

Prescribing Costs in Hospitals and the Community

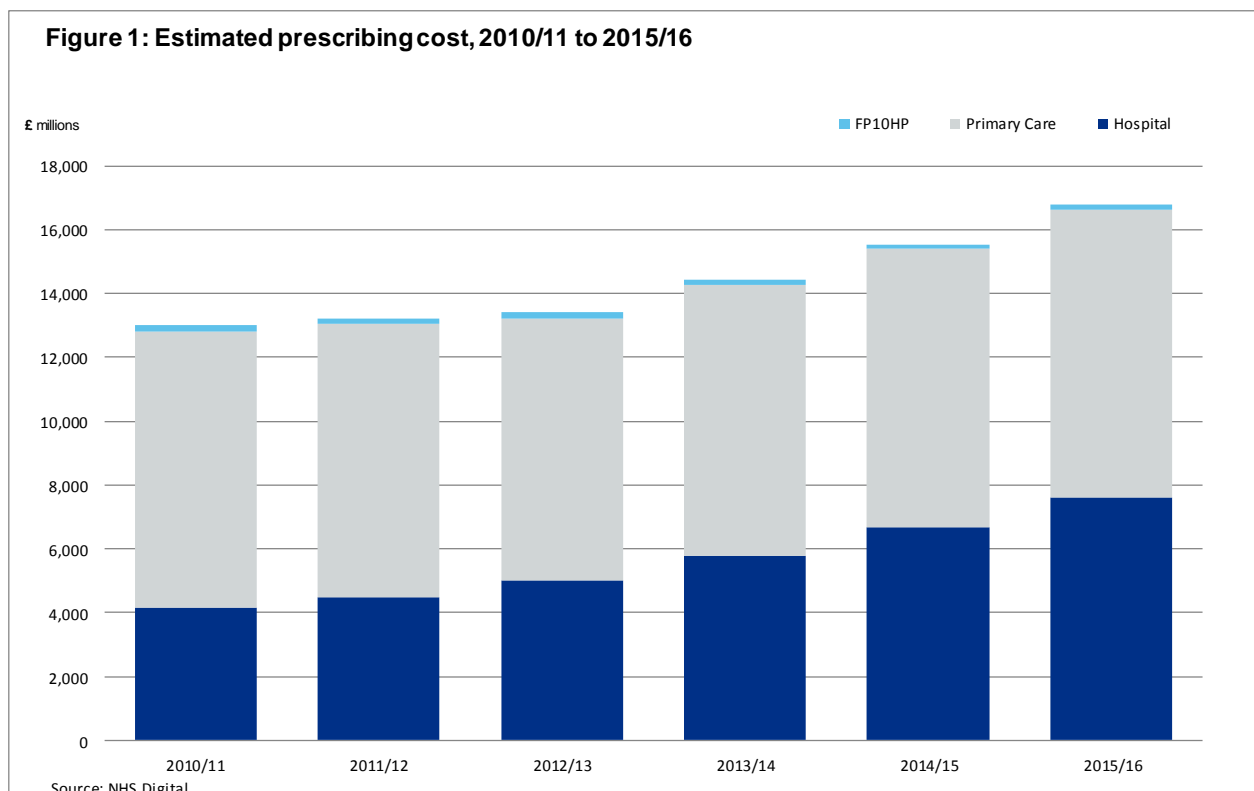
England 2015/16

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Prescribing Costs in Hospitals and the Community compares the overall costs of medicines used in hospitals with those used in primary care. It also looks at the medicines positively appraised by the National Institute for Health and Clinical Excellence (NICE).

Key findings

- The overall NHS expenditure on medicines in 2015/16 was £16.8 billion, an increase of 8.0 per cent from £15.5 billion in 2014/15 and an increase of 29.1 per cent from £13.0 billion in 2010/11.
- In 2015/16 hospital use accounted for 45.2 per cent (£7.6 billion) of the total cost, up from 43.0 per cent (£6.7 billion) in 2014/15 and up from 32.1 per cent (£4.2 billion) in 2010/11.



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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).

