Identifying Opportunities to Reduce Acute Hospital Activity

Prepared for Dudley Clinical Commissioning Group
November 2017
The Strategy Unit
Leading research, analysis and change within the NHS

The Strategy Unit was established in 2006, as a small specialist team within a Strategic Health Authority. Today, we’re an autonomous consultancy business (as part of the NHS Midlands and Lancashire CSU), with a team of 30 and an annual turnover in excess of £3 million.

Our mission is simple to improve outcomes by helping our customers successfully navigate complexity and risk. We help commissioners, healthcare providers, universities, charities, national policy makers, and Government to understand the challenges they face, and make the best possible decisions. Our clients, who are at the forefront of UK healthcare, value us as a trusted partner to provide evidence-informed analysis and advice, and the ability to take that into implementation.

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Purpose of this Report

This report provides valuable information to support local health economies in developing their strategic plans. The focus is a comparative assessment of “opportunities” to reduce levels of acute hospital utilisation. In-depth information is presented for more than 30 subsets of hospital activity. These activity subsets may be amenable to interventions aimed at avoiding or reducing activity of a particular type or for a specific condition.

The opportunity definitions are drawn from a range of sources, including: published research, grey literature, and our own experiences working with healthcare organisations over many years. When considered alongside other sources of information, the analyses included in this report can help steer health economies to direct resources to areas most likely to lead to improvements in quality, outcomes, and cost savings.
Opportunities to Reduce Acute Hospital Activity
Inpatient Admissions

Admissions from ED of patients with mental health problems

Ambulatory care sensitive:
- Chronic conditions
- Acute conditions
- Vaccine preventable

Alcohol related:
- Wholly attributable
- Partially attributable – chronic conditions
- Partially attributable – acute conditions

End of life care:
- Death within 2 days following admission
- Death between 3 and 14 days following admission

Falls related

Frail elderly admissions:
- Usually managed in a non-acute setting
- Occasionally managed in a non-acute setting

Medically unexplained symptoms

Medicines related:
- Explicit
- Implicit NSAIDs
- Implicit Anti-Diabetics
- Implicit Benzodiazepines
- Implicit Diuretics

No overnight stay, no procedure, discharged:
- Children
- Adults

Obesity related:
- Largely attributable
- Somewhat attributable
- Marginally attributable

Procedures of Limited Clinical Value (PLCVs):
- Relatively ineffective
- Close benefit / harm ratio
- Probably aesthetic
- Cost effective alternative

Self-harm

Smoking related:
- Largely attributable
- Somewhat attributable
Opportunities to Reduce Acute Hospital Activity
Emergency Department and Outpatient Attendances

**Emergency Department (ED)**
- Frequent attenders
- Increase use of ambulance “See & Treat” and “Hear & Treat”
- Low acuity ED attendances
- Patients leaving ED before being seen

**Outpatient**
- Consultant to consultant referrals
- GP referred first outpatient attendances:
  - Medical specialties: adults
  - Medical specialties: children
  - Surgical specialties: adults
  - Surgical specialties: children
Data Sources

There are three potential sources that we could have used as the basis for this report:

- Secondary Uses Service (SUS)
- Secondary Uses Service Payment by Results (SUS PbR)
- Hospital Episodes Statistics (HES)

All hospital activity and cost data used in the this report are taken from the Secondary Uses Service (SUS) datasets. SUS is a centralised data warehouse that is populated by data feeds from hospital patient administration systems.

The Strategy Unit is able to access SUS data for the nineteen West Midlands CCGs listed in Table 1 via our host organisation, the Midlands and Lancashire Commissioning Support Unit. Data is unavailable for the 3 remaining West Midlands CCGs: North Warwickshire, Coventry and Rugby, and South Warwickshire.

Where references are made to a DSR (Directly Standardised Rate), the standard population used is the 2013 European Standard Population (1), with an upper age group of 90 plus. The index or study population used is the resident population estimate for the CCG.

<table>
<thead>
<tr>
<th>Code</th>
<th>CCG</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13P</td>
<td>Birmingham CrossCity</td>
<td>Bcc</td>
</tr>
<tr>
<td>04X</td>
<td>Birmingham South Central</td>
<td>Bsc</td>
</tr>
<tr>
<td>04Y</td>
<td>Cannock Chase</td>
<td>Can</td>
</tr>
<tr>
<td>05C</td>
<td>Dudley</td>
<td>Dud</td>
</tr>
<tr>
<td>05D</td>
<td>East Staffordshire</td>
<td>Est</td>
</tr>
<tr>
<td>05F</td>
<td>Herefordshire</td>
<td>Her</td>
</tr>
<tr>
<td>05G</td>
<td>North Staffordshire</td>
<td>Nst</td>
</tr>
<tr>
<td>05J</td>
<td>Redditch and Bromsgrove</td>
<td>Red</td>
</tr>
<tr>
<td>05N</td>
<td>Shropshire</td>
<td>Shr</td>
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<tr>
<td>05P</td>
<td>Solihull</td>
<td>Sol</td>
</tr>
<tr>
<td>05Q</td>
<td>South East Staffordshire and Seisdon Peninsula</td>
<td>Ses</td>
</tr>
<tr>
<td>05L</td>
<td>Sandwell and West Birmingham</td>
<td>Swb</td>
</tr>
<tr>
<td>05T</td>
<td>South Worcestershire</td>
<td>Swo</td>
</tr>
<tr>
<td>05V</td>
<td>Stafford and Surrounds</td>
<td>Sas</td>
</tr>
<tr>
<td>05W</td>
<td>Stoke on Trent</td>
<td>Sto</td>
</tr>
<tr>
<td>05X</td>
<td>Telford &amp; Wrekin</td>
<td>Tel</td>
</tr>
<tr>
<td>05Y</td>
<td>Walsall</td>
<td>Wal</td>
</tr>
<tr>
<td>06A</td>
<td>Wolverhampton</td>
<td>Wol</td>
</tr>
<tr>
<td>06D</td>
<td>Wyre Forest</td>
<td>Wyr</td>
</tr>
</tbody>
</table>

Table 1. West Midlands CCGs included in this report.

References

Registered and Resident Populations

There are two alternative sources of information for a CCGs responsible population:

The first is an estimate from the Office for National Statistics (ONS) of the “usually resident population” living within a geographically defined area.

The second, the registered population of a CCG, is the number of people currently registered at GP practices affiliated to that CCG. Among this number, there may be a substantial proportion who live outside the geographical boundary of the CCG.

