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Department of Health

Delivering the Cancer Reform Strategy

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National Audit Office

Department of Health

Delivering the Cancer Reform Strategy

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Amyas Morse
Comptroller and
Auditor General

National Audit Office

11 November 2010

Cancer has been a priority for the Department of Health since publication of The NHS Cancer Plan in 2000. In 2007 the Department published its five year Cancer Reform Strategy to refocus its efforts to improve cancer services.

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Contents

The National Audit Office study team consisted of:

Chris Groom, Colin Ross, Philippa Dixon, David Xu, Andrew Epps and Suzy Kirk under the direction of Karen Taylor

This report can be found on the National Audit Office website at www.nao.org.uk/cancer-reform-2010

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Email: enquiries@nao.gsi.gov.uk

Website: www.nao.org.uk

Twitter: @NAOorguk

Summary

Introduction

1 Each year in England around 255,000 people are diagnosed with cancer and around 130,000 will die from the disease. More than one in three people will develop cancer during their lifetime, and it causes 28 per cent of all deaths. Survival varies by type of cancer and, for each cancer, by a number of factors including age, sex, treatment received and stage of disease at diagnosis. There are an estimated 1.7 million cancer survivors in England.

2 There are more than 200 different types of cancer, with breast, lung, colorectal and prostate cancer accounting for over half of all new cases. The risk of being diagnosed with cancer increases with age, with three quarters of cases diagnosed in people aged 60 and over, and more than a third of cases in people aged 75 and over. Although cancer occurs predominantly in older people, it is also the most common cause of death in people under the age of 60.

3 While the incidence rate for cancer has increased in recent years, mortality rates have fallen. This trend is not, however, consistent across all cancer types or between sexes. The overall age standardised incidence rate for cancer is predicted to reach a plateau by 2015, but with a rising population among the middle and older aged groups where incidence rates are higher, it is forecast that the number of new cases each year will continue to rise and will reach 300,000 by 2020.

4 In the 1990s, comparative data showed that England suffered higher cancer mortality rates and lower rates of long-term survival in comparison with most other European countries. In 2000, the Department of Health (the Department) published *The NHS Cancer Plan* (the Cancer Plan) which set out a 10 year strategy to improve cancer services. The Plan established cancer networks and introduced waiting times standards for diagnosis and treatment of cancer, such as GP urgent referrals (two week wait). It also set out plans to enhance cancer facilities and increase the cancer workforce, and committed additional funding of £570 million for cancer services.

5 Expenditure on individual aspects of NHS expenditure, including cancer services, was not monitored until 2003-04, but the Department calculated that between 2000-01 and 2003-04 cancer services received additional funds of £640 million, exceeding the £570 million committed by the Cancer Plan. The Department's cost data indicate that overall expenditure on cancer services increased from £3.4 billion in 2003-04 to £4.4 billion in 2006-07. The number of consultants in specialties with a major role in cancer also increased by 36 per cent from 9,700 to 13,100 between 2000 and 2006.

6 In 2007, the Department published its five year *Cancer Reform Strategy* (the Strategy) to refocus its efforts. The Strategy acknowledged that although improvements had been made in cancer services, the gap in survival rates between England and the best European countries had not been closed. The Strategy also identified that challenges remained in the shape of rising incidence; increasing numbers of survivors; and cost and capacity pressures. In order to build on existing progress and meet these challenges, it set out six actions to improve outcomes and four actions to drive delivery of these improvements (**Figure 1**).

The scope of our study

7 This report examines how effectively three of the Strategy's actions to drive delivery have been utilised to improve services for cancer patients:

- Improving the quality of information (Part 1).
- Strengthening commissioning (Part 2).
- Making better use of resources (Part 3).

8 This report does not examine the fourth action to drive delivery which focuses on cancer research and the development of the workforce which are long-term change agents. It also does not examine specific cancers, access to cancer drugs, or palliative care which was examined in our November 2008 report, *End of Life Care*.

Figure 1
The Cancer Reform Strategy's ten areas of action

Actions to improve outcomes	Actions to drive delivery
Prevention through encouraging lifestyle changes such as quitting smoking.	**Better information** focused on improved collection and publication of data on outcomes and public awareness.
Earlier diagnosis and treatment through screening, improving public awareness and reductions in waiting times.	**Stronger commissioning** of cancer services reflecting local needs.
Access to cost-effective treatments, improved surgical techniques and increased radiotherapy capacity.	Appropriate funding to build world class cancer services alongside effective commissioning to ensure **better use of resources**.
Improving patients' experience through better information and face-to-face communication with health professionals, and better coordination of care.	**Building for the future** through cancer research and the development of the cancer workforce.
Reducing cancer inequalities for different groups in society.	
Delivering care in the most appropriate setting by implementing new service models.	

Source: Department of Health, 2007

Key findings

On improving the quality of information on cancer

High quality information provides a basis for better decision-making and more effective assessment of performance. Aspects of cancer information have improved substantially since publication of the Strategy, but key gaps and limitations remain.

9 The National Cancer Intelligence Network (NCIN) has linked national data from a range of sources. The NCIN was established by the Department in 2008 to improve the collection and coordination of cancer data by bringing together data specialists, organisations and datasets. It has linked clinical, demographic and performance data from a range of sources and provided new analyses and reports on key cancer statistics, such as the first national analysis of incidence and survival by ethnic group. It has also developed a Cancer Commissioning Toolkit.

10 The Department has taken action to improve information on cancer. Since publication of the Strategy, the Department has established a national baseline on levels of cancer awareness and undertaken a Cancer Patient Experience survey with responses from 67,000 patients (the results will be published at the end of 2010). It has increased participation and data completeness in the five national clinical audits for cancer.

11 Key gaps remain in cancer information. Incomplete and inconsistent data on how advanced patients' cancers have become at the time they are diagnosed limit understanding of variations in outcomes and the effective allocation of resources. Data on radiotherapy activity are not yet publicly available. Data on chemotherapy activity and outcomes are poor, and the Department's planned introduction of a national chemotherapy dataset is two and a half years behind the commitment it made in its Strategy.

12 There is duplication in the publication of cancer data which leads to confusion. NCIN was established to ensure optimal use of all data currently collected and to identify and eliminate duplication of effort. Although NCIN brings together a broad range of cancer data, it does not always provide access to the most up-to-date data available, and other publicly funded organisations present the same data in different ways or for different time periods. This lack of consolidation leads to inefficiency in the publication of cancer data, and confuses commissioners about which data to use.

On strengthening the commissioning of cancer services

Commissioners are responsible for securing services to meet the health needs of their local population, monitoring performance of providers and evaluating the outcomes achieved for the resources used. Few commissioners, however, make best use of the information available when commissioning cancer services and most do not know whether their commissioning is cost-effective.

13 Many commissioners lack understanding of what drives costs and have not focused on improving value for money. Just 22 per cent of Primary Care Trusts (PCTs) had attempted to assess the value for money delivered by cancer service providers. Despite being a focus of the Strategy, only around half of PCTs had identified where expenditure which does not benefit patients could be eliminated and just 20 per cent had achieved quantified efficiency gains as a result of implementing the Strategy. PCTs that had attempted to reduce costs and improve value for money had most commonly done so by seeking to avoid unnecessary admissions and reduce length of stay for cancer patients.

14 Commissioners do not link cost and activity data to incidence, prevalence and survival data. Cost and activity data are usually available six months after the end of the financial year. The Department requires cancer registries to provide details of cancer cases in their region within 18 months of the end of the calendar year for collation by the Office for National Statistics (ONS). National outcomes data such as survival rates are then published at least two years after cost and activity data. Commissioners reported that these delays limit their usefulness for commissioning, as they are unable to link costs and activities during the preceding 12-18 months to outcomes.

15 Expenditure on cancer services is structured around complex payment mechanisms which largely fund activity in hospitals. Cancer services are commissioned using national tariff payments, block contracts and locally negotiated tariffs. Only around 40 per cent of hospital expenditure is covered by a national tariff. Commissioners reported difficulties in moving funds from hospitals to commission services in non-hospital settings, which may benefit patients and improve efficiency. Despite this being a focus of the Strategy, only 26 per cent of PCTs had carried out a cost benefit analysis comparing different ways of delivering cancer services.

16 Chemotherapy and radiotherapy, two of the main treatments for cancer, are excluded from the national tariff and there is poor understanding of costs and activity. In April 2009, the Department introduced a national dataset to improve understanding of radiotherapy treatment and outcomes, although data are not yet publicly available. Commissioners also lack information on the cost of services delivered by their providers. A review of hospital trusts' 2008-09 cost data for chemotherapy undertaken by the Audit Commission found that trusts measure chemotherapy activity in different ways and not all have systems in place to report costs consistently. As a result, reported unit costs varied widely between trusts from £43 to £4,300 and the review concluded that arrangements for capturing chemotherapy activity are poor. National work is underway to help hospitals improve coding and costing of chemotherapy and radiotherapy activity.

17 Commissioners have made progress in supporting the delivery of key commitments to improve cancer services, but shortcomings persist. There have been consistently high levels of achievement against cancer waiting times standards. The number of patients diagnosed through urgent referrals has also increased although the urgent referral rate varied almost fourfold amongst PCTs. There have also been improvements in the coverage of cancer screening programmes although variations persist between PCTs.

On the better use of resources

We estimate that NHS expenditure on cancer services in 2008-09 was around £6.3 billion and that there are opportunities to deliver better outcomes for patients whilst saving money and freeing up resources to meet the increasing demand for services.

18 The Department has not monitored the cost of implementing the Strategy and the data it collects on expenditure on cancer services include unexplained variations from one year to the next within and between PCTs. The Department has not evaluated the cost of implementation against its original expectations. There are also considerable variations in reported expenditure between PCTs and unexplained variations in this expenditure from year to year. The £5.1 billion cost of cancer services reported by the Department of Health in 2008-09 excludes costs of services (which may not result in a patient being diagnosed with cancer) such as diagnostics, screening, and activity in primary care; which we estimate cost an additional £1.2 billion.

19 Significant reductions have been made in inpatient hospital bed days for cancer. In 2006-07, inpatient care for cancer accounted for 9.9 per cent of all inpatient bed days in England, with cancer patients occupying 4.9 million bed days a year. By 2008-09, despite an increased incidence of cancer, inpatient cancer care had been reduced to 9 per cent of all inpatient bed days, which we calculate equates to a reduction of 281,000 inpatient bed days for cancer patients. This reduction was achieved through a combination of measures such as reducing length of stay for all admissions and increasing the number of patients treated as day cases.