Introduction

1. This report presents summary cost figures relating to medicine use through prescribing in hospitals and in the community in England for 2015/16, 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.
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. 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.
4. 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. 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.
5. 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). Cost changes have not been adjusted for inflation.
6. 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.
7. 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 (NIC) is the basic cost of a drug. It does not take account of discounts, dispensing costs, fees or prescription charges income.

Overall costs

8. Table 1 gives details of the estimated prescribing cost of prescriptions in millions of pounds from 2010/11 to 2015/16 for primary care prescribing dispensed in the community (FP10), for hospital prescribing dispensed in the community (FP10HP) and for medicines issued from hospital pharmacy departments (HPAI). It also shows the proportions of the total cost for each sector and the corresponding annual percentage change between each year.
9. Figure 1 shows the estimated prescribing 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 (Figure 3) and accounts for an increasing proportion of the estimated prescribing cost on medicines, as shown in Figure 2.
10. The overall NHS expenditure on medicines in 2015/16 was £16.8 billion, which is an increase of 8.0 per cent from £15.5 billion from 2014/15, and 29.1 per cent from £13.0 billion in 2010/11.
11. Of the total £16.8 billion; £7.6 billion was spent on medicines used in hospitals (45.2 per cent), £9.0 billion was spent on primary care prescribed medicines (53.9 per cent), and £150.0 million was spent on hospital prescribed medicines dispensed in the community (0.9 per cent).
12. The cost of medicines dispensed in primary care has risen steadily over the last five years, from £8.6 billion in 2010/11 to £9.0 billion in 2015/16, a rise of 4.6 per cent. As a proportion of the overall NHS expenditure on medicines, primary care dispensed medicines has fallen 12.6 percentage points over this time period (66.5 to 53.9 per cent).
13. This proportional shift in cost is due to the spend on medicines used in hospital, which have increased from £4.2 billion in 2010/11 to £7.6 billion in 2015/16, a rise of 81.8 per cent.
14. The introduction of new and innovative medicines, as well as the greater use of specialist medicines has contributed to the increase in expenditure on medicines used in hospital.
15. Of the drugs positively appraised by NICE, the greatest overall cost in 2015/16 was for Adalimumab (£416.6m), which also incurred the greatest cost (£391.1 million) in hospitals. This is used for treating auto-immune conditions, including psoriatic arthritis.

Table 1: Estimated prescribing cost from each sector, 2010/11 to 2015/16

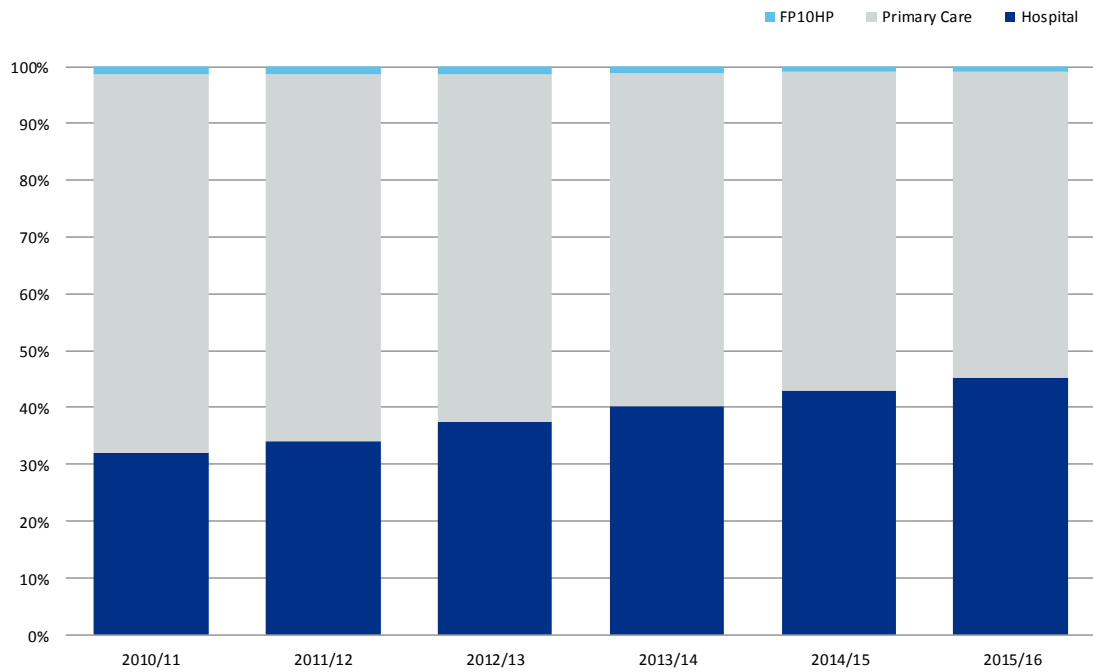
	Issues by hospital pharmacy (HPAI) ^[1]			Primary care prescribing (FP10) ^[2]			Hospital prescribing dispensed in the community (FP10HP) ^[3]			Total	
	Cost (£million)	Annual % change	% of total	Cost (£million)	Annual % change	% of total	Cost (£million)	Annual % change	% of total	Cost (£million)	Annual % change
2010/11	4,173.9		32.1	8,648.3		66.5	178.4		1.4	13,000.6	
2011/12	4,497.6	7.8	34.0	8,535.3	-1.3	64.6	180.8	1.4	1.4	13,213.7	1.6
2012/13	5,026.9	11.8	37.5	8,200.7	-3.9	61.2	169.0	-6.6	1.3	13,396.5	1.4
2013/14	5,783.0	15.0	40.1	8,465.0	3.2	58.8	159.6	-5.5	1.1	14,407.6	7.5
2014/15	6,682.0	15.5	43.0	8,704.9	2.8	56.0	154.1	-3.4	1.0	15,541.0	7.9
2015/16	7,589.0	13.6	45.2	9,049.1	4.0	53.9	150.0	-2.7	0.9	16,788.1	8.0