Both measure subtly different concepts and have their own strengths and weaknesses.

Registered population

The numbers of patients registered at a GP Practice are published quarterly by NHS Digital. The data are sourced from the GP payments system, which is part of the wider National Health Application and Infrastructure Services (NHAIS) system. It is a live system and the data extracted represent a snapshot view at a point in time. The total number of people registered at GP practices in England is known to overstate the number of people estimated to be resident in England. In April 2017 there were 58m people registered with practices compared with an estimated resident population of 55m (June 2016). No projections of the likely future size of the registered population are produced.
Registered and Resident Populations

Resident population

The Office for National Statistics publish annual mid-year estimates of the size of the “usually resident population”. This is the population who have been usually resident for a period of at least 12 months, or, if they have been resident for less than this period, intend to stay for at least 12 months in total. Visitors and short term immigrants are not included, but usual residents of the UK temporarily visiting another country are included. Estimates for CCG areas are formed from groups of Lower Layer Super Output Areas (LSOAs), which are a level of geography designed specifically for the reporting of small area statistics. Projections of the likely future size and age structure of the population are also produced. These projections are widely used for resource allocation and planning.

In this report we use counts of hospital activity for the registered population alongside ONS estimates of the resident population. However, we acknowledge that for some CCGs this will lead to different values than if we used the registered population. The table shown right compares the registered and resident populations for all CCGs included in this report. Where a CCG’s registered population is significantly greater than its resident population activity rates will be inflated relative to other CCGs with smaller differences. Importantly though, the effect will be similar across all “opportunities” so for any single CCG the ranking of opportunities by potential savings is likely to remain unchanged.

<table>
<thead>
<tr>
<th>CCG</th>
<th>Resident</th>
<th>Registered</th>
<th>Resident as % of registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birmingham South Central</td>
<td>205,798</td>
<td>305,721</td>
<td>67</td>
</tr>
<tr>
<td>Sandwell and West Birmingham</td>
<td>493,200</td>
<td>568,403</td>
<td>87</td>
</tr>
<tr>
<td>Solihull</td>
<td>211,804</td>
<td>243,996</td>
<td>87</td>
</tr>
<tr>
<td>Wyre Forest</td>
<td>99,360</td>
<td>114,574</td>
<td>87</td>
</tr>
<tr>
<td>East Staffordshire</td>
<td>126,625</td>
<td>138,937</td>
<td>91</td>
</tr>
<tr>
<td>Stoke on Trent</td>
<td>260,869</td>
<td>286,445</td>
<td>91</td>
</tr>
<tr>
<td>Telford &amp; Wrekin</td>
<td>171,042</td>
<td>180,701</td>
<td>95</td>
</tr>
<tr>
<td>Wolverhampton</td>
<td>255,914</td>
<td>270,172</td>
<td>95</td>
</tr>
<tr>
<td>South Worcestershire</td>
<td>300,017</td>
<td>303,036</td>
<td>99</td>
</tr>
<tr>
<td>Walsall</td>
<td>277,189</td>
<td>279,773</td>
<td>99</td>
</tr>
<tr>
<td>Dudley</td>
<td>316,986</td>
<td>315,825</td>
<td>100</td>
</tr>
<tr>
<td>North Staffordshire</td>
<td>217,008</td>
<td>216,199</td>
<td>100</td>
</tr>
<tr>
<td>Cannock Chase</td>
<td>135,018</td>
<td>131,790</td>
<td>102</td>
</tr>
<tr>
<td>Herefordshire</td>
<td>189,246</td>
<td>184,716</td>
<td>102</td>
</tr>
<tr>
<td>Shropshire</td>
<td>312,407</td>
<td>304,859</td>
<td>102</td>
</tr>
<tr>
<td>Redditch and Bromsgrove</td>
<td>180,973</td>
<td>174,921</td>
<td>103</td>
</tr>
<tr>
<td>SE Staffordshire and Seisdon Peninsula</td>
<td>225,649</td>
<td>216,951</td>
<td>104</td>
</tr>
<tr>
<td>Stafford and Surrounds</td>
<td>153,253</td>
<td>146,911</td>
<td>104</td>
</tr>
<tr>
<td>Birmingham CrossCity</td>
<td>745,709</td>
<td>712,536</td>
<td>105</td>
</tr>
</tbody>
</table>

Table 2. A comparison of resident and registered populations of CCGs included in this report.
To compare values among areas or groups of different size, a count is typically converted into a per capita value or rate. In the healthcare arena an additional step is often performed that allows fair comparison between areas with different age and gender structures.

There are two methods of standardisation; direct and indirect. In practice both methods usually give similar results. Throughout this report, directly standardised rates (DSRs) are used. These are rates that an area would experience if it had the same age and gender distribution as a chosen standard population. The standard population used is the 2013 European Standard Population. A key advantage of the direct method (over the indirect method) is that it is considered a fairer method for making multiple comparisons across a large number of units or areas.

Note that where an opportunity relates specifically to children, adults have not been excluded from the DSR calculations.
Estimates for potential savings are calculated with reference to the utilisation rates and spend of comparator CCGs.

Because of considerable overlap between strategies to reduce acute hospital activity, individual admissions or attendances can appear in multiple opportunities. The savings estimates for any single opportunity are accurate, but an assessment of overall potential savings that aggregates savings across multiple opportunities will be inflated by “double-counting” of spells or attendances that appear in more than one opportunity.

For example, across all the inpatient opportunities, around 40% of the admissions selected in at least one of the activity subgroups will also appear in one or more of the other subgroups.

The three care settings—inpatient, ED, and outpatient are modelled independently. This means that additional savings may be possible from the avoidance of related activity across settings e.g. if an inpatient admission is avoided then this may also mean a related ED attendance is also avoided.
Questions Addressed by this Report

For each opportunity, this report addresses the following questions:

1. How have levels of activity of this type changed over time?
2. After taking account of its demographic structure, does the CCG see more or less activity of this type than other CCGs?
3. How does the rate of change (over time) of this type of activity compare with other CCGs?
4. How much activity of this type took place in 2016-17, and how much did the CCG spend?
The question above is addressed with the aid of time series chart. On the vertical axis, the directly standardised rate (per 100,000 population), controls for differences in the age and gender structure over time. It is important to note that we have assumed that coding practice has been consistent in this period. Any dramatic changes in rates may be the result of revisions to national or local coding practice.
2. After taking account of its demographic structure, does the CCG see more or less activity of this type than other CCGs?

