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Prescribing Costs in Hospitals and the Community

England 2014-15

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This report may be of interest to members of the public, policy officials and other stakeholders to make local and national comparisons on the use of medicines in hospital, in primary care, and where medicines are prescribed in hospital but dispensed in the community. It also shows the estimated cost of each medicine positively appraised by the National Institute for Health and Clinical Excellence (NICE).

Author:	**Prescribing & Medicines Team** **Health and Social Care Information Centre**
Responsible statistician:	**Ian Bullard, Senior Services Manager**

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Contents

Executive Summary

1. This report, Prescribing Costs in Hospitals and the Community, England 2014-15, contains information about the use of medicines in hospitals and puts their use into context by comparing it with their use in primary care and with medicines prescribed in hospitals but dispensed in the community. This report also includes a section looking at the medicines positively appraised by the National Institute for Health and Clinical Excellence (NICE). Many are used mainly or exclusively in hospitals.

2. Data for hospital use of medicines is provided by IMS Health, who collects data on issues from pharmacies in the majority of hospitals in England and apply costs to this data using the Drug Tariff and standard price lists. Hospitals are often able to access NHS negotiated discounted prices for medicines; therefore the costs presented in this report are not necessarily those that hospitals actually paid for the medicines.

3. The data for medicine use in the other two sectors, primary care and hospital prescribed medicines dispensed in the community, is provided by NHS Prescription Services, a division of the NHS Business Services Authority, which is responsible for reimbursing those who dispense prescriptions.

- The overall NHS expenditure on medicines in 2014-15 was £15.5 billion, an increase of 7.8 per cent from £14.4 billion in 2013-14 and an increase of 19.4 per cent from £13.0 billion in 2010-11.
- In 2014-15 hospital use accounted for 42.9 per cent of the total cost, up from 40.1 per cent in 2013-14 and up from 32.1 per cent in 2010/11.
- The cost of medicines rose by 7.8 per cent overall but by 15.4 per cent in hospitals, from 2013-14 to 2014-15. The cost of medicines in hospitals has risen by 59.8 per cent since 2010-11.
- Of the drugs positively appraised by NICE, the greatest overall cost in 2014-15 was for Adalimumab (£371.2m), which also incurred the greatest cost (over £348.2 million) in hospitals.

Introduction

4. This report presents summary cost figures relating to medicine use through prescribing in hospitals and in the community in England for 2014-15, and the recent growth in use. The report aims to show the relative use of medicines in hospital and in primary care and the wider health economy. It also includes a section looking at the estimated cost of medicines positively appraised by NICE. Many of these are used mainly or exclusively in hospitals.

Sources

5. The figures included in this report are derived from a data source collected by IMS Health, the Hospital Pharmacy Audit Index (HPAI) database and the databases maintained by NHS Prescription Services. Direct comparisons between the databases is not straightforward as medicine classification in the HPAI is by the European Pharmaceutical Marketing Research Association (EphMRA) version of the Anatomical Therapeutic Chemical (ATC) system and by the British National Formulary (BNF) in the data provided by NHS Prescription Services.

6. Access to the HPAI data is regulated by a contract between IMS Health and the Health and Social Care Information Centre (HSCIC). Publication of detailed data extracts will not normally be permitted under the contract. Details of the major conditions imposed by the contract are given in Appendix 3, Limits on access to Hospital data. IMS Health updates historic data as they receive revised figures from individual hospitals. The figures in this report may therefore differ from figures published previously.

7. The primary care figures in this report differ from the figure given in the statistical report, “Prescriptions Dispensed in the Community Statistics for 2004 to 2014: England” (http://www.hscic.gov.uk/pubs/presdisp0414). The latter report uses 2014 calendar year figures relating to all prescriptions dispensed in England and so includes prescriptions written elsewhere in the United Kingdom, prescribing by hospital doctors and prescribing by dentists but excludes prescriptions written in England but dispensed elsewhere.

8. The data used in this report for primary care is 2014-15 financial year data taken from the ePACT system. It relates to what was prescribed in England, and dispensed in the community in the United Kingdom. It does not include prescriptions written by dentists and hospital doctors.

9. Prescriptions written by hospital doctors in England and dispensed in the community in the United Kingdom are included in ‘FP10HP’ figures.

10. Further details of methods of supply and data collection for all data included in this report are provided in Appendix 1: Sources and definitions.

Net Ingredient Cost of prescriptions

11. All costs given in this report are net ingredient cost (NIC). This is the basic price of a drug excluding VAT (the price listed in the national Drug Tariff or in standard price lists). This standardises cost throughout prescribing across the whole health economy, and allows comparisons of data from different sources. For hospitals this is not necessarily what was actually paid as the NHS Commercial Medicines Unit (CMU) negotiates NHS

contracts providing discounts on many products. Even when Trusts purchase medicines outside such contracts they often receive a discount on the price given in the Drug Tariff. Unlike medicines supplied through primary care prescribing, medicines purchased by hospitals are subject to VAT. However, VAT is not included in the costs reported here.

12. Due to the methods by which data on hospital medicine use is collated and calculated, hospital and total costs are estimated net ingredient costs. Where hospital and total costs are stated throughout the report the figures refer to estimated net ingredient costs.

Overall costs

England

13. Table 1 gives details of the total net ingredient cost of prescriptions in millions of pounds for 2014-15 for primary care prescribing dispensed in the community, for hospital prescribing dispensed in the community (using a prescription form previously known as an FP10HP) and for medicines issued from hospital pharmacy departments. It also shows the corresponding figures for 2013-14 and the percentage increases between 2013-14 and 2014-15.

Table 1: Estimated costs from each sector in 2014-15. All figures are in £ million

	Issues by hospital pharmacy [1]		Primary care prescribing [2]		Hospital prescribing dispensed in the community [3]		Total
	Cost	% of total	Cost	% of total	Cost	% of total	
2014-15	6,668.3	42.9	8,704.9	56.1	154.1	1.0	15,527.3
2013-14	5,776.7	40.1	8,465.0	58.8	159.6	1.1	14,401.4
% change 2013-14 to 2014-15	15.4		2.8		-3.4		7.8

14. The estimated cost of medicines to the NHS for 2014-15 is £15.5 billion. The increase in total estimated cost from 2013-14 is 7.8 per cent.

