Hospital Episode Statistics: Accident and Emergency Attendances in England (Experimental Statistics) 2011-12

Summary Report
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**Contents**

**Executive Summary**
- Introduction 4
- Key facts 4
- Changes to the Publication 6
- Published tables 6
- Target audience 7
- Provider level analysis 7
- Background 7
- A&E departments 7
- Reporting of A&E data 7

**Findings**
- Overall coverage 8
- Accident and emergency (A&E) attendances 10
- Reason for A&E attendance 11
- Investigation, Diagnosis and Treatment 12
- Attendance disposal 12

**Accessing HES**

**Feedback**

**Appendices**
- Appendix 1: Data submissions to A&E HES 14
- Appendix 2: Glossary of terms 15
- Appendix 3: Hospital Episode Statistics Data Quality Statement: 16
- Appendix 4: Table summary 22
- Appendix 5: Table column definitions 26
- Appendix 6: Data for press release 29
Executive Summary

Introduction
Hospital Episode Statistics (HES) is a data warehouse containing details of all admissions to NHS hospitals in England. It includes private patients treated in NHS hospitals, patients who were resident outside of England and care delivered by treatment centres (including those in the independent sector) funded by the NHS. Within its’ A&E dataset HES includes records of attendances at major A&E departments, single specialty A&E departments, walk-in centres and minor injury units in England.

HES is the data source for a wide range of healthcare analysis for the NHS, Government and many other organisations and individuals.

Each record in HES includes a wide range of information including details of the patient (age, sex, geographic details), when they were treated and what they were treated for. This experimental statistics publication releases some high level analyses of HES data.

Key facts
In 2011-12:

- There were 17.6 million accident and emergency attendances recorded at major A&E departments, single specialty A&E departments, walk-in centres and minor injury units in England; an increase of 8.5 per cent from 2010-11.

- Data is incomplete; there are 17.3 million attendances reported in A&E HES (excluding planned follow-up attendances), compared to 21.5 million reported in the Department of Health’s Weekly A&E situation reports (Sit Reps) aggregate data for the equivalent period.

- There are 200 providers with attendances recorded in A&E HES compared to 273 providers who have submitted A&E attendances via Weekly A&E Sit Reps. Weekly A&E Sit Reps has seen an increase in the number of walk in centres and minor injury units, some of which do not currently submit data to HES.

- Of the 73 providers that do not submit A&E data to HES, 33 are primary care trusts (PCTs), 10 are trusts, 2 are care trusts and 28 are other (including walk in centres, minor injury units and private providers).

- 43.4 per cent (7.7 million) of all A&E attendances were for patients aged 29 or under, 16.3 per cent (2.9 million) were for patients aged 20-29. Just over half of all A&E attendances (50.5 per cent) were male.

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1 Due to some providers submitting data to both A&E HES and Weekly A&E Sit Reps at different levels of aggregation in 2011-12, the provider counts have been consolidated to the 3 character provider code level. This has been done to allow comparison between the two data collections.
• 24.2 per cent (4.3 million) of all arrivals at A&E were by ambulance or helicopter, compared to 25.8 per cent (4.2 million) of all arrivals in 2010-11.

• 62.6 per cent (11.0 million) of all attendances at A&E had a valid diagnosis code and 13.4 per cent (2.4 million) of all attendances had a diagnosis of ‘Diagnosis not classifiable’ recorded.

• 92.9 per cent (16.4 million) of all attendances had a valid treatment code, an 18.2 percentage point increase from 2010-11. 34.4 per cent (6.1 million) of all attendances had a recorded treatment of ‘guidance/advice only’.

• 58.4 per cent (10.3 million) of all attendances were discharged (‘GP follow-up required’ or ‘no follow-up required’) and 20.7 per cent (3.7 million) of all attendances were admitted to hospital.
Changes to the Publication

This document (Hospital Episode Statistics Accident and Emergency Attendances in England 2011-12 - Summary Report) replaces the Explanatory Notes document, which previously accompanied the publication data tables, and provides a central point of collation for background information that assists in the interpretation of the data contained within these tables.

The document has been restructured to bring it into line with other HES data publications and to make it more accessible to users.

The appendices contain definitions of i) the data fields contained within each table and ii) the data counts contained within each field, as well as a summary of any data quality issues which may impact on the published data.

The official source of A&E information has changed from QMAE to Weekly A&E Sit Reps (Weekly A&E situation reports). It should be noted that, unlike QMAE, Weekly A&E Sit Reps do not provide a breakdown by first A&E attendance and unplanned follow-up A&E attendance. The Weekly Sit Reps publication can be found at: Weekly A&E Activity

2011-12 has seen an increase in the number of private sector organisations providing A&E services, particularly minor injury and walk-in facilities. As a result of this increase, it has become necessary to make use of 5 digit provider codes for those organisations that provide services at more than one location in England. This has presented an issue in that some organisations supply data to A&E HES at a different level of aggregation to that supplied to Sit Reps. As a result of this inconsistency the provider counts provided in Table 3 have been consolidated to the 3 character provider code level. This has been done to allow direct comparison between the two data collections. For consistency, the data provided for 2010-11 has also been consolidated to the 3 character provider code level.

As of April 2011, the Department of Health introduced a series of quality indicators for A&E departments which includes measures of duration to assessment (arrival by ambulance), treatment and departure. Information about these indicators is available from the HSCIC website:
[http://www.ic.nhs.uk/searchcatalogue?topics=0%2fHospital+care&sort=Relevance&size=10&page=1#top ]

Published tables

This document shows the key statistics from the Accident and Emergency (A&E) attendance data within HES for 2011-12 and provides year-on-year comparisons with data from 2010-11. Tables cover treatments & diagnoses, date & time of attendance, age & gender of attendee, A&E providers and methods of referral, arrival & disposal. Further details about these tables are included in Appendix 4.