When comparing utilisation rates, or rates of change, there will always be some differences between CCGs. Funnel plots of activity display the directly standardised rate of activity for each CCG, and may be used to help CCGs understand whether variation might be explained by chance (common cause variation), or by other factors (special cause variation).

When investigating differences in standardised rates, CCGs may wish to consider whether the variation could be explained by difference or changes in (1) ;

- need and demand (2)
- data and coding
- policy and regulation
- organisational structures
- process of care
- referral agent behaviour
- clinician behaviour.

References

1. This list was adapted from the pyramid model in Mohammed MA, Rathbone A, Myers P, et al. An investigation into general practitioners associated with high patient mortality flagged up through the Shipman inquiry: retrospective analysis of routine data. BMJ. 2004;328:1474–1477.

2. Given that the utilisation rates have been age/sex standardised, differences in rates cannot be readily attributed to differences in CCG age/sex structure.
2. After taking account of its demographic structure, does the CCG see more or less activity of this type than other CCGs?

A funnel plot can be interpreted in the same way as a scatter plot. Here, each CCG is represented by a dot.

For the activity rates, the position of a dot relative to the vertical axis represents the directly standardised rate of activity for the CCG.

The location of a dot relative to the horizontal axis represents the CCG’s population (standardised* for the given opportunity).

A funnel and horizontal line are superimposed on the scatter plot. The line represents the West Midlands average rate. The funnel shows the 3 sigma limit for a variable population size. If a point is outside the funnel there is a 99.7% likelihood that the difference from the average is not due to chance (i.e., we have a special cause for this variation).

* This idea can be a little tricky to interpret, so here is our attempt to clarify. The horizontal axis shows the size of the CCG population that would be expected given the number of observed events in the CCG (having taken account of the age and gender profile of its population).

Without this adjustment, we would need a separate funnel plot for each age group and gender. The adjustment allows age and gender specific rates of a CCG to be quoted as a single (direct) standardised rate. One other way to explain this is to say that the calculation corrects for differences in the age and gender structure of CCGs given the number of observed events in each CCG.
3. How does the rate of change of this type of activity compare with the other CCGs?

Funnel plots are also used to compare the percentage change in activity rates over a 5 year period.

A funnel plot can be interpreted in the same way as a scatter plot. Here, each CCG is represented by a dot. The position of a dot relative to the vertical axis represents the percentage change in rate of activity for a CCG in the last five years. The location of a dot relative to the horizontal axis represents a CCG’s activity in the first year of the period.

A funnel and horizontal line are superimposed on the scatter plot. The line represents the West Midlands average rate. The funnel shows the 3 sigma limit for a variable population size.

If a point is outside the funnel there is a 99.7% likelihood that the difference from the average is not due to chance (i.e., we have a special cause for this variation).
4. How much activity of this type took place in 2016-17, and how much did the CCG spend?

A summary of CCG activity and spend can be found in table form at the start of each chapter, and in boxes - like those below – on each graphical summary slide.

Please note that activity numbers, and cost per unit activity have been rounded to the nearest 10. Total spend has been rounded to the nearest £100,000.

<table>
<thead>
<tr>
<th>1,010 admissions</th>
<th>£5.5M spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4% of all admissions</td>
<td>£1,350 per unit activity</td>
</tr>
</tbody>
</table>
Inpatient Opportunities
## Inpatient Summary

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Admissions</th>
<th>2016-17 Spend (000s)</th>
<th>Rate</th>
<th>Rate of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS Acute</td>
<td>2,750</td>
<td>£3,445</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>ACS Chronic</td>
<td>2,680</td>
<td>£4,856</td>
<td>Low</td>
<td>-</td>
</tr>
<tr>
<td>ACS Vaccine</td>
<td>1,770</td>
<td>£5,085</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>Alcohol (wholly)</td>
<td>1,220</td>
<td>£1,724</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Alcohol (partially - chronic)</td>
<td>4,970</td>
<td>£7,775</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Alcohol (partially - acute)</td>
<td>1,930</td>
<td>£2,506</td>
<td>High</td>
<td>High</td>
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<tr>
<td>End of Life Care (3-14 days)</td>
<td>320</td>
<td>£1,030</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>End of Life Care (0-2 days)</td>
<td>200</td>
<td>£305</td>
<td>High</td>
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<tr>
<td>Falls</td>
<td>3,620</td>
<td>£8,873</td>
<td>High</td>
<td>-</td>
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<tr>
<td>Frail Elderly (occasional)</td>
<td>1,090</td>
<td>£2,349</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>Frail Elderly (usual)</td>
<td>2,800</td>
<td>£5,892</td>
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</tr>
<tr>
<td>Medically Unexplained</td>
<td>2,500</td>
<td>£1,795</td>
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<td>High</td>
</tr>
<tr>
<td>Medicines - Explicit</td>
<td>560</td>
<td>£1,137</td>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>Medicines - Implicit AntiDiab</td>
<td>190</td>
<td>£288</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>Medicines - Implicit Benzo</td>
<td>310</td>
<td>£771</td>
<td>High</td>
<td>-</td>
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<tr>
<td>Medicines - Implicit Diuretics</td>
<td>370</td>
<td>£429</td>
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<td>Medicines - Implicit NSAIDs</td>
<td>180</td>
<td>£360</td>
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<td>Obesity (largely)</td>
<td>40</td>
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<td>Obesity (marginal)</td>
<td>340</td>
<td>£733</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Obesity (somewhat)</td>
<td>2,150</td>
<td>£4,755</td>
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<td>PLCV Cosmetic</td>
<td>690</td>
<td>£981</td>
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<td>High</td>
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<tr>
<td>PLCV Alternative</td>
<td>1,310</td>
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<tr>
<td>PLCV Ineffective</td>
<td>560</td>
<td>£649</td>
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<td>-</td>
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<tr>
<td>PLCV Risks</td>
<td>1,260</td>
<td>£4,983</td>
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</tr>
<tr>
<td>Mental Health Admissions from ED</td>
<td>360</td>
<td>£320</td>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>Self-harm</td>
<td>770</td>
<td>£526</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Smoking (large)</td>
<td>340</td>
<td>£712</td>
<td>Low</td>
<td>-</td>
</tr>
<tr>
<td>Smoking (somewhat)</td>
<td>4,910</td>
<td>£7,306</td>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>Zero Length of Stay (adult)</td>
<td>11,840</td>
<td>£6,757</td>
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<td>High</td>
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<tr>
<td>Zero Length of Stay (child)</td>
<td>2,490</td>
<td>£1,500</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