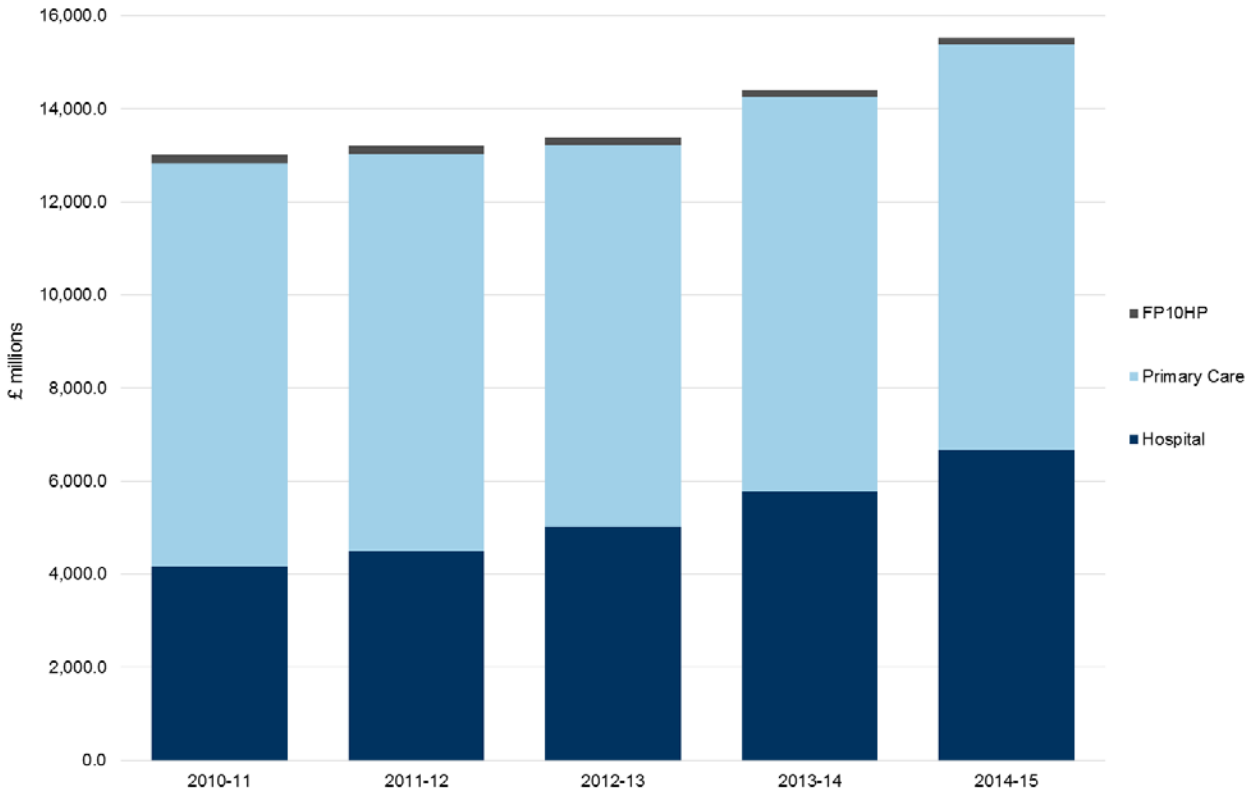
15. Hospital use of medicines accounted for 42.9 per cent of the total cost, up from 40.1 per cent in 2013-14. Medicines supplied in primary care accounted for 56.1 per cent of the estimated national costs, a fall from 58.8 per cent in 2013-14. The total cost associated

[1] Data taken from database last updated with IMS data release for September 2015; may include some dispensing for private patients
[2] Net Ingredient Cost, from NHS Prescription Services ePACT system, includes prescribing where the prescriber is unidentified
[3] Net Ingredient Cost, from NHS Prescription Services data on “FP10HP” prescriptions prescribed in England, includes prescribing where the prescriber is unidentified

with prescriptions written in hospitals but dispensed in the community remains relatively small but such use can be significant for specific medicines.

16. Figure 1 shows the estimated net ingredient cost for each year since 2010-11 for each sector. The cost of medicines in hospitals continues to rise at a greater rate than in primary care and accounts for an increasing proportion of the total estimated spend on medicines, as shown in Figure 2.

Figure 1: Estimated net ingredient cost, 2010-11 to 2014-15



17. Figure 3 shows the annual cost growth rates for hospitals, primary care, hospital prescribing dispensed in the community and a total percentage.

18. The number of items prescribed and dispensed in primary care has risen each year including in 2014-15, but costs fell slightly in 2012-13 due to expiry of patents and reductions in the cost of some medicines or formulations. The greater rate of expenditure growth in medicines used in hospital is likely to be related to the introduction of new and innovative medicines and increased use of specialist medicines, many of which are relatively high cost.

Figure 2 Proportion of total prescribing costs by sector, 2010-11 to 2014-15

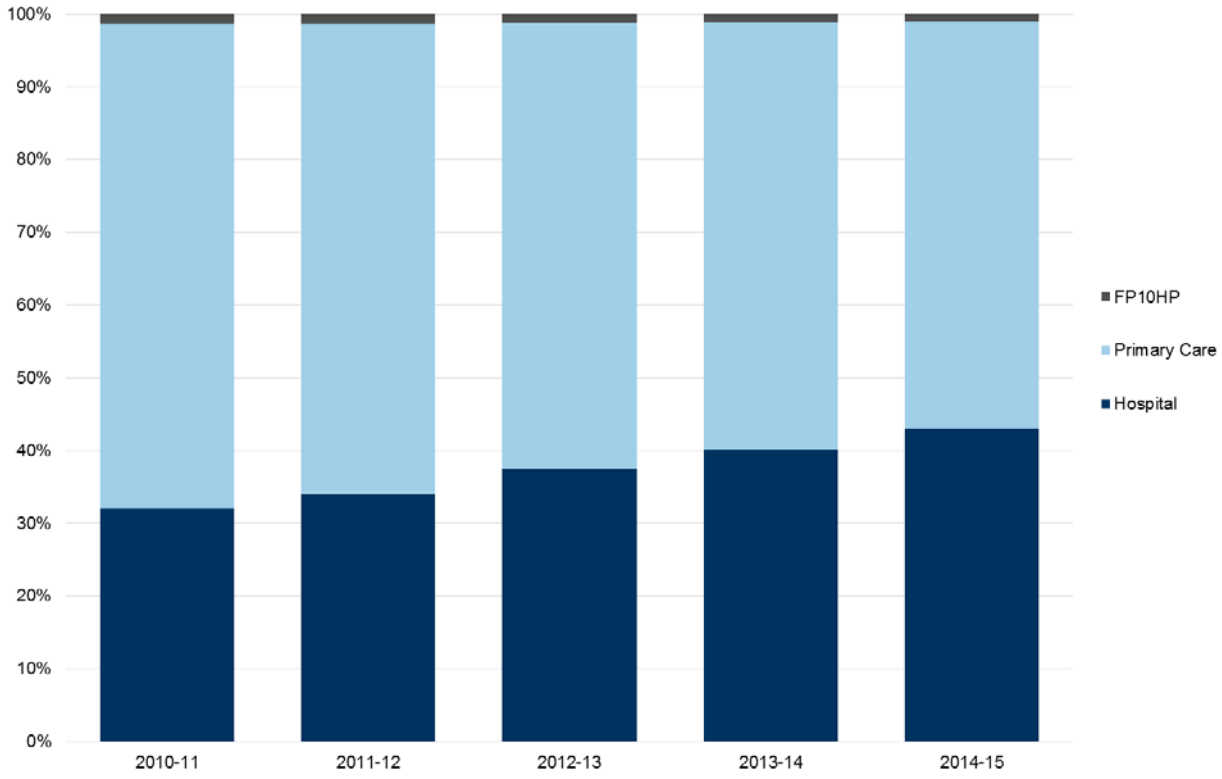
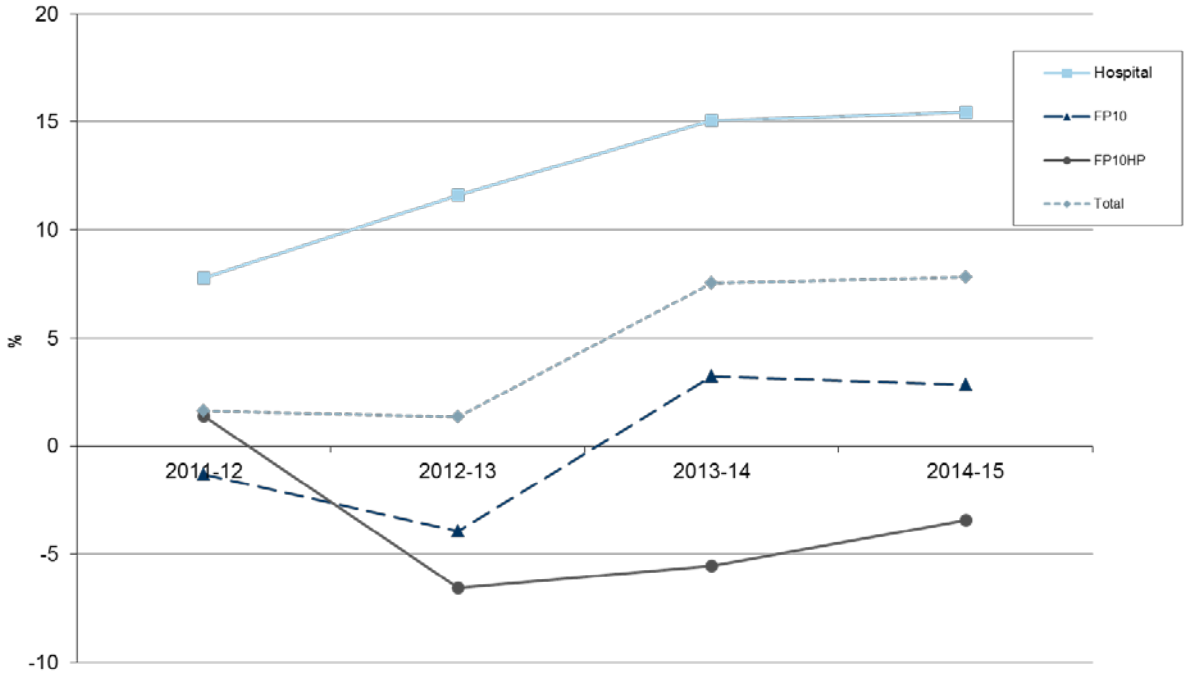


