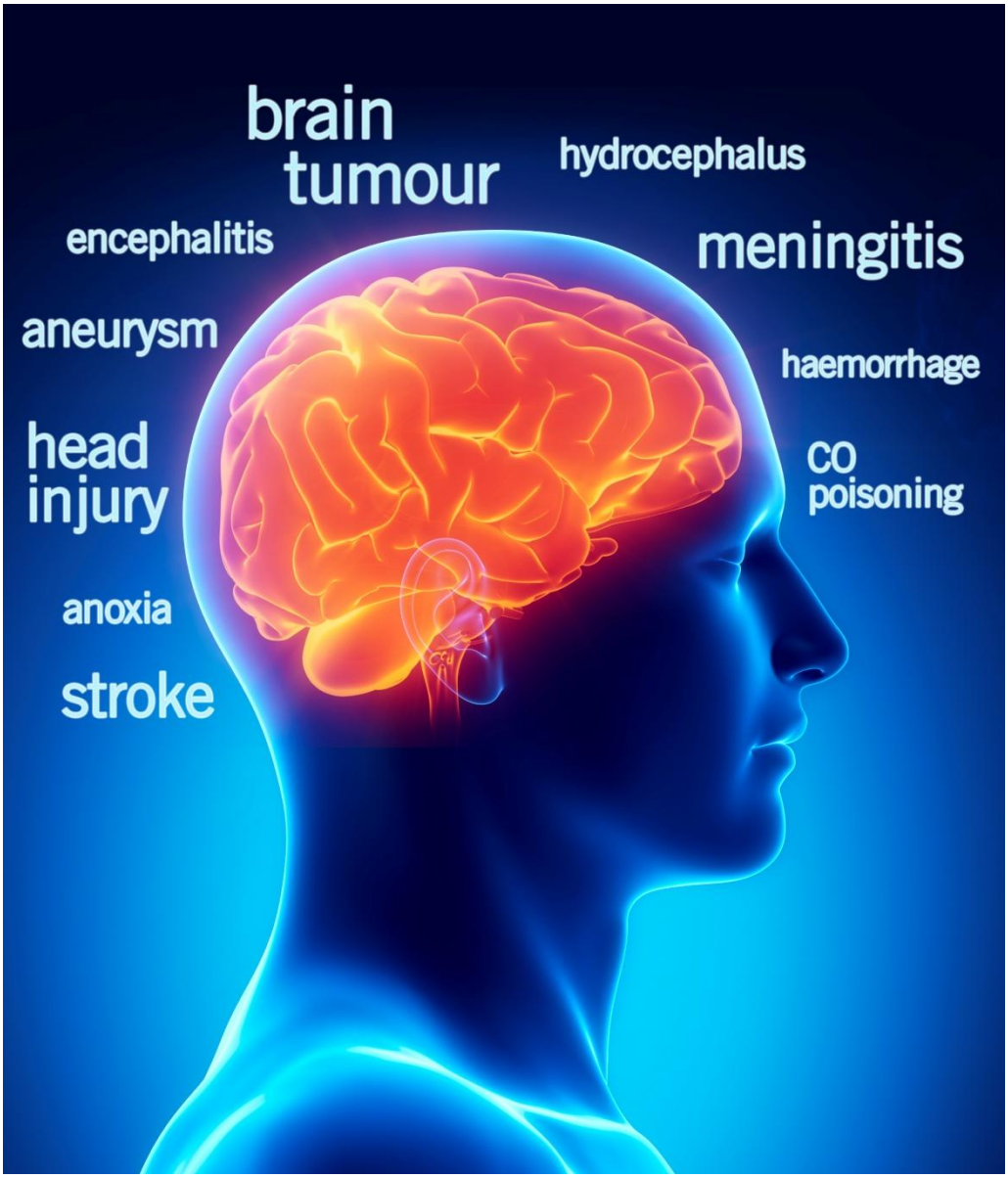
Acquired Brain Injury

The numbers behind the hidden disability

A report by Headway – the brain injury association, with foreword by Professor Alan Tennant