Notes: Rate and rate of change comparisons are with other West Midlands CCGs.
## Potential Savings

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>2016-17 Spend (000s)</th>
<th>Savings if Average (000s)</th>
<th>Savings if Top Quartile (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS Acute</td>
<td>£3,445</td>
<td>£541</td>
<td>£1,043</td>
</tr>
<tr>
<td>ACS Chronic</td>
<td>£4,856</td>
<td>£0</td>
<td>£828</td>
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<tr>
<td>ACS Vaccine</td>
<td>£5,085</td>
<td>£541</td>
<td>£1,293</td>
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<tr>
<td>Alcohol (wholly)</td>
<td>£1,724</td>
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<td>£463</td>
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<td>Alcohol (partially - chronic)</td>
<td>£7,775</td>
<td>£757</td>
<td>£1,814</td>
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<td>Alcohol (partially - acute)</td>
<td>£2,506</td>
<td>£413</td>
<td>£976</td>
</tr>
<tr>
<td>End of Life Care (3-14 days)</td>
<td>£1,030</td>
<td>£196</td>
<td>£363</td>
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<tr>
<td>End of Life Care (0-2 days)</td>
<td>£305</td>
<td>£54</td>
<td>£104</td>
</tr>
<tr>
<td>Falls</td>
<td>£8,873</td>
<td>£1,094</td>
<td>£2,033</td>
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<td>Frail Elderly (occasional)</td>
<td>£2,349</td>
<td>£285</td>
<td>£647</td>
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<td>Frail Elderly (usual)</td>
<td>£5,892</td>
<td>£1,421</td>
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<td>Medically Unexplained</td>
<td>£1,795</td>
<td>£423</td>
<td>£988</td>
</tr>
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<td>Medicines - Explicit</td>
<td>£1,137</td>
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<td>£216</td>
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<td>Medicines - Implicit AntiDiab</td>
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<td>£68</td>
<td>£149</td>
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<tr>
<td>Medicines - Implicit Benzo</td>
<td>£771</td>
<td>£130</td>
<td>£218</td>
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<tr>
<td>Medicines - Implicit Diuretics</td>
<td>£429</td>
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<td>£267</td>
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<tr>
<td>Medicines - Implicit NSAIDs</td>
<td>£360</td>
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<td>£154</td>
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<tr>
<td>Obesity (largely)</td>
<td>£195</td>
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<td>Obesity (marginal)</td>
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<tr>
<td>Obesity (somewhat)</td>
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<td>£0</td>
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<td>PLCV Cosmetic</td>
<td>£981</td>
<td>£135</td>
<td>£215</td>
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<tr>
<td>PLCV Alternative</td>
<td>£4,066</td>
<td>£346</td>
<td>£794</td>
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<td>PLCV Risks</td>
<td>£4,983</td>
<td>£495</td>
<td>£1,029</td>
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<tr>
<td>Mental Health Admissions from ED</td>
<td>£320</td>
<td>£29</td>
<td>£145</td>
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<tr>
<td>Self-harm</td>
<td>£526</td>
<td>£125</td>
<td>£186</td>
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<tr>
<td>Smoking (large)</td>
<td>£712</td>
<td>£0</td>
<td>£0</td>
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<tr>
<td>Smoking (somewhat)</td>
<td>£7,306</td>
<td>£170</td>
<td>£1,467</td>
</tr>
<tr>
<td>Zero Length of Stay (adult)</td>
<td>£6,757</td>
<td>£2,773</td>
<td>£4,413</td>
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<tr>
<td>Zero Length of Stay (child)</td>
<td>£1,500</td>
<td>£0</td>
<td>£108</td>
</tr>
</tbody>
</table>

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Potential Savings by Opportunity

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Admissions from ED for Patients with Mental Health Problems

Patients with a mental health diagnosis are thought to be particularly vulnerable to accident and self-harm and, in some instances, do not access healthcare services effectively (1). People with mental ill health typically attend an ED 3 times more and have 5 times the amount of emergency admissions than people without mental ill health (2). This opportunity identifies patients that may benefit from a psychiatric liaison service (often known as RAID). These services aim to identify patients presenting at an ED who have mental health and/or drug and alcohol related problems. These problems can be better dealt with in the community without admission to an acute inpatient bed.

We identify all admissions from the emergency department with a primary diagnosis in ICD10 Chapter 5 (mental and behavioural disorders), where no procedure was performed, and the patient did not die in hospital.

References


Admissions From ED of Patients with Mental Health Problems

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 360 admissions
- £0.3M spent
- 0.4% of all admissions
- £900 per unit activity
Ambulatory or primary care sensitive conditions (ACSCs) are those for which hospital admission could be prevented by interventions in primary care (1).

Sets of ACSCs often include conditions for which acute management should prevent admission, e.g. dehydration and gastroenteritis, and chronic conditions where preventive care should prevent later admission, e.g. complications of diabetes. There is a considerable body of research from the USA on the use of ACSCs as markers of primary care effectiveness.

Research has been undertaken to develop or validate sets of ACSCs in a number of different countries. A range of sets exist based on different understanding or conceptual interpretations of the term “ambulatory care sensitive”.

The most frequently used subset of ACSCs in the NHS in England contains 19 conditions.

These conditions can be classified into one of three sub-groups (2).

1. **Acute conditions** – where early intervention can prevent more serious progression;

2. **Chronic conditions** – where effective care can prevent flare-ups; and

3. **Vaccine-preventable conditions** – where immunisation can prevent illness.

The conditions that make up these subsets are:

**Acute conditions:**
- Dehydration and gastroenteritis
- Pyelonephritis
- Perforated / bleeding ulcer
- Cellulitis
- Pelvic inflammatory disease
- Ear, nose and throat infections
- Dental conditions
- Convulsions and epilepsy
- Gangrene

**Chronic conditions:**
- Asthma
- Congestive heart failure
- Diabetes complications
- COPD
- Angina
- Iron-deficiency anaemia
- Hypertension
- Nutritional deficiencies

**Vaccine-Preventable conditions:**
- Influenza and pneumonia
- Other vaccine-preventable conditions

ACS admissions are identified in hospital episode datasets by ICD10 codes of primary and secondary diagnoses.

