



## Review Paper

## Waiting list and waiting time statistics in Britain: A critical review

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## ARTICLE INFO

*Article history:*

Received 19 July 2007

Received in revised form 25 January 2008

Accepted 15 June 2008

Available online 2 December 2008

*Keywords:*

Waiting times

Waiting lists

Performance monitoring

Targets

Access to health care

## SUMMARY

**Objectives:** The measurement of access to health care in the National Health Service is dominated by waiting list and waiting time targets which depend on the collection and publication of a range of government statistics. The aim of this study was to describe the purposes for which waiting statistics are collected, and the different methods of data collection in the countries of Britain, in order to assess the extent to which published data meet their objectives.

**Study design:** Systematic review.

**Methods:** A systematic evaluation of waiting statistics in England, Scotland and Wales based on official published data collections in each country, plus a review of the relevant literature.

**Results:** Waiting statistics are collected for a number of purposes, but are primarily for performance monitoring against waiting time targets and for local planning. One method of data collection may not best serve all objectives, and there are differences in the practices of the countries of Britain. An important purpose should be to measure access to health care according to individual patient need, and limitations in the statistics were identified in this respect due to methodological issues, omissions and exclusions, hidden waits, the emphasis on achieving targets, and interpretation.

**Conclusions:** Although there are merits in maintaining the existing series, the use of waiting statistics as the primary method of measuring and monitoring access to services has limitations, not least because statistics do not contain the information required to assess whether time waited is appropriate to need.

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## Introduction

The measurement of access to health care in the National Health Service (NHS) is dominated by waiting list and waiting time targets, which rest on the collection and publication of a wide range of government statistics. This paper describes and evaluates the approaches of each country with respect to both the purpose of the statistics and the data collections used to compile waiting list and waiting time information in England, Scotland and Wales, and considers how far such measures can properly inform policy relating to access to health care. Waiting time statistics are used for a range of important purposes, such as to measure performance, for local planning and to provide information to patients on access to health care. This makes a critical analysis of their purpose, collection methods, accuracy and validity both valuable and timely. A list of key current targets by country are shown in [Appendix 1](#).

## Methods

A systematic review was undertaken regarding how waiting statistics are collected and reported in the countries of Britain, based on published routine official data collections relating to waiting lists and waiting times.

In addition, a literature search was performed to see what previous analysis had been undertaken in relation to waiting statistics. This included searches of medical databases and free-text Internet searches, as well as reference to relevant sources identified from previous work that included a critique of available data sets to monitor access to health care.<sup>1</sup> The search was augmented by making enquiries to appropriate statisticians in the government departments of each country.

The statistics identified according to the key objectives were evaluated:

- to provide a definition of waiting lists and waiting times;
- to describe the purpose of collecting waiting list and waiting time statistics in each country;
- to describe the different methods of data collection in each country, and to evaluate the quality of data collected; and

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- to assess the extent to which the methods of collection and quality of data fulfill the objectives of the collection in each country.

## Results

### *Definition of 'waiting list' and 'waiting time'*

The 'waiting list' contains the number of people waiting for a planned procedure at an acute or community hospital, whilst 'waiting time' is the period of time for which a patient waits for inpatient/day-case admission or an outpatient appointment from the date of their referral.<sup>2</sup> Patients may wait to access health care at a number of stages in the course of their care; firstly to see a general practitioner (GP), then following referral to see a consultant or healthcare professional, then for diagnostic tests or procedures, and finally for treatment.<sup>3</sup> It is the length of the wait that is important to patients, as a long list may not necessarily mean a long wait if patients are processed quickly,<sup>4</sup> although there is likely to be a correlation between the two.

