

A REPORT FOR HCA

OCTOBER 2012

This report has been prepared by Laing & Buisson on a private and confidential basis.

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INTRODUCTION

This report has been prepared for HCA by Laing & Buisson (Consultancy) Ltd.

The data published within the report is estimated from modelled behaviour, based on underlying assumptions outlined by Laing and Buisson in each section. Laing and Buisson acknowledges that actual behaviour may differ from modelled behaviour, and that the robustness of some assumptions may be challenged. However, these assumptions enable Laing and Buisson to produce a workable model to produce estimates to meet the objective.

All reasonable care has been taken to ensure completeness and accuracy, but no liability can be accepted for any errors, inaccuracies or omissions.

Statistics in this report may be subject to revision at a later date.

REPORT SUMMARY

- Between a quarter and a third of people with private medical cover in England that were admitted to hospital for non-emergency medical/surgical treatments in England in 2011 were estimated to be treated on the NHS, funded by the NHS.
- This was equivalent to up to 254,500 non-emergency medical/surgical admissions, and compared to an estimated 607,780 total admissions which were funded privately by domestic private medical cover policies in 2011.
- The NHS spent up to £359 million to commission these non-emergency medical/surgical treatments from hospital providers, excluding the cost of outpatient services.
- Within this, the commissioning of treatments for non-emergency patient admissions with the primary diagnosis of cancer was estimated to be worth £65m-£100 million.
- In addition the NHS spent up to an estimated £609 million to pay for emergency medical/surgical admissions from NHS hospitals providers for people which had private medical cover in England in 2011. This was equivalent to an estimated 489,250 emergency admissions.
- Within this, the commissioning of treatments for emergency patient admissions with the primary diagnosis of cancer was estimated at £15m-£25 million.
- Estimates for non-emergency and emergency medical/surgical admissions are based on a number of modelled assumptions, including an underlying assumption that the incidence of admission for people with private medical cover is not significantly different to the incidence of admission for people without private medical cover. This assumption is believed to be stronger for non-emergency admissions than for emergency admissions.

OVERALL OBJECTIVE:

The overall objective expressed by the client HCA is to estimate for the:

'Value of NHS services currently received by patients with private medical insurance (PMI) cover in England that might have been funded and provided as private patient services (in an NHS PPU or independent hospital) under the terms of the patients current PMI entitlements.'

Introduction

To Laing and Buisson's knowledge actual statistical data on the use of NHS hospital services by people with PMI cover in England is not collected or monitored by any party. For this reason Laing and Buisson has to model usage based on a series of assumptions, see *INTRODUCTION* above.

Laing and Buisson has used its market data and intelligence on the independent acute medical care sector alongside data published by the Department of Health to meet the overall objective as closely as possible.

Its model for analysis, based on 6 distinct steps, is designed to apply to non-emergency medical/surgical admissions to hospitals and clinics covered in Part 1. However, the model has also been applied to emergency medical/surgical admissions, which is presented separately in Part 2.

The 6 distinct steps are summarised as:

- **Step 1** – Establish a population benchmark which can be used to estimate the need for hospital medical care from people with private medical cover. GP or equivalent consultations of the population are selected as the benchmark for non-emergency care. Accident & emergency (A&E) visits are selected as the benchmark for emergency care.
- **Step 2** - Apply age-appropriate whole population consultation/A&E visit activity to the population covered by private medical cover to establish private medical cover consultation/A&E demand.
- **Step 3** - Estimate total volumes of medical care hospital admissions in the NHS and independent sector which may be accessed by private medical cover.
- **Step 4** - Calculate a probability that consultation/A&E visit leads to hospital medical care admission, and apply that probability to private medical cover consultations/A&E visits.

- **Step 5** - Estimate the volume of admissions for people with private medical cover which are carried out in the NHS.
- **Step 6** - Estimate the value of NHS admissions for patients with private medical cover.

Each Step in the model is based on a number of key assumptions which Laing and Buisson believes can be applied to provide estimates which can be modelled to achieve the overall objective based on the data sources that are available publicly. However, Laing and Buisson points out that some assumptions are likely to be more robust in their reflection of a 'true' picture than others. Broadly Laing and Buisson believes that its assumptions made for non-emergency hospital medical care are likely to be more robust than those assumptions made for emergency care. Further comments on this point are made in the following analysis.

