for [✂] of its total revenue. HCA stated:
- In short, failing to be recognized by a top four PMI provider, particularly BUPA and AXA PPP, can threaten the financial viability of a facility by limiting the volume of patients that can be admitted for treatment. This effect is significantly multiplied by the consultant drag effect, whereby consultants prefer to treat their patients at a single facility, and faced with a split list, choose to exit that facility altogether.
63. HCA noted that its success was dependent on being recognized by the major PMIs. While it thought the PMIs could potentially live without HCA, it could not live without them.
64. HCA also argued that in tandem with the above effect, failing to be recognized by any PMI provider represented a serious reputational risk for hospital operators.

65. HCA stated that while it has a relatively high proportion of international patients, it would not easily be able to increase the revenues of these patients to fill any spare capacity as a result of AXA PPP (or indeed any other PMI provider) delisting HCA facilities.
66. HCA also argued that even smaller PMIs had been able to secure significant discounts from it, noting that Aviva was building an increasingly strong position with London corporate subscribers, and major corporate customers included [REDACTED]. In HCA's view, [REDACTED] had secured substantial discounts from itself, [REDACTED] which effectively extended [REDACTED] discount for large corporate clients to [REDACTED]. These discounts were in recognition of [REDACTED] growth and increasingly important position in the London corporate market. As they grew even small PMIs were able to get substantial discounts.
67. HCA also argued that aside from a threat to 'delist' its facilities there were other ways by which PMIs asserted their leverage. For example, HCA noted that if PMIs refused to approve new 'innovative' treatments, this could undermine investment in new equipment or procedures. HCA said that PMI providers were in a position to constrain how hospital operators expanded and invested in new facilities and were often resistant to recognizing new facilities where they perceived that there was already sufficient capacity in a given area. HCA told us that the use of service line tenders was now a long-established tactic PMIs used to drive down prices.

Redirection of policyholders away from HCA facilities

Insurer views

68. PMIs argued that it was difficult actively to direct policyholders away from HCA facilities towards cheaper facilities. Moreover, contractual clauses HCA had with

Bupa and AXA PPP may make it more difficult to price insurance policies in such a way as to signal that HCA facilities were more expensive than other hospitals.

69. The clearest example of this type of clause was in the most recent contract with [REDACTED].
70. [REDACTED]
71. In setting out its objectives for the negotiation, [REDACTED] explained why it wanted to remove the clause: [REDACTED]
72. In further internal preparations for the negotiation, [REDACTED]. It stated that the 'nub of the problem' was that it wanted to be able to create networks which gave customers the choice over what they would pay for—and ensure that the price of the products reflected the underlying cost of provision. Customers could then exert pressure on providers to deliver value.
73. [REDACTED]. Although it did not prevent [REDACTED] from introducing new policies, neither was it tied to how much [REDACTED] spent with HCA, but instead [REDACTED].
74. Aviva currently only included HCA on its premium 'Extended' hospital list but not on its more widely-sold 'Key' hospital list. It noted that it priced its policies on a postcode by postcode basis with a focus on winning business in areas of the country where it felt it got competitive prices from hospitals. Aviva said that some years ago it tried to increase its volumes significantly in London and wrote policies for big corporates like [REDACTED] to increase its volume. However, it claimed that it did not see a notable difference in price with HCA, which continued to increase. At this stage it decided not to try to compete for SME and individual policyholders in London and decided to separate HCA hospitals from the other London hospitals so it was clear to all of its

customers that there was a premium for them, over and above the other hospital groups.

75. Aviva also noted that while it had not seen a significant number of its large corporate policyholders taking policies that did not include HCA, it was starting to have conversations with corporate customers about how they could reduce their spend in London.

Hospital view

76. HCA argued that the fact that Aviva sold a policy which included access to most of the central London independent hospitals and the main PPUs but not HCA was an example of how PMIs could exercise real negotiating leverage. It noted that on Aviva's website the 'Key' hospital list was offered as the standard default option. HCA told us that Aviva had informed it that this accounted for [REDACTED] policyholders in London with a treatment value of [REDACTED]. This, HCA suggested, was a real example of an insurer 'delisting' HCA on a mainstream PMI product.
77. [REDACTED]
78. HCA also questioned a comment made by AXA PPP that AXA PPP network products 'may be acceptable to a small sub-set of customers' only. HCA believed that both Bupa and AXA PPP had significant lower-cost network products which were increasingly diverting business away from London providers.
79. HCA argued that all of the PMIs sold products that did not include HCA. It suggested that there was no shortage of consumer choice for a network product which was not HCA hospitals. However, HCA commented that when consumers were given a choice, they liked to go to its hospitals.

80. HCA stated that the clauses in its contract with [REDACTED], had not prevented [REDACTED] from introducing and marketing its [REDACTED] policies to corporate clients in London. Furthermore, HCA had not sought to enforce this clause to prevent or restrict [REDACTED] from launching [REDACTED] policies, such as [REDACTED].
81. HCA said that the clause [REDACTED]. However, this provision had never been enforced, nor had [REDACTED], rendering the provision redundant.
82. [REDACTED] explained that it had seen Bupa's algorithms at work in its call centre and these did not appear to recommend that Bupa patients in London use its facilities. On this basis, [REDACTED] inferred that the reason for this must be some contractual restrictions that stopped certain PMIs from referring or directing patients away from HCA. [REDACTED] also argued that there was a difference between creating an incentive for PMIs to allocate or direct work to a hospital and any absolute prohibitions or restrictions on PMIs' ability to direct it anywhere else.

National negotiations

Introduction

1. This appendix reviews evidence provided by both hospital operators and PMIs relating to how they negotiate and their respective strengths and weaknesses in national negotiations. Although negotiations between PMIs and hospital operators take place at a national level, it has been suggested by PMIs that the degree of local competition between hospitals plays an important role. Our ToH3 in the AIS posited that as the main hospital groups have a number of hospitals with local market power this means that the PMIs have limited bargaining power in national negotiations, allowing such hospital groups to secure a high national price for their group of hospitals. As a result, the more hospitals with local market power that a hospital group has, the stronger its negotiating position and the better the overall price it can extract.
2. In response to the market questionnaire hospital operators and PMIs provided a very large number of documents including internal documents relating to their negotiations. Key evidence identified in our review of these documents is presented below along with views of relevant parties made in submissions and hearings.

Bargaining framework

3. Contracts between a hospital operator and a PMI are typically the product of bilateral negotiations where an agreement is reached over price and the terms on which the parties will trade with each other.
4. Economic theory states that the outcome of a bilateral negotiation such as the one between hospital operators and PMIs will depend on the parties' respective bargaining power. This will in turn depend in large part on the respective value of each party's outside option. That is the value of their next best alternative should they

fail to reach an agreement. The parties' outside options effectively place a ceiling on how much a buyer will be willing to pay to a supplier and a floor on how much a supplier will be willing to accept from a buyer. Clearly no party will enter into an agreement that is worse than that it could achieve elsewhere. The less valuable the outside options and the worse the consequences of not reaching a deal, the more likely the party will be willing to make concessions to reach a deal.

5. Key to understanding the negotiating position of hospital operators and PMIs is the extent to which PMIs can exert meaningful control over where their policyholders are treated. If PMIs cannot control where its policyholders are treated then the outside option of the hospital operator is likely to be relatively strong. Even if the hospital operator fails to reach an agreement with the PMI they will continue to treat its policyholders. On the other hand, if PMIs can determine at which hospital their policyholders are treated, without significantly harming their business in the process, this strengthens the PMIs outside option and weakens the outside option of the hospital operators. If the hospital operator faces a credible risk that it could lose a significant number of patients its outside option would either be to accept the loss of patients or seek patients from elsewhere, for example another PMI, self-pay patients, or pursue more NHS work. The greater the revenue that could be lost by the hospital operator and the less costly such a step is for the PMI the stronger the bargaining position and thus the buyer power of the PMI.
6. Underpinning the proposition that some hospital operators are in a strong bargaining position during negotiations is the argument that there may be certain hospitals to which a PMI cannot easily restrict patient access (for example due to a lack of alternatives in the area) and ownership of these hospitals provides the operator with the ability to inflate the overall contract price.

Hospital—PMI negotiations in practice

7. There is normally a principle contract that governs the relationship between a hospital and PMI. In the case of the smaller PMIs, this is often a loose annual agreement that is focused on the price of particular services. In the case of the larger PMIs, this is usually a more detailed multi-year contract (often referred to as a Hospital Agreement Plan (HAP)) that along with prices sets a number of detailed conditions. In some cases this may be augmented by smaller separate agreements covering a specific policy of the PMI (for example a low cost network product) or specific services.
8. The principal mechanism used by PMIs to control access to hospitals by policyholders is through their hospital networks. When a customer signs up with a PMI the terms of the policy will list a network of hospitals they are allowed to use. When a hospital is included on a PMI's network, this means that the PMI has committed to allow their policyholders to be treated at that hospital. An agreement between the PMI and hospital fixes the level of the fees and terms of service (eg quality standards) and in return the PMI will add the hospital to its network.
9. Our review of the documents indicates that during negotiations, hospitals seek the broadest possible recognition and assurances that they will have access to as many patients as possible, with the PMIs seeking to trade this for the lowest possible price. The more patients that the PMI can credibly deliver, or withhold, the stronger its negotiating position is likely to be. It is the ability to exclude a given hospital or hospital group from its network(s) that will give the PMIs their main lever in negotiations.

Structure of paper

10. We have received submissions from PMIs and hospital operators setting out many factors that they argued could influence the outcome of a negotiation. Each set of bilateral negotiations is going to be different and the outcome will depend on the identity of the PMI and the hospital operator involved. This appendix considers the key factors we identified as part of our review of negotiations between the main hospital groups and PMIs that are likely to most affect the outcome of those negotiations, in particular:
- (a) the importance of local factors to national negotiations, specifically, whether there are hospitals in particular locations that, given their characteristics, are ‘must have’ for a PMI and the role this plays in national negotiations;
 - (b) the extent to which PMIs can control where patients are treated and can switch demand to other providers (ie improve their own outside position and weaken the outside option of hospital). This includes:
 - (i) use of networks:
 - the credibility and consequences of a threat by a PMI to delist hospitals from its networks. From a PMI’s insurer’s perspective this is closely tied to the question of ‘must have’ hospitals considered in (a). This section considers the effect on both hospitals and PMIs;
 - adjusting the composition of individual networks; and
 - strategic recognition of new facilities/services.
 - (ii) steering patients: the use of guided referrals to direct policyholders to specific hospital operators;
 - (iii) service-line tenders: increasing competition between hospital operators for individual treatments; and
 - (iv) sponsoring new entry;
 - (c) the extent to which the relative size and financial strength of parties influences the outcome of a negotiation.

Local competitive conditions and ‘must have’ hospitals in national negotiations

11. This section considers the importance of local factors such as the degree of local competition in national negotiations. It reviews the views of the parties and internal documents in relation to the question of whether there are hospitals in particular locations, with certain characteristics, that are considered as ‘must have’ by PMIs and the extent that this may provide a hospital operator with any degree of leverage in a negotiation.

Views of the parties on local competitive conditions and ‘must have’ hospitals in national negotiations—PMIs

12. Several of the PMIs argued that their negotiating position was driven by the nature of each hospital operator’s portfolio of hospitals, in particular the number, where they were located and the competitive conditions in each local area. In their view ownership of key hospitals in locations that PMIs required access to in order to offer a credible insurance product to customers, in particular corporate customers, provided hospitals operators with a degree of negotiating leverage:
 - (a) Bupa argued that where a hospital was located in an area with no, or a very limited number of, rival hospitals located nearby (or where the rivals lacked sufficient capacity or key specialisms) the hospital was ‘must have’ in order to serve policyholders in that area. It stated that its analysis, which identified hospitals that either dominated treatments in an area (with over 80 per cent of Bupa’s claims activity) or did not have a rival within a 30 minute drive time, showed that [REDACTED] of BMI’s hospitals were ‘must have’; it also thought [REDACTED] and [REDACTED] owned a significant number of must have hospitals. However, Bupa stated that a hospital operator’s bargaining power stemmed not just from the number of must have hospitals within that operator’s portfolio but also the importance of these hospitals, in particular their impact on corporate accounts. [REDACTED]

(b) AXA PPP argued that there were some hospitals in London it regarded as ‘must have’ for servicing corporate customers which had employees in the south-east. These hospitals were distinguishable on the basis of their professional reputation (both in terms of facilities and/or consultants) and the broad range of treatments undertaken. Six of the seven hospitals it identified were operated by HCA. AXA PPP also stated that the number and proportion of ‘solus’ hospitals owned by BMI was significant. Although it did not think BMI had sought to leverage its very strong position, it was concerned that it could do in the future.

(c) Aviva argued that there were significant parts of the UK with high levels of concentration, which it defined as a single hospital operator having a market share above 70 per cent. This means that each of the large hospital operators owns facilities that it needs to recognize if it is to offer insurance with national coverage. It noted that national coverage mattered if it was to be able to offer policies to large corporate customers with employees across the UK. [✂]

(d) WPA stated that it had customers throughout the UK, in particular large corporate customers. [✂]

13. PMIs argued that if a hospital operator did own must have facilities this meant that the PMIs would have to continue to send patients to these facilities even in the event of a dispute—for example, where they failed to agree terms over a new contract. Most PMIs have therefore argued that owning a number of must have hospitals provided the hospital operator with a degree of negotiating leverage as a hospital operator with a significant number of these hospitals could take steps that would disadvantage the PMI in the event of a dispute, thus weakening the PMI’s outside option while improving its own:

(a) Aviva argued that due to the ownership of must have hospitals it was forced to recognize higher-priced facilities, even in local areas where alternative facilities

offered more competitive pricing.¹ Were it to recognize only the lower-priced provider it would be threatened with price rises at the remaining facilities that would leave it in a worse position.²

(b) Bupa argued that hospital operators leveraged their must have hospitals by negotiating their portfolio as a bloc; if the PMIs wanted access to the must have hospitals they must also recognize other hospitals in the portfolio or face significant price increases at the hospitals it must continue to use.³ If Bupa were to delist some of the hospital operator's facilities it would have to pay significantly more at the must have hospitals it could not delist, leading to higher costs for the PMI insurer while mitigating the financial consequences of the dispute for the hospital operator.⁴

(c) WPA [REDACTED]

(d) In response to the annotated issues statement AXA PPP has provided analysis which it argued showed the impact on its business of delisting HCA specifically.⁵ AXA PPP noted that it would make significant savings if it was able to direct patients to alternative facilities. However, it argued that it would face a significant price increase for any patients that continued to be treated at HCA facilities (which it estimates would be a [REDACTED] increase if prices were increased to rack rate). AXA PPP estimates that there would be at least [REDACTED] of patients that it would not be able to re-direct to other hospitals, even in the medium term.⁶ Based on a steady state (ie not taking into account increased lapses due to HCA being omitted from the network), AXA PPP estimates that it would lose c[REDACTED] in the first year, and would need to re-direct [REDACTED] per cent of the treatment in future years to break even on an annual basis.

¹ Aviva response to IS.

² Aviva response to IS, paragraph 1.18.

³ Bupa response to AIS, p33i.

⁴ Bupa response to AIS, pp28 & 29.

⁵ We understand this analysis was prepared for the purpose of its submission to the CC.

⁶ [REDACTED]

14. AXA PPP also argued that although Spire, Nuffield and Ramsay owned some solus hospitals (or hospitals that were necessary to provide an alternative to one of the other providers) it felt that, in the round, there was a balance in the relative levels of commercial leverage between Spire, these hospital operators and PMIs.⁷ PruHealth stated also that, outside London, it had not seen evidence of hospital operators using their local position to influence pricing.
15. Several PMIs have also argued that where a hospital operator owned must have hospitals then in the event of a dispute the hospital operators could engage directly with the PMI's customer that continued to use its hospitals encouraging a migration of policyholders to rival PMIs:
- (a) Both AXA PPP and Bupa argued that hospital operators might seek to damage a PMI's relationship with policyholders by suspending the ability to settle bills for treatment meaning patients had to pay in advance, or suspending the payment of invoices to the PMI for patients treated at the operator's hospitals. [✂]
 - (b) Bupa argued that a hospital operator might rally concerns among customers and intermediaries that PMI attempts to control cost would lead to lower quality, which it regarded as unfounded.⁸
16. Bupa noted that when solus hospitals were owned by a hospital group, its negotiating position was weaker as it became more difficult to take mitigating steps. For example, in a dispute with an independent hospital in a single market, mitigating steps like working with affected consultants, communicating with policyholders or even finding some short-term alternative provision for certain treatments were all more plausible than when managing a situation of being in dispute with a group

⁷ AXA PPP response to AIS, pp3 & 20.

⁸ Bupa response to AIS, p33.

across a large number of local markets simultaneously. Therefore, a dispute with a national operator was significantly more challenging and costly; [X].

Views of the parties on local competitive conditions and must have hospitals in national negotiations—hospital operators

17. Most hospital operators rejected the proposition that PMIs might be constrained in their ability to steer patients as a result of limited choice of alternative hospitals in particular areas. Several stated that in the annotated issues statement we significantly underestimated the degree of local competition, that there was sufficient alternative provision in the areas where they operated and their hospitals could not reasonably be characterized as ‘must have’ by the PMIs.^{9,10} All the main hospital groups were of the view that their own portfolio of hospitals did not provide a significant advantage in negotiations with PMIs. HCA argued that the very fact that many PMIs had a range of networks that did not provide cover for all hospitals indicated that PMIs could market networks with a subset of hospitals and suggested that policyholders would be satisfied with a subset of hospitals.¹¹
18. While Nuffield argued that local concentration did not necessarily translate directly into hospital operator leverage in national negotiations with PMIs, it did take the view that for some hospital operators this was the case.¹² Nuffield argued that there were ‘must have’ hospitals, which a PMI had little or no choice to recognize if they were to have a credible offering to large corporate customers. For a hospital to be ‘must have’ it must be located in an area with high corporate PMI penetration and have a high local market share. On this basis Nuffield believed that there were 55 must have hospitals in the UK, of which BMI, Spire and HCA controlled 89 per cent.¹³ In Nuffield’s view the concentration of must have facilities within BMI and Spire meant

⁹ HCA response to IS, paragraph 10.21.

¹⁰ Ramsay response to AIS, paragraphs 7.4 & 7.15.

¹¹ HCA response to AIS, paragraph 5.46.

¹² Nuffield response to AIS, paragraph 1.15.

¹³ Nuffield response to IS, paragraph 3.25.

that they were able to negotiate higher prices with PMIs while driving an increasing proportion of insured procedures through their portfolio of hospitals and maintain universal PMI network approval. Nuffield argued that BMI's and Spire's scale and coverage meant that PMIs must essentially build their national network by starting with BMI and Spire portfolio subsequently adding other hospitals in areas lacking coverage.¹⁴

19. Most hospital operators also argued that even if there were pockets of concentration there were few steps they could take to leverage these hospitals in a negotiation:
- (a) Several hospital operators argued that, in the event of a PMI shifting volumes away (for example, the delisting of hospitals from a PMI network), adjustments to prices at other hospitals was not leveraging 'must have' hospitals, it simply reflected the reality that price was closely tied to volume. The high fixed cost component in a hospital business meant that a loss in volume would result in an increase in unit costs.¹⁵
 - (b) Spire argued that PMIs overstated the significance of the threat of a price increase by hospital providers in the event of a dispute. It suggested that the PMI may simply refuse to pay a new price and continue to reimburse the hospital at previous year's rates.¹⁶
 - (c) BMI argued, citing evidence of being approached by Bupa, that the PMI would in any case be able to get better rates from other hospital operators if they were to delist its hospitals using the additional volume as an incentive.¹⁷
 - (d) Several argued that even in the context of a dispute the hospital operator still had a powerful incentive to continue to encourage the PMI to send volume to its hospitals as it was unable to adjust its committed fixed cost quickly and needs revenue to help mitigate these costs. [✂]

¹⁴ Nuffield response to AIS, paragraph 1.19.

¹⁵ HCA response to AIS, paragraph 5.31; BMI response to AIS, paragraph 8.8(a).

¹⁶ Spire response to AIS, paragraph 4.30.

¹⁷ BMI response to AIS, p28.

- (e) BMI also argued that due to the fact that BMI had no means to even know, let alone to actually contact the vast majority of policyholders, the likelihood it could have an impact on policyholders switching PMI was farfetched.¹⁸
- (f) HCA said that suggestions by PMIs that hospital operators may take other steps, such as billing patients directly were exaggerated. It noted that such a course of action could only take place in a situation when a valid contract between the hospital and PMI no longer exists or where the PMI had not reimbursed the hospital within the contractual period and so was in breach of contract. Furthermore, billing PMI customers directly during a commercial dispute is not a sustainable or attractive strategy for a hospital operator as it has an adverse impact on the hospitals finances and severely damages the hospital operators' reputation with patients and consultants. HCA added that billing customers directly was a course of action it was desperate to avoid and, on occasion, HCA had instead elected to write off bills.¹⁹
- (g) Spire argued that PMIs always had the ability to retaliate against activities by a hospital operator at one hospital by redirecting their customers away from another of that operator's hospitals.

Local competitive conditions and must have hospitals in national negotiations—internal documents

20. In this section we consider the internal documents of the PMIs and hospital operators as to how the portfolio of hospitals owned by a particular hospital operator can affect its negotiating position. We identify examples where, as part of their planning for negotiations, PMI and hospital operators look at where hospitals are located, assess whether there are alternative providers available in each area and evaluate how this affects their negotiating position.

¹⁸ BMI response to AIS, paragraph 8.9.

¹⁹ HCA response to AIS, paragraph 5.54.

21. Although negotiations are typically national, PMIs' and hospital operators' internal view of their respective bargaining positions is influenced by local considerations, in particular their analysis of whether there are alternative hospitals in each area and the consequence for the PMI of diverting patients to the alternatives identified.
22. Where PMIs assess their options, their internal view of their bargaining position is influenced by their assessment of:
- (a) the availability of alternative hospitals in each location that patients could be diverted to in the event of a dispute;
 - (b) the treatment cost of sending patients to these alternative hospitals were they to remove the incumbent from their networks, including any additional discounts they could secure from rival hospitals in the area; and
 - (c) the prices the PMI anticipates the incumbent hospital operator will charge at any hospital they continue to use (eg must have hospitals) in the event that they seek to divert patients to alternative hospitals where they can.
23. Bupa's negotiation planning is based around analysing its 'Best Alternative to Negotiated Agreement' (BATNA). As part of its assessment, Bupa looks at each hospital owned by a hospital group and considers the alternative hospitals available and the likely costs faced if it fell out of agreement with the group.
24. In the context of its 2011 negotiations with BMI and Spire, Bupa set out how it evaluated the alternative hospitals available. Bupa's principle model (the BATNA model) used [X] to determine if there were viable alternatives in each area. [X]
25. Bupa looked at the portfolio of hospitals owned by an operator and categorized each hospital on the basis of the analysis described above, considering competition at

each hospital location. In the 2011/12 BMI and Spire negotiations Bupa categorized each individual hospital as either [REDACTED].

26. In relation to BMI, a contemporaneous strategy document setting out Bupa's proposed approach to its negotiation states that [REDACTED] per cent of its claims spend with BMI [REDACTED]. Bupa stated in its 'sourcing strategy': [REDACTED]
27. As can be seen from Figure 1 below, in the analysis it prepared for the steering committee overseeing the negotiation, Bupa modelled what proportion of patients treated at BMI hospitals it could divert to alternative providers and how much more or less it would spend if it did so. [REDACTED]

FIGURE 1

Bupa analysis—number of BMI patients that could be diverted to alternative hospital operators and cost of doing so

[REDACTED]

Source: Bupa.

28. After the dispute with BMI, Bupa refined its analysis, stating that it needed to consider more carefully the impact on customers, which it thought was driven by the [REDACTED].
29. In negotiations with other hospital operators Bupa similarly assessed its bargaining position in relation to the number of hospitals the operator owned that were in locations with limited competition and the cost implications of transferring business elsewhere where it could do so.
- (a) The first step in Bupa's internal planning for a negotiation is what it called a 'business need' document setting out its objectives for the negotiation. [REDACTED]
- (b) In negotiations with [REDACTED], Bupa considered the location of its hospitals and the extent to which they have rivals located nearby, as well as the cost of those

rivals' facilities. Bupa's 'sourcing strategy' document stated that there were alternatives within a reasonable distance that it could transfer patients to in the event of an out-of-contract scenario. However, a factor it said it should take into account was that [REDACTED].

(c) Likewise when Bupa prepared a contingency plan at the outset of its negotiations with [REDACTED] it identified only one hospital where it would be difficult to transfer rivals to alternative providers based on travelling time. Further analysis as negotiations progressed confirmed that alternatives were available at most locations. It said: [REDACTED]

30. Analysis conducted by Bupa's advisors, [REDACTED], helping it prepare to enter into its recent round of negotiations with HCA, [REDACTED].
31. In an internal briefing document prepared for its negotiation [REDACTED] Bupa noted that it would need to secure capacity elsewhere were it to delist [REDACTED].
32. When considering its upcoming negotiations with HCA in 2010 Bupa noted that HCA had [REDACTED].
33. During Bupa's negotiations with [REDACTED], minutes from the Bupa Board meeting cite Bupa's then Managing Director explaining that [REDACTED].
34. In internal papers prepared during 2008 and 2009 when its negotiations stalled, AXA PPP considered the financial implications of delisting Spire hospitals and sending policyholders to alternative hospitals. A key part of these deliberations was its assessment of the number and locations of Spire's hospitals where it felt there were no alternatives, its spend at each of these sites and what it expected the cost to be if it kept using some Spire hospitals. An internal 'briefing note' prepared in January

2008 stated that of the 23 hospitals Spire owned at the time,²⁰ most had at least one competitor, leaving [redacted] locations²¹ (accounting for £[redacted] million of AXA PPP's spend) where AXA PPP considered there was a lack of competitors.

35. Analysis conducted by AXA PPP in 2009, and provided in a presentation to its management committee on the financial implications of removing Spire from its network noted that its 'assumptions indicate that it could operate without Spire'. The analysis presented how much business AXA PPP thought it could shift to each different hospital group and compared its existing cost of treatment with the new cost if the business was moved. AXA PPP stated that if it was able to use this additional volume to negotiate a [redacted] per cent discount, removing Spire would achieve an overall saving of £[redacted]. However, based on AXA PPP's existing rates with these operators, the overall cost would be £[redacted].
36. During negotiations with Nuffield in 2006, AXA PPP evaluated Nuffield's portfolio of hospitals and considered the options available were it to remove Nuffield from its network. At this stage, only 27 of the 40 hospitals Nuffield owned at the time were in the AXA PPP network, [redacted] of which it regarded as local monopolies. However, it noted that most of these were in smaller provincial towns such as Exeter, Hereford, Stoke and Bury St Edmunds. AXA PPP provided internal analysis it conducted during the negotiation. This identified the closest competitor for each of the 33 Nuffield hospitals, of which 11 of these hospitals were cheaper. In evaluating its options AXA PPP stated that it did not believe that the financial impact would be significant if Nuffield were outside its network for a prolonged period. In the more recent negotiations during 2010 AXA PPP considered removing Nuffield entirely from its network. Its conclusion was that that if all 22 hospitals were removed this would save

²⁰ This was prior to Spire purchasing ten hospitals from Classic.

²¹ [redacted]

it approximately £[REDACTED] million a year, plus an additional £[REDACTED] million if it could secure additional discounts from other providers. However, it did state that this would endanger a number of accounts with corporate clients.

37. Aviva reviewed its hospital procurement strategy after a dispute with Spire. As part of this it considered if it was possible to shift patients towards [REDACTED]. A challenge this document highlighted was that it thought there were [REDACTED] Spire facilities in areas with 'little competition' (representing £[REDACTED] million of spend) and [REDACTED]. As part of this assessment Aviva also stated that [REDACTED] Nuffield hospitals faced limited competition.
38. We found little evidence of smaller PMIs such as WPA and Simplyhealth evaluating local competition in this way or considering alternatives to different hospital operators.
39. As well as PMIs assessing their bargaining position with regard to the characteristics of the hospitals within the hospital operator's portfolio of hospitals, we also identified several instances where hospital operators considered their relative strength based on the local competition their hospitals face.
40. A June 2011 BMI strategy document called '[REDACTED]' described its plans for negotiations over the following year: "These negotiations centred on the big four PMIs (Bupa, AXA PPP, Aviva and PruHealth) but also shaped relationships with the larger number of smaller funders. The Bupa negotiation is critical to our success as this represents the largest volume ([REDACTED] per cent PMI market share) and the [REDACTED] discounts (at [REDACTED] per cent from "rack-rate")."
41. Under the section 'funder engagement and negotiation strategy' BMI considers its position with respect to Bupa, evaluating its portfolio of hospitals and considering the

impact they could have on the negotiation. A slide titled "[REDACTED]" divided BMI's hospital estate into three categories:

- (a) those with a strong case for exclusion ([REDACTED] hospitals), where it thought there were private competitors within sensible driving time, with similar acuity and specialty range and where exclusion would bring little disruption to Bupa members;
- (b) those where competitors' specialty range, acuity or reputation hinders BMI exclusion somewhat ([REDACTED] hospitals), stating that exclusion would cause moderate disruption to Bupa members but competitors may be willing to invest to raise standards to BMI level; and
- (c) those where Bupa cannot exclude BMI based on geography as there are no private hospitals within sensible driving time, and BMI exclusion would cause very strong disruption to Bupa members.

42. BMI then stated that if it was completely excluded from BUPA's network [REDACTED] Bupa patients using its hospitals were likely to be severely affected (based on hospitals in category A and B above), representing [REDACTED] per cent of Bupa policyholders. A further slide titled "[REDACTED]" BMI looks at the number of hospitals in each region that BMI considered before the negotiation that Bupa could not delist (category C above) and took the view that [REDACTED] of its 63 hospitals were at risk of delisting by Bupa, reflecting [REDACTED] per cent of its Bupa revenue.

43. A Spire document provides evidence suggesting that [REDACTED].

44. A spreadsheet provided by Spire, [REDACTED], evaluates the relative strength and weaknesses of each of Spire's hospitals and whether there was a risk that Bupa could exclude Spire hospitals from its network. The assessment of individual hospitals looked at the alternative hospitals within a [REDACTED] minute drive time and [REDACTED]

minute drive time from Spire sites and evaluated [REDACTED] at each. In each case Spire also summarised the main advantage or disadvantage of each Spire hospital. [REDACTED] Spire states that this document was a work in progress, however a summary output shows some of the factors Spire considered relevant in assessing an individual hospital's strengths and weaknesses. [REDACTED]

45. A Spire meeting note from [REDACTED].
46. During its negotiations with Bupa in 2006, Nuffield considered the possibility that Bupa could decide to delist some of its hospitals, identifying those hospitals it considered 'high risk' ([REDACTED] hospitals) 'medium risk' ([REDACTED] hospitals) and 'low risk' ([REDACTED] hospitals). Those hospitals it considered most at risk were those that had a low market share and a high proportion of insured revenue derived from Bupa policyholders.
47. In an internal summary of its negotiations with Bupa in 2010, Aspen considered options available if an agreement proved elusive. It noted that if the disagreement escalated Bupa might start to redirect patients to other facilities, in which case it would need to uplift prices significantly across the board possibly to rack rates. It, however, noted that redirection was probably counterproductive as Aspen's intelligence suggested its competitors were more expensive and would struggle with volumes.
48. A 2009 internal HCA document setting out its plans for negotiations with Bupa stated that it had [REDACTED].
49. PMIs argued that a hospital operator was likely to be in a strong negotiating position if many of its hospitals faced limited competition as it could disadvantage the PMI

through raising prices at must have hospitals in the event of dispute. Our review of the documentary evidence identified some examples where the possibility that a hospital operator could increase prices at hospitals that did not face significant competition appeared to have been considered by the hospital operator in the context of a negotiation.

50. In an internal Spire email from November 2010, Nigel Hawkins (head of PMI business development and contracting) considered [REDACTED].
51. An HCA planning document from HCA's previous negotiations with Bupa in 2009 [REDACTED]. However, HCA also noted that this would enable Bupa in: [REDACTED].
52. During 2009 negotiations with Aviva, [REDACTED] sought a price increase for 2010 of [REDACTED]. In response Aviva proposed an arrangement whereby it would include [REDACTED] out of [REDACTED] hospitals on its 'key' network list, with [REDACTED] hospitals being moved on to its 'extended' network list (which was only available to policyholders at a premium). In response [REDACTED] stated that if Aviva went ahead with this approach it would adjust its pricing at hospitals Aviva continued to require access to:

[REDACTED] is unable to continue positively in a relationship that unambiguously favours other hospital providers with Aviva seeking only to maintain a relationship with [REDACTED] on the basis of securing hospital coverage in areas where its preferred provider hospital organizations have no footprint ... Under these circumstances [REDACTED] is forced to respond to Aviva's intended exclusion in a firmly defensive manner to ensure that any subsequent loss of revenue is mitigated through price increases.
53. [REDACTED] response was to propose a three-tier charging structure, with [REDACTED]. All the hospitals with the largest increase were ones that Aviva had proposed to leave on its

key list. [REDACTED] also reserved the right to increase prices or remove discounts further as required and to restrict the acceptance of Aviva policies on a hospital by hospital basis, subject to four weeks' notice.'

54. In 2010, Nuffield was in negotiations with AXA PPP to try and get all its hospitals included on AXA PPP's networks. During these negotiations, Nuffield wrote to AXA PPP on 19 August 2010 protesting at AXA PPP's failure to respond positively to its offer. The letter also stated that if no agreement was reached by 1 November, it would consider removing direct settlement for AXA PPP customers (ie require AXA PPP customers to pay upfront) and remove all AXA PPP discounts (which AXA PPP estimated would mean a price rise of [REDACTED] per cent on average at a cost of £[REDACTED] million a year). However, Nuffield did not pursue its threat to increase prices significantly and the parties continued to negotiate. [REDACTED]
55. The dispute between Bupa and BMI at the end of 2011 is the only example where we have seen a failed negotiation result in the complete removal of hospitals from a PMI's networks. Bupa has argued that [REDACTED]. This is discussed in the context of that dispute in paragraph 76 et seq.
56. In relation to negotiations between HCA and Bupa and AXA PPP respectively we have also been provided with evidence that HCA's ongoing relationship with policyholders was relevant to disputes it has had with these PMIs.
57. During 2009 and 2010 a contractual dispute arose between AXA PPP and HCA as a result of AXA PPP's plans to launch its Corporate Pathways product (see paragraph 129), which did not include HCA hospitals and which HCA anticipated would 'divert patients between network providers on the grounds of price'. [REDACTED] HCA stated that holding bills results in patient being held harmless (that is, the patient is not

requested to pay any amount until the correct rate has been determined). AXA PPP argued that this meant that AXA PPP could not accurately cost its corporate clients business based on an up-to-date billing history when those contracts came up for renewal. AXA PPP provided a number of emails demonstrating the frustration of its corporate clients with this. An Internal HCA document from September 2009, titled 'AXA-PPP Update-Sept 09, setting out HCA's strategy in the event it served notice to terminate its contract with AXA PPP, stated that [REDACTED]. Internally HCA noted that [REDACTED]. An HCA document from December 2008 referred to its policy of [REDACTED].

58. AXA PPP also stated that HCA selected patients who policyholders of their corporate clients, sending letters of demand for payment. AXA PPP provided samples of these letters chasing payment, including final demand notices from a debt collection agency. An internal HCA document called 'AXA PPP Update-Sept 09' states 'large [REDACTED]'. Internally AXA PPP noted that where customers were being threatened with referral to a debt collector, AXA PPP had no choice but to pay the amount claimed in order to manage the reputational effect. In its response to the market questionnaire AXA PPP argued that it was forced to settle given that the dispute was costing it customers and damaging its reputation.
59. Internally HCA considered a number of similar steps during its negotiations with Bupa in 2009. In a document setting out its options for how to respond to Bupa's negotiating position, HCA sets out its 'escalation route' in the event that Bupa 'hold firm and talk the clock down' and an agreement was not reached by the time the contract expires. HCA states it could '[REDACTED]'.

To what extent can PMIs switch demand to alternative providers?

60. As explained in paragraph 5, the ability of the PMI to direct patients between hospitals is critical to understanding its position in a negotiation. If the PMI can

control the choice of hospital its policyholders use it will increase the credibility of any proposition to reward lower-cost hospitals with more patients or withdraw patients from high-cost facilities. This section considers arguments put forward by hospital operators that there are a number of effective steps PMIs can take to shift demand between hospital operators.

Use of Networks by PMIs

61. As noted in paragraph 8 the principle mechanism PMIs use to retain control of where policyholders are treated is a requirement that policyholders should use a hospital recognized on the network associated with their policy. By adding or removing hospitals from these networks PMIs can potentially control whether all or some of their patients are treated at a specific hospital.
62. All PMIs sell a range of policies with different sized networks. The only exception we are aware of is WPA which does not operate a restrictive network but seeks to recognize all eligible providers. If unable to reach an agreement with a hospital operator the ultimate threat available to a PMI is to remove, or threaten to remove, some or all hospitals from its networks, so that policyholders would not be able to use these hospitals under the terms of their insurance policy. This we refer to as a 'full delisting' and is discussed in paragraphs 65 to 117.
63. As PMIs often have a number of networks, they may also introduce new networks or adjust the composition of individual networks as a way to direct patients towards favoured providers, this is discussed in paragraphs 118 to 163.
64. At various points hospital operators may buy or construct a new hospital in which case they will need to obtain agreement with the PMI to include the hospital in their

network. The potential for PMIs to withhold recognition as a way to extract better terms is discussed in paragraphs 164 to 169.

Use of networks by PMIs: ‘Full delisting’ from network

65. In this section we consider evidence that the risk that a PMI may fully delist some or all of a hospital operator’s hospitals may act as a constraint during negotiations. As well as setting out the views of hospital operators and PMI this section considers internal documents which relate to:

- (a) the effect on hospital operators and PMIs of a delisting in relation to the two examples of network exclusion we are aware of, with particular reference to the recent dispute between BMI and Bupa; and
- (b) examples where hospital operators and PMIs have internally considered delisting in the context of other negotiations in particular where they have considered the credibility or anticipated effect of a delisting on either themselves or the other party.

Views of the parties regarding a ‘full delisting’—hospital operators

66. The main hospital groups said that the risk that a PMI might remove their hospital(s) from its network(s) was likely to strongly influence the outcome of a negotiation. Most of the hospital groups argued that the threat of delisting was a credible and powerful threat used by PMIs, [X]. BMI stated that as PMIs are able to delist and in doing so remove all demand from the delisted hospitals this means BMI’s ‘outside option’ (ie the alternative to reaching a deal) is very poor. Hospital operators argued that were they to face a full delisting (ie an PMI deciding not to list a hospital at all) this could have [X].

67. [X]. Several hospital operators noted that the fixed cost nature of hospitals means that the threat would have a significantly disciplining effect. For example, BMI argued

that losing significant numbers of customers during a period of delisting, coupled with a very limited ability to ‘turn off’ ongoing fixed costs, weakened its ability to withstand a protracted dispute, [§]. BMI contrasted its position with that of a PMI which it argued, in the event of a dispute, would face a stable cash flow from policyholders with, at worst, an increase in variable costs in the very short term as it diverted demand elsewhere. Several hospital operators also noted that were they delisted from a major PMI’s network there was little in the way of effective steps they could take to mitigate the effect and replace lost PMI business, in an environment where PMIs had several mitigation options.

68. A number of hospital operators argued that a delisting could also have a magnifying effect as it would lead to consultants switching hospitals in order to maintain their ability to see all private patients, regardless of the PMI.²² BMI stated that this was relevant to a delisting even by a small PMI. BMI and HCA also argued that ~~this~~ once consultants have changed their practice in this way it can continue after the hospital is relisted. They stated that a delisting may also lead to changed GP/consultant referral patterns.²³
69. Several hospital operators also noted that the recent Bupa delisting of BMI confirmed to other suppliers that Bupa was willing to carry out delistings, and confirmed the credibility of any threat to delist.²⁴ HCA pointed out that Bupa has publicly stated that it intends to continue to exclude hospital operators that it regards as too expensive.²⁵ BMI stated that delisting was not connected to a PMI’s scale, if Bupa can redirect much of its demand to other hospitals through delisting then so can other PMIs.²⁶

²² Spire response to AIS, paragraph 4.22; Nuffield response to IS, paragraph 3.36.

²³ BMI response to AIS, paragraph 8.7. HCA response to AIS, paragraph 5.130.

²⁴ Spire response to AIS, paragraph 4.35; HCA response to AIS, paragraph 5.49.

²⁵ HCA response to AIS, paragraph 5.129.

²⁶ BMI response to AIS, paragraph 8.12.