**References**


Ambulatory Care Sensitive Conditions

Acute Conditions

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

2,750 admissions
£3.4M spent
3% of all admissions
£1,250 per unit activity
Ambulatory Care Sensitive Conditions

Chronic Conditions

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

- 2,680 admissions
- £4.9M spent
- 3% of all admissions
- £1,810 per unit activity
Ambulatory Care Sensitive Conditions
Vaccine-Preventable Conditions

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

1,770 admissions
£5.1M spent
2% of all admissions
£2,880 per unit activity
Alcohol causes, or can contribute to the development of, many health conditions. For some patients, excessive consumption of alcohol is clearly the primary cause of admission (e.g. acute alcohol intoxication and chronic alcohol dependency). For admissions relating to other conditions alcohol consumption is the primary causal factor in only a proportion of cases.

To obtain estimates of the impact that alcohol has on population health and health service use, Alcohol Attributable Fractions (AAF) are calculated. Attributable fraction values, or population attributable fractions, are the proportion of a health condition or external cause that is attributable to the exposure of a specific risk factor (such as alcohol) in a given population. These fractions are typically derived from measures of the relative risk associated with the exposure of interest, in combination with information about the prevalence of the exposure in the target population.

The population attributable fraction calculation assumes a causal association between risk factor and outcome, meaning that the attributable fraction can also be viewed as the expected proportional reduction in cases of an outcome arising in the population as a result of removing the exposure.

We use a set of alcohol-attributable fractions developed by Jones and Bellis (1).

They calculated AAFs for a total of 52 conditions, including 20 conditions which were wholly attributable to alcohol consumption (e.g. alcoholic liver disease), and 32 conditions that were partially attributable to alcohol. Partially attributable conditions are subcategorised into two groups; chronic conditions (e.g. oesophageal cancer) and acute conditions (e.g. accidents resulting from alcohol misuse). Attributable fractions are age and sex specific, reflecting the difference in exposure, prevalence and physiological differences between males and females, and between age groups.

Jones and Bellis highlight some conditions with a negative attributable fraction where low levels of alcohol consumption were found to have a protective effect, such as type 2 diabetes. We have chosen not to apply this small number of negative fractions. This is consistent with national reporting from NHS Digital.

When identifying alcohol-related admissions we consider all diagnosis codes (primary and any secondary codes) that are recorded in relation to a patient’s admission record. If any of these codes has an alcohol-attributable fraction then that admission forms part of the alcohol-related admissions total.

References

Alcohol-Related Wholly Attributable

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 1,930 admissions
- £2.5M spent
- 2.1% of all admissions
- £1,300 per unit activity
Alcohol-Related
Partially Attributable - Chronic Conditions

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

4,970 admissions
£7.8M spent
5.5% of all admissions
£1,570 per unit activity
Alcohol-Related Partially Attributable - Acute Conditions

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

1,220 admissions
£1.7M spent

1.4% of all admissions
£1,410 per unit activity
End of Life Care

It is well established that the majority of patients would prefer to die either at home or in a hospice (1). By 2030 it is estimated that only one in ten people will die at home, placing considerable pressure on inpatient services which would require significant expansion (2). Identifying the disease trajectory early and planning community care to support death at home would provide end of life experiences that are more in line with the patient and their family’s needs (2), and reduce the cost of admissions for patients with palliative care needs.

We identify admissions where the patient dies in hospital and no procedure is carried out, and there is no indication that the patient experienced any trauma.

These admissions are divided into two groups:

1. Patients who die within 3 days following admission
2. Patients who die between 3 to 14 days following admission

Absence of trauma is determined by the nonappearance of a diagnosis code in ICD10 Chapter 20 – External causes of morbidity and mortality.

References


End Of Life Care - Death Within 2-Days Following Admission

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 200 admissions
- £0.3M spent
- 0.2% of all admissions
- £1,520 per unit activity
End Of Life Care - Death Within 3-14 Days Following Admission

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

- 320 admissions
- £1M spent
- 0.3% of all admissions
- £3,260 per unit activity
Falls-Related Admissions

Falls and fall-related injuries are a common and serious problem for older people. People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year.(1) Effective fall prevention strategies can reduce the number of people who fall, the rate of falls and the severity of injury should a fall occur.

We identify admissions where the patient is 65 years-old or over, is admitted as an emergency, and at least one diagnosis code from the following three groups is present:

1. **Explicit** – where a fall is indicated as a cause (e.g. cause code W06 – fall involving bed)

2. **Implicit** – where the patient is recorded as having a tendency to fall (diagnosis code R296 – tendency to fall nec)

3. **Implicit** – fractures commonly resulting from a fall (e.g. diagnosis code S424 – fracture of lower end of humerus).

These three groups are not, by definition, exclusive of one another.

**References**

Falls-Related

Trend in Directly Standardised Rate, 2012-13 to 2016-17

DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17

Percentage change in DSR [Vertical Axis]

- 3,620 admissions
- £8.9M spent
- 4% of all admissions
- £2,450 per unit activity
Admissions for persons 75 years-old or over where the primary diagnosis would not normally require an otherwise fit and healthy person to be admitted.

These admissions are categorised into one of two groups:

1. Admissions which usually have the potential to be treated in a non-acute setting; and

2. Admissions which occasionally have the potential to be treated in a non-acute setting.

This classification was developed with guidance from Professor Ian Philp, a leading expert in the care of older people.
Frail Elderly Admissions
Could Usually be Managed in a Non-Acute Setting

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 2,800 admissions
- £5.9M spent
- 3.1% of all admissions
- £2,110 per unit activity
Frail Elderly Admissions
Could Occasionally be Managed in a Non-Acute Setting

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

1,090 admissions
£2.3M spent

1.2% of all admissions
£2,150 per unit activity
Medically Unexplained Symptoms

Medically unexplained symptoms can be defined as conditions where the patient experiences symptoms (such as headaches, insomnia, palpitations etc.) that cannot be explained despite intensive medical assessment (1). Research suggests medically unexplained symptoms are the presenting problem for approximately 20% of primary care attendances and account for 8% of inpatient bed days (2). This group of patients have disproportionately high rates of healthcare utilisation and often receive potentially unnecessary referrals, investigations and treatments (3). The cost to the NHS in 2008/09 for medically unexplained symptoms was £2.9bn which is comparable to the cost of dementia (4). These patients may derive greater benefit from a psychological therapy rather than an acute hospital admission.

These admissions are identified using a set of ICD10 codes defined by NHS South Central.