20 Poor coding of outpatient activity makes it difficult to measure follow-up activity after treatment. Follow-up care for cancer patients has typically been through outpatient appointments in hospitals. The Strategy identified that improvements in the management of follow-up after treatment, for example, decreasing the ratio of new to follow-up appointments and using alternative approaches, were needed to respond to the increasing number of cancer survivors and release funds for other services to support cancer survivors. It is not yet possible to assess progress as insufficient information is available to understand the reason for an outpatient appointment or even whether the patient has cancer, with around 97 per cent of outpatient data not coded for a disease diagnosis.

21 The Strategy expected emergency admissions for cancer patients to be minimised and, while the rate of increase has been reduced, emergency admissions are still increasing. Emergency admissions for cancer may arise for a number of reasons including previously undiagnosed cancer, admissions for side-effects of treatment, or symptoms associated with the disease. Between 2006-07 and 2008-09, emergency admissions for cancer patients increased on average by 2 per cent per year, compared to an average of 3.8 per cent per year between 2000-01 and 2006-07. There is wide variation between PCTs in the extent of emergency admissions and poor understanding of the reasons for them.

22 Challenging existing resource use can deliver savings. Our analyses have identified three areas of potential savings:

- Use of radiotherapy machines varies over twofold per year, per machine, by centre. While there may be valid reasons for these variations, we identified the potential for existing capacity to be used much more productively.
- Inpatient admissions per new cancer diagnosis varied from 1.7 to 3.2 between PCTs in 2008-09. If every PCT met the inpatient admissions per new cancer diagnosis of the best performing quartile, 532,000 bed days could be saved; equivalent to around £106 million each year.
- Average length of stay for inpatient cancer admissions varied from 5.1 to 10.1 days between PCTs in 2008-09. If every PCT had the same length of stay as the average for PCTs in the best performing quartile, then even with no overall reduction in inpatient admissions, 566,000 bed days could be saved; equivalent to around £113 million each year.

Conclusion on value for money

23 The Department has made progress in improving key aspects of cancer services through strong direction and high profile leadership underpinned by increased resources. While there have been measurable improvements in efficiency by treating more people as day cases, and reductions in length of stay, there is substantial scope to make further improvements by tackling variations and raising performance to the standard of the best. The key driver of further improvements is high quality information. Although there have been improvements in some aspects of cancer information, commissioners' poor understanding of costs and outcomes mean that they do not know whether they are commissioning services which optimise outcomes for patients. Furthermore, the Department has limited assurance as to whether implementation of the Strategy is achieving value for money.

Recommendations

24 Improvements in cancer services will need to be delivered in the face of much tougher finances and an increase in the number of new cases each year from 255,000 to 300,000 by 2020. In July 2010, the Secretary of State for Health asked the National Cancer Director to review the Strategy to determine if it is the right strategy to deliver improved cancer survival rates. Our findings show that there is risk to the successful delivery of any future strategy unless there is considerable further improvement in the information used to support its implementation. As part of its review of the Strategy the Department should develop an action plan which identifies the roles, responsibilities and timelines for taking the following actions:

a **Variations in the measurement of cost and activity data for cancer services limits their usefulness.** The Department should develop a measurement strategy which includes common standards for the capture of cost and activity data to ensure that it is able to generate consistent data to measure progress in implementing the Strategy, including information on diagnosis and diagnostic tests.

b **Some cancer registries publish data more quickly than others.** The quickest cancer registries process all cancer registrations within six months of the end of the calendar year. In order to enable ONS to publish more timely cancer data, the Department should tighten its 18 month data submission requirement so that all registries are required to meet the performance of the quickest.

c **Data on how advanced patients' cancers are at diagnosis are incomplete.** To improve understanding of variations in outcomes and to facilitate better allocation of resources, commissioners should make the recording of these data a requirement in their contracts with providers.

d **NCIN should work with commissioners to maximise the usefulness of its outputs to support commissioning.** In doing so it should work with the Department to rationalise what information is produced by whom and when including taking action to reduce confusion and increase commissioners' confidence in the information NCIN provides.

e **There is inadequate information to understand variations in need for and the subsequent utilisation of radiotherapy machines.** Work that has already been commissioned to model needs should be supplemented by additional work to examine variations in productivity between centres to ensure that best practice is shared and existing capacity is effectively utilised.

f **There are inadequate data on activity, costs and outcomes for chemotherapy.** To enable commissioners to evaluate the cost-effectiveness of chemotherapy services, the Department should ensure that its planned chemotherapy dataset is expedited and contains information on activity, costs and outcomes.

g **Commissioners do not understand what is driving their emergency admissions for cancer patients.** Commissioners should benchmark their performance, and obtain a better understanding of the reasons for emergency admissions, and the extent to which they are arising from undiagnosed cancer and in particular, pre-existing diagnoses of cancer.

h **Commissioners are unable to measure the extent of outpatient follow-up for cancer patients.** Commissioners should make it a requirement in their contracts with providers that patients' diagnoses should be recorded for all outpatient activity.

i **Current NHS payment structures do not provide sufficient incentives to change the way cancer services are delivered.** The Department should develop tariffs for cancer that encourage adoption of best practice and reward activities which deliver efficiencies. It should also require commissioners to reduce the use of block contracts, and put in place disincentives to providing services which evidence shows do not benefit patients.

Part One

Progress in improving the quality of information

1.1 High quality information provides a basis for better decision-making and more effective monitoring of performance. Poor quality information can lead to inefficiency and waste, poor performance, and result in unnecessary costs. While a significant amount of information was already being collected on cancer, the Strategy identified that this information was patchy and was not consistently being used to improve services, largely because it was not brought together in a readily usable form. The Strategy identified the need to improve the collection and use of information in three areas:

- Awareness of cancer risk factors and symptoms.
- Patients' experience of treatment and care.
- Clinical outcomes, activity and demographic data (**Figure 2**).

1.2 This part of the report evaluates the extent to which the Department has improved the quality of information collected on cancer in these areas. It also examines the extent to which the coordination of cancer information has improved.

Figure 2

Gaps in clinical outcomes, activity and demographic data identified by the Strategy

Incomplete coverage of cases for cancers covered by national clinical audits.

Rudimentary information on chemotherapy delivery.

A lack of accurate information on ethnicity.

Inconsistent recording of radiotherapy activity.

Incomplete recording of information on how advanced patients' cancers are at diagnosis (staging) and the presence of additional disorders or diseases (co-morbidities).

Inadequate recording of information on the origin, nature and course of the disease (pathology).

Source: Department of Health, 2007

Information on patient awareness and the patient experience has improved

Two national surveys of public awareness have been undertaken and work is underway to measure awareness locally

1.3 Improving awareness of cancer and encouraging people to adopt healthy lifestyles is crucial to improving prevention and outcomes. The Department with Cancer Research UK carried out two surveys of public awareness covering 3,700 people in 2008. They found that smoking was the most recognised risk factor for cancer, while recognition of alcohol, dietary factors, cervical infection and lack of exercise was poor. Unprompted recollection of cancer symptoms was poor, with the exception of 'lump or swelling', and awareness of cancer warning signs was lower in men, younger people, ethnic minorities and those from lower socio-economic groups.[1]

1.4 These findings provide a basis for identifying those groups in whom awareness raising initiatives are likely to be of greatest benefit and provide baseline levels of cancer awareness against which the value for money of future awareness raising initiatives can be evaluated. The survey tool has now been rolled out locally, and 19 of the 28 cancer networks have used it to develop their understanding of variations in awareness and attitudes to cancer within their localities.

The Department has undertaken a national survey of cancer patients' experience

1.5 The Strategy set out plans to collect regular information on patients' experience and to use the results to drive local service improvements. Between June and July 2010, the Department surveyed 109,000 patients, following up earlier surveys in 2000 and 2004; achieving 67,000 responses. Results of the survey will be published at the end of 2010.

The Department has improved clinical outcomes, activity and demographic data on cancer but key gaps remain

The National Cancer Intelligence Network has brought together information from a range of sources

1.6 As part of the Strategy, the Department established the National Cancer Intelligence Network (NCIN) in 2008 to improve the collection and coordination of cancer data by bringing together data specialists, organisations and datasets. Since it was established, NCIN has made progress in linking national cancer data from sources such as cancer registries[2] and Hospital Episode Statistics (HES),[3] which has enabled new analyses to be undertaken, such as examining incidence and survival by ethnic group

[1] University College London, *Public awareness of cancer in Britain: Report for National Awareness and Early Diagnosis Initiative*, 2009.

[2] Eight regional cancer registries have collected information on cancers diagnosed in their area for around 40 years.

[3] HES data are the primary measure of NHS funded hospital activity, informing the tariff-based funding system Payment by Results.

which is key to improving understanding of inequalities in cancer care. The Strategy had identified that ethnicity data was inconsistently collected. By linking cancer registrations to HES data, NCIN has increased its completeness from 65 to 76 per cent. NCIN has also produced reports and tools on key cancer statistics accessible through its website www.ncin.org.uk such as:

- incidence and mortality by gender for cancers affecting both men and women;
- overall prevalence of cancer, and prevalence by age and cancer;
- trends in admissions, lengths of stay and bed utilisation by cancer patients;
- numbers of patients diagnosed following emergency presentation, and the impact of emergency presentation on survival; and
- the Cancer e-Atlas showing analyses at cancer network, PCT and local authority level.

NCIN is leading two programmes of work aimed at improving the collection of pathology and co-morbidity data

1.7 Data on the origin, nature and course of the disease (pathology data) are vital for the diagnosis and clinical management of the cancer. The Strategy identified, however, that the recording of these data was inadequate. NCIN is leading a programme of work to define the core items of pathology data required for cancer registration and the format for transferring these data to cancer registries.

1.8 Data which record the presence of any disorders or diseases a patient has in addition to their primary disease (co-morbidity data) are important for both clinical decision-making and for adjusting outcomes data in analyses. The Strategy identified that these data were poorly collected for cancer patients. NCIN is exploring ways of collecting, deriving and using co-morbidity data relevant for cancer by, for example, using data collected in primary care or through HES.

Participation and case coverage have increased for the national clinical audits of cancer

1.9 Clinical outcomes for cancer patients are monitored through five national clinical audits which seek to enable hospital trusts to monitor whether clinical standards are being met, compare their performance with others, and identify and learn from good practice. Clinical audit participation is, however, not mandatory and the Strategy identified in 2007 that returns were missing for up to two thirds of cases.

1.10 We examined whether participation and case coverage for the five audits had increased since publication of the Strategy. We found that trust participation was now high across all audits with increases for both the bowel and head and neck audits. Coverage of cases has also increased for those audits where it has been monitored for over a year (**Figure 3**).