70. Spire argued that even if a PMI had to recognize a hospital for higher acuity treatments, which it does not believe to be the case, it could redirect lower acuity patients to alternative providers, which would represent the majority of its purchases. Spire stated that [REDACTED]²⁷ HCA noted that delisting of particular specialties could lead to the end of the provision of such services if there was insufficient volumes or if consultants decided to relocate their practice to an alternative hospital (because that other hospital was recognized for a more comprehensive range of services).²⁸
71. HCA argued that there was a lack of competition in the PMI market and that policyholders were often unable to switch insurance provider. HCA argued that individual PMI consumers in the UK faced an underwriting process which often meant that if they switched from their current PMI, they lose the very cover that they were seeking.²⁹ In HCA's view this constraint on switching PMI provider significantly improved a PMIs bargaining position, as it meant there was little risk that customers would migrate to rival PMI offering a more attractive hospital list in the event that a PMI removed or did not include a given hospital from its network.³⁰

Views of the parties regarding a 'full delisting'—PMIs

72. PMIs agreed that their main negotiating lever is the threat to delist a hospital operator. However, they argued that in practice this could often seriously damage their business. Paragraphs 12 to 16 set out views put forward by PMIs that many hospital operators own a number of 'must-have' hospitals in areas of the country where there is a lack of competition, and were they to delist other hospitals they would expect to face increased prices at these hospitals, making a delisting an expensive exercise. As well as these arguments relating to local competition it has

²⁷ [REDACTED]

²⁸ [HCA response to AIS, paragraph 5.100.](#)

²⁹ [HCA reply to AXA PPP, 22 February 2013, paragraphs 7.3–7.10; HCA response to IS, paragraph 6.16–6.21.](#)

³⁰ [HCA response to IS, paragraph 10.27, also response to AIS, paragraph 5.47.](#)

been argued that a delisting harms their interests as it reduces the overall attractiveness of their product:

(a) Bupa stressed that delisting a hospital was a last resort given the impact on its policyholders. Insurance customers were buying 'peace of mind', wanted to be treated when necessary and were not interested in the cost implications of their decisions when they are ill. The reputational costs of delisting a major hospital chain were such that getting into a situation where Bupa had to delist hospitals was not something that Bupa or its competitors could do again and again. The reputational impact was particularly important for a PMI as the relationship with the customer was the key asset of the business.³¹ Not only would Bupa lose share but the market would be eroded into extinction.

(b) Simplyhealth stated: 'I think it's worth stressing the point as well that we never approach any hospital on the basis that if they don't agree with us we're going to drop them from the list. Because, whether it's corporate clients or our individual customers, they want that national coverage, they want inclusivity.'

(c) WPA stated: '[REDACTED].'

73. [REDACTED]³² AXA PPP stated that it was difficult to determine what the impact of client losses would be for a PMI actually delisting a hospital operator from its network and there were few examples of actually reaching this stage.³³

74. However, AXA PPP argued that outside of London the threat of delisting a hospital could have a disciplining effect: 'the negotiating power (outside of London) is to some extent balanced by our continued efforts to manage costs and the PH providers' objective to achieve recognition for as many of their non-solus hospitals as

³¹ Bupa response to AIS, p35.

³² Bupa response to AIS, p34.

³³ AXA PPP response to AIS, paragraph 5.37.

possible'.³⁴ 'While PMI buyer power is a positive and mitigating factor up to a point it is not panacea, most acutely in relation to HCA in London.'³⁵ AXA PPP's view was that "HCA hospitals are essential for its corporate customers in the South East meaning that its choice was binary—either AXA PPP has a credible London offer for its corporate customers, which includes HCA, or it does not."³⁶ AXA PPP argued that were it to exclude HCA from its network it would need to reduce its premiums to retain customers, but in practice would still lose a significant volume of customers to other PMIs. A similar view about the consequence of delisting HCA in London was expressed by most PMIs.

75. AXA PPP has provided the results of its modelling to show the effect on its business were it to delist HCA (see paragraph 13(d)). It stressed that the impact would depend on the reactions from corporate customers. AXA PPP argued that taking this into account it would expect to lose between [X] in the first year after delisting HCA, considerably more than what it thinks would be the cost to HCA.

Bupa delisting BMI hospitals in 2011

76. We are only aware of one example of PMI removing a group of hospitals from all of its general networks as a result of failing to reach an agreement over a revised contract. This stemmed from negotiations between BMI and Bupa in 2011.³⁷ The contract (initially signed in 2008) expired on 31 December 2011 and despite protracted negotiations no agreement was reached, resulting in Bupa temporarily removing 37 BMI hospitals from its hospital networks.

77. [X] Bupa intended to remove BMI hospitals from its network in areas where there was adequate provision if they did not represent value for money compared to other

³⁴ AXA PPP response to IS, paragraph 9.1.

³⁵ AXA PPP response to AIS, p3.

³⁶ AXA PPP response to AIS, p4.

³⁷ Bupa stated that certain delisted hospitals remained on its service line networks (eg cataract) during the delisted period.

providers. Bupa also wanted to change certain contractual terms including the removal of [REDACTED].

78. During negotiations discussions involved nominal price increases or decreases (i.e. not adjusted for inflation). In August 2011 Bupa initially proposed a [REDACTED] reduction in its tariff assuming static volumes. BMI's starting position had been a [REDACTED] increase in price on static volume but in response to Bupa's desire for a [REDACTED] discount offered this in return for a [REDACTED]. In October 2011 Bupa informed BMI that it planned to delist (from 1 January 2012) 12 BMI hospitals where it considered that there was already sufficient provision. It then asked BMI to provide separate prices for BMI's other hospitals.
79. In late November BMI, rejected Bupa's request for local pricing and made a new offer which reduced its proposed price increase to [REDACTED] per cent based on static volumes (which it stated was close to inflation at the time). However, this offer included a volume discount scheme linking price to total Bupa activity [REDACTED].
80. Bupa in turn responded with a counter proposal on 1 December 2011 proposing a [REDACTED] per cent reduction on static volumes. When BMI rejected Bupa's counter proposal, Bupa's response was to inform BMI that it intended to delist a further 25 hospitals, making a total of 37 hospitals which it planned to remove from its network on 1 January 2013. Bupa also informed BMI that it had contacted consultants to advise them that it was planning to remove 37 BMI hospitals from its network. On 22 December, BMI offered a [REDACTED]. Bupa rejected this proposal and responded with an offer of a [REDACTED] discount [REDACTED]. On 1 January 2012 the contract expired without an agreement in place and the 37 BMI hospitals were delisted.

81. At this stage an agreement was quickly reached and on the 18 January all but 3 of the delisted hospitals were reinstated on the Bupa network (one of the initial 12 had been sold). The final agreement included a mechanism under [REDACTED]. Bupa has stated that [REDACTED].

Effect of the BMI delisting on Bupa

82. [REDACTED]
83. Bupa however has argued that the dispute damaged its relationship with customers. Bupa referred to the fact that it experienced a [REDACTED] in complaints over this period, peaking close to [REDACTED] customer complaints relating directly to the dispute in January 2012.
84. Bupa noted that it was particularly difficult to manage its relationship [REDACTED].
85. Support for this can be found in a December 2011 internal BMI document updating its board on the negotiation. [REDACTED] BMI noted that ‘anecdotal feedback’ suggested that there had been an increase in tendering activity by Bupa’s corporate clients seeking a safer haven while negotiations between Bupa and BMI ran their course.
86. Bupa also argued that its position was harmed when some BMI hospitals wrote to Bupa policyholders that had used BMI hospitals in the past, to inform them about the dispute and that there was the prospect that they may no longer be covered for treatment at BMI hospitals. A sample of a letter sent to patients by BMI stated that Bupa plans to delist hospitals were ‘a unilateral decision made by Bupa and our understanding is that this is part of an ongoing Bupa initiative to direct patients to healthcare facilities who charge the lowest price, rather than offering patients the best quality hospitals and consultants’. The letter went on to note that other

insurance options were available and that ‘the significant majority of these PMIs will offer you unimpeded access to both the hospital and consultant of your choice, something Bupa will not be offering in the future’. BMI board minutes from December 2011 note that BMI sent letters relating to its dispute to [REDACTED] corporate decision makers, [REDACTED] patients who had previously received care at the 12 hospitals that it expected to be delisted at that stage and [REDACTED] intermediaries.

87. Other BMI correspondence over the period advised patients how to complain to Bupa, including how to report Bupa to the FSA for making an ‘unacceptable mid-term policy change’, or (for corporately-insured patients) reporting Bupa to their HR Director. [REDACTED]
88. Bupa argued that the recent loss in market share it had experienced was in part a result of the dispute with BMI. Bupa noted that the dispute took place in the latter part of 2011 and into early 2012, [REDACTED]. Bupa stated that it did not get its share of the new clients that were coming into the market because the [REDACTED]. Bupa’s view was that [REDACTED].
89. AXA PPP noted that Bupa appeared to have lost about 6 per cent of patient volume (from 2.87 million at the end of 2011 to 2.69 million by the end of 2012), the majority of this in the first six months. This contrasts with a 3 per cent increase in AXA PPP’s UK population. AXA PPP considers the majority of Bupa’s losses would have been from its Large Corporate portfolio, one contributor of which it thought was the dispute with BMI.³⁸
90. An internal BMI document titled ‘operational and financial report—May 2012’ also commented that Bupa was losing customers. The BMI report discussed the impact of Bupa delisting/negotiations and stated that Bupa had lost [REDACTED] corporate lives since

³⁸ AXA PPP response to AIS, paragraphs 5.37 & 5.38.

January 2012, AXA PPP being the main beneficiary (estimated [REDACTED] revenue)

Although it noted that the 'root cause of the current Bupa trend is inconclusive'. BMI stated that the statistics appear to support the notion that at least some of what Bupa is losing is going to other PMIs rather than being lost from the market.

91. Bupa provided samples of unfavourable media coverage and argued that the publicity the dispute received was also very damaging. In discussing the dispute AXA PPP made the same point, 'Pictures of sad-looking people saying "Bupa would not let me go and see my consultant at BMI" in the *Daily Mail* are a disaster.'

Effect of the BMI delisting on BMI

92. BMI argued that Bupa had set out in the negotiation from the outset to send a clear signal to BMI and the market as a whole that Bupa can and will assert its authority over BMI and [REDACTED]. BMI stated that this was consistent with Bupa's stated objectives in respect of the current market investigation which included ensuring Bupa had 'the tools and authority to identify and address poor behaviour'.³⁹ [REDACTED]
93. Bupa argued that [REDACTED] as Bupa knew that BMI's debt level meant [REDACTED]. This leverage would not always be there [REDACTED]. In Bupa's view it should not be taken as evidence that Bupa or any other PMI can make credible threats to delists.
94. However BMI stated that Bupa knew that delisting 37 hospitals would [REDACTED]. BMI's long term debt, covenant compliance and equity financing were related factors, but the critical factor was that BMI had insufficient cash to fund its fixed costs for a prolonged period without work from its most important customer which represents [REDACTED] per cent of total revenue. BMI stated that there was no 'one time' effect related

³⁹ Bupa response to IS, paragraphs 1.24 & 1.125 *et seq.*

to the period of the last negotiation or to BMI's current capital structure. In particular BMI states that there was no BMI or GHG debt refinancing going on at the time.

95. In June 2011, as negotiations were at an early stage, BMI analysis considered the impact of going out of contract with Bupa. It estimated at that stage that up to [REDACTED] per cent of its Bupa revenue (£[REDACTED] million) was at risk and on this basis it would face a loss of £[REDACTED] million. BMI's view was that if it increased Bupa's prices by [REDACTED] per cent this would have a comparatively small impact on Bupa's profitability, raising Bupa costs by [REDACTED] per cent and, assuming a claims ratio of c[REDACTED] per cent, result in a net profit reduction for Bupa of [REDACTED] per cent.
96. [REDACTED] This is supported in a document setting out the situation for the BMI board after a new deal with Bupa had been negotiated: *"As a starting comment, it is important in assessing these to bear in mind context that by not reaching an agreement with Bupa, and with 37 hospitals de-listed, [REDACTED]."*
97. In a report to the Bupa Group Chief Executive on developments in negotiations as it was approaching the stage of delisting BMI, Bupa emphasized that [REDACTED].
98. As can be seen from Figure 2 below, taken from a negotiation strategy steering committee discussion document, Bupa's view during its 2011/12 negotiation with BMI was that [REDACTED]. In modelling the potential impact on BMI, Bupa estimated that were it delisted, BMI's profit on a per annum basis could [REDACTED].

FIGURE 2

Internal Bupa analysis assessing the impact on BMI of some of its hospitals being delisted

[REDACTED]

Source: Bupa.

99. In BMI's view the timing and Bupa's selection of the initial 12 de-listed hospitals was calibrated to represent 'a shot across the bows' in terms of the number of hospitals that would *"cause significant pain and a decent enough volume for it to reverberate around the market."* BMI stated that the further 25 delisted hospitals were intended to [REDACTED]. Internal Bupa documents updating the Bupa steering committee overseeing the negotiations with BMI stated that any delisting [REDACTED].
100. At the same time Bupa informed BMI of its plans to delist its hospitals it also informed consultants working at the hospitals. BMI argued that the impact was felt much earlier than the day of the delisting because of the level of notification Bupa provided to consultants, general practitioners, patients, consumers and corporate employers. Moreover this effect of the dispute with Bupa had disproportionate effect as some consultants took all of their business with them.
101. On 16 January 2012, two days before the settlement with Bupa, BMI internally discussed the problem of consultants moving their business internally "Where we are now is that the Bupa patients pre-authorised before 31 December are being flowed through the hospitals, but this activity is starting to dry up. The challenge we are facing is that, as it does so, consultants are starting to move their practices to other hospitals and with them some of their other work. [REDACTED]"
102. In updating the board that an agreement had been reached with Bupa on 18 January 2012 BMI's chief executive stated that [REDACTED].
103. Bupa also considered that this 'consultant drag' effect, whereby consultants move all of their practice to another hospital after a delisting by one PMI, could [REDACTED].

104. BMI argued that the ramification of delisting in terms of lost revenue started before the actual delisting and continued after the hospitals were re-included in the network, even though the delisting itself was for a relatively short period. During 2012 BMI's revenue from Bupa fell by [REDACTED] per cent. In its response to the annotated issues statement BMI argued that this was more noticeable at hospitals that were delisted by Bupa, citing evidence which it argued showed that the effect had been long-lasting as the decline in Bupa work at delisted hospitals continued for at least [REDACTED].
105. Although BMI was clearly concerned about the impact on itself, an update to its board in December 2011 BMI also recognised that the events were damaging to both itself and Bupa. "In parallel with the negotiations, Bupa has delisted 37 BMI units representing some [REDACTED] of Bupa revenues to BMI. This will create [REDACTED] and is in neither party's interest. Negotiations will continue, but against a background of increasing [REDACTED]".

Nuffield/AXA PPP delisting

106. Although not a recent occurrence a number of Nuffield hospitals have remained outside of AXA PPP's networks since AXA PPP created its current network structure via a competitive tender in the late 1990s. Nuffield has argued that this non-recognition by AXA PPP had caused serious harm [REDACTED], in particular because of its effect on a hospital's ability to attract and retain consultants. In 2007 Nuffield sold nine of its hospitals; analysis presented to the board during the disposal phase suggested that underperformance of five of these facilities was, at least in part, due to fact that they had not been able to secure AXA PPP recognition.
107. [REDACTED]

Internal documents which consider the credibility and effect of a delisting

108. [REDACTED]

(a) In one undated internal document setting out progress Spire considered [REDACTED].

(b) In a summary of a meeting at the start of its negotiations with Bupa [REDACTED].

(c) In the same internal note Spire considered [REDACTED].

(d) In an internal note of a meeting with Bupa on 9 February 2012, Spire considered [REDACTED].

(e) An internal Spire note of a meeting with Bupa [REDACTED].

(f) An internal Spire note of a meeting between Bupa and Spire [REDACTED].

109. In an internal email in November 2010, Spire considered how Aviva would approach their upcoming negotiations. [REDACTED]

110. In an internal document reviewing its negotiating strategy with Bupa in January 2009 HCA considered 'Bupa's sources of leverage'. [REDACTED]

111. In a document called AXA PPP Update-sept 09, HCA reflected on negotiations with AXA PPP during 2009 in the midst of a contractual dispute over AXA PPP's launch of the Corporate Pathways product. The document considered HCA's strategy in the event it served notice to terminate its contract with AXA PPP (see paragraph 57). HCA also considered AXA PPP's possible response to the termination notice, [REDACTED].

112. Paragraphs 23 to 37 set out evidence where PMIs evaluate the anticipated cost to themselves of removing a hospital operator from their network, depending on the location of the operator's hospitals and how it reacts to the delisting (for example whether it raises prices at any hospitals that are not delisted). In the internal documents below PMIs evaluate the likely effect of a delisting, either on the hospital operator, the PMI's base of policyholders or the outcome of a negotiation.

113. In January 2009, AXA PPP evaluated its options in the event that no agreement could be reached with Spire before the contract expired. An internal slide pack prepared by AXA PPP for a management committee discussion commented that AXA PPP was prepared to go out of contract with Spire if it did not agree to its commercial proposals. 'However, our belief is that our volume is critical to Spire and that they will agree to our terms rather than go out of network.'
114. Aviva considered the options open to it as it approached its negotiations with [REDACTED]. A June 2010 internal document setting out Aviva's 'clinical procurement strategy' stated that given the risks, there was a 'significant lack of appetite within the business for a confrontation [REDACTED]. Aviva considered a number of options, including not using some or all of [REDACTED]. However, it concluded that the damage to its business would be significant. For example, corporate clients [REDACTED] would not want a scheme that did not [REDACTED].
115. Bupa internal documents suggested it considered the impact of delisting HCA during its 2012/2013 negotiations. An internal briefing document prepared for the Bupa steering group overseeing negotiations with HCA noted [REDACTED].
116. Figure 3 is from a presentation prepared by Bupa advisors, showed that Bupa expects any dispute where it delisted HCA would have [REDACTED].

FIGURE 3

Bupa analysis of delisting on corporate clients

[REDACTED]

Source: Bupa.

117. When negotiations between AXA PPP and HCA looked like they could fail in December 2009 AXA PPP developed an internal project, 'Project Steller' to explore contingencies in the event that HCA raised its prices to the list price. In January

2010, AXA PPP prepared a 14-day contingency plan and detailed communications plan in the event that it opted to delist HCA hospitals. A presentation in January 2010 set out some of the issues. This identified a number of difficulties with this approach, including the fact that it might be perceived as reducing choice/perceived benefits, without providing the customer with an alternative and therefore have to pay HCA's claims. The presentation also noted that any delisting was likely to impact new business sales, retention sales (as it would have no options or only expensive options available) and some London-based large corporate renewals.

New networks and adjusting network composition

118. The networks used by different PMIs are not uniform in shape nor is their composition fixed. One of the tools available to PMIs to assert more control over where their patients are treated is to change the shape of their existing networks without fully delisting a hospital, for example adding or removing a hospital from one network or introducing a new policy that has a different network of hospitals associated with it.

Views of the parties on new networks and adjusting network composition—hospital operators

119. Most hospital operators have drawn attention to the fact that almost all PMIs operate multiple hospital networks, and argued that the threat to add or remove hospitals from a network can be used to improve the bargaining power of PMIs in negotiations with hospital operators. HCA argued that adjusting the composition of a network could have the same effect as delisting the hospital operator but avoid any cost associated with a 'full delisting'.⁴⁰

⁴⁰ HCA response to AIS, paragraph 5.38.

120. HCA argued that it continued to be delisted from at least one network offered by each of the four largest PMIs and that on each of these networks a number of HCA's central London competitors had been listed.⁴¹ Likewise, Ramsay pointed out that all the hospitals initially identified by us as being of potential concern had been excluded from at least one network by at least one PMI.⁴²
121. BMI noted that it had participated in (and in a number of instances proposed to) PMIs new networks supporting PMI products where it has offered [X] discounts in return for the PMI using its power to direct patients towards BMI. It cited as an example AXA PPP's Corporate Pathways model.

Views of the parties on new networks and adjusting network composition—PMIs

122. Bupa noted that introducing new low cost networks that offered its policyholders the choice of access to a narrower set of hospitals in exchange for a reduced premium was one tool it was using to focus volume and reward hospitals that were less costly, along with service-line tendering, open referrals and seeking to gain influence over care pathways. However, it noted that all of these things faced resistance from hospital operators.
123. [X]
124. AXA PPP stated that a challenge to introducing a restricted network such as its Corporate Pathways product was securing national coverage, which was important if the policy was to attract corporate customers.
125. Commenting on HCA's view that all PMIs sold products that did not include HCA, AXA PPP stated that it disagreed and that these products, such as lower cost

⁴¹ HCA response to AIS, paragraph 5.21.

⁴² Ramsay response to AIS, paragraph 7.9(d).

networks, demonstrated that PMIs had sufficient bargaining power against HCA. Indeed HCA was in a position to impose contractual terms that [REDACTED]. Its expectation was that such low cost products were very much at the margin and HCA still dominated the lion's share of PMI spend in London.

126. Bupa also stated that HCA had [REDACTED].

New networks and adjusting network composition—review of the evidence

127. The section below considers evidence where PMIs have sought to adjust the composition of their networks or introduce new networks with the objective of achieving further discounts from hospitals operators.

128. Examples we have identified where PMIs sought to introduce new network or amend new networks include:

- (a) AXA PPP's introduction of Corporate Pathways, a low cost restricted network aimed at corporate policyholders, and Health Online, a low cost policy aimed at personal customers;
- (b) Bupa introduced a new low cost network aimed at personal customers in 2011;
- (c) PruHealth tendered for several new networks in 2009; and
- (d) Aviva introduced a number of corporate tailored networks and considered making further adjustments to the composition of its network in 2009 and 2010.

AXA PPP Corporate Pathways and Health Online

129. In 2010 AXA PPP launched a new policy called Corporate Pathway in conjunction with BMI. In return for a [REDACTED] per cent discount on its existing network rates with BMI the scheme required a patient to be treated by BMI if they lived within 20 miles of a BMI hospital nationally or ten miles within London. With PMI skewed towards the South-East and many of its large corporate customers and their employees being

based in the Home Counties, AXA PPP noted that providing a cost-effective solution that avoided high-cost treatment in London was a key objective. Once AXA PPP had confirmed that the patient was eligible for treatment, AXA PPP referred the patient to a BMI call centre if he or she lived inside a BMI catchment and BMI would arrange treatment, including identifying a relevant consultant.

130. AXA PPP noted that this initial scheme, working exclusively with BMI, had limited success, with only [REDACTED] corporate clients and [REDACTED] lives covered, mainly due to limited national coverage. The poor take-up caused AXA PPP to revisit the design of the policy. Drawing on negotiations following the tender for its Health-on-Line (HOC) product (see paragraph 133) AXA PPP revised the scheme, adding Nuffield hospitals, TLC and some smaller hospitals to the network in order to give it broader national coverage. AXA PPP relaunched the revised scheme in January 2013. The new Corporate Pathways network now consists of around 120 hospitals—with BMI facilities accounting for approximately 50 per cent of the hospitals in this network.
131. BMI stated that the Corporate Pathways product had a major impact on the volumes that BMI undertakes for a given corporate customer. Typically, BMI said it would see its share of an individual company's acute healthcare spend [REDACTED] after a switch to Pathways. BMI considers that this showed the ability of tight networks to increase volume and capacity utilization, drive discounts and ultimately support industry rationalization.
132. AXA PPP argued that a major challenge was that the introduction of its Corporate Pathways led to a contractual dispute with HCA, which claimed it was a breach of contract (see paragraphs 57 to 58). [REDACTED], rendering the provision redundant.

133. AXA PPP has also introduced a parallel low-cost directional product for personal customers. As with its Corporate Pathways product the objective was to seek greater discounts by concentrating business at fewer hospital groups. AXA PPP's approach was to purchase a 'value' band, HOL and in May 2011 it launched a tender exercise to construct a new network. Hospitals operators were asked to discount their prices relative to their existing contracts with AXA PPP on the basis that it would be reducing its existing network of providers by 50 per cent with a maximum drive-time for patients being approximately 45 minutes.
134. The final HOL network included 130 hospitals, made up predominantly of Nuffield and BMI hospitals. BMI stated that it was willing to participate as it thought the use of a new brand would attract new policyholders that did not previously have PMI rather than encourage existing policyholders to trade down to a cheaper network. Ramsay offered [REDACTED] and secured eight hospitals on the network. TLC supported the proposition [REDACTED]. AXA PPP stated that [REDACTED] and was not part of HOL. [REDACTED].
135. Up until the start of 2012 the uptake of the AXA PPP low cost networks was minimal. Figures provided in response to the market questionnaire suggest that AXA PPP had approximately [REDACTED] policyholders on its Corporate Pathways (approximately [REDACTED] per cent of its corporate membership). However, updated figures provided by AXA PPP suggests that this has grown and there are now [REDACTED] subscribers insured (representing [REDACTED] per cent of its insured population). AXA PPP argued that in relation to London its corporate scheme had had very little success. This is discussed below in paragraph 158. At the start of 2012 there were around [REDACTED] HOL policyholders (approximately [REDACTED] per cent of its personal policyholders).

Bupa low cost network

136. In 2010 Bupa developed plans to introduce a new slimmed down 'essential access' network, which would support a new low-priced product (Bupa By You). Hospitals were to be selected on the basis of a tender exercise, with a target of approximately 170 hospitals. Bupa stated that the principle aim was to offer a new lower-cost product that would attract new customers to PMI. Bupa's tender requested hospitals bid to be part of the network by offering a discount against their existing rates. It also opted to synchronize the contracts so it could retender in future if it needed to.
137. A clause in Bupa's previous contract with HCA that stated that [REDACTED]. Bupa has explained that under the new contract [REDACTED].
138. [REDACTED], as set out below BMI and Spire were not able to reach an agreement with Bupa.
139. During June 2011, BMI and Bupa exchanged correspondence as BMI sought more information from Bupa on how the product would work, where other hospitals on the network would be located and how Bupa planned to market the product. BMI stated that it considered this information fundamental in order to be able to make a commercial decision and to accurately price its offer. Citing a need to be fair to all bidders Bupa declined to provide most of these details.
140. BMI stated that it was unable to accurately price its offer against Bupa's requirement to submit a flat discount across all their hospitals without a clear understanding of how many hospitals would be included as it would not know what volumes to expect.
- ⁴³ BMI explained that it also had concerns about whether volume assumptions would be robust for the future as Bupa reserved the right to add additional competitor

⁴³ See also Spire, paragraph 64, and Ramsay, paragraph 67 below.

hospitals in the future. In order to address Bupa's wish to choose which BMI hospitals would be included on the network BMI suggested [REDACTED].

141. BMI was concerned about Bupa policyholders trading down and 'cannibalizing' existing revenue (ie receiving a lower price to treat the patients that it would treat none the less) instead of attracting a significant number of new lives to the PMI market. It made a number proposals to address trading down and ensure that the new product accessed new demand, [REDACTED]. Bupa rejected these proposals. [REDACTED]
142. Spire expressed [REDACTED].
143. Given the non-participation of BMI and Spire, Bupa stated that the construction of the low-cost network had not been as successful as it had hoped, with significant gaps in coverage. It stated that uptake of *Bupa By You* products had been [REDACTED] covered on these products of which [REDACTED] per cent were on product options that used the Low Cost Network (as at August 2012). Data provided in response to the market questionnaire confirmed that Bupa had [REDACTED] policyholders on its low costs network. [REDACTED]
144. An internal email [REDACTED] commented on the outcome of Bupa's tender exercise, noting that there: [REDACTED]

PruHealth network revision

145. In August 2009, PruHealth organized a tender exercise to reconfigure its hospital networks and to launch a series of new insurance products. In an internal document, PruHealth described the rationale: 'Given our size in the market, we can only make a quantum shift in our hospital pricing by restricting the number of hospitals on our network lists and driving volume to these hospitals.'

146. PruHealth's proposal was to introduce a series of new networks with a varying degree of hospital inclusiveness. In response to PruHealth's tender all hospital groups responded with a discount to some degree. In January 2010, PruHealth informed the parties that it intended to structure its network as follows:
- (a) *Local network*. Made up of BMI and Spire, with a number of gap-fill hospitals included, in particular those from Nuffield.
 - (b) *National network*. Predominantly made up of BMI, Nuffield and Spire, with some backfill from other hospitals.
 - (c) *London network*. All the hospitals in the national network, augmented by BMI's four London hospitals and HCA hospitals. This would be further augmented with a number of key NHS hospitals that PruHealth felt were vital 'from a broker/customer perception'.
 - (d) *Premier network*. All the hospitals in the London network, augmented further by the remaining NHS Private Patient Units, all other NHS hospitals, and the remaining acute private hospitals in London.⁴⁴
147. An internal document reviewing the outcome of the tender exercise noted that PruHealth's view was that it had been very successful in securing 'excellent pricing submissions from the main five hospital groups'. It was also comfortable with the geographic spread of the list it produced, since it allowed for a 30-minute drive-time for 89 per cent of its membership on the local list and 91 per cent of its membership on the national list. Internal documents suggested that PruHealth anticipated saving more than 4 per cent per life per member (PLPM) by the second year of the new contract.

⁴⁴ These were: Great Ormond Street Hospital, Guy's Hospital, Moorfields Eye Hospital, Royal Brompton Hospital, St Thomas' Hospital, The Royal Marsden Hospital and University London Hospital.

148. [X] PruHealth also stated that in 2010, after the acquisition with Standard Life Healthcare, it commenced a review of its products and associated hospital lists. To streamline the product lists and increase customer choice Ramsay, Nuffield, Aspen and Circle hospitals were added to both the narrow and national list (which was renamed the 'countrywide' list).

Aviva adjustments to network composition

149. In its response to the market questionnaire Aviva stated that following a review of its procurement strategy in 2008 it sought to negotiate discounts with some hospital operators in return for increased volume, with the intention of channelling business to these providers. In an internal note prepared in advance of negotiations with [X], Aviva explained that it intended to route patients away if [X] prices were not reduced: 'Perhaps NUHC ['Norwich Union Health Care', as Aviva was previously known] has been the 'soft touch'. However, that is changing and if [X] now fail to heed that change, divergence will be inevitable ... So What's changed ... Routing is a top business priority for NUHC, as part of its transformation to a wellness provider.
150. As part of this Aviva sought to introduce tailored policies for corporate customers during 2009 and 2010 that would restrict policyholders to a limited number of lower-cost hospital facilities near to where they lived and worked. Aviva explained that these typically excluded the higher cost facilities and the savings generated through reduced claims costs were passed on to the corporate customer by way of a discount from premiums. According to Aviva it developed its tailored networks, aimed at directing business to [X] facilities with whom it had negotiated favourable deals that rewarded volume growth. Aviva provided analysis it conducted for several large corporates, showing how their costs could potentially reduce their spend by around 5 or 6 per cent.

151. As set out in an internal planning document for its tailored network Aviva planned to target patients that would otherwise be treated by [X] and to a lesser extent [X]. Its target was to reduce [X] revenue by more than £[X], [X] by more than £[X] and [X] by around £[X]. In an email to [X] in August 2009 with whom Aviva had agreed a range of volume discounts in return for increased volume, Aviva set out a number of ‘proposed network changes’ to try to move volumes in [X] favour. This included, moving a number of hospitals from its key list to its extended list, reviewing whether to recognize Circle Bath and reviewing whether to include a number of independent hospitals on all its networks.
152. However, Aviva had difficulties where it introduced a tailored network [X] which removed 12 [X] hospitals from [X] hospital list. [X]. The dispute was settled on the pragmatic basis that [X] patients would be allowed to access treatment and be fully funded at any [X] hospital, even though the 12 hospitals that were the subject of the dispute were not listed in the customers’ policy documentation. The discount provided by [X] remained in place. In relation to ‘tailored networks’ generally [X] stated that were Aviva to treat policyholders using [X] hospitals as going out of network, limiting how much it would pay for treatment, this would be a breach of contract. Internally, Aviva discussed whether or not [X] would commence legal proceedings in relation to tailored networks, noting the fact [X] had reserved the right to robustly defend further tailor networks beyond [X], which was interpreted by Aviva as a threat to sue for damages if it continued with its approach. Aviva noted that a material breach of its agreement with [X] was defined as ‘Aviva persistently undertaking an action with the intention and consequence of diverting volumes away from [X] hospital facilities’.⁴⁵
153. In an internal note of a meeting [X].

⁴⁵ [Aviva response to IS, 5.3.21.](#)

154. Attempts by Aviva to divert patients away from [X] facilities were also unsuccessful. During 2009 Aviva failed to move [X] hospitals from its key list to its extended list, as a result of [X] stating that it would raise prices significantly at certain hospitals (see paragraphs 52 and 53). Aviva also stated that its contract with [X] gave [X] the right to terminate the agreement if it undertook any action or introduced any schemes (such as those that may divert volumes away from [X]) which had a material adverse impact on [X].⁴⁶
155. Aviva stated that in its contract with [X] a material breach of the agreement was defined as ‘Aviva persistently undertaking an action with the intention and consequence of diverting volumes away from [X] facilities’.⁴⁷
156. In November 2009, [X] expressed disappointment to Aviva that initiatives to guide patients to [X] that had been the basis of the parties’ pricing agreements had not progressed further or faster citing a number of steps it had expected to see based on Aviva’s presentations to it, [X].

PMI networks in London

157. As noted above, HCA argued that it had been excluded from at least some network products of almost all PMIs, while PMIs argued that such exclusions had little impact on HCA in London and had not provided much additional negotiating leverage. This section considers the development of networks in London that do not include HCA.
158. AXA PPP stated that its weakened bargaining position in London was reflected in the low take up of products in London that did not include HCA. AXA PPP stated that so far only one firm with ‘a significant city presence’ has taken it up. It stated that in 2013, [X] corporate accounts had come up for renewal only [X] had transferred on

⁴⁶ Aviva response to IS, 5.3.21.

⁴⁷ Aviva response to IS, 5.3.22.

to Corporate Pathways. AXA PPP insures [REDACTED] FTSE 250 companies. Of these [REDACTED] have moved to Corporate Pathways, however these companies have a low presence in London (less than 10 per cent). AXA PPP insures [REDACTED] FTSE 100 companies, of which only [REDACTED] have transferred to Corporate Pathways. It noted that these companies also only had a small proportion of their staff in London. AXA PPP provided an email from [REDACTED] (a large corporate broker) to AXA PPP stating that [REDACTED] would not switch to Corporate Pathways as their use of HCA was so high.⁴⁸

159. PruHealth noted that it had offered products to corporates in London that did not include HCA, and that over the past year it has worked relatively well. It noted that it had reduced HCA's share of its London spend by [REDACTED] per cent by encouraging the use of other facilities. It noted although it could potentially persuade existing customers to accept this it was difficult to win new customers without HCA in the policy, as brokers insisted on full coverage, including HCA, and with PMIs fighting for the business they had to offer full coverage.
160. Aviva currently only includes HCA on its premium 'Extended' hospital list but not on its more widely sold 'Key' hospital list. [REDACTED]. HCA provided evidence of correspondence between itself and Aviva where Aviva indicated [REDACTED] which it argued showed how the exclusion of HCA from the extended hospital list improved Aviva's negotiating position.⁴⁹ The email cited by HCA (from Aviva to HCA) [REDACTED].
161. In its hearing Aviva stated that it priced its policies on a postcode by postcode basis with a focus on winning business in areas of the country where it felt it got competitive prices from hospitals. Aviva stated that some years ago it tried to increase its volumes significantly in London and wrote policies for big corporates like [REDACTED] to increase its volume. However, Aviva claimed it did not see a notable

⁴⁸ [REDACTED]

⁴⁹ HCA comments on the Aviva response to AIS.

difference in price with HCA, whose prices continued to increase. At this stage it decided to price at levels that reflected underlying product costs rather than following market prices which Aviva believed to be unsustainable for SME and individual policyholders in London. Aviva also decided to separate HCA hospitals from the other London hospitals so it was clear to all of its customers that there was a cost premium for them, over and above the other hospital groups. In its response to the annotated issues statement Aviva also stressed that its largest corporate clients in London have all chosen products that allow access to HCA facilities.⁵⁰

162. However, Aviva also noted that while it had not seen a significant number of its large corporate policyholders taking policies that did not include HCA, it was starting to have conversations with corporate customers about how they could reduce their spend in London.
163. On 23 December 2011 HCA internally discussed Aviva's Extended and Key hospital list and noted it had only ever been included on Aviva's extended list (although added to Fair & Square list which ended in 2009). On 22 December 2011 Aviva confirmed that it had added three private London hospitals (TLC, Bupa Cromwell and King Edward VII) to its Key list in July 2011 without previously notifying HCA. HCA noted that [✂].

Strategic recognition of new facilities

164. Where hospital operators purchase or build a new facility they will have to seek separate approval of each PMI in order to have the hospital added to the PMI's networks. The PMI may seek to withhold recognition if it perceives that by doing so it can secure improved terms in return for recognition.

⁵⁰ [Aviva response to AIS, p2.](#)

Views of parties on the strategic recognition of new facilities—hospital operators

165. Several hospital operators have made representations that PMI's have a strong negotiating position where a hospital operator asks a PMI to recognize a new facility that was not previously included on a hospital network.⁵¹ BMI noted that given the risks of PMIs refusing to recognize a facility once a hospital operator had sunk investment to create or purchase it was to be expected that hospital operator would seek contractual terms to mitigate this risk.⁵²
166. Hospital operators argued that PMIs could refuse to recognize new facilities or services without assurance that they would receive significant discounts. [X]

Views of parties on the strategic recognition of new facilities—PMIs

167. Bupa stated that once it recognized a new hospital, even in a market that had alternatives, that recognition led to consultants establishing referral patterns, care pathways and member usage of the hospital. This gave the hospital operator a degree of power over Bupa in negotiations because once the hospital was added to the network any subsequent de-recognition would disrupt those patient journeys. For this reason Bupa stated that it was reluctant to offer recognition until terms were fully agreed in advance.
168. AXA PPP stated in its response to our IS that where a hospital group acquired a hospital not currently in network, it would expect a significant discount to recognize the hospital.⁵³

⁵¹ BMI response to AIS, p36. HCA response to AIS, p51.

⁵² BMI response to AIS, p36.

⁵³ AXA PPP response to IS, paragraph 8.3.

Strategic recognition of new facilities—review of the evidence

169. The section below sets out examples where we have identified that recognition of a new facility was part of a negotiation, or where the PMI was able to secure a discount in return for recognizing a new facility:

- (a) When HCA started managing the PPU at Queen's Hospital, Romford, Bupa only recognized the facility for oncology [REDACTED].
- (b) When HCA opened its new outpatient centre in New Malden—'Harley Street at The Groves'—in spring 2010, Bupa did not initially recognize it, arguing that there was sufficient capacity in the area ([REDACTED]). Ultimately it did recognize the centre, [REDACTED].
- (c) When negotiating with Bupa during 2009, Aspen sought an increase in its rates. In an internal email, Bupa stated: [REDACTED].
- (d) Bupa stated internally in a 'market evaluation' document, prepared in 2009 to support of its upcoming negotiations with Ramsay, that [REDACTED].
- (e) According to Spire, [REDACTED].
- (f) When BMI acquired the Abbey Hospitals, [REDACTED].⁵⁴
- (g) The most recent contract between HCA and Bupa (agreed in July 2013) contains a clause that [REDACTED].

Steering patients

170. The use of networks discussed above is the principle way that PMIs guide patients towards more competitive facilities, given that the normal referral pathway involves a GP and then consultant directing a patient towards a particular hospital. However, PMIs have also been trying to find ways to assert more control where their patients are treated without resorting to reshaping their network. The more flexibility and control a PMI can exert over where a given policyholder is treated and thus the

⁵⁴ AXA PPP response to IS, paragraph 8.3.

quicker they can reward low cost hospitals with more patients, or withdraw patients from high cost facilities, the better their bargaining position is likely to be.

171. Some PMIs are therefore actively trying to ‘guide’ patients at the point of claim. For example, this may be done by requiring the policyholder to get open referral from their GP and assisting the policyholder finding a consultant, but it may also involve steering patients that do not have an open referral at the point of pre-authorization.
172. This section considers attempts by PMIs to guide patients. We also consider the hospital operators’ perspectives as to how important this is likely to be going forward and the potential impact on negotiations.

Views of the parties on steering patients—hospital operators

173. Several hospital operators noted that contracts with PMIs provided no guarantee of volumes and that there was considerable scope for PMIs to steer policyholders away from a recognized hospital even if included in a network.^{55,56} In particular hospital operators argued that the increased use of ‘open referrals’ gave the PMI considerable discretion to direct the patients’ treatment path. Spire argued that even where patients did not have an ‘open referral’ policy, PMIs can and do direct patients’ treatment paths. Some hospital operators argued that by steering patients at point of referral PMIs could control where patients were treated and hence switch demand from one hospital to another, providing considerable leverage in negotiations.
174. Spire argued that open referral was a growing trend in the market [38], although it noted that not all PMIs had followed this path.⁵⁷ Hospital operators have suggested that guiding in this way is no longer new with AXA PPP and Bupa both having

⁵⁵ Spire response to AIS, paragraph 4.14.