Figure 3: Annual estimated cost growth, 2011-12 to 2014-15



Area Teams in England

19. Table 2 shows the estimated costs by Area Team for 2014-15 from the three sectors and the total for each Area Team. The Area Teams listed are those which came into existence in April 2013.

20. The figures in Table 2 (total £15.2 billion) do not sum to the same figure as the total in Table 1 (total £15.5 billion, 2.1 per cent higher) for two reasons.

- Firstly, costs that cannot be allocated to a specific Area Team are not included.
- Secondly, the data in the HPAI is not grossed up at Area Team level to correct for hospitals which do not provide data (see Appendix 1: Sources and definitions which lists those hospitals not providing data in 2014-15). The national data includes all costs from primary care, and HPAI data grossed up to national level.

Table 2: Estimated cost of prescribing in 2014-15 by Area Team. All figures are in £ million

Area Team		Hospital issues [4]		Primary care		Hospital prescribing dispensed in the community		Total Cost
		Cost	% growth since 2013-14	Cost	% growth since 2013-14	Cost	% growth since 2013-14	
Q44	Cheshire, Warrington & Wirral	160.6	36.4	216.3	3.4	1.5	-11.4	378.4
Q45	Durham, Darlington & Tees	109.3	6.9	228.7	3.1	3.1	6.8	341.1
Q46	Greater Manchester	372.1	11.2	510.0	3.5	3.5	-6.4	885.6
Q47	Lancashire	110.7	7.6	271.7	2.2	1.3	0.2	383.7
Q48	Merseyside	162.6	17.3	242.0	2.7	1.6	3.5	406.2
Q49	Cumbria, Northumbria, Tyne & Wear	294.9	13.2	359.1	2.4	6.7	5.2	660.7
Q50	North Yorkshire & Humber	166.1	12.6	293.8	3.6	3.4	13.0	463.3
Q51	South Yorkshire & Bassetlaw	181.2	20.8	272.3	4.3	2.4	-9.3	455.9
Q52	West Yorkshire	305.4	15.8	404.5	3.4	2.5	-5.9	712.5
Q53	Arden, Herefords & Worcester	139.8	14.2	264.4	2.5	5.4	-10.4	409.7
Q54	Birmingham & the Black Country	317.3	17.4	435.0	3.9	9.3	-10.7	761.6
Q55	Derbyshire & Nottinghamshire	201.5	15.2	304.5	3.3	6.9	-7.9	512.8
Q56	East Anglia	293.8	21.8	408.1	2.8	11.0	34.3	712.9
Q57	Essex	151.9	16.9	286.9	2.6	2.7	-9.6	441.5
Q58	Hertfordshire & South Midlands	194.6	15.7	384.5	2.4	6.5	-23.7	585.7
Q59	Leicestershire & Lincolnshire	134.7	10.1	302.2	3.9	16.0	13.4	452.9
Q60	Shropshire & Staffordshire	141.6	20.1	278.5	3.1	2.8	16.0	422.9
Q64	Bath, Glos, Swindon & Wiltshire	145.4	18.6	227.8	3.4	8.6	-9.1	381.8
Q65	Bristol, N Somerset, Somerset & S Glos	152.2	25.4	215.5	3.5	12.5	22.4	380.3
Q66	Devon, Cornwall & Isles Of Scilly	207.1	13.9	296.0	3.1	6.0	42.8	509.2
Q67	Kent & Medway	156.8	18.0	299.9	3.1	7.5	-9.5	464.2
Q68	Surrey & Sussex	290.9	17.2	437.6	2.2	7.1	-12.2	735.7
Q69	Thames Valley	174.6	15.2	263.2	2.9	2.4	-1.5	440.1
Q70	Wessex	271.8	19.0	426.5	3.1	7.9	-17.9	706.2
Q71	London	1,540.0	15.7	1,044.8	2.6	15.0	-27.9	2,599.7

21. From 2013-14 to 2014-15, the cost of medicines used in hospitals rose by between 6.9 and 36.4 per cent at Area Team level, while primary care expenditure growth ranged from 2.2 to 4.3 per cent. There was considerable variation in the growth or decrease of cost for medicines prescribed in hospitals but dispensed in the community, which may be

[4] Area Team hospital data taken from HPAI database held by HSCIC, last updated with data for September 2015. May include drugs used to treat private patients.

explained by the small numbers involved. This ranged from -27.9 per cent in London to 42.8 per cent in Devon, Cornwall & Isles of Scilly.