Figure 3
Clinical audit participation and completeness

Audit	2007 (%)	2008 (%)	2009 (%)	2010 (%)
Bowel				
Participation (trust participation rate)	48	87	95	–
Coverage (coverage of cases)	35	62	68	–
Lung				
Participation	93	97	98	–
Coverage	66	75	85	–
Mastectomy and breast reconstruction				
Participation	–	–	100	100
Coverage	–	–	74	81
Oesophago-gastric				
Participation	–	–	93	–
Coverage	–	–	60	–
	2006-07 (%)	2007-08 (%)	2008-09 (%)	
Head and neck				
Participation	64	83	94	
Coverage	54	64	89	

Source: National Clinical Audit Support Programme

A radiotherapy dataset has been introduced and the quality and timeliness of the data are steadily improving

1.11 Radiotherapy plays an important role in the treatment of many cancers but information on activity has been recorded in various ways by different radiotherapy departments. The Strategy identified the need for better data on radiotherapy activity to improve understanding of treatment and outcomes nationally and a mandatory Radiotherapy Dataset (RTDS) was introduced in April 2009, although data are not yet publicly available.

1.12 Despite early technical difficulties with the electronic capturing of data from treatment machines, submission rates are increasing. A time lag remains, however, with submission rates highest for April 2009 (98 per cent) and lower for more recent months such as May 2010 (73 per cent). The timeliness of data submission is also improving and the percentage of monthly submissions failing quality assurance procedures has decreased from 22 per cent in April 2009 to under 5 per cent in May 2010.

The number of patients recorded as being treated with chemotherapy is increasing but there are quality issues with these chemotherapy data

1.13 The Strategy committed to providing more chemotherapy for a range of different cancers. Our analysis of HES data found that the number of patients recorded as treated with chemotherapy has increased each year since 2001-02 (**Figure 4**). Measuring the number of patients treated with chemotherapy in 2008-09 against 2007 cancer incidence data, however, we found that the percentage of cancer patients recorded as receiving chemotherapy ranged from around 5 to 35 per cent between PCTs (**Figure 5**). The Department considers that this variation is likely to be exaggerated due to data quality issues associated with poor coding and is unlikely to reflect actual differences in chemotherapy use.

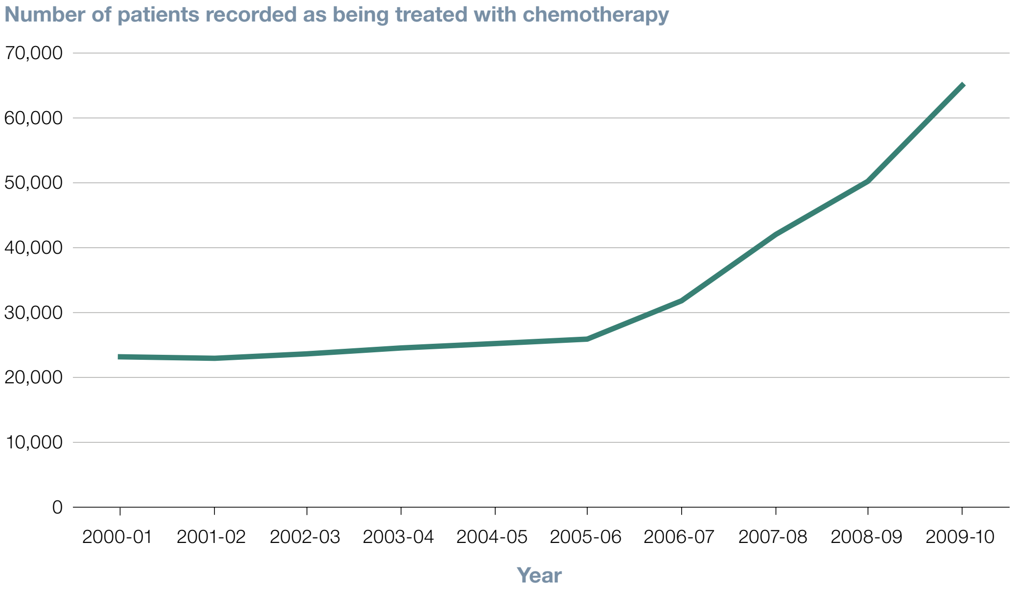
The planned national chemotherapy dataset is two and a half years behind schedule

1.14 We estimate that chemotherapy (and hormonal therapy used in the treatment of breast and prostate cancer) accounts for around £1 billion of cancer expenditure annually. Information on chemotherapy activity and outcomes is required by both commissioners and providers to inform the planning, resourcing and monitoring of services. The Strategy identified that insufficient information was being collected to understand variations in the use of chemotherapy drugs and set out plans to develop an agreed chemotherapy dataset once the findings of a report by the National Chemotherapy Advisory Group (NCAG) had been considered.

1.15 In 2009, NCAG reported that while information is collected on chemotherapy at a local level it is not being done in a uniform way, which prevents the collation and analysis of aggregated national data. The report also found that data collection and analysis are hampered by the patchy use of electronic prescribing of chemotherapy. A June 2010 Audit Commission review also found that hospital trusts measure chemotherapy activity in different ways (for example, patient attendances or drug regimens delivered) and not all have systems in place to report costs consistently. Reported unit costs varied widely between trusts from £43 to £4,300 and the review concluded that arrangements for capturing chemotherapy activity are poor.

1.16 Work to define a core dataset for chemotherapy is underway. The Strategy envisaged reporting of chemotherapy data would begin in October 2009. However, the NHS's processes for approving collection of new datasets mean that reporting will not now start until April 2012. The Department has been working with hospitals during 2010 to help improve their coding and recording of chemotherapy activity.

Figure 4
Number of patients recorded as being treated with chemotherapy

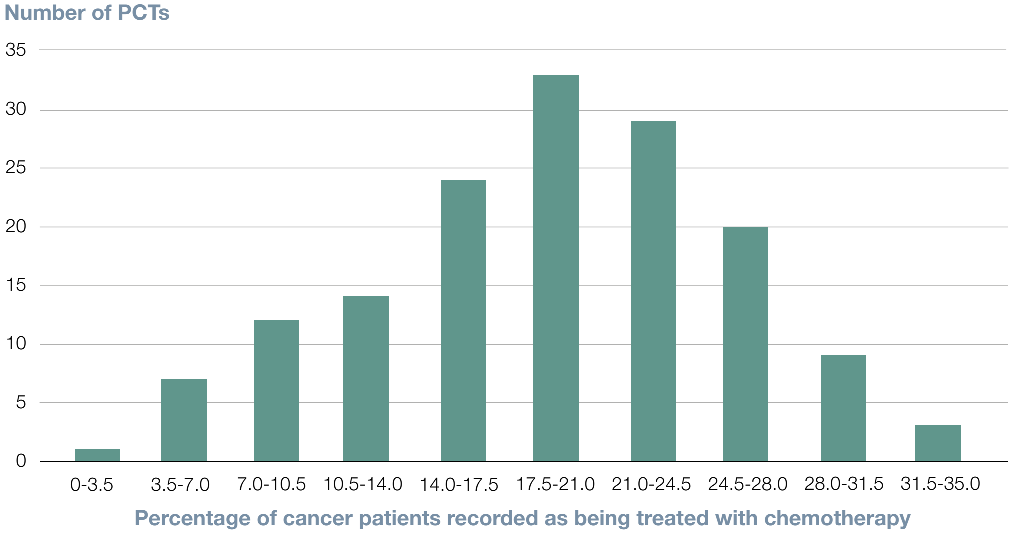


NOTE

1 The figure presented for 2009-10 is extrapolated from data for the first three quarters.

Source: National Audit Office analysis of Hospital Episode Statistics

Figure 5
Variation in the percentage of cancer patients recorded as being treated with chemotherapy, by PCT, 2008-09

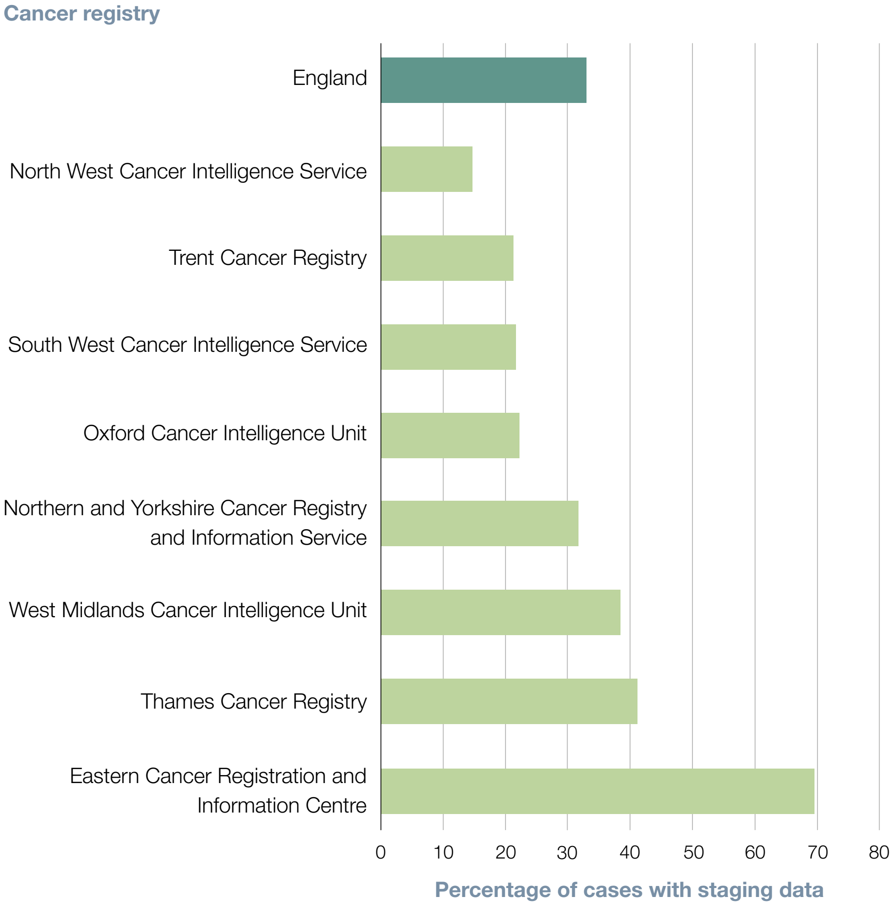


Source: National Audit Office analysis of Hospital Episode Statistics

Incomplete and inconsistent data on how advanced patients' cancers are at diagnosis limits understanding of variations in outcomes

1.17 Staging data provide a measure of an individual's disease progression. They facilitate better resource allocation through improved understanding of the relative proportions of patients diagnosed early as opposed to late; and improve understanding of variations in outcomes across population areas and groups. These data are, however, not consistently recorded. For cancers diagnosed in 2007, the completeness of staging data varied between registries, from 15 per cent to 70 per cent of cases (**Figure 6**).

