



## Reasons why people with dementia are admitted to a general hospital in an emergency

### National Dementia Intelligence Network briefing

#### Introduction

In recent years there have been a number of national reports highlighting the plight of people with dementia in acute general hospital settings<sup>0</sup>. Increasingly the health and social care system is looking to ways to improve preventative interventions and thus reducing the need for people with dementia requiring emergency admissions to hospital for physical conditions.

This intelligence briefing, produced by the Dementia Intelligence Network (DIN) draws on national data<sup>A</sup> to illustrate key information related to this diagnosed group and their use of inpatient general hospital services during the financial year 2012/13. The focus of this briefing is the provision of care for people living with dementia rather than the process of acquiring a diagnosis. This briefing is aimed at Commissioners and those involved in health service improvements.

Health intelligence related to other key themes for dementia, including the diagnosis process are supported by the work of the DIN. Further details are contained in **Find Out More** section at the end of this document.

#### Key messages

- 48% increase in emergency admissions involving people identified as having dementia since 2008/09
- 20% of admissions for potentially preventable acute conditions including disease of the urinary system, pneumonia and lower respiratory infections
- 26% of emergency admissions involving people with dementia were short stay admissions (one night or less)
- 13,800 (18%) short stay emergency admissions of people with dementia related to injuries including to head, hip or thigh

<sup>A</sup> Inpatient Hospital Episode Statistics – copyright Health & Social Care Information Centre.

## Dementia prevalence in England

In March 2015 there were 400,707<sup>1</sup> individuals in England who had a formal diagnosis of dementia and who were registered with their primary care practice. The all-age prevalence of recorded dementia in England was around 620 individuals per 100,000 population<sup>2</sup>, with the number of diagnoses representing around 58% of the 685,800<sup>3</sup> individuals in England currently estimated to have dementia.

## Admissions to acute general hospital

People with dementia, along with the general population, are prone to develop physical conditions as part of living and the aging process. However people with dementia can have more complex needs than those of the general population because of the condition, which can potentially result in difficulty with assessment or treatment prolonging the individual's recovery period.

If the complex needs of such individuals remain unaddressed, then a likely outcome is that emergency hospital care is required. During 2012/13 there were 292,200 such emergency admissions to hospital in England where a reference to dementia was recorded. This relates to 199,470 individuals being admitted on average 1.5 times each during the year, with 70% (140,270) being admitted only once and 29% (57,920) between 1 and 5 times. Only around 1% (1,290) of individuals were admitted in excess of 5 times each during the year<sup>B</sup>.

Around 83% (242,200) of the admissions to inpatient facilities in the acute general hospitals involving people with dementia were routed via an A&E department, while 11% (33,270) came from a GP source.

### Box 1: Definition of study group

- All hospital inpatient emergency admissions in 2012/13 with discharge within period. Comparative period 2008/09;
- With a mention of dementia ICD10 codes F00-F04 and G30-G31 in discharge documentation;
- With valid CCG resident and treatment code for England;
- Reason for admission being the primary code on discharge;
- Short stay being defined as 1 overnight stay or less.

### Box 2: Diagnosis of dementia

This study utilised hospital discharge coding for dementia to generate the study cohort. It is assumed that all in the study group have dementia. No validation or verification checks have been undertaken on the codes. Those in the study group are likely to include individuals with a formal diagnosis of dementia and those suspected of having dementia by hospital staff or showing symptoms of dementia in hospital, but are otherwise not formally diagnosed.

<sup>B</sup> Where codes for dementia were recorded in discharge documentation.

The median length of stay in hospital, following an emergency admission in 2012/13 was 6 days. Around 26% of the emergency admissions, some 75,200 episodes were for lengths of stay of 1 day or less. Short stays in hospital (1 day or less) accounted for a similar proportion of admission as the previous year, but an increase on the 2008/09 figures of around 4% points.

The number of emergency admissions<sup>C</sup> for people with dementia in 2012/13 was 14% higher than the previous year and was 48% higher than in 2008/09. Similarly there were increases in the number of individuals being admitted to hospital in an emergency scenario, with a 12% increase on the year and 37% since 2008/09.

The number of individuals with dementia being admitted to hospital in an emergency scenario represents 50%<sup>D</sup> of the numbers with a formally recorded diagnosis in 2012/13 and 29% of the estimated population with dementia in England.