Each of these tables contains analysis by the fields listed in Appendix 5, which include: number of attendances, gender and age group profiles, date & time of arrival to A&E, arrival method by age, duration spent in A&E department, method of discharge and average duration in A&E.
Target audience
This document has been written primarily for those working in the NHS, to inform and support strategic and policy led processes for the benefit of patient care.

Provider level analysis
The accompanying Excel spread-sheet provides information at provider level (where submitted) relating to:

- Number of A&E attendances
- Gender and age group profiles
- Arrival to A&E, by day and time
- Duration spent in A&E department
- Method of discharge

Background
A&E departments
The role of major accident and emergency (A&E) departments is to assess and treat patients who have serious and unforeseen injuries or illnesses. Major A&E departments are consultant led, open 24 hours a day and 365 days a year with full resuscitation facilities. Not all hospitals have an A&E department.

In addition to major A&E departments, single specialty A&E departments, walk-in centres and minor injury units are also covered by the A&E HES data. People can attend these services without an appointment. They deal with a range of minor injuries and illnesses.

Reporting of A&E data
A&E HES data consists of individual records of patient care that are held within the HES database. These have been submitted from local NHS providers’ patient administration systems (PAS), via the Secondary Uses Service (SUS). SUS is a national data warehouse that has been delivered as part of the National Programme for IT.

Weekly A&E situation reports (Sit Reps)
The collection process used for A&E HES data is very different from the process used for collecting the other nationally published source of information on A&E activity, the weekly A&E situation reports (Sit Reps). Weekly Sit Reps are based on counts made in local NHS organisations and submitted to the Department of Health in aggregate form, rather than from patient level data.

This aggregate data is still the official source of A&E information and should be used in preference to A&E HES for information that is held in both datasets.
Findings

Overall coverage

Total attendances (tables 1,2,3,4 & 17)

While A&E Sit Reps remain the official source of A&E attendance numbers A&E HES is able to offer more detailed analysis. As stated previously, A&E HES coverage (80.5 per cent of the A&E Sit Reps attendances) has improved since the first publication of these figures as experimental statistics in 2007-08 (62.2 per cent), aligning more closely to A&E Sit Reps data.

In 2011-12 there were 17.6 million A&E attendances (all) recorded within HES, representing an increase of 8.5 per cent from the previous year. This difference is largely driven by coverage improvements within A&E HES. Over the same period A&E attendance levels reported within A&E Sit Reps increased by 0.5 per cent.

Attendance records in A&E HES data can be split into groups based on whether the attendance was a first attendance or a follow-up attendance. Furthermore, follow-up attendances can be split into whether the attendance was planned or unplanned.

The A&E Sit Reps submission does not collect planned follow-up attendances, but does include unplanned follow-up attendances. Where A&E HES is being compared with A&E Sit Reps directly, total attendance will exclude planned follow-up attendances.

Using this definition, the number of total attendances when derived from A&E HES is 17.3 million. Therefore, there are 4.2 million fewer attendances than those reported in A&E Sit Reps for 2011-12.

Assessing growth through time

A&E HES figures are available from 2007-08 onwards. Changes to the figures over time need to be interpreted in the context of both improvements in data quality and coverage and changes in activity. The introduction of Payment by Results, increased private sector involvement in the delivery of secondary care and the increase in the number of single specialty A&E departments, walk-in centres and minor injury units will have all affected trends.

Payment by Results is a system whereby hospitals are paid for the number of patient treatments, known as activity, they perform and the complexity of these treatments. It was introduced in a phased way from the middle of the last decade onwards. In order to get paid correctly, hospitals need to record the activity they perform and the clinical codes that outline the patients’ conditions and treatment. This has provided a major financial incentive for hospitals to ensure all of the activity they perform and the

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2 First Attendance to A&E - the first in a series or the only attendance
3 Follow-up Attendance to A&E - Planned: a subsequent planned attendance at the same department and for the same incident as the first attendance. Unplanned: a subsequent unplanned attendance at the same department and for the same incident as the first attendance. (Source: A&E HES Data Dictionary [http://www.ic.nhs.uk/article/1826/HES-data-dictionary])
clinical coding is fully recorded. This improved recording of information captured by HES could be one of the factors leading to the reported activity increases.

The NHS has seen increases in real terms expenditure throughout the period. In the earlier years of the period, the year on year increase in this expenditure was higher than in the most recent years. The period has also seen a rise in the number of emergency admissions. One factor contributing to this is likely to be the increased demand on health services from an ageing population. Alongside this there has been the introduction of observation or medical assessment units at many hospitals to which patients arriving in Accident and Emergency departments are admitted, often for around a day, to enable observation and tests to be performed on them.

The data we have provided here highlight these changes. Care should be taken when interpreting these changes as improvements in coverage in HES will contribute alongside growth from increased activity.

Extra care should be taken when looking at clinical data, as changes in NHS practices (such as the introduction of new procedures and interventions) can have an effect on changes through time.
Accident and emergency (A&E) attendances

Who attends A&E? (Tables 5 & 6, chart 1)
Despite the improvements in coverage, the demographic profile of patients who use A&E departments has remained relatively stable when compared to previous years. In 2011-12 males are still marginally the main users of A&E departments in England (50.5 per cent).

When focusing specifically on age groups, these have changed very little in terms of the underlying distribution from last year. 43.4 per cent (7,651,005) of all A&E attendances were for patients aged 29 or under, 16.3 per cent (2,875,643) were for patients aged 20-29.