May 2015



Key findings

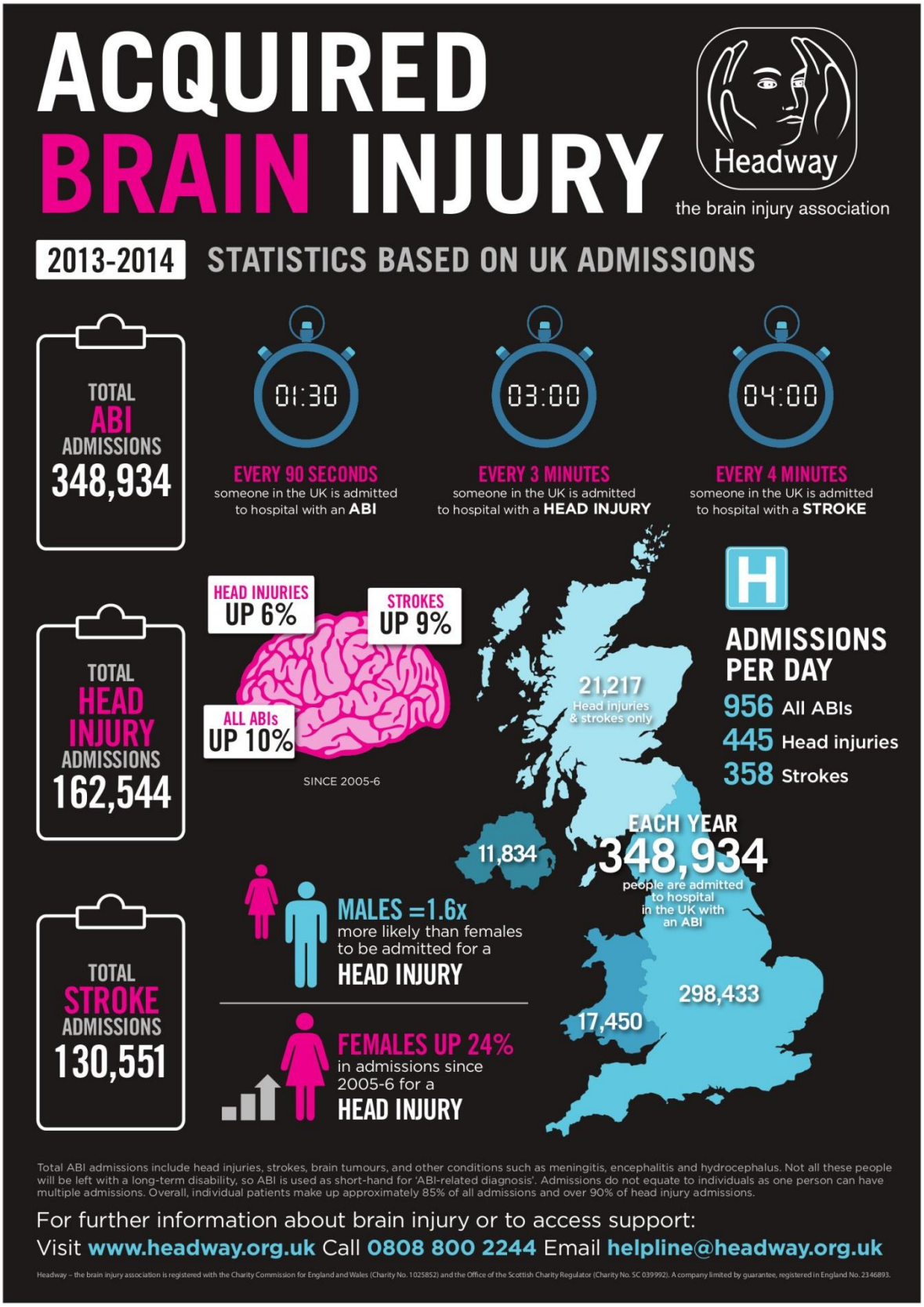
- There were **348,934 UK admissions to hospital with acquired brain injury** in 2013-14. That is 566 admissions per 100,000 of the population.
- **ABI admissions in the UK have increased by 10%** since 2005-6.
- There were approximately 956 ABI admissions per day to UK hospitals in 2013-14 – or **one every 90 seconds**.
- In 2013-14, there were **162,544 admissions for head injury**. That equates to 445 every day, or **one every three minutes**.