Figure 6
Completeness of staging data in cancer registries, 2007



Source: National Cancer Intelligence Network

Commissioners report that a lack of timely and consolidated data limits their ability to commission effectively

There are delays between collection and publication of population-based data on cancer

1.18 Data on cancer incidence, survival and mortality are essential for the planning and development of cancer services. While the quality of these data is high, there are time delays between collection and publication due to the time spent preparing, validating, and processing the data (**Figure 7**). PCTs reported that these delays substantially limit the usefulness of these data for commissioning, as they are unable to link their activities during the preceding 12-18 months to outcomes.

Figure 7

Timeliness of cancer data

Data type	Local source	Organisation responsible for national collation, analyses and publication	Latest data available	Date of publication
Population-based data				
Incidence	Cancer registries	Office for National Statistics (ONS)	2008	October 2010
Mortality	Death certification	ONS	2009	July 2010
One and five year survival	Cancer registries and ONS	ONS	2007	April 2010
Prevalence	Cancer registries and ONS	NCIN	2006	June 2010
Activity data				
Surgery and inpatient activity	Hospital patient administration systems	NHS Information Centre (HES)	2009-10	November 2010
Waiting times	NHS hospital trusts	Department of Health	Q1 2010-11	August 2010
Cost data				
PCT commissioning spend	PCTs	Department of Health Programme Budgeting data	2008-09	April 2010
Reference costs	NHS hospital trusts	Department of Health	2008-09	January 2010

Source: National Audit Office

1.19 The Department's contracts with cancer registries require them to submit details of cancer registrations in their region to ONS within 18 months of the end of the calendar year, for subsequent publication. The quickest cancer registries process all cancer registrations within six months of the end of the calendar year.

1.20 In 2009, NCIN funded an investigation into the potential benefits of converging the IT systems of two cancer registries. Despite taking place at the same time as the processing of the 2008 registrations, this convergence led to improvements in data quality, and savings of £88,000 through reductions in IT costs and improvements in the efficiency of data preparation, validation, and processing. The 2008 registrations were also completed two months earlier than in previous years.

There is duplication in the publication of cancer data which leads to confusion among commissioners

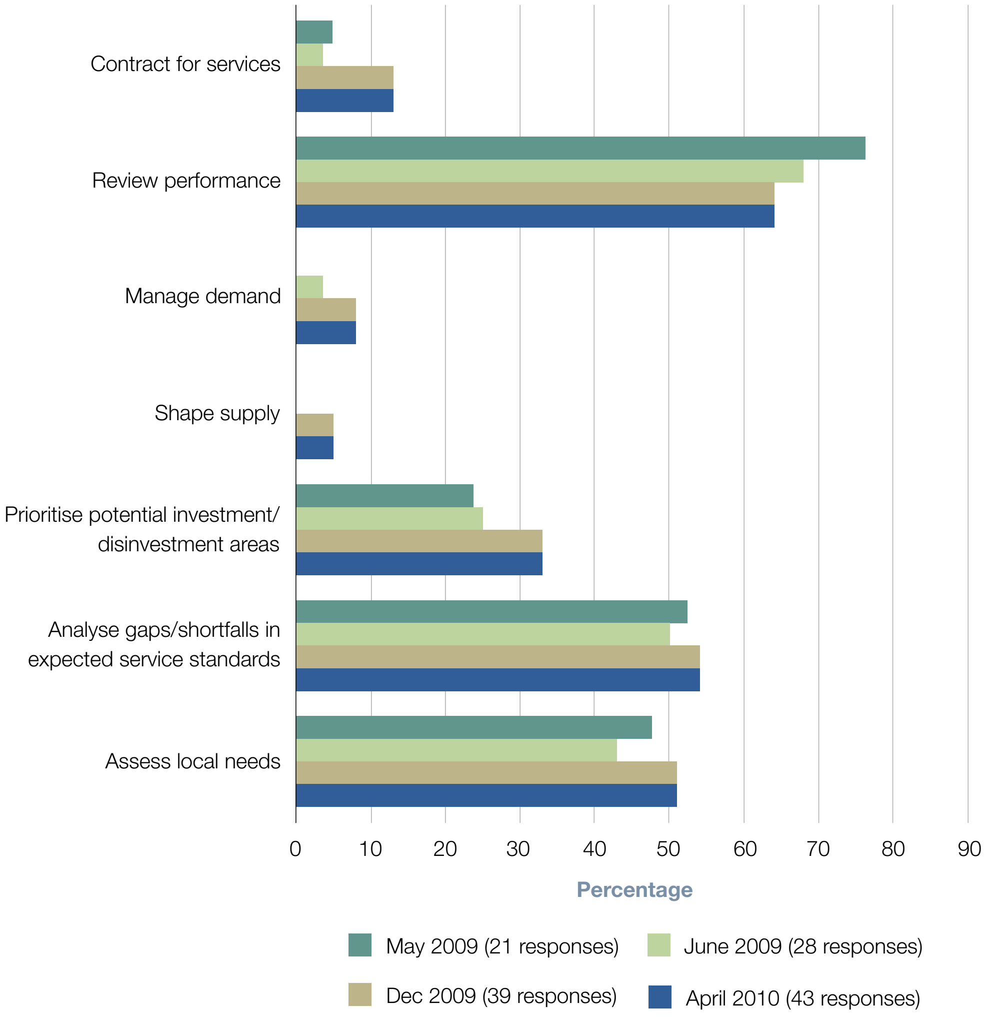
1.21 In addition to improving the collection and coordination of cancer data, NCIN was also established to ensure optimal use of all data currently collected and to identify and eliminate duplication of effort. To examine the progress made by NCIN, we tracked online access to six areas of data: incidence, prevalence, one year survival, mortality, costs, and activity.

1.22 We found that NCIN provided access to all six areas we identified but other publicly funded organisations, such as NHS Comparator and Better Care Better Value, publish the same source data using different methods of analysis and data for different time periods. PCTs reported that this duplication results in inconsistencies, and confusion about which data to use and that improving the timeliness and consolidation of the information from different sources would reduce this confusion.

1.23 The principal product through which NCIN seeks to make information on all aspects of cancer available to commissioners is the Cancer Commissioning Toolkit. We found that 80 per cent of PCTs had used the toolkit, with the majority of these finding it useful. During 2009 and 2010, NCIN carried out user surveys to establish the extent to which the toolkit was supporting aspects of commissioning activities. These surveys found that the toolkit was helping commissioners to review performance, but was less effective in supporting strategic planning (**Figure 8**).

Figure 8
Cancer Commissioning Toolkit user survey results, 2009 and 2010

In particular, has the Toolkit helped you to:



Source: National Cancer Intelligence Network

Part Two

Progress in strengthening commissioning

2.1 NHS commissioning involves assessing the health needs of a population, securing services to meet that need, performance managing the providers delivering services, and evaluating the outcomes achieved for the resources used. Currently, 152 PCTs commission cancer services locally, largely from acute and specialist centres. PCTs are assisted in their commissioning role by 28 cancer networks, which usually cover five or six PCTs or a population of 1-2 million. Commissioning for cancer is particularly complex as there are over 200 different types of cancer, each with different pathways. Aspects of the diagnosis and treatment of some cancers require specialised commissioning at a national or regional level.

2.2 The Strategy identified that strong cancer commissioning is vital for the delivery of high quality cancer services, but recognised that commissioning had not been as effective as it might have been. In 2007, the Department published *World Class Commissioning*, which sets out the competencies commissioners are expected to display in the commissioning of NHS services. The Strategy set out the application of these competencies to cancer and identified a number of cancer-specific commissioning responsibilities for PCTs. This part of the report focuses on the extent to which commissioners are displaying these competencies and fulfilling their cancer-specific commissioning responsibilities.

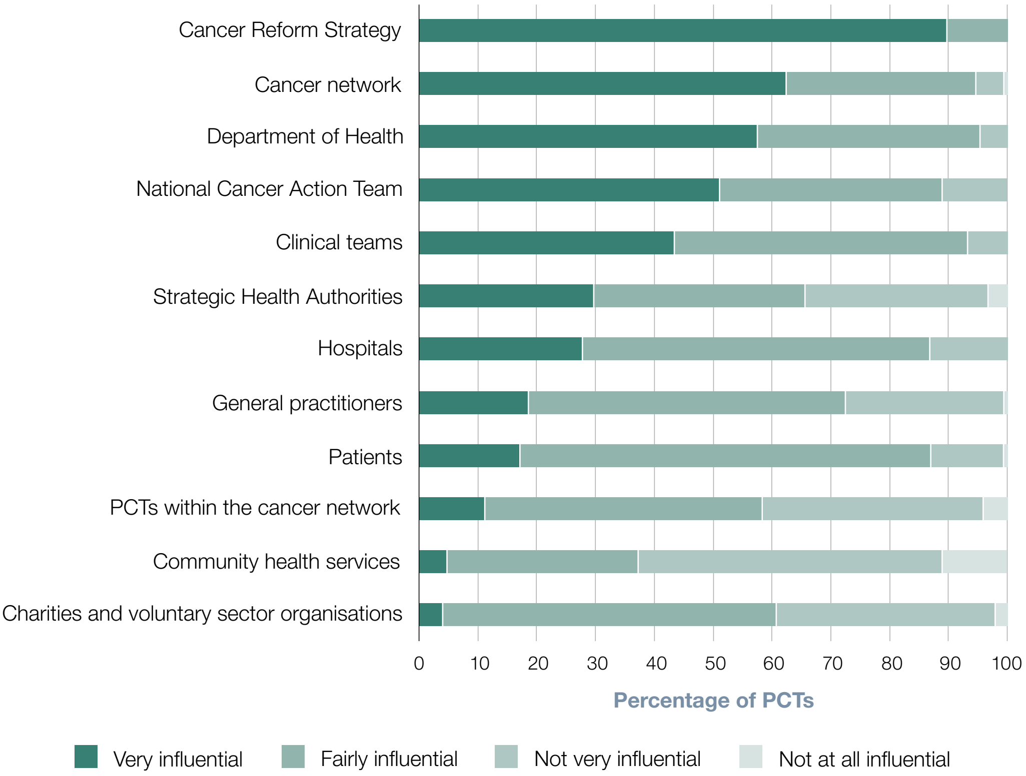
Commissioners have not consistently demonstrated the commissioning competencies expected by the Department to deliver the Strategy

There is a strong national influence in the setting of priorities for cancer services, but a need for more collective working at a local level

2.3 Across the areas of action set out in the Strategy (Figure 1), PCTs ranked early diagnosis as their highest priority. The central direction provided by the Strategy was the biggest influence on the priorities they set (**Figure 9**). We examined the extent of collaborative working locally to determine priorities and to deliver services. The Strategy identified that 75 per cent of networks had not agreed collective commissioning arrangements with their PCTs; we found that nearly three years after publication of the Strategy, 61 per cent of networks still did not have the expected arrangements in place.