⁵⁶ BMI response to AIS, paragraph 8.5.

⁵⁷ Spire response to AIS, paragraph 4.16.

established open referral policies offered to corporate customers. However, Spire noted that open referral remained a relatively new dynamic in the market, and continued to develop. Spire and BMI have said that open referral was already a consideration in negotiations with PMIs.⁵⁸ Some operators argued that the fact there was excess capacity in the UK meant PMIs could readily switch between rival hospitals and this gave hospitals an incentive to try and attract this business. HCA noted that our review of corporate clients suggested there was strong support for open referral and that public statements made by PMIs suggested that they envisaged open referral becoming increasingly popular with their corporate clients.⁵⁹

175. BMI stated that it had invested significant resources in differentiating itself so as to benefit to the maximum extent possible from PMIs' ability to direct patient volumes, particularly through restricted networks and open referral.⁶⁰ BMI has made particular use of [X] to facilitate PMIs' attempts to grow demand through discounted open referral products.⁶¹

176. Spire stated that some PMIs offered incentives, including cash payments potentially worth several thousand pounds, and the retention of benefit limits and no claims bonuses, for patients to be treated on the NHS, rather than through their private scheme. HCA argued that this could improve the bargaining position of a PMI as it could target specific operators, geographic areas (eg London) or services (eg cancer).⁶²

⁵⁸ Spire response to AIS, paragraph 4.15; BMI response to AIS, paragraph 8.36.

⁵⁹ HCA response to AIS, paragraph 5.135.

⁶⁰ BMI response to AIS, paragraph 8.34.

⁶¹ BMI response to AIS, paragraph 8.35.

⁶² HCA response to AIS, paragraph 5.134.

Views of the parties on steering patients—PMIs

177. Bupa argued that its open referral service launched in 2011 improved the incentives of hospitals and doctors to compete. While the service was receiving very positive feedback from customers, it was facing significant resistance from some hospital operators. It argued that the service was still in its infancy and was not yet on a scale to provide effective discipline on hospitals.⁶³ Furthermore, open referral was of limited use if a single hospital operator dominated a local area.⁶⁴
178. Bupa commented that its open referral [§]. However, in the longer term one of its objectives was to make consultants more concerned about costs such that they become more interested in where they practised, how they practised, how the decisions they were making contributed to the end-to-end costs of care.
179. Bupa also stated that under its new agreement with HCA (signed in July 2013) [§].
180. Aviva noted that guiding patients was challenging given that it usually had little input into decisions about where patients were treated. This was typically determined by the consultant or GP making the referral.⁶⁵ Aviva stated that while the PMI might be able to develop mechanisms to influence the patient's choice of hospital its experience was that this was not effective at increasing its leverage in negotiations, due to the concentration of the large hospital chains. It noted that clauses in its contracts with [§] all limited its ability to direct patients towards less costly providers, without jeopardizing its existing agreement.⁶⁶

⁶³ Bupa response to IS, paragraph 1.81.

⁶⁴ Bupa response to AIS, p2.120.

⁶⁵ Aviva response to IS, paragraph 4.17.

⁶⁶ Aviva response to AIS, paragraphs 5.3.13–5.3.22.

Steering patients—review of the evidence

181. We set out below internal documents regarding the scope for PMIs to guide patients between hospital operators. This is considered in relation to Bupa, AXA PPP and Aviva policies.

Bupa open referral policies

182. In a slide from a 2011 internal Bupa briefing document in preparation for negotiations with [REDACTED].

FIGURE 4

Bupa slide setting out its framework for guiding patients to provider of choice

[REDACTED]

Source: Bupa.

183. Another document from a presentation Bupa gave to BMI during negotiations also suggests [REDACTED].
184. [REDACTED]
185. The main tool Bupa has introduced for directing patients, other than through its networks, is its guided referral product. This requires patients to get an unnamed or 'open referral' from their GP, rather than a referral to a named consultant. When the patient contacts Bupa for authorization it then provides a suggested list of consultants that the patient can choose from and arrange an appointment. This has been offered to all of Bupa's corporate clients since 2012. Bupa has confirmed that it will shortly offer a guided referral policy for individuals too.
186. In presentations Bupa has given to hospital operators, it has noted that hospital cost will feature in its recommendations noting that 'good end-to-end cost for that speciality' will be taken into account when recommending a consultant to the patient.

187. The documents below consider internal views of hospital operators about the likely effect of Bupa guided referral policies.
188. An internal HCA document called '2012 mid-year review' states that the [REDACTED]. HCA identified a number of solutions in response including: [REDACTED]
189. In an email attached to a Spire PMI strategy paper from September 2011 Spire refers to Bupa's overall approach to guiding: [REDACTED]
190. In an internal meeting note Spire reported a presentation by Bupa on 12 October 2011 at the onset of their negotiations. This states that [REDACTED]
191. In an undated document (that appears to have been produced in November 2011) setting plans for its 2011 negotiations with Bupa Spire states: [REDACTED]
192. [REDACTED]
193. In March 2012, in an internal 'pricing and contracting report' Spire stated [REDACTED].

AXA PPP guided referral policies

194. The AXA PPP Corporate Pathways product (see paragraph 129) is a guided referral policy and requires the policyholder to get an open referral from their GP. AXA PPP has also developed its own in-house 'Fast Track Appointments Service' and will assist policyholders to choose and make an appointment with a consultant.
195. In February 2012, AXA PPP proposed to hospital operators that were part of its HOL network (see paragraph 133) that it would refer all patients that presented with an open referral to their hospitals, in return for matching the HOL discount. AXA PPP explained that it could ensure any policyholder with an open referral would be treated

at a partnering hospital, by identifying those consultants that only carried out treatments at its partner hospitals and offering the patient a choice of specialists from this list initially. It would only refer to a different consultant if the patient requested or if it was a medical necessity. AXA PPP also noted that it had already removed the most expensive consultants by episode cost (ie consultant *plus* hospital cost) from the list used by its Fast Track Appointment Service. At the time of the market questionnaire AXA PPP noted that it was still in the process of agreeing additional discounts with its HOL hospitals in return for referring open referrals to them. [X]

Aviva directional policies

196. During 2009 and 2010 Aviva considered if it was possible to try and divert patients from [X] to [X], with whom it had negotiated agreements that rewarded additional volume with price reductions.
197. When Aviva evaluated its agreement with [X] it stated that it had demonstrated its ability to increase [X] revenue and market share, from £[X] million in 2007/08 to £[X] million in 2008/09 ([X] per cent growth) and to a projected £[X] million in 2009/10 ([X] per cent growth). However, it goes on to state 'the original intent of the deal was for Aviva to shift significant volumes to [X]. Despite some good progress, our experience over the last 2 years suggests that meeting [X]'s minimum requirement of £[X] million is a real challenge'.
198. Reviewing its strategy in 2010 Aviva stated that it was still keen on having directional policies, but recognized that it had had limited success. It noted that the amounts it could direct might only affect a single digit per cent of a hospital group's turnover. Aviva went on to state that it might take combined efforts of PMIs to influence hospital behaviour: 'we could potentially encourage our competitors to be equally

directional, so that our combined “modest” directionality is enough to change the market dynamic albeit at the cost of some medium term competitive advantage’.

Hospital responses to steering of patients

199. This section considers the views of both BMI and Spire in relation to steering of policyholders by PMIs. This overlaps closely with evidence presented in relation to how PMIs can adjust network composition or introduce new networks. These are the only two providers that have documents that set out a clear strategy in relation to this area.

BMI’s approach

200. In a strategy review in December 2009 BMI stated that its approach had been to encourage PMIs to consolidate their volume at its sites. In reviewing this strategy it asked ‘who do we believe really drives the referral—GP, Consultant or Funder?’. If it is the funder it suggested it should ‘trade price for volume’ and develop products such as ‘thin networks’, ‘guiding’ and ‘tailored products’. However, BMI stated that if PMIs could not steer referrals they were ‘price insensitive’ in which case it should ‘accept that the influence of the referral is low’ and ‘reduce discounts to insurers’ (noting that this would be incentivizing PMIs to steer work away from BMI). Other slides state: ‘[✂]’ patients. As well as ‘[✂]’.
201. In the same document BMI evaluates the opportunities to work with each PMI on guiding patients to its hospitals.

FIGURE 5

[✂]

Source: BMI.

202. BMI told us that its commercial arrangements since the date of this presentation such as the AXA PPP Pathways proposal and engagement on open referral product

innovation such as the Simplyhealth MSK trial continued to reflect a view that PMIs could steer volumes in this way. BMI stated that to support its efforts to encourage PMI guiding [REDACTED].

Spire approach

- 203. Spire provided several documents that discuss its position in relation to PMI attempts to guide patients more closely.
- 204. Spire has stated [REDACTED].
- 205. In a set of internal slides considering its relationship with PMIs, Spire noted that [REDACTED].
- 206. In a 'pricing and contracting report' from May 2011 Spire states: [REDACTED]
- 207. In a set of slides from Spire's senior leadership team meeting from April 2012 Spire [REDACTED].
- 208. In a set of internal slides called 'Aviva strategic plan' dated March 2012, Spire [REDACTED].

Service-line tenders/networks

- 209. On a number of occasions PMIs have identified specific services that could be carved out of the main PMI/hospital contract and procured separately, often via a competitive tender. Policyholders are then required only to use providers that are part of the new service-line network.

Service-line tenders—views of hospitals

210. Hospital operators noted that PMIs, in particular AXA PPP and Bupa, have used tenders to remove certain services from the scope of their contract with hospital operators.⁶⁷ HCA points out that when a PMI decides not to recognize a hospital operator for the provision of a particular treatment or service this has the same effect as a 'delisting'.⁶⁸ Furthermore, the removal of a designated specialty or medical procedure is capable of disrupting a hospital operator's ability to offer a service across the full patient pathway, eg delisting of MRI services.⁶⁹
211. BMI noted that it was not surprising that there was resistance from hospital operators when service-line networks were first introduced, as BMI took the view that it had the competed to provide a 'service bundle' and it was therefore illegitimate for a PMI, mid-term of the contract, to seek to 'salami slice' a service line while leaving other prices the same. BMI could not make commitments to fixed costs if the main service lines contributing to those fixed costs could subsequently be cherry picked away. It took time for such practices to be embedded in hospital business models.⁷⁰ However, several hospital operators stated that service-line networks were now an established feature of PMI negotiations. BMI pointed to contractual provisions permitting service-line tenders in support of this statement.⁷¹

Service-line tenders—views of PMIs

212. Bupa argued that service-line tenders could only ever apply to a sub-segment of treatments that were discrete, highly standardized across providers, for example outpatients services such as scans or simple eye operations. Bupa argued that they

⁶⁷ Ramsay response to AIS, paragraph 7.9(e).

⁶⁸ HCA response to AIS.

⁶⁹ HCA response to AIS, paragraph 5.101.

⁷⁰ BMI response to AIS, paragraphs 8.31/2.

⁷¹ HCA response to AIS, paragraph 5.136; BMI response to AIS, paragraph 8.33.

work less well for very complicated procedures or medical treatments.⁷² While Bupa [REDACTED] it noted that less than [REDACTED] per cent of its expenditure was procured in this way.

213. Bupa noted that some hospital operators [REDACTED]. Bupa stated that in its recent negotiations with HCA a key feature of the negotiation was [REDACTED]. Bupa stated that final contract [REDACTED].

Service-line tenders—review of the evidence

214. This section sets out which PMIs have introduced service-line networks for which services. It also provides evidence where projected or actual cost savings have been provided.

Bupa service-line tenders

215. Bupa has service line networks for outpatient MRI scans (2006) and cataract surgery (2007). Although these were originally established by way of a competitive tender, subsequent renewal has been on an ‘any qualified provider’ basis. Criteria for membership includes: (a) passing specific quality assessments; and (b) agreeing to Bupa’s standard outpatient MRI/Ophthalmic agreement (including pricing). Bupa is also in the process of launching an [REDACTED]. In 2012, Bupa launched the Trans Aortic Valve Implantation (TAVI) network (a specialised and relatively complex procedure).
216. Bupa stated that the first phase of its ophthalmology network resulted in overall savings in cataract treatment of around £[REDACTED] a year. The network was then retendered on an ‘any qualifying provider’ basis in April 2009 (with a fixed price of £[REDACTED] outside London and £[REDACTED] inside London). The second phase increased the number of providers to [REDACTED] and resulted in [REDACTED] a year, according to Bupa’s estimates.

⁷² Bupa response to AIS, p36.

AXA PPP service-line tenders

217. Over the last decade AXA PPP has held tenders for a scanning network (from 2000), an oral surgery network, primarily wisdom teeth extraction (developed in 2005 rolled out in 2006) and a cataract network (developed in 2006 and rolled out in 2007).
218. AXA PPP has provided claims analysis supporting the launch of its oral surgery network, suggesting in 2006 that it anticipated savings of up to £[REDACTED] a year. Another piece of analysis suggests the savings could be around £[REDACTED] over four years. Further analysis suggested actual savings of £[REDACTED] during 2009, considerably lower than expectations.
219. AXA PPP stated that cataract surgery was one of its most common procedures and it was spending over £[REDACTED] a year on [REDACTED] procedures at the time it decided to launch a stand-alone network. AXA PPP projected that its tender exercise could achieve savings of £[REDACTED] a year (or at the top end up to £[REDACTED] a year). Further analysis suggested actual savings of £[REDACTED] between 2007 and 2008 and £[REDACTED] in 2009.

Aviva—service-line tenders

220. In 2008 Aviva introduced an MRI network following a tender exercise. Aviva explained in its response to the Issues Statement that average costs were reduced from £[REDACTED] to £[REDACTED]. In considering the response to its tender Aviva estimated that it would save between £[REDACTED] and £[REDACTED] a year.

Sponsoring entry

221. It has been put to us by hospital operators that as a longer-term step a PMI could potentially work with other hospital providers to encourage them to enter a particular market.

Sponsoring entry—hospital view

222. Hospital operators argued that sponsorship did not have to take the form of financial assistance, it might involve assurance of recognition. HCA argued that in light of its size, assurance by Bupa would be enough to embolden any entrant.⁷³ HCA also argued that in the past Bupa had sponsored new entrants, in particular an extension of Charing Cross hospitals in 2005.⁷⁴ BMI (citing a letter between the parties) and Ramsay stated [REDACTED].

Sponsoring entry—PMI views

223. Bupa stated that it had considered making loans to, investments in, and/or partnering with smaller local competitors in local markets, particularly PPU's. [REDACTED]

Sponsoring new entry—review of the evidence

224. In the documents provided we have not identified any examples of a PMI sponsoring a new entrant or assisting the expansion of a hospital. During a period of dispute between St Anthony's and Bupa, Bupa considered delisting St Anthony's [REDACTED].

Size and financial strength of counter party in negotiation

225. The relative size of the parties to a negotiation could influence the strength of their respective bargaining positions. For example, in the case of the PMI, the larger it is the more revenue could potentially be lost by the hospital operator were the PMI to divert patients to alternative hospitals (ie the worse the outside option of the hospital).

226. A dispute between a hospital operator and a PMI could potentially be costly for both parties involved. The financial strength of either party may influence their negotiating position as it will affect their ability to withstand a dispute, particularly if their

⁷³ HCA response to IS, paragraph 10.33.

⁷⁴ HCA response to AIS, paragraph 5.119.

expectation is that any costs will be short term and that the other side will make concessions first.

Views of the parties about size and financial strength—hospital operators

227. As reported in paragraph 66, most hospital operators argued that were they to face a ‘full delisting’ this could have [REDACTED].⁷⁵

228. Several hospital operators have argued that the size of Bupa and AXA PPP in particular gives them significant leverage in negotiations. Given the volume of revenue they represent BMI argued that both Bupa and AXA PPP were ‘must have’ PMIs. Ramsay stated [REDACTED].⁷⁶ HCA stated that the two major PMIs were unavoidable trading partners, and [REDACTED].⁷⁷ HCA stated that it was reliant on recognition from Bupa and AXA PPP in order to generate the patient volumes required to cover its fixed costs, achieve economies of scale inherent in private healthcare provision and to attract consultants to its hospital facilities. BMI argued that Bupa’s position of great strength was demonstrated by the 2011 negotiation where it delisted 37 of its hospitals and [REDACTED].⁷⁸

229. HCA stated that a hospital wishing to compete to attract consultants had an absolute need to secure recognition of the major PMIs.⁷⁹ BMI argued that a dispute even with a small PMI would risk creating consultant drag effect and gift an advantage to rival hospitals.⁸⁰

⁷⁵ HCA response to IS, paragraph 10.44; Spire response to AIS, 4.9/10; BMI response to AIS, paragraph 8.29(b); Ramsay response to AIS, paragraph 7.9(a).

⁷⁶ Ramsay response to AIS.

⁷⁷ HCA response to IS, paragraphs 10.52 & 5.97.

⁷⁸ BMI response to AIS, paragraph 8.29.

⁷⁹ HCA response to IS, paragraph 10.49.

⁸⁰ BMI response to AIS, paragraph 8.29(c).

230. BMI also stated that although Bupa was in a unique position of strength there were many strategies open to all PMIs.⁸¹ In particular, delisting and tight or narrow network strategies were open to all PMIs regardless of scale, pointing to threats to do this from [REDACTED].⁸² According to BMI, there was good evidence that smaller PMIs such as [REDACTED] attained good deals from BMI, even without tight networks or delisting. It argued that 'incremental' revenue from small PMIs was very important and hospital operators had [REDACTED].⁸³ Ramsay argued that as [REDACTED], any of the major PMIs could single handily constrain its behaviour.⁸⁴
231. HCA also argued that the financial position of PMIs provided an advantage in negotiations. Given the relatively stable and entrenched position of the major PMIs (in particular Bupa and AXA PPP), these PMIs are able to withstand a short-term dispute with hospital operators.⁸⁵ BMI told us that as PMIs are significantly bigger than BMI, with balance sheets and cashflow that are much larger they can outlast BMI in any conceivable dispute. BMI argued that the fact that it was in a far weaker financial position than Bupa was a significant factor in the settlement of its 2011 dispute, although stressed that this was related to the structural differences between them—not a one off event such as a debt refinancing.⁸⁶ Spire [REDACTED].⁸⁷
232. BMI argued that as hospital operators had a high proportion of committed and operational costs, this meant any immediate disruption to cash flow in the event of a dispute would [REDACTED].⁸⁷ On the other hand a PMI in dispute with a hospital had stable cash flow from policyholders and at worst faced increase in variable costs before it

⁸¹ BMI response to AIS, paragraph 8.29.

⁸² BMI response to AIS, paragraph 8.29(c).

⁸³ BMI response to AIS, paragraph 8.29(c).

⁸⁴ Ramsay response to AIS, p2.

⁸⁵ HCA response to AIS, paragraph 5.128.

⁸⁶ BMI response to AIS, p39.

⁸⁷ BMI response to AIS, paragraph 8.29(b).

was able to divert demand elsewhere or reach a settlement with the hospital operator.⁸⁸

Views of the parties about size and financial strength—PMIs

233. Bupa believed that while it was an important customer it was not essential, commenting that its average share of an ‘average’ private hospital’s revenue was now under one-quarter, smaller than the revenues earned from the NHS.⁸⁹
234. Bupa argued that the effect of consultant drag, the idea that consultants might move all their business to a different hospital if they could only treat some insured patients at a hospital, was moderated significantly as:
- (a) In many cases there would be no other hospitals to which the PMI could move its business.
 - (b) Consultants retained the option to split their practice during a dispute, particularly if it expected a dispute to be short lived.
 - (c) Hospitals retained a direct relationship with the consultant on a day-to-day basis, meaning that during a dispute the hospital could mitigate the effects with key high volume consultants to increase loyalty.
 - (d) Consultant loyalty schemes reduced the likelihood that consultants would switch away during a dispute.⁹⁰
235. Aviva argued that the threat of delisting was less credible for a PMI of Aviva’s size. It stated that its 11 per cent share of the insurance market was insufficient to have a material effect.⁹¹

⁸⁸ BMI response to AIS, paragraph 8.29(b).

⁸⁹ Bupa response to AIS.

⁹⁰ Bupa response to AIS.

⁹¹ Aviva response to AIS, pp3 & 4.

236. Simplyhealth argued that any countervailing buyer power was limited to the largest PMIs and was not reflective of the entire PMI market.⁹²
237. AXA PPP stated that quite often hospital operators would give attractive prices to a smaller PMI in order to ‘clip the wings of a larger insurer’ as they did not want AXA PPP and Bupa’s high market share to persist.
238. Bupa agreed that financial strength was a key factor in a dispute, it noted that [REDACTED].
239. AXA PPP argued that HCA adopted a very effective strategy during their dispute by withholding invoices (see paragraphs 57 to 59), but noted that ‘it does involve not charging us at all for long periods of time. That I think takes a bit of bottle, essentially, and quite a lot of cashflow’.
240. Bupa stated it had considered, although not attempted, to change billing arrangements where it was in dispute with hospital operators, this could affect hospital cash flow. For example, it noted that it could move from settling bills weekly by BACS to monthly by cheque.

Review of the evidence

Size of the PMI

241. As can be seen in Figure 6, PMIs make up the single largest source of revenue for each of the hospital operators apart from Ramsay, which earns more revenue from the NHS than it does PMIs. The CC has seen no evidence in internal documents from hospital operators to suggest that they considered they would be able to replace lost insured revenue from other sources, such as NHS revenue or self-pay patients.

⁹² [Simplyhealth response to AIS, p1.](#)

FIGURE 6

Total PMI as a share of hospital revenue

[REDACTED]

Source: Hospital data.

Note: Approximately 7 per cent of overall HCA revenue remains unallocated. HCA NHS revenue may include some revenue that should be classified as 'other'. There is a discrepancy in Ramsay data representing approximately 2 per cent of overall revenue.

242. Figure 7 below shows the proportion of each hospital operator's overall revenue that each PMI represents. For BMI, HCA and Spire Bupa represents more than [REDACTED] per cent of their overall revenue. For Nuffield, Bupa represents [REDACTED] per cent and for Ramsay [REDACTED] per cent of overall revenue (reflecting its higher NHS revenues). AXA PPP represents between [REDACTED] and [REDACTED] per cent of revenue for all hospital operators apart from Ramsay where it is [REDACTED] per cent. The share represented by the other PMIs is smaller; with Aviva making up between [REDACTED] and [REDACTED] per cent of hospital revenue, PruHealth between [REDACTED] and [REDACTED] per cent, Simplyhealth between [REDACTED] and [REDACTED] per cent and WPA between [REDACTED] and [REDACTED] per cent.

FIGURE 7

Individual PMI as a share of hospital revenue, 2011

[REDACTED]

Source: CC analysis.

243. Evidence presented in relation to the Bupa BMI dispute shows that Bupa considered the impact of its size and the volume of revenue it potentially controlled in the context of a negotiation. As discussed in paragraph 98, Bupa attempted to model the implications of delisting some of BMI's hospitals and estimated that if these hospitals were delisted, BMI's profit on a per annum basis could [REDACTED].
244. In a report to the Bupa Group Chief Executive reporting on developments in negotiations as it was approaching the stage of delisting BMI, Bupa emphasized that [REDACTED].

245. BMI analysis at the early stages of its 2011 negotiations considered how much revenue it thought could be at risk if it entered a dispute with Bupa. This estimated that Bupa could withdraw up to [REDACTED] per cent of its revenue (£[REDACTED] million) from BMI by switching its demand to alternative providers. If this happened BMI [REDACTED].
246. As discussed in paragraph 96 when seeking approval from its Board in January 2011, BMI stated that if an agreement was not reached with Bupa, [REDACTED].
247. As discussed at paragraph 103 in preparing for negotiations with BMI, Bupa also considered the impact of consultant drag effect on BMI business. Bupa stated [REDACTED]. However, it also notes that it would expect a significant number of consultants to split their practice between different hospitals as ‘consultants often prefer to work out of more than one unit where this is practical’.
248. In an internal email from 2005, Bupa’s then Managing Director noted that as part of Bupa’s planning for negotiations they wanted to understand the financial robustness of Nuffield’s business, given that one of Bupa’s options was to redirect business away from Nuffield. The analysis conducted noted that: [REDACTED].
249. In paragraph 106 above we also note documents from Nuffield dating from the sale of a number of hospitals in 2007, which state that non-recognition by AXA PPP was at least a factor in the performance of these hospitals and the decision to sell. We also note that Nuffield [REDACTED].
250. We have also identified some evidence where the significance of size was considered in the context of smaller PMIs negotiating with hospital operators.

251. A document reviewing Aviva's strategy in relation to hospital negotiations in 2010 stated that its size was a factor in negotiations with [REDACTED] "our ability to exert pressure on the market is minimal – customer choice program⁹³ for example will only impact [REDACTED] turnover". Aviva asks "what sort of volumes would we need to move to exert pressure?"
252. In a March 2012 document called "Aviva strategic plan" Spire [REDACTED].
253. We have reviewed documents related to a number of examples where small PMIs have been able to secure specific discounts to help them compete for major corporate accounts. [REDACTED], as well as [REDACTED], where the PMIs were competing against Bupa or AXA PPP for a contract.

Financial strength of the parties

254. Although the size of the PMI may mean that a large proportion of revenue is potentially at risk, the strength of each party's negotiating position may also depend on its ability to hold out in event of a stand-off during negotiations.
255. Both BMI and Bupa have argued that BMI's financial position was a key factor in their negotiation. Bupa, however, suggested that this reflected a short-term opportunity given BMI debt levels and reports at the time of BMI's debt refinancing.⁹⁴ BMI, however, stated that there was no refinancing going on at this stage; its difficult financial position stemmed from loss of cash flow given Bupa's size against committed costs. As noted above in paragraph 96, [REDACTED].⁹⁵

⁹³ Aviva's strategy to try steer patients to hospitals with which it had negotiated favourable rates, see paragraph 149.

⁹⁴ See for examples: *Financial Times*, 'Vultures circle GHG as restructuring looms', 15 January 2012, available at www.ft.com/cms/s/0/4d2617e4-3e10-11e1-ac9b-00144feabdc0.html#axzz21fhIvAZI; *Financial Times*, 'Hospital group GHG teeters on the brink', 15 January 2012, available at www.ft.com/cms/s/0/8f6efbd6-3df0-11e1-91f3-00144feabdc0.html#axzz21fhIvAZI.

⁹⁵ BMI response to AIS, paragraph 8.29(b).

256. When considering its position in parallel negotiations with Spire during 2011/12, Bupa also noted that [REDACTED]. It goes on to note that Spire made a net loss in 2010, despite positive EBITDA largely due to debt interest. [REDACTED]
257. Bupa's sourcing strategy, which set out its plan for the negotiation with BMI, contrasted its ability to withstand a dispute with BMI. Bupa estimated that the impact on itself was: [REDACTED].

Empirical analysis of price outcomes in negotiations between hospital operators and PMIs

Introduction

1. This appendix sets out our empirical analysis of price outcomes in bilateral negotiations between hospital operators and PMIs. The analyses focus largely on the five largest hospital operators (HCA, BMI, Spire, Nuffield and Ramsay) and the six largest PMIs (Bupa, AXA PPP, Aviva, PruHealth, Simplyhealth and WPA). In what follows we refer to ‘insured prices’ as the prices charged by hospital operators to PMIs for treatments provided to insured patients.
2. This appendix is structured in three sections. In the first section we analyse insured prices across hospital operators, by PMI and on average. In the second section we consider drivers of these insured prices. In particular we compare, across hospital operators, insured prices (outcomes of negotiation) and characteristics of their hospital portfolios (inputs of negotiations), including characteristics reflecting the different degree of substitutability to PMIs of hospitals in these portfolios. Finally, in the last section, we analyse insured prices across PMIs and relative to self-pay patients, by hospital operator and on average.
3. The first two pieces of analysis can provide a useful insight into the degree of any market power held by hospital operators in negotiations with PMIs, while the last piece of analysis can provide a useful insight into the degree of any buyer power held by PMIs in these negotiations.

Insured price outcomes across hospital operators

Methodology

4. Comparing insured prices is not a straightforward task. Insured prices are an outcome of bilateral negotiations between hospital operators and PMIs. During negotiations, discussions typically focus on the price of the overall bundle of a hospital operator's services (or the associated revenue), with relatively little focus on the price of individual treatments.¹ The prices of individual treatments are generally not set at the hospital level, but are constant across the hospital operator's portfolio of hospitals contracted with the PMI, thus reflecting an average (national) price of the treatment. Pricing patterns can vary across hospital operators and PMIs. While a particular hospital operator may have a lower price for one treatment, this may be offset by a higher price for a different treatment. This means that comparing the price of too small a number of treatments may lead to distorted results as the hospital operator may have higher or lower prices elsewhere.
5. We have sought to address these issues by identifying two different measures of insured prices:
 - (a) a total insured revenue per admission earned by hospital operators from each PMI (in what follows we will refer to this measure as 'insured revenue per admission'): this price measure is the most inclusive, as the revenue corresponds to all the treatments provided by each hospital operator to insured patients, but it does not control for the different mix of treatments and cases within each treatment (eg more complex versus less complex cases, inpatient versus day-cases) that hospital operators may have (see paragraph 9); and
 - (b) a price index based on a common basket of treatments offered by the different hospital operators to each PMI (in what follows we will refer to this measure as

¹ This is based on the facts of the negotiations as shown by the internal documents we reviewed. To the extent that discussions take place around adjusting individual treatment prices, this will normally be done on the basis that the changes made are 'revenue neutral'.

‘insured price index’): this measure considers a subset of treatments only, but it is constructed to control for the mix of treatments provided by different hospital operators, although it does not control for the mix of cases that hospital operators may have (see paragraphs 10 to 13).²

6. Although each price measure has advantages and disadvantages the insured price index allows better ‘like with like’ comparisons and is, in this respect, preferable to the insured revenue per admission. However, given that price negotiations between hospital operators and PMIs typically focus on the bundle of all treatments provided to insured patients, rather than individual treatments, our view is that both measures are informative and have to be considered in conjunction.
7. Our analysis compares the prices charged by the five largest hospital operators (and TLC, in the comparison with HCA) to each of the six main PMIs and on average, in 2007 to 2011. Consistency of results across measures and over time provides greater confidence that results are robust.
8. The next subsections describe how the two price measures are calculated.

Insured revenue per admission

9. The insured revenue per admission is calculated on the basis of aggregated data provided by the five largest hospital operators for patients insured by the six largest PMIs in 2007 to 2011. Revenue covers total revenue earned from insured patients (including inpatient, day-patient and outpatient treatments) and admissions cover the

² Note that in the working paper [Empirical analysis methodology of price outcomes in negotiations between hospital operators and PMIs](#), published on 6 June 2013, we considered a third price measure, the average insured revenue per admission based on inpatient and day-patient treatments only in Healthcode data. We decided to drop this price measure as, although it is more comprehensive than the insured price index, it still omits outpatient revenue and can thus lead to distorted results.

total number of admissions of insured patients (including inpatient and day-patient treatments).³

Insured price index

10. The price index is constructed for a common basket of treatments offered by the different hospital operators to each PMI and is based on disaggregated insured patient invoice data provided by Healthcode.⁴ It covers inpatient and day-patient episodes for patients insured by the six PMIs in 2007 to 2011. The price measure is an average price per episode (ie patient visit), excluding consultant fees.⁵
11. The invoice data allows us to compare the prices charged by each hospital operator to each PMI for individual treatments (inpatient and day-patient). Through the construction of a price index, we compare the average price that would be charged by different hospital operators were they to treat exactly the same number of patients for the same treatments.⁶ As we want to compare the price index for a given PMI across all hospital operators, this reduces the number of common treatments in the basket that could be compared. We note that this approach is similar to the approach

³ We have used admissions as data on outpatient visits appear less reliable and recording of visits appears to differ across operators.

⁴ Healthcode response to data request. The data include information on patient visit date, discharge date, episode setting (inpatient, day-case and outpatient), surgical procedure (CCSD code), invoiced charge, and itemized charges for each treatment and service provided on the same patient visit. As part of our data cleaning process, we have removed outliers with episode prices less than £10 or more than £100,000. HCA queried whether we had a sufficient number of measurements for each provider to conduct a robust statistical analysis after applying our methodology for the price index, for example, whether we had made provision for data discrepancies between hospital operators, and the methodology adopted by us when cleaning/preparing its data for analysis. HCA also said that some of the price measures could be subject to bias because of the nature of negotiations with PMIs. Footnote 7 covers our approaches to the charges we have used. We have a larger number of treatments and proportion of expenditure covered for Bupa and AXA PPP (see Table 3). The proportion of total insured revenue for HCA is lower than that for the other four large PMIs (see Table 4). We also have a large number of treatments and proportion of expenditure covered for Bupa and AXA PPP in our comparison between HCA and TLC (see Table 7). Given these numbers and coverage and the sensitivity tests we have carried out (see paragraph 14), we believe we can place weight on our results.

⁵ To ensure that our price comparison between hospital operators is consistent, we tried to capture all charges associated with an episode of treatment—ie all charges from when the patient is admitted in a hospital for a treatment until when the patient is discharged. However, we are aware of the following issues: (a) some hospitals bundle pre- or post-operative treatments/tests in the same invoice while others may invoice separately at a later date; (b) we have no information on the condition of the patient (severity, co-morbidities, illness) which may affect the level of the charge; and (c) we are aware that there may be some errors in the data where hospital operators have billed an PMI more than once for the same procedure.

⁶ We note that this is one way to compare baskets of prices.

that several PMIs have taken in comparing the price charged by different hospital operators.⁷

12. The steps to calculate our price index across hospital operators for a given PMI are as follows:

- (a) Identify the basket of treatments⁸ that are 'purchased' by a given PMI from all hospital operators under analysis. The price of these treatments for that PMI could therefore be compared across hospital operators. Eligible treatments are those where each hospital operator has treated more than five of the PMI's patients in 2011.
- (b) For each treatment in the basket, calculate the average price per episode (ie patient visit) charged by each hospital operator to the PMI.⁹
- (c) For each treatment in the basket, calculate the hypothetical expenditure the PMI would face if it were to purchase all its requirements for this treatment (given by the total volume of patients insured by that PMI who received the treatment) from one hospital operator at the average price charged by that hospital operator to the PMI.
- (d) Sum together the hypothetical expenditures associated with each treatment in the basket to obtain the total hypothetical expenditure the PMI would incur if it were to purchase all the treatments in the basket from one hospital operator. The higher the prices charged by the hospital operator, the higher the hypothetical expenditure the PMI has to incur in order to purchase the basket of treatments from that particular hospital operator.

⁷ Examples of PMIs using a price index to compare prices across hospital operators include: Bupa's 'affordability index'; AXA PPP 'Index to national average'); and Aviva's relative price.

⁸These are CCSD treatments, where every specific surgical procedure performed on a patient has a CCSD code assigned. In the invoice data we excluded episodes with more than one CCSD code (ie the patient has had more than one surgical treatment performed) from our analysis as it is not possible to disaggregate which part of the charge is associated with each CCSD code.

⁹ In response to the working paper on [Empirical analysis methodology of price outcomes in negotiations between hospital operators and PMIs](#), published on 6 June 2013, BMI noted that 'instead of calculating the mean episode price, the CC should ensure its results are robust to calculating the median episode price at step (b). This is because the mean price may potentially be subject to considerable influence from outliers caused by atypical patients who experienced material complications and so atypical episode prices'. In relation to outliers, as noted above, we note that as part of our data cleaning of Healthcode data, we have removed outliers with episode prices less than £10 or more than £100,000.

- (e) Index the total hypothetical expenditure at one hospital operator's prices relative to the PMI's actual expenditure on the basket of treatments at the different prices charged by different hospital operators.
13. An index of 0.8 means that had the PMI purchased the treatments in the basket only from that hospital operator, it would have spent 20 per cent less on these treatments than it did in fact spend. An index of 1.2 means that had the PMI purchased the treatments in the basket only from that hospital operator, it would have spent 20 per cent more on these treatments than it did in fact spend.¹⁰
14. We have run a number of sensitivity checks on the insured price index, as described in paragraph 12, and these broadly confirm the results we obtain. In particular:
- (a) In order to investigate better the price differences across hospital operators, we have identified baskets of common treatments between two hospital operators for given PMIs (rather than across all five hospital operators) and we have considered pair-wise comparisons of the price index in 2011. This is done for a common basket of treatments where each hospital operator has treated more than five and more than 30 of the PMI's patients in 2011 (see Annex D, Tables D1 and D2);
- (b) We have constructed the common baskets of treatments across all hospital operators considering inpatient treatments only (rather than inpatient and day-patient treatments) (see Annex D, Table D3); and

¹⁰ In response to the working paper on [Empirical analysis methodology of price outcomes in negotiations between hospital operators and PMIs](#), published on 6 June 2013, BMI noted that our interpretation of differences in the price indexes can be misleading. First, BMI noted that we do not consider the implications of volume discounts for our analysis or interpretation of results. In particular, the movement of volumes across hospitals may affect the average price per episode for a given treatment in a manner which is not at all 'hypothetical' but which is instead very real. Second, BMI noted that implicit in the hypothetical movement of volume is a great deal of implausible travel, and inconvenience, suffered by patients. In reality patients will care about the location of their treatment and would need to incur significant transport costs to move wholesale across providers. BMI added that by ignoring such important factors in our analysis or interpretation we appear to be comparing 'apples and oranges'— despite our effort in terms of controlling for treatment mix. We believe that these observations do not have an impact on our analysis and/or interpretation of results. The hypothetical movement of volumes is only used as a benchmark in the analysis to compare current average episode prices and we do not imply that it is a feasible alternative. We draw conclusions based on comparing the price indices across hospital operators, which are all subject to the same assumptions in terms of calculating hypothetical benchmark.

(c) We have constructed the insured price index as described in paragraph 12 across all hospital operators excluding HCA, which allowed us to increase the size of the basket of common treatments (see Annex D, Table D4).

Results

Insured revenue per admission

15. Table 1 shows the insured revenue per admission for each hospital operator, by PMI and on average,¹¹ in 2011. The ranking between hospital operators is shown in parenthesis (1 corresponding to the highest insured revenue per admission and 5 to the lowest). The last row in the table shows the percentage difference in the average revenue per admission between pairs of operators consecutive in the ranking (for example, 1–2 indicates the percentage difference in the average revenue per admission between the highest price operator and the second highest price operator). Table 2 shows the average insured revenue per admission, the operators' ranking and the percentage differences in the average insured revenue per admission between operators in each year between 2007 and 2010.¹² The results split by PMI in 2007 to 2010 are presented in Annex A (Tables A1 to A4).

TABLE 1 Insured revenue per admission, by PMI and average—all operators, 2011

£											PMIs' volume share (admissions) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
BUPA											51
AXA PPP											26
Aviva											11
PruHealth											6
Simplyhealth											3
WPA											3
											100
Weighted average revenue per admission											
Percentage difference (%)											

Source: CC analysis.

¹¹ Averages are calculated weighting prices by volumes, expressed as number of admissions, accounted for by each PMI.

¹² Data is not available for Ramsay in 2007 and 2008 as data on total insured revenue is not available.

TABLE 2 Average insured revenue per admission—all operators, 2007 to 2010

£

		BMI		HCA		Nuffield		Ramsay		Spire	
2010	Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2009	Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2008	Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]		[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]		[X]	[X]
2007	Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]		[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]		[X]	[X]

Source: CC analysis.

Insured price index

16. In relation to the price index of a common basket of treatments offered by the different hospital operators to each PMI, Table 3 sets out the number of treatments in each PMI's basket (ie the number of treatments common across hospital operators for each PMI). As can be seen, the basket for Bupa and AXA PPP is fairly extensive, covering more than 40 per cent of their surgical expenditure (ie expenditure associated with any CCSD codes). However, for some of the smaller PMIs the basket is less comprehensive. The 176 CCSD treatments included in our baskets cover all major 16 specialties and oncology. Although the total number of treatments in the baskets differs, the most common treatments for each PMI are generally included in all the baskets.¹³ Table 4 shows the shares of each hospital operator's total insured revenue (including inpatient, day-patient and outpatient treatments) accounted for by the basket with each PMI.¹⁴

¹³ The five treatments with the highest total expenditure for all PMIs, except [X], are hip replacements (w3712), knee replacements (w4210), arthroscopy of the knee (w8500), diagnostic colonoscopy (h2002) and oesophagus gastro duodenoscopy (g6500). For [X], Arthroscopic meniscectomy (w8200) is among the top-5 treatments instead of knee replacements (w4210).

¹⁴ For each hospital operator, we calculate the revenue share of the basket constructed for each PMI out of the hospital operator's total insured revenue (inpatient, day-patient and outpatient) with that PMI. Total insured revenues are based on the Market Questionnaire responses, Section 1.