- **Men are 1.6 times more likely than women to be admitted for head injury**. However, **female head injury admissions have risen 24%** since 2005-6.
- In 2013-14, there were **130,551 UK admissions for stroke**. That is an **increase of 9%** since 2005-6 and equates to **one every four minutes**.

Notes:

- Years refer to financial years (1 April – 31 March)
- Comparison to 2005-6 data is due to information for Scotland only currently available from that year. Therefore, data for the entire UK is presented from that time. Data for England, Northern Ireland and Wales are available from 2000-01, so combined data for those countries are presented separately.
- Many people die of stroke before admission to hospital so the actual number of strokes suffered is higher.
- Figures for Scotland are based on TBI (head injury) and stroke only. Statistics for other conditions were not available. Therefore, statistics shown for all ABI admissions and condition-specific admissions such as brain tumour will actually be higher than stated.

Headway
the brain injury association



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Foreword

For those of us who have worked in the field of brain injury epidemiology and rehabilitation provision, the need for accurate and up-to-date statistics to assist with service planning is well recognised. Consequently I have been delighted to consult with Headway on its work in this area and am very happy to support the release of these comprehensive new figures.

It is almost twenty years since colleagues and I published the studies *The long-term outcome of head injury: Implications for service planning*, and the *Prevalence of self-reported stroke in a population in Northern England*, and ten years since I published a Department of Health-funded study entitled *Admission to hospital following head injury in England: Incidence and socio-economic association*. The results confirmed that acquired brain injury is very common and constitutes a major public health concern.

The 2005 paper was used to inform the *National Service Framework (NSF) for Long Term Conditions*. The NSF was launched in 2005 with the aim, in a ten-year period, of improving services for people with neurological conditions and those who care for them. A decade on, the framework has expired having apparently failed to make significant changes to health and social care for people with those conditions.

It seems particularly timely, therefore, that Headway's detailed ABI admission statistics are released now, providing an up-to-date picture of the scale of the problem. There is no perfect way to quantify the number of people sustaining long-term disabilities as a result of brain injuries and the use of ICD-10 diagnosis codes to identify hospital admissions alone does not necessarily indicate this. However, Headway's work does provide the clearest picture to date of the pool of people who require support, from short-term advice and information, to long-term inpatient rehabilitation. It also provides up-to-date evidence with which to approach commissioners, and to request funding for rehabilitation and support services in areas of the greatest need.

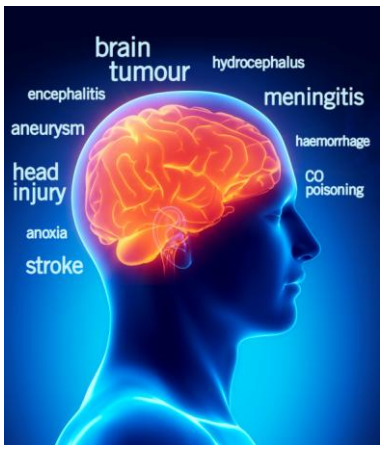
I sincerely hope that this excellent research receives the attention it warrants in order to contribute to an improvement in future service provision.

Professor Alan Tennant
Emeritus Professor of Rehabilitation Studies, University of Leeds, and author of several articles on brain injury epidemiology

Questions and answers

What do you mean by Acquired Brain Injury?

Acquired brain injury (ABI) is an umbrella term for any injury to the brain sustained since birth, excluding neurodegenerative conditions such as multiple sclerosis and motor neurone disease. By far the most common forms of ABI are traumatic brain injury (TBI; otherwise referred to as head injury) and stroke. Other causes include brain tumour, meningitis, aneurysm, haemorrhage, encephalitis, anoxia, and other conditions.



The brain controls everything we do and brain injury can affect every aspect of who we are. The physical, cognitive, emotional and behavioural effects of ABI can have devastating consequences for individuals and their families.

For further information about the effects of brain injury, click here.

How have these statistics been collated?

Using hospital admission numbers, Headway has compiled the first dataset on ABI-related hospital admissions in the UK.

The figures presented here have been obtained using the Hospital Episode Statistics (HES) system in England and its equivalents elsewhere in the UK. These systemically record all hospital admissions according to diagnosis by International Classification of Disease Version 10 (ICD-10) code. The admission figures presented here are for primary diagnosis (the main condition required for treatment on admission).