Figure 9

Influences on priority setting for PCTs



Source: National Audit Office census of Primary Care Trusts

Needs assessments have been undertaken by the majority of PCTs, but only a third have done so for all cancers

2.4 The Strategy emphasised the importance of prioritising investment according to local need, on the basis of regular needs assessments. We found that 86 per cent of PCTs had assessed the cancer needs of their populations since the Strategy's publication. One third of these PCTs had done so for cancers as a whole, with the remainder having made an assessment for some specific cancers.

There are unexplained variations in PCT expenditure on cancer services even when adjusted for need

2.5 Since 2003-04, the Department has collected cost data from PCTs to map their expenditure to 23 programmes of care, one of which is cancer. These data, known as Programme Budgeting data, are intended to inform commissioning decisions by making PCTs question their expenditure and consider the most efficient and effective way of delivering services. Reported PCT expenditure on cancer services varied from £55 to £154 per head of population in 2008-09. We found that less than half of the extent of this variation can be explained (see paragraph 3.3). Expenditure also varies inexplicably from year to year (**Figure 10**).[4]

2.6 The Strategy expects PCTs to benchmark their expenditure with PCTs with similar health needs to assess whether their levels of spending on cancer services are appropriate. One third had not done so since the Strategy was published. PCTs reported a lack of confidence in the cost data they have, with 41 per cent stating that it is not useful in informing decisions about delivering cancer services in different ways.

PCTs lack transparency about providers' costs and find it challenging to display good financial management

2.7 Cancer services are commissioned in different ways and through different payment mechanisms along the pathway of care (**Figure 11** on page 26). National tariff payments through Payment by Results typically cover around 40 per cent of expenditure on cancer in the acute sector, but do not cover key activities such as chemotherapy, and radiotherapy. These activities are covered by local tariffs and block contracts agreed between the PCT and the hospital providing the service.

2.8 Commissioners we interviewed commonly reported that they knew very little about the detailed costs of cancer services delivered by providers. Although 90 per cent of commissioners know their overall commissioning expenditure, they lack transparency about how providers use that income across different services. This puts them in a weak position to assess whether providers are using resources effectively.

2.9 We found that PCTs have little understanding of what drives costs, partly due to the fragmented nature of cancer service delivery which spans across a wide range of NHS specialties. PCTs also do not link financial management and outcomes data because of their concerns about the delays in the publication of outcomes data (see paragraph 1.18), which limits their ability to assess, compare and improve the value for money offered by their providers.

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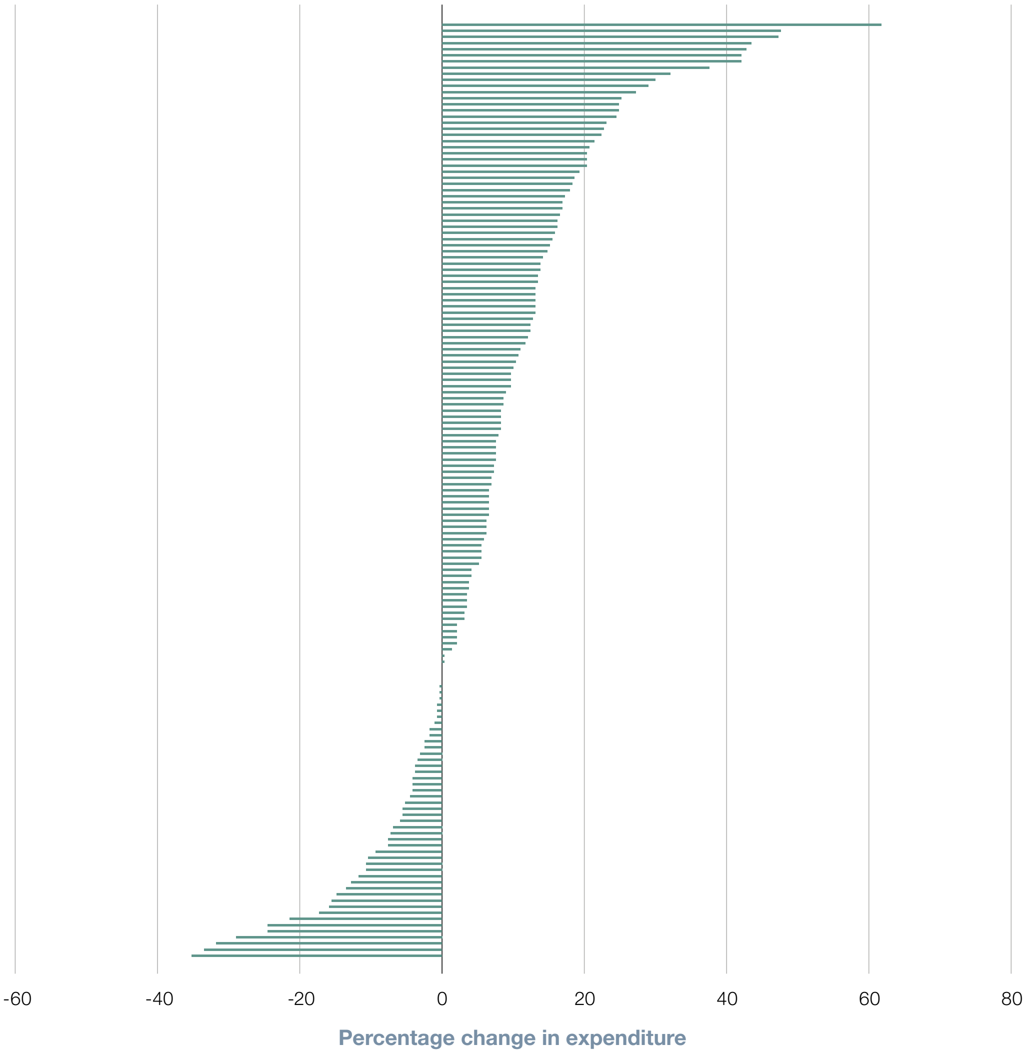
[4] The Department considers that year-on-year comparisons of Programme Budgeting data are not always meaningful due to changes in data collection methodology and the underlying data sources.

Figure 10

Percentage change in reported PCT spending per head of population on cancer services between 2007-08 and 2008-09



NOTE

1 Each bar represents a PCT.

Source: Programme Budgeting data

PCTs lack confidence in their ability to influence the performance of providers and have not been proactive in monitoring value for money

2.10 PCTs vary considerably in the extent to which they seek to influence the performance of providers. We found that less than a quarter of PCTs had made comparisons with other PCTs to monitor the proportion of patients receiving curative treatment for each of the four major cancers. One quarter of PCTs were not confident that they could detect variations in cancer outcomes within their PCT.

Figure 11
Payment mechanisms for commissioning cancer

Primary care		Diagnosis, care and treatment					Follow-up	
GP	**Screening**	**Outpatient referral**	**Planned inpatient**	**Emergency admissions**	**Chemotherapy and radiotherapy**	**Surgery**	**GP**	**Outpatients**
National GP contract and topped up by the Quality and Outcomes Framework (QOF)	Different screenings are commissioned through a mixture of local block contracts, national contracts and the QOF	Tariff and local contracts, some of which are commissioned on a historical basis	Tariff, with some local contracts	Tariff, with some flexibility for shorter emergency stays	Mixture of local tariff and local block contracts based on a mixture of activity and historical cost	Tariff, with each procedure covered by a healthcare resource group code	National GP contract and topped up by the QOF	Tariff and local contracts, some of which are commissioned on a historical basis

Source: National Audit Office

2.11 Twenty three cancer networks (82 per cent) reported that they had offered advice to PCTs on achieving value for money in cancer services, but just over half of PCTs had made use of this advice. Just 22 per cent of PCTs had assessed the value for money delivered by their cancer service providers, and although 66 per cent intended to do so, 12 per cent had no plans to carry out such an assessment. Despite being a focus of the Strategy, just 52 per cent of PCTs had identified where expenditure which does not benefit patients could be eliminated.

Commissioners have not routinely carried out cost benefit analyses to compare different ways of delivering cancer services

2.12 The Strategy emphasised that new models of care can bring advantages to patients and release resources for other aspects of care. We found, however, that just 26 per cent of PCTs had carried out a cost benefit analysis to compare different ways of delivering cancer services since the Strategy was published. PCTs identified that Payment by Results funds activity in hospitals, making it difficult for them to commission services in other settings, or services which reduce inpatient episodes and follow-up rates. Just 20 per cent of PCTs reported that they had achieved quantified efficiency gains as a result of implementing recommendations in the Strategy, 35 per cent had not and 45 per cent did not know.

Commissioners have made progress in supporting the delivery of commitments to improve cancer services, but shortcomings persist

Coverage of cancer screening has improved but variations between PCTs remain

2.13 In 2009-10, the NHS spent around £389 million on three cancer screening programmes. In 2007, the Strategy identified the need to reduce variation in cervical screening coverage between PCTs. This variation remains and there is even greater variation for breast screening (**Figure 12**). The number of women screened for cervical cancer increased from 3.2 to 3.6 million between 2007-08 and 2008-09, but reduced by 300,000 to 3.3 million in 2009-10. Between 2007-08 and 2008-09 breast screening coverage increased from 1.7 to 1.8 million women.

There have been consistently high levels of achievement against cancer waiting times standards

2.14 The Department has monitored performance against three cancer waiting times standards since *The NHS Cancer Plan* was published in 2000. These set the following maximum waits:

- Two weeks to first outpatient appointment following urgent referral by a GP.
- 31 days to treatment following a diagnosis/decision to treat.
- 62 days to first treatment following urgent referral.

2.15 These operational waiting time standards have been consistently met for eligible patients at national level for some time: two weeks since 2002-03, 31 days since 2005-06 and 62 days since 2006-07. The two treatment standards initially related only to newly diagnosed cancer patients but their coverage was extended to all patients in 2008-09, and high levels of achievement were maintained.

Figure 12
Coverage of national cancer screening programmes, 2008-09

Screening type	Expected coverage (%)	National coverage achieved (%)	PCT coverage range (%)
Breast	70	77	51-85
Cervical	80	79	66-86

NOTE
1 The third national cancer screening programme, for bowel cancer, started in April 2009.

Source: NHS Cancer Screening Programmes

The number of patients diagnosed with cancer through urgent referral has increased

2.16 The volume of patients referred through urgent referrals increased by 44 per cent from 627,000 in 2006-07 to 904,000 in 2009-10. The number of patients diagnosed through these referrals increased from 80,000 to 98,000 (**Figure 13**). The overall conversion rate (cancers diagnosed as a proportion of total volumes urgently referred) fell from 13 per cent in 2006-07 to 11 per cent in 2009-10.