[1] Provisional data taken from HPAI database last updated with IMS data release for September 2016; may include some dispensing for private patients

[2] Net Ingredient Cost, from NHS Prescription Services ePACT system (FP10 prescriptions), includes prescribing where the prescriber is unidentified

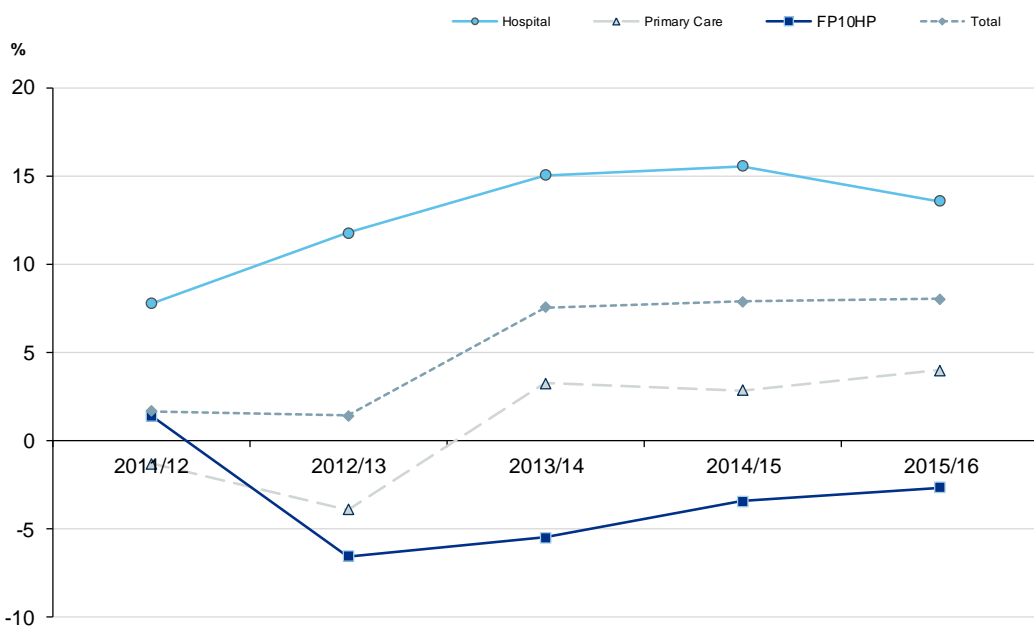
[3] Net Ingredient Cost, from NHS Prescription Services ePACT system (FP10HP prescriptions), includes prescribing where the prescriber is unidentified