The head injury figures are for non-superficial injuries, therefore increasing the likelihood that the majority of those represented in these figures will require some degree of information, support or rehabilitation on either a short or long-term basis. Standardised codes have been used for stroke, while codes for other ABI-related conditions have been collected by searching the ICD-10 code database and categorised according to condition.

Data for Scotland are only currently available for head injuries and stroke. Data for the entire UK, therefore, do not include other ABI related conditions in Scotland.

Further explanation on the way the figures were collated can be found here.

Why do the statistics only date back to 2005-06?

As data for Scotland are currently available from 2005-06, statistics for the entire UK are presented from that time. Data for England, Northern Ireland and Wales are available from 2000-01, so combined data for these countries are presented separately.

Do these statistics represent the number of people living with the effects of brain injury?

The statistics presented here do not answer the question of prevalence (number of people living with disabilities at any given time).

Admission to hospital for an ABI-related diagnosis does not necessarily mean a patient will be left with short or long-term deficits requiring rehabilitation or support.

Admissions do not necessarily equate to individuals because some people are admitted more than once. Approximately 85% of all admissions are individual patients. Other people also die before admission so are not included (this particularly applies to stroke patients).

Many of those admitted each year will be left with no lasting cognitive, physical, or behavioural deficits as a result of their injuries. Others will not be so lucky and will face an arduous battle to rebuild their lives and relearn lost skills most of us take for granted, including walking and talking. However, even those who make good recoveries are still likely to require some short-term support and information.

Prevalence estimates are notoriously problematic due to variation in injury severity and unpredictability of the level of disability people experience. However, it is important to note that the majority of people admitted with ABI survive. That means, as time goes on, more and more people are living with the effects of brain injury.

There have been more than three million admissions in the UK since 2005-06 and more than four million in England, Northern Ireland and Wales since 2000-01. As a significant number of these people will require ongoing support, these figures represent an ever increasing health problem.

In addition to the people represented by these admission statistics, people often report to Headway that their brain injury has simply never been diagnosed. Many people slip through the net and are forced to live with the effects of brain injury

without explanation, understanding or support. Also, previous research has suggested that a significant number of people with traumatic brain injury are not coded as such on admission, meaning they are not included in these statistics.

Why have you released these statistics?

The statistics presented in this report offer the most reliable data available to show the increasing number of people sustaining injuries to the brain each year and highlight the need for these people to be adequately supported.

This is the first time a picture of incidence rates for all ABI in the UK has been published. This study builds on a report by Professor Alan Tennant that examined head injury incidence in England over two years, whereas Headway's current research has analysed all ABI across the entire UK over a 14 year period since the start of the century.

Professor Tennant's 2005 study fed into the National Service Framework for Long-term (Neurological) Conditions and he is widely regarded as the leading brain injury epidemiology expert in this country. As such, Headway is extremely grateful for his support of this project.

Headway hopes that by collating and releasing this data, more people will be aware not only of how many people each year are affected by brain injury, but also the array of conditions and causes of acquired brain injury.

The vast numbers presented here should also serve as a reminder of the importance of support services for those who are left with short or long-term problems as a result of their injuries.

Since 2005-6, the number of people admitted to hospital for an ABI in the UK has risen by 10%. This concerning statistic suggests an increased need for support services such as those provided by Headway.

Over the past five years in particular, Headway has seen a dramatic increase in demand for its services on a national and local level. Calls to the charity's UK-wide nurse-led helpline increased by 60% between 2010 and 2014, with approximately 70% of the enquiries received coming from people directly affected by brain injury.

On a local level, Headway groups and branches are also experiencing a increase in demand for support – either rehabilitative or social. Many are struggling to meet this demand against a backdrop of reduced funding, as demonstrated by the charity's 2014 study: *A ticking time bomb: The false economy of cuts to brain injury services*[1].