### *Purpose of waiting list and waiting time statistics in each country*

Although the NHS has always been required to collect waiting statistics in order to know how many patients are waiting for treatment, the focus on performance measurement developed during the 1990s following the publication of the Patient's Charter. This rationale has continued and, over time, waiting time targets have been established for each country. Statistics are collected not only to monitor maximum waiting standards, but also for the more traditional purposes of local planning in order to manage capacity. The reasons for collection and publication were summarized in a review led by the Northern Ireland Department of Health, Social Services and Public Safety as being: to permit scrutiny of health service performance by the public, politicians and the media; to support performance management; to manage patient expectations; and to support informed choice by patients and GPs.<sup>5</sup>

In England, one of the main purposes of statistical collection is to 'performance manage' the NHS against targets set in its Public Service Agreements with the Treasury. Hence the length of time that patients wait for inpatient admission or outpatient appointments is measured to see how waiting times have changed (improved) in recent years.<sup>6</sup> Over time, England has placed the strongest emphasis on performance monitoring of all three countries, with a range of sanctions for trusts if targets are not met.<sup>7</sup>

In the past, Scotland has taken a less stringent approach to performance monitoring, although this is changing. The government policy guidance 'Fair to all and personal to each'<sup>8</sup> aimed 'to get rid of excessively long waits for good, make the service more focused on patients and extend choice'.<sup>9</sup> This included introducing stricter waiting time targets in line with England and Wales. Waiting time standards for key diagnostic tests were also introduced, which the Government expects to achieve through the use of independent sector diagnostic and treatment facilities.

In Wales, as in the other countries, the Assembly uses statistics to measure performance and monitor waiting time targets, whilst local trusts use information to manage their service and to plan capacity. Statistics indicate that people in Wales wait longer for elective treatment than people in England and Scotland, and in the past, targets have tended to be more lenient than elsewhere. This is changing, with recent policy developments firmly aimed at reducing waiting times through initiatives such as the 'Second Offer Scheme', introduced in 2004, which guarantees that patients breaching targets will be offered treatment by an alternative provider, as well as a rigorous new maximum total waiting time target.

### *Different methods of data collection in each country and the quality of data collected*

In England, inpatient waiting list statistics have been collected on a hospital basis (the NHS hospital trust providing treatment) since 1949, and by resident since 1996 (statistics were originally collected for residents within a health authority area, then this was superseded by commissioner statistics for the responsible population of primary care groups/primary care trusts). Despite minor changes in definitions, statistics provide a fairly consistent series of the number of patients waiting for elective inpatient and day-case admission to NHS hospitals (day cases are planned admissions where patients do not stay overnight).<sup>4</sup> Statistics do not cover emergency inpatient admissions which account for approximately half of all patients.<sup>10</sup>

Waiting statistics for both inpatients and outpatients are compiled by the Department of Health's Data Collection, Validation and Analysis Branch of the Performance Directorate. There are significant variations in coverage between commissioner and provider statistics. Commissioner returns are the most widely quoted as they relate to the population covered by the NHS. They include NHS-funded patients resident in England waiting for treatment elsewhere in the UK, abroad and in private hospitals, who are excluded from provider returns. They exclude non-resident and privately funded patients waiting for treatment in NHS hospitals, who are included in provider returns. There tends to be a 1–3% difference in the size of the two lists, with the provider-based figure being larger.<sup>11</sup>

Official inpatient figures derive from waiting list returns collected and published by the Department of Health. Statistics are based on a monthly census, and represent the median time waited at the census return date calculated from aggregate data, hence the time waited at a given point in time, thus representing only part of the actual wait until admission or treatment. The statistics do not include patients temporarily suspended from waiting lists for social reasons (e.g. due to family or work commitments) or because they are not medically fit enough for treatment.

Published outpatient figures are based on the number of GP or general dental practitioner (GDP) referrals, for first appointments which account for approximately 30% of all outpatient attendances.

A recent development has been that in order to monitor progress towards the waiting target of 18 weeks from GP referral to hospital treatment, official monthly 'Referral to Treatment' data have been published for 2007 onwards. This national data collection differs from traditional returns to capture 'waited' as well as 'waiting' data, focusing on the time patients actually waited from referral to the start of treatment. Times for completed pathways are available by specialty, for provider and commissioner.