Figure 2: Proportion of estimated prescribing cost by sector, 2010/11 to 2015/16



Source: NHS Digital

Figure 3: Annual estimated prescribing cost growth, 2011/12 to 2015/16



Source: NHS Digital

NHS England Regions

16. Table 2 shows the estimated prescribing cost by NHS England Region for 2015/16 by the three sectors and the total with an annual percentage change since last year. The table also shows the estimated cost per person for 2015/16 and the proportion of the total cost per person for each sector.
17. The figures in Table 2 do not sum to the total in Table 1 for two reasons. Firstly, costs that cannot be allocated to a specific NHS England Region are not included. Secondly, the data in the HPAI is not grossed up at NHS England Region level to correct for hospitals which do not provide data. The national data includes all costs from primary care, and HPAI data that has been grossed up to a national level.
18. From 2014/15 to 2015/16, the cost of medicines used in hospitals rose by between 10.3 (Lancashire and Greater Manchester) and 20 per cent (Wessex) at NHS England Region level, while primary care (FP10) expenditure growth ranged from 3.0 (Cumbria and North East) to 5.5 per cent (Wessex). There was considerable variation in the cost for medicines prescribed in hospitals but dispensed in the community, which may be explained by the small numbers involved. This ranged from -18.1 per cent (Wessex) to 9.8 per cent (North Midlands).
19. NHS England Regions differ widely in population, from Cheshire & Merseyside with a resident population of 2.4 million, to London with a resident population of 8.7 million (figures for mid-2015 produced by the Office for National Statistics). The populations for each NHS England Region are also included in Table 2.
20. These differences should not be interpreted as showing any variation in the level or quality of care provided within each NHS England Region. A number of factors can lead to cost variations between areas and in the proportions for different methods of delivering medicines. These are:
 - Variations in prevalence of conditions within populations;
 - Cross-boundary service provision where patients resident in one area are treated in another, particularly if specialist services are required which are likely to use more expensive medicines than hospitals providing general services;
 - how services are provided across the healthcare economy relating to differences in local arrangements for service provision and prescribing responsibility, whereby some medicines provided through hospitals in an area are provided via primary care in other areas; and
 - the extent to which alternative supply routes for medicines are used, such as the homecare route, which may result in under reporting.

Table 2: Estimated prescribing cost in 2015/16 by NHS England Region

Region Code	Region Name	Estimated prescribing cost (£ millions)								ONS Population	Estimated prescribing cost per person (£ per person)						
		HPAI	HPAI Annual % Change	FP10	FP10 Annual % Change	FP10H P	FP10H P Annual % Change	Total Cost	Total Cost Annual % Change		HPAI	HPAI % of total	FP10	FP10 % of total	FP10H P	FP10H P % of total	Total Cost
Q70	Wessex	326.2	20.0	449.8	5.5	6.5	-18.1	782.5	10.8	2,762,546	118.09	41.7	162.82	57.5	2.35	0.8	283.27
Q71	London	1765.2	14.7	1077.6	3.1	12.7	-15.5	2,852.8	9.9	8,673,713	203.52	61.8	124.24	37.7	1.46	0.4	329.21
Q72	Yorkshire & Humber	758.9	15.4	1015.6	4.6	7.7	-7.1	1779.9	8.9	5,499,053	138.01	42.6	184.68	57.0	1.40	0.4	324.09
Q73	Lancashire and Greater Manchester	536.9	10.3	808.5	3.4	4.5	-7.1	1349.2	6.0	4,267,454	125.82	39.8	189.45	59.9	1.06	0.3	316.33
Q74	Cumbria & North East	476.0	17.6	605.2	3.0	10.0	1.7	1091.5	8.8	3,128,673	152.15	43.6	193.44	55.5	3.18	0.9	348.78
Q75	Cheshire & Merseyside	361.4	11.9	478.7	4.5	3.3	6.6	843.3	7.5	2,441,562	148.02	42.8	196.08	56.8	1.34	0.4	345.45
Q76	North Midlands	393.6	14.6	606.2	4.0	10.7	9.8	1009.9	7.9	3,610,404	109.02	39.0	167.91	60.0	2.95	1.1	279.88
Q77	West Midlands	542.5	18.1	726.5	3.9	12.1	-17.8	1280.5	9.2	4,154,251	130.59	42.3	174.87	56.7	2.91	0.9	308.37
Q78	Central Midlands	366.8	11.3	716.7	4.4	23.3	3.8	1106.8	6.5	4,569,598	80.26	33.1	156.83	64.8	5.11	2.1	242.20
Q79	East	505.0	13.3	721.0	3.8	13.7	0.1	1239.2	7.4	4,290,277	117.70	40.7	168.06	58.2	3.20	1.1	288.96
Q80	South West	413.5	13.9	531.4	3.9	20.1	8.5	965.6	8.1	3,200,213	129.21	42.8	166.06	55.1	6.27	2.1	301.55
Q81	South East	495.4	10.8	766.3	3.9	15.4	5.4	1277.0	6.5	4,580,798	108.14	38.8	167.29	60.0	3.36	1.2	278.79
Q82	South Central	372.9	16.9	510.6	4.0	9.8	-10.3	893.5	8.8	3,607,785	103.36	41.7	141.52	57.2	2.73	1.1	247.61