TABLE 3 Number of treatments in each PMI's basket—all operators, 2011

PMI	Number of treatments in basket	% of overall expenditure basket accounts for	% of expenditure with any CCSD code basket accounts for	% of expenditure with only one CCSD code basket accounts for
Bupa	170	[X]	[X]	[X]
AXA PPP	110	[X]	[X]	[X]
Aviva	20	[X]	[X]	[X]
PruHealth	47	[X]	[X]	[X]
Simplyhealth	22	[X]	[X]	[X]
WPA	11	[X]	[X]	[X]

Source: CC analysis.

Note: Third column: 'overall expenditure' refers to a PMI's total expenditure on all episodes, including no surgical procedure, a single surgical procedure (ie one CCSD code) or multiple surgical procedures (ie multiple CCSD codes). Fourth column: 'expenditure with any CCSD code' refers to a PMI's expenditure on admissions related to a single surgical procedure (ie one CCSD code) or multiple surgical procedures (ie multiple CCSD codes). Fifth column: 'expenditure with only one CCSD code' refers to a PMI's expenditure on admissions related to a single surgical procedure (ie one CCSD code).

TABLE 4 Share of hospital operators' total insured revenue accounted for by the basket, by PMI—all operators, 2011

	per cent				
	BMI	HCA	Nuffield	Ramsay	Spire
BUPA	27	15	42	41	29
AXA PPP	31	15	41	44	31
Aviva	16	4	20	22	15
PruHealth	49	24	28	25	53
Simplyhealth	99	10	25	25	15
WPA	13	6	14	13	12

Source: CC analysis.

17. Table 5 shows the insured price index for each hospital operator, by PMI and on average,¹⁵ in 2011.¹⁶ The ranking between hospital operators is shown in parenthesis (1 corresponding to the highest price index and 5 to the lowest). As the components and size of each basket are PMI specific, the meaningful comparison is across hospital operators for each PMI (eg BMI's price with Aviva compared with HCA's price with Aviva). The last row in the table shows the percentage difference in the average price index between pairs of operators consecutive in the ranking (for example, 1–2 indicates the percentage difference in the average price index between the highest price operator and the second highest price operator). Table 6 shows the

¹⁵ Averages are calculated weighting prices by volumes, expressed as number of admissions, accounted for by each PMI. PMIs' volume shares are calculated as total admissions in each PMI's basket relative to the total number of admissions in all baskets.

¹⁶ The results for the insured price index excluding HCA in 2011 are presented in Annex 4, Table 4. By excluding HCA, the ranking across hospital operators based on the weighted average price index remains the same. The price difference between BMI and Spire is [X], between Spire and Nuffield is approximately [X] and between Nuffield and Ramsay is approximately [X]. By considering the rankings by PMI, the relative positions of the hospital operators remain the same except for Nuffield, which gets higher rankings with the small PMIs.

average insured price index, the operators' ranking and the percentage differences in the price index between operators in each year between 2007 and 2010. The results split by PMI in 2007 to 2010 are presented in Annex A (Tables A5 to A8).

TABLE 5 Insured price index, by PMI and average—all operators, 2011

PMI	BMI		HCA		Nuffield		Ramsay		Spire		PMIs' volume share (admissions in the basket) %
Bupa	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	55
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	26
Aviva	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	7
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	7
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	3
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	2
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	100
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]			[X]	[X]	

Source: CC analysis.

TABLE 6 Average insured price index—all operators, 2007 to 2010

		BMI		HCA		Nuffield		Ramsay		Spire	
2010	Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]			[X]	[X]
2009	Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]			[X]	[X]
2008	Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]		
2007	Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
	Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]		

Source: CC analysis.

Note: Historical data seems to be less complete and we could not construct a common basket of treatments for Aviva, Simplyhealth and WPA for all or some of the years between 2007 and 2010. Therefore, the weighted average price index does not cover Aviva between 2007 to 2010, Simplyhealth between 2007 to 2008 and WPA between 2007 to 2009.

HCA

- As shown in Tables 1 and 5, in comparison with the other four largest hospital operators (ie BMI, Spire, Nuffield and Ramsay), HCA charges significantly higher prices to PMIs, individually and on average, on the basis of both price measures in 2011. The percentage difference with the second highest price operator on average,

BMI, is larger in terms of insured revenue per admission ([REDACTED]) than insured price index ([REDACTED]).

19. Similar results arise throughout the period 2007 to 2010 (Tables 2 and 6). In particular, in terms of the insured revenue per admission HCA price premium relative to the second highest price operator, BMI, ranges between [REDACTED] over the period, while in terms of the insured price index HCA price premium over the second highest price operator, BMI, ranges between [REDACTED] over the period.

Comparison with TLC insured price index

20. We assessed whether the marked price differences between HCA and the other largest hospital operators could be explained by differences in costs. In particular, the cost profile of a hospital operator such as HCA, which has almost all hospitals located in central London, is likely to be different from the cost profile of hospital operators that do not have a significant central London presence. These cost differences may arise because of (some) costs in central London being higher than in other parts of the UK and/or because of the different mix of treatments and cases provided in central London compared with the rest of the UK (eg high acuity and complex treatments). Cost differences can affect both price measures considered, but the impact of any cost difference is likely to be more significant for the insured revenue per admission than for the insured price index, as the former does not control for the mix of treatments.
21. In order to control for these possible cost differences better, we constructed a separate price index considering HCA and TLC only. TLC has been selected as it is based in central London only and, based on our review of the evidence and our analysis, it appears to be the closest competitor to HCA in terms of range of

treatments and cases provided.¹⁷ As such, the price index comparison between HCA and TLC should better control for cost differences arising from higher costs and/or from differences in the mix of treatments and cases provided in central London.

Table 7 sets out the number of treatments in each PMI's basket for HCA and TLC, while Tables 8 and 9 report the price index results in 2011 and 2007 to 2010 respectively. Note that the 2007 to 2010 results focus on Bupa and AXA PPP only, as for these PMIs historical data appear to be more complete than for other PMIs.

TABLE 7 Number of treatments in each PMI's basket—HCA and TLC, 2011

PMI	Number of treatments in basket	% of overall expenditure basket accounts for	% of expenditure with any CCSD code basket accounts for	% of expenditure with only one CCSD code basket accounts for
Bupa	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]

Source: CC analysis.

Note: Third column: 'overall expenditure' refers to a PMI's total expenditure on all episodes, including no surgical procedure, a single surgical procedure (ie one CCSD code) or multiple surgical procedures (ie multiple CCSD codes). Fourth column: 'expenditure with any CCSD code' refers to a PMI's expenditure on admissions related to a single surgical procedure (ie one CCSD code) or multiple surgical procedures (ie multiple CCSD codes). Fifth column: 'expenditure with only one CCSD code' refers to a PMI's expenditure on admissions related to a single surgical procedure (ie one CCSD code).

TABLE 8 Insured price index, by PMI and average—HCA and TLC, 2011

PMI	HCA	TLC	% difference between HCA and TLC price index	PMIs' volume shares (admissions in the basket) %
Bupa	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]
Weighted average price index	[X]	[X]	[X]	

Source: CC analysis.

¹⁷ See Appendix 6.10.

TABLE 9 Insured price index for Bupa and AXA PPP—HCA and TLC, 2007 to 2010

	PMI	HCA	TLC	% difference between HCA and TLC price index	PMIs' volume shares (admissions in the basket)
2010	Bupa	[X]	[X]	[X]	[X]
	AXA PPP	[X]	[X]	[X]	[X]
2009	Bupa	[X]	[X]	[X]	[X]
	AXA PPP	[X]	[X]	[X]	[X]
2008	Bupa	[X]	[X]	[X]	[X]
	AXA PPP	[X]	[X]	[X]	[X]
2007	Bupa	[X]	[X]	[X]	[X]
	AXA PPP	[X]	[X]	[X]	[X]

Source: CC analysis.

22. Table 8 shows that on the basis of the insured price index TLC is cheaper than HCA by [X] on average in 2011. In relation to individual PMIs, with the exception of [X], TLC is cheaper than HCA for all other PMIs in 2011. [X] As shown in Table 9, similar results hold for 2007 to 2010, [X].
23. These results indicate that, even when we control for (some) cost differences by comparing HCA with TLC (rather than with the other largest hospital operators), HCA has the highest price index on average [X]. Overall, as HCA insured price index is still higher than that of its closest competitor, this suggests that at least part of the difference in insured prices between HCA and the other large hospital operators (ie BMI, Spire, Nuffield and Ramsay) is not explained by differences in costs, ie by (some) costs for HCA being potentially higher because of the central London location and/or the different mix of treatments and cases provided.

The other four largest operators (excluding HCA)

24. As shown in Tables 1 and 5, of the other four largest hospital operators (ie excluding HCA), BMI charges on average the highest prices to PMIs and Spire charges the second highest prices, followed by Nuffield and Ramsay, on the basis of both price measures in 2011. The price difference based on the average insured revenue per

admission is [X] per cent between BMI and Spire, and [X] cent between Spire and Ramsay, [X].

25. In relation to individual PMIs, [X].

26. On the other hand, [X].

27. As shown by Tables 2 and 6, over the period 2007 to 2010 BMI is consistently the highest price operator on average on the basis of both price measures. Spire is the second highest price operator on average over the period on the basis of the insured revenue per admission, but not on the basis of the insured price index. [X]

Insured price index across hospital operators and over time

28. For Bupa and AXA PPP, we calculated the insured price index for a common basket of treatments across all hospital operators and across all years (2007 to 2011) using the same methodology described in paragraph 12.¹⁸ We focused on Bupa and AXA PPP only, as for these PMIs historical data appear to be more complete. Comparing the insured price index across hospital operators and over time on the basis of the same basket complements the analysis described in the previous section. In particular, it allows us to investigate whether the relative positions of the different hospital operators changed over time, both in terms of price and ranking, considering the same set of treatments over the period.

29. It should be noted, however, that, given how the insured price index is constructed, comparing the price index for each operator over the period considered shows how the prices of that hospital operator relative to the average prices charged by other

¹⁸ This is based on the Healthcode data described in paragraph 10. Eligible treatments described in paragraph 12(a) are those where each hospital operator treated more than five of the PMI's patients in each year from 2007 to 2011.

hospital operators changed over time. However, it cannot be inferred from these results whether the prices of the hospital operator increased or decreased over time.

30. Tables 10 and 11 present the insured price index calculated for Bupa and AXA PPP respectively across all hospital operators over the period 2007 to 2011. As shown by the tables, the ranking of the hospital operators is consistent across all years, except in three cases [X].

TABLE 10 Insured price index for Bupa—all operators across 2007 to 2011

	BMI		HCA		Nuffield		Ramsay		Spire		Basketsize	Basket volume (admissions)	% of expenditure with only one CCSD code basket accounts for
2011	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2010	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2009	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2008	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2007	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE 11 Insured price index for AXA PPP—all operators across 2007 to 2011

	BMI		HCA		Nuffield		Ramsay		Spire		Basket size	Basket volume (admissions)	% of expenditure with only one CCSD code basket accounts for
2011	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2010	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2009	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2008	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
2007	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

31. As the price index results for each operator do not vary significantly across years, whether in terms of index value or hospital operators' ranking, we looked at a (simple) average of the price indices across 2008 to 2011 for Bupa and AXA PPP.¹⁹ We excluded 2007 from the average as the basket volume, in terms of admissions accounted for by the basket, is significantly smaller in this year than in other years, which reflects the less complete data we have in earlier years. Table 12 shows the

¹⁹ This allows us to look at a single average difference in insured prices between operators across years (see Table 13).

average 2008 to 2011 insured price index calculated for Bupa and AXA PPP as well as an average of the results for the two PMIs weighted by the size of admissions in the basket accounted for by each PMI.²⁰

TABLE 12 Average 2008 to 2011 insured price index for Bupa and AXA PPP—all operators

	<i>BMI</i>		<i>HCA</i>		<i>Nuffield</i>		<i>Ramsay</i>		<i>Spire</i>	
Bupa	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

32. We calculated the percentage difference in the average price index between hospital operators on the basis of their rankings in the weighted average price index presented in the last row of Table 12 (ie HCA first, BMI second, Spire third etc). The results are presented in Table 13.

TABLE 13 Percentage difference in the average 2008 to 2011 insured price index for Bupa and AXA PPP between operators

	<i>HCA-BMI</i>		<i>BMI-Spire</i>		<i>Spire-Nuffield</i>		<i>Nuffield-Ramsay</i>	
Bupa	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

33. The results presented in Tables 10 to 13 show the following: [X]

34. Overall, these results broadly confirm the results obtained in the previous section (see Tables 5 and 6).

Trend in insured prices 2007 to 2011

35. For each hospital operator, we looked at the trend in the average insured revenue per admission and in the average insured price of a common basket of treatments between 2007 and 2011.

²⁰ The weights used are the shares of admissions in each PMI's basket relative to the total admissions in the two baskets. Bupa's share is around [X] and AXA PPP's share is around [X].

36. Figure 1 shows the average²¹ insured revenue per admission for each hospital operator between 2007 and 2011²² (note that this is a graphical representation of the results presented previously in Tables 1 and 2). Figure 1 shows that the average insured revenue per admission is increasing overtime for all hospital operators. [✂]
- The relative ranking of hospital operators remains the same over time.

FIGURE 1

Weighted average insured revenue per admission-all operators, 2007-2011

[✂]

Source: CC analysis.

37. We have also looked at the trend in the weighted²³ average insured price of the common basket of treatments, across all hospital operators and across all years (2007 to 2011), that we derived in the previous section for Bupa and AXA PPP (see paragraph 28).²⁴ This average insured price is in fact a weighted average revenue per admission calculated on the treatments (inpatient and day-patient) included in the basket.²⁵
38. Figures 2 and 3 show the results for Bupa and AXA PPP, respectively. In line with the results for the average revenue per admission in Figure 1, the results for the

²¹ As stated in footnote 11, averages are calculated weighting prices by volumes, expressed as number of admissions, accounted for by each PMI.

²² As noted above, results for Ramsay in 2007 and 2008 are not available.

²³ The average insured price of each treatment in the basket is weighted by the volume of admissions accounted for by the treatment in the basket. See footnote 25 on how the weighted average insured price is calculated.

²⁴ This is based on Healthcode data as discussed in paragraph 10.

²⁵ For each hospital operator-PMI pair the average insured price in each year is calculated as follows: (i) for each treatment in the basket, we calculate the average price per episode (ie patient visit) charged by each hospital operator to the PMI, and (ii) we calculate the weighted average price of all treatments (inpatient and day-patient) in the basket, where the weight assigned to each treatment is the volume of admissions accounted for by the treatment. We note that, although the treatments included in the basket are the same across all years, the weights assigned to each treatment may vary across years according to the number of admissions accounted for by each treatment in the basket in each year. As this may be driving part of the annual variation in the average insured price across years, we ran a sensitivity check by providing equal weights to all treatments in the basket. The results confirm increasing price trends across all hospital operators; however, we observe fewer price fluctuations across years (see Annex 2, Figures 6 and 7).

average insured price for the common basket of treatments show an increasing trend for all hospital operators between 2007 and 2011.²⁶ [✂]

FIGURE 2

Weighted average insured price of common basket of treatments for Bupa-all operators, 2007-2011

[✂]

Source: CC analysis.

FIGURE 3

Weighted average insured price of common basket of treatments for AXA PPP-all operators, 2007-2011

[✂]

Source: CC analysis.

Drivers of insured price outcomes across hospital operators

Methodology

39. The previous section sets out our results for the two insured price measures we have considered, ie the insured revenue per admission and the insured price index. These results show that insured prices differ across hospital operators. Insured prices are outcomes of the negotiations. This section considers the inputs to the price negotiations from the hospital operator's side—in other words, what the hospital operators have to offer the PMIs—and analyses whether and to what extent differences in the price outcomes of these negotiations are associated with differences in these inputs.
40. The principal inputs to the negotiations from the hospital operators' side are the individual hospitals and, collectively, the portfolio of hospitals that each hospital operator has to offer. A particular hospital within a hospital operator's portfolio may

²⁶ As the weights assigned to each treatment in the basket are hospital-PMI specific (see previous footnote) the differences in average insured prices charged by each hospital operator to Bupa may be partially driven by the different weights assigned to the treatments in the basket for each hospital operators. This also applies to AXA PPP.

be less substitutable for a PMI—and for the insured patients on behalf of whom the PMI is acting—because of its characteristics relative to the individual hospitals that another hospital operator has to offer in the local area (for example, hospitals located in more concentrated areas are those for which a PMI has fewer outside options to consider when negotiating, and, therefore, are less substitutable for the PMI). In addition, a hospital operator's portfolio as a whole may be less substitutable for a PMI because of certain characteristics relative to the portfolio of another hospital operator (for example, a hospital portfolio with a larger footprint may be less substitutable for a PMI if it has to offer PMI coverage to certain corporate customers).

41. Based on the above, the degree of substitutability between hospitals at the local level and/or between hospital portfolios as a whole may have an impact on insured prices. Thus, we have investigated the relationship between characteristics of hospital portfolios reflecting the substitutability of the hospitals at the local level and of the hospital portfolios as a whole, and insured prices. Because we only observe national (average) prices for insured patients, in order to investigate any relationship between the substitutability of hospitals at the local level and insured price, we have to focus on average hospital characteristics across the hospitals in the portfolio owned by each operator, rather than individual hospitals' characteristics, and on the only four hospital operators that own an extensive portfolio of hospitals across the UK (ie BMI, Spire, Ramsay and Nuffield). As a result, the analysis we discuss here is limited to four data points per year.
42. In light of the above discussion, we have undertaken two tasks:
 - (a) describe the different hospital operators' portfolios through a number of characteristics reflecting, in various ways, the average substitutability to PMIs of hospitals at the local level and/or the substitutability of hospital portfolios as a whole; and

(b) compare the insured price outcomes with the characteristics of each operator's portfolio of hospitals.

43. The characteristics we have considered can be grouped into four categories. These are listed below, with an explanation of why each characteristic may be relevant in negotiations (for details of the characteristics, see Table 14):

(a) *Local concentration*. Hospitals that are located in more concentrated areas are those for which a PMI has fewer outside options to consider when negotiating, and, therefore, are less substitutable for the PMI. At the extreme, certain hospitals may be 'must have' to certain PMIs. The metrics used are: 1 minus average LOCI, average network effect, number of hospitals with low LOCI (bottom quartile) and number of hospitals with fascia count lower than two.²⁷

(b) *Large and/or high acuity hospitals*. Hospitals that are well known because of a strong reputation, for example due to their large size or to the provision of critical care, may be those that downstream PMI customers pay particular attention to when selecting their PMI policy and may thus be less substitutable for a PMI. The metrics used are: number of high admissions hospitals (top quartile) and number of hospitals providing critical care level 3 (CCL3).

(c) *Size*. Larger portfolios of hospitals provide a PMI with access to more PMI customers. The metric used is total admissions from insured patients.

(d) *Footprint*. Hospital portfolios with a larger footprint may not only give access to more PMI customers (as in (c)), but offer more geographic coverage which may be relevant for certain PMI customers (eg corporate customers). The metrics used are: number of hospital sites, number of NUTS2 regions that contain a hospital and number of hospitals in high PMI penetration regions.

²⁷ See Appendix 6.4 and Appendix 6.5 for details of the concentration measures we used. Network effect is measured by the difference between network LOCI and individual LOCI (based on patient numbers) for each hospital. 1 minus average LOCI and average network effect have been calculated as simple averages across hospitals.

44. Characteristics such as 'local concentration' and 'large and/or high acuity hospitals' mainly reflect attributes of individual hospitals and, in turn, the average competitive position of the hospital operator at the local level. On the other hand, characteristics such as 'size' and 'footprint' reflect, to a large extent, attributes of the portfolio of hospitals as a whole. We note, however, that the number of hospitals in high PMI penetration regions, classified under 'footprint', may involve a local element. For example, a hospital located in a high PMI penetration region may be less substitutable for a PMI, everything else equal, than a hospital in a low PMI penetration region as the disruption to PMIs' customers caused by delisting such a hospital would be greater in the high PMI penetration region.
45. In order to take into account that some local areas or regions are more important to PMIs because of a higher penetration of PMI, we constructed 'weighted local concentration' measures. The metrics used are: 1—weighted average LOCI, by hospital insured admissions; 1—weighted average LOCI, by NUT2 regional insured admissions; and 1—weighted average LOCI, by regional PMI penetration.²⁸
46. After constructing the metrics for each characteristic, we have compared the ranking of hospital operators by these metrics with the ranking by the prices that the hospital operators secure with PMIs. The insured price measures used are those derived in the previous section, ie the average insured revenue per admission and the average insured price index. We have also calculated correlation coefficients between each metric and each of the two insured price measures.

²⁸ The weighted-average LOCI by hospital admissions is calculated in a straightforward manner by weighting each LOCI by the hospital's insured admissions. The weighted-average LOCI by PMI penetration and by NUTS2 regional insured admissions are calculated in a different manner. The weighted-average LOCI by PMI penetration is calculated as follows: first, calculate the UK average PMI penetration (12 per cent); second, for each hospital, calculate its regional PMI penetration relative to the UK average (eg if a hospital is located in a region with PMI penetration of 18 per cent then the relative PMI penetration is $1.5 (= 18 / 12)$); third, for each operator, calculate the sum of the relative PMI penetration figures; fourth, for each hospital, calculate weights equal to the relative PMI penetration divided by the operator sum of relative PMI penetration figures; fifth, calculate a weighted-average LOCI using the weights just described. This methodology therefore assigns more weight to hospitals that are located in regions with higher PMI penetration. The weighted-average LOCI by NUTS2 regional admissions uses the same methodology described above, but with PMI penetration replaced with NUTS2 regional admissions.

Results

47. Table 14 shows how the different hospital operators compare to each other in terms of the different characteristics and metrics we considered.

TABLE 14 Characteristics of hospital operators' portfolios, 2011

Characteristic	Metric	Ramsay	Nuffield	Spire	BMI
Local concentration	1 – average LOCI*	0.49	0.50	0.56	0.62
	Average network effect†	0.04	0.06	0.07	0.19
	Number of hospitals with low LOCI (bottom quartile)‡	3	6	10	20
	Number of hospitals with fascia count <=1	14	17	17	39
Large and/or high acuity hospitals	Number of high admissions hospitals (top quartile, 2011)§	2	2	14	25
	Number of hospitals providing CCL3¶	0	2	5	7
Size	Total admissions from insured patients, 2011	[×]	[×]	[×]	[×]
Footprint	Number of hospital sites	22	30	36	60
	Number of NUTS2 regions that contain a hospital	16	20	22	27
	Number of hospitals in high PMI penetration regions#	8	11	17	31
Weighted local concentration	1 – weighted average LOCI, by hospital insured admissions	0.54	0.49	0.56	0.65
	1 – weighted average LOCI, by NUTS2 region insured admissions	0.45	0.44	0.51	0.56
	1 – weighted average LOCI, by regional PMI penetration	0.49	0.48	0.54	0.6

Source: CC analysis.

*1 minus average LOCI is presented rather than simply LOCI in order for this metric to be consistent in direction with the other metrics (ie the higher the metric, the more desirable a portfolio is expected to be).
†Average network effect per site is the sum of the difference between network and individual LOCI (based on patient numbers) across all hospitals, divided by the number of hospital sites.
‡Hospitals with a low LOCI are those that have a LOCI in the bottom quartile of all hospitals for which we can calculate a LOCI.
§High admissions hospitals are those with admissions for insured patients in the upper quartile of the hospitals in our analysis.
¶CCL3 = critical care level 3, and hospitals are classified as providing this if they have one or more CCL3 bed.
#High PMI penetration regions are those with a PMI penetration of 15 per cent or more on the basis that the average UK PMI penetration rate is 12 per cent. London and the South-East have the highest penetration rate of 17.5 to 18.5 per cent. See L&B UK Health Cover 2012 the [add data source].

48. The results in Table 14 show that hospital operators' portfolios differ significantly between each other by many of these characteristics/metrics. BMI is the largest operator for every metric, followed by Spire; Nuffield is the third largest operator for most metrics (although it ranks as Ramsay in one case), but it is fourth after Ramsay on the basis of all weighted local concentration metrics. For example:

(a) *Local concentration*. BMI has 20 hospitals with low LOCI, compared with 10 Spire hospitals, 6 Nuffield hospitals and 3 Ramsay hospitals; the average network effect is approx [15-20] per cent for BMI, [5-10] per cent for Spire, [5-10] per cent for Nuffield and less than 5 per cent for Ramsay.

- (b) *Large and/or high acuity hospitals.* BMI has 25 high admissions hospitals compared with 13 Spire hospitals, 2 Nuffield hospitals and 2 Ramsay hospitals.
- (c) *Size.* BMI has [X] insured admissions in 2011, compared with [X] for Spire, [X] for Nuffield and [X] for Ramsay.
- (d) *Footprint.* BMI has 31 hospitals in high PMI penetration regions, Spire has 17, Nuffield has 11 and Ramsay has 8.
- (e) *Weighted local concentration.* BMI has weighted local concentration measures between 0.56 and 0.65, Spire between 0.51 and 0.56, Ramsay between 0.45 and 0.54 and Nuffield, which has the lowest weighted local concentration measures, between 0.44 and 0.49.

49. Table 15 sets out the ranking of the insured price outcomes and the characteristics/metrics of hospital portfolios for BMI, Spire, Nuffield and Ramsay in 2011 (1 is the highest rank, ie it refers to the highest price outcome and to the highest value for each metric; 4 is the lowest rank, ie it refers to the lowest price outcome and to the lowest value for each metric). We present both insured prices based on the average insured revenue per admission and on the average price indices calculated in the previous section (see Tables 1 and 5). Table 16 presents the correlation coefficients between each characteristic/metric and each of the two insured price measures.

TABLE 15 **Ranking of hospital portfolios by insured prices and other characteristics, 2011**

		<i>Low rank</i>		<i>High rank</i>	
		4	3	2	1
Price	Weighted average insured revenue per admission	Ramsay	Nuffield	Spire	BMI
	Weighted average insured price index	Ramsay	Nuffield	Spire	BMI
<i>Characteristic</i>	<i>Metric</i>				
Local concentration	1 – average LOCI	Ramsay	Nuffield	Spire	BMI
	Average network effect	Ramsay	Nuffield	Spire	BMI
	Number of hospitals with low LOCI (bottom quartile)	Ramsay	Nuffield	Spire	BMI
	Number of hospitals with fascia count <=1	Ramsay	Nuffield	Spire	BMI
Large and/or high acuity hospitals	Number of high admissions hospitals (top quartile, 2011)	Ramsay	Nuffield	Spire	BMI
	Number of hospitals providing CCL3	Ramsay	Nuffield	Spire	BMI
Size	Total admissions from insured patients, 2011	Ramsay	Nuffield	Spire	BMI
Footprint	Number of hospital sites	Ramsay	Nuffield	Spire	BMI
	Number of NUTS2 regions that contain a hospital	Ramsay	Nuffield	Spire	BMI
	Number of hospitals in high PMI penetration regions	Ramsay	Nuffield	Spire	BMI
Weighted local concentration	1 – weighted average LOCI, by hospital insured admissions	Nuffield	Ramsay	Spire	BMI
	1 – weighted average LOCI, by NUTS2 region insured admissions	Nuffield	Ramsay	Spire	BMI
	1 – weighted average LOCI, by regional PMI penetration	Nuffield	Ramsay	Spire	BMI

Source: CC analysis.

TABLE 16 **Correlations coefficients between characteristics and insured prices, 2011—BMI, Spire, Nuffield and Ramsay**

<i>Characteristic</i>	<i>Metric</i>	<i>Weighted average insured revenue per admission</i>	<i>Weighted average insured price index</i>
Local concentration	1 – average LOCI	1.00	0.85
	Average network effect	0.92	0.71
	Number of hospitals with low LOCI (bottom quartile)	0.98	0.82
	Number of hospitals with fascia count <=1	0.88	0.65
Large and/or high acuity hospitals	Number of high admissions hospitals (top quartile, 2011)	1.00	0.78
	Number of hospitals providing CCL3	0.97	0.93
Size	Total admissions from insured patients, 2011	0.96	0.94
Footprint	Number of hospital sites	0.96	0.81
	Number of NUTS2 regions that contain a hospital	0.95	0.92
	Number of hospitals in high PMI penetration regions	0.98	0.79
Weighted local concentration	1 – weighted average LOCI, by hospital insured admissions	0.90	0.49
	1 – weighted average LOCI, by NUTS2 region insured admissions	0.99	0.75
	1 – weighted average LOCI, by regional PMI penetration	0.98	0.70

Source: CC analysis.

50. Figure 4 shows a graphical representation of one of the relationships between insured prices and characteristics, in particular between the average insured revenue per admission and 1 minus average LOCI. A line of best fit is added only as an

illustrative guide. Graphical representations of the other relationships are presented in Annex C.

FIGURE 4

Scatterplot of average insured revenue per admission and 1 minus average LOCI

[X]

Source: CC analysis.

51. Figure 5 shows a graphical representation of the relationship between the average insured revenue per admission and 1 minus average LOCI, weighted by regional PMI penetration, together with two potential price benchmarks shown by the grey lines. The dashed line, [X]²⁹ is the weighted average revenue per admission paid by [X] to [X] in 2011. The dashed line shows that taking the average across hospital operators of revenues per admission paid by [X] yields a number that is comparable to [X] average revenue per admission.
52. The dotted line, at around [X]³⁰ is the weighted average revenue paid by [X] only in 2011. This benchmark is significantly below the average revenue per admission for any individual hospital operator, and also below the average revenue per admission paid by [X] (the dashed line).

FIGURE 5

Scatterplot of average insured revenue per admission and 1 minus weighted average LOCI by regional PMI penetration

[X]

Source: CC analysis.

53. Tables 15 and 16 show that the ranking of the four largest hospital operators (ie BMI, Spire, Nuffield and Ramsay) by average insured prices is, in almost all cases,

²⁹ [X] is the exact value.

³⁰ [X] is the exact value.

consistent with the ranking by the metrics/characteristics of hospital portfolios we considered and that the correlation between average insured prices and metrics/characteristics is generally high.

54. These comparisons show that the hospital operators with hospitals in their portfolios that appear to be less substitutable on the basis of various characteristics, either in terms of the average substitutability of the hospitals at the local level or the substitutability of the hospital portfolios as a whole, are also those hospital operators that obtain the higher average prices with PMIs. For example, BMI and Spire are shown to obtain higher average prices with PMIs than Nuffield and Ramsay, and it is also the case that, on the basis of the characteristics considered, BMI and Spire have hospitals which are less substitutable at the local level on average and/or hospital portfolios which are less substitutable as a whole.

Insured price outcomes across PMIs

Methodology

55. In this section we analyse the prices charged by each hospital operator to different PMIs. In particular, using disaggregated insured patient and self-pay patient invoice data, we compare:

- (a) insured price outcomes across PMIs; and
- (b) insured price outcomes relative to self-pay patients' prices.

Comparing insured price outcomes across PMIs

56. In order to compare the price charged by different hospital operators to a given PMI, we used the price index analysis described in paragraphs 10 to 13 to identify a basket of treatments that are provided by all hospital operators (or a subset of them) to that PMI. As noted, this analysis does not allow a comparison of the price charged by a specific hospital operator to different PMIs. Therefore, in order to make a

comparison across PMIs, we repeat the analysis identifying for each hospital operator a basket of treatments provided to all six larger PMIs.

Comparing insured price outcomes relative to self-pay prices

57. We construct a price index based on a common basket of treatments offered by each hospital operator to all six PMIs as well as to self-pay patients. Similar to the price index described above, the data on insured prices is based on disaggregated insured patient invoice data provided by Healthcode (see paragraph 10).³¹ The data on self-pay prices is based on disaggregated patient invoice data provided by hospitals.^{32 33} The price index covers inpatient and day-patient episodes. The price measure is an average price per episode, excluding consultant fees (ie patient visit).

58. The steps to calculate our price index are as follows:

- (a) Identify the basket of treatments³⁴ that have been provided by a given hospital operator to all PMIs and to self-pay patients in 2011. A treatment is included in the basket if the hospital operator has treated more than five patients for each PMI as well as five self-pay patients.
- (b) For each treatment in the basket, we calculate the average price per patient visit charged by a given hospital operator to each PMI and to self-pay patients.
- (c) We calculate the weighted average price of the basket of treatments for each PMI and for self-pay patients. The prices per treatment are weighted by the total volumes of the treatment provided by each hospital operator to insured and self-pay patients.

³¹ Healthcode response to Data Request.

³² Response to Data Request by BMI, HCA, Nuffield, Ramsay and Spire.

³³ The two data sets contain information on patient visit date, discharge date, episode setting (inpatient, day-case and outpatient), surgical procedure (CCSD code), invoiced charge, and itemized charges for each treatment and service provided on the same patient visit. As part of our data cleaning process, we have removed outliers with episode prices less than £10 or more than £100,000.

³⁴ In the invoice data we excluded episodes with more than one CCSD code (ie the patient has had more than one surgical treatment performed) from our analysis as it is not possible to disaggregate which part of the charge is associated with each CCSD code.

(d) We index the weighted average price of the basket for each PMI relative to the self-pay weighted average price of the basket.

59. An index of 100 means that the hospital operator charges the PMI for the selected basket of treatments the same prices as self-pay patients. An index of 80 means that the PMI is charged 20 per cent less than self-pay patients. Similarly, an index of 120 means that the PMI is charged 20 per cent more than self-pay patients.

60. We have run the following sensitivity checks for the price indices constructed in this section:

(a) In order to limit the possible effects of outliers we have defined eligible treatments as those where each hospital operator has treated at least 30 patients for each PMI as well as 30 self-pay patients in 2011, compared with 5 patients in paragraph 58(a). The main results remain the same. There are few exceptions, where we observed small changes in the magnitude of the price difference between self-pay and insured prices for hospital operators with a small basket size (see Annex D, Table D5).

(b) We have constructed the basket of treatments based on inpatient treatments only. Although the main results are broadly the same, focusing on inpatient treatments yields slightly different results for some hospital operator and PMI pairs (see Annex D, Tables D6 and D7).

Results

Comparing insured price outcomes across PMIs

61. Table 17 shows the results of the insured price index based on each hospital operator's basket of treatments common to all PMIs. As the component and size of each basket is hospital-operator specific, the only meaningful comparison is across PMIs with one hospital operator (eg Bupa's price with BMI compared with Aviva's price

with BMI). The ranking across PMIs for each hospital operator is shown in parenthesis (6 corresponding to the lowest insured price index and 1 to the highest).

TABLE 17 Insured price index by hospital operator—all PMIs, 2011

<i>Hospital operator</i>	<i>Aviva</i>	<i>AXA PPP</i>	<i>Bupa</i>	<i>PruHealth</i>	<i>Simply-health</i>	<i>WPA</i>	<i>Basket size</i>	<i>Share of revenue (inpatient and day-patient with single CCSD code) accounted for by basket %</i>
BMI	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

62. As Table 17 shows, [X].

63. The smallest PMIs, [X], tend to pay some of the highest prices across all hospital operators. [X]

Comparing insured prices relative to self-pay prices

64. Figure 6 shows the results of the weighted average insured price index, based on each hospital operator's common basket of treatments across all PMIs,³⁵ relative to self-pay prices.

FIGURE 6

Weighted average insured price index relative to self-pay—all PMIs, 2011

[X]

Source: CC analysis.

65. Figure 6 shows that, on average, PMIs pay significantly lower prices than self-pay patients. PMIs on average pay the lowest prices relative to self-pay prices with [X].

³⁵ Weights used are the share of each PMI out of the total number of patient visits for the selected basket of treatments for each hospital operator. The size of the basket for each hospital operator and its share out of the hospital operator's revenue is provided below in Table 18.

66. We break down the price index analysis by PMI in order to investigate which PMIs tend to drive these results. Table 18 shows the results of the insured prices indexed relative to self-pay prices across PMIs for each hospital operator. As mentioned above, the component and size of each basket is hospital operator specific. Therefore, the only meaningful comparison is across PMIs with one hospital operator (eg Bupa's price index with BMI compared with Aviva's price index with BMI). The ranking across PMIs for each hospital operator is shown in parenthesis (1 corresponding to the highest insured price index relative to self-pay and 6 to the lowest).

TABLE 18 Insured price index relative to self-pay by hospital operator—all PMIs, 2011

<i>Hospital operator</i>	<i>Aviva</i>	<i>AXA PPP</i>	<i>Bupa</i>	<i>PruHealth</i>	<i>Simply-health</i>	<i>WPA</i>	<i>Basket size</i>	<i>Share of revenue (inpatient and day-patient with single CCSD code) accounted for by basket %</i>
BMI	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

67. Table 18 shows that the lower insured prices relative to self-pay are mainly driven by the large PMIs, namely Bupa and AXA PPP. [X]

68. Smaller PMIs [X] pay at least as high a price as self-pay patients, with the exceptions [X].

69. Overall, the results of the insured price index across PMIs and relative to self-pay patients show that, on the one hand, the large PMIs, Bupa and AXA PPP, achieve lower prices than smaller PMIs and self-pay patients, Bupa more than AXA PPP. On the other hand, smaller PMIs pay close to or even higher prices than self-pay patients.

TABLE A1 Insured revenue per admission, by PMI and average—all operators, 2010

	£										PMIs' volume share (admissions) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
BUPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	

Source: CC analysis.

TABLE A2 Insured revenue per admission, by PMI and average—all operators, 2009

	£										PMIs' volume share (admissions) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
BUPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	

Source: CC analysis.

TABLE A3 Insured revenue per admission (£), by PMI and average—all operators, 2008

	£										PMIs' volume share (admissions) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
BUPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	

Source: CC analysis.

TABLE A4 Insured revenue per admission, by PMI and average—all operators, 2007

	£										PMIs' volume share (admissions) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
BUPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average revenue per admission	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	
Percentage difference (%)	[X]	[X]	[X]	[X]			[X]	[X]	[X]	[X]	

Source: CC analysis.

TABLE A5 Insured price index, by PMI and average—all operators, 2010

											PMIs' volume share (admissions in the basket) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
Bupa	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]			[X]	[X]	

Source: CC analysis.

Note: N/A = data not available. Historical data seems to be less complete for some PMIs and we could not construct a common basket of treatments for Aviva.

TABLE A6 Insured price index, by PMI and average—all operators, 2009

											PMIs' volume share (admissions in the basket) %
PMI	BMI		HCA		Nuffield		Ramsay		Spire		
Bupa	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
WPA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	[X]			[X]	[X]	

Source: CC analysis.

Note: N/A = not available. Historical data seems to be less complete for some PMIs and we could not construct a common basket of treatments for Aviva and WPA.

TABLE A7 Insured price index, by PMI and average—all operators, 2008

<i>PMI</i>	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>PMIs' volume share (admissions in the basket) %</i>
Bupa	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]
Aviva	N/A	N/A	N/A	N/A	N/A	N/A
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	N/A	N/A	N/A	N/A	N/A	N/A
WPA	N/A	N/A	N/A	N/A	N/A	N/A
Weighted average price index	[X]	[X]	[X]	[X]	[X]	[X]
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	

Source: CC analysis.

Note: N/A = not available. Historical data seems to be less complete for some PMIs and we could not construct a common basket of treatments for Aviva, Simplyhealth and WPA.

TABLE A8 Insured price index, by PMI and average—all operators, 2007

<i>PMI</i>	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>PMIs' volume share (admissions in the basket) %</i>
Bupa	[X]	[X]	[X]	[X]	[X]	66
AXA PPP	[X]	[X]	[X]	[X]	[X]	29
Aviva	N/A	N/A	N/A	N/A	N/A	N/A
PruHealth	[X]	[X]	[X]	[X]	[X]	5
Simplyhealth	N/A	N/A	N/A	N/A	N/A	N/A
WPA	N/A	N/A	N/A	N/A	N/A	N/A
Weighted average price index	[X]	[X]	[X]	[X]	[X]	100
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]	

Source: CC analysis.

Note: N/A = not available. Historical data seems to be less complete for some PMIs and we could not construct a common basket of treatments for Aviva, Simplyhealth and WPA.

FIGURE B1

Weighted average insured revenue per admission in real terms-all operators, 2007-2011³⁶

[✂]

Source: CC analysis.

FIGURE B2

Weighted average insured price of common basket of treatments for Bupa—all operators, 2008-2011 (2008=100)

[✂]

Source: CC analysis.

FIGURE B3

Weighted average insured price of common basket of treatments for AXA PPP—all operators, 2008-2011 (2008=100)

[✂]

Source: CC analysis.

FIGURE B4

Weighted average insured price of common basket of treatments for Bupa in real terms³⁷—all operators, 2007-2011

[✂]

Source: CC analysis.

³⁶ Based on CPI for the health sector from the ONS. We set 2007 as the base year, ie (2007 = 100).