The demographic profile has remained relatively stable despite an increase in the number of A&E attendances for which either the gender or the age of the attendee is recorded as being unknown. In the case of gender the number of unknowns has risen from 0.4 per cent (67,278) in 2010-11 to 1.1 per cent (191,530) in 2011-12. For age groups the number of unknowns has risen from 0.0 per cent (1,640) in 2010-11 to 0.9 per cent (158,023) in 2011-12. The majority of these records have been submitted by County Durham and Darlington NHS Foundation Trust (150,984 and 151,021 records respectively). This is a known data issue arising from the Trust now submitting data on behalf of a number of minor injury units and walk in centres and our data quality team has liaised with the trust about this.

When do A&E attendances occur? (Tables 7 & 8, charts 2 & 3)
The distribution of A&E attendances in 2011-12 is very similar to 2010-11. The number of A&E attendances recorded are generally lower during the winter (November to February).

When looking at the day and hour of arrival of A&E attendances, the busiest day continues to be Monday with 15.8 per cent of all attendances (2,781,531). The busiest time of arrival on that day is 10am (hour) with 211,569 attendances (1.2 per cent of all A&E attendances). The trend for the arrival time / day is relatively similar for all weekdays; peaking between 10am and 11am. There is a slight variation to the underlying trend on weekends, which doesn’t see the second - and lesser - ‘post-work’ peak at about 6pm.

Despite the changes in A&E attendance numbers and the people visiting these departments, the only difference in trend between 2010-11 & 2011-12 is the absence of the daily ‘midnight’ peak from the 2011-12 data. This is likely to be an improvement in data quality with fewer attendances being recorded as midnight by default.

Referral method (Table 9)
The majority of A&E attendances are self-referred, some 64.7 per cent (11,404,438) in 2011-12. Referrals to A&E from all sources have remained relatively stable when compared to previous years.
Arrival method (Tables 10 & 11, charts 4, 5, 6 & 7)

In 2011-12, 24.2 per cent (4,256,884) of all arrivals at A&E were by ambulance or helicopter, compared to 25.8 per cent (4,195,075) of all arrivals in 2010-11.

The number of attendances where the arrival method was ‘ambulance or helicopter’ is greatest between 14:00 – 15:00 hours, when 232,370 patients arrived at A&E providers by that method. However, those patients represented only 20.5 per cent of all attendances to A&E during the hour of 14:00 -15:00. Proportionally the most attendances where the arrival mode is ambulance or helicopter are seen during the hour of 04:00 - 05:00, when 53.6 per cent (99,259) of all attendances arrived that way.

More males arrive at A&E by ambulance or helicopter up to the age of 69 compared to females. However, from the age of 70 onwards the number of female attendances (arriving by ambulance or helicopter) is higher than male attendances; this is possibly linked to population demographics.

The age group with the highest number of A&E attendances (who arrived by ambulance or helicopter) is the 80 to 89 year-old age group (757,555 or 17.8 per cent).

How a patient arrives at an A&E department can reflect the level of treatment / care required. Of patients who arrived at A&E by ambulance or helicopter, 50.2 per cent (2,135,949) are admitted to hospital. Conversely, for those who arrived by another method, 11.5 per cent (1,511,138) were admitted and 43.8 per cent (5,753,200) discharged with no follow-up required.

Reason for A&E attendance

Patient Groups (Table 12, charts 8, 9, 10 & 11)

Within the reason for attendance field, 95.0 per cent of entries are valid records i.e. ‘excluding “Not known’. However, the majority of these 15,736,690 (or 89.3 per cent of all records) are classified as either ‘other accident’ or ‘other’.

Road accidents
Road accidents accounted for 1.6 per cent (278,321) of all recorded attendances. There are peaks in the number of A&E attendances during the morning and evening rush hours. There are fewer road accident related attendances over the weekend.

Assaults
Assaults accounted for 1.1 per cent (186,060) of all recorded attendances. There are more assault related attendances on Friday and Saturday nights.

Deliberate self-harm
Deliberate self-harm accounted for 0.7 per cent (118,935) of all recorded attendances. There is a clear re-occurring pattern throughout the week, increasing slightly on Friday and Saturday evenings. The number of attendances increases throughout the day.

Sports injury
Sports injuries accounted for 2.3 per cent (400,822) of all recorded attendances. These are most likely to occur on Saturday and Sunday afternoons.
Investigation, Diagnosis and Treatment

First investigation (Table 13)
In total 16,699,574 (94.8 per cent) of recorded attendances had a valid investigation code. More than 40 per cent of valid records have the first investigation recorded as ‘none’, and over a quarter are recorded as ‘X-ray plain film’.

Data coverage has increased for recorded first investigation, from 87.3 per cent of valid records in 2010-11 to 94.8 per cent in 2011-12. Most recorded first investigations have shown small fluctuations, however there has been an increase of 7.4 percentage points in all attendances where the first investigation is recorded as ‘none’.

First diagnosis (Table 14)
In total 11,037,309 (62.6 per cent) of recorded attendances had a valid diagnosis code, an increase of 3.1 percentage points from 2010-11.

The highest percentage of valid A&E HES attendances within primary diagnosis information are coded as ‘diagnosis not classifiable’, representing 21.3 per cent of all valid records, followed by ‘dislocation/fracture/joint injury/amputation’ (7.5 per cent) and then ‘laceration’ (6.8 per cent), replicating last years’ top three.