Medicines appraised by NICE

21. 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.
22. Table 4 in the accompanying Excel file shows the estimated prescribing cost of medicines positively appraised by NICE of which table 3 lists the top 20. 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.
23. 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.
24. NICE may recommend the use of a medicine in combination with one or more other medicine. However, the data used to produce tables 3 and 4 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.
25. 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.
26. A very high growth may be because the drug was recently launched on to the market or was positively appraised late in 2014/15, or in 2015/16. 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.

27. The NICE Technology Appraisals in the NHS in England - Innovation Scorecard, published by NHS Digital also includes information regarding medicines appraised by the NICE technology appraisal process. The data provided shows volume use over time at National, NHS England Region, Clinical Commissioning Group and NHS hospital Trust level, where data is available. The link to the most recent publication is:
<http://content.digital.nhs.uk/pubs/nicetechapproct16>
28. In 2015/16 the medicine positively appraised by NICE with the greatest cost in primary care was rivaroxaban. 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.
29. 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.
30. Table 3 shows the top 20 medicines positively appraised by NICE with the greatest total cost, summing all 3 sectors. Only 3 of these medicines are predominantly used in Primary care (in the community), the remaining 17 are mostly used in Secondary care (in hospitals).

Table 3: Overall top 20 medicines by estimated prescribing cost for medicines positively appraised by NICE prescribed or issued in all sectors in 2015/16

Medicine	Most Recent TA	Condition	Sector where highest cost is incurred	Total Cost (£000s)
adalimumab	TA383 – February 2016	TNF-alpha inhibitors for ankylosing spondylitis and non-radiographic axial spondyloarthritis	Secondary care	416,647.8
ranibizumab	TA298 – November 2013	Choroidal neovascularisation associated with pathological myopia	Secondary care	248,975.9
etanercept	TA383 – February 2016	TNF-alpha inhibitors for ankylosing spondylitis and non-radiographic axial spondyloarthritis	Secondary care	230,588.3
aflibercept (solution for injection)	TA346 – July 2015	Treating diabetic macular oedema	Secondary care	198,268.4
infliximab	TA375 – January 2016	Rheumatoid arthritis not previously treated with DMARDs or after conventional DMARDs only have failed	Secondary care	178,179.2
rituximab	TA308 – March 2014	Anti-neutrophil cytoplasmic antibody-associated vasculitis	Secondary care	155,893.3
trastuzumab	TA208 – November 2010	HER2-positive metastatic gastric cancer	Secondary care	152,037.6
lenalidomide	TA322 – September 2014	Treating myelodysplastic syndromes associated with an isolated deletion 5q cytogenetic abnormality	Secondary care	141,840.4
rivaroxaban	TA335 – March 2015	Preventing adverse outcomes after acute management of acute coronary syndrome	Primary care	106,586.8