References


Medically Unexplained Symptoms

Trend in Directly Standardised Rate, 2012-13 to 2016-17

- DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17

- Percentage change in DSR [Vertical Axis]

Directly Standardised Rate, 2016-17

- DSR per 100k population [Vertical Axis]

- Standardised population 2016-17

2,500 admissions

£1.8M spent

2.8% of all admissions

£720 per unit activity
Medicines-Related Admissions

There are several ways in which use of medicines can lead to harm (1).

1. Adverse drug reactions – even correctly prescribed and correctly used medicines can harm through side-effects or unanticipated allergic reactions.

2. Medication errors or medicines mismanagement – prescribing errors, dispensing errors, monitoring errors and administration errors all have potential to cause harm.

3. Poor adherence – harm may arise through incorrect use, or non-use, by the patient.

Together, medication-related harms cause around 2.7–8.0% of UK hospital admissions. Some of these admissions may be preventable with better medicine management.

We identify two groups of admissions where medicines may have been a factor.

1. Explicitly coded – based on the presence of one or more of a small number of specific cause codes indicating adverse effects of medicines.

2. Implicitly coded – admissions where there is indirect evidence of an adverse reaction to or poor management of medicines in one of the following four groups:
   - NSAIDs
   - Anti-Diabetics
   - Benzodiazepines
   - Diuretics

The implicitly coded admissions are identified using specific combinations of primary and secondary diagnoses that link a patient’s condition and a possible problem with medicines used to treat that condition. For example, an admission with a secondary diagnosis of insulin-dependent diabetes mellitus and a primary diagnosis of drug-induced hypoglycaemia without coma would appear in the implicitly coded anti-diabetics medicines subgroup.

References

Medicines-Related
Explicitly Coded

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

560 admissions
£1.1M spent

0.6% of all admissions
£2,020 per unit activity
Medicines-Related Anti-Diabetics

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

190 admissions
£0.3M spent
0.2% of all admissions
£1,480 per unit activity
Medicines-Related Benzodiazepines

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 310 admissions
- £0.8M spent
- 0.3% of all admissions
- £2,460 per unit activity
Medicines-Related 
Diuretics

**Trend in Directly Standardised Rate, 2012-13 to 2016-17**

DSR per 100k population [Vertical Axis]

**Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17**

Percentage change in DSR [Vertical Axis]

**Directly Standardised Rate, 2016-17**

DSR per 100k population [Vertical Axis]

**370 admissions**

**£0.4M spent**

**0.4% of all admissions**

**£1,150 per unit activity**
Medicines-Related NSAIDs

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

<table>
<thead>
<tr>
<th>180 admissions</th>
<th>£0.4M spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2% of all admissions</td>
<td>£1,980 per unit activity</td>
</tr>
</tbody>
</table>
An emergency admission where a patient is discharged on the same day without a procedure being carried out may indicate that the patient could have been treated in a non-acute setting.

We identify patients admitted as an emergency who are discharged on the same day without undergoing a procedure.

These admissions are divided into two groups:

1. children (0–17)
2. adults (18+)
No Overnight Stay, No Procedure, Discharged Adults

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 11,840 admissions
- £6.8M spent
- 13.1% of all admissions
- £570 per unit activity
No Overnight Stay, No Procedure, Discharged

Children

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

| 2,490 admissions | £1.5M spent |
| 2.8% of all admissions | £600 per unit activity |
Obesity is a condition in which weight gain has reached the point of seriously endangering health. Obese people are more likely to suffer from a number of serious chronic diseases, many of which are life limiting. Besides the physical effects, the psychological and social burdens of obesity can also be debilitating. The contribution of a risk factor to a disease (or death) is quantified using population attributable fractions (PAF). Population attributable fractions, or attributable fraction values, are the proportion of a health condition or external cause that is attributable to the exposure of a specific risk factor (such as obesity) in a given population. These fractions are typically derived from measures of the relative risk associated with the exposure of interest, in combination with information about the prevalence of the exposure in the target population. The population attributable fraction calculation assumes a causal association between risk factor and outcome, meaning that the attributable fraction can also be viewed as the expected proportional reduction in cases of an outcome arising in the population as a result of removing the exposure.

We use a set of obesity-attributable fractions produced for a National Audit Office report.(1) Obesity-attributable fractions were calculated for 13 separate conditions. Attributable fractions are sex and age specific to reflect the difference in exposure, prevalence and physiological differences between males and females and between age groups.

When identifying obesity-related admissions we consider only primary diagnosis codes as oppose to primary and any secondary codes recorded in relation to a patient’s admission record.

We group conditions based on estimates of the proportion of attributable cases.

- Largely attributable (>50% cases attributable to obesity)
- Somewhat attributable (25-49%)
- Marginally attributable (<25%)

It is important to remember that we identify all admissions that may be attributable, not all admissions that are attributable.

References

Obesity-Related
Largely Attributable (50% - 100%)

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

40 admissions
£0.2M spent
0% of all admissions
£4,650 per unit activity
Obesity-Related
Somewhat Attributable (25-49%)

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

2,150 admissions
£4.8M spent
2.4% of all admissions
£2,210 per unit activity
Obesity-Related
Marginally Attributable (<25%)

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 340 admissions
- £0.7M spent
- 0.4% of all admissions
- £2,190 per unit activity
Procedures Of Limited Clinical Value (PLCV)

A procedure of limited clinical value is considered either clinically ineffective, or cost-ineffective. Reducing expenditure on procedures of low clinical value will enable CCGs to invest in services with better clinical outcomes (1).

Whilst a definitive list of PLCVs does not exist, the “Croydon List”, originally produced by Croydon PCT, was adopted in the London area and has gained widespread acceptance among commissioners across England. The Croydon List, which is used in this report, names 34 low priority treatments from more than 250 which have been identified as ineffective or cost-ineffective by different CCGs.

PLCVs are usually broken into four groups:

• Relatively ineffective interventions
• Probably aesthetic interventions
• Effective interventions with a close benefit/risk balance in mild cases
• Effective interventions where cost effective interventions should be tried first

References

Procedures of Limited Clinical Value
Probably Aesthetic

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

- 690 admissions
- £1M spent
- 0.8% of all admissions
- £1,430 per unit activity
Procedures of Limited Clinical Value
Effective but More Cost-Effective Options should be Tried First

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

1,310 admissions
£4.1M spent

1.4% of all admissions
£3,110 per unit activity
Procedures of Limited Clinical Value
Relatively Ineffective

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

560 admissions
£0.6M spent

0.6% of all admissions
£1,150 per unit activity
Procedures of Limited Clinical Value
Effective but with a Close Risk/Benefit Balance in Mild Cases

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

1,260 admissions
£5M spent
1.4% of all admissions
£3,970 per unit activity
Self-Harm Related Admissions

Deliberate self-harm is a common reason for emergency medical admission. The benefits of admission are, however, uncertain and some patients could be managed by primary or community mental health services.

