Safer Lives, Stronger Nation: Our Call for a National Accident Prevention Strategy

Appendix 3: Economic statistics

Part 1. Hospital admissions: Cost to the NHS

NHS England data shows that there were **741,755 hospital admissions due to accidents** in 2022/3.[1] For each accident category, the NHS also provides a mean average length of stay ('bed days') in hospital; the number of admissions for each three-digit ICD category has been multiplied by that category's mean length of stay to give a total number of bed days for that accident type. Summing these totals, yields an overall number of bed days of **4,432,201**.

The Government stated in 2020/21 that the average cost of a bed day in the NHS was **£1,032.09**.[2]

Multiplying the total number of bed days due to accidents by the average cost of a bed day gives a total of **£4,574,430,330** (£4.6bn).

Because hospital admissions data is not available by cause for Scotland or Northern Ireland, an estimate for the UK-wide cost to the NHS has been made. This accounts for the fact that England comprises 84.48% of the UK population, according to the ONS's 2022 mid-year estimates.[3] We have arrived at a UK-wide estimate for the cost of hospital admissions due to accident by dividing the cost for England by 84.48 and multiplying the result by 100; this yields an estimated UK cost of **£5,414,709,471** (£5.4bn).

Summary:

NHS England: bed days for patients admitted due to accidents (2022/23)	4,432,201
Average cost of a bed day (2020/21)	£1,032.09
NHS England: cost of admissions due to accidents	£4,574,430,300
English share of UK population (mid-2022)	84.48%
Cost to the NHS across the UK (2022/23)	**£5,414,709,471**

[1] NHS England, 'Hospital Admitted Patient Care Activity, 2022-23: External Causes' (21 September 2023). 'Admissions' for V01-X59 and Y85-Y86.
[2] 'Hospital Beds: Costs', *Hansard*, 1 March 2023 (UIN 146908).
[3] ONS, 'Mid-Year Population Estimates'. Retrieved 21 June 2024.

Part 2. Hospital admissions: Cost to businesses (lost output)

Estimating the cost to businesses is a complicated process because it has to account for:

- The share of working people admitted to hospital due to accidents
- Their length of stay in hospital
- Days lost directly due to accident-related admissions to hospital
- Days lost due to continued sick leave after being discharged
- Days lost by relatives or friends caring for them
- Direct costs to businesses due to absence
- Indirect costs to businesses due to their absence, including management and administrative costs

Not all of this data is collected by the NHS or other government agencies, so a range of careful assumptions have had to be made to arrive at a figure.

Stage 1: Bed days among working-age adults

NHS England's admissions data for 2022/23 captures the number of people admitted to hospital due to accidents.[4] For each three-digit ICD code for the range V01-X59 and Y85-86, we have multiplied by the number of working-age (18-64) adults[5] by the average length of stay for patients admitted due to that accident category. This yields a total of **1,440,721** days in hospital.

It is worth noting that this average length of stay is the average for all ages, as one is not provided for individual age groups; we have no indication of what the actual figure could be and have therefore had to use this average for working-age adults.

Stage 2: Lost working days due to bed days

Not all working age adults are in work. We have therefore multiplied the total bed days by the share of the population that was in employment in October 2022 (midway through the financial year); this was 75%.[6] This yielded 1,080,541 bed days among in-work adults.

It should be noted that this assumes that working-age people in work are just as likely to be admitted to hospital due to accidents as working-age people out of work; we have no indication of what the actual rate is.

Additionally, people can be admitted to hospital on any day of the week; to account for weekends, we have assumed that stays are evenly spread across the week, and have multiplied the total bed days by $^{5}/_{7}$ to arrive at an estimate for the number of days off work during the hospital stay. This leads to an estimate of **773,873** days off work.

Stage 3: Lost working days due to post-discharge absences

Hospital admissions are serious and many people will continue to be off work for long periods while they recover. There is very little official data on how long people continue to be off work

[4] NHS England, 'Hospital Admitted Patient Care Activity, 2022-23: External Causes' (21 September 2023). 'Admissions' for V01-X59 and Y85-Y86.
[5] 297,631 people across all accident types.
[6] ONS, 'Employment Rate (Aged 16 to 64, Seasonally Adjusted): %'. Retrieved 21 June 2024.