imatinib	TA326 – November 2014	Adjuvant treatment of gastrointestinal stromal tumours	Secondary care	89,067.7
enzalutamide	TA377 – January 2016	Treating metastatic hormone-relapsed prostate cancer before chemotherapy is indicated	Secondary care	86,360.4
insulin glargine	TA053 – December 2002	Type 1 & Type 2 Diabetes	Primary care	81,629.9
ledipasvir-sofosbuvir	TA363 – November 2015	Treating chronic hepatitis C	Secondary care	81,054.7
buprenorphine (excluding combination with naxolone)	TA114 – January 2007	Drug misuse	Primary care	76,728.9
abiraterone	TA259 – June 2012	Treatment of castration-resistant metastatic prostate cancer previously treated with one docetaxel-containing regimen	Secondary care	74,148.7
sofosbuvir	TA330 – February 2015	Treating chronic hepatitis C	Secondary care	73,443.0
tacrolimus (immunosuppression - oral)	TA099 – April 2006	Renal Transplant	Secondary care	71,435.0
docetaxel	TA109 – September 2006	Breast cancer (early)	Secondary care	66,654.8
dimethyl fumarate	TA320 – August 2014	Treating relapsing-remitting multiple sclerosis	Secondary care	64,178.5
paclitaxel	TA55 – January 2003	Treatment of ovarian cancer	Secondary care	61,298.3

Appendix 1: Sources and definitions

Definition of terms

31. **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.
32. **Net Ingredient Cost (NIC):** All costs given in this report are net ingredient cost (NIC). This is the basic price of a drug excluding VAT, 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, 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.
33. **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'.
34. **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

35. 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. 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.

Hospital Pharmacy Audit Index (HPAI) database

36. 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. Access to the HPAI data is regulated by a contract between IMS Health and NHS Digital. 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.

37. Unlike primary care, there is no central NHS collection 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.
38. 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

39. Data for medicine use in primary care is obtained from the electronic Prescribing Analysis and Cost (ePACT) 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 ePACT 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.

40. The primary care figures in this report differ from the figures given in the statistical report, “Prescriptions Dispensed in the Community Statistics for 2005 to 2015: England” (<http://content.digital.nhs.uk/catalogue/PUB20664>). The latter report uses 2015 calendar year figures relating to all prescriptions written in the UK and dispensed in the community in England including those written by hospital doctors and by dentists but excludes those prescriptions written in England but dispensed elsewhere.
41. The data used in this report for primary care is 2015/16 financial year data taken from the ePACT system. It relates to what was prescribed in England, and dispensed in the community in the UK. It does not include prescriptions written by dentists and hospital doctors.
42. Prescriptions written by hospital doctors in England and dispensed in the community in the UK are included in this report as ‘FP10HP’ figures.

Prescriptions issues in hospital and dispensed in the community – ‘FP10HP’

43. Data for hospital prescribed medicines dispensed in the community, is sometimes referred to as FP10HP, 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.
44. 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, has been extracted from a hospital version of the ePACT system provided by NHS Prescription Services.

Data Quality

45. 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 principles¹ appropriate to this output.
46. In doing so it complies with the UK Statistics Authority (UKSA) Code of Practice for Official Statistics², 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

47. 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

48. 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

¹ 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.

² 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
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
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

49. 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 96 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:

50. Outsourced pharmacies servicing chosen hospitals are also sourced and included as a separate site where possible. Homecare and department data are also captured.
51. 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.
52. 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.
53. IMS Health report coverage as follows (as at October 2016):

Sub Region	Total	Panel	Coverage
Q70 Wessex	7,052	7,052	100.0%
Q71 London	25,514	25,095	98.4%
Q72 Yorkshire & Humber	18,063	17,213	95.3%
Q73 Lancashire & Greater Manchester	14,064	14,064	100.0%
Q74 Cumbria & North East	12,555	11,765	93.7%
Q75 Cheshire & Merseyside	9,460	8,933	94.4%
Q76 North Midlands	10,597	10,585	99.9%
Q77 West Midlands	12,667	12,056	95.2%
Q78 Central Midlands	9,753	9,670	99.1%
Q79 East	11,812	10,627	90.0%
Q80 South West	9,635	9,118	94.6%
Q81 South East	11,551	10,891	94.3%
Q82 South Central	9,197	8,953	97.3%

54. 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.