³⁷ Based on CPI for the health sector provided by the ONS. We set 2007 as the base year ie (2007 = 100).

FIGURE B5

**Weighted average insured price of common basket of treatments for AXA PPP
in real terms³⁸—all operators, 2007-2011**

[✂]

Source: CC analysis.

FIGURE B6

**Simple average insured price of common basket of treatments for Bupa—all
operators, 2007-2011**

[✂]

Source: CC analysis.

FIGURE B7

**Simple average insured price of common basket of treatments for AXA PPP—
all operators, 2007-2011**

[✂]

Source: CC analysis.

³⁸ Based on CPI for the health sector provided by the ONS. We set 2007 as the base year ie (2007 = 100).

FIGURE C1

Average revenue per admission vs average network effect



Source: CC analysis.

FIGURE C2

Average revenue per admission vs number of hospitals with low LOCI



Source: CC analysis.

FIGURE C3

Average revenue per admission vs number of hospitals with fascia count ≤ 1



Source: CC analysis.

FIGURE C4

Average revenue per admission vs number of high admissions hospitals



Source: CC analysis.

FIGURE C5

Average revenue per admission vs number of hospitals providing CCL3



Source: CC analysis.

FIGURE C6

Average revenue per admission vs total admissions from insured patients, 2011



Source: CC analysis.

FIGURE C7

Average revenue per admission vs number of hospital sites



Source: CC analysis.

FIGURE C8

Average revenue per admission vs number of NUTS2 regions that contain a hospital



Source: CC analysis.

FIGURE C9

Average revenue per admission vs number of hospitals in high PMI penetration regions



Source: CC analysis.

FIGURE C10

Average revenue per admission vs 1—weighted-average LOCI, by hospital insured admissions



Source: CC analysis.

FIGURE C11

Average revenue per admission vs 1—weighted-average LOCI, by regional insured admissions



Source: CC analysis.

FIGURE C12

Average revenue per admission vs 1—weighted-average LOCI, by regional PMI penetration



Source: CC analysis.

TABLE D1 Insured price index, by PMI—pair-wise comparison between hospital operators, treatments with more than five admissions at each hospital operator, 2011

<i>PMI</i>	<i>BMI</i>	<i>Spire</i>	<i>Basket size</i>
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>BMI</i>	<i>Nuffield</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>BMI</i>	<i>Ramsay</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Nuffield</i>	<i>Spire</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Ramsay</i>	<i>Spire</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Nuffield</i>	<i>Ramsay</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]

Source: CC analysis.

Note: Bold indicates that the rank between hospital operators based on the pair-wise comparison changes compared with the results for all hospital operators. Italic indicates more than a five-point difference in the pair-wise results compared with our results for all hospital operators. Bold italic indicates where the ranking has changed and there is more than a five-point difference in the pair-wise results compared with our results for all hospital operators.

TABLE D2 **Insured price index, by PMI—pair-wise comparison between hospital operators, treatments with more than 30 admissions at each hospital operator, 2011**

<i>PMI</i>	<i>BMI</i>	<i>Spire</i>	<i>Basket size</i>
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>BMI</i>	<i>Nuffield</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>BMI</i>	<i>Ramsay</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Nuffield</i>	<i>Spire</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Ramsay</i>	<i>Spire</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]
	<i>Nuffield</i>	<i>Ramsay</i>	
Aviva	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]
Bupa	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]
WPA	[X]	[X]	[X]

Source: CC analysis.

Note: Bold indicates that the rank between hospital operators based on the pair-wise comparison changes compared with the results for all hospital operators.

TABLE D3 Insured price index, by PMI—all operators, inpatients only, 2011

	BMI	HCA	Nuffield	Ramsay	Spire	Basket size
Aviva	[X]	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]	[X]
Bupa	[X]	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE D4 Insured price index, by PMIs—all operators excluding HCA, 2011

	BMI	Nuffield	Ramsay	Spire	PMIs' volume share (admissions in the basket) %
Bupa	[X]	[X]	[X]	[X]	[X]
AXA PPP	[X]	[X]	[X]	[X]	[X]
Aviva	[X]	[X]	[X]	[X]	[X]
PruHealth	[X]	[X]	[X]	[X]	[X]
Simplyhealth	[X]	[X]	[X]	[X]	[X]
WPA	[X]	[X]	[X]	[X]	[X]
Weighted average price index	[X]	[X]	[X]	[X]	[X]
Percentage difference (%)	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE D5 Insured price index relative to self-pay, by hospital operator—all PMIs, treatments with more than 30 admissions for each PMI and for self-pay, 2011

Hospital operator	Aviva	AXA PPP	Bupa	PruHealth	Simply-health	WPA	Basket size	Revenue share of the basket %
BMI	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE D6 Insured price index, by hospital operator—all PMIs, inpatients only, 2011

Hospital operator	Aviva	AXA PPP	Bupa	PruHealth	Simply-health	WPA	Basket size	Revenue share of the basket %
BMI	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE D7 Insured price index relative to self-pay, by hospital operator—all PMIs, inpatients only, 2011

<i>Hospital operator</i>	<i>Aviva</i>	<i>AXA PPP</i>	<i>Bupa</i>	<i>PruHealth</i>	<i>Simply-health</i>	<i>WPA</i>	<i>Basket size</i>	<i>Revenue share of the basket %</i>
BMI	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

Assessment of profitability

Introduction

1. In this appendix we set out our framework for assessing the profitability of the PHPs. We explain why we have undertaken this assessment and how we have done it. We set out the results from applying this framework and the key provisional findings we draw from these results.
2. The rest of this appendix is structured as follows:
 - (a) purposes of the profitability assessment;
 - (b) our approach to the profitability assessment;
 - (c) our understanding of the nature of the private healthcare industry;
 - (d) an outline of the adjusted ROCE methodology used in our assessment;
 - (e) our approach to the adjustments to the inputs of the ROCE calculation which may be required in a market investigation, and discussion of the responses we received to our approach from the PHPs;
 - (f) the results of our analysis, setting out any specific adjustments for each provider; and
 - (g) a summary of our assessment and interpretation of profitability.

Purposes of the profitability assessment

3. Profitability analysis in the context of a market investigation has a number of purposes, most of which are highlighted in our Guidelines¹ as set out below.

¹ CC3.

Indicator of whether prices are too high

4. Profitability can be a useful indicator of the competitive conditions in a market. Firms in a competitive market would generally earn no more than a 'normal' rate of profit—the minimum level of profits required to keep the factors of production in their current use in the long run, ie its rate of return on capital employed for a particular business activity would be equal to its opportunity cost of capital for that activity.²

Evidence about entry conditions

5. The ability to earn profits persistently above the competitive level could indicate the presence of entry barriers. Evidence of persistent profits above the competitive level within the industry or among large incumbents could suggest that there may be entry barriers in the market. But such evidence is neither necessary nor sufficient. Conversely, data showing that incumbents consistently fail to earn high profits may be consistent with low entry barriers, but it does not prove that barriers are low and that competition is working dynamically.³

Evidence about trends in profitability

6. The trend in profits will be an important consideration and the CC will seek to understand the reasons for the observed trend. Where the size of the gap between the level of profitability and the cost of capital has grown over a period the competitive situation may have worsened, whereas a narrowing of that gap may indicate that competitive conditions have improved.⁴

Evidence about the impact of shocks on profitability

7. We may also want to assess profitability over time in order to ascertain the short- and long-term impact on profitability of changing supply and demand conditions, in this

² CC3, [paragraphs 114 & 116](#).

³ CC3, [paragraphs 119 & 231](#).

⁴ CC3, [paragraph 124](#).

case the shock of increasing demand for privately-provided healthcare from the NHS. As of 2007, NHS demand generated revenues of £315 million for PHPs in the UK. By 2011, this increased by 149 per cent to £785 million.⁵ Such evidence may be informative about the nature of competition.⁶

Our approach to the profitability assessment

8. In many cases, our focus is on the largest incumbent firms in the market or market sector. The profitability of firms representing a substantial part of the market can therefore be a useful indicator of competitive conditions in a market.⁷ As already explained in paragraph 4, we assess a firm's profitability against its cost of capital. Furthermore we consider, among other things, whether firms are earning *persistently* high profits against this benchmark.⁸
9. In addition to specifying a relevant profitability measure, we therefore need to define the following parameters to assess profitability in line with this approach:
 - (a) the reference products, ie *the reference markets*;
 - (b) the firms representing a substantial part of the market, ie *the relevant firms*; and
 - (c) the time frame over which we will test for persistence, ie *the relevant period*.

The reference markets

10. We take as our starting point the market referred to us by the OFT in its terms of reference,⁹ namely the supply or acquisition of privately-funded healthcare services in the UK. These are services provided to patients via private facilities and/or clinics including private patient units, through the services of consultants and other medical and clinical professionals who work within such facilities.

⁵ Laing & Buisson, *Private Acute Medical Care, UK Market Report, 2012*, Table 2.3. Figures quoted are NHS revenues under local contracting agreements and hence exclude revenues for ISTCs.

⁶ CC3, [paragraph 108](#).

⁷ CC3, [paragraph 116](#).

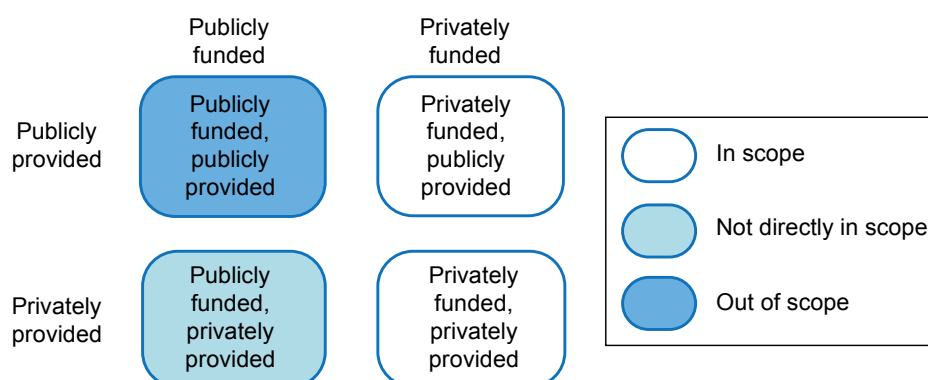
⁸ CC3, [paragraph 119](#).

⁹ www.competition-commission.org.uk/assets/competitioncommission/docs/2012/private-healthcare-market-investigation/healthcare_terms_of_reference.pdf.

11. These privately-funded healthcare services are supplied to patients by PHPs which, in many cases, also supply healthcare services to publicly-funded (NHS) patients. In most instances, both types of patient are treated in the same facilities, although some of the PHPs also have Independent Sector Treatment Centres (ISTCs), which serve NHS patients only.

FIGURE 1

Scope of OFT reference market



Source: OFT, Report on the market study and final decision to make a market investigation reference. Private Healthcare Market Study, Figure 2.1, p16.¹⁰

12. The focus of our investigation has been on the provision of medically-necessary, acute healthcare services to privately-funded patients in both public and private facilities. We have not focused on services such as cosmetic surgery, mental health care, fertility services and routine maternity care.¹¹
13. For the purposes of the profitability analysis, however, we have assessed the financial performance of the private hospital operations of each of the relevant firms,¹² without seeking to exclude the revenues and costs generated from either their publicly-funded activities or services such as cosmetic surgery, mental health, fertility or maternity care.¹³ We did, on the other hand, exclude all activities that were

¹⁰ www.of.gov.uk/shared_of/market-studies/OFT1412.pdf.

¹¹ See Section 5, Market Definition.

¹² See paragraph 15 for the list of the relevant firms.

¹³ This approach included NHS PPUs and pay beds within the relevant market, although no NHS trust had large enough private revenues to be included as one of the relevant firms.

not carried out within the firms' acute private hospitals, including fitness centres, primary care facilities, ISTCs and separate facilities specializing in cosmetic and IVF treatments.

14. We adopted this approach to assessing profitability in order to reflect the basis on which the firms make investment decisions and assess their own performance and to avoid the potentially arbitrary allocation of costs and capital between the various revenue streams of the PHPs, which are generated using the same asset base. We have taken into account the potential impact of NHS activities on the financial performance of the businesses in our interpretation of our profitability analysis.

Relevant firms

15. We selected the largest seven acute PHPs active in the UK as the relevant firms for the purposes of assessing the profitability of the market.¹⁴ Table 1 shows the market shares of these operators in 2011 for privately-funded healthcare services.

TABLE 1 **Market shares of the UK private-patient-only hospital market by provider, 2011**

<i>Firm</i>	<i>Market share %</i>
BMI	20.8
HCA	16.5
Spire	15.4
Nuffield	10.9
Ramsay	4.9
The London Clinic	3.4
Bupa Cromwell Hospital	<u>2.0</u>
Top 7 total	<u>73.9</u>
Others	26.1

Source: Laing & Buisson, Private Acute Medical Care UK Market Report, 2012. Figure 1.5.

Note: The market share information is calculated on the basis of UK private-patient-only hospital revenues, ie revenues from private patients in both private and NHS hospitals. Laing & Buisson estimated that the private-patients-only market was worth £3.54 billion in 2011, 86 per cent of which was generated by private providers, with the remaining 14 per cent being generated by NHS PPUs and pay beds.

¹⁴ These firms are: Bupa Cromwell Hospital (BCH), General Healthcare Group (BMI), HCA, Nuffield, Ramsay, Spire and TLC.

16. These seven operators represent 74 per cent of the private acute healthcare market in the UK, with a large number of smaller and specialist operators comprising the rest of the market.
17. We recognize the potential issue of ‘survivorship bias’ in focusing only on the profitability of the seven largest PHPs, whereby large, successful firms may exhibit profitability levels that are not representative of those of smaller and potentially less successful firms in the market. However, by assessing the profitability of firms comprising 73.9 per cent of the reference market, our analysis covers a substantial proportion of the industry. The relevant firms include both commercial and not-for-profit businesses as well as businesses of varying sizes and operational models. Some of these firms have national chains, whilst others operate in only one or two local markets. The largest chain (BMI) has 61 hospitals, whilst both BCH and TLC are single hospitals. Hence, we consider that a profitability assessment based on these seven firms provides insight into competitive conditions across the industry as a whole.

Relevant time period

18. The time frame over which we conduct our profitability assessment should be sufficiently long to detect whether any trends in profitability have been persistent. In market investigations a five-year period is usually considered a representative and sufficient period over which the outcomes of any competitive process might be demonstrated.¹⁵

¹⁵ A five-year period was used in a number of previous market investigations, including Local Buses, Home Credit and Aggregates.

19. We considered whether, in light of the extended life cycle of many of the assets employed in the industry,¹⁶ it would be appropriate to assess profitability over a period longer than five years. However, we decided that such an approach was likely to make the analysis less rather than more insightful due to significant changes in the structure of the industry that took place between 2006 and 2008. These changes saw the largest PMI, Bupa, largely exit the private hospital sector as well as the increasing consolidation of the industry by the larger operators:
- (a) In 2005, Bupa sold nine of its smaller hospitals (the Classic Hospitals Group) to Legal & General Ventures. In 2007, Bupa exited the hospital market completely with the sale of its remaining 25 hospitals to Cinven, forming the Spire group. Bupa chose to re-enter the London market with its acquisition of the Cromwell hospital in 2008.
 - (b) In 2005, BMI acquired the Mount Alvernia hospital in Guildford, followed in 2008 by the Woodlands hospital in Darlington, as well as seven Nuffield hospitals.¹⁷ In 2010, BMI acquired a further four hospitals (Covenant Healthcare's Abbey Hospitals portfolio).
 - (c) In 2008, Spire acquired the Classic Hospitals portfolio from Legal & General Ventures, reassembling the former Bupa portfolio of hospitals, as well as a hospital in Gerrards Cross (Spire Thames Valley) from BMI.
 - (d) In 2007, Ramsay entered the UK market via its acquisition of the Capio group of hospitals. Ramsay acquired one further hospital in Nottingham from BMI in 2008 and took on the management of the Orwell PPU in 2009.
20. We consider that these changes in the structure of the market, together with the growth of NHS demand for privately-provided healthcare services, mean that the

¹⁶ In particular, we note that hospital buildings have lives of 50 years or more, although significant investment is required periodically to maintain them in an appropriate condition and adapt the buildings and medical equipment to the changing requirements of the hospital sector.

¹⁷ BMI acquired nine hospitals from Nuffield in this transaction but disposed of two of them pre-emptively in order to ensure clearance of the transaction by the OFT. The hospitals sold were in Gerrards Cross (to Spire) and Nottingham (to Ramsay).

financial performance of the sector prior to 2007 is unlikely to be a relevant indicator of the current competitive conditions in the market.

21. In addition, we note that in determining the appropriate period for analysis, we must balance the potential benefits of examining a longer time period with the practical difficulties of doing so. These difficulties include both the issue of interpreting the results of such analysis against a background of significant changes in the market structure over time, and the challenge of obtaining (comparable) data over the longer period. A number of the relevant firms told us that they would not be able to provide financial information prior to 2007 due to changes in their ownership.
22. The relevant firms have different financial year ends including 31 December, 30 June and 30 September. For consistency, we have assessed their profitability for the five financial years ending between 1 January 2007 and 30 June 2012 (the relevant period). In each case, we have five years of financial information for each firm, with Ramsay's information covering a five-and-a-half-year period due to a change in its year end in 2007/08.
23. HCA and Ramsay put forward the view that the proposed five-year period did not reflect the full life cycle of the major assets in the industry and hence may not give an unbiased view of profitability in the longer run. HCA told us that, following its acquisition of St Martin's Healthcare, 'HCA invested heavily in its business, making improvements and introducing cutting edge technology, which has allowed it to make a reasonable long-term return on its investment'. As set out in our Guidelines,¹⁸ we take into account the pattern of investment and the nature of sources of competitive advantage (advertising, research and development (R&D), more efficient production) in forming a view on the relevant timescales over which we would expect to see

¹⁸ CC3, [paragraph 121](#).

competition playing out in the market. Where firms have made large and risky investments, we may expect to see a normal level of profitability restored over a relatively long timescale. In paragraphs 24 to 30, we have set out our understanding of the nature of the private healthcare market. Although we recognize the long life cycle of many of the assets employed by the PHPs, we believe that the investment lead time of two to three years and the duration of contracts of three years or less mean that a five-year period is likely to be sufficiently long for the competitive dynamics of the industry to play out and hence is appropriate for our assessment of profitability.

Our understanding of the nature of the private healthcare industry

24. In this subsection we set out our understanding of the nature of the private healthcare industry which underpins our approach to the profitability analysis.¹⁹
25. The provision of (private) healthcare services is a capital-intensive industry, with significant investment required in land, buildings and equipment. Hospital properties have an extended life cycle, with approximately 20 per cent of the buildings currently used by the relevant firms being more than 50 years old. The lead time on investments in the industry is around two to three years for a new hospital and (generally) less than a year for an investment in extending, refurbishing or adding a new service to an existing hospital.²⁰ There have been only a few new hospitals opened over the relevant period, with the business plans suggesting that new facilities break even or

¹⁹ Section 2 of our report provides significant additional detail on these and other areas. This section highlights only those characteristics of the industry that we consider have particular relevance to the profitability analysis.

²⁰ For example, it took Spire approximately two years from the time of deciding to proceed with the construction of a new hospital in Edinburgh to opening the facility. The Shawfair site had been purchased six months prior to making this decision. Similarly, Circle took three years to build and commission its hospital in Bath from the date of obtaining planning permission, although the opening of the hospital was delayed by several months due to some last-minute regulatory issues.

make a small profit in the first year and reach their maintainable level of profit in the second year.²¹

26. Private healthcare services are supplied to patients jointly by private hospitals and consultants. Consultants diagnose, advise and treat patients using the facilities provided by private hospitals.²² The services provided by the private hospitals include the use of theatres, consulting rooms and medical equipment, as well as nursing care and hotel services.
27. Advances in medical technology have had an impact on private hospitals in two main ways. First, developments in medical treatment require hospitals to invest in new equipment, such as MRI and CT scanners. Some of this equipment represents a significant capital investment for the hospitals and the rate of progress in certain areas makes equipment functionally obsolete within a five- to ten-year period. Second, as many types of surgery have become less invasive and there have been advances in anaesthesia, treatments that previously required patients to remain in hospital overnight are now performed on a day-case basis. These developments have had an impact on the ideal configuration of a hospital building, with, for example, fewer overnight and more day-care beds and imaging facilities required.
28. Patients are generally (although not always) referred by their GPs to a specific consultant who specializes in the type of treatment that the patient requires, rather than being referred directly to a hospital. For this reason, PHPs seek to attract consultants to their facilities in order to secure a stream of patients.²³ Competition for consultants may take a variety of forms, including investment in equipment and

²¹ Documents provided by Spire indicate that it planned to make a [§] at both its Shawfair and Brighton hospitals in the first year of operations, with demand approximately [§]. Similarly, TLC's forecasts for its Cancer Centre indicated that revenues were expected to increase significantly from the first to the second year of operation, with revenues growing at or slightly above the rate of inflation thereafter.

²² We note that some healthcare services may be provided solely by hospitals and their employees. In particular, hospitals often employ clinical staff in the area of diagnostics and physiotherapy.

²³ See Section 2, Industry Background.

facilities, the payment of incentives and the choice of hospital location. PHPs also target their marketing efforts towards GPs to encourage referrals to consultants practising at their facilities.²⁴

29. The large majority of consultants who undertake private work also hold an NHS post, splitting their time between their NHS and private hospitals. As a result, a private hospital which is located near the NHS hospital at which the consultants practise will generally have a competitive advantage over a hospital that is located further away. The importance of location depends on the number of operators in a local area, with proximity to the local NHS hospital being less important for solus private hospitals than for ones which have a number of private competitors in the same area.
30. The PMIs and PHPs tend to negotiate framework contracts every three years. These set out a detailed price list for each procedure or service but generally do not specify a volume of treatments as this is unknown ex ante.²⁵ During the term of the contract, prices are generally indexed to a measure of inflation but not otherwise subject to negotiation. We might expect, therefore, changes in competitive dynamics to feed through into the prices negotiated between the PMIs and PHPs with some delay.

The (adjusted) return on capital employed: methodology

Overview

31. There are a number of different metrics that can be used to measure profitability. The Guidelines primarily refer to the rate of return on invested capital, mentioning the internal rate of return (IRR), the truncated IRR and the return on capital employed (ROCE) as possible alternative approaches. The Guidelines also mention return on

²⁴ For example, Nuffield told the CC that 'it is typically the GP who determines the best course of action for a patient by referring to a consultant, who in turn will chose the most appropriate hospital operator for that patient to use', hence competition is for consultants and GPs. Market research, carried out for Nuffield, highlighted that i) brand, quality and marketing provide reassurance to patients but the consultant's opinion is the primary driver of choice, and ii) patients do not exhibit significant awareness of hospital brand attributes. *Nuffield response to MQ, question 14*.

²⁵ Some contracts do, however, contain provisions for the prices to be decreased in response to volume above a certain level or increased if volumes fall below a certain level.

sales.²⁶ However, this would be an unsuitable profitability measure for the private healthcare market due to its capital-intensive nature. Moreover, unlike profitability measures based on estimating the rate of return on invested capital, there is no robust comparator against which to judge the levels of profitability observed.

32. Spire suggested that rather than adopting the ROCE approach, we should assess profitability using the IRR on the grounds that ‘internal rate of return (IRR) and Net Present Value (NPV) are conceptually the correct methods for measuring profitability because they take into account the cash inflows and outflows of a business activity (rather than accounting revenues and costs, which include accruals and non-cash items)’. While we agree that conceptually the IRR is an appropriate method of measuring the profitability of a given project, we believe that the approach we have adopted in estimating the ROCE is often consistent with the IRR methodology, and also has the advantage of avoiding the difficulties inherent in identifying the cash flows of a given activity within a broader business, and is thus a more appropriate measure in the current case.²⁷

Background and general principles

33. The approach that we have taken to estimating the ROCE adjusts accounting information to provide economically meaningful estimates of returns. Two basic principles need to be applied for this to be the case: the first is that capital employed should be valued using the value-to-the-business rules, as set out below; the second is that the accounts should be fully articulated, such that the whole of any change in the value

²⁶ CC3, Annex A, [paragraphs 9 and 10](#).

²⁷ Ramsay and Spire, told the CC that they were unable to separate out the cash flows of their private hospitals from those of their other activities. HCA told the CC that it does not track cash flow at a UK level. It is consolidated as part of its parent company accounts.

of capital employed flows through the profit and loss account.²⁸ In this subsection, we set out this approach in more detail.

Operating returns and assets

34. We determine the ROCE using the operational profits and capital employed by the business and then compare it with the pre-tax weighted average cost of capital. The general principle is therefore that all revenues, costs, assets and liabilities necessarily arising from the operation of the businesses should be included. Any other operating items, whether revenues or costs, which are associated with running the business should also be included. These costs include irrecoverable VAT.²⁹
35. All financing costs, whether short or long term, are excluded. Similarly, corporation tax and any associated deferred tax charges, as well as any pension deficit or surplus, are excluded.

Economic profits and costs

36. The relevant firms' financial information has been prepared under (modified) historic cost accounting rules in accordance with UK or international accounting standards. Following a change of control or for the purposes of raising finance, some of the private hospital operators have revalued some of their fixed assets, in which case the basis of preparation is described as modified historic cost accounting.
37. As set out in our Guidelines,³⁰ we are interested in understanding the economic rather than the accounting profitability of the relevant firms. Economic costs are the costs of resources used at a price at which they would be traded in a competitive

²⁸ These principles are set out in detail in *The Economic Analysis of Accounting Profitability*, Edwards, Kay & Mayer, 1987.

²⁹ The provision of healthcare services is VAT exempt, which means that the non-charitable operators in the sector are unable to reclaim VAT on their inputs. Hence, this VAT represents an operating cost for those businesses. HMRC reference: Notice 701/31, November 2011.

³⁰ CC3, [paragraph 115](#).

market, where entry to and exit from the market is easy. The value of resources consumed and assets utilized should reflect their current value to the business, not their actual or revalued historical cost. Therefore, as set out in paragraphs 39 to 45, it has been necessary to estimate the current value of certain categories of assets to the relevant firms.

38. For some of the relevant firms, we have conducted the profitability analysis on a subset of their total activities, as discussed in paragraph 13. In these cases, we have sought to ensure that the relevant revenues, costs, assets and liabilities have been attributed to these activities using the principles of causality and objectivity.

*Measurement basis for valuation of assets*³¹

39. The current value of an asset could be determined by reference to entry value (replacement cost), exit value (net realizable value (NRV)) or value in use (discounted present value of the cash flows expected from continuing use and ultimate sale by the present owner). For some assets—for example, investments in actively-traded securities—these three alternative measures of current value produce very similar amounts, with only small differences due to transaction costs. However, for other assets—for example, fixed assets specific to the business—differences between the alternative measures can be material.
40. The approach to valuing assets should reflect their current value to the business, which is the loss the entity would suffer if it were deprived of the asset involved. That

³¹ The following paragraphs draw heavily on the *Alternative Measures of Current Value* section within The Statement of Principles for Financial Reporting (1999), UK Accounting Standards Board, paragraphs 6.6–6.9.

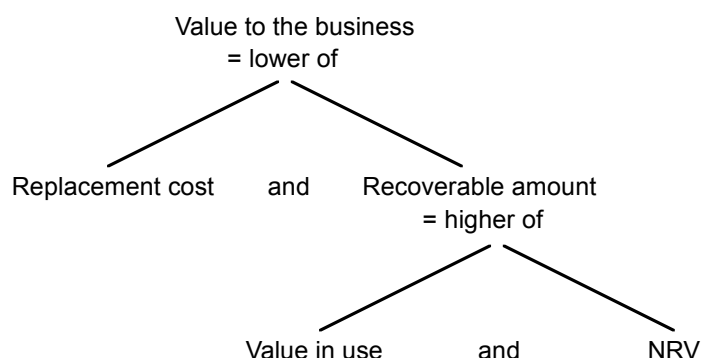
measure, which is also referred to as the deprival value,³² or value to the owner, will depend on the circumstances involved.

41. In most cases, as the entity will be putting the asset to profitable use, the asset's value in its most profitable use (in other words, its recoverable amount) will exceed its replacement cost. In such circumstances, the entity will, if deprived of the asset, replace it, and the current value of the asset will be its current replacement cost.
42. An asset will not be replaced if the cost of replacing it exceeds its recoverable amount. In such circumstances, the asset's current value is that recoverable amount.
43. When the most profitable use of an asset is to sell it, the asset's recoverable amount will be the amount that can be obtained by selling it, net of selling expenses; in other words, its NRV. When the most profitable use of an asset is to consume it—for example, by continuing to operate it—its recoverable amount will be the present value of the future cash flows obtainable and cash flows obviated as a result of the asset's continued use and ultimate disposal, net of any expenses that would need to be incurred; in other words, its value in use. This can be portrayed diagrammatically as shown in Figure 2.

³² The deprival value of an asset does not need to take into account the physical reality of replacing the asset, for example in terms of the time taken to reinstate a building. It can represent a hypothetical scenario which requires us to estimate, were there a market, what the replacement cost of an asset would actually be. Hence, a deprival value does not need to include the cost of lost business that would be incurred while an asset is replaced, just the cost of replacing the asset.

FIGURE 2

Establishing which valuation basis for an asset gives its value to the business



Source: UK Accounting Standards Board, Statement of Principles (1999).

Estimation of replacement cost

44. Where an asset is worth replacing, its value to the business will be its current replacement cost, or more precisely the replacement cost of a modern equivalent asset (MEA) determined in a fully competitive market and allowing for the asset's remaining useful life.³³ The MEA value is the cost of replacing an old asset with a new one with the same service capability allowing for any differences both in the quality of output and in operating costs.³⁴ The fact that markets are often not fully competitive does not alter the validity of the assumption of competition as a benchmark for measuring costs.
45. This approach is consistent with our Guidelines, which state³⁵ that the CC considers the MEA value or replacement cost (as defined in the previous paragraph) to be the economically meaningful measure for the purpose of measuring profitability in most cases.

³³ This estimate is referred to as the 'depreciated replacement cost' of the asset.

³⁴ An integral requirement of the MEA approach is to adjust the profitsof a business as well as the value of its capital employed to reflect the performance of the modern equivalent asset. For example, a new piece of equipment may be more costly to acquire but may also have lower running costs. Both of these changes should be reflected under the MEA approach. In practice, it may be problematic to make such adjustments where there is limited evidence on the performance of modern equivalent assets.

³⁵ CC3, [Annex A](#), paragraph 14.

Full articulation of the accounts

46. In order for the ROCE measured using accounting data to be economically meaningful, the accounting profit (EBIT) estimated in each period should be estimated after deducting a depreciation charge that is equal to the difference between the value of capital employed at the beginning of the period and the capital employed at the end of the period. Formally:³⁶

$$\text{EBIT}_t = \text{EBITDA}_t - \text{Depreciation}_t, \text{ where}$$

$$\text{Depreciation}_t = \text{CapEmp}_{t-1} - (\text{CapEmp}_t - \text{CAPEX}_t)$$

47. In effect, this means that an increase in the value of assets, for example due to an increase in the cost of building a hospital, serves to reduce the depreciation charge over the period, whilst a decline in the value of assets, due to a fall in the replacement cost of assets, increases the depreciation charge. In applying this principle, we have smoothed changes in land and building values over the five-year period to avoid fluctuations in asset prices from one year to the next obscuring the underlying operational returns of the relevant firms. This approach reflects our view that the PHPs may expect relatively gradual changes in the value of their assets over time due to changing relative prices but assets in this industry are not held with a view to short-run, capital gains or losses. Hence, returns from large increases or decreases in asset values from one year to the next represent transitory shocks rather than sustainable returns on investment.³⁷

48. Spire put forward the view that increases in the value of assets should not be passed through the profit and loss since this approach 'is not consistent with GAAP' and has 'highly theoretical underpinnings'. We recognize that the framework set out in the previous paragraphs is not consistent with GAAP. Indeed, our approach intentionally

³⁶ See *The Economic Analysis of Accounting Profitability*, Edwards, Kay & Mayer, Chapter 2.

³⁷ This smoothing has been applied to both the asset values and the profit and loss charge. In Annex 2, we set out the results of our analysis without smoothing the changes in asset values. This does not have an impact on the average ROCE estimate but shows a more volatile pattern of returns.

departs from GAAP in this respect in order to make the analysis economically meaningful. Depreciation, under this approach, reflects the cost or benefit of owning an asset over the period measured as the change in value of that asset. To the extent that the value of the asset increases, for example due to the increased cost of replacing a building, the business that owns the building has made a return on its investment. Hence, passing any increases in asset values through the profit and loss is the logical corollary of charging depreciation against assets as they decline in value due to age and technical obsolescence. By charging depreciation to the profit and loss but not increases in asset values, our EBIT figures and hence ROCE estimates would be under stated.

Comparability, materiality and lack of unnecessary complexity

49. This section sets out the aspects of financial information that are particularly relevant to our profitability assessment.³⁸

Comparability (and consistency)

50. Financial information is particularly useful when it can be compared with similar information about the entity for some other period or point in time. Information about a particular firm is also much more useful if it can be compared with similar information about other entities in order to evaluate their relative financial performance and financial position. Information in financial statements therefore needs to be comparable as far as is possible.
51. Comparability generally implies consistency throughout the reporting entity within each accounting period and from one period to the next. However, consistency is not

³⁸ This section draws heavily from 'The qualitative characteristics of financial information' chapter of *The Statement of Principles for Financial Reporting*, 1999, UK Accounting Standards Board.

an end in itself. Consistency can also be useful in enhancing comparability between entities, although it should not be confused with a need for absolute uniformity.

52. As noted in paragraph 36, all the relevant firms prepare financial information in accordance with UK or international accounting standards. As a result, we would expect a certain level of consistency in the accounting treatments adopted both between one accounting period and the next and between one PHP and another.

Materiality

53. We only require adjustments to be made to financial information supplied to us by the relevant firms that is likely to make a material difference to our assessments.
54. An item of information is material if its misstatement or omission might reasonably be expected to influence the economic decisions of users (here, the CC) of that information. Whether information is material will depend on the size and nature of the item in question judged in the particular circumstances of the case. The factors to be taken into account are set out below. It will usually be a combination of these factors, rather than any one in particular, that will determine materiality:
- (a) The item's size is judged in the context both of the financial information as a whole and of the other information available to users that would affect their evaluation of that financial information. This includes, for example, considering how the item affects the evaluation of trends and similar considerations.
 - (b) Consideration is given to the item's nature in relation, for example, to the transactions or other events giving rise to it.
55. If there are two or more similar items, the materiality of the items in aggregate as well as of the items individually needs to be considered.

Lack of unnecessary complexity

56. We also place value on the simplicity (but not at the expense of either comparability or materiality) of the financial information used in the assessment. What we mean by this is that, rather than seeking to make elaborate numerical adjustments (eg in relation to the age profile of equipment) or numerical adjustments involving a high degree of professional judgment (eg efficiency adjustments), we plan to incorporate such aspects, important though they may be, qualitatively into our assessment and interpretation of the relevant firms' profitability. A by-product of this approach is that the numbers that we rely on in our assessment are more likely to be recognized by the individual firms concerned.

Adjustments to the inputs to ROCE calculation: recognition of assets and liabilities

57. Assets are defined as rights or other access to the future economic benefits controlled by an entity as a result of past transactions or events. Liabilities are obligations of an entity to transfer economic benefits as a result of past transactions or events. Our approach to the recognition of assets and liabilities generally follows the accounting treatment applied by the relevant firms. However, in this subsection, we set out a couple of exceptions to this approach, for leasehold land and buildings, and intangible assets.

Leasehold land and buildings

58. A number of the relevant firms lease at least some of their hospitals and/or clinics from third party landlords.³⁹ The terms of these lease agreements range from long leasehold titles at peppercorn rents, to sale and leaseback agreements and short-term rents at market rates. Our approach to the recognition of these assets has

³⁹ BMI and Spire are structured as separated operating companies and property companies, with the former leasing the hospital buildings from the latter. In assessing the profitability of these firms, we have applied the principle of 'substance over form', basing our analysis on the financial performance of the consolidated entities rather than that of the separate operating and property companies.

generally followed the accounting treatment adopted by the operators, ie where the parties have capitalized a building on their balance sheet, we have also do so. The (small number of) exceptions to this approach are described and explained in the detailed profitability assessment of each operator. In these cases, a full market rent has been charged to the profit and loss.

59. For those leasehold assets that have been capitalized, we have treated them on the same basis as freehold assets, ie their value has been estimated on a freehold basis and they have been depreciated over their useful economic life rather than over the remaining term of the lease under which they are held. As a consequence, any rental payments made on these buildings have been removed from operating costs.

Intangible assets

60. Our Guidelines state that:

- ... the CC may consider the inclusion of certain intangible assets where the following criteria are met:
 - it must comprise a cost that has been incurred primarily to obtain earnings in the future;
 - this cost must be additional to costs necessarily incurred at the time in running the business; and
 - it must be identifiable as creating such an asset separate from any arising from the general running of the business.⁴⁰

61. BMI, HCA, Ramsay and Spire⁴¹ put it to us that they had invested in developing and acquiring a range of intangible assets that were employed in generating returns for their businesses and which should, therefore, be recognized as part of the capital

⁴⁰ CC3, [Annex A](#), paragraph 13.

⁴¹ Spire submitted estimates of the replacement cost of each of its most significant intangible assets.

employed by their businesses. Spire put forward the view that such intangibles were required by any hospital operator to generate a viable business. In the following paragraphs, we set out the principal categories of intangible assets suggested by these private hospital operators and our proposed approach to their recognition.

Purchased goodwill

62. Some of the relevant firms have grown through acquisition or been acquired themselves and hence have capitalized purchased goodwill on their balance sheets. This is subject to an annual impairment review.
63. Spire, Ramsay and BMI put forward the argument that some or all of the purchased goodwill held on their balance sheets should be included in the capital employed in our analysis on the basis that this represented payment for intangible assets including, among other things, a skilled workforce, start-up losses, relationships with consultants, GPs and patients, internally-developed intellectual property related to clinical and administrative processes, as well as the value of the reputation or brand of the businesses.
64. Purchased goodwill is not a separately identified asset but rather is a balancing figure. It is the remaining, unallocated element of an acquisition price once all tangible assets and certain (although not necessarily all) intangible assets have been fair-valued and set against the price paid. In principle we agree that, when purchasing a business, goodwill may represent the value of intangible assets not capitalised on the business's balance sheet. The approach that we have taken is to recognize those intangible assets that meet our criteria for recognition, regardless of whether these have been separately identified in the companies' balance sheets or are included in a balancing goodwill figure, but to exclude any remaining goodwill in

line with our approach in previous CC market investigations.⁴² This approach ensures that only intangible assets that meet our criteria for recognition are included in the estimate of the capital employed by the relevant firms. It also avoids the risk of capitalizing any 'excess profits' that the business is able to generate, which may be reflected in the purchase price and hence the purchased goodwill.

IT systems and software development costs

65. Spire, Ramsay, BMI and HCA noted that they had invested in developing bespoke IT systems and software to help them manage their businesses. In some but not all cases, these investments had been capitalized on the firms' balance sheets under IFRS accounting standards. We accept that the costs of acquiring and/or developing such systems meet our criteria for the recognition of an intangible asset in that they represent an investment in the business incurred primarily to obtain earnings in the future; and such costs are additional to those necessarily incurred at the time in running the business. We had some doubt as to whether they create an asset that is separable from any arising from the general running of the business. However, on balance we considered that this was a reasonable assumption in this case.

66. Hence, we have included the costs of acquiring and/or developing such assets at their cost. The parties proposed differing periods for the depreciation of such assets, ranging from three to seven years. In the interests of ensuring consistency in our analysis, all such assets have been depreciated over a four-year period.

Staff training and recruitment

67. The standard accounting treatment of staff training and recruitment is to write off the costs to expenses as they are incurred. HCA, Spire and Ramsay argued, however, that the costs of recruiting (both medical and non-medical) staff and training them

⁴² For example, this was the approach taken in the [Home Credit](#) and [Local bus services](#) market investigations.

represented an asset for their businesses that should be recognized in the capital base. Spire estimated that the total cost of recruiting its staff would be £[§] in FY11.⁴³ The operators told us that the training provided ranges from induction courses for new joiners to continuing professional development for medical staff and on-the-job learning where experienced staff provided training to more junior staff members.

68. We recognize that in certain past investigations the costs of training staff have been capitalized as intangible assets.⁴⁴ However, we do not believe that this would be an appropriate approach to take in this case due to the nature of the training provided. A review of the submissions made by the parties indicates that most training is aimed at either inducting staff into the hospital operators' specific businesses or maintaining their skill levels in line with professional requirements (CPD), with fundamental training being provided largely by the education system and the NHS. We consider that the former represents recurring expenditure that is necessarily incurred at the time in running the business and we do not see a good case for treating them in any way other than as an operational cost.⁴⁵ Hence staff training costs have not been capitalized.