In addition to the official statistics, waiting times are available from Hospital Episode Statistics (HES) published by the Information Centre for health and social care for admitted patients for specific conditions and operations; data that are not available from official statistics. HES provides time waited for all patients admitted to hospital within a given period, counting the period between the date of the decision to admit and the date of actual admission, rather than just until a specific point in time. Unlike the official published figures, HES are not adjusted to exclude periods during the wait caused by self-deferral or medical or social suspension. The two sets of statistics are not directly comparable due to the differences in definitions. An analysis by Dixon, however, concluded that the datasets are consistent, but that the method of measuring the waiting experience can lead to different trends.<sup>12</sup>

In Scotland, waiting list and waiting time data are published by the Information Services Division, NHS National Services Scotland, collated from data submitted by NHS boards. There are significant differences in statistics from the other countries of Britain, pre-dating 1998 devolution. As elsewhere, for the purpose of

monitoring performance against the waiting time standard, waiting lists record the number of all inpatients/day-case patients still waiting for hospital admission at a census point. However, except for this purpose, many published statistics report on measures time waited by patients who have been seen (patients who have been admitted to hospital), as opposed to those still waiting at a point in time, so waiting times are reported differently from the other countries.

In the past, statistics omitted periods of waiting by patients in certain circumstances designated by a range of availability status codes, including self-deferrals, patients refusing a reasonable offer of admission, cases where treatment was judged to be low clinical priority or highly specialized, and patients who did not attend. These codes were abolished in January 2008 under the 'New Ways' waiting times programme, but previously there was leeway to move patients to this list, which was not included in targets.

A further difference is that in Scotland, unlike the other countries, both inpatient and outpatient statistics exclude the mental health specialty.<sup>5</sup>

In Wales, definitions are broadly in line with England. The Health Statistics and Analysis Unit of the National Assembly of Wales collects and publishes data on the number of residents currently waiting for inpatient/day-case treatment and for a first outpatient appointment. Although trusts submit aggregate data to the Assembly, they have access to patient-level data.

Wales, however, has a wider definition of outpatients and is the only country to include in its list first outpatient appointment referrals whatever the source, rather than just from GPs or GPs, e.g. including referrals from accident and emergency and other consultants. This results in the inclusion of 20–30% more outpatients than in the other countries.<sup>2</sup>

Wales was the first British country to address the question of hidden waiting times for diagnostic and therapy services, and has collected and published monthly data on such waits since February 2006.<sup>13</sup> All countries have now started to publish this data.

Wales does not publish the number of inpatients temporarily suspended from lists (for whom the waiting time clock has stopped), who can account for a significant proportion of those waiting in the other countries.<sup>2</sup>

*Extent to which the methods of collection and the quality of data fulfill the objectives of the collection in each country*

*For the purpose of performance monitoring against maximum waiting standards*

In all countries, official statistics based on a census that measures the wait of those on the list at a certain point in time, includes only part of the wait. This has the advantage that recent trends are captured that would be missed if patients were only counted after eventual admission, with long waits measured at points before admission. However, longer waits are more likely to overlap the census point, so will be better represented than patients waiting a short time (because a short wait is likely to start and finish in between censuses).<sup>12,14</sup> Studies using lifetable methods have questioned the accuracy of current methods. Armstrong contended that official figures present the 'time-since-enrolment' as if this indicates the length of time that patients can expect to wait for admission, and argued that this introduces a bias into the published statistics, which do not represent the real experience of patients.<sup>15</sup>

Therefore, median waiting times derived from aggregated census data used in official figures may not provide the most accurate estimate of maximum waiting time. In all countries there is now a move towards targets that focus on waiting times from referral to treatment. This is being accompanied by the

development of data collections on the whole patient pathway, including stages for diagnostic testing and follow-up outpatient appointments.

As noted, in Scotland, many published waiting time statistics are based on patients who have been seen as opposed to those still waiting at a census point. Further, Scotland is the only British country to collect patient-level data, enabling a more accurate median waiting time to be calculated than from estimates based on aggregate returns.