[1] www.headway.org.uk/research/a-ticking-time-bomb-the-false-economy-of-cuts-to-brain-injury-services.aspx

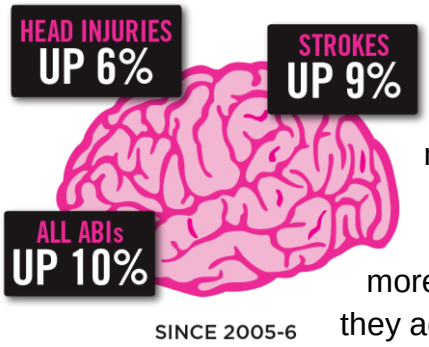
This study found that:

- 57% of Headway groups believe changes to local authority support have already had a direct impact on their ability to provide support services;
- 85% of Headway groups are concerned about their long-term survival;
- 89% of Headway groups have been forced to use reserves or additional charity funds to maintain vital their services.

With these new hospital admission statistics suggesting an increasing number of people are sustaining ABIs each year, a reduction in resources being directed to charities supporting those affected is of even greater concern.

What are the reasons behind the increases?

Further analysis of these statistics is required in order to identify possible reasons for trends and causes that could aid prevention campaigns, and improve acute care provision and community-based rehabilitation services in the future.



What we can take from these data, however, is that more and more people are being admitted to hospital each year with ABI-related diagnoses. The vast majority of these people survive, meaning more and more people each year are in need of help and support as they adjust to a life with brain injury.

Conclusion

It is vital that a true picture of the number of people affected by brain injury each year is captured in order to ensure appropriate resources are diverted to meet the short and long-term support needs of this significant population.

More research is required to understand the reasons behind why the number of ABI-related diagnoses has increased. But the shocking statistics presented here clearly demonstrate that brain injury incidence rates are rising – and as a result more people are requiring support to help them cope with their life-changing brain injuries.

Headway hopes that this information will increase the public's awareness of the wide range of conditions and causes of acquired brain injury, enable people to see that brain injury is more common that most realise, and emphasise the need for national and local brain injury services to be given the resources they need in order to help those affected.

Data tables

Chart 1: All ABI: Scotland, Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2005-06	184,776	625	132,370	429	37	**317,183**	525
2006-07	188,755	634	133,293	429	37	**322,085**	530
2007-08	188,285	627	134,416	430	32	**322,733**	526
2008-09	191,368	632	138,646	440	31	**330,044**	534
2009-10	198,483	653	147,257	468	45	**345,785**	559
2010-11	199,652	651	148,726	470	30	**348,408**	559
2011-12	200,650	645	151,289	470	15	**351,954**	556
2012-13	192,009	613	150,649	465	15	**342,673**	538
2013-14	194,734	618	154,169	473	31	**348,934**	544
Change since 2005-06 %	5	-1	16	10	-16	**10**	4

* Rate is per 100,000 population.

* Data for Scotland are currently available from 2005-6. Therefore, data for the entire UK is presented from that time. Data for England, Northern Ireland and Wales are available from 2000/01, so combined data for those countries are presented separately (charts 4-6).

Chart 2: Head injury: Scotland, Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2005-06	104,286	353	49,756	165	25	**154,067**	255
2006-07	107,773	362	51,041	169	22	**158,835**	261
2007-08	106,535	355	52,010	171	19	**158,564**	259
2008-09	106,816	353	53,813	176	23	**160,652**	260
2009-10	111,067	365	59,632	195	20	**170,718**	276
2010-11	108,756	354	59,767	194	16	**168,539**	270
2011-12	108,923	350	60,494	195	9	**169,426**	268
2012-13	99,008	316	58,503	187	11	**157,522**	247
2013-14	100,831	320	61,701	196	12	**162,544**	254
Change since 2005-06 %	-3	-9	24	19	-52	**6**	-1

* Rate is per 100,000 population.

Chart 3: Stroke: Scotland, Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2005-06	57,598	195	62,488	202	12	**120,098**	199
2006-07	56,681	190	60,246	194	12	**116,939**	192
2007-08	56,608	189	59,919	191	10	**116,537**	190
2008-09	59,192	195	61,793	196	8	**120,993**	196
2009-10	61,315	202	63,960	203	17	**125,292**	202
2010-11	63,531	207	64,730	204	12	**128,273**	206
2011-12	64,369	207	65,422	203	6	**129,797**	205
2012-13	65,369	209	66,101	204	3	**131,473**	206
2013-14	65,315	207	65,232	200	4	**130,551**	204
Change since 2005-06 %	13	6	4	-1	-67	**9**	2

* Rate is per 100,000 population.