69. We considered whether there was a stronger justification for capitalizing the costs associated with the recruitment of staff. However, we were not convinced that these costs were either additional to costs necessarily incurred at the time in running the business, or that they served to create an asset separate from any arising from the general running of the business. Therefore, we have not capitalized staff recruitment costs.

⁴³ This figure was estimated on the basis of interviews conducted with third party recruiters.

⁴⁴ For example, this approach was taken in the investigation into [Local bus services](#).

⁴⁵ Information submitted by Spire indicated that induction training generally took between two and three days per staff member, with the large majority of the costs incurred being the opportunity cost of salaries that would be incurred anyway, rather than costs of providing the training.

Relationships with patients, GPs and consultants

70. Spire argued that they invested in developing relationships with GPs, consultants and patients in order to ensure a stream of referrals in the future. HCA also noted that it invested significantly in developing relationships with GPs, consultants and patients in order to raise awareness of its hospitals and increase their attractiveness. Ramsay highlighted that it invested in developing relationships with GPs to increase awareness among GPs of Ramsay hospitals and the services offered. The categories of costs identified by the operators as contributing to the development of their relationships included, among other things, marketing their facilities to GPs, patients and consultants, educational events for GPs, the administrative costs associated with granting practising privileges to new consultants, and investments in providing a quality service to patients. The estimates of the annual costs of such activity provided to us by the relevant firms varied materially across the parties, which we believe was at least partly due to different approaches being taken to identify which costs serve to develop such relationships.
71. We recognize that the marketing of private hospitals to potential patients and clinical professionals represents an expense incurred with the aim of obtaining revenues in the future. However, we do not consider that these relationships with GPs, consultants and patients create assets that are separable from any arising from the running of the business since such relationships are generally either non-contractual or short-lived. We briefly set out our reasoning for this approach in the case of each type of relationship identified by the parties below.
72. We understand that the average contractual relationship between a hospital and a patient tends to be of short duration—in most cases lasting no more than a few days, ie the period during which a patient is admitted to the hospital for treatment. The patient (or their insurer) is subsequently invoiced for the treatment received with no

continuing relationship with the hospital. In our view, this indicates that marketing expenditure directed at patients is a current expense of the business rather than investment in an asset that can be expected to generate returns over an extended period of time.

73. In the case of GPs and consultants, we consider that in the absence of any contractual obligations—either to refer patients or to practise at a hospital—these relationships do not meet the criteria as assets separate from any arising from the general running of the business.

Reputation

74. BMI, HCA, Spire and Ramsay argued that their corporate brand and/or the reputation of their individual hospitals should be recognized as an asset of the business. Ramsay stated that ‘the value of this brand and reputation is the product of many years of investment in safe operating procedures, well trained and competent staff and the establishment of a track record for delivering care safely and efficiently in the UK and abroad.’ We recognize that the reputation of a business may be developed over time by providing high quality products or services. However, as set out in previous investigations, we do not consider that the costs incurred in directly providing a good or service should be capitalized as creating an intangible asset for the business, since they were necessarily incurred in running the business.⁴⁶

Regulatory approvals

75. Spire and Ramsay argued that healthcare providers must not only adhere to a broad range of regulations, but must also obtain specific approvals and/or licences in order

⁴⁶ This principle was articulated in our Report on SME banking, paragraph 2.270: ‘any or all of the revenue costs of supplying any product could also be regarded as having the effect, provided the product is of good quality, of enhancing the supplier’s reputation; on this basis the costs result in a future benefit as well as a current one. However, this creation of the future benefit is incidental in that the costs have had to be incurred in order to supply the product at all, and for this reason the costs are treated for the purpose of economic and financial evaluation as revenue, not capital, costs.’

to operate. These include registration with the CQC and the Information Commissioner, as well as licences from the Human Tissue Authority and the Human Fertilisation and Embryology Authority, among others. These operators argued that the CC should include the costs of obtaining such approvals as an intangible asset on their balance sheets.

76. Having reviewed the information provided by the PHPs, as well as information from the various agencies listed, we understand that these regulatory approvals represent a recurring (annual) cost of the businesses rather than a one-off investment.⁴⁷
- Hence, we have treated the costs of maintaining these approvals as expenses rather than a capital investment.⁴⁸

Clinical and administrative processes and know-how

77. Ramsay, BMI and Spire put it to us that they had invested in developing clinical and administrative processes that allowed them to offer high-quality treatment to patients as well as manage their businesses effectively. Spire stated that 'This subset of costs includes (but is not limited to) the investments required to develop clinical care pathways, develop patient protocols, implement these pathways and protocols, train staff and develop ICT services'. Similarly, Ramsay highlighted the investment in the development of leadership expertise undertaken by its parent company and used by its UK operations, stating that 'Ramsay UK benefits from the internally developed procedures, processes and systems which are developed by its overseas businesses, as well as from the input of senior executives'.

⁴⁷ For example, the CQC fee for the grant or subsistence of a CQC registration is between £8,500 and £150,000 per year depending on the number of sites; and the Human Tissue Authority charges annual fees which vary depending on the type of work done and the number of sites.

⁴⁸ This approach is consistent with that adopted in the SME Banking investigation where the costs of maintaining a banking licence were treated as revenue rather than capital expenditures on the grounds that these were necessary to run the business and not additional to the costs necessarily incurred in running the business. See Report into SME banking, paragraph 2.333.

78. The third criteria for the recognition of an intangible asset is that the expenditure must create an asset 'separate from any arising from the general running of the business'. We recognize that over time a business will develop a range of internal processes for administrative, strategic and operational purposes since these are required for the day-to-day running of a business. However, it is not clear that there is an intangible asset of 'clinical processes' separate from the employment of appropriately trained medical directors, matrons and other clinical staff, who are responsible for developing and updating such processes on an ongoing basis. Similarly, management expertise is an asset (human capital) of a management employee, the cost of which to the hospital operator can generally be expected to be reflected in the employee's salary.
79. We have not included clinical processes or management know-how as an intangible asset in our analysis. However, to the extent that such intellectual property has been incorporated into the PHPs' IT systems, we have allowed the development costs of these systems to be capitalized on the basis that such systems represent a separable asset.

Adjustments to the inputs to ROCE calculation: valuations of tangible assets

80. In this subsection we set out the adjustments that we have made to the accounting valuations of the tangible assets used by the relevant firms. For each type of asset, we provide:
- (a) an overview of the current accounting treatment and the potential issues arising from using this treatment for the purposes of profitability analysis in a market inquiry;
 - (b) the views of the relevant firms as articulated to us; and
 - (c) our view of the appropriate treatment, together with our reasoning. This is the treatment that we have adopted in the profitability analysis.

81. We consider that the general principles outlined in paragraphs 33 to 56 above apply regardless of whether a particular issue is specifically discussed below.

Land and buildings

82. The private hospital operators hold land and buildings on their balance sheets at either the actual historic cost of buying the land and constructing the hospital, or at a (historically) revalued level, in many cases determined during a fair-value adjustment made on acquisition of the business by its current owners.⁴⁹ Historic costs will generally understate the current economic value of hospital properties as a result of both general inflation and changes in the real value of assets in the years since acquisition. In certain cases, we note that this difference between historic cost and the current economic value of the property is substantial.⁵⁰
83. Equally, where land and buildings have been revalued, their value in the accounts may not represent the deprival value of the asset but a 'fair' or market value of the business.⁵¹ This fair value may represent an expert's opinion on what a purchaser would pay for the business conducted using the asset rather than an estimate of the cost of replacing the asset.⁵² For example, BMI told the CC that the value of its land and buildings in its accounts was based on a report, which valued the land and buildings on the basis of the trading potential of the hospital:

Our valuations have been calculated with the application of a multiplier, based on a yield, to the sustainable EBITDA. The EBITDA utilised is based on the Net Operating Profit (NOP) figures provided to us by BMI

⁴⁹ According to IFRS 13, the fair value of a non-financial asset takes into account its highest and best use. IFRS 13:27.

⁵⁰ For example, Nuffield's financial statements record the value of the land on which its Exeter hospital is sited at £[REDACTED], as the land was initially acquired in the early 1960s. DTZ's report puts the cost of such a plot of land (in its current location) at £[REDACTED] million.

⁵¹ Financial Reporting Standards require that when a business is acquired, its assets and liabilities are recorded in the financial statements of the acquiring firm at their 'fair value', which is the value at which the asset could be exchanged in an arm's-length transaction.

⁵² To the extent that these fair values reflect an opinion as to what a purchaser would pay for an asset rather than the costs of replacing the asset, they are subjective, incorporating expected returns.

Healthcare Limited, and is primarily based upon the amalgamation or average of the 2005 Actuals and the 2006 Budget.⁵³

84. We consider that this valuation methodology is inappropriate for the purposes of profitability analysis, as the property value will reflect the returns generated by the hospital business, which may include any 'excess returns' that it is able to generate and which we are seeking to identify in our analysis.
85. We were also concerned that, to the extent possible, our analysis should be based on comparable information across the relevant firms. As some of the private hospital operators had revalued their land and buildings, while others recorded them at historic cost, we set out in the following paragraphs how we have sought to assess the economic cost of these assets in a consistent way across all PHPs.

Land

86. Our view is that the land owned by the relevant firms should be valued at the cost of replacing it rather than at its value in the balance sheet of the firms. In the absence of pre-existing evidence on replacement costs, we commissioned a report from DTZ to estimate the cost to a new entrant of acquiring the existing or equivalent land portfolios of the hospital operators. (See Appendix 6.15 for the DTZ report.)
87. DTZ estimated the price of the plots of land with reference to RICS VS6 Valuation Standards and GN 6 Guidance Note, which relates to the depreciated replacement cost method of valuation. The fundamental principle of this approach is that a hypothetical buyer for an MEA would purchase the least expensive site that would be

⁵³ *Report and Valuation in respect of Portfolio of Forty Five Independent Acute Hospitals and One Development Site*, GVA Grimley, 31 March 2006.

appropriate for its proposed operations. DTZ estimated these prices based on alternative uses, such as residential, employment and agricultural land.⁵⁴

88. We also collected information on the land values used by the Valuation Office Agency (VOA) in its calculations of business rates. We note that these figures are substantially lower than those estimated by DTZ. However, we do not believe that these estimates are prepared in accordance with the value to the owner principles. For example, in many cases the VOA imputes a land value as a proportion of the replacement cost of the hospital building rather than considering the cost of land in a particular area.⁵⁵

Relevant firms' views

89. BMI submitted to us a report prepared by Colliers, which put forward the 'fair maintainable operating profits' or 'residual value' methodology as the conceptually appropriate approach to estimating the value of land.⁵⁶ This derives the value of land from the (maintainable) trading performance of the hospital. As set out in paragraph 84, we consider that such an approach would introduce circularity into our analysis and therefore is fundamentally inappropriate.
90. Spire provided two land valuations, prepared by Knight Frank, one following RICS Valuation Guidance and one using a slightly modified version of DTZ's approach. The first used recent private hospital land transactions to estimate a range of prices per acre paid for land with planning permission for a hospital. Knight Frank assessed the relative desirability of each of Spire's sites based on site size, site location and

⁵⁴ Where agricultural land has been used as a comparator, the prices reflect those paid for agricultural land for development, rather than agricultural land for farming use.

⁵⁵ The VOA is an executive agency of HMRC. It provides the Government with the valuations and property advice required to support taxation and benefits. The VOA is responsible for setting business rates. For specialized buildings, such as hospitals, the VOA employs a depreciated replacement cost methodology, which is set out in *Practice Note 5: 2010: The Valuation for Rating of Private Sector Hospitals*: www.voa.gov.uk/corporate/Publications/Manuals/RatingManual/RatingManualVolume5/sect840/ch-rat-man-vol5-s840-pn5-2010.html.

⁵⁶ Ashkirk, Spire's property adviser, also recommended this approach. More detail on this approach is provided in Appendix 6.16.

site defects/benefits and then applied a value from this range to arrive at a value for the land required to replicate the Spire estate. The second approach used data included in various Knight Frank publications and VOA information⁵⁷ on residential land prices, as well as data on recent care-home transactions to estimate the value of Spire's portfolio on an alternative use basis. Both of these methodologies resulted in a similar land valuation of approximately £[§] million for Spire's 37 hospital sites.

91. HCA submitted two valuation reports. The first, prepared by Altus Edwin Hill (AEH), estimated the cost of HCA's land using the price of office land in central London as a proxy, while the second, prepared by KPMG, estimated land (and building) values on the basis of the alternative use of the hospitals for residential purposes. KPMG considered that residential developers would be the most likely buyers for the subject properties were they to be made available on the open market. HCA put forward the view that the value in alternative use was the appropriate one for profitability analysis as it represented its opportunity cost of operating hospitals in central London.

Our view

92. A detailed description and assessment of these approaches and that taken by DTZ is set out in Appendix 6.15. We consider that the approach adopted by DTZ was in accordance with the value to the owner principles set out above and hence provided a suitable basis for our profitability analysis. We had some concerns with the Knight Frank valuations, not least that its approach in each case extrapolated from a small number of data points, which we have reason to believe may not be representative, to land values around the country. We consider, therefore, that these valuations are likely to overstate the replacement cost of land. Finally, as noted in paragraph 88, we do not believe that the VOA land price estimates are appropriate for profitability

⁵⁷ www.voa.gov.uk/dvs/_downloads/pmr_2011.pdf.

analysis as they have not been estimated with reference to the cost of acquiring a plot of land.

93. Consequently, we have used the DTZ land values in our profitability assessment for all operators outside central London. In using these values, we have made allowance for both the costs of obtaining planning permission at a rate of £250,000 per site, which the DTZ report advises is towards the upper end of the range of costs that an operator is likely to incur,⁵⁸ and stamp duty land tax (at a rate of 5 per cent) and fees (at 0.8 per cent of the purchase price).
94. However, we have also carried out a sensitivity on our analysis on the basis of the Knight Frank report. On average, Knight Frank estimated land values to be approximately [X] per cent higher than those estimated by DTZ (including Stamp Duty Land Tax, fees and planning costs). We have applied this uplift across all national operators.⁵⁹ See paragraphs 167 and 168 for a discussion of this sensitivity.
95. For central London hospitals, DTZ provided an estimate of the cost of acquiring a replacement building, rather than a plot of land, whereas the AEH report estimated average land values of approximately £2,500 per square metre of built space using a residual value methodology based on alternative use as offices.⁶⁰ In order to ensure a consistent treatment across operators, we have used the AEH land valuation approach for HCA and TLC rather than DTZ's replacement building cost. It was unclear with the latter whether an operator could acquire a hospital building (as opposed to an office or other building) at the prices estimated by DTZ or, if not, what

⁵⁸ We used a figure at the upper end of the range to reflect the costs of potential delays and uncertainty in obtaining planning. Such delays and uncertainty are more likely to be an issue in the cases where DTZ has estimated replacement costs with reference to the price of agricultural land for development, than for other sites.

⁵⁹ National operators refer to those that have hospitals that are located predominantly outside London, ie BMI, Nuffield, Ramsay and Spire. The 'London' operators are BCH, HCA and TLC.

⁶⁰ AEH stated that the most appropriate and viable alternative use for HCA's buildings was office space. See Appendix 6.16 for a full description of AEH's approach to land valuation. In central London we understand that land prices are largely dependent on the size of building that can be constructed on a plot rather than the size of the site itself.

the costs of converting an office into a hospital would be. Although AEH's land values were not estimated for TLC's buildings, we applied the same price per metre of built area as for the Devonshire, Portland and Princess Grace hospitals. We consider this to be a reasonable approximation given the proximity of these to TLC's site on Devonshire Place.

96. Although land is not depreciated, we have sought to reflect the change in the value of land over the period in the profit and loss. The Knight Frank report provided information on how land values in each part of the country had changed over the relevant period. Based on the Land Registry House Price Index, it showed a 6 per cent decline in land values on the basis of alternative use between 2007 and 2013, ie approximately a 1 per cent decline in land values each year, although this masks significant fluctuations over the period. We have made the assumption that this is representative of the country as a whole and applied it to all national operators.⁶¹ We did not have information on how land values in London had changed over the period and did not believe that the national scale was likely to be representative. We have, therefore, used the same land value (estimated as of January 2013) for the entire period. We believe that this is likely to be a conservative assumption given the out-performance of the London property market in comparison with the rest of the country.⁶²

Buildings

97. For freehold and capitalized leasehold buildings, we gathered information from the relevant firms on the reinstatement values of their hospital properties. These estimates had been prepared for the firms as the basis for their insurance policies. They

⁶¹ We have applied a consistent rate of change (decline) in land values rather than including increases in some years and decreases in other. This is to avoid these fluctuations in asset prices causing volatility in returns that are unrelated to the operational performance of the businesses.

⁶² If the value of land increased between 2007 and 2013, by using the value as of 2013 in our analysis, we would be overstating the average level of capital employed over the period and not reflecting the increase in the value of land in the profits of the business.

take into account the costs of demolishing the existing structures, clearing the site and reinstating the building and building services, car parking and other external landscaping, as well as professional and planning fees and an allowance for 'un-measured costs'. We also considered the VOA's replacement cost estimates for each hospital.⁶³

Relevant firms' views

98. BMI put forward the view that reinstatement costs were likely to understate the cost of building a hospital as they excluded the costs of 'any land decontamination required; renewal of foundations; access roads and car parks and so forth; provision of utilities to the site; interest and other financing costs of reinstatement; and developer's profit'. BMI suggested that either the net book value⁶⁴ of hospital buildings or the costs incurred by PHPs in the construction of new hospitals in recent years would provide a better guide to the MEA value of private hospitals. The net book value of BMI's tangible assets (land, buildings and equipment) in its financial statements was £[REDACTED] as of FY11. BMI told the CC that a 'conservative' estimate of the MEA value of its hospitals was approximately £[REDACTED]⁶⁵ on the basis of the costs incurred by various operators in constructing a number of new hospitals in recent years (see Figure 3).

⁶³ Practice Note 5: 2010: *The Valuation for Rating of Private Sector Hospitals*, VOA.

⁶⁴ BMI noted that even if the deprival value of the hospitals were reflected in the reinstatement costs, 'it still leaves open what should be done with this reduction in asset values [from the net book value]. The Core Hospital Business needs to recover this fall in asset value.' In the context of profitability analysis, a difference between the net book value of the assets held by a business and their deprival value does not imply that their value has changed over the period, which would be recognized in the profit and loss. It may imply that the businesses paid more (or less) than the replacement cost of the assets when they acquired them, with the net book value of the assets reflecting the valuation approach adopted on acquisition. The aim of profitability analysis is to identify the level of returns being made on the economic cost of the assets, which in a competitive market should tend towards the cost of capital over time; it is not concerned with the returns being made on the investment by the owners of the assets, since this investment is likely to be increased where it is possible for assets to earn excessive returns.

⁶⁵ BMI arrived at the £[REDACTED] estimate by applying the average cost (excluding TLC's cancer centre) of £47 million to its [REDACTED] largest hospitals (which had an average of 4 theatres and 62 beds) to reach a figure of £[REDACTED] million, and then adding the total reinstatement cost of its [REDACTED] smaller hospitals of £[REDACTED]. We note that the hospitals cited as comparators in Figure 3 are not part of BMI's portfolio.

FIGURE 3
Recent hospital build costs

Hospital	Characteristics	Cost (includes land and commissioning costs)
Circle Bath	4 theatres, 28 IP beds, no ICU or HDU	£30 million
Spire Montefiore	3 theatres, 20 IP beds, no ICU or HDU	£29 million
London Clinic Cancer Centre	Specialist cancer equipment, 35 IP beds	£90 million
HCA Christie Clinic	6 NHS theatres, 34 IP beds, no ICU or HDU	£35 million
Circle Reading	5 theatres, 30 IP beds, no ICU or HDU	£58 million
KIMS	5 theatres, 77 IP beds	£90 million
Nuffield Oxford Manor	8 theatres, 71 IP beds, 7 bed ICU	£50 million
Nuffield Leeds	6 theatres, 48 IP beds	£40 million
Average		£53 million
Average excluding LCCC		£47 million

Source: BMI submission to the CC.

99. Spire proposed that the MEA value should reflect both upgrades that had been made to the hospital buildings since the date of the assessment for insurance purposes and the latest construction technology and regulations rather than those used for the current buildings. Spire submitted a revised reinstatement estimate on this basis,⁶⁶ which was approximately [X] per cent above the reinstatement estimate used in Spire's insurance policies.
100. HCA put forward the view that its properties should be valued with reference to their highest value potential alternative use, which was as residential properties. It submitted a report, prepared by KPMG, which valued its (land and) buildings on this basis. HCA submitted details of some recent planning decisions, where a change of use (to residential from another use) was permitted in Westminster, to support its view that residential planning permission would be forthcoming on its properties.

⁶⁶ This report was prepared for Spire by Knight Frank. Knight Frank's estimate was based on the inspection of 25 of Spire's properties and a desktop review of the remaining 12 sites. Spire has submitted Knight Frank's estimates to its insurers as the basis for its insurance policies from summer 2013 onwards.

101. BMI and Spire told us that they spent considerable sums maintaining and improving their buildings such that their value did not depreciate substantially over time. They suggested that this capital expenditure approximately offset the depreciation on the buildings over time.
102. Ramsay suggested that we should reflect changes in the market level of rent over the period in the rental charges included in the profit and loss rather than using the actual levels of rent paid in order to ensure consistency between the treatment of owned and rented buildings.

Our view

103. As explained in paragraphs 82 to 84, we do not consider the net book values of hospital buildings in the financial statements of the relevant firms to provide an appropriate measure of the value of those assets to the business for the purposes of profitability analysis. The net book values of BMI's (and other relevant firms' property assets) are based on valuation opinions derived from the profits of the business rather than measures of the cost of replacing the assets. Hence, we do not agree with BMI's view that 'more emphasis should be placed upon values that are known with certainty (i.e. net book values)'.
104. On the other hand, we consider that the value at which the relevant firms insure their building assets do provide a measure of replacement costs. These estimates were prepared for the relevant firms by surveyors with reference to the actual hospital buildings owned by the relevant firms and industry-level cost indices. We believe that the relevant firms have an incentive to ensure that their reinstatement estimates reflect the actual costs they would incur in rebuilding their existing hospital buildings since significant deviations from this level would result in either the buildings being

under-insured, leaving the business exposed to the costs of rebuilding, or paying unnecessarily high insurance premiums.

105. Our review of the reinstatement reports submitted by the parties indicates that the values include the 'Full structural rebuilding costs including appropriate foundations',⁶⁷ as well as the costs of reinstating the on-site car parks, roads and building services within the boundaries of the sites. We recognize that the figures do not include an allowance for either developer's profit or for interest and financing costs. However, they do include an estimate of demolition and site clearance costs which would not be required for a new-build hospital, as well as an allowance for both professional fees⁶⁸ and 'unmeasured' costs. These costs comprise around 20 per cent of the total reinstatement cost estimates. Hence, we consider that the reinstatement value is a reasonable estimate of the cost of constructing a new hospital. We note that the costs of decontaminating land could be expected to be recovered in a lower land purchase price and hence, although incurred in building the hospital, should not add to the overall costs given that the land values used in our analysis do not include a discount for the land being contaminated.
106. We agree that improvements made to the hospital buildings after the reinstatement assessments were undertaken should be reflected in the capital value of the buildings. We have capitalized the investments made by the parties in improving their freehold buildings in addition to the reinstatement value.⁶⁹
107. We reviewed the information submitted by BMI and Spire on the costs incurred by PHPs in building hospitals in recent years. We did not consider the comparisons

⁶⁷ Colliers CRE, *Buildings Insurance Reinstatement Cost Assessment Report*, August 2008, prepared for Spire. Similarly, Rushton International's reinstatement cost report, prepared for HCA stated that 'The basis of assessment adopted is full reinstatement inclusive of foundations'.

⁶⁸ We note that the allowance for professional fees includes planning fees, which we have also allowed for in the value of land.

⁶⁹ These improvements have been capitalized from the year of the reinstatement assessment onwards as improvements carried out prior to that assessment would have been included in the reinstatement cost estimate.

drawn by the operators to be informative since a number of the examples given are significantly different from the 'average' hospital in the portfolio of the relevant firms in terms of both the size and the specification of the units, with the figures quoted including the costs of all equipment. For example, the Kent Institute of Medicine and Surgery, Nuffield's Oxford and Leeds hospitals and Circle's Nottingham ISTC and Reading hospital are significantly larger than the average Spire or BMI hospital, with floor spaces that are approximately 2 to 3 times the size. Moreover, KIMS and Nuffield's Oxford and Leeds hospitals all offer (or will offer) state-of-the art facilities, including intensive care units and advanced treatment and diagnostic capabilities. In contrast, only 7 of BMI's and 5 of Spire's hospitals offer critical care level 3 facilities. TLC's new cancer centre required the demolition of existing buildings and the excavation of a basement that is 20 metres (3 floors) under ground and a linking tunnel (to TLC's main clinic) prior to construction of the cancer clinic. The Cancer Centre offers a range of cutting-edge equipment, including Cyberknife and RapidArc technologies, the costs of which are included in BMI's estimate of the costs of building the facility. This equipment is very costly to acquire and not available in most private hospitals in the UK.⁷⁰

108. We consider that Knight Frank's estimate of the costs of reinstating Spire's portfolio on an MEA basis is likely to be more accurate, as it is based on Spire's actual estate of hospitals rather than alternative facilities which may not be comparable. Knight Frank's estimate was approximately [X] per cent higher than Spire's reinstatement costs, with this difference reduced to about [X] per cent when (capitalized) freehold improvements (made subsequent to the insurance estimates) were added to the reinstatement values.⁷¹

⁷⁰ For example, in the UK only HCA and TLC among the PHPs have invested in Cyberknife.

⁷¹ Spire has invested significantly in extending and improving its hospital assets. This 24 per cent difference is significantly smaller than the differences posited by Spire and BMI in their estimates based on recently-constructed hospitals.

109. However, we did not consider it appropriate to use the construction costs for the modern hospital assets as a proxy for the deprival value of the relevant firms' existing assets. As set out in paragraph 44, the MEA value is the cost of replacing an old asset with a new one with the same service capability allowing for any differences both in the quality of output and in operating costs. For the hospital operators to incur significant additional costs in constructing more complex and flexible buildings, rather than the less costly alternatives currently used, it is logical to assume that there would be substantial operational benefits either in terms of the units' ability to generate revenue or operating costs. Hence, a consistent treatment would require an adjustment to be made to the level of profits earned—to reflect the operational performance of the more expensive assets—as well as to the capital value of the assets. Since we do not have any estimates of these operational benefits, we consider it more reliable to base our profitability assessment on the actual hospital buildings being used in the industry at the moment together with the actual operational costs of the private hospital groups.⁷² We agree with HCA that the value to the business of a hospital may be influenced by the feasible alternative uses to which that building could be put, since a new entrant would have to pay a price that at least matched that offered by those alternative uses. However, we have a number of concerns regarding the assumptions made in the KPMG report, including:

- (a) KPMG assumes that all of HCA's buildings would be able to gain residential planning permission, which we do not believe is reasonable for those hospitals in the Harley Street Special Policy Area, including the Harley Street Clinic (88 Harley Street), the Portland and Devonshire hospitals.⁷³ The Howard de Walden Estate (HdW) told us that the impact of planning restrictions in this area was such that, for a medical building to gain permission to be converted to residential use (or

⁷² For example, Spire highlighted changes in building regulations which came into effect in October 2010 relating to the conservation of fuel and power which could increase the costs of construction. However, this example also highlights that more modern buildings are likely to result in operational efficiencies, such as lower heating costs which should be taken into account when an MEA approach is employed.

⁷³ The Princess Grace hospital is located just outside the Harley Street Special Policy Area and within Westminster's Central Activities Frontage Zone. Hence, it is unclear how planners would view an application for conversion of use to residential.

vice versa), its owners would usually have to ensure that another building in the area was converted from residential to medical use in order to maintain the mix of uses in this area.⁷⁴

(b) KPMG does not take into account affordable housing and section 106 costs in its valuation estimate. Although these are agreed on a site-by-site basis and may be waived for smaller sites or where the viability of the development might be jeopardized by the requirement, there is potential for this to have a material impact on value.⁷⁵

110. Hence, we consider that the alternative use value estimated by KPMG is likely to overstate materially the value of HCA's hospital buildings, since it is likely that some could not be converted to residential use and some would incur non-negligible affordable housing and section 106 costs, which would reduce the price a developer would pay to HCA.

111. Reinstatement estimates provide the 'new' value of a hospital. Over time buildings can decline in value either as the result of wear and tear or due to technological obsolescence. For example, advances in medical technology mean that modern hospitals require few inpatient bedrooms and more day-case beds, as well as more diagnostic equipment, such as MRI and CT scanners. Our review of the evidence, including property reports and the VOA business rates calculations,⁷⁶ indicated that a number of the hospitals had declined in value over time due to both wear and tear

⁷⁴Similarly, a report prepared for TLC by CBRE (2012) stated that:

The property lies within the Harley Street Special Policy Area and is within Westminster's Central Activities Frontage Zone. Westminster's policy is to seek to protect and encourage the provision of private medical facilities that do not adversely affect local amenity or alter the balance of medical or residential uses. The aim is to protect the unique cluster of medical facilities to ensure they are not lost to other commercial uses. Alternative use would be a material departure from these policies, in view of the large size of the London Clinic. It is not possible to predict what alternative development might be permitted or the timescales for obtaining planning permission.

⁷⁵ We note that London has an overall target of 50 per cent affordable housing. Whilst this target comprises affordable housing from all sources, including housing association schemes and bringing vacant properties back into use, as well as through planning obligations on new developments and conversions, it does not appear reasonable to assume that no affordable housing would need to be provided in converting all of HCA's properties to residential use.

⁷⁶ The VOA estimates the level of obsolescence of hospitals on a site-by-site basis, following an inspection. Its estimates are generally revised every five years. The methodology applied by the VOA is set out in *Practice Note 5: 2010: The Valuation for Rating of Private Sector Hospitals*.

and obsolescence. For example, the most recent VOA assessments were undertaken as of April 2008 and indicated that on average the hospital buildings used by BMI, Spire, Nuffield and HCA had declined in value by approximately 20 to 25 per cent due to obsolescence. Similarly, a Colliers report (for BMI) noted that [REDACTED].⁷⁷

112. We considered the VOA estimates of obsolescence to be reliable as they were calculated in some detail by surveyors, following an inspection of each site and taking into account both age, structural and functional sources of obsolescence. They also had the advantage of consistency in terms of approach across all hospital buildings owned by the relevant firms.
113. In our analysis, we used the 'day one' reinstatement value (plus VAT) of the hospitals as the basis of our valuation. This was adjusted with reference to the BCIS construction output price indices to give a value in each year of the period.⁷⁸ We then applied the level of obsolescence estimated by the VOA as of 2008 to the (2008) reinstatement value. We charged depreciation on all hospital buildings on a straight-line basis at 2 per cent per year, using the level of obsolescence in 2008 as the starting point.⁷⁹ All refurbishments and improvements to the buildings carried out after the date of the reinstatement assessment have been capitalized (at cost) and added to the depreciated reinstatement cost of the buildings.⁸⁰ This approach has been applied consistently across all the relevant firms.

⁷⁷ Likewise, a [REDACTED] valuation report carried out for [REDACTED] noted that: 'Within our valuations we have deducted a total one off sum for capital expenditure. This reflects our view that a purchaser would want to make some immediate improvements to a number of hospitals and address accommodation or equipment shortfalls at a number of sites.' AEH's report for HCA applied significant discounts to the gross replacement cost estimates to reflect the wear and tear and functional obsolescence of the buildings.

⁷⁸ <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-287916>

⁷⁹ The 2 per cent straight-line depreciation charge is based on an assumed useful economic life of 50 years in the absence of major refurbishments. By separately capitalizing refurbishment, we have sought to capture both extensions to the hospital buildings and refurbishments/improvements that serve to extend their economic life. We note that for some operators the depreciation charge is lower than the increase in value due to capital expenditure such that their total buildings value increases over the period, whilst for others it is less.

⁸⁰ Some of the relevant firms submitted reinstatement values from 2011 or 2012 and hence no improvements or refurbishments made over the period have been capitalized as these are already reflected in the reinstatement value.

114. For rented buildings, we did not make any adjustments to the levels of rent paid and we followed the accounting treatment used by the relevant firms, in terms of capitalizing improvements and/or capital refurbishments of these buildings at their (depreciated) historic cost. See paragraphs 153 to 157.

Sensitivity

115. We have carried out a sensitivity on the building values of the hospitals located in central London (HCA and TLC's buildings). These are based on KPMG's valuation, ie assuming a residential alternative use. (See paragraphs 169 to 175 for further details.)
116. We considered whether it was appropriate to apply a sensitivity to the building values based on the reinstatement costs estimated by the VOA. These were generally lower than those used by the firms for insurance purposes, which we understand was due to a lower build cost per square metre being applied. However, when we compared the VOA values with the build costs of recently-constructed hospitals, such as Spire Shawfair, we noted that the VOA values were significantly lower. We considered, therefore, that these were likely to understate materially the replacement cost of the relevant firms' hospital buildings. Hence, we have not used these figures in our profitability assessment.

Fully depreciated assets

117. Some firms will find that they are still using fixed assets after they have been fully written off in their financial statements. The economic useful lives used in most depreciation calculations are only estimates. If unbiased estimates of economic useful lives are used, there will be an element of averaging with some assets lasting longer than originally envisaged and others wearing out prior to this.

Relevant firms' views

118. Ramsay and BMI put forward the view that the value of equipment, furniture, fixtures and fittings (referred to here as 'equipment') should be adjusted in an assessment of economic profitability to reflect the continuing economic value of assets that were fully depreciated but still in use over the period. Ramsay suggested that we should adjust the useful economic lives of its fully depreciated assets such that they were written down to zero at the end of the period (June 2012) and recalculate depreciation and capital employed on this basis.
119. Spire submitted a report by LEK putting forward the view that the CC should adjust for fully depreciated equipment by considering the MEA value of the equipment that a new operator would need to acquire. Spire suggested that its expenditure of £[REDACTED] million on equipment for its Brighton hospital could be used as a proxy for the cost of equipping the average hospital. On this basis, LEK estimated that an investment of c£[REDACTED] million would be required to reinstate the equipment of the entire group in 2011 however, it suggested that a newly established operator would be likely to acquire used equipment where practical and on this basis, it estimated a 'realistic acquisition cost' of £[REDACTED] million and a depreciated acquisition cost of equipment of £[REDACTED] million in FY11, compared with a net book value of £[REDACTED] million.

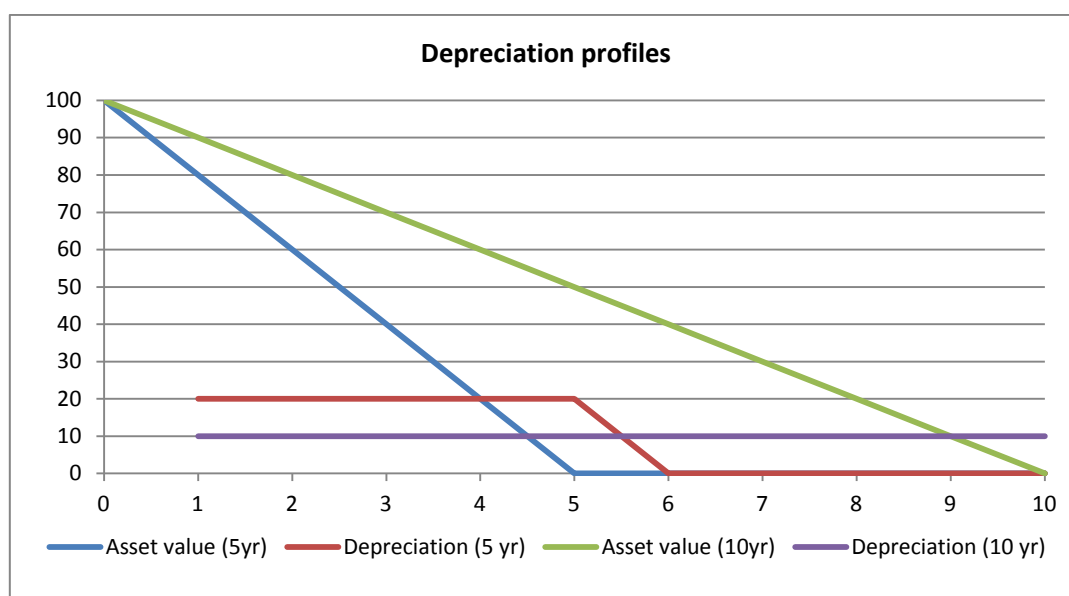
Our view

120. We agree that assets that are still in use should be reflected in the capital employed according to the value to the business principles. Ideally, all assets should be depreciated over their actual useful economic lives with the pattern of depreciation charged reflecting the stream of economic benefits from those assets. The analysis submitted by Ramsay indicates that assets comprising approximately half the total gross book value of the firm's plant and equipment were fully depreciated at the end of the period but still in use. This implies that the net book value of the assets

systematically understates the capital employed by the business. However, it also implies that the depreciation charged against most categories of equipment is too high in early years and too low, ie zero, in later years. In order to rectify this in a consistent manner, it would be necessary to adjust the time frame over which all assets are depreciated to reflect their actual useful economic life, restating both the capital value and the depreciation charge in each period. This adjustment is demonstrated in Figure 4, which shows the pattern of asset value and depreciation for an asset worth £100, when depreciated over five or ten years.

FIGURE 4

Asset value and depreciation profiles



Source: CC analysis.

121. If we were to alter the asset value and depreciation charge of only those assets that are fully depreciated, without making similar adjustments for assets that are not fully depreciated, the total depreciation charge will be overstated. Moreover, the total capital value will remain understated as assets that are not fully depreciated will still have been depreciated too rapidly (on average) in the early years of their life.

122. Adjusting the period over which all assets are depreciated, will increase the level of capital employed and, if the business is in a steady state, will leave the overall level of depreciation unchanged. However, where the asset base of a business is increasing, depreciation will be lower over the period. Hence, it is unclear what impact such an adjustment would have on the ROCE.
123. We considered the approach proposed by Spire but we had concerns regarding the comparability of the equipment in the Montefiore hospital with that used in Spire's other hospitals in terms of both age and specification. The 'realistic acquisition cost' approach does not take into account the age and technical obsolescence of Spire's actual equipment and hence is likely to significantly overstate its value. The 'depreciated acquisition cost' approach takes the estimated replacement cost of equipment (based on Brighton) and applies the average level of depreciation already charged against Spire's assets (including those written down to a zero value). However, it is not clear that the equipment employed by Spire in Brighton is necessarily representative of that in all Spire's hospitals. Spire's website for the Montefiore states that 'Our diagnostic suite boasts some of the most up-to-date equipment in the country'. To the extent that the average Spire hospital has older and/or less sophisticated equipment, this may indicate that the costs of equipping the Montefiore are above average. In addition, a consistent application of Spire's approach would also require that we adjust profits to reflect the reduction in operating costs that result from the technological evolution of medical equipment.⁸¹
124. In addition to making adjustments for fully depreciated assets, the application of the principle of the value to the business would require an adjustment to be made to reflect the value of assets that would not be replaced by the business if it were deprived of them. We note that there is significant excess capacity in the private

⁸¹ LEK report, page 37.

hospital industry. For example, in spite of a [X] per cent increase in hospital patient days between 2006 and 2012, Ramsay reported an average total occupancy rate of [X] per cent in FY12.⁸² BMI indicated that its theatres were operating at less than [X] per cent utilization and its beds at just over [X] per cent utilization.⁸³ HCA indicated that its theatres and consulting rooms were operating at around one-third of total capacity. [X] Similarly, [X].

125. We recognize that the nature of private healthcare services requires some spare capacity in the system to ensure the prompt treatment of patients. However, we believe that the current level of spare capacity indicates that not all assets would be replaced by the operators if they were deprived of them.
126. We do not have sufficient information to make either of these adjustments to the value of equipment (and land and buildings, in the case of excess capacity) employed by the relevant firms. Hence, in our profitability analysis, we have not sought to recalculate the deprival value of the relevant firms' assets to correct for either fully depreciated or 'excess' assets. We have, however, taken these issues into account qualitatively in our interpretation of the results of our analysis in paragraphs 176 to 178.

Working capital

127. Submissions from both the relevant firms and some PMIs highlighted a degree of seasonality in the provision of private healthcare services. Our profitability assessment takes this into account by using the average level of (net) working capital held by the private hospital operators during each financial year, rather than using the year-end position.

⁸² The [X] per cent increase in hospital patient days is a like-for-like figure, ie it excludes the effect of Ramsay opening/acquiring hospitals over the period.