22. Area Teams differ widely in population, from Durham, Darlington and Tees Area Team with a resident population of 1.2 million, to London with a resident population of 8.4 million (figures for mid-2013 produced by the Office for National Statistics[5]). The populations for each Area Team are shown in Appendix 2. Table 3 shows the figures from Table 2 divided by the population for each Area Team.

[5] Accessed from http://www.ons.gov.uk/ons/rel/sape/small-area-population-estimates/mid-2013/index.html See Appendix 2 for further details.

Table 3: Estimated cost per person for 2014-15 by Area Team (£ per person)

		Hospital issues	Primary Care	Hospital prescribing dispensed in the community	Total
Q44	Cheshire, Warrington & Wirral	130.64	176.00	1.20	307.84
Q45	Durham, Darlington & Tees	92.53	193.67	2.59	288.79
Q46	Greater Manchester	135.42	185.58	1.28	322.29
Q47	Lancashire	75.33	184.95	0.91	261.19
Q48	Merseyside	136.35	202.97	1.34	340.66
Q49	Cumbria, Northumbria, Tyne & Wear	152.50	185.74	3.49	341.73
Q50	North Yorkshire & Humber	99.36	175.75	2.03	277.14
Q51	South Yorkshire & Bassetlaw	123.13	185.02	1.64	309.79
Q52	West Yorkshire	132.70	175.76	1.08	309.54
Q53	Arden, Herefords & Worcester	85.43	161.53	3.33	250.28
Q54	Birmingham & The Black Country	129.34	177.27	3.77	310.38
Q55	Derbyshire & Nottinghamshire	101.35	153.18	3.45	257.98
Q56	East Anglia	119.37	165.82	4.46	289.66
Q57	Essex	86.65	163.63	1.57	251.85
Q58	Hertfordshire & South Midlands	71.87	141.99	2.40	216.27
Q59	Leicestershire & Lincolnshire	76.62	171.98	9.09	257.69
Q60	Shropshire & Staffordshire	89.40	175.77	1.79	266.96
Q64	Bath, Glos, Swindon & Wiltshire	97.93	153.42	5.80	257.15
Q65	Bristol, N Somerset, Somerset & S Glos	104.93	148.57	8.62	262.12
Q66	Devon, Cornwall & Isles Of Scilly	122.36	174.87	3.55	300.78
Q67	Kent & Medway	88.85	169.97	4.23	263.05
Q68	Surrey & Sussex	106.47	160.19	2.61	269.27
Q69	Thames Valley	84.72	127.69	1.14	213.55
Q70	Wessex	99.81	156.64	2.91	259.36
Q71	London	182.97	124.14	1.78	308.89

23. These differences should not be interpreted as showing any variation in the level or quality of care provided within each Area Team. A number of factors can lead to variations in the volume and cost of medicines across organisations including:

    a. Variations in prevalence of conditions within populations.
    b. Cross-boundary service provision where patients resident in one Area Team are treated in another Area Team, particularly if specialist services are required.
    c. How services are provided across the healthcare economy.
    d. The extent to which alternative supply routes for medicines are used, such as the homecare route, which results in under reporting.

24. Table 4 shows the cost percentage split between each of the 3 sectors by Area Team.

Table 4: Percentage of the total estimated cost by Area Team for 2014-15, by sector

		Hospital issues (%)	Primary Care (%)	Hospital prescribing dispensed in the community (%)
Q44	Cheshire, Warrington & Wirral	42.4	57.2	0.4
Q45	Durham, Darlington & Tees	32.0	67.1	0.9
Q46	Greater Manchester	42.0	57.6	0.4
Q47	Lancashire	28.8	70.8	0.3
Q48	Merseyside	40.0	59.6	0.4
Q49	Cumbria, Northumbria, Tyne & Wear	44.6	54.4	1.0
Q50	North Yorkshire & Humber	35.9	63.4	0.7
Q51	South Yorkshire & Bassetlaw	39.7	59.7	0.5
Q52	West Yorkshire	42.9	56.8	0.4
Q53	Arden, Herefords & Worcester	34.1	64.5	1.3
Q54	Birmingham & The Black Country	41.7	57.1	1.2
Q55	Derbyshire & Nottinghamshire	39.3	59.4	1.3
Q56	East Anglia	41.2	57.2	1.5
Q57	Essex	34.4	65.0	0.6
Q58	Hertfordshire & South Midlands	33.2	65.7	1.1
Q59	Leicestershire & Lincolnshire	29.7	66.7	3.5
Q60	Shropshire & Staffordshire	33.5	65.8	0.7
Q64	Bath, Glos, Swindon & Wiltshire	38.1	59.7	2.3
Q65	Bristol, N Somerset, Somerset & S Glos	40.0	56.7	3.3
Q66	Devon, Cornwall & Isles Of Scilly	40.7	58.1	1.2
Q67	Kent & Medway	33.8	64.6	1.6
Q68	Surrey & Sussex	39.5	59.5	1.0
Q69	Thames Valley	39.7	59.8	0.5
Q70	Wessex	38.5	60.4	1.1
Q71	London	59.2	40.2	0.6

25. The proportion of estimated net ingredient cost for medicines supplied in hospital ranged from 59.2 per cent (London) to 28.8 per cent (Lancashire). The proportion of medicine costs from primary care ranged from 70.8 per cent (Lancashire) to 40.2 per cent (London). The proportion of cost for prescriptions issued in hospitals but dispensed in the community ranged from 3.5 per cent (Leicestershire & Lincolnshire) to 0.3 per cent (Lancashire). The relative proportions for England are shown in Table 1.

26. The variation in the proportions for different methods of delivering medicines is mainly driven by two factors. The first is the presence of one or more hospitals in an Area

Team which provide specialist services and are therefore likely to use more expensive medicines than hospitals providing general services. The second relates to differences in local arrangements for service provision and prescribing responsibility, whereby some medicines provided through hospitals are provided via primary care in other areas.

27. London clearly has a larger proportion of its medicine costs provided in hospitals than other Area Teams, and a higher provision of hospitals than other areas. Patients from areas surrounding London are likely to be treated in London.

Medicines appraised by NICE

28. The NICE Technology Appraisal process assesses the clinical and cost effectiveness of new and existing medicines and interventions, and provides guidance on their use by the NHS. The guidance issued is intended to provide an authoritative assessment of clinical and cost-effectiveness (http://www.nice.org.uk/). However the guidance commonly recommends a medicine as an option for treatment among other options. Many of these medicines are used for specialist indications, with treatment being initiated in hospital. NICE also develop and publish clinical guidelines which may cover the use of several medicines. The HPAI data enables the usage of the medicines appraised by NICE to be estimated across England.

29. The accompanying Excel file NICE Data Table.xls shows the estimated cost of medicines positively appraised by NICE. Technology appraisals generally review the use of drugs for specific indications. The figures shown are for all recorded use unless otherwise noted as the data relating to medicine use for specific indications is generally not reported. For example tumour necrosis factor (TNF) alpha inhibitors such as infliximab may be used to treat a number of conditions including rheumatoid arthritis, psoriasis and ulcerative colitis.