There are arguments for and against measuring and including periods when patients are temporarily suspended from the waiting list. For performance monitoring, whilst inclusion may offer less scope to manipulate figures (by making average waits appear shorter by excluding long waiting patients) and more closely represents the experience of patients, such waits are likely to be outside an individual hospital's control, and not because of restrictions of access.<sup>14</sup>

In all countries, official published waiting statistics have tended to only provide a partial view of the patient experience in accessing health care and do not include most patients who are likely to be emergency hospital admissions or outpatient follow-up cases, though this is changing with the development of referral to treatment waiting times to measure the whole patient journey. However, only waits for certain types of health care are covered; e.g. waits are not recorded for admission to nursing and residential homes, or to community-based services such as community mental health services.

*For the purpose of local planning and capacity management*

It is important for trusts to monitor the total waiting time for individual patients, including time suspended for social or medical reasons, as they will still need to plan for patients to receive treatment within an appropriate time depending on urgency of need.

From a trust's point of view, it is most useful to know the number of people waiting to be seen, the reason for the wait, clinical severity, age and sex in order to book beds in appropriate wards. This is also relevant information by which to evaluate access according to patient need.

It should be recognized that many aspects of waiting times are beyond the control of local providers and are affected by total capacity within the local healthcare sector, as well as by their resources in terms of available beds and staff.

## Discussion

Waiting lists and waiting time statistics have become the primary method by which access to health care is measured and performance monitored through a series of ever more stringent waiting time targets. Although there are merits in maintaining the existing series, the use of waiting time statistics as the primary method of measuring and monitoring access to services has limitations, as summarized below, not least because statistics do not contain the information required to assess whether time waited is appropriate to need. Such limitations are as follows.

*Data collection and methods*

The differences in data collection and methods have a major impact on the statistics published and results. The quality of the data and the way they are processed determines who does and who does not appear on waiting lists. There are significant differences between countries in these respects.

### *Purpose of statistics*

Of the various methods of measuring waiting times in each country, no single method is ideal for informing all of the purposes for which waiting statistics are required, i.e. performance measurement against targets, local planning and to evaluate whether waiting time is appropriate to need. These different purposes are likely to require different methods of recording.

### *Omissions and exclusions*

Statistics only apply to a proportion of activity, plus there are hidden waits for which no routine data are published, such as waiting to be placed on the inpatient list and (until recently) waiting for diagnostic tests. This is now being addressed. Wales was the first country to publish waits for diagnostic testing, and Scotland has set targets to include a 9-week maximum wait for eight diagnostic procedures.<sup>16</sup> In England, the Government pledge to end hidden waits and to treat patients within 18 weeks by end 2008 includes 6-week maximum waits for all diagnostic investigations.<sup>17</sup>

Privately funded patients in private hospitals are not included in waiting time statistics. In England, NHS funded patients treated by private providers under contract to the NHS should be included as they remain on the commissioner waiting list, but it can be difficult to collect such data. As the use of private providers is set to expand, this could become an increasing weakness in the statistics.

### *Level of aggregation*

It is difficult to interpret waiting statistics in relation to determining access to health care because of the aggregated level at which they are collected and published. Information relating to the relative need for treatment, e.g. the severity of cases, and patient characteristics can only be available if information is collected at individual patient level, which is only undertaken in Scotland at present.

### *Emphasis on achieving targets*

The focus on reducing waiting lists and times can have the effect of prioritizing conditions included in the measures. It is acknowledged that the focus on meeting targets increases pressure on trusts. In England in 2001, the implications for data accuracy were illustrated when the National Audit Office published a list of trusts found to have adjusted waiting lists inappropriately, along with recommendations to prevent a recurrence.<sup>18</sup> Subsequently, the Department of Health asked the Audit Commission to undertake a series of spot checks of individual hospitals. Their report published in 2003 identified persistent problems, although a subsequent report concluded that accuracy was sufficiently robust to enable reasonable judgements about trends in waiting lists and waiting times.<sup>19,20</sup>

### **Recommendations**

#### *To expand the purpose of data collection and take a geographic area-based approach*

It is recommended that rather than monitoring performance against national standards, the primary purpose of data collection should be to monitor and measure access according to clinical need for treatment and by geographic area of residence. This would

provide a more useful measure than the current focus on performance monitoring of aggregate maximum waiting times.