<b>Figure 1: Summary Statistics relating to people with dementia</b>	
Number of emergency admissions (2008/09)	198,135
Number of emergency admissions (2012/13)	292,200
via A&E	242,400 (83%)
via GP	33,270 (11%)
via bed bureau	4,990 (2%)
via outpatients	2,380 (1%)
via other	9,070 (3%)
Short stay admissions	75,200 (26%)
Stays longer than 1 night	217,000 (74%)
Number of individuals admitted to hospital in an emergency (2012/13)	199,470
Number with a formal diagnosis of dementia (March 2015) <sup>4</sup>	400,707
Estimated population with dementia (2014) <sup>5</sup>	685,000

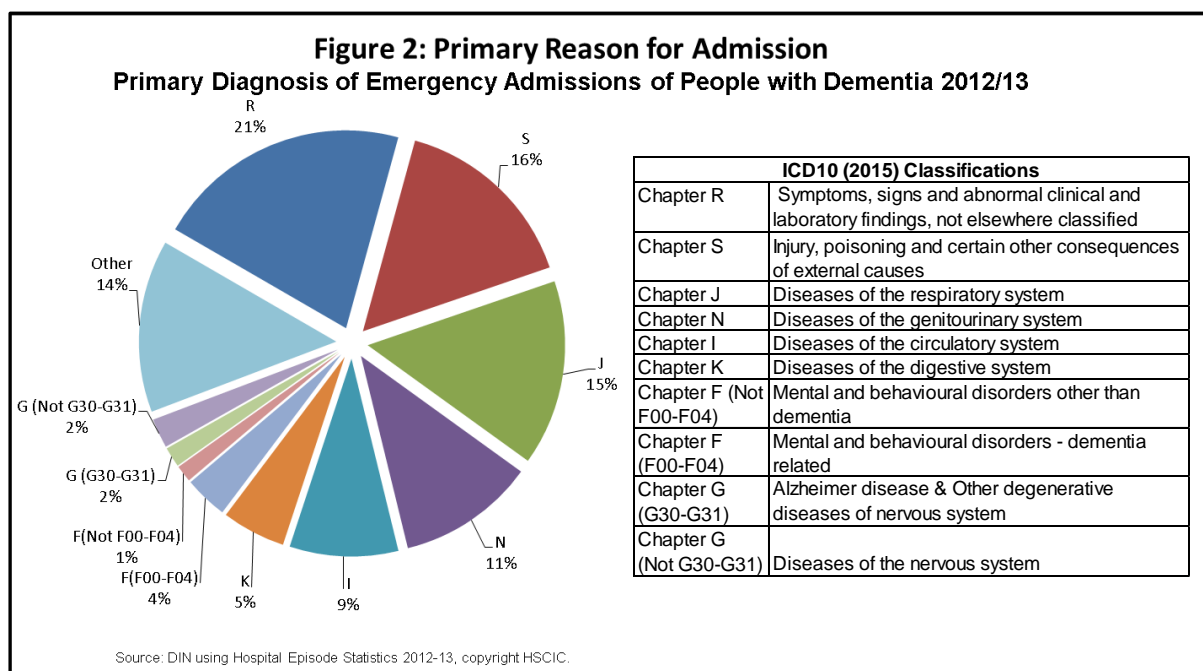
<sup>C</sup> Where there was a reference to dementia in the diagnosis code.

<sup>D</sup> Using the March 2015 figures for recorded diagnoses. However the two population groups aren't validated between data sets and therefore this is a best case scenario.

## Reasons why people are admitted to hospital

On discharge from a hospital spell, the reason for admission along with other relevant morbidity details is recorded on the hospital administration system using the international classifications of diseases<sup>6</sup> (ICD10) coding system. This system uses 5-digit codes to group conditions and diseases into a twenty-two themed chapters.

Around 6% (15,120) of emergency admissions to acute general hospitals during 2012/13 had a dementia code as primary diagnosis. The largest proportions of 2% were recorded as dementia unspecified (F03 - 5,100) and other degenerative diseases of the nervous system including Alzheimer's disease (G30 & G31- 4,790). Only 1% of admissions were coded with vascular dementia as the primary diagnosis (F01).



Seven ICD10 chapters accounted for around 78% of the primary diagnoses for the emergency hospital admissions relating to people with dementia. These chapters are –

Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified – chapter R.

- Around 21% (61,150) of admissions related to reasons for admission categorized with a code from the R –chapter including -
  - 6% for general symptoms and signs (R5).
  - 5% symptoms and signs involving the skin and subcutaneous tissue and the nervous and musculoskeletal systems (R2);
  - 4% for symptoms and signs involving cognition, perception, emotional state and behaviour, and involving speech and voice (R4);
  - 3% symptoms and signs involving the circulatory and respiratory systems (R0);

Injury, poisoning and certain other consequences of external causes – chapter S

- Around 16% (45,290) of admission related to events linked to external injuries and poisoning. These admissions included –
  - 6% for injuries to the hip and thigh (S7);
  - 5% for Injuries to the head (S0).
- NB there were no emergency admissions involving people with dementia that were coded with a primary diagnosis of a fall – i.e. ICD10 code W0 and W1

Diseases of the respiratory system – chapter J

- Approximately 15% (44,340) of admissions related to issues with the respiratory system, including –
  - 8% for pneumonia (J1);
  - 3% for other acute lower respiratory infections (J2);
  - 2% for chronic lower respiratory diseases (J4).