Laing and Buisson presents five years of data covering the calendar years 2007-2011 inclusive.

All data references and estimations are indicated in each data tables listed.

PART 1: NON-EMERGENCY (HOSPITAL MEDICAL CARE) PATIENT ADMISSIONS

STEP 1

To achieve the overall objective, it is necessary to establish the hospital medical care demand (need) of people covered by private medical cover. A benchmark to assess this need for non-emergency care is provided by the number of GP (or professional equivalent) consultations in primary care settings, which has the propensity to lead to non-emergency hospital referral. An age specific distribution of consultations is a crucial demographic indicator of demand. Further demographic splits are not available.

Table 1: Total GP or equivalent surgery based consultations, NHS and private, and breakdown by age group of patients, 2007-2011

	Total Consultations	Total NHS	Total Private	Number of consultations by age group			
				0-15 years	16-44 years	45-64 years	65+ years
	No. million	No. million	No. million	No. million	No. million	No. million	No. million
2007	155.3	150.6	4.7	17.9	53.2	40.6	43.6
2008	154.6	149.9	4.7	17.7	52.7	40.5	43.7
2009 ^e	158.3	153.5	4.8	18.1	53.6	41.8	44.8
2010 ^e	157.2	152.4	4.8	18.0	52.7	41.9	44.6
2011 ^e	157.1	152.4	4.8	18.0	52.4	42.0	44.8
	Consultation rate %			Consultation rate %			
				0-15 years	16-44 years	45-64 years	65-75*
2007	3.0	-	-	2.0	2.5	3.2	4.5
2008	3.0	-	-	1.9	2.5	3.1	4.5
2009 ^e	3.1	-	-	2.1	2.6	3.3	4.7
2010 ^e	3.0	-	-	2.0	2.5	3.2	4.5
2011 ^e	3.0	-	-	1.9	2.5	3.2	4.5

^e Estimated

* Estimated for private medical cover age group relevance

Source: Consultations Report 20 - QRESEARCH calendar year consultations 2008, Office of National Statistics

In 2011 there were estimated to be 157.1 million GP or equivalent consultations in primary care settings in England. This was equivalent to an average of 3 consultations per person in England.

A number of assumptions have been made to filter this consultation activity.

Assumption 1.1: Referrals in primary care made by GPs or equivalent clinician (optician, pharmacist, non-GP doctors). Therefore, consultations with nurses excluded from benchmark.

Assumption 1.2: Referrals by GPs and others made face-to-face in primary care settings (surgeries). Therefore, GP consultations over the telephone, and through home visits excluded from the benchmark.

Assumption 1.3: Consultation demand by age has not significantly changed in the last three years.

Assumption 1.4: The volume of consultations has moved on a similar path to the full-time equivalent GP workforce in the last three years.

Assumption 1.5: NHS consultations represent 97% of total consultations, private consultations represent 3% of total consultations. These shares have been unchanged in the last three years. Adults of working age have a higher private consultation rate, of 3.5%, and children and over 65s have a lower private rate at 2% and 2.5% respectively.

Assumption 1.6: Unemployed persons have a similar consultation demand to those working. (General Household Survey).

STEP 2

The age specific consultation rates presented in Table 1 above can be applied to the population covered for private hospital medical care in England to present an age specific breakdown of consultation demand for people with private medical cover.

In 2011 the 6.028 million people covered for private medical treatment in England were estimated to have 16.9 million (NHS or private) GP or equivalent consultations during the year.

This activity is based on two important assumptions, see below.

Table 2: Persons in England covered by private medical cover, and number of GP or equivalent consultations provided to these people, 2007-2011

	Persons covered by private medical cover		Number of consultations by persons covered by private medical cover in England				
	England	Growth rate	Total	0-15 years	16-44 years	45-64 years	65+ years
	Million	%	Million	Million	Million	Million	Million
2007	6.679	-	19.071	2.003	7.288	6.805	2.975
2008	6.670	-0.1	18.827	1.945	7.163	6.736	2.982
2009	6.387	-4.2	18.392	1.850	6.950	6.641	2.952
2010	6.138	-3.9	17.414	1.747	6.520	6.322	2.825
2011	6.028	-1.8	16.939	1.677	6.293	6.197	2.772

Source: Health Cover 2012, Laing and Buisson & consultation rates in Table 1 above. Age breakdown taken from Family Resources Survey, Department for Work and Pensions

Assumption 2.1: Consultation demand by people with private medical cover is not believed to be significantly different from people without private medical cover.