due to accident-related injuries, but the UK Injury Multicentre Longitudinal Study (2012) surveyed patients aged 16-65 in employment or self-employment who were admitted to hospital for a range of injuries in four NHS Trusts in the UK. They followed up patients at 1 month and 4 months after discharge to discover how many days they had taken off sick from work due to their injuries.[7] The vast majority of injuries (89.8%) were unintentional. The results, published in Kendrick et al (2012),[8] showed that after 1 month, admitted patients had taken the following days off work due to injury:

Days off	Percentage
0	6.8%
1 to 5	5.5%
6 to 10	6.8%
11 to 15	6.8%
16 to 20	5.5%
20+	68.5%

After 4 months, formerly admitted patients had taken the following days off work in the *previous 4 weeks*:

Days off	Percentage
0	51.4%
1 to 5	3.7%
6 to 10	3.7%
11 to 15	5.5%
16 to 20	1.8%
20+	33.9%

We have extrapolated from these figures to arrive at national estimates for time off work following discharges. To begin with, we have taken the total number of admissions for working-age people (297,631), subtracted 25% to account for those not working (total: 223,819) and then applied the 1-month percentages above:

Days off	Percentage	Totals
0	6.8%	15,220
1 to 5	5.5%	12,310
6 to 10	6.8%	15,220
11 to 15	6.8%	15,220
16 to 20	5.5%	12,310
20+	68.5%	153,316

[7] These injuries were skill-brain injuries (3.3%), spine/vertebrae injuries (3.3%), facial fracture or eye injuries (4.1%), internal organ injuries (1.1%), upper extremity fractures (13.7%) and other injuries (3.3%), hip fractures (1.8%), lower extremity fractures (37.6%) and other injuries (5.9%), superficial injuries and open wounds (12.9%), burns (7%), and other injuries (5.9%): Kendrick et al (2012), p. 6 (Table 1).
[8] Denise Kendrick, Carol Coupland, Yana Vinogradova, Nicola Christie, et al., 'Getting Back to Work after Injury: The UK Burden of Injury Multicentre Longitudinal Study', *BMC Public Health*, vol. 12 (2012), no. 584.

We have multiplied the totals for each category by the interval mid-points (e.g., assuming 3 days for those in the 1 to 5 days category):

0 + (3 x 12,310) + (8 x 15,220) + (13 x 15,220) + (18 x 12,310) + (20 x 153,316)

= 3,644,450 days off work in addition to bed days at 1 month after admission

As Kendrick et al show, two-thirds of patients were still off work completely after a whole month. At the 4-month follow-up, one-third of patients had been off work due to their injuries for the whole of the previous month, but most others have returned to work, indicating there is a small but significant portion of workers who are off work for many months following a serious accident. To account for this, we have assumed that the people off work for the whole month due to their injuries at the 4-month mark had not returned at all since their admission to hospital. Although the proportion in this category was 34%, some of the original respondents did not respond at the follow-up; to ensure that we are being conservative with our estimate, we have therefore decided to use the proportion of total original respondents who reported being off work for 20+ in the previous 4 weeks at the 4-month interval (37 of 146; 25%).

We multiplied 25% of the working-age, in-work admitted patients (223,819) by 60 days (to account for the 3 months they were off work). This yielded a further 3,357,285 days off.

Combined with the figure above, this gives a total number of days off work as **7,001,735**

Stage 4: Relatives' or friends' days off work due to caring responsibilities

When a person is seriously injured, it is common for a caregiver to have to take time off work to look after them during their recovery, especially in the immediate aftermath of the injury. Kendrick et al. (2012) also studied this and found as follows:

Number of relatives' or friends' days off to look after the injured person	**Percentage**
0	42.0%
1 to 5	38.5%
6 to 10	11.2%
11 to 15	3.5%
16 to 20	1.4%
20+	3.5%

To account for this important aspect of workplace absence resulting from accidents, we have applied to same methodology as in Stage 3 to these figures:

Number of relatives' or friends' days off to look after the injured person	**Percentage**	**Number of people**	**Total days off (assuming midpoint)**
0	42.0%	94,004	0
1 to 5	38.5%	86,170	258,511
6 to 10	11.2%	25,068	200,542
11 to 15	3.5%	7,834	101,838
16 to 20	1.4%	3,133	56,402
20+	3.5%	7,834	156,673

NB: Numbers do not sum to 100% due to rounding

This gives a total of **773,966** lost working days for relatives and friends of the injured persons.