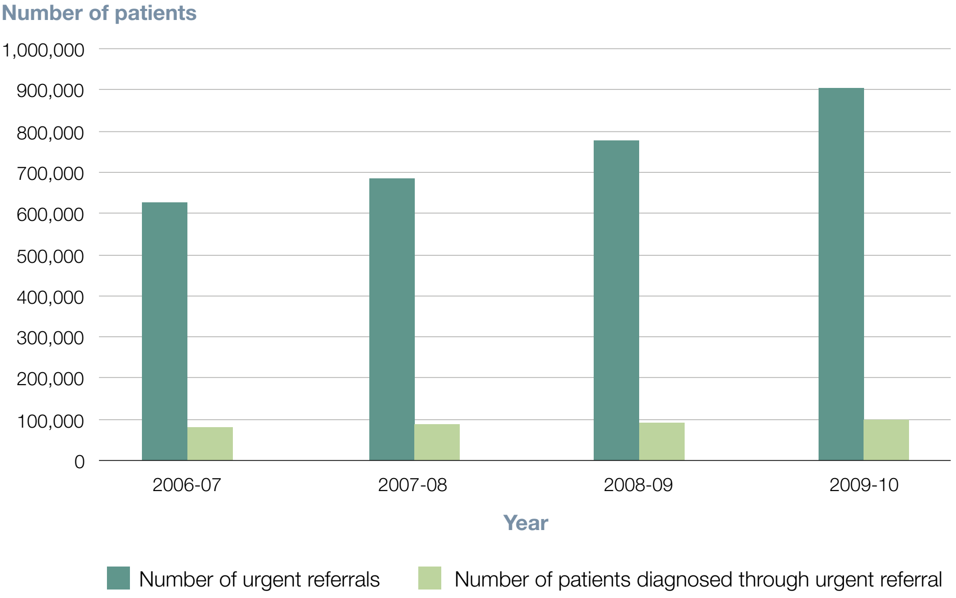
2.17 Data provided by NCIN show variation in conversion rates from 7 per cent to 20 per cent between PCTs, and from under 5 per cent to over 45 per cent between GP practices. There has, however, been no evaluation of the causes of such variations or their impact on resource utilisation in secondary care.

The majority of PCTs have taken no action to address variations in urgent referrals by GPs

2.18 Information provided by NCIN shows that the urgent referral rate varied almost fourfold across PCTs and by more than eightfold between GP practices in England (**Figure 14**).[5] The proportion of cancer patients diagnosed through urgent referral as a proportion of total patients diagnosed per GP practice ranges from under 10 per cent to over 80 per cent.

Figure 13

Urgent referral and diagnosis



Source: Department of Health cancer waiting times data

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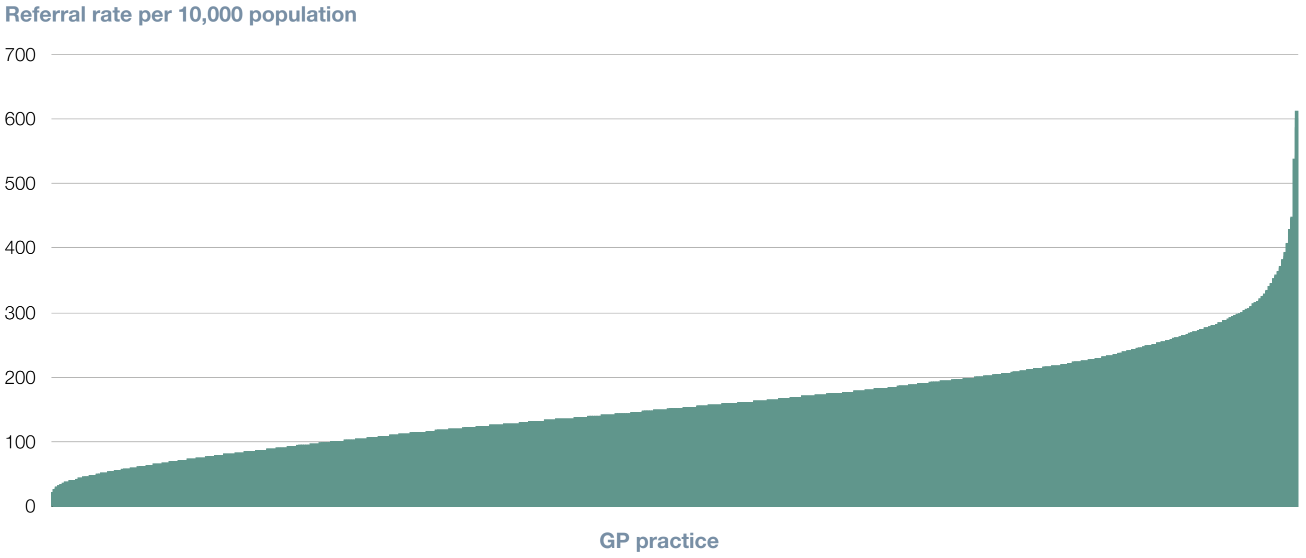
[5] This figure excludes outliers in the 5 per cent at either end of the distribution.

Figure 14

Urgent referral rate per 10,000 population by GP practice, 2008-09



Source: Trent Cancer Registry on behalf of National Cancer Intelligence Network

2.19 We explored the way in which urgent referral data is used by PCTs. Eighty per cent reported that they monitor variations in the use of urgent referral by GPs in their area, and 76 per cent compare these variations with other PCT areas. Sixty per cent of PCTs reported that information on such variations had not influenced their commissioning of cancer services.

There are concerns about the safety and quality of chemotherapy

2.20 As part of commissioning responsibilities, PCTs are responsible for ensuring the availability of safe and effective chemotherapy. The National Chemotherapy Advisory Group (NCAG) was established to advise on the development and delivery of high quality chemotherapy services. In November 2008, the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) on chemotherapy judged that good care was given in only 35 per cent of cases sampled. NCAG issued a draft report addressing the concerns raised on the day that the NCEPOD report was published. The final NCAG report published in August 2009 made recommendations for improving the quality and safety of chemotherapy, including the need to collect data on activity in a systematic way across the country. As yet there is a lack of consistency in the collection of these data (see paragraphs 1.14-1.16).

There is insufficient cost information to support strong commissioning of radiotherapy activity

2.21 The majority of radiotherapy activity is commissioned through block contracting, with some local tariffs in place. While the quality of information on treatment and outcomes is being improved (see paragraph 1.11-1.12), we found that there is not yet sufficient data on costs to support strong commissioning. Our interviews with PCTs revealed the quality of cost information received from radiotherapy service providers was highly variable and identified a lack of transparency from some providers about how they deliver radiotherapy and what they charge for it. The Department has a national project underway working with several radiotherapy centres to improve the coding and costing of activity.

Part Three

Progress in making better use of resources

3.1 The Strategy identified opportunities to save money, deliver better outcomes, and free up resources for reinvestment in cancer care. This part of the report examines expenditure on cancer services and the extent to which resources are being used more effectively and efficiently.

NHS Programme Budgeting data do not capture all elements of expenditure on cancer and some variations at PCT level cannot be explained

3.2 NHS Programme Budgeting data indicate that between 2003-04 and 2008-09, PCT spend on cancer services increased from £3.4 billion to £5.1 billion. This increase was broadly in line with overall increases in PCT expenditure. We estimate, however, that NHS expenditure on cancer services in 2008-09 was around £6.3 billion, as Programme Budgeting for cancer data exclude the costs of several key elements of cancer services (**Figure 15** overleaf).

3.3 We analysed variations in PCT spend on cancer reported through Programme Budgeting data (see paragraph 2.5). We found that around 23 per cent of the variation could be explained by the number of cancer patients in the PCT, the extent of inpatient activity, and local market price factors such as staff pay. A further 20 per cent can be accounted for by the needs-based formula the Department uses to allocate resources to PCTs, while 3 per cent can be explained by the size of the PCT. We could not identify an explanation for the remaining 54 per cent. Even though surgery, chemotherapy and radiotherapy are the main treatments for cancer, we did not find any correlation between recorded PCT activity in these areas and reported spend.

3.4 In 2008, an NAO review of Programme Budgeting data found that there was scope for improvement in the robustness of the data. It found large variations in the time spent preparing the data by hospital trusts and PCTs, ranging from 2 to over 200 hours, and in the seniority of staff involved in the review of the data.

Figure 15
Estimated NHS expenditure on cancer services, 2008-09

Area of expenditure	Cost (£m)	
Programme Budgeting		**5,130**
Screening (breast, bowel and cervical screening programmes)	357	
GP consultations (before and after diagnosis)	336	
Costs related to first consultant hospital visit (the diagnostic process)	180	
Prevention (proportion of smoking cessation spend attributable to cancer, and HPV vaccination against cervical cancer)	110	
Other (including costs of imaging and pathology tests)	205	
Estimated cost of services excluded from Programme Budgeting		**1,188**[1]
Estimated total cost		**6,318**

NOTE

1 Includes costs associated with investigation of people who are suspected of having cancer but are subsequently found not to have the disease.

Source: National Audit Office analyses. See technical paper at www.nao.org.uk/cancer-reform-2010

The Department reports annually on its progress against the Strategy but has not monitored the benefits and cost of implementation

3.5 Since publication of the Strategy, the Department has published two annual progress reports on implementation. In 2007, it also published an impact assessment for the Strategy setting out its expected costs and benefits. We tested whether this assessment complied with good practice in central government. We found that it was generally soundly based and had many elements of good practice, such as a clear review of relevant costs and benefits. The annual reports, however, cover achievement of clinical objectives, with no evaluation of the achievement of benefits or the costs of implementation against original expectations.

Bed days and length of stay have been reduced but emergency admissions have not

Reductions in bed days and length of stay have delivered savings

3.6 The Strategy identified that new models of care can bring advantages to patients and release resources for investment in cancer services. It established the Transforming Inpatient Care Programme to improve the quality of care for cancer patients by avoiding unnecessary inpatient admissions and reducing length of stay in hospital.

3.7 The Department's NCIN measures inpatient cancer activity on the basis of admissions for patients with a diagnosis of cancer in any of the first three diagnostic fields in HES, and we have used this measure in our analyses of cancer admissions. This contrasts to the Department's Programme Budgeting data which assign costs to cancer activity on the basis of diagnostic codes for patients with a primary diagnosis of cancer only.[6] Other analyses, for example, waiting times and incidence calculations also use slightly different codes to define cancer.