55. 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.
56. 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 last updated with IMS data release for September 2016.

Data limitations

57. 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.
58. 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.
59. 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.
60. Unlicensed products: Information on unlicensed products is not included within the HPAI.
61. Drugs issued 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.
62. 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

63. NHS Digital believe that there is no reason to suggest that any analyses have been adversely affected by the data quality issues raised below.
64. 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 later still. 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.
65. 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>
66. 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 96% 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

67. This report is published annually. The timing of this publication is influenced by the agreement between NHS Digital and IMS Health which requires NHS Digital not to publish hospital data until six months after the time period to which it applies.
68. This report has been released in line with the pre-announced publication date and is therefore deemed to be punctual.

Accessibility and clarity

69. This report is available annually via the NHS Digital 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 NHS Digital's contact centre: enquiries@nhsdigital.nhs.uk (please include 'Hospital Prescribing' in the subject line).
70. Data included in this report originates from a range of sources. For details of further prescribing data available, please see our website:
[Prescribing publications - NHS Digital](#)

Coherence and comparability

Comparability over time

71. Previous publications can be found using the link below:
<http://content.digital.nhs.uk/searchcatalogue?q=title%3A%22Hospital+Prescribing%2C+England%22&area=&size=10&sort=Relevance>
72. In previous versions of the publication, sub-national breakdowns have been by Area Team (AT) or previously Strategic Health Authority (SHA). Due to the changes to the NHS structure, implemented in April 2015, this publication contains sub-national breakdowns at NHS England Region level, in order to reflect the current structure.
73. The medicines included in Table 3 and 4 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

74. The Prescription Services data presented here differs from that presented in the NHS Digital 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 NHS Digital.
75. The NICE Technology Appraisals in the NHS in England - Innovation Scorecard, published by the NHS Digital also includes information regarding medicines appraised by the NICE technology appraisal process. The data provided shows volume use (rather than cost), over time at national, NHS England Region, Clinical Commissioning Group and NHS hospital Trust, where data is available. The link to the most recent publication is:
<http://content.digital.nhs.uk/pubs/nicetechapproct16>

Assessment of user needs and perceptions

76. This report is used by stakeholders as the only complete source of information about use of medicines across the NHS in England.
77. NHS Digital is keen to gain a better understanding of the users of this report and their needs. Please send any comments to enquiries@nhsdigital.nhs.uk (please include 'Hospital Prescribing' in the subject line). Alternatively you can call our contact centre on 0300 303 5678 or write to NHS Digital, 1 Trevelyan Square, Boar Lane, Leeds, LS1 6AE.

Performance cost and respondent burden

78. 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 NHS Digital's Statement of Administrative Sources at:
<http://content.digital.nhs.uk/article/1789/Statement-of-administrative-sources>
79. 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

80. 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>

81. The standard NHS Digital data security and confidentiality policies have been applied in the production of these statistics. See the NHS Digital publications calendar web page for links to relevant NHS Digital policies and other related documents:
<http://content.digital.nhs.uk/pubs/calendar>

82. Freedom of Information Process: <http://content.digital.nhs.uk/foi>

Appendix 2: Projected Populations of Area Teams

83. The table below shows the projected populations for each region (using summed Mid-2015 Population Estimates for Clinical Commissioning Groups (CCGs)) in England. These figures were published on 26 October 2016, by the Office for National Statistics. These can be found at:

<http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/clinicalcommissioninggroups/midyearpopulationestimates>

Region Code	Region	Estimated Population
Q70	Wessex	2,762,546
Q72	Yorkshire and Humber	5,499,053
	Lancashire and Greater Manchester	4,267,454
Q74	Cumbria and North East	3,128,673
Q75	Cheshire and Merseyside	2,441,562
Q76	North Midlands	3,610,404
Q77	West Midlands	4,154,251
Q78	Central Midlands	4,569,598
Q79	East	4,290,277
Q80	South West	3,200,213
Q81	South East	4,580,798
Q82	South Central	3,607,785
Q71	London	8,673,713

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 NHS Digital 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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