First treatment (Table 15)
In total 16,366,997 (92.9 per cent) of recorded attendances had a valid treatment code, an increase of 18.2 percentage points from 2010-11. The number of null/blank records decreased by 17.3 percentage points from 2010-11.

The highest percentage of A&E HES attendances with valid first treatment information are coded as ‘guidance/advice only’, representing 37.0 per cent of all valid records, followed by ‘none (consider guidance/advice option)’ (14.2 per cent).

Attendance disposal

Disposal method (Table 16, charts 12, 13 & 14)
In 2011-12, 58.4 per cent (10,295,519) of all attendances were discharged (‘GP follow-up required’ or ‘no follow-up required’) and 20.7 per cent (3,652,985) of all attendances were admitted to hospital.

As the duration the patient has spent in the A&E department increases, so does the likelihood that the patient will be admitted to hospital, peaking in the 10 minute time slot between 3hrs 51 min and 4hrs.

Patients who have shorter durations in A&E are more likely to be discharged with no follow-up required, compared to those patients who wait longer.
Accessing HES

The HES publications focus on headline information about hospital activity. Each annual publication includes a series of national tables and also provider level breakdowns for some main areas.

The publication tables are also made available in machine readable format (as .CSVs) in line with the making public data public transparency agenda.

All data items included in the published tables are explained in footnotes and the Health and Social Care Information Centre publish data dictionaries for HES describing the format and possible values for all HES data items:


The data is also readily accessible via an online interrogation service (for NHS users) or via our bespoke extract service:

http://www.ic.nhs.uk/data-extracts

Feedback

Feedback on this publication can be provided via our website: http://www.ic.nhs.uk/hes (‘Have your say - give us your comments on this publication’) or the HES customer feedback survey on HESonline. Alternatively, feedback can be provided to the Health and Social Care Information Centre via enquiries@ic.nhs.uk or 0845 300 6016.

The Health and Social Care Information Centre welcomes all feedback relating to any aspect of this publication. In particular we would welcome feedback on the usefulness of the information to different users, the ways in which the information is used and what further information would be useful. Any additional information you can provide us with about your use of HES data will help us to improve our statement on known users and uses of the data - available at:

http://www.ic.nhs.uk/CHttpHandler.ashx?id=10495&p=0

HESonline gets over 70,000 unique visitors each year, with over 1,000,000 page views and over 250,000 downloads. In order to continually meet the needs of our online interrogation service users, we hold HES User Group (HUG) meetings every two months to discuss issues surrounding HES, such as data improvements, data quality and details of any upcoming changes that would impact users. We also hold meetings every six months with the users who subscribe to our Monthly Managed Extract Service.

Responsible statistician:
Matt Whitston, Principal Information Analyst HES/SUS Analysis Section
Contact via enquiries@ic.nhs.uk or 0845 300 6016
Appendices

Appendix 1: Data submissions to A&E HES

A list of mandatory and optional fields for submission in the Accident and Emergency Commissioning Data Set (CDS) is provided by Connecting for Health within the CDS data dictionary - available at: [http://www.datadictionary.nhs.uk/data_dictionary/messages/cds_v6-2/cds_v6-2.asp].

CDS V6 TYPE 010 - ACCIDENT AND EMERGENCY CDS

Please note: The markers in the columns “OPT, U/A, and HES” indicate the NHS recommendations for the inclusion of data:

M = Mandatory: data must be included where available
O = Optional: data need not be included
* = Must not be used
Appendix 2: Glossary of terms

A&E

Accident and Emergency

A&E HES

‘Accident and Emergency Hospital Episodes Statistics’ is a name given to the data set that contains data on individual A&E attendances. A&E HES is one of a number of data sets available from the family of HES products.

AR

Annual Refresh

CDS

Commissioning Data Set

DH

Department of Health

HES

Hospital Episode Statistics

HSCIC

Health and Social Care Information Centre

MIU

Minor Injury Unit

NHS

National Health Service

ONS

Office for National Statistics

OOH

Out of Hours

PAS

Patient Administration Systems

PCT

Primary Care Trust

Sit Reps

Situation Reports

SUS

Secondary Uses Service

WIC

Walk-in Centre
Appendix 3: Hospital Episode Statistics Data Quality Statement:

Introduction

Hospital Episode Statistics (HES) includes patient level data on hospital admissions, outpatient appointments and A&E attendances for all NHS trusts in England. It covers acute hospitals, primary care trusts and mental health trusts. HES includes information about private patients treated in NHS hospitals, patients who were resident outside of England and care delivered by treatment centres (including those in the independent sector) funded by the NHS.

Healthcare providers collect administrative and clinical information locally to support the care of the patient. This data is submitted to the Secondary Uses Service (SUS) to enable hospitals to be paid for the care they deliver. HES is created to enable secondary use of this data.

HES is the data source for a wide range of healthcare analysis used by a wide variety of people including the NHS, Government, Regulators, academic researchers, the media and members of the public.

HES is a unique data source, whose strength lies in the richness of detail at patient level going back to 1989 for inpatient episodes, 2003 for outpatient appointments and 2007 for A&E attendances. HES data includes:

- Specific information about the patient, such as age, gender and ethnicity
- Clinical information about diagnoses, operations and consultant specialties
- Administrative information, such as time waited, and dates and methods of admission and discharge
- Geographical information such as where the patient was treated and the area in which they live.

The principal benefits of HES are in its use to:

- Monitor trends and patterns in NHS hospital activity
- Assess effective delivery of care and provide the basis for national indicators of clinical quality
- Support NHS and parliamentary accountability
- Inform patient choice
- Provide information on hospital care within the NHS for the media
- Determine fair access to health care
- Develop, monitor and evaluate Government policy
- Reveal health trends over time
- Support local service planning
Relevance
The HES publications focus on headline information about hospital activity. Each annual publication includes a series of national tables and also provider level breakdowns for some main areas.