⁸³ [X]

128. The relevant firms agreed that the use of this average working capital position was reasonable, but HCA and Spire put forward the view that the working capital balance should also include an operational cash balance in order to cover any mismatches that may arise between the timing of cash inflows and outflows. A report by LEK, prepared for Spire, suggested that the business would have needed to hold, 'on a conservative estimate', an average cash balance of £[£] million per year for these purposes. HCA told us that 'as a conservative assumption' it 'considers that a cash balance of at least monthly staff costs is necessary for the operation of its hospitals'.
129. We recognize that the operators will experience mismatches in the timings of cash inflows and outflows from time to time and that they will need to have ready access to funds to cover such mismatches when they occur. However, it is our view that the net working capital balance represents the average level of capital that is required by the business, with the additional liquidity requirements described by HCA and Spire representing financing of those operations, which can be met either through the holding of a cash balance, or through the use of an overdraft facility. Therefore, our assessment does not include an operational cash balance.

Level of working capital

130. We observed a number of differences in both the levels of working capital held by the relevant firms and trends in working capital over time. Figure 5 shows the average working capital balance of the national PHPs over the period, while Figure 6 shows that of the London-based PHPs. The former all demonstrate a downward trend in the level of working capital held over the period, while the latter appear to show an upward trend from FY10 onwards.

FIGURE 5

Average working capital balances, national PHPs

[✂]

Source: CC analysis.

FIGURE 6

Average working capital balances, London PHPs

[✂]

Source: CC analysis.

131. BMI attributed the [✂], while Ramsay and Nuffield indicated that more prompt NHS payment terms accounted for the majority of the declines they experienced.

132. We have not conducted a sensitivity on the level of working capital employed by the relevant firms. However, we discuss the potential impact of these trends in working capital requirements in our interpretation of the analysis.

Profitability analysis

133. Table 2 shows the weighted average ROCE for the seven relevant firms combined. (See Annex A for details of how the financial information of the seven PHPs has been aggregated to produce these figures.)

TABLE 2 **Weighted average ROCE, aggregated figures for relevant firms**

	<i>per cent</i>				
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
ROCE	13.4	15.4	16.5	18.2	18.3

Source: CC analysis.

134. This analysis indicates that the profitability of the industry has improved over the period from 13.4 per cent in FY07 to 18.4 per cent in FY11, with a weighted average of 16.4 per cent for the period as a whole.

135. In the following subsections, we set out our ROCE calculations for each of the relevant firms, together with details of any specific adjustments that have been made to their financial information that has not been dealt with in the rest of this paper.

Bupa Cromwell Hospital

136. Table 3 sets out our ROCE calculation for BCH. We have not made any adjustments to BCH's financial information.

TABLE 3 **BCH financial results**

	£'000				
	FY08	FY09	FY10	FY11	FY08–FY11 average
EBIT	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]

Source: Bupa Cromwell financial information (January 2008 to December 2011) and CC analysis.

Note: Financial information for BCH is not available prior to 2008 when it was acquired by Bupa.

BMI

137. Table 4 sets out our ROCE calculation for BMI. The financial information provided by BMI included income from a number of businesses that were outside the scope of our investigation, including their Transform and Care businesses, which specialized in cosmetic surgery and IVF services, respectively, as well as their Netcare⁸⁴ and health screening operations. Therefore, we removed the financial results of these activities from BMI's private hospital operations and allocated central costs between

⁸⁴ BMI's Netcare business provides healthcare services to publicly-funded patients via separate facilities and clinics from BMI's private hospital operations. BMI told us that Transform and Care had separate management teams and therefore were not supported by the central businesses and hence should not be allocated any portion of central costs.

the private hospitals and the Netcare and health screening operations on the basis of revenues.

TABLE 4 BMI financial results

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: BMI financial information (October 2006 to September 2011) and CC analysis.

Specific adjustments

138. BMI put forward the view that we should include the costs of operating its warehouse facility (storage and logistics for drugs and prosthesis), which was integral to its private hospital operations, [X]. We did not agree with this approach. It is reasonable to assume that an operator will seek to run its affairs as efficiently as possible. If by investing in a warehouse facility, which is required to support its core business, an operator is able to cover the costs of that facility (or generate a small profit), we see no reason why the costs should be attributed wholly to the hospitals and the revenues be excluded. We have included the net profit generated by BMI's warehouse facility in our analysis. However, we note that the impact on ROCE is not significant whichever approach is adopted.

139. BMI told us that although its Harbour site is now leased, it had been owned by the business up until 2011 when it was sold to a third party. In the interests of simplicity, we have reflected the value of this asset over the period by deducting the rent cost on the building from EBIT in each year (FY07 to FY11), rather than capitalizing the value of the building in earlier periods.

140. BMI argued that the CC should not exclude the rental expense on two buildings ([X]) that were leased but co-located with freehold buildings since these rental expenses

had been incurred by the business. We recognize that BMI has indeed paid these rents but note that the freehold value of both the land and buildings of these rented properties has already been included in the capital employed. In the interests of simplicity, since we do not have information on the replacement cost of these properties separate from the owned buildings with which they are co-located, we have removed the rental expense rather than the capital value of the buildings. If we do not adjust the level of capital employed and deduct these rental costs from EBIT, the average ROCE over the period falls by [X] per cent, which we do not consider to be significant.⁸⁵

HCA

141. Table 5 sets out our ROCE calculation for HCA.

TABLE 5 HCA financial results

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: HCA financial information (January 2007 to December 2011) and CC analysis.

142. For HCA, we had two estimates of the reinstatement costs of the buildings, one prepared by Rushtons and one by Altus Edwin Hill. We have used the latter in our analysis, as it included the correct set of properties, whereas the Rushtons report did not provide a reinstatement cost for all HCA's owned buildings and included some rented buildings.⁸⁶ HCA told us that AEH had [X] for the Princess Grace/Devonshire hospital. We adjusted for this by increasing the reinstatement value of that building by 20 per cent in our analysis. In estimating obsolescence, we used the VOA values

⁸⁵ We note that this approach double counts the value of the buildings by including them in the capital and including the rent paid on them.

⁸⁶ For example, the Rushton Report included 212-214 and 234-238 Great Portland Street, which are leased by HCA at a market rent, while it did not include 211 Great Portland Street, which is capitalized on HCA's balance sheet.

in order to ensure consistency with the treatment for other hospital groups. However, we note that AEH also estimated the obsolescence of the buildings and its estimates were significantly higher than those of the VOA, ie its report indicated that the buildings were depreciated to a greater extent.

143. HCA submitted a property valuation prepared by KPMG, which valued its buildings on the basis of their alternative use. We have considered this submission as one of our sensitivities.
144. HCA provided the CC with its own model of ROCE, which separated the returns made on UK patients from those made on overseas patients by allocating costs between these customer types according to the number of 'inpatient day equivalents'.⁸⁷ HCA told us that it considers that [X] with all patients receiving the same treatment, benefitting from the same level of service, and having access to the same facilities. HCA noted that, whilst it occasionally uses translators for international patients, [X].
145. We have reviewed this model and have a number of reservations regarding its usefulness for our analysis. In the first instance, we note that it uses the KPMG alternative use property valuation of £[X] million rather than a replacement cost value. This increases the capital employed significantly. In paragraph 109, we have detailed our reservations regarding the appropriateness of this valuation basis. In addition, we consider that the large increases in residential property prices in central London between 2007 and 2013 (the date of the KPMG report) means that this approach is likely to overstate significantly the value of capital employed when applied without adjustment to each year of the period. We have made adjustments to

⁸⁷ In effect, the model weights the volume of inpatient, day-case and outpatient visits according to their relative workload using NHS Reference Cost data in order to derive a common unit of a patient day. Costs and assets are then allocated between UK and overseas patients on the basis of this weighted number of 'inpatient day equivalents'. Revenue does not need to be allocated as HCA has information on the source of revenues.

reflect these increases in our sensitivity. Our analysis indicates that the KPMG values may be overstated by as much as £[£] at the beginning of the period.⁸⁸

146. Secondly, we consider that the inclusion of construction in progress and freehold building improvements and refurbishments, as well as the associated depreciation charges on the latter is inappropriate when applying an alternative use value to the buildings. The addition of a theatre or a imaging suite, for example, is unlikely to have an impact on the alternative use value of the building. Nor does the wear and tear of such assets reduce the alternative use value of the building (which is based on the conversion of the building to apartments). Hence, we do not agree with HCA's view that refurbishments should be capitalized as investments in the business separate from the market value of the properties where those properties are valued with reference to alternative use. Rather, we consider that this approach 'double counts' elements of HCA's capital employed and understates profits.⁸⁹
147. Finally, there are a number of other points where we disagree with the approach taken by HCA, including (a) the deduction of amortisation of purchased goodwill from profits,⁹⁰ although HCA has not included this goodwill or capitalized intangible assets as part of the capital employed in its model, (b) the inclusion of investments in facilities that are not within the scope of the investigation, such as Rood Lane, Enhancecorp and HCA purchasing, and (c) the charging of management fees and guarantee fees payable to other HCA entities.

⁸⁸ Land registry data indicates that residential property prices in Westminster increased by around 55 per cent between December 2006 and February 2013.

⁸⁹ Where we have used reinstatement costs to proxy the replacement cost of a hospital, we have capitalized freehold improvements made after the date of the reinstatement estimate to reflect the higher value of the building and depreciated all refurbishments and improvements from that date onwards. Moreover, we note that the KPMG valuation was conducted in February 2013, which was after the end of the period, and hence should reflect the value of all refurbishments and/or improvements made to the buildings over the period to the extent that they have an impact on the alternative use value of the building.

⁹⁰ In several years this is a negative balance, ie amortization increases profits.

148. As regards the allocation of costs between UK and overseas patients, we consider that the approach taken may result in a disproportionate quantity of costs being allocated to UK patients, resulting in a lower ROCE on those patients and a higher ROCE on overseas patients. The allocation of costs is made based on information from the NHS Reference Cost database. This information indicates that a day-case visit and an elective inpatient day are approximately equivalent from a cost point of view. HCA states that ‘there is... no reason to think that HCA would have relative inpatient-outpatient-day case costs systematically and significantly different to those of the NHS’. We have reviewed the NHS Reference Cost information for 2010/11.⁹¹ The reference cost for inpatient elective treatment of £3,091 used in HCA’s model is based on an average length of stay across all treatments of approximately 2.90 days⁹². HCA’s model estimates a daily inpatient cost by dividing this total cost by HCA’s average length of inpatient stay of [X] days. The resulting day rate of £[X] is then used as a weighting factor for the cost allocations. However, the NHS information indicates that the average cost per day of inpatient treatment is £1,066, ie £3,091 divided by 2.9 days. Hence, we consider that HCA’s approach understates the inpatient cost per day relative to the day case cost. Using the £1,066 daily cost in determining the allocation of costs, results in a substantial reduction in the difference between the returns earned on UK and overseas patients.
149. In addition, we note that the average UK inpatient at an HCA hospital stays for [X] days, whereas the average overseas inpatient stays for [X] days, indicating that the latter are, on average, receiving treatment for more complex and acute conditions with proportionately greater need for costly ICU/HDU services. Finally, HCA’s model does not separate out any costs that are only pertinent to overseas patients, such as

⁹¹ <https://www.gov.uk/government/publications/2010-11-reference-costs-publication>

⁹² Based on total patients of 1.6 million and total bed days of 4.7 million.

the cost of hiring interpreters. These are apportioned evenly on the basis of effective inpatient days.

150. As a result, we do not consider that there is any evidence to support HCA's contention that it earns a higher return on overseas patients than on UK patients. Finally, we note that the scope of our reference includes the provision of privately-funded healthcare services in the UK, which includes overseas patients who come to the UK in search of treatment. Hence, we are also concerned to understand the profitability of these services as well as that of providing healthcare services to UK patients.

Nuffield Health

151. Table 6 sets out our ROCE calculation for Nuffield.⁹³ Nuffield told us that it did not have any intangible assets that should be recognized in its capital employed.

TABLE 6 Nuffield financial results

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: Nuffield financial information (January 2007 to December 2011) and CC analysis.

Ramsay

152. Table 7 sets out our ROCE calculation for Ramsay.

⁹³ The only specific adjustments made to Nuffield's data were the reversal of a one-off restructuring cost and a reallocation of equipment depreciation across the years of the period.

TABLE 7 Ramsay financial results

		£'000				
	18 months to June 08	FY09	FY10	FY11	FY12	2008–FY12 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: Ramsay financial information (January 2007 to June 2012) and CC analysis.

*This is calculated on an annual basis (ie the capital employed has been grossed up to 1.5 times the year end level to take into account the fact that the EBIT relates to an 18-month rather than 12-month period).

Specific adjustments

153. Ramsay put it to us that the capital value of its Nottingham hospital should not be pro-rated in the 18 month period ended June 2008, but rather should be recognized at its full value in accordance with normal accounting principles. We do not agree that this is the correct treatment of the asset for the purposes of our profitability analysis. Nottingham Woodthorpe was acquired by Ramsay in March 2008. The profit generated by the hospital has been included in Ramsay's results from the date of acquisition, rather than for the whole period.⁹⁴ Hence, we have sought to match the level of capital employed by the business with the returns generated thereon by pro-rating the value of this hospital in the period to June 2008 and including it at its full value in all subsequent periods. We consider that this provides an economically meaningful estimate of ROCE.
154. Ramsay leases [X] of its 24 hospitals from Prestbury Investments, a property fund which acquired the buildings from Capio in 2007. Ramsay put forward the view that, in conducting our profitability analysis, the rental payments made to Prestbury should be increased to reflect their current market value. Ramsay's lease with Prestbury [X]. Table 8 sets out the difference between the actual rent charges and those estimated using the formula in Ramsay's leases.

⁹⁴ In effect the profits of the hospital are included in Ramsay's financial information for approximately three months of the 18-month period.

TABLE 8 Ramsay rental charge (Prestbury leases), actual and adjusted

	£'000				
	FY08	FY09	FY10	FY11	FY12
Actual rental charge	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Adjusted rental charge	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Difference	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Ramsay response to the FQ and CC analysis.

155. Our view is that the deprival value of a rental agreement is not necessarily given by the formula governing rents agreed at the beginning of the period but rather the level of rents that would be agreed at the beginning of each year over the period. We have reviewed the evidence available to us to assess whether this indicates that rents would have increased over the period.

156. A [REDACTED] property report carried out in [REDACTED] used a rent cover of 1.5x EBITDAR (after head office costs and maintenance capex) to assess the market value of the properties. The report states that 'It should be noted that most market transactions in the public domain are analysed in terms of rent cover on EBITDARM, with **the most recent examples around 2**. A rent cover of 1.5 based on EBITDAR equates to approximately a rent cover of 2 on EBITDARM in most cost cases.'⁹⁵ We calculated the EBITDAR (after head office costs and maintenance capex) for the hospitals covered by this lease and estimated the rental cover using both the actual rental payments made by Ramsay and the adjusted rental charge that Ramsay suggested should be used in our analysis (see Table 9).

⁹⁵ [REDACTED]. Emphasis added.

TABLE 9 Rental cover for leased properties, actual and adjusted levels of rent

	£'000				
	FY08	FY09	FY10	FY11	FY12
EBITDAR*	[£]	[£]	[£]	[£]	[£]
Rental cover (actual rent)	0.81	1.05	1.45	1.45	1.59
Rental cover (adjusted rent)	0.81	1.09	1.19	1.22	1.24
EBITDARM*	[£]	[£]	[£]	[£]	[£]
Rental cover (actual rent)	1.52	1.48	1.87	1.82	1.97
Rental cover (adjusted rent)	1.54	1.54	1.54	1.54	1.54

Source: Ramsay response to FQ, questions 4 and 7, CC analysis.

*EBITDAR is stated after head office costs and maintenance capex, with these costs allocated to sites based on their EBITDA. EBITDARM is stated before head office costs and maintenance capex.

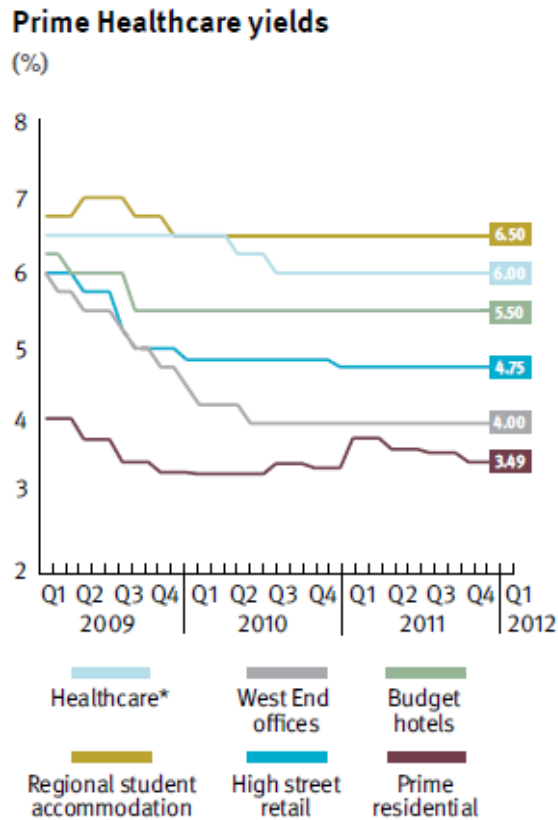
157. This analysis indicates that on the basis of current market expectations of rental cover of between 1.5x EBITDAR and 2x EBITDARM, the actual rent paid is approximately what would be agreed. The adjusted level of rent would result in a substantially lower level of rent cover than is currently being accepted in the market.⁹⁶

158. We also considered the evidence from property market research, such as Knight Frank's report on the healthcare investment market.⁹⁷ This indicates that yields on healthcare assets (including hospitals) declined from around 6.5 per cent in 2009 to 6 per cent in 2011.

⁹⁶ [£]

⁹⁷ Knight Frank, Healthcare Investment, 2012. <http://my.knightfrank.co.uk/research/?regionid=2&divisionid=2>.

FIGURE 7



159. This information, although only available for 2009 to 2011, indicates that if Ramsay were to have renegotiated its rents each year over the period, the total level of rent payable is unlikely to have increased in line with the terms of the contract agreed in 2007. Moreover, the [§] report indicates that the current level of rents is approximately in line with market expectations. We have not, therefore, adjusted Ramsay's rental payments over the period.

Spire

160. Table 10 sets out our ROCE calculation for Spire.

TABLE 10 **Spire financial results**

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: Spire financial information (January 2007 to December 2011) and CC analysis.

161. All of Spire's buildings have been capitalized as freeholds, using the reinstatement value of the property and the land value as estimated by DTZ, except for Clare Park, Fylde Coast and Hull, where the Knight Frank land values have been used.⁹⁸

The London Clinic

162. Table 11 sets out our ROCE calculation for TLC.

TABLE 11 **TLC financial results**

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: TLC financial information (January 2007 to December 2011) and CC analysis.

163. We used TLC's reinstatement costs, as provided by CBRE, for its building values and the VOA estimates of obsolescence. However, the DTZ report did not provide estimates of London land values, nor did TLC submit information on this. We have, therefore, used information submitted by HCA to estimate the cost of land for TLC.

⁹⁸ Our initial analysis treated these three hospitals as rented and hence DTZ was not asked to provide land values for them. We have revised this treatment in light of further submissions by Spire and used the Knight Frank values as the best estimate of the land values.

Assessment and interpretation of profitability

164. Our assessment of the ROCE of the relevant firms indicates that BMI, HCA and Spire have persistently made profits in excess of their cost of capital.⁹⁹ In addition, Ramsay has demonstrated a significant increase in profitability over the period, moving from a position of making profits that were less than its cost of capital to generating returns in excess of that level. Nuffield has [X], whilst BCH and TLC are making returns that are around their cost of capital on average. These findings are consistent with BMI, Spire and HCA having market power and with there being barriers to entry into the private hospital market both in London and elsewhere in the UK.
165. In this section we set out our sensitivity analyses and discuss our interpretation of our profitability analysis.

Sensitivity analysis

166. Our profitability assessment has required a fairly extensive revaluation of the fixed assets of the relevant firms, using information from a number of sources. We have conducted a number of sensitivities on these asset valuations in order to understand the impact these have on our results.

Land values

167. As described in paragraph 94, we recalculated the ROCE of the national¹⁰⁰ relevant firms, using the Knight Frank valuation level as opposed to that estimated by DTZ, ie a 40 per cent uplift on the land values used in the base case.¹⁰¹

⁹⁹ See Appendix 6.14 for our assessment of the cost of capital.

¹⁰⁰ Bupa Cromwell does not have any land as the hospital is rented. The land values used for both HCA and TLC have not been altered as these are not based on the DTZ report but on information submitted by HCA.

¹⁰¹ The Knight Frank land valuations were between 41 and 44 per cent higher than the DTZ valuation (including SDLT, fees and planning permission costs). We have used a sensitivity of 40 per cent to reflect the fact that Knight Frank increased the size of some of the plots of land, which we do not consider to be appropriate.

TABLE 12 Land value sensitivity, ROCE

	<i>per cent</i>					
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>	<i>FY07–FY11 average</i>
BMI	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	12.7	14.8	15.8	17.4	17.5	15.7

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCE for BCH, HCA and TLC are not shown as these are unaltered in this sensitivity.

168. In this sensitivity, the industry ROCE falls by 0.7 percentage points to 15.7 per cent.

We believe that this demonstrates that our results are robust to even relatively substantial increases in the value of land used in the analysis.

Buildings values

169. As set out in paragraph 115, despite our reservations regarding the appropriateness of the approach, we recalculated the ROCE of HCA and TLC, using the KPMG approach to valuation, ie assuming that the central London hospitals have a viable alternative use option as residential property. KPMG's methodology derives the value of the properties to HCA by using a market-determined price per square foot to value a residential building of an equivalent size to HCA's hospitals and deducting the costs of converting those hospitals from their current use to flats.

170. However, in light of the substantial increases in residential property prices in prime central London areas, we considered that using a constant value over the period would introduce significant bias into the analysis. Instead, we have adjusted the price of residential property in KPMG's model on the basis of the Land Registry's house price index for each London borough. Table 13 sets out the indices used. We also adjusted the conversion costs used by KPMG in line with the building cost index used to adjust the reinstatement values of all the relevant firms. We smoothed the changes

in the building values over the 2007 to 2011 period rather than applying the index at each year end.

TABLE 13 House price indices, central London

<i>Land Registry House Price Index</i>			
<i>London borough</i>	<i>February 2013</i>	<i>December 2011</i>	<i>December 2006</i>
City of Westminster	514	464	326
Kensington & Chelsea	579	504	347
Southwark	451	413	351
Camden	534	476	362

Source: Land Registry, House Price Index.

171. We conducted this sensitivity on two different bases. In the first case, we adhered to the principle of full articulation of the financial statements, such that the increase in the value of buildings over the period was passed through the profit and loss. The ROCE under this approach is shown in Table 14.

TABLE 14 Alternative use, buildings value sensitivity with full articulation of accounts, ROCE

	<i>per cent</i>					
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>	<i>FY07–FY11 average</i>
HCA	[X]	[X]	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	14.5	16.3	17.1	18.3	18.3	17.0

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCE for BCH, BMI, Nuffield, Ramsay and Spire are not shown as these are unaltered in this sensitivity.

172. This approach increases the ROCE for TLC due to the significant gains in the value of their properties. However, there is little impact on HCA's ROCE as the increase in profits and the increase in capital employed approximately cancel out.

173. In the second case, we did not pass the increase in the value of the property through the profit and loss. The ROCE on this basis is shown in Table 15. Our aim in conducting our profitability analysis is to understand the returns being generated from operating private hospitals in the UK. We consider that the increase in value of

central London hospital buildings may represent a ‘windfall’ to these operators, which is unrelated to competitive conditions in the market for private healthcare. Hence, although the increase in property values has been persistent, we have estimated the ROCE with these gains excluded from our analysis.¹⁰²

TABLE 15 **Alternative use, buildings value sensitivity without full articulation of accounts**

	<i>per cent</i>					
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>	<i>FY07–FY11 average</i>
HCA	[X]	[X]	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	13.2	15.0	15.9	17.2	17.1	15.8

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCE for BCH, BMI, Nuffield, Ramsay and Spire are not shown as these are unaltered in this sensitivity.

174. In this case, HCA’s average ROCE over the 2007 to 2011 period declines by approximately four percentage points. However, it remains significantly above the cost of capital for the industry. We consider that this demonstrates that our results are robust to even relatively substantial increases in the value of buildings used in the analysis.

175. TLC’s ROCE increases slightly as the alternative use value estimated using KPMG’s model is lower at the beginning of the period than the replacement costs based on building reinstatement costs and AEH’s land values.

Interpretation

176. Our sensitivity analysis indicates that our findings are robust to even relatively significant variations in the value of land and buildings employed by the firms.¹⁰³ We have not conducted sensitivity analysis on the value of equipment employed by the

¹⁰² We note that this approach is not logically consistent and hence will not necessarily produce economically meaningful results as depreciation is charged on some assets (ie equipment and leasehold building improvements and refurbishments) to reflect their decrease in value but the increase in value of the owned hospital buildings is not taken into account.

¹⁰³ If we combine the land sensitivity for BMI, Nuffield, Ramsay and Spire with the second buildings sensitivity for HCA and TLC, the weighted average ROCE for the period is 15.2 per cent.

business due to both the complexity of conducting the analysis in a consistent manner and the significant number of assumptions that would need to be made in order to do so.¹⁰⁴ It is unclear what impact correcting for these values would have on our estimates of ROCE. Where accounting depreciation is too rapid, there will be some assets that incur no depreciation charge despite still being in use and others that are incurring an excessive depreciation charge in light of their useful lives. Hence, the profit effect is unpredictable. The level of capital employed will be understated as a result of the over-depreciation, tending to inflate the rate of return, but where the impact of excessive depreciation on profits is to decrease them, the understatement of capital employed will not necessarily outweigh the negative effect on profits.

177. Our analysis also excludes the 'going concern' value of the relevant firms, insofar as it does not include in the capital base any of the incremental operating costs involved in starting up a hospital. For example, during its first year of operations, a private hospital may incur additional marketing and recruitment costs over and above those required on an on-going basis. Having reviewed the relevant firms' submissions, we determined that it was not practical to identify the additional element of these costs¹⁰⁵ or to quantify them consistently across all operators. However, we recognize their exclusion means that our estimates of the relevant firms' ROCE will be overstated in this respect.

178. On the other hand, we have not made any adjustments for excess capacity in the industry, which, given the current levels of capacity utilization [X], may have a significant negative impact on the level of capital employed for some of the relevant firms and a consequent increase in the ROCE. Similarly, we note that there appears

¹⁰⁴ We consider that making broad assumptions would substantially eliminate the benefit of conducting this analysis.

¹⁰⁵ I.e., the element over and above that required on an on-going basis.

to be a decline in the level of working capital that the national PHPs need to hold, due to improved payment terms with the NHS, which may lower future capital requirements. While the opposite trend can be observed among the London PHPs, which do not have significant numbers of NHS patients, we would expect the former effect to dominate due to the larger combined size of the national PHPs.

179. Finally, we consider the impact of a number of structural changes in the private healthcare market over the last five to seven years and how these may have had an impact on the profitability of the relevant firms.

Growth in NHS demand

180. Between 2007 and 2011, NHS demand for privately-provided healthcare services increased from £315 million to £785 million (excluding ISTCs), an average annual increase of 26 per cent. Ramsay, in particular, has increased its share of NHS work with [REDACTED] per cent of its admissions and approximately [REDACTED] per cent of its total revenues in FY12 coming from NHS patients. For [REDACTED], Spire and Nuffield, NHS revenues comprised around [REDACTED] per cent of their total revenues in FY11. The London PHPs, on the other hand, do a negligible quantity of NHS work. Ramsay told us that a significant benefit of NHS work was that it allowed operators greater flexibility in terms of scheduling operations. As a result, it made it possible for PHPs to operate their assets more efficiently by smoothing volumes over time.
181. The improvement in Ramsay's ROCE over the period provides support for this view, with Spire also telling us that an increase in NHS revenues had contributed to the improvement in its profitability.¹⁰⁶ Without this growth in demand, it seems likely that the relevant firms would have had lower profitability over the period, although the extent of the impact is unclear due to some evidence of NHS demand cannibalizing

¹⁰⁶ [REDACTED] We note that these improvements should also lower the long-run average cost of providing services to patients.

demand from self-pay patients. However, given the fixed-cost nature of the industry, we might also expect this increase in demand to result in lower unit costs in the longer run and hence downward pressure on the prices charged to privately-funded patients, whether PMI or self-pay.

182. Spire submitted a report prepared by LEK, which stated that the revenues it earned from treating NHS patients were more volatile than those earned from PMI patients and that local contract NHS revenues and (to a certain extent choose and book revenues) [X]. We recognize that, at the level of individual hospitals, NHS revenues have been volatile over the period due to the existence of spot contracts which have provided significant volumes in some years and none in others. However, NHS revenues have not been as volatile when considered in the context of the larger PHPs' estates as a whole. Moreover, although there may be some political risk involved in providing services to publicly-funded patients, the recent NHS reforms are likely to result in an increase in private sector involvement in the long run rather than a decrease. On balance, therefore, it seems more likely that NHS demand for privately-provided healthcare will increase in the future rather than decrease, such that the impact on profitability can be expected to continue in the long-run.

Recession

183. Between January 2008 and December 2011, the size of the UK economy declined by around 4 per cent, with unemployment increasing from 5.3 per cent to 8.5 per cent. This downturn has had a differential impact on the market for PMI and that for the services of PHPs. The total number of PMI policyholders has declined by approximately 351,000 people, or 8.1 per cent, between 2008 and 2011, which Laing & Buisson attributed to a combination of job losses and a reduced willingness among

consumers to spend on non-discretionary items.¹⁰⁷ As a result, expenditure on private medical cover declined by 7 per cent between 2008 and 2011, in real terms. In contrast, expenditure on privately-funded healthcare services increased by £344 million between 2008 and 2011, which represented a real increase of 2.2 per cent.

184. As a result of this recession, it seems likely that expenditure on private healthcare services, although resilient, would have been depressed relative to a situation in which the UK economy was growing. Consequently, our estimates of profitability may understate the returns that could be earned in more “normal” market conditions.

¹⁰⁷ Laing & Buisson, Health Cover UK Market Report, 2012, Table 1.1. Approximately two thirds of PMI policies are provided by firms to their employees, hence reductions in employment can directly reduce the number of PMI policyholders.

Aggregation of financial information

Table A1 shows the periods that have been aggregated to give the profitability analysis for the industry as a whole.

TABLE A1 **Periods aggregated for the purposes of industry-level financial analysis**

<i>'Financial year' for aggregated results</i>					
<i>Firm</i>	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
BMI	Oct 06–Sep 07	Oct 07–Sep 08	Oct 08–Sep 09	Oct 09–Sep 10	Oct 10–Sep 11
BCH	-	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
HCA	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
Nuffield	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
Ramsay	Jan 07–Jun 08	Jul 08–Jun 09	Jul 09–Jun 10	Jul 10–Jun 11	Jul 11–Jun 12
Spire	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
TLC	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11

Source: CC analysis.

ROCE estimates

Table B1 shows the ROCE calculations for the relevant firms with the full change in value of assets passed through the profit and loss in the year in which it is incurred. This creates greater volatility in the ROCE figures due to increases and decreases in land and building values. It does not, however, change the average ROCE for the period as total EBIT and total capital employed are the same.

TABLE B1 **ROCE with unsmoothed depreciation**

						<i>per cent</i>
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>	<i>FY07–FY11 average</i>
BCH	[X]	[X]	[X]	[X]	[X]	[X]
BMI	[X]	[X]	[X]	[X]	[X]	[X]
HCA	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay*	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average	16.1	17.7	15.0	14.5	18.9	16.5

Source: CC analysis.

*Figures for Ramsay refer to the following financial year, with this table showing the period in which they have been aggregated.

Assessment of the cost of capital

Introduction

1. The approach to assessing profitability, as set out in our Guidelines,¹ is to compare the profits earned with an appropriate cost of capital. In this appendix, we set out our estimate of the nominal pre-tax weighted average cost of capital (WACC) for the private hospital operators in the UK, based on data for the period January 2007 to June 2012.
2. Our estimated range for the industry WACC for this period is 7.2 to 9.9 per cent with a mid-point of 8.6 per cent (see Table 1). In response to the financial questionnaire, six of the seven largest private hospital groups (BMI, BCH, HCA, Nuffield, Ramsay and Spire²) provided the CC with WACC estimates, either for their UK operations or for their broader group. These are set out in Annex A.

TABLE 1 CC estimate of UK private healthcare nominal pre-tax WACC

	<i>Low</i>	<i>High</i>
Nominal risk free rate (RFR) (%)	3.0	4.0
Equity risk premium (ERP) (%)	4.0	5.0
Asset beta	0.50	0.60
Pre-tax Ke (%)	8.9	12.7
Pre-tax cost of debt (Kd) (%)	5.5	7.0
Gearing (%)	50	50
Tax rate (%)	28	28
Pre-tax WACC (%)	7.2	9.9
Mid-point estimate (%)	8.6	

Source: CC analysis.

3. We consider the above range to be a reasonable estimate of the cost of capital that would have been faced by a hypothetical stand-alone UK private hospital operator.

¹ www.competition-commission.org.uk/assets/competitioncommission/docs/2013/publications/cc3_revised_.pdf.

² TLC did not submit an estimate of its WACC to the CC. It considered that its charitable status and lack of shareholders made the calculation of a WACC problematic.

4. The remainder of this section sets out our methodology and the analysis we have conducted. As set out in our Guidelines,³ we generally look to the capital asset pricing model (CAPM) when considering the cost of capital, and this is the approach we have adopted in estimating the cost of equity for the PHPs. We have estimated the cost of debt for the PHPs with reference to both the actual interest rates paid by the private hospital operators and corporate bond yields over the period.

Relevant firms' views

5. Some of the private hospital operators suggested that the CC should adopt a different approach, either to the overall assessment of the cost of capital, or to the calculation of individual elements of the WACC. We address their suggestions regarding how elements of the CAPM should be estimated in the relevant subsections below. In the final section of this appendix, we also discuss the broader conceptual points raised by the firms.

CC estimation of WACC

6. This section sets out the analysis that we have undertaken in order to estimate the components of the WACC calculation, which includes both generic and industry-specific components. The former comprise: the RFR, the ERP and the tax rate; while the latter comprise: beta, cost of debt, and gearing.
7. In conducting our cost of capital analysis, we have had reference to our price determination for Bristol Water, which was undertaken in 2009/10, ie during the relevant period for our analysis.⁴

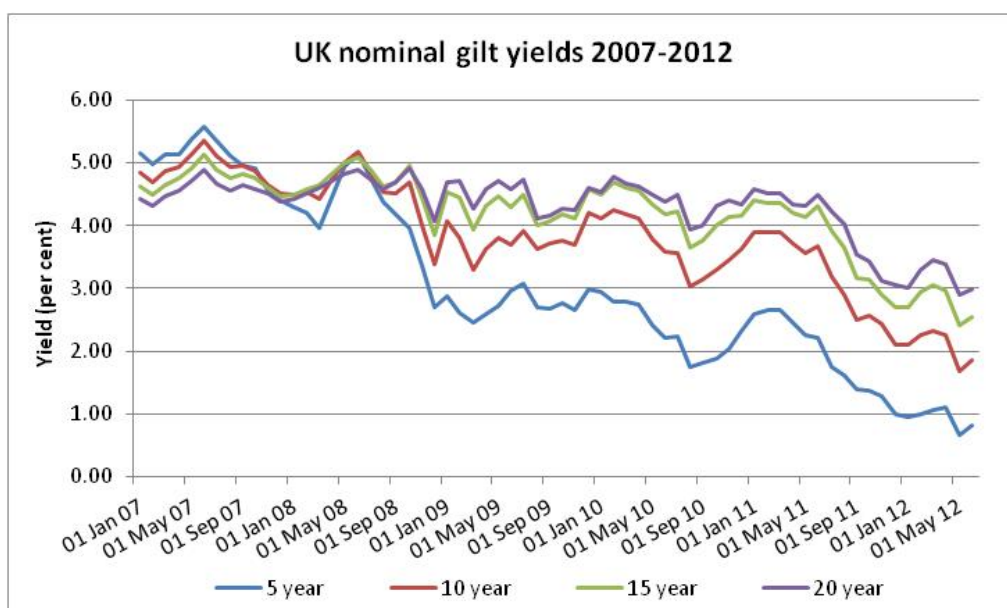
³ CC3, Annex A, paragraph 16.

⁴ Bristol Water plc: determination on a reference under section 12(3)(a) of the Water Industry Act 1991, August 2010.

Risk-free rate

8. In this section, we consider the RFR relevant to calculating the cost of equity. In paragraphs 40 to 46, we estimate the cost of debt directly.
9. We have used the nominal return on UK gilts as a proxy for the (nominal) RFR on the basis that these instruments have negligible default risk. Figure 1 shows the yields on nominal gilts with maturities between 5 and 20 years.

FIGURE 1



Source: Bank of England Monthly average yield on government securities.

10. The yields on nominal gilts have demonstrated a downwards trend over the period from between 4 and 5 per cent in 2007, to between 1 and 3 per cent in June 2012. Yields on five-year maturities have been the most volatile, ranging from around 5.5 per cent in mid-2007 to just under 1 per cent by mid-2012. In addition, the difference between the yields on the various maturities has increased over the period from around half a percentage point in 2007 to in excess of two percentage points in the first six months of 2012.

11. Table 2 shows the average yields for each year and each maturity over the relevant period.

TABLE 2 **Average annual yields, UK gilts, 2007 to 2012**

	<i>per cent</i>					
	2007	2008	2009	2010	2011	2012 (6 months)
5 years	5.0	4.2	2.8	2.3	1.9	0.9
10 years	4.9	4.5	3.8	3.7	3.2	2.1
15 years	4.7	4.7	4.3	4.2	3.8	2.8
20 years	4.6	4.6	4.5	4.4	4.0	3.2

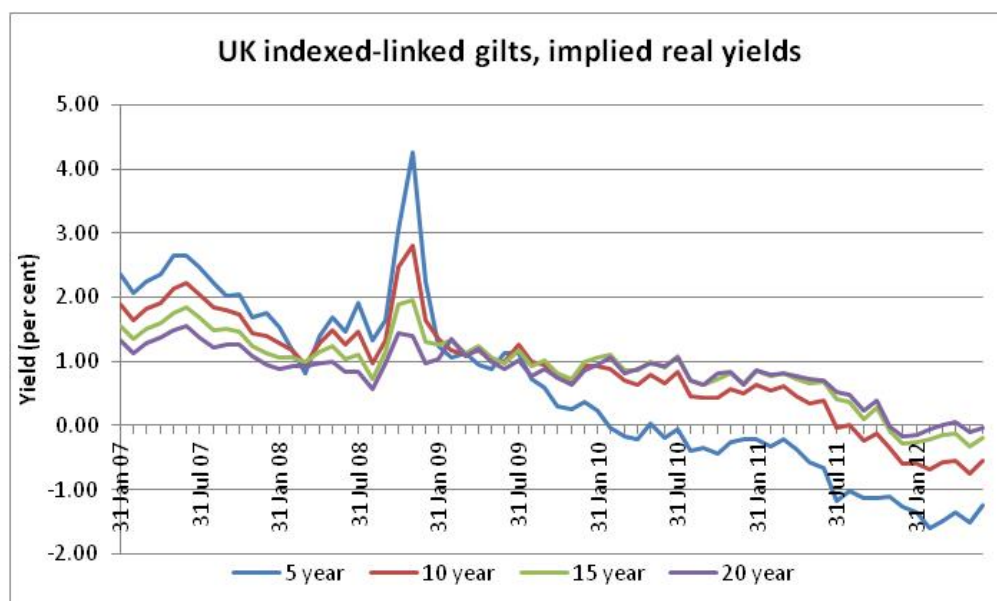
Source: Bank of England Monthly average yield on government securities.

12. In previous market investigations, we have taken the view that long-dated yields, whilst in principle the most suitable basis for estimating the RFR, are often affected by market distortions (associated, for example, with pension fund dynamics) which make them an inappropriate proxy for the RFR.⁵ Consequently, we have tended to use yields on shorter- and medium-term gilts as a proxy for the RFR. However, the effects of the financial crisis and the response by external agents to the market, such as the Bank of England, have caused volatility in gilt yields, with shorter-dated gilts particularly affected. We believe that this volatility, together with the emergence of a significant gap between the yields on gilts of varying maturities over this period, may make short-term gilt yields a less reliable indicator of the RFR. Consequently, we have placed greater weight on the yields on 10-year gilts in reaching our view on an appropriate RFR. This results in a (slightly) higher estimate of the RFR than would be the case if we had focused on five-year gilt maturities.
13. The nominal yield on gilts has ranged between 2 and 5 per cent, with an average of 3.8 per cent for ten-year gilts. On this basis, we have used a range of between 3.0 and 4.0 per cent as the nominal RFR.