Stage 5: Direct costs to businesses

To arrive at a direct cost to businesses, we have summed the totals arrived at through Stages 2, 3 and 4 as follows:

Cause	Lost days
Time in hospital	773,873
Time off sick after discharge	7,001,735
Relatives' or friends' time off sick to care for the injured person	773,966
TOTAL	**8,549,574**

We have arrived at a figure for the average daily wage by dividing the average weekly wage for a worker in Great Britain (from the ONS's monthly statistics) for October 2022 (£627) by five (£125.40).[9] This is an average day's wage. We have then multiplied the daily wage by the number of days off work to arrive at a cost to businesses via lost output: **£1,072,116,580 (£1.1bn)**

Stage 6: Indirect costs to businesses

Absences cause business many additional costs. Costing this is complicated and its study remains neglected, but an Institute for Employment Studies research paper highlights the contributions of 'other salary oncosts, overtime, payments to replacement workers and all management costs from both line management or HR functions'.[10] Owing to a lack of research, there is no simple multiplier that has been identified to account for these indirect absence costs, but the IES study's analysis of multiple businesses showed that between 6% and 52% of costs were indirect and management costs, with the average across all their case studies being 33%.[11] Given that the average total contribution of indirect costs to all costs to business is one third, we use a multiplier of 1.5 onto direct costs to businesses to arrive at a total cost to business.

Based on this, we have multiplied our figure from Stage 5 by 1.5, to arrive at a total cost to businesses of **£1,608,174,870 (£1.6bn)**

Stage 7: UK estimates

As in the NHS costings above, we can estimate the cost to businesses across the UK by dividing this figure by 84.48 and multiplying the result by 100: **£1,903,616,087 (£1.9bn)**

Summary table

Total bed days for people aged 18 to 64 admitted to hospital due to accidents (2022/23)	1,440,721
Working population as a percentage of working-age total	75%
Estimated admissions in working population	1,080,541
Estimated weekdays in hospital (times by 5/7)	773,873

[9] ONS, 'Average Weekly Earnings in Great Britain: June 2024'. Retrieved 21 June 2024.
[10] S. Bevan and S. Hayday, *Costing Sickness Absence in the UK*, IES Report 382 (Falmer, 2001), p. ix.
[11] 38% (Case Study 1a), 32% (Case Study 1b), 40% (Case Study 1c), 34% (Case Study 2), 52% (Case Study 3), 49% (Case Study 4), 6% (Case Study 5), 19% (Case Study 6), 31% (Case Study 7): Bevan and Hayday (2001).

Days off sick after discharge	7,001,735
Relatives' or friends' days off sick to care for the injured person	773,966
Total days off work including time in hospital, after discharge and for relatives/friends/carers	8,549,574
Average daily wage	£125.40
Direct costs to businesses	£1,072,116,580
Indirect costs to businesses	£536,058,290
TOTAL (direct + indirect costs to businesses)	£1,608,174,870
Extrapolated for the whole of the UK	**£1,903,616,087**

Part 3. A&E attendances: Cost to the NHS

Before 2021/22, NHS England published summary tables which included 'primary diagnosis' data for A&E attendances aggregated by diagnosis category (e.g., 'cardiac conditions', 'head injuries'). Data is no longer published in this format so, for the purposes of this analysis, we have used the data for 2019/20 year (the year 2020/21 being unrepresentative due to the Covid-19 pandemic).[12]

Unlike hospital admissions, ICD diagnostic codes were not recorded against records of A&E attendances. To estimate the number of people attending due to accidents, we summed the totals for the following diagnostic categories: bites/stings, burns and scalds, contusion/abrasion, dislocation/fracture/joint injury/amputation, electric shock, foreign body, head injury, laceration, local infection, muscle/tendon injury, near drowning, nerve injury, poisoning, soft tissue inflammation, and sprain/ligament injury. The total number of A&E attendances due to these injuries was 6,007,713. This was 37% of the 16,233,463 attendance records which were valid.

However, there were a further 6,399,488 attendances without valid data; to account for this, we have assumed that injuries accounted for 37% of the total (22,632,951) as well. This yielded an estimated 8,376,049 attendances due to injuries annually in England.