30. Data collection for some medicines used in hospitals is not complete (see Appendix 1: Sources and definitions). Some medicines listed may be issued to patients through care provided within their own home (homecare), or via outsourced dispensing services so therefore may not have the full usage recorded in the data used here. Likewise anti-smoking products, for example, may be supplied to patients by other supply routes such as via a Patient Group Direction and are therefore not recorded within the data sources used here. This means that these figures may be an under-estimate for some medicines.

31. NICE may recommend the use of a medicine in combination with one or more other medicine. However, the data used to produce Excel file NICE data table.xls cannot identify where a medicine has been used in combination with one or more medicines unless a combination product exists. Unless otherwise noted, all presentations of a medicine have been included.

32. A blank indicates that there was no use of the drug or that the percentage growth cannot be calculated because there was no use of the drug in the previous year.

33. A very high growth may be because the drug was recently launched on to the market or was positively appraised late in 2013-14, or in 2014-15. Afatinib is an example of this. Negative growth in cost may not mean a reduction in use, but may indicate a price reduction, possibly due to the introduction of a generic version of the medicine. Memantine is an example of this. A new medicine for a specific indication may lead to reduced use of other medicines for the same indication.

34. The NICE Technology Appraisals in the NHS in England - Innovation Scorecard: Experimental statistics, published by the HSCIC also includes information regarding medicines appraised by the NICE technology appraisal process. The data provided shows volume use over time at Area Team, Clinical Commissioning Group and NHS hospital Trust, where data is available. The link to the most recent publication is:

http://www.hscic.gov.uk/pubs/nicetechapproct15

35. In 2014-15 the medicine positively appraised by NICE with the greatest cost in primary care was Insulin glargine. The medicine with the greatest cost in secondary care of those positively appraised by NICE was Adalimumab. The medicine with the greatest cost which was prescribed in hospital but dispensed in the community of those positively appraised by NICE was Adalimumab. The medicine with the greatest overall cost in all 3 sectors of those positively appraised by NICE was Adalimumab.

36. Some of these figures may be under-estimates because of provision via the homecare route or from outsourced dispensing services, which may not be fully recorded in the HPAI data.

37. Table 5 shows the top 20 medicines positively appraised by NICE with the greatest total cost, summing all 3 sectors. Only 6 of these medicines are predominantly used in Primary care (in the community), the remaining 14 are mostly used in Secondary care (in hospitals).

Table 5: Overall top 20 medicines by total cost for medicines positively appraised by NICE prescribed or issued in all sectors in 2014-15

Medicine	Most Recent TA	Condition[1]	Sector where highest cost is incurred	Cost (£000s)
Adalimumab	TA199 - August 2010	Psoriatic arthritis	Secondary care	371,195.7
Ranibizumab	TA298 – November 2013	Choroidal neovascularisation associated with pathological myopia	Secondary care	249,626.3
Etanercept	TA199 – August 2010	Psoriatic arthritis	Secondary care	229,226.1
Infliximab	TA199 – August 2010	Psoriatic arthritis	Secondary care	159,575.4
Rituximab	TA308 – March 2014	Anti-neutrophil cytoplasmic antibody-associated vasculitis	Secondary care	145,757.8
Trastuzumab	TA208 – November 2010	Gastric cancer (HER2-positive, metastatic)	Secondary care	145,428.0
Aflibercept (solution for injection)	TA305 – February 2014	Visual impairment caused by macular oedema secondary to central retinal vein occlusion	Secondary care	133,625.5
Lenalidomide	TA171 – June 2009	Multiple myeloma	Secondary care	124,487.8
Abiraterone	TA259 – June 2012	Treatment of castration-resistant metastatic prostate cancer previously treated with one docetaxel-containing regimen	Secondary care	96,641.3
Imatinib	TA251 – April 2012	Treatment of chronic phase Philadelphia-chromosome-positive chronic myeloid leukaemia	Secondary care	82,305.3
Insulin glargine	TA053 – December 2002	Type 1 & Type 2 Diabetes	Primary care	80,805.9

Medicine	Most Recent TA	Condition[1]	Sector where highest cost is incurred	Cost (£000s)
Aripiprazole	TA292 – July 2013	Moderate to severe manic episodes in adolescents with bipolar disorder	Primary care	73,428.3
Buprenorphine (excluding combination with naxolone)	TA114 – January 2007	Drug misuse	Primary care	73,178.0
Tacrolimus (immunosuppression - oral)	TA099 – April 2006	Renal Transplant	Secondary care	65,417.7
Docetaxel	TA109 – September 2006	Breast cancer (early)	Secondary care	61,895.8
Somatropin	TA188 – May 2010	Growth failure (children)	Primary care	55,735.5
Ezetimibe (monotherapy)	TA132 – November 2007	Primary (heterozygous-familial and non-familial) hypercholesterolaemia	Primary care	53,657.3
Rivaroxaban	TA287 – June 2013	Treating pulmonary embolism and preventing recurrent venous thromboembolism	Primary care	53,256.4
Ipilimumab	TA319 – July 2014	Previously untreated advanced (unresectable or metastatic) melanoma	Secondary care	52,471.6
Paclitaxel	TA091 – May 2005	Ovarian cancer (advanced)	Secondary care	52,067.8

[1] Condition relates to the most recent TA only. It should be noted that medicines may have multiple TAs for a range of conditions. Only the most recent TA and the condition to which this applies, is included in Table 5.

Appendix 1: Sources and definitions

Definition of terms

38. Technology Appraisal: Technology appraisals are recommendations from NICE on the use of new and existing medicines and treatments within the NHS in England and Wales. Recommendations are based on a review of clinical and economic evidence.

39. Net Ingredient Cost (NIC): This is the basic price of a drug, i.e. the price listed in the national Drug Tariff or in standard price lists. NIC is used in Prescription Services reports and other analyses, as it standardises cost throughout prescribing nationally. The actual price paid by the NHS takes into account any discounts.

40. Issue: when a hospital pharmacy supplies medication to a ward or operating theatre or to a patient who is being discharged. This supply is usually termed an 'issue'.

41. Defined Daily Dose: the World Health Organisation define this as the assumed average maintenance dose per day for a drug used for its main indication in adults.

Data sources

42. The figures in this report are derived from both the HPAI database provided by the commercial company IMS Health and the databases maintained by the Prescription Services Division, part of the NHS Business Services Authority.

Hospital Pharmacy Audit Index (HPAI) database

43. Data for hospital use of medicines is provided by IMS Health who collect data from pharmacies in hospital Trusts across the UK, to produce the HPAI. The data relating to England has been made available by IMS Health.