Diseases of the genitourinary system – chapter N

- Approximately 11% (32,850) of admission related to issues concerning the genitourinary system, in particularly the majority of admissions included -
  - Other diseases of urinary system – 9% (N3);
  - Renal tubulo-interstitial diseases – 2% (N1).

Diseases of the circulatory system – chapter I

- Around 9% (25,980) of emergency admissions in 20112-13 for people with dementia related to issues with the circulatory system. Codes included –
  - 3% for cerebrovascular diseases – (I6);
  - 2% for ischaemic heart disease, pulmonary heart disease and diseases of pulmonary circulation – (I2).

Diseases of the digestive system – chapter K

- Around 5% (15,250) of emergency admissions related to issues with the digestive system. These included –
  - 2% for noninfective enteritis and colitis and other diseases of intestines (including vascular disorders of intestine, paralytic ileus and intestinal obstruction without hernia, diverticular disease of intestine, irritable bowel syndrome, other functional intestinal disorders) (K5);
  - 2% for other diseases of the digestive system (K9).

Mental and behavioural disorders (other than dementia F00-F04) – chapter F

- Approximately 1% (4,020) of emergency admission were coded with a primary diagnosis of mental and behavioural disorders, excluding dementia. The majority of which, 2,540 were related to delirium, not induced by alcohol and other psychoactive substances (F05).

## Reasons for short stay emergency admissions to general hospitals

Around 26% of the emergency admissions to acute general hospitals involving people with dementia in 2012/13 were classed as short stay admissions i.e. one night or less. People admitted who stay for one day or less are statistically significantly more likely to be admitted for symptoms, signs and abnormal clinical and laboratory findings (ICD10 chapter R) and injury, poisoning and certain other consequences of external causes (ICD10 chapter S).

Around 3 in 10 people with dementia who have a hospital stay of one day or less are admitted for symptoms and signs of clinical abnormality (Chapter R), 50% higher proportion than admissions of all durations in 2012/13. Statistically there are a larger proportion of admissions for –

- General symptoms and signs (R5) – 9% of admissions compared to 6% for all durations of admission;
- Symptoms and signs involving the circulatory and respiratory systems (R0) - 7% compared to 3%;
- Symptoms and signs involving the skin and subcutaneous tissue and the nervous and musculoskeletal systems (R2) – 6% compared to 5%;

Approximately 1 in 5 admissions (18%) with a short stay in hospital (one day or less) were coded as an injury or poisoning (Chapter S), significantly higher proportion than for all duration of admissions of 16%. In particular 11% of short stay admissions have the primary diagnosis of injuries to the head (S0) in 2012/13, compared to 5% of all duration admissions.

<b>Figure 3: Significant variation in the reasons for short term hospital admissions of people with dementia.</b>			
	<b>Proportion of Admissions 2012/13</b>		
	Short stay	All durations	
<b>Symptoms, signs and abnormal clinical and laboratory findings (ICD10 chapter R)</b>	30%	21%	Short stay significantly higher
General symptoms and signs (R5)	9%	6%	Short stay significantly higher
Symptoms and signs involving the circulatory and respiratory systems (R0)	7%	3%	Short stay significantly higher
Symptoms and signs involving the skin and subcutaneous tissue and the nervous and musculoskeletal systems (R2)	6%	5%	Short stay significantly higher
<b>Injury, poisoning and certain other consequences of external causes (ICD10 chapter S).</b>	18%	16%	Short stay significantly higher
Injuries to the hip and thigh (S7)	1%	6%	Short stay not significantly higher
Injuries to the head (S0)	11%	5%	Short stay significantly higher

## Discussion

### Increases in general hospital admissions

Emergency admissions to general hospitals involving people with dementia have increased over recent years. Around 14% more admissions occurred in 2012/13 compared with the previous year and round 48% more than in 2008/09.

There are a number of underlying reasons as to why the numbers of emergency admissions have increased during the latter period. One likely reason is the greater awareness of hospital staff to the symptoms of dementia. In 2009, the Department of Health published the national strategy for England<sup>7</sup> in which objective 8 was aimed at improving the quality of care of people with dementia in general hospitals. Part of the implementation of this objective was the development by NHS England of the dementia CQUIN<sup>8</sup> which was used to incentivise the identification of patients with dementia or suspected of having dementia and to prompt for onward referrals to specialist support. A likely consequence of this initiative is that a reference to dementia is included in the individual's case notes that is reflected in the discharge documentation.