Most data included in the published tables are aggregate counts of hospital activity. Where averages are published, e.g. average length of stay for inpatients or caesarean rates for maternity statistics, the data is clearly labelled stating how the data has been calculated.

Accuracy and Reliability
The accuracy of HES data is the responsibility of the NHS providers who submit the data to SUS. This data is required to be accurate to enable them to be correctly paid for the activity they undertake.

The Audit Commission audits the data submitted to SUS to ensure NHS providers are being correctly paid by Payment by Results for the care they provide.

Each month the HSCIC makes data quality dashboards available to NHS providers to show the completeness and validity of their data submissions. This helps to highlight any issues prevalent in the provisional data allowing time for corrections to be made before the annual data is submitted.

<table>
<thead>
<tr>
<th>Table 1: Data Completeness</th>
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<td>Activity in English NHS Hospitals and English NHS commissioned activity in the independent sector, 2010-11 and 2011-12</td>
</tr>
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</table>

<table>
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<th>A&amp;E key fields</th>
<th>2010-11</th>
<th>2011-12</th>
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<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Total</td>
<td>16,244,934</td>
<td>100%</td>
</tr>
<tr>
<td>A&amp;E Arrival Mode</td>
<td>15,824,313</td>
<td>97.4%</td>
</tr>
<tr>
<td>A&amp;E Department Type (from April 2007)</td>
<td>14,343,544</td>
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<td>A&amp;E Attendance Category</td>
<td>16,125,834</td>
<td>99.3%</td>
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<td>A&amp;E Attendance Disposal</td>
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<td>A&amp;E Incident Location Type</td>
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<td>Source of Referral for A&amp;E</td>
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<td>Arrival Date</td>
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<td>100.0%</td>
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<tr>
<td>Arrival Time</td>
<td>16,244,934</td>
<td>100.0%</td>
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<tr>
<td>A&amp;E Initial Assessment Time</td>
<td>13,246,928</td>
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<td>A&amp;E Time Seen For Treatment</td>
<td>13,953,329</td>
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<td>A&amp;E Attendance Conclusion Time</td>
<td>15,613,643</td>
<td>96.1%</td>
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<tr>
<td>A&amp;E Departure Time</td>
<td>16,212,725</td>
<td>99.8%</td>
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<tr>
<td>Primary A&amp;E Diagnosis - 2 Character Level</td>
<td>9,676,615</td>
<td>59.6%</td>
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<tr>
<td>First A&amp;E Investigation - 2 Character Level</td>
<td>14,175,261</td>
<td>87.3%</td>
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<tr>
<td>First A&amp;E Treatment - 2 Character Level</td>
<td>12,141,322</td>
<td>74.7%</td>
</tr>
</tbody>
</table>

4 An A&E diagnosis is a six-character code made up of diagnosis condition (n2), sub-analysis (n1), anatomical area (n2) and anatomical side (an1).
5 An A&E investigation is a six-character code made up of investigation (n2) and local sub-analysis (up to an4).
6 An A&E treatment is a six-character code made up of treatment (n2), sub-analysis (n1), local use (up to an3).
There have been improvements in the coverage and quality of data provided to A&E HES compared to last year, with relative coverage levels improving in A&E HES.

As detailed in this report, there are also some definitional differences between A&E HES data and Weekly A&E Sit Reps data. The main difference is that A&E Sit Reps data does not include attendances where the A&E appointment has been pre-arranged or planned. Therefore, where A&E HES is compared directly with A&E Sit Reps planned follow up attendances are excluded.

Coverage within A&E HES has improved over the last year, both in terms of the comparison with A&E Sit Reps and completed data fields within A&E HES. Codes were considered to be valid if they matched to one of the A&E Commissioning Data Set (CDS) data dictionary values for the specified field and were considered invalid if they did not match to one of the data dictionary values. Where a field has a null value it is considered invalid.

Multiple diagnosis, investigation and treatment codes can be submitted within the dataset. The analysis contained within this report only looks at the first (or primary) diagnosis, investigation and treatment codes submitted. It also only uses the first two characters of these codes covering the diagnosis condition, investigation and treatment sections of the six character codes. This is due to quality issues with these clinical fields.

Collection of HES data is carried out on a monthly basis throughout the financial year, with a final Annual Refresh (AR) once the year end has passed. Each monthly collection refreshes data back to the start of the financial year.

Month 13 represents the provisional full year data and was published in July 2012. Hospital providers and the HSCIC HES Data Quality team work to improve the quality and completeness of the data in order to produce the final annual refresh data used in this report.

Table 2, below, shows the change from the Month 13 provisional data to the final Annual Refresh data.

<table>
<thead>
<tr>
<th>Table 2: Data Completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity in English NHS Hospitals and English NHS commissioned activity in the independent sector, 2011-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Month 13</th>
<th>Annual Refresh</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of records</td>
<td>17,602,055</td>
<td>17,619,708</td>
<td>0.10%</td>
</tr>
<tr>
<td>First A&amp;E attendance</td>
<td>16,723,291</td>
<td>16,737,176</td>
<td>0.08%</td>
</tr>
<tr>
<td>Planned follow-up A&amp;E attendance</td>
<td>332,342</td>
<td>333,060</td>
<td>0.22%</td>
</tr>
<tr>
<td>Unplanned follow-up A&amp;E attendance</td>
<td>389,228</td>
<td>389,573</td>
<td>0.09%</td>
</tr>
<tr>
<td>Not known</td>
<td>157,194</td>
<td>159,899</td>
<td>1.72%</td>
</tr>
</tbody>
</table>

Chart 1, overleaf, shows the number of attendances ending in each month, by the submission version for 2011-12.
Chart 1: Monthly variation in submitted records

There is also further information about HES data quality published online: http://www.ic.nhs.uk/article/1825/The-processing-cycle-and-HES-data-quality

This information includes links to HES data quality notes which specify known data quality issues each year.