⁵ See CC analysis on local bus services market investigation: www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/inquiry/ref2010/localbus/pdf/cost_of_capital_working_paper.pdf.

14. Figure 2 shows the real RFR with reference to the yields on UK index-linked gilts between January 2007 and June 2012.

FIGURE 2



Source: Bank of England 'UK implied real spot curve'.

15. This graph shows the same downward trend as for nominal yields, with all maturities providing a negative real yield by the beginning of 2012. The real yields on 10-year gilts varied from -0.8 per cent to 2.8 per cent over the period and averaged 0.91 per cent. On this basis, we have used a range of 1.0 to 2.0 per cent for the real RFR.

Equity risk premium

16. The ERP is the additional return that investors require to compensate them for assuming the risk associated with investing in equities rather than in risk-free assets. The ERP cannot be directly observed from market data because the future yields on equities are uncertain.
17. There are two methods that can be used to estimate the ERP. The first is to estimate historical returns earned on equities and calculate the difference between this return and that earned on a riskless asset, ie the RFR. The second is to estimate a forward-

looking risk premium based on either the reported expectations of market participants or the ERP implied in asset prices at the start of the period.

Historical approach

18. The motivation for the historical approach is that expected returns remain constant over time and hence that average realized returns reflect the expected return. DMS estimated the average ERP for a number of countries, including the UK, on the basis of equity and gilt yields over the last 112 years. These ERPs are estimated as the difference between the real return on equities and the real return on gilts over the period.⁶ As DMS explained, 'To understand risk and return, we need to examine long periods of history. This is because asset returns, and especially equity returns, are extremely volatile. Even over periods as long as ten or twenty years, we can still observe "unusual" returns.' On this basis, we have used the full 112-year mean equity returns estimates in our analysis.⁷
19. We note that there is a long-running debate among academics regarding which mean—arithmetic or geometric—is the most appropriate for the purposes of estimating a cost of capital. HCA suggested that the arithmetic mean should be used on the basis that it provided a 'more unbiased means of estimating the average market return since it ignores estimation error and serial correlation in returns and unbiased estimators have been found to be closer to the arithmetic than the geometric mean'.⁸ However, the Smithers Report⁹ states:

⁶ The formula used to estimate the ERP is: $((1 + \text{Equity rate of return}) / (1 + \text{Riskless return})) - 1$, which is approximately equivalent to deducting the riskless returns from the returns on equities. DMS categorises 'gilts' into two groups for the purposes of its analysis; shorter-dated 'treasury bills' and longer-dated 'treasury bonds'. The former have maturities of up to ten years, whilst the latter have an average maturity of 20 years. The difference between 'bond' and 'bill' returns is referred to as the 'maturity premium'.

⁷ *Credit Suisse Global Investment Returns Sourcebook* 2012, p7. The advantage of this approach is also that the larger sample size (ie number of years), increases the accuracy of the estimates—the standard errors of the estimations are reduced, narrowing the confidence interval.

⁸ See <http://faculty.london.edu/icooper/assets/documents/ArithmeticVersusGeometric.pdf>.

⁹ *A study into Certain Aspects of the Cost of Capital for Regulated Utilities in the UK*, Stephen Wright, Robin Mason & David Miles, February 2003. The assumption of log-normality ensures that returns cannot fall below –100 per cent but are unbounded on the up side. This is consistent with the possible range of financial returns.

While arithmetic mean returns should be used to proxy for expected returns, these are best built up from a more data-consistent framework in which returns are log-normally distributed, so means should be estimated with reference to mean log returns, or virtually identically, geometric (compound) averages.

20. Table 3 shows the geometric and arithmetic average returns on equities, bonds and bills over the period between 1900 and 2011, together with the historic equity risk premium implied by these returns.

TABLE 3 Real returns on UK equities and government debt, 1900 to 2011

	<i>per cent</i>	
	<i>Geometric mean</i>	<i>Arithmetic mean</i>
<i>UK real returns</i>		
Equities	5.2	7.1
Bonds	1.5	2.4
Bills	1.0	1.2
<i>ERP</i>		
Bonds	3.6	4.6
Bills	4.2	5.8

Source: Credit Suisse *Global Investment Returns Sourcebook*, 2012, Dimson, Marsh & Staunton.

21. An alternative approach suggested by Fama and French is to estimate the underlying return from the sum of the average dividend yield and the average rate of dividend growth.¹⁰ Using the full run of historical data for the UK, this suggests an underlying market return of 5.5 per cent.¹¹
22. Fama and French's work on US securities provides evidence of a fall in expected returns over time, with expected returns being lower since 1950 than before. The statistical evidence for the UK is less extensive¹² but, as illustrated in Figure 3, the

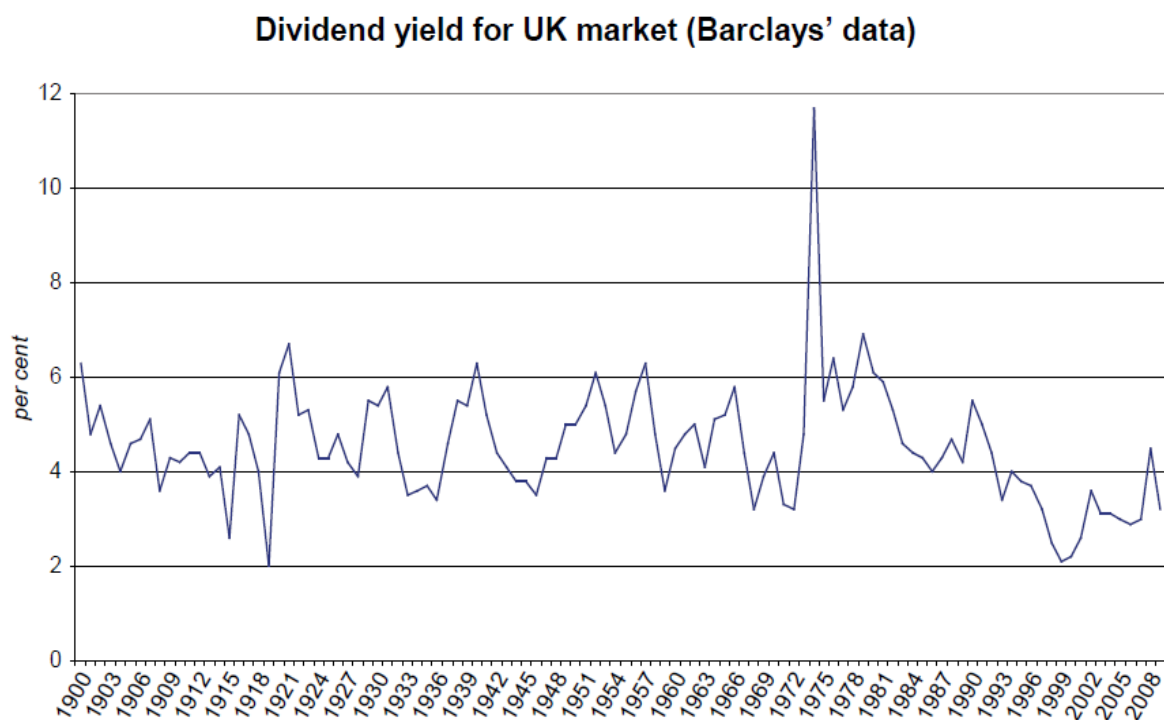
¹⁰ E F Fama and K R French, 'The Equity premium', *Journal of Finance*, April 2002.

¹¹ This result is derived from an average dividend yield of 4.5 per cent and dividend growth of 1 per cent a year (Barclays Equity Gilt Study data).

¹² Two papers that find evidence of a reduction in the expected market return or ERP for the UK (albeit at different times) are N Buranavityawut, M C Freeman & N Freeman, 2006, 'Has the equity premium been low for 40 years?', *North American Journal of Economics and Finance*, 17, pp191–205; and A Vivian, 'The UK equity premium, 1901–2004', *Journal of Business*

dividend yield as of the start of the relevant period (of about 3.5 per cent) was below the historical average (4.5 per cent). Unless future dividend growth is higher than in the past, this would suggest that expected returns are about 1 per cent lower than the past average, implying a market return of about 4.5 per cent (using Barclays' data).¹³

FIGURE 3



Source: Barclays Equity Gilt study.

Forward-looking approaches

23. DMS, noting that dividend yields are lower than in the past (paragraph 22), inferred that, for the world index, a forward-looking risk premium (over Treasury Bills) would be 4.5 to 5.0 per cent, implying a market return of 5.5 to 6.0 per cent based on a real RFR of 1 per cent.¹⁴

and *Financial Accounting*, 2007. The first paper suggests that the expected equity premium may have fallen in the 1960s in the UK and other countries, while the second paper suggests that there was a permanent decline in the UK market dividend-price ratio during the early 1990s.

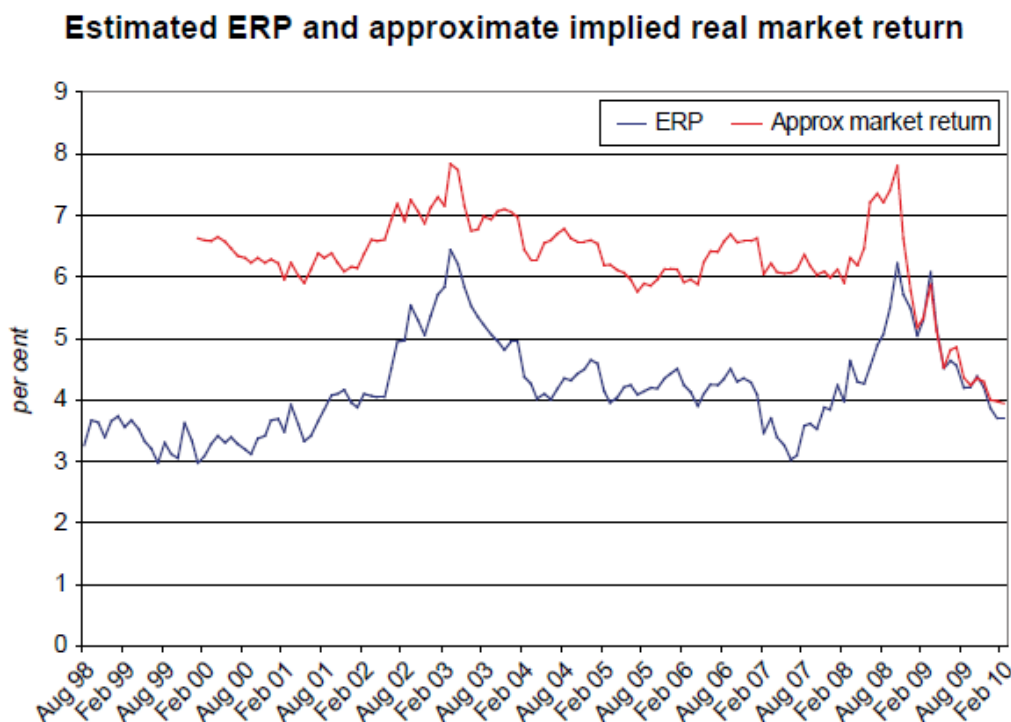
¹³ These figures do not take into account payments to shareholders other than dividends, for example share repurchases.

¹⁴ *Credit Suisse Global Investment Sourcebook 2012*, section 2.6.

24. ERP is also commonly estimated using projected dividends from analysts' forecasts (which extend out by four or five years) and a longer-term dividend growth rate. The expected return is then the discount rate at which the present value of future dividends is equal to the current market price. A limitation of this approach is that it is necessary to make an assumption about future long-term growth of dividends (which has a major effect on the calculation since dividends beyond year four or five account for a large part of present value at plausible discount rates).
25. Figure 4 shows estimates of ERP using this methodology published in a 2010 article in the *Bank of England Quarterly Bulletin*. These estimates are based on the assumption that the future long-term growth in dividends per share is equal to an estimate of the potential growth of the economy. However, the authors of the article noted that this choice of future long-term growth rate is essentially arbitrary.¹⁵ The estimates in Figure 4 suggest that the expected ERP has fluctuated around 4 per cent. We attempted to calculate the expected market return implied by these estimates of the ERP: this appeared to have fluctuated around 6.5 per cent in the period up to the credit crunch, since when it has declined markedly.

¹⁵ Mika Inkinen, Marco Stringa and Kyriaki Voutsinou, 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, 2010 Q1.

FIGURE 4



Source: Mika Inkinen, Marco Stringa & Kyriaki Voustinou: 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, 2010 Q1.

26. The geometric and arithmetic averages of historical market returns over the last 110 years suggest a range for the market return of between 5 and 7 per cent; Fama and French's evidence suggests a long-run market return of 5.5 per cent with a short run (since 1950) of 4.5 per cent, although with less extensive statistical data. Forward-looking approaches suggest a market return of 5.5 to 6.5 per cent. Based on this evidence, we have used a range of 5 to 7 per cent average return on equities which, together with a real RFR of between 1.0 and 2.0 per cent, implies an ERP of between 4.0 and 5.0 per cent.¹⁶

¹⁶ The lower end of the range is calculated by deducting the lower estimate of the RFR (1.0 per cent) from the lower estimate of mean equity returns (5 per cent). The upper end of the range is calculated by deducting the upper estimate of the RFR (2.0 per cent) from the upper estimate of the mean equity return (7 per cent). This approach to estimating the ERP ensures consistency between the real RFR used in the cost of capital calculation and that used in estimating the ERP. It also has the advantage of bypassing concerns about the volatility of the historic ERP and hence the RFR. As the Smithers Report explains:

There is considerably more uncertainty about the true historic equity premium and hence the risk-free rate than there is about the true cost of equity capital ... For this reason we regard the standard approach to building up the cost of equity from estimates of the safe rate and the equity premium as problematic. We would recommend, instead, that estimates should be derived from estimates of the aggregate equity return (the cost of equity for the average firm) and the safe rate.

Tax rate

27. The corporation tax rates applicable over the period are set out in Table 4. For the purpose of estimating the WACC, we have used an average of the tax rates over the period of 28 per cent.

TABLE 4 **UK corporation tax rates**

						<i>per cent</i>
<i>2006/07</i>	<i>2007/08</i>	<i>2008/09</i>	<i>2009/10</i>	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
30	30	28	28	28	26	24

Source: HMRC.

Equity beta

28. The beta of an asset measures the correlation between the volatility of the returns on the asset and the returns on the market as a whole, or the exposure of the firm to systematic or 'non-diversifiable' risk. It is in return for assuming this (market) risk that investors require an (equity risk) premium over the risk-free return.
29. According to the CAPM, the beta value of a listed firm can be directly estimated as the covariance between the stock's returns and the market's returns, divided by the variance of market returns. It is not possible, however, to estimate directly the beta value of a privately-held company.¹⁷
30. We have estimated a range of beta values for a stand-alone UK private healthcare operator on the basis of beta information from listed comparable companies (see Annex B). This group includes some of the parent companies of the private hospital operators active in the UK market. Table 5 provides a summary of our analysis on the beta values of comparable companies.

¹⁷ We recognize that it is possible to estimate accounting betas for unlisted companies. However, as earnings information is only available on an annual basis, we would have very few data points from which to derive beta values. As a result, the beta estimates would be unreliable.

TABLE 5 Comparable companies, beta estimates

Company	Levered betas		Unlevered betas	
	Weekly	Monthly	Weekly	Monthly
Netcare	0.62	0.55	0.26	0.23
Ramsay	0.39	0.24	0.28	0.17
HCA	1.24	1.51	0.45	0.55
Lifepoint Hospitals	0.98	1.07	0.65	0.71
Tenet Healthcare	1.38	2.21	0.62	0.99
Rhoen Klinikum	0.47	0.37	0.39	0.31
Universal Health Services	0.98	1.24	0.70	0.89
Community Health Systems	1.43	1.49	0.46	0.48
Health Management Associates	1.59	2.16	0.67	0.92
Fortis Healthcare	0.85	0.83	0.70	0.69
Apollo Hospitals Enterprise	0.48	0.31	0.44	0.29
Mean beta	0.95	1.09	0.51	0.56

Source: Bloomberg data.

Note: The beta values used were unadjusted (raw) figures calculated in local currencies for the period January 2007 to June 2012. The beta values for HCA, Life Healthcare and Fortis Healthcare were estimated for the (shorter) period from the date of their listing to June 2012. Betas have been unlevered using the statutory tax rates in each jurisdiction.

31. HCA put it to the CC that monthly data should be used to estimate beta values:

as they constitute a closer proxy to annual data than weekly beta estimates, and therefore provide a better matching of the ROCE and WACC analyses. In addition, over a five-year time period monthly betas are more likely to deal with potential non-synchronous trading problems in smaller stocks.

We do not agree that estimating betas from monthly data is necessarily preferable to using weekly data. Indeed, the latter permits a more statistically robust estimation due to the larger number of data points available for the calculation and hence the lower standard errors. In our analysis, we have taken into account both the weekly and monthly beta estimates produced by Bloomberg.

32. HCA put forward the view that a number of these businesses did not provide suitable beta values for comparison with a stand-alone UK private hospital operator. HCA highlighted that

‘The CAPM assumes efficient markets, and perfect information for investors. This is obviously a simplification of the real world, and is only a reasonable starting point where share trading is highly liquid, and

shareholders are provided with good information on which to make choices. [...]

A problem arises where the observations of equity betas are distorted by low levels of trading liquidity, either for the stock in question or the exchange/index on which the stock is traded. In these circumstances, it may not be possible to obtain an accurate estimate of the beta from direct observation of the stock/index.'

33. In particular, HCA argued that:

- (a) The Thai, Indian and South African stock exchanges were either thinly traded and/or had a low total market capitalization and hence were an unreliable source of beta estimates.
- (b) A number of the companies used by the CC as comparables were thinly traded and hence an unreliable source of beta estimates.
- (c) Several of the companies operated in markets with very different levels of economic development and/or healthcare systems when compared with the UK and hence could not be considered comparable businesses.

34. HCA suggested that the CC should focus on US-listed comparables as the main source of beta values on the basis that 'the most highly-developed, competitive and liquid market for healthcare providers is the US market. This is the market that provides the greatest scope and broadest range of comparator data for UK healthcare providers'. It proposed another comparable company, HealthSouth, but excluded HCA itself on the basis that it had not been listed throughout the period and hence could not provide a beta value for the period as a whole.

35. We recognize that certain markets and/or stocks may provide less reliable beta estimates due to thin trading and or stock market composition. We reviewed the

original list of comparable companies¹⁸ and removed Generale de Sante, Bangkok Dusit and Mediclinic International on the basis that these companies were relatively thinly traded and hence might produce biased beta estimates.¹⁹ However, we do not agree with HCA's view that the South African and Indian markets are too small or illiquid to provide reliable beta estimates. The Johannesburg Stock Exchange had an average market capitalization of US\$650 billion over the period, and turned over around 60 per cent of its total market capitalization each year. Similarly, the Mumbai Stock Exchange had an average market capitalization of US\$550 billion and turned over approximately 26 per cent of its total market capitalization each year. While these exchanges may be smaller and less liquid than the US or UK markets, we consider that they are sufficiently large and liquid to provide reasonably reliable beta estimates.

36. Similarly, we recognize that the systematic risks faced by the private healthcare operators in Table 5 may not be entirely representative of those faced by a stand-alone UK operator due to differences in healthcare systems across countries. However, we consider that this issue is best addressed by considering a range of operators across a number of countries rather than by focusing exclusively on US-listed stocks, the beta values of which will be influenced by the specific characteristics of the US healthcare market. It is not clear that the factors influencing the betas of US private hospital operators are more pertinent to a stand-alone UK operator than the factors influencing the betas of Australian, German, South African or, indeed, Indian private hospital operators. In particular, we consider that the beta values of Netcare, Ramsay and HCA are relevant due to their exposure to the UK

¹⁸ See [Profitability working paper](#), 1 March 2013.

¹⁹ In the case of Bangkok Dusit, we also recognize that the market capitalization of the Stock Exchange of Thailand is relatively small and hence may produce biased beta estimates. We have also removed Life Healthcare from the list of comparable companies as its beta estimates appeared to be inconsistent, with those estimated on weekly data being positive and those on monthly data being negative.

healthcare market.²⁰ We have not included HealthSouth in our list of comparable companies as the business focuses on the provision of long-term rehabilitation services rather than acute healthcare.²¹

37. We asked the private hospital operators to provide us with an estimate of their own, or their parent companies', weighted average cost of capital. The asset beta values used by the parties are shown in Table 6. These estimates have not been prepared on a consistent basis, with HCA and Ramsay providing estimates for their worldwide operations and the other operators using estimates based on comparable companies.

TABLE 6 Private hospital operators' asset beta estimates

	Low	High
BMI	[REDACTED]	[REDACTED]
BCH		[REDACTED]
HCA		[REDACTED]
Nuffield	[REDACTED]	[REDACTED]
Ramsay	[REDACTED]	[REDACTED]
Spire	[REDACTED]	[REDACTED]
TLC		-
Average		0.57

Source: Responses to CC financial questionnaire.

*Ramsay indicated that [REDACTED] was its actual group-level asset beta (calculated from market data) but that it considered this to be biased by recent market volatility. We have excluded the upper value ([REDACTED]) from the average value as no evidence was offered to support this figure.

Note: The asset beta estimated by HCA is for HCA Inc for (Q1 2012) rather than the group's UK operations.

38. The asset beta values used by the operators are similar to those of the comparable listed companies, with all estimates indicating that on an unlevered basis private hospitals experience significantly less volatility than the market as whole. The range of values is large (0.26 to 0.77), with an average asset beta of 0.57.

²⁰ While betas may change over time due to changes in the activities of firms, we do not have reason to believe that HCA's beta would have been significantly different for the first four years of the period than for the last 15 months or so. Hence, we consider it reasonable to use a beta value for HCA that was estimated over part of the period only.

²¹ For example, HealthSouth's services include a range of physical and occupational therapies for patients recovering from a range of illness and treatments, including: amputation, arthritis, brain injury, cardiac surgery, Parkinson's disease, oncology, spasticity management, stroke etc.

39. Taking into account our own comparator analysis suggesting an average (unlevered) beta of 0.51 to 0.56 (see Table 5) and the views of the parties suggesting a range of 0.26 to 0.77 with an average of 0.57 (see Table 6), we consider that a range of 0.5 to 0.6 is appropriate for the asset beta in our analysis.

Cost of debt

40. In order to estimate the cost of debt for a typical UK stand-alone private hospital operator, we have considered information on both the interest rates actually paid by the operators over the relevant time period and the redemption yields on corporate bonds over gilts.
41. We consider that the effective interest rates paid by the private hospital operators on debt raised in the UK provide the most relevant benchmark for our analysis. We note, however, that the interest rates paid by the private hospital operators will reflect their actual levels of gearing rather than the 'typical' level of gearing assumed in our WACC calculation (see paragraphs 47 to 50). To the extent that this actual level of gearing exceeds the 50 per cent we have used in our analysis, the interest rates paid by the operators may exceed those of a 'typical' operator over the period and, similarly, to the extent that it falls below 50 per cent, the interest rates paid by the operators may be lower than that of a 'typical' operator.
42. Table 7 sets out the effective interest rates paid by each of the operators in each year where they were able to provide this information. BCH, HCA and Ramsay were funded at a group level and provided estimates of their blended cost of debt for the group as a whole.

TABLE 7 Effective interest rates paid by private hospital operators, FY07 to FY11

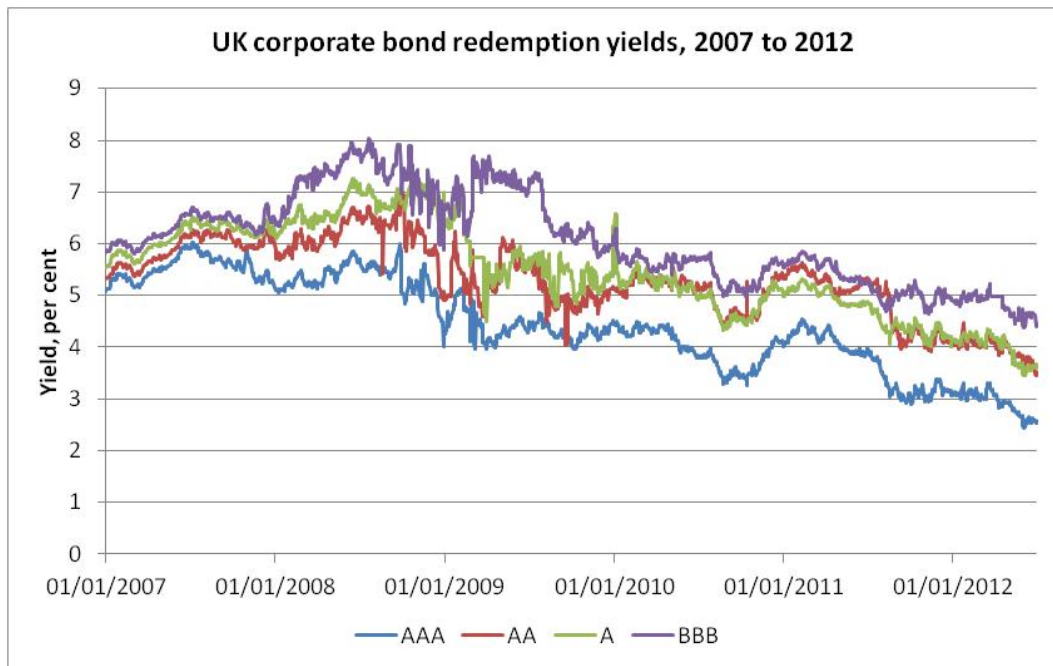
	<i>per cent</i>				
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
BMI	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]
<i>Group funding costs</i>					
BCH			[X]		
HCA			[X]		
Ramsay			[X]		
TLC			[X]		

Source: Responses to CC financial questionnaire.

Note: Ramsay and HCA funding costs are for the whole group and not just their UK operations.

43. The effective interest rates paid by the operators have varied from around 5 to 7.5 per cent, with [X] paying higher rates of interest than the other operators. The interest rates paid by [X] and [X] declined between 2007 and 2011. There is no evidence that the costs of debt of the operators vary according to their size.
44. We recognize that the interest rates payable by the private hospital operators may reflect market conditions at a single point in time; for example, on acquisition of the business. They may not, therefore, be representative of the costs of debt over the whole period. In order to reflect changes in the cost of debt, we have also taken into account the level of redemption yields on corporate bonds over the whole period. As Figure 5 shows, the yield on BBB-rated bonds varied from 4.4 to 8 per cent over the period, with an average of 6.1 per cent.

FIGURE 5



Source: Thompson Reuters, based on ten-year corporate bonds.

45. HCA suggested that a stand-alone private hospital operator in the UK would achieve a B or BB credit rating, on the basis of the credit rating of comparable US companies, and hence that—due to a lack of data relating to B- and BB-rated companies—an additional (0.7 per cent) yield should be added to the cost of debt of BBB-rated companies to reflect this lower creditworthiness. Table 8 sets out the credit ratings of a number of private hospital operators.

TABLE 8 Credit ratings, private hospital operators

Company	Credit rating			
	Standard & Poor's	Fitch Ratings	Moody's	Others*
Netcare	-	-	-	A/A1
HCA	-	B+	-	-
Lifepoint Hospitals	BB-	BB	Ba2	-
Tenet Healthcare	B	B	B2	-
Rhoen Klinikum	-	-	Baa3	-
Bangkok Dusit	-	-	-	A+
Universal Health Services	BB	BB	Ba2	-
Community Health Systems	B+	B+	-	-
Health Management Associates	B+	BB-	B1	-
Mediclinic International	-	-	-	A-
Fortis Healthcare	-	-	-	A-
Apollo Hospitals Enterprise	-	-	-	AA

Source: Bloomberg data.

*Netcare and Mediclinic had credit ratings provided by Global Credit Ratings. Bangkok Dusit's rating was provided by Thai Rating and Information Service Co. Fortis and Apollo's ratings were provided by CRISIL, a subsidiary of Standard & Poor's.

Notes:

1. Ramsay did not have a formal credit rating.

46. The information that we have collected on the credit ratings of private hospital operators in overseas markets is mixed. While the US operators tend to have a BB or lower rating, the South African and Indian groups tend to have a higher credit rating. Therefore, we regard data on bond yields as consistent with the data on bank debt. In our analysis, we have used a cost of debt of between 5.5 and 7.0 per cent, with the upper end of this range allowing for a stand-alone UK private hospital group to have a credit rating below BBB. We consider this to be a reasonable estimate, noting that it is in line with the effective interest rates submitted by the relevant firms and the observed costs in the market.

Gearing

47. As all of the relevant firms are privately held, it is not possible to estimate directly their levels of gearing.²² We have, therefore, used the following analyses to inform our judgement of the appropriate gearing for a stand-alone UK private hospital operator:

²² Some of the operators have listed parent companies in other countries but their UK operations are privately held. See the cost of capital methodology paper, paragraphs 31–35, for further explanation of this point. http://www.competition-commission.org.uk/assets/competitioncommission/docs/2012/private-healthcare-market-investigation/121113_wacc_methodology_final.pdf.

(a) the gearing of comparable companies that are listed; and

(b) the operators' gearing used in their WACC calculations.

48. Table 9 provides details of the levels of gearing of the listed comparable private hospital operators.

TABLE 9 **Gearing of listed private healthcare businesses**

	<i>per cent</i>				
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
Netcare	70.0	78.0	69.2	59.9	62.5
Ramsay	33.7	50.3	44.2	33.0	25.6
HCA	N/A	N/A	N/A	N/A	74.3
Lifepoint Hospitals	46.7	52.2	40.8	42.2	45.7
Tenet Healthcare	63.4	88.7	60.4	55.4	68.6
Rhoen Klinikum	19.8	27.3	16.5	21.2	23.7
Bangkok Dusit	21.2	32.8	24.4	11.0	9.9
Health Management Associates	73.2	88.0	63.1	56.2	65.8
Mediclinic International	14.4	66.8	65.8	56.6	52.6
Universal Health Services	31.7	39.7	28.7	49.5	50.8
Community Health Systems	72.6	87.3	73.1	72.3	85.3
Apollo Hospitals Enterprise	7.8	4.0	14.6	12.7	9.6
Fortis Healthcare	N/A	17.3	22.9	41.3	12.7
Mean	41.3	52.7	43.6	42.6	45.2

Source: Bloomberg data.*

*For the purposes of estimating the average level of gearing of comparable companies, we have used a broader range of comparable companies, including several that were excluded for the purposes of estimating beta values. We consider that these businesses are relevant comparables in terms of capital structure even if a relative lack of liquidity may make their beta values unreliable.

Note: N/A = not available.

49. A review of the information on comparable companies indicates that average levels of gearing are between 40 and 50 per cent over the period. Gearing appears to be higher among firms operating in the USA and South Africa than those with activities elsewhere in the world.

50. Table 10 sets out the gearing levels used by the operators in their WACC estimates.

TABLE 10 **Gearing levels used by UK private hospital operators**

	Gearing %
BMI	[X%]*
BCH	[X%]
HCA	[X%]
Nuffield	[X%]
Ramsay	[X%]
Spire	[X%]

Source: Responses to CC financial questionnaire.

*The report prepared for BMI by American Appraisal used gearing of [X%] per cent for the opco alone and [X%] per cent for the Group. We believe that the Group figure is the most comparable for our analysis.

Note: The gearing ratios quoted for both Ramsay and HCA are for their group operations rather than their stand-alone UK operations.

51. The gearing levels of comparable operators and those assumed by the relevant firms in their WACC calculations are similar, averaging between 40 and 50 per cent. On the basis of this information, we have used a gearing ratio of 50 per cent in our estimate of the WACC. We note that using a slightly lower level of gearing of 40 per cent does not have a significant impact on our cost of capital estimates.
52. In our analysis we did not allow for debt beta to be greater than zero. We noted that the Bloomberg unlevered betas (see Table 5) were based on a simple formula assuming a debt beta of zero, and for consistency we therefore assumed a debt beta of zero in our calculation of industry WACC. We noted also that assuming a small positive debt beta would be unlikely to change materially the industry WACC, providing it was included both in the calculation of unlevered betas for comparator companies and in the calculation of WACC.

Interpretation of the cost of capital

Use of a single industry WACC

53. Ramsay and HCA put forward the view that a single industry WACC would not reflect the cost of capital for their businesses due to their different mix of customers.

Ramsay highlighted its strong dependence on the NHS with the associated political risk, while HCA argued that the revenues it earned from overseas customers were

more volatile than UK PMI and self-pay revenues, and that due to its heightened exposure to the property market, which contributes to the enterprise value of the business, its business model (combining both healthcare services and property management) is likely to be riskier than that of the other UK private healthcare providers.

54. We consider that the systematic risk profile, as measured by the beta value, of one private hospital operator in the UK does not differ materially from that of another private hospital operator. This does not mean that there will not be some variation in risks across local markets and customer types but that all private hospital businesses are exposed to systematic risks to broadly the same extent. We have reviewed HCA's overseas revenues over the 2006 to 2011 period and have come to the conclusion that there is no evidence to suggest that they demonstrate a higher level of market-related volatility than revenues from UK patients.²³ Similarly, although Ramsay's dependence on NHS revenue may expose it to a higher level of political risk, this is unrelated to the systematic risk measured by the beta value of a stock and, under the assumptions of the CAPM, could be diversified away by holding a portfolio of assets, many of which are not exposed to such risks. An investor would not, therefore, expect a higher return for assuming this political risk. Finally, we note that, although the risks associated with managing property in central London may be higher than those of operating a hospital business, it is not necessary for a hospital operator in the UK to own its buildings and assume this risk. HCA could adopt the same approach as Ramsay, which leases the majority of its buildings. Our concern is to understand the cost of capital of a typical, stand-alone hospital operator in the UK.
55. Ramsay also put forward the view that the level of gearing assumed by the CC was significantly higher than Ramsay's actual level of gearing such that the industry

²³ [X]

WACC was not relevant to Ramsay's capital structure. The purpose of the CC's profitability analysis is to understand how the operational returns in the industry compare with a reasonable or typical cost of capital. For this reason, we use the WACC of a hypothetical typical, UK stand-alone private hospital operator of a similar size to the relevant firms. We recognize that the private hospital operators will have made different choices in terms of their capital structures. However, financing costs and the ability to raise funds should also be similar across all operators based on risk profile. Consequently, we have estimated a single WACC for the private healthcare industry.²⁴

Use of an average WACC for January 2007 to June 2012

56. Ramsay suggested that 'The use of a single average WACC over a 5-year period means the significant variations in the cost of capital are effectively "lost" by averaging' making it 'impossible for the CC's analysis to differentiate between profits in excess of the cost of capital in a given year ... and annual variations in profits which keep pace with cost of capital'. We do not agree with Ramsay that there is any risk of misdiagnosis of excess profits by using a single cost of capital over the period. We have taken account of the volatility in financial markets and downward trend in gilt yields over the period by using a range of values for both the ERP and the RFR. We do not consider that estimating a separate cost of capital for each year would provide additional useful information for our analysis.
57. HCA put it to us that we should base our estimate of the cost of capital in so far as it formed a benchmark for its results on the five years ending 31 December 2011, on the basis that we were assessing HCA's profitability over this period. We do not disagree with this point conceptually. However, we have chosen to use the 5½-year period ending 30 June 2012 to match the period over which we have considered the

²⁴ We note that using a lower level of gearing has a very small impact on the WACC, for a given level of asset beta.

profitability of the private hospital operators as a whole. We do not consider that this slightly longer period has any significant impact on our calculation of the cost of capital.

Size premium

58. In their estimates of their cost of capital, BMI, BCH and Nuffield all specified a small company premium, with [3X] also adding a company-specific premium to its cost of capital. Their estimate of these premiums ranged from 3 to 7.5 per cent in total. HCA also put forward the view that the CC should have reference to the Fama-French model when interpreting its analysis on the cost of capital for the private healthcare industry. The Fama-French model includes both a size and a value factor in its formula for estimating the cost of equity.
59. In relation to the Fama-French model, we note that such models fail to describe reliably the cross-section of returns in the UK.²⁵ Moreover, even if there were such evidence in relation to the UK market, we consider that it would not necessarily be right to infer from this that the typical stand-alone private hospital operator would require a size premium. In the first instance, we note that the private hospital operators active in the UK are not particularly ‘small’.²⁶ Second, it is not clear that these businesses would necessarily share any (unknown) general characteristics of small firms that increase their cost of capital due to higher risk. In line with previous CC decisions, therefore, we have not applied a small company premium in our estimate of the cost of capital.²⁷

²⁵ See *Constructing and Testing Alternative versions of the Fama-French and Carhart Models in the UK*, Gregory, Tharyan & Christidis, University of Exeter, 2011, and *On the Information Content of the Fama and French Factors in the UK*, Michou, Mouselli & Stark, 2008.

²⁶ [3X] Since these transactions, both businesses have expanded substantially via bolt-on acquisitions and organic growth.

²⁷ HCA also estimated a cost of capital using the Fama-French model and US data and comparable companies. Given the sensitivity of the size and value factors to the market for which they are estimated and the use of a small set of companies in a different market, we do not consider that the estimates produced provide reliable information for our cost of capital calculation. See [Bristol Water](#) decision.

60. We have not included any company-specific premiums in our analysis since this is at odds with the basic hypothesis of the CAPM, which is that investors only receive a return for assuming risk which cannot be diversified away.

Impact of charitable status

61. BMI drew our attention to the charitable status of two of the operators, Nuffield and TLC, and their consequent exemption from corporation tax. The impact of this is that these operators would require a lower pre-tax return in order to generate the same post-tax return as their competitors and so would have a lower cost of capital. The basis of our estimate of the WACC is that which would apply to a hypothetical stand-alone UK operator. We believe that the most consistent assumption to make is that such an operator is 'for profit' rather than a charity. However, we will take into account the fact that some operators may have a lower cost of capital than our estimate when interpreting the results of our analysis.

Relevant firms' WACC estimates

The Table A1 below shows the relevant firms' estimates of their UK or group-level WACCs.

TABLE A1 Relevant firms' estimates of their UK or group-level WACC

	<i>per cent</i>					
	<i>BMI</i>	<i>BCH</i>	<i>Nuffield</i>	<i>HCA</i>	<i>Ramsay</i>	<i>Spire</i>
Real RFR	[X]	[X]	[X]	[X]	[X]	[X]
Nominal RFR	[X]	[X]	[X]	[X]	[X]	[X]
ERP	[X]	[X]	[X]	[X]	[X]	[X]
Small company risk premium	[X]	[X]	[X]	[X]	[X]	[X]
Company-specific risk premium	[X]	[X]	[X]	[X]	[X]	[X]
Asset beta	[X]	[X]	[X]	[X]	[X]	[X]
Equity beta	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax Ke	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax Kd	[X]	[X]	[X]	[X]	[X]	[X]
Gearing	[X]	[X]	[X]	[X]	[X]	[X]
Tax rate	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax WACC	[X]	[X]	[X]	[X]	[X]	[X]

Source: Responses to CC financial questionnaire.

*BCH describes this as an alpha factor, reflecting business-specific risks including size premium, financing and forecasting risks. This was increased to adjust for the fall in the RFR in 2011 which was considered not to be reflective of long-term market conditions.

Notes:

1. The estimates provided by Ramsay and HCA are for their whole groups rather than for their stand-alone UK operations. All other estimates are for the UK firms only.
2. BMI gave a real RFR of [X] per cent. The CC has assumed that this would give a nominal RFR of [X] per cent higher, ie [X] per cent.
3. Nuffield ranges are taken from its response to the FQ and the Deloitte report on the WACC (2009).

Beta estimates

The Table B1 below sets out the beta values of a number of listed private hospital operators.

TABLE B1 **Beta estimates for listed private hospital operators**

<i>Company</i>	<i>Levered betas</i>		<i>Debt/equity ratio</i>	<i>Statutory tax rate %</i>	<i>Unlevered betas</i>	
	<i>Weekly</i>	<i>Monthly</i>			<i>Weekly</i>	<i>Monthly</i>
Netcare	0.623	0.547	2.12	34.55	0.26	0.23
Ramsay	0.393	0.236	0.60	30	0.28	0.17
HCA	1.239	1.51	2.90	40	0.45	0.55
Lifepoint Hospitals	0.977	1.067	0.84	40	0.65	0.71
Tenet Healthcare	1.377	2.209	2.06	40	0.62	0.99
Rhoen Klinikum	0.472	0.365	0.28	29.50	0.39	0.31
Health Management Associates	1.587	2.162	2.25	40	0.67	0.92
Universal Health Services	0.982	1.244	0.67	40	0.70	0.89
Community Health Systems	1.433	1.493	3.57	40	0.46	0.48
Apollo Hospitals	0.476	0.307	0.11	34	0.44	0.29
Fortis Healthcare	0.845	0.829	0.31	34	0.70	0.69

Source: Bloomberg data.