We identify all admissions with an ICD10 cause code relating to intentional self-harm or intentional self-poisoning.

References

Self-Harm

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

770 admissions
£0.5M spent
0.8% of all admissions
£690 per unit activity
Smoking-Related Admissions

Smoking is the most important cause of preventable ill health and premature mortality in the UK. Smoking is a major risk factor for many diseases, such as lung cancer, chronic obstructive pulmonary disease (COPD) and heart disease. It is also associated with cancers in other organs, including lip, mouth, throat, bladder, kidney, stomach, liver and cervix.

The contribution of a risk factor to a disease (or death) is quantified using population attributable fractions (PAF). Population attributable fractions, or attributable fraction values, are the proportion of a health condition or external cause that is attributable to the exposure of a specific risk factor (such as smoking) in a given population. These fractions are typically derived from measures of the relative risk associated with the exposure of interest, in combination with information about the prevalence of the exposure in the target population. The population attributable fraction calculation assumes a causal association between risk factor and outcome, meaning that the attributable fraction can also be viewed as the expected proportional reduction in cases of an outcome arising in the population as a result of removing the exposure.

We use a set of smoking-attributable fractions produced for the West Midlands Public Health Group. Smoking-attributable fractions were estimated for 34 diseases.

When identifying smoking-related admissions we consider only primary diagnosis codes as oppose to primary and any secondary codes recorded in relation to a patient’s admission record.

We group diseases/conditions based on estimates of the proportion of attributable cases.

• Largely attributable (>50% cases attributable to smoking)
• Somewhat attributable (25-49%)

It is important to remember that we identify all admissions that may be attributable, not all admissions that are attributable.

References

**Smoking-Related**

**Largely Attributable (>50%)**

Trend in Directly Standardised Rate, 2012-13 to 2016-17

- DSR per 100k population [Vertical Axis]

<table>
<thead>
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<th>Year</th>
<th>Admissions</th>
<th>Spending (£M)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>340</td>
<td>£0.7M</td>
<td>0.4%</td>
</tr>
<tr>
<td>2016-17</td>
<td>-</td>
<td>£2,110</td>
<td>-</td>
</tr>
</tbody>
</table>
Smoking-Related
Somewhat Attributable (25-49%)

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

4,910 admissions
£7.3M spent

5.4% of all admissions
£1,490 per unit activity
Emergency Department Opportunities
## Emergency Department Summary

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Activity</th>
<th>2016-17 Spend (000s)</th>
<th>Rate</th>
<th>Rate of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulance Conveyed, No Treatment</td>
<td>1,400</td>
<td>£103</td>
<td>High</td>
<td>High</td>
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<tr>
<td>Frequent Attenders</td>
<td>17,530</td>
<td>£2,092</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Left Before Seen</td>
<td>1,860</td>
<td>£137</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Low Acuity ED</td>
<td>24,570</td>
<td>£1,885</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Notes: Rate and rate of change comparisons are with other West Midlands CCGs.
## Potential Savings

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>2016-17 Spend (000s)</th>
<th>Savings if Average (000s)</th>
<th>Savings if Top Quartile (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulance Conveyed, No Treatment</td>
<td>£103</td>
<td>£19</td>
<td>£36</td>
</tr>
<tr>
<td>Frequent Attenders</td>
<td>£2,092</td>
<td>£0</td>
<td>£508</td>
</tr>
<tr>
<td>Left Before Seen</td>
<td>£137</td>
<td>£0</td>
<td>£0</td>
</tr>
<tr>
<td>Low Acuity ED</td>
<td>£1,885</td>
<td>£0</td>
<td>£0</td>
</tr>
</tbody>
</table>

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Savings by Opportunity

Potential savings (£ millions)

Ambulance Conveyed, No Treatment

Low Acuity ED

Left Before Seen

Frequent Attenders

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Frequent Attenders

Frequent attenders is a term used to describe patients who attend a health care facility repeatedly. This group of patients make a disproportionate number of visits to emergency departments. There is no common definition on what constitutes a “frequent attender” and study definitions vary from more than 4 to 12 or more visits per year (1). We identify all attendances of patients that attended the same ED 3 or more times in a 12-month period.

The College of Emergency Medicine has produced a best practice guideline on managing frequent attenders in the emergency department (2).

References


Frequent Attenders

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

17,530 attendances
£2.1M spent

19.7% of all attendances
£120 per unit activity
Approximately 70% of patients treated by the ambulance service are conveyed to hospital, reducing the number of avoidable conveyances will save the health service money and will improve patient care, especially for the elderly (1). Initiatives such as Hear & Treat and See & Treat are alternatives responses and are aimed at shifting the balance of care away from acute hospitals into home and community settings. It allows patients who require urgent medical attention to receive the care they need and allows minor problems to be dealt with over the phone or be treated and discharged at the scene, with no need for conveyance (2).

This indicator identifies attendances of those where patients were conveyed to ED via ambulance but were subsequently discharged following no investigation and no treatment. The following combination of codes are used to identify these cases:

- Arrival mode is “1” (brought in by ambulance) and
- Investigation code is null or ‘none’ and
- Treatment code is “NULL” or “22” (guidance/advice only) or “99” (none) and
- Disposal code is “3” (discharged – did not require any follow-up treatment)

**References**


Ambulance Conveyed, No Investigations, Not Admitted

Trend in Directly Standardised Rate, 2012-13 to 2016-17

Directly Standardised Rate, 2016-17

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17

1,400 attendances
£0.1M spent
1.6% of all attendances
£70 per unit activity
Low Acuity ED Attendances

This indicator identifies attendances where low cost investigations or treatments were carried out and the patients were discharged or referred back to their GP. Between 10 and 30% of patients presenting to ED could be classified as primary cases meaning they are cases that are regularly seen in general practice and do not require specialisms in emergency medicine (1). Primary care or Urgent care centre services could safely and appropriately deal with low acuity conditions such as fever, diarrhoea and vomiting. These attendances could be avoided if patients understood better which services to access and when, therefore campaigns promoting alternative services for lower acuity cases may alleviate some pressure on ED (2).