Of course, not all injuries are caused by accidents – some are intentional or of undetermined intent. To estimate the share that are accidental, we have used mortality data; the share of accidental deaths[13] within the category of deaths due to external causes[14] in 2022 in England was 72%.[15] So, we have estimated that the number of A&E attendances in England due to accidents was 72% of 8,376,049 = **6,020,857** (27% of all A&E attendances)

According to the King's Foundation, the cost of an A&E visit starts at £86 and can rise depending on required care.[16] To be conservative, we have taken £86 as the cost for every attendance though it will be an underestimate; multiplying the cost by the attendance figure above gives a total of: **£517,793,724 (£500m)** for England.

To estimate a UK-wide figure, I have divided this figure by 84.48 (England's % share of the population of the UK) and multiplied it by 100; this gives an estimate of **£612,918,707 (£612m).**

The number of attendances for the UK can be estimated using this approach too: **7,083,361.**

[12] NHS England, 'Hospital Accident & Emergency Activity 2019-20' (10 September 2020). Retrieved 21 June 2024. Table 18.
[13] ICD-10 codes V01-X59, Y85-Y86
[14] V01-Y99
[15] ONS, 'Mortality Statistics – Underlying Cause, Sex and Age' – via Nomis. Retrieved 21 June 2024.
[16] King's Fund, 'Key Facts and Figures about the NHS' (4 May 2023). Retrieved 21 June 2024.

Part 4. A&E attendances: Cost to businesses (lost output)

Based on a similar methodology to the one used for hospital admissions, we have estimated the businesses costs of A&E attendances due to accidents.

Stage 1

NHS England's A&E attendance data shows that 54.1% of attendances were among people aged 18 to 64 in 2022.[17] They do not publish the age breakdown by diagnosis, so we have used this proportion to derive an estimate for working-age people attending due to accidents: 0.541 x 6,020,857 = **3,257,284**.

We have subtracted the number of hospital admissions in this cohort due to accidents (297,631) to avoid duplication, giving **2,959,652** attendances

Assuming an even distribution across the week, we estimate that weekday attendances were 2,114,037. Given that 75% of the working-age population were actually in work in October 2022,[18] we estimate that the number of days off work due to A&E attendances for accidents was 0.75 x 2,114,037 = **1,585,528.**

Using the methodology applied in the part 3, we can estimate the UK-wide number as **1,865,327 lost work days due to A&E visits.**

Stage 2

As with hospital admissions, people who attend A&E with injuries are likely to need further time off to recover from their injury. The same study used above (Kendrick et al 2012) found that people attending A&E took the following additional days off work:

Days off work	Proportion
0	35.2%
1 to 5	22.6%
6 to 10	11.1%
11 to 15	4.6%
16 to 20	4.1%
20+	22.1%

Applying this to the total number of attendances among in-working, working-age adults (2,219,740[19]) yields the following:

Days off work	Proportion	Number	Total days (midpoint x number)
0	35.2%	788,008	0
1 to 5	22.6%	501,661	1,504,983

[17] NHS England, 'Hospital Accident & Emergency Activity 2019-20' (10 September 2020). Retrieved 21 June 2024. Table 6.
[18] ONS, 'Employment Rate (Aged 16 to 64, Seasonally Adjusted): %'. Retrieved 21 June 2024.
[19] (The number of accident-related attendances minus accident-related hospital admissions (result: 2,700,756)) multiplied by 0.75 (share of working age people in work)

6 to 10	11.1%	246,391	1,971,129
11 to 15	4.6%	102,108	1,327,404
16 to 20	4.1%	91,009	1,638,168
20+	22.1%	490,562	9,811,249[20]
		TOTAL:	**16,252,933**

Using the approach from part 3 above, we can then estimate the total number of additional days **across the UK: 19,121,098**

Stage 3: total work days lost for A&E attendees due to accidents

We can arrive at the figure of total, UK-wide days lost for A&E attendees due to accidents by adding the estimated work days lost due to A&E visits (1,865,327) and the estimated days lost while recovering (19,121,098) to arrive at a UK-wide total for lost days: **20,986,425**.

Stage 4: Costs to businesses

Multiplying the number of days by the average GB worker's daily wage (£125.40) yields a total direct cost to businesses of **£2,631,697,728 (£2.6bn)**

There are additional indirect costs to businesses, which (as discussed in the methodology for costing hospital admissions) we are estimating by multiplying this figure by 1.5: **£3,947,546,592 (£4.0bn)**

Stage 5: Costs to businesses of admissions and A&E attendances

Summing this figure together with the admissions total in Part 3 (above) reveals that the costs to businesses are approximately **£5.9bn per annum**.

[20] Number x 20