Assumption 2.2: The centre of the age distribution of people with private medical cover has moved gradually upwards overall since 2005.

STEP 3

To estimate the non-emergency hospital medical care incidence of people with private medical cover it is necessary to estimate total non-emergency hospital admission activity in England which is typically covered by private medical cover, and is eligible for referral by GPs.

In 2011 there were an estimated 8.59 million non-emergency hospital medical/surgical patient admissions in the NHS and independent sector combined in England which private medical cover policies typically cover. Please note the assumptions below.

Table 3: Total non-emergency hospital medical/surgical admissions which are typically covered by private medical cover policies, NHS and independent sector, 2007-2011*

	Total admissions	0-15 years	16-44 years	45-64 years	65+ years
	Million	Million	Million	Million	Million
	NHS+IS	NHS+IS	NHS+IS	NHS+IS	NHS+IS
2007	7.46	0.68	2.14	1.70	2.93
2008	7.95	0.67	2.21	1.86	3.21
2009	8.19	0.67	2.25	1.92	3.34
2010	8.40	0.69	2.27	1.97	3.47
2011	8.59	0.71	2.32	2.01	3.55

* Age group data adjusted where necessary

Source: NHS - 2007-2010 Hospital Episode Statistics, Department of Health, 2011 – Quarterly Hospital Activity, Department of Health
Independent Sector – Laing and Buisson Activity Surveys – Private Acute Medical Care UK Market Report 2012

Assumption 3.1: All emergency admissions are excluded from analysis.

Assumption 3.2: NHS admissions based on primary diagnosis on patient condition, see Appendix for exclusions.

Assumption 3.3: In the NHS all admissions are assumed to be eligible for primary referral by GP or equivalent. In the independent sector all medical/surgical admissions which are not commonly referred by GP or equivalent are excluded from totals. This mainly covers cosmetic surgery, which often does not require a GP referral.

Assumption 3.4: Financial year data for the NHS is used to represent calendar year estimates. Eg, 2011/12 is used for calendar 2011.

STEP 4

With data on total consultations and total non-emergency hospital admissions for the population in England, a probability that a consultation in primary care leads to non-emergency medical/surgical admission in secondary care can be calculated for each age group. These probabilities can be applied to total consultations for people with private medical cover, Table 2 above, to estimate the total non-emergency medical/surgical requirement for people covered by private medical cover. This is based on the following crucial assumption:

Assumption 4.1: The probability that a GP or equivalent consultation in a primary care setting leads to a non-emergency medical/surgical treatment in secondary care typically covered by private medical cover, is not significantly different between those people with private medical cover and those people without private medical cover.

Table 4: Probability (percentage change) that a consultation in primary care leads to a non-emergency medical/surgical treatment in hospital (which is typically covered by private medical cover), and number of probability predicted total admissions by people with private medical cover in England, 2007-2011*

		Probability that a consultation leads to a non-emergency medical/surgical treatment - Percentage chance			
		0-15 years	16-44 years	45-64 years	65+ years
2007	-	0.04	0.04	0.04	0.07
2008	-	0.04	0.04	0.05	0.07
2009	-	0.04	0.04	0.05	0.07
2010	-	0.04	0.04	0.05	0.08
2011	-	0.04	0.04	0.05	0.08
		Total non-emergency medical/surgical admissions for people with private medical cover			
		0-15 years	16-44 years	45-64 years	65+ years
	No.	No.	No.	No.	No.
2007	854,815	75,635	293,305	285,795	200,080
2008	902,060	73,180	300,125	309,880	218,875
2009	885,995	68,825	291,350	305,490	220,330
2010	864,425	67,100	280,350	297,110	219,865
2011	862,280	66,445	278,845	296,825	220,165

* Age group data adjusted where necessary

Source: Tables 1, 2 & 3

Probabilities across age groups predict that people with private medical cover in England were likely to need an estimated 862,280 non-emergency medical/surgical admissions in total in 2011.