**Timeliness and Punctuality**

HES data is published as early as possible. The production of the underlying HES datasets takes several months after the reference period. The final submission deadline for NHS providers to send annual data to SUS is normally at the end of the May, almost 2 months after that year has finished. It then takes approximately 3 months to produce the A&E HES dataset and a further 2 months to complete publication production and data investigation.

In addition to annual data the HSCIC also publish provisional monthly HES data approximately 3 and a half months after the reference period.

The final annual data includes additional data cleaning, validation and processing than the provisional monthly data.

**Coherence and Comparability**

Users can misinterpret HES data as relating to numbers of patients but care should be taken as HES data relates to hospital activity not individuals.

A&E data is presented as attendances. People who have more than one attendance in a year will be counted for each attendance.
UK comparisons
Separate collections of hospital statistics are undertaken by Northern Ireland, Scotland and Wales. There are a number of important differences between the countries in the way that data measures are collected and classified, and because of differences between countries in the organisation of health and social services. For these reasons, any comparisons made between HES and other UK data should be treated with caution.

ONS used to produce UK Health Statistics which contained key figures about the use of health and social services, including hospital in-patient activity and waiting times across the UK. The last version of this discontinued series can be found at: http://www.ons.gov.uk/ons/rel/ukhs/united-kingdom-health-statistics/2010/edition-4--2010.pdf

Other UK Data
Hospital data for the other administrations can be found at:
Northern Ireland - Hospital Statistics & Research
Scotland – Hospital Care
Wales - Health and care statistics

The Department of Health also publish hospital activity data: NHS Outcomes and Performance.

Wider international comparisons
HES and similar statistics from the devolved administrations are used to contribute to World Health Organisation, Organisation for Economic Co-operation and Development (OECD) and Eurostat compendiums on health statistics.

Changes to organisation codes and geographical boundaries
The Organisation Data Service (ODS) is provided by NHS Connecting for Health. It is responsible for the publication of all organisation and practitioner codes and national policy and standards with regard to the majority of organisation codes, and encompasses the functionality and services previously provided by the National Administrative Codes Service (NACS).

For more information about the ODS and changes to organisation codes and geographical boundaries visit: http://nww.connectingforhealth.nhs.uk/ods

There is also some further information about historic geographic changes in HES at: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=1168

Performance, Cost and Respondent Burden
The production of HES data is a secondary use of data collected during the care of patients in the NHS and submitted for NHS Providers to be paid for the care they deliver. Therefore HES does not incur additional costs or burden on the providers of the data.
Improvements over time
A&E HES data are available from 2007-08 onwards. Changes to the figures over time need to be interpreted in the context of improvements in data quality and coverage (particularly in earlier years), increases in independent sector activity (particularly for 2011-12) and changes in NHS practice. For example, apparent reductions in activity may be as a result of increases in activity at other facilities, particularly minor injury units and walk-in centres.

Confidentiality, Transparency and Security
Although certain information is considered especially sensitive, all information about someone's health and the care they are given must be treated with regard to confidentiality at all times. There are a limited number of people authorised to have access to the record level data, all of who must adhere to the written protocol issued by The HSCIC on the dissemination of HES data. For example guidance is given on handling the very small numbers that sometimes occur in tables, to reduce the risk that local knowledge could enable the identification of either a patient, the only consultant of a particular specialty within a trust, or a single-handed GP.

HES is a record level data warehouse and it contains information that could (if it was made freely available) potentially identify patients or the consultant teams treating them. In some cases record level data may be provided for medical/health care research purposes. For example data is likely to be required by the Care Quality Commission and other such bodies. The information may be given following a stringent application procedure, where the project can justify the need and where aggregated data will not suffice. Any request involving sensitive information, or where there may be potential for identification of an individual, is referred to the Data Access Advisory Group (DAAG) or the Ethics and Confidentiality Committee (ECC).

HES data is stored to strict standards, a system level security protocol is in place, this details the security standards that are in place to ensure data is secure and only accessed by authorised users.
Appendix 4: Table summary

Attendances recorded by type in A&E HES and Weekly A&E Sit Reps
The *Attendances recorded by type in A&E HES and Weekly A&E Sit Reps* table provides a comparison between recorded attendances at A&E units in A&E HES and in Weekly A&E Sit Reps. Weekly A&E Sit Reps does not include planned follow up attendances and so for the purposes of comparison the A&E Sit Reps total should be compared with the Total (Excluding planned follow-up) figure for A&E HES. Unlike the discontinued QMAE statistics Weekly A&E Sit Reps does not provide a breakdown by First A&E attendance and Un-planned follow-up A&E attendance. However, the table design has not been altered from previous years in order to continue the practice of presenting the A&E HES figures aggregated by attendance category. Attendance category gives an indication of whether a patient is making an initial or follow-up attendance within a particular A&E Department. For both A&E HES and Weekly Sit Reps the counts of attendances are also expressed as a percentage of the respective overall total.