44. Unlike primary care, there is no central NHS collation of information on medicines issued and used in NHS hospitals. IMS Health collects and collates this data on a commercial basis. The HPAI is based on issues of medicines recorded on hospital pharmacy systems. The information is sent to IMS Health each month electronically by hospital pharmacy departments. Issues refer to all medicines supplied from hospital pharmacies to wards, departments, clinics, theatres, satellite sites and to patients both in out-patient clinics and on discharge. Therefore, the HPAI monitors usage levels by hospitals rather than purchases by Trusts. This avoids any bias introduced by some hospitals which purchase on behalf of a consortium of Trusts.

45. Data on medicine use is collated as quantities issued (packs) and no financial information is collected. There is no equivalent to the concept of an item as is commonly used in analysing primary care data. Costs are calculated from quantities by IMS Health using the Drug Tariff and other standard price lists. Many hospitals receive discounts from suppliers, particularly for high volume drugs, which are commercially confidential. Therefore, the costs reported in this report do not represent the actual amount paid by hospitals. They are a proxy for utilisation and are not suitable for estimating financial pressures. In this report hospital costs are referred to as estimated costs. However, a comparison between the costs taken from the HPAI database and the returns to the

Department of Health (DH) from Trusts suggests that the total costs are similar although costs may be different for individual medicines.

Primary Care

46. Data for medicine use in primary care is obtained from the Prescribing Analysis and CosT (PACT) system, which covers prescriptions prescribed by GP practices in England and dispensed in the community in the UK. Prescriptions written in England but dispensed outside England are included. Prescriptions written in hospitals or clinics that are dispensed in the community, prescriptions dispensed in hospitals and private prescriptions are not included in PACT data. The data in this report have been extracted using a national version of this system, provided by NHS Prescription Services, which arranges the data by month and by the Area Team (AT) and Clinical Commissioning Group (CCG) of the prescriber.

Prescriptions issues in hospital and dispensed in the community – 'FP10HP'

47. Data for hospital prescribed medicines dispensed in the community, is sometimes referred to FP10HP as, formerly, hospital prescribers used a prescription form with this reference name, which was similar to those used routinely in primary care, the FP10. The forms now used by hospital prescribers have the same reference name as those used in primary care and are only differentiated by the cost centre details overprinted on the form and the title Hospital Prescriber and HP at the top of the prescribing section of the form.

48. Use of the term FP10HP continues in the report as a convenient way of referring to this method, where the prescription is written by a hospital prescriber when it is intended that the patient will have the prescription dispensed in the community. The cost of the prescription is charged to the hospital. The data within this report, at Area Team level, has been extracted from a hospital version of the ePACT system provided by NHS Prescription Services.

Data Quality

49. This section provides data quality information for the data sources used in this report. It aims to provide users with an evidence based assessment of the quality of the statistical output by reporting against those of the European Statistical System (ESS) quality and related dimensions and principles[6] appropriate to this output.

50. In doing so it complies with the UK Statistics Authority (UKSA) Code of Practice for Official Statistics[7], particularly Principle 4, Practice 2 which states: "Ensure that official statistics are produced to a level of quality that meets users' needs, and that users are informed about the quality of statistical outputs, including estimates of the main sources of bias and other errors, and other aspects of the European Statistical System definition of quality".

Relevance

51. This report allows readers to see how the use of medicines has grown in the three sectors covered, i.e. hospital, primary care and those cases where a prescription is written by a hospital doctor but dispensed by a community pharmacist. It also looks at the use of drugs positively appraised by NICE.

Methods of medicine supply routes and data collection

52. Patients can receive their medicine from the NHS by a variety of routes and the data in this report covers the majority of this prescribing activity. The most common is to receive a prescription from their general practice and have it dispensed by a community pharmacy. However there are many other ways.

Method of medicine supply	Data available centrally?	Used in report
Prescription issued by general practitioner, nurse or other primary care prescriber and dispensed by the practice, a community pharmacy or appliance contractor	Yes (ePACT from NHS Prescription Services)	Yes
Prescription issued by a dentist and dispensed by a community pharmacy (only medicines from a restricted list, mainly antibiotics and oral products)	Yes if dispensed in England (List B from NHS Prescription Services)	No
Prescription issued by a hospital doctor and dispensed by a community pharmacy or appliance contractor	Yes (Hospital ePACT from NHS Prescription Services)	Yes
Prescription issued by a hospital doctor and dispensed by the hospital pharmacy	Yes if captured by IMS Health HPAI system	Yes

[6] The original quality dimensions are: relevance, accuracy and reliability, timeliness and punctuality, accessibility and clarity, and coherence and comparability; these are set out in Eurostat Statistical Law. However more recent quality guidance from Eurostat includes some additional quality principles on: output quality trade-offs, user needs and perceptions, performance cost and respondent burden, and confidentiality, transparency and security.

[7] UKSA Code of Practice for Statistics: http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html

Method of medicine supply	Data available centrally?	Used in report
Medicines provided within a hospital (in-patient or out-patient)	Yes if captured by IMS Health HPAI system	Yes
Medicine supplied directly to a patient by a dentist, general practitioner, pharmacist or nurse (e.g. Walk-in Centre, Out of Hours, Minor Ailment Scheme)	No	No
Medicine supplied under a Patient Group Direction	No	No
Medicine supplied to patient via homecare arrangement with a hospital Trust	Some supplies are recorded in IMS Health HPAI system, but it is not clear how much	Only if in HPAI data
Medicines supplied to patients by Mental Health Trusts (no prescription involved)	Only if the data is recorded as part of the IMS Health HPAI	Only if in HPAI data
Medicines administered in ambulances	No	Only if provided by hospital pharmacy and in HPAI data

53. The HPAI has been established since 1991 in its present form and gives information on the usage of medicinal products in NHS hospitals. It excludes military and private hospitals, prisons and schools, but would include private wards within NHS hospitals and Private Hospitals holding an SLA with an NHS site. It covers over 99.5 per cent of beds across the UK where National figures are projected on the basis of bed numbers at postcode level, summarised at a Binley's defined region level below:

    Outsourced pharmacies servicing chosen hospitals are also sourced and included as a separate site where possible. Homecare and department data are also captured..

54. IMS collects "issues" from Pharmacy Departments. When analysing primary care prescribing the number of items is commonly used as a measure of frequency of prescribing and as a proxy for volume. There is no equivalent measure for hospital pharmacy issues, which are described in terms of packs or part packs. Issues will include supply of original packs as ward stock, dispensing for named patients, outpatient clinics and dispensing on discharge. **Therefore the data does not include the physical quantity (though this can be deduced by looking at the pack description) and hence no equivalent to the number of Defined Daily Doses.**

55. Not all hospitals contribute data to the HPAI. Some Trusts provided data too late for it to be included in the data used for this report. In such cases previous data was used to estimate data for those months where data was missing.