Another likely reason for the increase in hospital admissions linked to the national strategy is related to objective 2 providing good quality and timely diagnoses. Since 2008/09 there has been a 58% net increase in England in the numbers with a formal diagnosis of dementia, some additional 133,800 individuals. A positive consequence of which is that on admission to hospital an individual or their carer, may be empowered to report details of the condition to hospital staff to elicit appropriate additional support. Inevitably the exchange of information will lead to case note entries being made that again are reflected in the discharge documentation.

A third likely reason for the increase in emergency admissions to general hospitals of people with dementia is that the usual care arrangements for the individual are no-longer effective due to changing need or circumstances. A number of approaches are discussed in the next subsection on preventing avoidable admissions.

## **Preventing avoidable emergency admissions to acute general hospitals**

In a 2006 review the Health Service Management Centre<sup>9</sup> concluded that there were a number of initiatives that could have an effect on the reduction in avoidable emergency admissions to hospital through the adoption of evidence based and comprehensive admission avoidance programmes. These programmes included case management, crisis resolution teams, intermediate care, telehealth, team-based interventions in A&E and proactive management of long-term conditions.

The effective implementation of these programmes gain a greater importance when dealing with people with dementia where admissions to general hospital inpatient facilities can be particularly traumatic, often resulting in significant distress and deterioration of the condition. Whilst the focus of this data briefing was not to examine the service provision across England, the data illustrates that perhaps improvements could still be made.

For acute conditions, where early intervention can prevent more serious progression, around 20% of admissions in the study period were likely to fall into this category. 9% were for other diseases of urinary system (N3), 8% for pneumonia and 3% for other acute lower respiratory infections (J2).

Although there were emergency admissions in the study period related to chronic conditions such as asthma, COPD diabetes and congenital heart disease, the numbers were relatively low to other types of conditions, such COPD where only 2% of admissions were reported. The low proportion of admissions perhaps indicating that on average in England the management of people with dementia and other chronic conditions is reasonably good, although this would warrant further investigation at the local level.

A significant minority of admissions (16%) were related to injury, poisoning or consequences of external causes. In particular 11% of admissions, some 32,000 admissions relate to injuries to head, hip or thigh. Perhaps there is evidence to suggest that renewed slips, trips and falls initiatives, particularly targeted at older people with dementia is required.



### **Emergency admissions with short hospital stay**

Emergency admissions to hospital are usually difficult experiences for any individual, but can be particularly traumatic for people with dementia often resulting in significant distress and deterioration of their condition. While short stays in hospital may be clinically beneficial, consideration is necessary to the impact on the individual with dementia, in particular the change in routine and the disorientating effects of changes to the living environment.

During the study period around 26% of emergency admissions involving people with dementia were classed as short stays of 1 night or less. People being admitted for short stays in hospital are 50% more likely to be admitted for symptoms, signs and abnormal clinical and laboratory findings (ICD10 chapter R), accounting for 3 in 10 short stay admissions. Similarly significantly larger proportions of short stay admissions are for reasons relating to injury, poisoning and consequences of external causes (ICD10 chapter S), accounting for 18% of short stay admissions, of which 11% relate to head injuries.

Further investigations are necessary into the causes of the injuries with which people with dementia present at acute general hospital. However home accident prevention interventions might assist in reducing avoidable admissions.

## References

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## Find out more:

The dementia intelligence network (DIN) was launched in June 2014 with the purpose of providing and disseminating health intelligence products to enable local systems to take an intelligence-driven approach to commissioning, resulting in measurable improvements in the quality and outcomes for local communities.

The DIN will provide these health intelligence products in ways designed to support and enable local improvement work aimed at improving local community's dementia services.

The ambition of the DIN is to develop a strategic approach to the development the health intelligence products around dementia. This will include a new focus on risk reduction and living well with dementia. This will be approached thematically around five "pillars" of health intelligence relating – prevalence; prevention & risk reduction; the diagnosis process; living well with dementia and post diagnosis support; end of life care. The approach also includes cross cutting themes such as user & carer experiences and system financials.

The DIN website contains more information and resources related to dementia intelligence [www.yhpho.org.uk/default.aspx?RID=198136](http://www.yhpho.org.uk/default.aspx?RID=198136)

The DIN is part of National Mental Health Dementia and Neurology Intelligence Network and a member of the Health Intelligence Network family sponsored by Public Health England and NHS England.

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