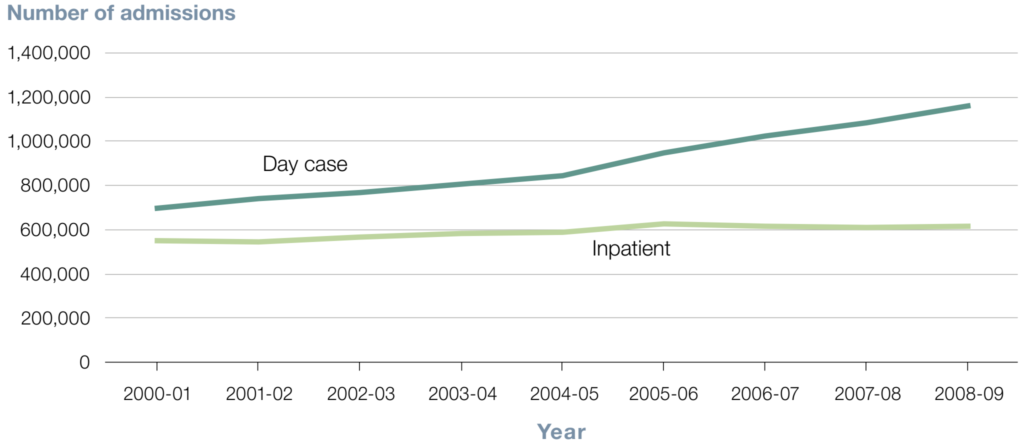
3.8 Using NCIN's measure for evaluating achievements of the Transforming Inpatient Care Programme we found that, between 2000-01 and 2005-06, inpatient admissions for cancer increased by an average of 2.7 per cent per year; however, from 2006-07 to 2008-09, this increase has levelled off with the total number of admissions remaining largely unchanged at around 615,000. In 2006-07, inpatient care for cancer accounted for 9.9 per cent of all inpatient bed days in England, with cancer patients occupying 4.9 million bed days. By 2008-09, inpatient cancer care had been reduced to 9 per cent of all inpatient bed days in England. This equates to a reduction of 281,000 inpatient bed days for cancer patients or a saving of around £56 million (**Figure 16** overleaf).

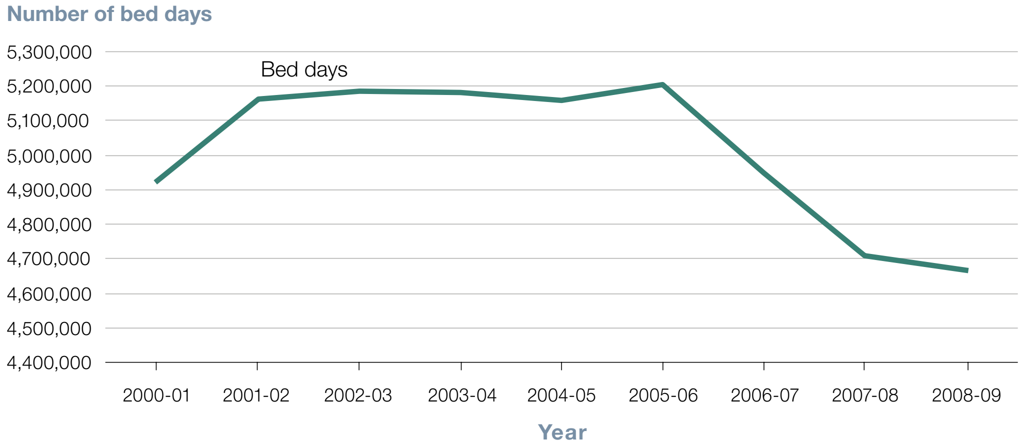
3.9 The reduction in inpatient bed days has been achieved despite an increased incidence of cancer. Total day cases for cancer increased by 13 per cent from 1.02 million in 2006-07 to 1.16 million in 2008-09 (Figure 16). The average length of stay for cancer patients for all admissions has been falling since 2001-02 and following the Strategy has decreased from 8.2 days in 2006-07 to 7.7 days in 2008-09 (**Figure 17** on page 35).

---

[6] A HES record may contain up to 14 diagnoses, with the primary diagnosis being the main condition treated or investigated during the episode recorded. Research has shown, however, that recording inpatient cancer activity on the basis of only those patients admitted with a primary diagnosis of cancer could underestimate the true level of activity because cancer admissions can be caused by a wide range of associated symptoms such as pain, infections, or urinary retention.

Figure 16
Admissions for cancer patients



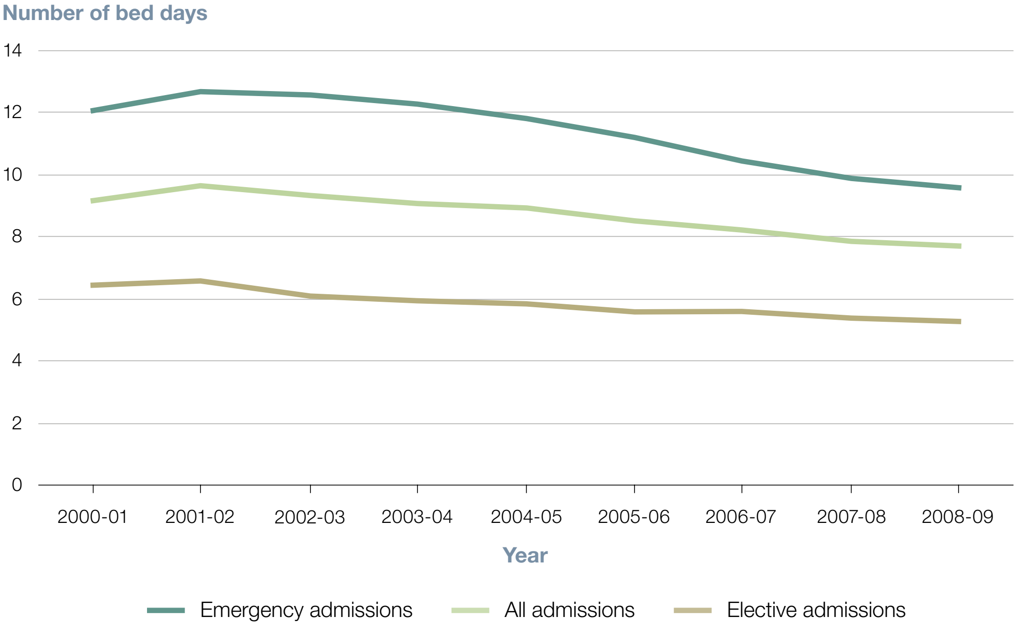


Source: National Audit Office analysis of Hospital Episode Statistics

While the rate of increase in emergency admissions has slowed, they are still increasing

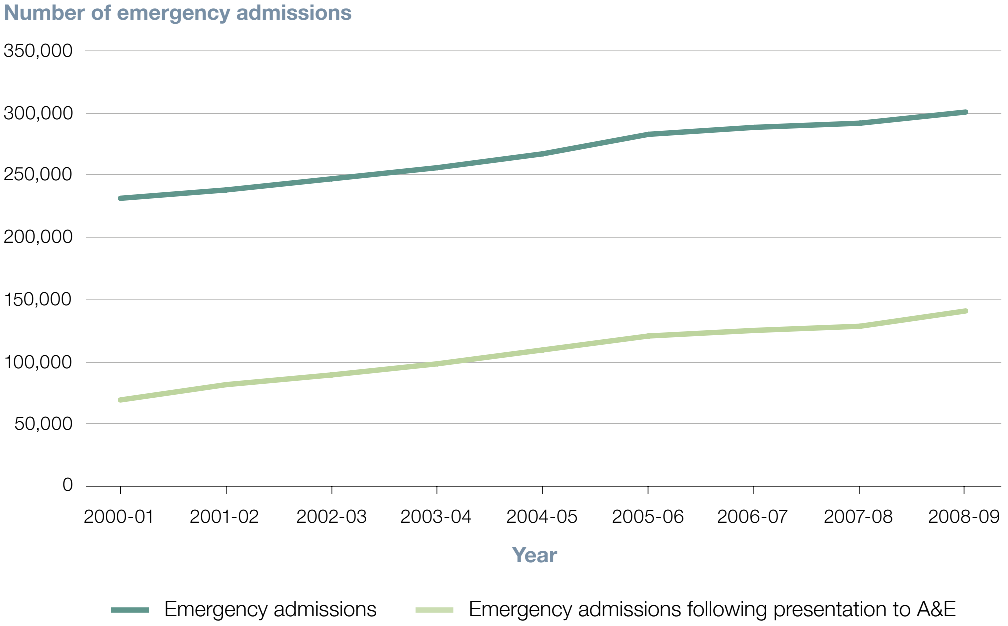
3.10 The Strategy stated that emergency admissions for cancer patients should be minimised and be the exception. Between 2000-01 and 2006-07, the period of the NHS Cancer Plan, emergency admissions increased from 231,000 to 289,000; an average increase of 3.8 per cent per year. Between 2006-07 and 2008-09, emergency admissions for cancer patients increased from 289,000 to 300,000; an average increase of 2 per cent per year (**Figure 18**). Since 2000-01, emergency admissions following presentation to Accident and Emergency have doubled.

Figure 17
Length of stay for cancer patients



Source: National Audit Office analysis of Hospital Episode Statistics

Figure 18
Emergency admissions for cancer patients



Source: National Audit Office analysis of Hospital Episode Statistics

3.11 In 2008-09, the average length of stay of cancer patients admitted as an emergency was 9.6 days, which is twice as long as elective admissions. We estimate that around 80 per cent of people admitted through the emergency route have a pre-existing diagnosis of cancer, with 20 per cent diagnosed following the emergency admission.[7] An NCIN analysis found that one year survival rates for patients diagnosed as a result of an emergency admission were around half of those for people diagnosed through urgent referral for almost all cancers except leukaemia.[8]

3.12 There is, however, poor understanding of the drivers for emergency cancer admissions amongst PCTs. There are also wide variations in the extent of emergency admissions between PCTs, 37 per cent of whom had not compared their levels with other PCTs.

Efficiency in follow-up after treatment cannot be routinely measured

3.13 The number of cancer survivors is predicted to increase from 1.7 million to 2 million by 2020. The Strategy identified that this increase would necessitate improvements in the management of specialist follow-up after treatment, which has typically been carried out through outpatient hospital activity. The impact assessment for the Strategy estimated that up to £240 million could be saved between 2008 and 2018 if improvements in survivorship follow-up were made. These improvements included decreasing the number of routine follow-up appointments to the average of other specialties, using the savings to invest in the use of alternative approaches, such as community-based support.

3.14 We found that it was not possible to measure progress against this aim as insufficient information is available to understand the reason for an outpatient appointment (whether it is during treatment or for monitoring purposes) or whether the patient has cancer, with around 97 per cent of outpatient data in HES not coded for a disease diagnosis. We did, however, examine the trends in follow-up appointments in oncology departments, and found that the ratio of new to follow-up appointments has remained the same since the Strategy was introduced, suggesting that little progress has been made. Although non-mandatory tariff prices are available to cover alternative approaches, during our visits cancer networks and PCTs cited a lack of incentives as a barrier to improving the efficiency of follow-up appointments.