Number of valid records in HES by A&E key field
The *Number of valid records in HES by A&E key field* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by various key fields where the records are deemed to be valid. Records are deemed to be valid if the codes contained in the respective key fields are also valid. Codes are considered to be valid if they match to one of the A&E Commissioning Data Set (CDS) data dictionary values for the specified field and are considered to be invalid if they do not match to one of those data dictionary values. Where a field has a null value it is considered invalid. Alongside the count of valid records for each key field is the percentage value of that count as a proportion of the total of all valid records.

Comparison of 2010-11 and 2011-12 A&E attendances in A&E HES against those reported in Weekly A&E Sit Reps, broken down by the organisation type
The *Comparison of 2010-11 and 2011-12 A&E attendances in A&E HES against those reported in Weekly A&E Sit Reps, broken down by the organisation type* table provides a comparison between recorded attendances at A&E units in A&E HES and in Weekly A&E Sit Reps. Two comparisons are made: between the numbers of each provider type submitting data to the respective systems and between the numbers of A&E attendances broken down by provider type. For the purposes of this comparison planned follow up attendances are excluded from the A&E HES figures. Furthermore, due to some providers having submitted data to both A&E HES and Weekly A&E Sit Reps at different levels of aggregation in 2011-12, the provider level counts in this table have been consolidated to the 3 character provider code level. Consolidation was necessary in order to allow direct comparison between the two data collections. For consistency, the data provided for 2010-11 has also been consolidated to the 3 character provider code level.
A&E Attendances by attendance category

The A&E Attendances by attendance category table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by attendance category. Alongside the count of attendances for each category is the percentage value of that count as a proportion of the attendances in A&E HES.

A&E attendances by gender

The A&E attendances by gender table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the gender of the attendee. Alongside the count of attendances for each gender category is the percentage value of that count as a proportion of all the attendances in A&E HES.

A&E attendances by age group

The A&E attendances by age group table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the decile age group of the attendee. Attendees aged 90 or over are grouped together in the 90+ age group. Alongside the count of attendances for each age group is the percentage value of that count as a proportion of all the attendances in A&E HES.

A&E attendances by month

The A&E attendances by month table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the month of attendance. Alongside the count of attendances for each month is the percentage value of that count as a proportion of the whole year’s attendances in A&E HES.

A&E attendances by day

The A&E attendances by day table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the day of attendance. Alongside the count of attendances for each day is the percentage value of that count as a proportion of all the attendances in A&E HES.

A&E attendances by referral method

The A&E attendances by referral method table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the referral method. Alongside the count of attendances by each referral method is the percentage value of that count as a proportion of all the attendances in A&E HES.
A&E attendances by arrival method

The *A&E attendances by arrival method* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the arrival method. Alongside the count of attendances by each arrival method is the percentage value of that count as a proportion of all the attendances in A&E HES. The method of arrival is recorded as: *Arrival by ambulance / helicopter, Other arrival method or Unknown.*

A&E attendances by hour of arrival, where arrived by ambulance

The *A&E attendances by hour of arrival, where arrived by ambulance* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the hour of attendance. This table only includes attendances where the arrival method was ambulance. Alongside the count of attendances for each hour of arrival is the percentage value of that count as a proportion of attendances by all arrival methods.

A&E attendances by patient group

The *A&E attendances by patient group* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the patient group of the attendee. Alongside the count of attendances for each patient group is the percentage value of that count as a proportion of all the attendances in A&E HES.

Number of A&E attendances, first A&E investigation '2 character description field'

The *Number of A&E attendances, first A&E investigation '2 character description field'* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the initial A&E investigation. The descriptions with which the *First A&E investigation* column is populated are based upon the first 2 characters of the A&E investigation code. Alongside the count of attendances for each A&E investigation are percentage values of that count as a proportion of all the attendances in A&E HES, and as a proportion of attendances excluding records with unknown or unmatched A&E investigation codes.

Number of A&E attendances, A&E primary diagnosis '2 character description field'

The *Number of A&E attendances, A&E primary diagnosis '2 character description field'* table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the initial A&E diagnosis. The descriptions with which the *First A&E diagnosis* column is populated are based upon the first 2 characters of the A&E diagnosis condition. Alongside the count of attendances for each A&E diagnosis are percentage values of that count as a proportion of all the attendances in A&E HES, and as a proportion of attendances excluding records with unknown or unmatched diagnoses.
Number of A&E attendances, first A&E treatment '2 character description field'

The Number of A&E attendances, first A&E treatment '2 character description field' table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the initial A&E treatment. The descriptions with which the First A&E treatment column is populated are based upon the first 2 characters of the A&E treatment code. Alongside the count of attendances for each A&E treatment are percentage values of that count as a proportion of all the attendances in A&E HES, and as a proportion of attendances excluding records with unknown or unmatched treatment codes.

Total number of attendances in A&E HES by attendance disposal method

The Total number of attendances in A&E HES by attendance disposal method table provides a year-on-year comparison between 2011-12 and 2010-11 of the counts of A&E attendances broken down by the method by which the attendee left A&E (the disposal method). Alongside the count of attendances for each disposal method is the percentage value of that count as a proportion of all the attendances in A&E HES. The table aggregates data by attendance disposal method at two levels of granularity. At the higher level the disposal methods are: Admitted / became a lodged patient, Discharged - follow up by GP, Discharged - no follow up required, Referred and Others. Figures for the Referred and Others disposal methods are also broken down further to present the figures for the disposal methods that are grouped together under those headings.