#### *To develop alternative methods of data collection*

In order to fulfil the purpose described above, individual patient level data on needs should be collected to include information on what waits are for, the severity of clinical need, whether clinical prioritization on the basis of urgency took place, and basic patient characteristics such as age and sex. Key to monitoring access is the need for denominator data on area-based populations so that differences in access and use can be evaluated.

### **Summary**

This research shows that there are no consistent waiting statistics relating to the whole of Britain. Therefore, policies informed by such statistics need to be related to each individual country.

There is a welcome commitment by all three countries to encompass the concept of the 'whole patient journey' in current developments in the collection and publication of waiting statistics, but for the time being, there are significant exclusions from the lists representing patients about whose access to health care little is known. It is difficult to interpret the reasons for rises and falls in waiting list and time statistics from published aggregate statistics, for example whether they reflect shifts towards treatment in outpatient, primary or community settings, or other factors. Clinical need should be the main determinant of time waited, yet most data do not currently indicate what waits are for, who patients are, or whether they were prioritized to treat those in most urgent need. This greatly limits their usefulness in evaluating the appropriateness and equity of access to treatment. Rather than measuring how well hospitals are responding to need, current measures of waiting times largely reflect capacity within the whole health economy; issues beyond the control of individual trusts. They should therefore be considered within the wider context of the supply of health care including availability of beds, staff and funds.

### **Acknowledgements**

This article is based on a comprehensive report about waiting list and waiting time statistics in Britain published in 2007 and updated in 2008 by the Centre for International Public Health Policy, University of Edinburgh, available from the publications section at: <http://www.health.ed.ac.uk/CIPHP>. The main conclusions and their significance for future policy are highlighted in this paper.

#### *Ethical approval*

None sought.

#### *Funding*

None declared.

#### *Competing interests*

None declared.

**Appendix 1. Key current waiting time targets in England, Scotland and Wales.**

Target	England	Scotland	Wales
Inpatients and day cases	18 weeks from GP referral to admission for hospital treatment by end 2008 26 weeks since end 2005	18 weeks by end 2007 (for patients for whom waiting time standard applies). Maximum whole journey from GP referral to treatment of 18 weeks by 2011	22 weeks by end of March 2008. Maximum total waiting time from GP referral to treatment will be 6 months by December 2009
First outpatient appointment	13 weeks since end 2005	18 weeks by end 2007 (for patients for whom waiting time standard applies)	22 weeks by end of March 2008
Cardiac services:	3-month maximum wait for revascularization since March 2005	By end 2007: 16 weeks from GP referral through rapid access chest pain clinic or equivalent to cardiac intervention. 16 weeks from being seen as outpatient and recommended for treatment by a specialist	Definitive treatment within 52 weeks of original referral by receiving trust to secondary or tertiary cardiology by end March 2008
Cancer – all	1 month from diagnosis to treatment for all cancers by 2008	2-month maximum wait since end 2005 from urgent referral to treatment	Since end December 2006. Newly diagnosed patients referred via the USC route to start treatment within 2 months of receipt of referral at the hospital. Newly diagnosed patients not included in USC route to start treatment within 1 month of diagnosis
Cataract surgery	18 weeks from referral to treatment	18 weeks since end 2007 from referral to treatment	Seen within 4 months
Diagnostic tests	Maximum of 6 weeks for all diagnostic tests by March 2008	9 weeks since end 2007 for eight key tests	14 weeks for access to specified diagnostic services or 24 weeks to therapy services by end March 2008
A&E	98% of patients to wait no longer than 4 h maximum in A&E from arrival to admission, transfer or discharge since March 2005	98% of patients to wait no longer than 4 h between arriving at an A&E unit and admission, discharge or transfer by end 2007	95% of all patients to spend less than 4 h in A&E from arrival until admission, transfer or discharge. No one to wait longer than 8 h
Primary care	Guaranteed access to a primary care professional within 24 h and to a primary care doctor within 48 h since March 2005	Guaranteed access to a GP, nurse or other healthcare professional within 48 h of contacting GP	Access to a member of the primary care team within 24 h

Targets are subject to constant revision, and this table refers to the start of 2008. A&E, accident and emergency; GP, general practitioner; USC, urgent suspected cancer.

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