STEP 5

Based on total non-emergency medical/surgical admission activity predicted by probabilities established in Step 4, and Laing and Buisson estimates for private medical cover funded medical/surgical admissions, the number of non-emergency admissions likely to have taken place on the NHS can be estimated for people with private medical cover.

In 2011 there were an estimated 254,500 non-emergency medical/surgical admissions on the NHS for people with private medical cover in England for treatments typically covered by a private medical cover policy. In essence between a quarter and a third of people with private medical cover received their non-emergency treatment on the NHS, funded by the NHS in England, and did not claim on their private medical cover policy.

Based on the primary diagnosis of non-emergency hospital admissions on the NHS, an estimated 17.4% of these admissions in 2011 were estimated to be for treatment of cancer (malignant neoplasms). This is equivalent to 48,400 admissions of the total 254,500 non-emergency admissions.

Table 5: Total non-emergency medical/surgical admissions for people with private medical cover in England split by whether admission is funded by private medical cover (provided by independent sector hospitals and clinics or private patient facilities in the NHS) or NHS funded, 2007-2011*

	Total non-emergency medical/surgical admissions			
	All funded	Funded by private medical cover	Funded by NHS	NHS coverage as a proportion of total
	No.	No.	No.	%
2007	854,815	640,350	214,460	25.1
2008	902,060	629,465	272,600	30.2
2009	885,995	621,895	264,100	29.8
2010	864,425	613,075	251,350	29.1
2011	862,280	607,780	254,500	29.5

* Admissions rounded to nearest 5.

Source: Total admissions – Table 4 above

Private medical cover admissions – Laing and Buisson activity surveys & other intelligence

Assumption 5.1: Private medical admissions which are funded by international private medical cover or by other domestic insurance products, such as cash plans, are excluded from analysis. International cover funded admissions and other insurance products are estimated to represent approximately 7.5% of all admissions.

Assumption 5.2: England admissions represent 93% of total UK admissions.

Assumption 5.3: Private medical cover funded admissions in NHS private patient facilities represent 60% of their total admissions. The other 40% represent admissions that are self-funded by individuals or from overseas sources.

STEP 6

The NHS funded admission activity in Step 5 can be valued in monetary terms by estimating an average cost for non-emergency medical/surgical activity on the NHS.

The NHS spent an estimated £359 million in 2011 on commissioning non-emergency medical/surgical treatments for people that had private medical cover in England during the year. This excluded the costs of outpatient consultations and diagnostics.

Within this, the commissioning of interventions for patient admissions with the primary diagnosis of cancer (malignant neoplasms) was estimated to be worth £65m-£100 million.

Table 6: Total NHS cost of non-emergency medical/surgical admissions from people with private medical cover in England, funded by the NHS, 2007-2011

	Total NHS funded admissions	Average NHS cost per admission (treatment only)	Total NHS cost for all admissions (excluding outpatients)
	No.	£	£ million
2007	214,460	1,265	271
2008	272,600	1,315	358
2009	264,100	1,360	359
2010	251,350	1,390	349
2011	254,500	1,415	359

Source: NHS – NHS reference costs, Department of Health (Based on average across elective inpatient treatments, partial non-elective inpatient treatments, and partial day surgery treatments).

Assumption 6.1: The average NHS cost per admission, derived from the average cost of elective and non-elective inpatient and day case treatments on the NHS, is a fair reflection of non-emergency medical/surgical treatments provided to people with private medical cover on the NHS.

PART 2: EMERGENCY MEDICAL CARE ADMISSIONS

STEP 1

To assess the demand of people covered by private medical cover for emergency acute medical care it is necessary to establish a benchmark, which has the propensity to lead to emergency admission. This benchmark is provided by the number of Accident & Emergency (A&E) visits. An age specific distribution of visits is a crucial demographic indicator of demand. Further demographic splits are not available.

In 2011 there were estimated to be 16.7 million A&E visits in England. This was equivalent to an average of almost 1 visit for every 3 people in England.