We identify all attendances where no or low cost investigations or treatments were carried out and the patient was either discharged without follow-up treatment or discharged with follow-up treatment to be provided by their general practitioner.

The following HRG codes are used to identify these attendances.

- VB06Z – Category 1 investigation with category 3-4 treatment
- VB07Z – Category 2 investigation with category 2 treatment
- VB08Z – Category 2 investigation with category 1 treatment
- VB09 – Category 1 investigation with category 1-2 treatment
- VB10Z – Dental care
- VB11Z – No investigation with no significant treatment

References

1. Primary Care Foundation (2010) Primary care and emergency departments. Available from: http://www.primarycarefoundation.co.uk/images/PrimaryCareFoundation/Downloading_Reports/Reports_and_Articles/Primary_Care_and_Emergency_Departments/Primary_Care_and_Emergency_Departments_RELEASE.pdf [Accessed 19th October]

Low Acuity ED Attendances

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- **24,570** attendances
- **£1.9M** spent
- **27.7%** of all attendances
- **£80** per unit activity
Patients Leaving ED Before Being Seen

A small percentage of patients leave the emergency department before being seen. The number of patients who leave before being seen increases with extended waiting times and is often used as an indicator of patient experience. Alarmingly 50% of those patients that leave ED require urgent medical attention which can increase the clinical risk of these patients as they may have health conditions that will deteriorate without treatment. Emergency departments have started checking up on patients to ensure they are still waiting and have implemented strategies to reduce waiting times. For those patients that leave without being seen and do not require urgent medical attention, attention should be directed towards educating them regarding alternatives such as urgent care centres or GP practices (1).

References:

Patients Leaving ED Before Being Seen

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

1,860 attendances
£0.1M spent
2.1% of all attendances
£70 per unit activity
# Outpatient Summary Table

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Activity</th>
<th>2016-17 Spend (000s)</th>
<th>Rate</th>
<th>Rate of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant-Consultant Referral</td>
<td>26,030</td>
<td>£3,203</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>GP referred Medical (adult)</td>
<td>20,740</td>
<td>£3,172</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>GP referred Medical (child)</td>
<td>2,560</td>
<td>£580</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>GP referred Surg (adult)</td>
<td>23,760</td>
<td>£3,139</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>GP referred Surg (child)</td>
<td>2,060</td>
<td>£283</td>
<td>Low</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes: Rate and rate of change comparisons are with other West Midlands CCGs.
### Potential Savings

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>2016-17 Spend (000s)</th>
<th>Savings if Average (000s)</th>
<th>Savings if Top Quartile (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant-Consultant Referral</td>
<td>£3,203</td>
<td>£0</td>
<td>£291</td>
</tr>
<tr>
<td>GP referred Medical (adult)</td>
<td>£3,172</td>
<td>£0</td>
<td>£0</td>
</tr>
<tr>
<td>GP referred Medical (child)</td>
<td>£580</td>
<td>£0</td>
<td>£0</td>
</tr>
<tr>
<td>GP referred Surg (adult)</td>
<td>£3,139</td>
<td>£0</td>
<td>£242</td>
</tr>
<tr>
<td>GP referred Surg (child)</td>
<td>£283</td>
<td>£0</td>
<td>£0</td>
</tr>
</tbody>
</table>

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Savings by Opportunity

Potential savings (£ millions)

0.0

0.1

0.2

GP referred Surg (child)

GP referred Surg (adult)

GP referred Medical (child)

GP referred Medical (adult)

Consultant-Consultant Referral

Notes: Savings estimates are the total savings achievable if activity for a particular sub-group was reduced from its current level to the average or top quartile of other West Midlands CCGs.
Consultant to Consultant Referrals

Consultant to consultant referrals represent a small proportion of referrals yet are the main source of non-GP referrals. Some CCGs have developed protocols and guidelines which only allow consultant to consultant referrals when an investigation or treatment is completed by another speciality or when it is deemed as clinically urgent. Commissioners may look to reduce the number of referrals to gain a greater control of their budget and free up consultant time (1).

References

Consultant to Consultant Referrals

Trend in Directly Standardised Rate, 2012-13 to 2016-17

DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17

Percentage change in DSR [Vertical Axis]

26,030 attendances
£3.2M spent
5.3% of all attendances
£120 per unit activity
GP Referred First Outpatient Attendances

Evidence suggests that not all GP referred Outpatient appointments are clinically necessary (1). Many commissioners have sought to reduce the rate at which GPs refer patients to secondary care by introducing referral management services, alternative triage services, peer review of referral and more detailed referral guidelines (2).

These attendances are split into 2 subcategories:

Surgical specialties:
- Adults
- Children

Non-surgical specialities
- Adults
- Children

References


GP Referred First Outpatient Attendances
Adults Medical Specialties

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

- 20,740 attendances
- £3.2M spent
- 4.2% of all attendances
- £150 per unit activity
GP Referred First Outpatient Attendances
Children Medical Specialties

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

2,560 attendances
£0.6M spent
0.5% of all attendances
£230 per unit activity
**GP Referred First Outpatient Attendances**

**Adults Surgical Specialties**

**Trend in Directly Standardised Rate, 2012-13 to 2016-17**

DSR per 100k population [Vertical Axis]

- 2012-13: 5,000
- 2013-14: 5,500
- 2014-15: 6,000
- 2015-16: 6,500
- 2016-17: 7,000

W.M. average

**Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17**

Percentage change in DSR [Vertical Axis]

- 2012-13: 0%
- 2013-14: 5%
- 2014-15: 10%
- 2015-16: 15%
- 2016-17: 20%

**Directly Standardised Rate, 2016-17**

DSR per 100k population [Vertical Axis]

- 2012-13: 200,000
- 2013-14: 400,000
- 2014-15: 600,000
- 2015-16: 800,000

**Results**

- **23,760** attendances
- **£3.1M** spent
- **4.8%** of all attendances
- **£130** per unit activity
GP Referred First Outpatient Attendances
Children Surgical Specialties

Trend in Directly Standardised Rate, 2012-13 to 2016-17
DSR per 100k population [Vertical Axis]

Directly Standardised Rate, 2016-17
DSR per 100k population [Vertical Axis]

Percentage Change in Directly Standardised Rate, 2012-13 to 2016-17
Percentage change in DSR [Vertical Axis]

2,060 attendances
£0.3M spent

0.4% of all attendances
£140 per unit activity
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References

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3. https://creativecommons.org/licenses/by/2.0/
4. https://flic.kr/p/a2o1VU
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