56. Hospitals missing from the HPAI in England for part or the whole of 2014-15 include:

Hospital	Area Team
Callington Road Hospital	Bristol, North Somerset, Somerset & South Gloucestershire Area Team
Long Fox Unit (Weston General Hospital)	Bristol, North Somerset, Somerset & South Gloucestershire Area Team
Weston General Hospital	Bristol, North Somerset, Somerset & South Gloucestershire Area Team
Launceston General Hospital	Devon, Cornwall & Isles Of Scilly Area Team
St Barnabas Hospital	Devon, Cornwall & Isles Of Scilly Area Team
William Julien Courtauld Hospital	Essex Area Team
Faversham Cottage Hospital	Kent & Medway Area Team
St Martins Hospital (Cantebury)	Kent & Medway Area Team
Whitstable and Tankerton Hospital	Kent & Medway Area Team

57. IMS Health report coverage as follows (as at October 2015):

Area Team		Total	Panel	Coverage
Q44	Cheshire, Warrington & Wirral	3,942	3,415	86.6
Q45	Durham, Darlington & Tees	4,281	3,491	81.5
Q46	Greater Manchester	9,105	9,095	99.9
Q47	Lancashire	4,728	4,728	100.0
Q48	Merseyside	5,505	5,505	100.0
Q49	Cumbria, Northumbria, Tyne & Wear	8,295	8,295	100.0
Q50	North Yorkshire & Humber	4,670	4,311	92.3
Q51	South Yorkshire & Bassetlaw	6,566	6,163	93.9
Q52	West Yorkshire	6,766	6,766	100.0
Q53	Arden, Herefords & Worcester	4,300	3,907	90.9
Q54	Birmingham & The Black Country	8,333	8,115	97.4
Q55	Derbyshire & Nottinghamshire	6,338	6,338	100.0
Q56	East Anglia	6,557	6,557	100.0
Q57	Essex	5,021	4,949	98.6
Q58	Hertfordshire & South Midlands	5,630	5,557	98.7
Q59	Leicestershire & Lincolnshire	4,235	4,225	99.8
Q60	Shropshire & Staffordshire	4,328	4,316	99.7
Q64	Bath, Glos, Swindon & Wiltshire	3,696	3,472	93.9
Q65	Bristol, N Somerset, Somerset & S Glos	4,591	4,086	89.0
Q66	Devon, Cornwall & Isles Of Scilly	5,091	5,091	100.0
Q67	Kent & Medway	3,909	3,271	83.7
Q68	Surrey & Sussex	7,570	7,570	100.0
Q69	Thames Valley	5,457	5,437	99.6
Q70	Wessex	7,034	7,034	100.0
Q71	London	25,578	25,173	99.4

58. The basic measure within the HPAI database is volume, measured in packs. IMS Health then calculates the cost of this volume using the current Drug Tariff (issued by DH) or manufacturers' price lists. An individual drug may be available in several different pack sizes and pack sizes can vary between medicines. In this report we have used cost since this is a measure which can be added together for different medicines.

59. The HPAI does not include data on some devices and appliances, for example, products such as nebuliser masks. There is only limited data on dressings. The Prescription Services Division data however includes everything which appeared on an "FP10" prescription.

60. IMS Health releases data on a regular basis. Each IMS dataset includes data for 24 months and may include updates to earlier data. The dataset used in this report was the database held within the HSCIC, downloaded from IMS by secure data transfer.

Data limitations

61. Estimated cost: The prices used in the HPAI are the published prices from the Drug Tariff and other standard price lists. This is not a true reflection of the actual expenditure by hospitals as many purchases are made on contract with individual manufacturers or wholesalers at lower prices.

62. Private usage: The HPAI includes no information taken directly from private hospitals. The data used in this report will however include usage in private wards within NHS hospitals, or where the NHS hospital supplies a private hospital.

63. Clinical trial usage: Where the data received can be linked to a valid UK pack, clinical trial usage will be incorporated. This is not always possible as clinical trial packs may not be issued from or recorded within the hospital pharmacy system.

64. Unlicensed products: Information on unlicensed products is not included within the HPAI.

65. Drugs issues through aseptic units: Certain types of drug, notably some cytotoxics and intravenous nutrition, are prepared in aseptic conditions. This may be carried out at a separate site by an outside contractor. There is one site in England where IMS are not able to collect such data. If the data relate to issues from an aseptic unit, it is sometimes not possible to determine the quantity of drugs used. In such instances an average quantity is substituted.

66. Medicines supplied via companies providing care at home: A number of specialist medicines are not only provided in hospital or by community pharmacies but are also delivered directly to the patient's home by various commercial companies. No "homecare" supplies are recorded in ePACT data and it is recorded within hospital pharmacy systems to a variable extent. Homecare supplies are generally initiated and commissioned by a hospital but the supply to the patient is made by the company and the hospital is invoiced for this service. The total value of homecare is estimated by the Commercial Medicines Unit of the Department of Health to exceed £1.5 billion per year. However, we do not know what proportion of this is included in the hospital data reported here.

Accuracy and reliability

67. The HSCIC believe that there is no reason to suggest that any analyses have been adversely affected by the data quality issues raised below.

68. All medicines provided using a prescription and dispensed in the community in the UK need to be submitted to Prescription Services if the dispenser is to be reimbursed and so coverage should be complete. Please note that if a prescription was issued, but not presented for dispensing or was not submitted to NHS Prescription Services by the dispenser, then it is not included in the data. The prescription item is recorded in the month in which NHS Prescription Services received it. In the majority of cases prescriptions will be issued, dispensed and submitted to NHS Prescription Services in the same month. However, prescriptions can be presented for dispensing up to six months after issue, and the dispensing organisation may submit the prescription for payment late. Prescription data may be attributed to organisations which have since closed. An issuing organisation may have closed before a prescription is dispensed and NHS Prescription Services may also receive prescriptions late from an organisation or a prescription pad from a closed organisation may still be in use by a prescriber previously at that organisation.

69. NHS Prescription Services have their own internal quality process to assure the data they provide. They state that due to the complex and manual processes involved there may be random inaccuracies in capturing prescription information which are then reflected in the data. The prescription processing activity is internally audited to 98.5 per cent accuracy (i.e. at least 98.5 per cent of prescriptions are recorded accurately). Further data quality details are available from NHS Prescription Services:

    http://www.nhsbsa.nhs.uk/PrescriptionServices/3751.aspx

70. IMS Health sells their data to a range of customers who would not purchase it if they did not have faith in it. However it has known limitations. It is based on a sample of Trusts although that sample covers over 99% of the beds in Trusts in England. There are known problems when a product is used via an aseptic unit (where a drug is prepared for use by dilution). The data received by IMS Health does not always indicate the physical amount of the drug in a bag prepared for infusion and an estimate has to be made using average doses. Data from some aseptic units does not appear in data submitted to IMS Health. Another known deficiency is when medicines are supplied to patients in their homes using a process known as homecare or supplied via outsourced dispensing services. Although the service (including the medicines used) is paid for by the Trust, the details are not always recorded in the pharmacy system and so may not appear in the data provided to IMS Health. This means that the figures are likely to be an underestimate of the medicines used. Note that the costs are not necessarily the true cost paid by the Trusts but rather the equivalent price of these medicines in primary care.

Timeliness and punctuality

71. This report is published annually. The timing of this publication is influenced by the agreement between the HSCIC and IMS Health which requires the HSCIC not to publish hospital data until six months after the time period to which it applies.