Table 7: Total A&E visits (including NHS and private facilities), and breakdown by age group of patients, and probability of A&E visit per unit population, 2007-2011*

Accident & Emergency (All providers – NHS and private)					
	Total visits	0-15 years	16-44 years	45-64 years	65+ years
	No. Million	No. Million	No. Million	No. Million	No. Million
2007	12.23	2.62	5.22	2.18	2.20
2008	13.77	2.90	5.78	2.50	2.59
2009	15.50	3.26	6.43	2.86	2.96
2010	16.24	3.43	6.65	3.01	3.15
2011 ^e	16.70	3.53	6.84	3.09	3.24
Probability of A&E visit per unit population					
	All ages	0-15 years	16-44 years	45-64 years	65-75**
	%	%	%	%	%
2007	0.2	0.3	0.2	0.2	0.3
2008	0.3	0.3	0.3	0.2	0.3
2009	0.3	0.4	0.3	0.2	0.3
2010	0.3	0.4	0.3	0.2	0.3
2011 ^e	0.3	0.4	0.3	0.2	0.3

^e Estimated

* Age group data adjusted where necessary ** Estimated for private medical cover age group relevance

Source: Accident and Emergency Attendances in England (Experimental statistics), Hospital Episode Statistics, NHS The Information Centre

STEP 2

The age specific A&E visit rates presented in Table 7 above can be applied to the population covered for private hospital medical care in England to present an age specific breakdown of A&E visit demand for people with private medical cover.

In 2011 the 6.028 million people covered for private medical treatment in England were estimated to have 1.794 million A&E visits during the year.

This activity is based on two important assumptions.

Assumption 2.1: A&E demand by people with private medical cover is not significantly different from people without private medical cover.

Assumption 2.2: The centre of the age distribution of people with private medical cover has moved gradually upwards overall since 2005.

Laing and Buisson notes that Assumption 2.1 may not be fully robust, and believes it is likely to be less robust than Assumption 2.1 in Part 1 which covers GP consultation activity. In particular Laing and Buisson believes that people with private medical cover may have a lower than average propensity to use accident and emergency services. However, without wider demographic data on A&E patient characteristics across the population, Laing and Buisson is not able to provide statistical evidence to support this belief. As such, Laing and Buisson attaches an appropriate 'health warning' to figures based on Assumption 2.1 from this point forward.

Table 8: Number of A&E visits from people with private medical cover, 2007-2011

	A & E visits by people covered by private medical cover				
	Total visits	0-15 years	16-44 years	45-64 years	65+ years
	No. Million	No. Million	No. Million	No. Million	No. Million
2007	1.501	0.294	0.716	0.365	0.127
2008	1.694	0.318	0.786	0.416	0.174
2009	1.810	0.334	0.833	0.454	0.190
2010	1.810	0.334	0.822	0.454	0.199
2011	1.794	0.328	0.817	0.451	0.198

Source: Table 2 above, and A&E probabilities in Table 7 above.

STEP 3

To estimate the emergency hospital medical care incidence of people with private medical cover it is necessary to estimate total medical/surgical hospital admissions in England which are classed as emergencies.

In 2011 there were an estimated 5.1 million emergency medical/surgical hospital admissions in the NHS in England. Please note the following assumptions.

Assumption 3.1: All non-emergency admissions are excluded from analysis.

Assumption 3.2: NHS admissions based on primary diagnosis on patient condition, see Appendix.

Assumption 3.3: All emergency admissions are carried out and funded by the NHS. Emergency admissions to independent hospitals and clinics are believed to be very small, and negligible in this analysis.

Assumption 3.4: Financial year data for the NHS is used to represent calendar year estimates. Eg, 2011/12 is used for calendar 2011.

Table 9: Emergency admissions for medical/surgical treatments in England, NHS hospitals only, 2007-2011*

	Emergency admissions to NHS hospitals for medical/surgical treatments				
	Total	0-15 years	16-44 years	45-64 years	65+ years
	No. Million	No. Million	No. Million	No. Million	No. Million
2007	4.450	0.404	1.246	0.950	1.849
2008	4.707	0.396	1.279	1.026	2.006
2009	4.858	0.402	1.305	1.058	2.092
2010	4.972	0.409	1.309	1.094	2.160
2011 ^e	5.097	0.420	1.342	1.121	2.214