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[7] Our estimates were based on an NCIN analysis of routes to diagnosis for new cases of cancer (see footnote 8).

[8] L. Elliss-Brookes, *Routes to Diagnosis Results*, presentation to UKACR/NCIN Conference, Birmingham, June 2010.

Efficiency gains could be made through more productive use of existing resources

Radiotherapy equipment could be used more productively to help the NHS meet increasing demand

3.15 The Strategy identified expanding the capacity and effectiveness of radiotherapy services as a priority. A 2007 report by the National Radiotherapy Advisory Group (NRAG) identified an increasing unmet need for radiotherapy treatment and concluded that PCTs needed to commission more attendances (fractions) for their population. NRAG also identified that there was a two-and-a-halffold variation in radiotherapy activity between cancer networks. Whilst it recognised that some of the variation may be due to a greater burden of disease and issues such as travel times, it stated that it could not account for the entire variation and considered that the level of variation was unacceptable.

3.16 The 2007 report acknowledged that workforce and treatment capacity would need to increase through a stepped approach and that in the short-term this would require radiotherapy centres to make the best use of their existing resources. It recommended that centres should ensure that their machines deliver at least 8,000 attendances per machine per year with immediate effect; working towards at least 8,700 by 2016. In 2007-08, the average across the NHS was 7,350 treatment attendances per machine.

3.17 Unpublished data for 2009-10 indicate that although the total number of attendances had increased, a twofold variation in activity between radiotherapy centres remains. The average use was 6,670 treatment attendances per machine, with the use of machines, by centre, varying from 4,100 to 9,700[9] per year, per machine (**Figure 19** overleaf). Machines can have different utilisation rates for clinical and demographic reasons and local service models and the availability of qualified staff can also impact on the effective use of equipment. The variation suggests that there is considerable potential for existing capacity to be used more productively. The Department has commissioned work to model need and map this to activity but this does not cover machine utilisation or the cost-effectiveness of different models of delivery.

Reducing variations in the number of inpatient admissions could save around £100 million a year

3.18 The number of inpatient admissions per new cancer diagnosis varied from 1.7 to 3.2 between PCTs in 2008-09 (**Figure 20** overleaf). If every PCT could meet the inpatient admissions per new cancer diagnosis of the average of the best performing quartile of PCTs, then 69,000 admissions and 532,000 bed days at a cost of £106 million could be saved each year. The majority of this saving (£80 million) would be achieved by reducing variations in the number of emergency admissions.

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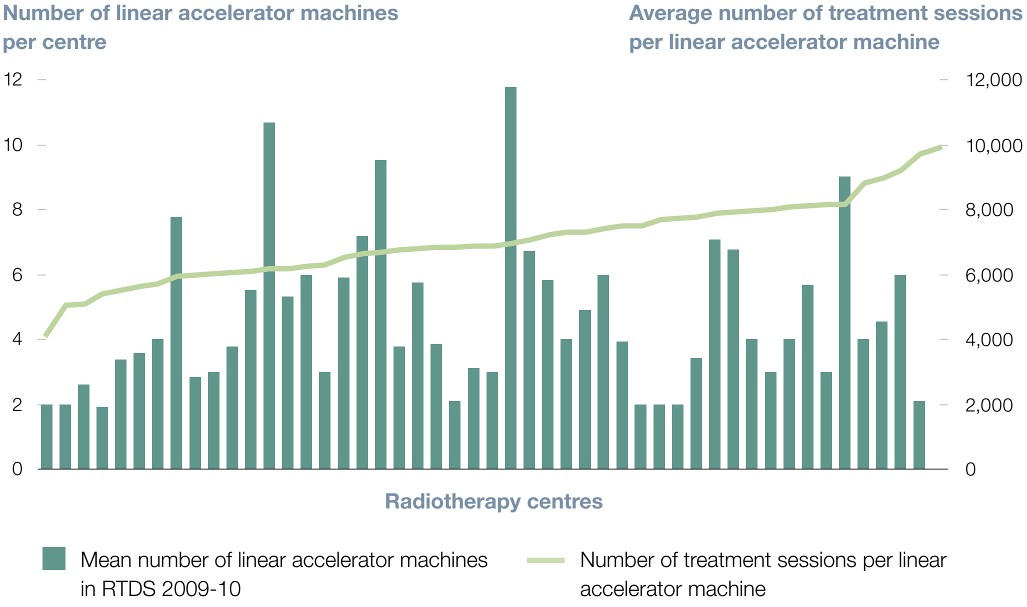
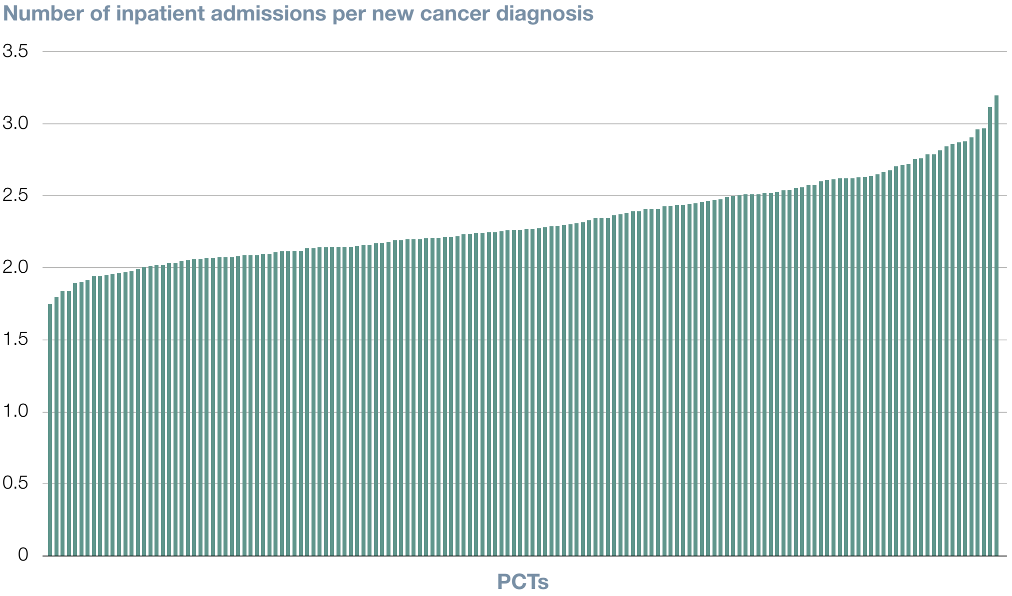
[9] The figures on treatment attendances per machine excludes outliers.

Figure 19
Variations in the use of linear accelerator machines for radiotherapy treatment, 2009-10



Source: National Audit Office analysis of unpublished Radiotherapy Dataset data

Figure 20
Inpatient admissions per new cancer diagnosis, 2008-09



NOTE

1 Each bar represents a PCT.

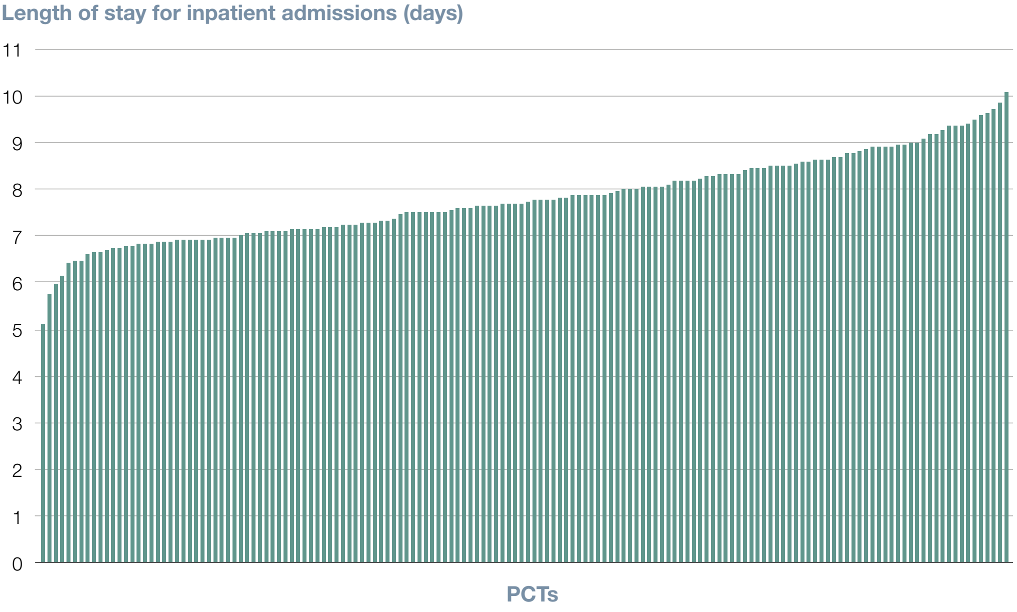
Source: National Audit Office analysis of Hospital Episode Statistics and Cancer Commissioning Toolkit

Reducing variations in the length of stay for inpatient admissions could save around £100 million a year

3.19 The average length of stay for inpatient admissions varied from 5.1 days to 10.1 days between PCTs in 2008-09 (**Figure 21**). We estimate that if every PCT had the same length of stay for inpatient admissions as the average for PCTs in the best performing quartile, then even with no overall reduction in inpatient admissions, 566,000 bed days at a cost of £113 million could be saved each year.

Figure 21

Variations in length of stay for inpatient admissions, 2008-09



NOTE

1 Each bar represents a PCT.

Source: National Audit Office analysis of Hospital Episode Statistics

Appendix

Methodology

Our fieldwork took place between February and July 2010.

Method	Purpose
Review of policy documents, academic literature and departmental data.	To develop understanding of the cancer landscape and identify data for our analyses.
Censuses of PCTs and cancer networks.	To identify how information, commissioning and use of resources drive implementation of the Strategy. Census questionnaires were developed with input from the Department and piloted. PCT returns were signed off by PCT Chief Executives. National results from the censuses are available on the NAO website.
Analysis of costs and efficiency.	To examine variations in cost and efficiency of cancer services, and determine the extent to which savings anticipated by the Strategy have been achieved.
Analysis of performance data.	To assess the performance of NHS cancer services relating to the Strategy's recommendations.
Semi-structured interviews with stakeholders including the Department, National Cancer Action Team, and main cancer charities.	Qualitative analysis for triangulation with quantitative data.
Interviews with 10 PCTs, 10 cancer networks, 10 acute trusts and 5 strategic health authorities.	To obtain qualitative evidence about the Strategy's implementation.

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