72. This report has been released in line with the pre-announced publication date and is therefore deemed to be punctual.

Accessibility and clarity

73. This report is available annually via the HSCIC website, as a combination of web pages and downloadable reports and data files. The publication may be requested in large print or other formats through the HSCIC's contact centre: enquiries@hscic.gov.uk (please include 'Hospital Prescribing' in the subject line).

74. Data included in this report originates from a range of sources. For details of further prescribing data available, please see our website:

    Prescribing - Health & Social Care Information Centre

Coherence and comparability

Comparability over time

75. Previous publications can be found using the link below:

    http://www.hscic.gov.uk/searchcatalogue?q=title%3A%22Hospital+Prescribing%2C+England%22&area=&size=10&sort=Relevance

76. In previous versions of the publication, sub-national breakdowns have been by Strategic Health Authority (SHA). Due to the changes to the NHS structure, implemented in April 2013 as a result of the 2012 Health and Social Care Act, this publication contains sub-national breakdowns at Area Team level, in order to reflect the current structure.

77. The medicines included in Excel file NICE Data Table.xls and Table 5 have been positively appraised by NICE. Some are new medicines whilst others will have been available for a longer period of time. Changes to the figures over time need to be interpreted in the context of changes in available medicines and their cost, and changes in NHS practice and structure. For example, a reduction in items dispensed for a particular medicine may be due to the introduction of alternative medicines, or a change in prescribing behaviour, especially in the length of treatment each item is intended to cover.

Comparability with other sources

78. The Prescription Services data presented here differs from that presented in the HSCIC publications based on the Prescription Cost Analysis (PCA) system. This is because the PCA database is based on all prescriptions dispensed in England irrespective of where they were written. The primary care figures given here will match the Clinical Commissioning Group (CCG) Prescribing data published by the HSCIC.

79. The NICE Technology Appraisals in the NHS in England - Innovation Scorecard: Experimental publication, published by the HSCIC also includes information regarding medicines appraised by the NICE technology appraisal process. The data provided shows volume use (rather than cost), over time at Area Team, Clinical Commissioning Group and NHS hospital Trust, where data is available. The link to the most recent publication is:

    http://www.hscic.gov.uk/pubs/nicetechapproct15

Assessment of user needs and perceptions

80. This report is used by stakeholders as the only complete source of information about use of medicines across the NHS in England.

81. The HSCIC is keen to gain a better understanding of the users of this report and their needs. Please send any comments to enquiries@hscic.gov.uk (please include 'Hospital Prescribing' in the subject line). Alternatively you can call our contact centre on 0300 303 5678 or write to HSCIC, 1 Trevelyan Square, Boar Lane, Leeds, LS1 6AE.

Performance cost and respondent burden

82. For the figures from the Prescription Services, the figures used in this publication are collected as part of the process of reimbursing dispensers for drugs supplied. The publication therefore uses an existing administrative source. Information about the administrative sources and their use for statistical purposes is included in the HSCIC's Statement of Administrative Sources at:

    http://www.hscic.gov.uk/article/1789/Statement-of-administrative-sources

83. The hospital data is not collected by the NHS but by a commercial company who cannot require Trusts to provide the data and so any burden is entered into willingly.

Confidentiality, Transparency and Security

84. This is an Official Statistics publication and therefore the code of practice for official statistics is adhered to from collecting the data to publishing.

    http://www.statisticsauthority.gov.uk/national-statistician/guidance/index.html

85. The standard HSCIC data security and confidentiality policies have been applied in the production of these statistics. See the HSCIC publications calendar web page for links to relevant HSCIC policies and other related documents:

    http://www.hscic.gov.uk/pubs/calendar

86. Freedom of Information Process: http://www.hscic.gov.uk/foi

Appendix 2: Projected Populations of Area Teams

The table below shows the projected populations for each Area Team (using summed Mid-2013 Population Estimates for Clinical Commissioning Groups (CCGs)) in England. These figures were published on 23 October 2014, by the Office for National Statistics. These can be found at:

http://www.ons.gov.uk/ons/rel/sape/small-area-population-estimates/mid-2013/index.html

Area Team		Population
Q44	Cheshire, Warrington & Wirral Area Team	1,229,137
Q45	Durham, Darlington & Tees Area Team	1,181,098
Q46	Greater Manchester Area Team	2,748,024
Q47	Lancashire Area Team	1,468,845
Q48	Merseyside Area Team	1,192,264
Q49	Cumbria, Northumberland, Tyne & Wear Area Team	1,933,521
Q50	North Yorkshire & Humber Area Team	1,671,825
Q51	South Yorkshire & Bassetlaw Area Team	1,471,807
Q52	West Yorkshire Area Team	2,301,664
Q53	Arden, Herefordshire & Worcester Area Team	1,636,794
Q54	Birmingham & the Black Country Area Team	2,453,665
Q55	Derbyshire & Nottinghamshire Area Team	1,987,902
Q56	East Anglia Area Team	2,461,036
Q57	Essex Area Team	1,753,052
Q58	Hertfordshire & South Midlands Area Team	2,708,085
Q59	Leicestershire & Lincolnshire Area Team	1,757,446
Q60	Shropshire & Staffordshire Area Team	1,584,253
Q64	Bath, Gloucestershire ,Swindon & Wiltshire Area Team	1,484,709
Q65	Bristol, North Somerset, Somerset & South Gloucestershire Area Team	1,450,838
Q66	Devon, Cornwall & Isles Of Scilly Area Team	1,692,872
Q67	Kent & Medway Area Team	1,764,617
Q68	Surrey & Sussex Area Team	2,732,009
Q69	Thames Valley Area Team	2,060,979
Q70	Wessex Area Team	2,722,840
Q71	London Area Team	8,416,535

Appendix 3: Limits on Access to Hospital Data

The agreement between IMS Health and the Health and Social Care Information Centre imposes limitations on what can be released. The restrictions include:

1. **No data can be released until six months after the period to which it refers**
2. IMS data cannot be released to any foreign government or any UK regulatory or advisory body, except where specifically stated below, without permission from IMS.
3. IMS data must not be released in a way which may identify, or could be used with other information that may identify, any prescriber or NHS Trust or Hospital.
4. IMS data may not be released using molecule brand names.
5. Any release of data must preserve the anonymity of Trusts and suppliers. One of the consequences of this is that IMS data for a specific manufacturer may not be released and that figures for a drug may not be released if only one manufacturer produces it.
6. Recipients of IMS information may not use the information for, or in, any commercial purpose without IMS' permission.
7. Recipients of IMS information cannot publish or pass on this information, or any analyses derived from it, to any other party, except where the data are published in response to a Parliamentary Question, questions about NICE approved products or as part of an HSCIC publication.
8. The data cannot be released using the EphMRA ATC (Anatomical Therapeutic Chemical) classification.

An exception is made to point 5 when the medicine has been positively appraised by NICE when data on a single medicine can be made available even if it is produced by only one manufacturer.

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Responsible Statistician

Ian Bullard, Section Head

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For further information

www.hscic.gov.uk

0300 303 5678

enquiries@hscic.gov.uk