Chart 4: All ABI: Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2000-01	153,360	584	111,878	406	350	**265,588**	493
2001-02	154,719	586	111,983	405	199	**266,901**	494
2002-03	152,635	575	113,131	407	28	**265,794**	489
2003-04	158,195	593	114,125	409	21	**272,341**	499
2004-05	163,232	608	117,715	420	36	**280,983**	512
2005-06	171,561	634	123,095	436	37	**294,693**	533
2006-07	175,179	642	124,070	437	37	**299,286**	537
2007-08	174,024	632	125,066	437	32	**299,122**	533
2008-09	177,362	638	128,993	447	31	**306,386**	541
2009-10	184,878	663	137,681	479	45	**322,604**	570
2010-11	186,662	663	139,471	482	30	**326,163**	571
2011-12	187,290	657	141,712	481	15	**329,017**	567
2012-13	179,512	625	141,229	476	15	**320,756**	549
2013-14	182,766	631	144,920	486	31	**327,717**	558
Change this century %	19	8	30	20	-91	**23**	13

* Rate is per 100,000 population.

Chart 5: Head injury: Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2000-01	79,358	302	35,569	129	291	**115,218**	214
2001-02	80,954	307	35,751	129	135	**116,840**	216
2002-03	79,309	299	35,528	128	21	**114,858**	212
2003-04	84,857	318	37,854	136	15	**122,726**	225
2004-05	89,680	334	41,653	149	24	**131,357**	239
2005-06	95,495	353	45,522	161	25	**141,042**	255
2006-07	98,636	361	46,723	164	22	**145,381**	261
2007-08	96,769	351	47,442	166	19	**144,230**	257
2008-09	97,428	351	49,250	171	23	**146,701**	259
2009-10	102,110	366	55,118	192	20	**157,248**	278
2010-11	100,290	356	55,470	192	16	**155,776**	273
2011-12	100,162	351	55,825	189	9	**155,996**	269
2012-13	91,208	317	53,980	182	11	**145,199**	249
2013-14	93,403	323	57,191	192	12	**150,606**	256
Change this century %	18	7	61	49	-96	**31**	20

* Rate is per 100,000 population.

Chart 6: Stroke: Northern Ireland, Wales and England

Year	Male	Rate*	Female	Rate*	Unknown	Total	Rate*
2000-01	51,222	195	56,751	206	57	**108,030**	201
2001-02	51,920	197	56,912	206	62	**108,894**	201
2002-03	53,187	200	58,993	212	7	**112,187**	207
2003-04	52,769	198	57,587	207	6	**110,362**	202
2004-05	52,423	195	57,589	206	8	**110,020**	201
2005-06	53,174	196	57,447	204	12	**110,633**	200
2006-07	52,242	191	55,340	195	12	**107,594**	193
2007-08	52,113	189	55,137	193	10	**107,260**	191
2008-09	54,575	196	56,703	197	8	**111,286**	197
2009-10	56,667	203	58,897	205	17	**115,581**	204
2010-11	59,007	210	59,772	206	12	**118,791**	208
2011-12	59,769	210	60,515	205	6	**120,290**	207
2012-13	60,672	211	61,204	206	3	**121,879**	209
2013-14	60,775	210	60,493	203	4	**121,272**	206
Change this century %	19	8	7	-2	-93	**12**	3

* Rate is per 100,000 population.

Further information

- For detailed regional and national data for all ABI-related conditions, and more information on the methodology of the research, visit www.headway.org.uk/brain-injury-stats.aspx or click here.

- For further information about brain injury and Headway services across the UK, visit www.headway.org.uk.

- If you have been affected by brain injury and would like support, or if you have a question about brain injury or services available, contact the charity's helpline on 0808 800 2244 or helpline@headway.org.uk.

- If you have any queries about the statistics, please contact Richard Morris, Publications and Research Manager, on publications@headway.org.uk.

- Any media enquiries should be directed to Luke Griggs, Director of Communications, on directorofcomms@headway.org.uk or Rachel Smith, Press Officer, on press.officer@headway.org.uk or 0115 924 1906.