Number of A&E attendances, recorded in A&E HES (excluding planned follow-up attendances) and Weekly A&E Sit Reps by each provider

The Number of A&E attendances, recorded in A&E HES (excluding planned follow-up attendances) and Weekly A&E Sit Reps by each provider table provides a comparison between recorded attendances at A&E units in A&E HES and in Weekly A&E Sit Reps when broken down by the A&E provider. For each provider data is included on the total number of attendances and on the number of attendances with a duration of less than 4 hours in A&E. The ratio of the number of attendances with a duration of less than 4 hours to the total number of attendances for each provider is also presented as a percentage. For the purposes of this comparison planned follow up attendances are excluded from the A&E HES figures. It should be noted that 112 providers submit A&E data to Weekly Sit Reps that do not submit A&E data to HES; leading to a high number of empty fields in the HES columns.

---

7 Whilst provider counts presented previously in this report (Key Facts, and Comparison of 2010-11 and 2011-12 A&E attendances in A&E HES against those reported in Weekly A&E Sit Reps, broken down by the organisation type) have been aggregated to the 3 character provider code level, they have been presented in this table in their submitted format to allow comparisons between individual providers.
Appendix 5: Table column definitions

This section contains descriptions of the column headers found in the tables that you can download from the HESonline website. Definitions for generic columns (common to all tables) are given first, followed by definitions for columns that are only in specific tables.

General columns

You can find the general column listed below in all the data tables, except Table 2: Number of valid records in HES by A&E key field.

**Number of A&E attendances**

A count of the number of HES records submitted to the Secondary Uses Service (SUS), on behalf of hospital providers, that relate to A&E attendances that ended during the 2011-12 HES year. The data presented in the tables has not been adjusted to account for shortfalls in the number of records submitted, or for missing or invalid clinical information (e.g. diagnosis).

**Date completeness tables**

The data completeness tables have the additional columns below:

**Attendance category**

An indication of whether a patient is making an initial or follow-up attendance within a particular A&E Department. The first attendance (1) is the first in a series, or the only attendance, in a particular A&E Episode. A planned follow-up A&E attendance (2) is a subsequent planned attendance at the same department, and for the same incident as the first attendance. An unplanned follow-up A&E attendance (3) is a subsequent unplanned attendance at the same department, and for the same incident as the first attendance.

**A&E key fields**

The fields that are used to aggregate data in the published tables and charts. The key fields are effectively the subjects of those media.

**Organisation type**

Healthcare provider type.

Attendance category tables

The attendance category tables have the additional columns below:

**Gender**

A derived field containing the gender of the patient. This field is derived from the sex of patient field which contains a code that defines the sex of the patient.

**Age group**
A derived field containing the count of attendances relating to patients who fell within the following inclusive age groups (inclusive) when the attendance began: 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, 90+ and unknown. The source field contains the age in whole years on arrival, calculated from arrival date and date of birth. For patients under 1 year old, special codes apply.

**Month**
The month of attendance of a patient in the A&E department. Derived from the arrival date field.

**Day**
The day of attendance of a patient in the A&E department. Derived from the arrival date field.

**Referral method**
The source of referral for each A&E episode.

**Arrival method**
The mode by which a patient arrived at an A&E department.

**Arrival hour**
The time of patient arrival in the A&E department. For ‘urgent transport requests’ this is the time the vehicle arrives at the specified destination.

**Patient group**
The reason for an A&E episode.

**Attendance by assessment, diagnosis and treatment tables**
The attendance by assessment, diagnosis and treatment tables have the additional columns below:

**First A&E investigation**
The A&E investigation description. This field contains a description of the initial A&E investigation based upon the first 2 characters of the A&E investigation code and only displays a code where it is unclassifiable against the A&E Investigation classification.

**First A&E Diagnosis**
The A&E diagnosis description at 2-character level covering the diagnosis condition. This field contains a description based on the diagnosis condition (first 2 characters) of the A&E diagnosis and only displays a code where it is unclassifiable against the A&E Diagnosis classification.

**First A&E treatment**
The A&E treatment description at 2-character level covering the treatment. This field contains a description based upon the treatment (first 2 characters) of the A&E treatment code and only displays a code where it is unclassifiable against the A&E Investigation classification.

**Duration and disposal tables**
The duration and disposal tables have the additional columns below:

*Disposal Method*
The way in which an A&E attendance ends.

*Provider description*
A derived field that gives the name of a provider. The field is derived from the provider code field.

*Provider Code*
A provider code is a unique code that identifies an organisation acting as a health care provider. It contains only the first three characters (the organisation code) and can be used to identify an individual provider (e.g. NHS Trust or PCT).

*Number of attendances with a duration of less than 4 hrs in A&E*
The time (expressed as a whole number of minutes) between the patient’s arrival, and the time the A&E attendance has concluded and the department is no longer responsible for the care of the patient.
Appendix 6: Data for press release

This section contains the data used to support the associated press release and provides details of where to locate any other relevant information within the other publication documents.

Table 3 below shows the calculation of:

- The average number of attendances per hour in England
- The average number of attendances per hour on a Monday between 10 a.m. and 12 a.m. in England

The data for these calculations is taken from the publication table ‘Chart 3 Data’.

<table>
<thead>
<tr>
<th>Table 3: Press release data</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>Monday 10-12</td>
</tr>
<tr>
<td>Total Attendances (a)</td>
<td>16,244,934</td>
<td>380,746</td>
</tr>
<tr>
<td>No. of days/Mondays in year (b)</td>
<td>365</td>
<td>52</td>
</tr>
<tr>
<td>Number of hours in period (c)</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Average no. of attendances per hour (a/b/c)</td>
<td>1,854</td>
<td>3,661</td>
</tr>
</tbody>
</table>
| Hospital Episode Statistics: Accident and Emergency Attendances in England (Experimental Statistics) 2011-12 | Published by The Health and Social Care Information Centre  
|-------------------------------------------------|-------------------------------------------------|----------------------|
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