* Age group data adjusted where necessary

^e Estimated

Source: NHS - 2007-2010 Hospital Episode Statistics, Department of Health, 2011 – Quarterly Hospital Activity, Department of Health

STEP 4

With data on total A&E visits and emergency admissions for the population in England, a probability that an A&E visit leads to an emergency admission can be calculated for each age group. These probabilities can be applied to total A&E visits for people with private medical cover, Table 8 above, to estimate the total emergency medical/surgical requirement for people covered by private medical cover. This is based on the following crucial assumption:

Assumption 4.1: The probability that an A&E visit leads to emergency admission is not significantly different between those people with private medical cover and those people without private medical cover. See 'health warning' for Assumption 2.1 above.

Table 10: Probability (percentage change) that an A&E visit leads to an emergency medical/surgical treatment in hospital (which is typically covered by private medical cover), and number of probability predicted total emergency admissions by people with private medical cover in England, 2007-2011*

		Probability that an A&E visit leads to emergency hospital admission for a medical/surgical treatment - Percentage chance			
		0-15 years	16-44 years	45-64 years	65-75**
2007	-	0.2	0.2	0.4	0.7
2008	-	0.1	0.2	0.4	0.7
2009	-	0.1	0.2	0.4	0.6
2010	-	0.1	0.2	0.4	0.6
2011	-	0.1	0.2	0.4	0.6
		Total emergency medical/surgical admissions for people with private medical cover			
		0-15 years	16-44 years	45-64 years	65+ years
		No.	No.	No.	No.
2007	463,460	42,250	170,640	159,370	91,200
2008	513,790	43,580	173,795	170,700	125,715
2009	498,920	41,090	169,210	167,975	120,645
2010	483,735	39,835	161,815	165,270	116,815
2011	489,250	39,050	160,240	163,660	126,300

* Age group data adjusted where necessary ** Estimated for private medical cover age group relevance
Source: Tables 7, 8 & 9

STEP 5

This Step is not used for emergency medical/surgical admissions as this model assumes these admissions are exclusively provided in the NHS.

STEP 6

The NHS funded emergency admission activity in Step 5 can be valued in monetary terms by estimating an average cost for emergency medical/surgical treatments on the NHS.

The NHS spent up to £609 million in 2011 on commissioning emergency medical/surgical interventions from NHS providers for people that had private medical cover in England during the year, equivalent to up to 489,250 admissions. This excluded the costs of outpatient consultations and diagnostics.

Emergency admissions for the primary diagnosis of cancer (malignant neoplasm) were estimated at 14,200, equivalent to 2.9% of total admissions. This represented an estimated £15m-£25 million worth of commissioning on emergency medical/surgical interventions.

Please note, these estimates in Table 11 are based on Assumptions made in Steps 1-4 inclusive.

Table 11: Total NHS cost for emergency admissions for medical/surgical treatments from people with private medical cover in England, funded by the NHS, 2007-2011

	Total NHS funded emergency admissions	Average NHS cost per admission (treatment only)	Total NHS cost for all emergency admissions (excluding outpatients)
	No.	£	£ million
2007	463,460	1,120	519
2008	513,790	1,160	596
2009	498,920	1,205	601
2010	483,735	1,230	595
2011	489,250	1,245	609

Source: NHS – NHS reference costs, Department of Health (Based on average across partial non-elective inpatient admissions and partial day surgery admissions)

Assumption 6.1: The average NHS cost per admission, derived from the average cost of non-elective inpatient and day case treatments on the NHS, is a fair reflection of emergency medical/surgical hospital treatment provided to people with private medical cover on the NHS.

APPENDIX – Primary Diagnosis of Admissions

Medical/surgical treatments provided to patient admissions which are included in this analysis are intended to be consistent with secondary care treatments which are commonly covered by private medical cover.

For the NHS, admissions included have been selected based on the primary diagnosis of a patient's condition. Exclusions from the analysis include mainly patients with the following diagnosis:

- Pregnancy abortion;
- Births - Labour and delivery;
- Pregnancy complication (partial);
- Fertility/Infertility
- HIV;
- Mental health condition;
- Sexual health diseases;
- Dental treatment;
- Chronic renal failure.

A full list of primary diagnosis for NHS admissions are available at the following link:

<http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=192>