

# Costs to Britain of workplace injuries and work-related ill health: 2009/10 update

## Workplace fatalities and self reported injury and ill health

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## Summary

New estimates show the total cost associated with workplace injuries and ill health (excluding occupational cancers) in Great Britain to be some £14 billion in 2009/10. This total has fallen in the last 3 years, reflecting the downward movements in injury and illness numbers.

- The cost estimates aim to reflect the economic costs of injuries and common ill health complaints resulting from current working conditions.
- Of the total cost in 2009/10, workplace illness cost society an estimated £8.5 billion; workplace injury (including fatalities) an estimated £5.4 billion.
- Somewhat over half of the total cost in 2009/10 fell on individuals whilst the remainder was shared between employers and government.
- £6.3 billion of the total cost in 2009/10 represents financial costs; the remaining £7.6 billion represents the monetary value given to individuals' 'pain, grief and suffering'.
- Between 2006/07 and 2009/10 the estimated total cost fell by around £2 billion (£14 billion in 2009/10 compared with £16 billion in 2006/07).
- Cost estimates for 2006/07 and onwards are not directly comparable with previously published figures, being based on new, more accurate methods.
- Further work is underway to estimate costs of less common work-related illness conditions such as cancer. These costs could be considerable.

**Figure 1: Total cost of workplace injuries (including fatalities) and ill health in Great Britain, 2006/07–2009/10 (2009 prices)**

**Note:** average sampling variability +/- 8% on the total

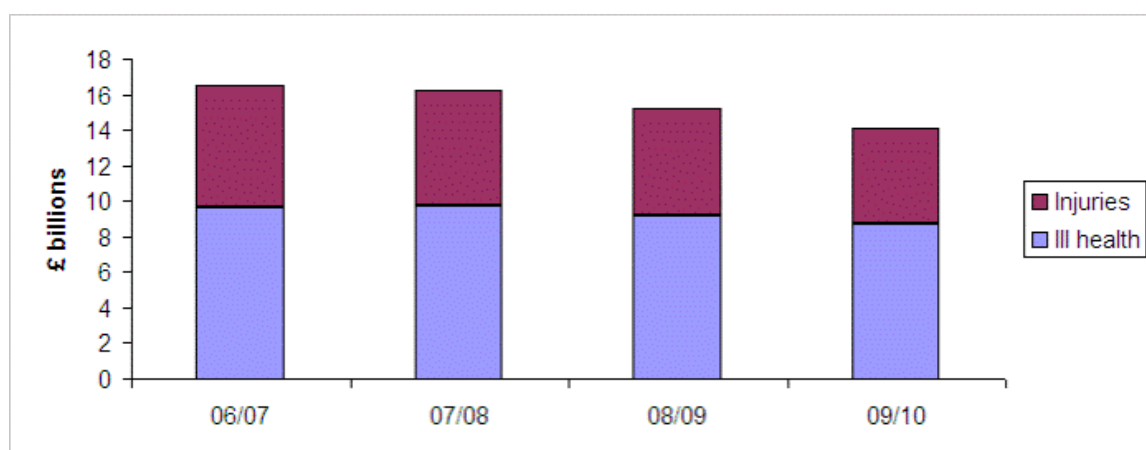


Table 1 presents the cost estimates separated out by the three distinct groups to whom the cost falls, namely individuals, employers and government. It includes cost estimates for both 2006/07 and 2009/10, the earliest and latest year for which estimates are consistent.

**Table 1: Estimated Costs to Britain of work related injuries and ill health by cost bearer (2006/07 and 2009/10)**

Cost Bearer	Period	Estimated Cost (£billions, 2009 prices)			% of total cost
		central	95% C.I.		
			lower	upper	
Individuals	2006/07	9.4	8.5	10.2	58%
	2009/10	7.6	6.8	8.4	55%
Employers	2006/07	3.4	3.3	3.5	21%
	2009/10	3.1	3.0	3.1	22%
Government	2006/07	3.5	3.1	3.9	21%
	2009/10	3.3	2.9	3.7	24%
Total cost to society	2006/07	16.3	15.0	17.5	100%
	2009/10	13.9	12.7	15.1	100%

## Introduction

Workplace injuries and ill health impose economic costs – on employers (e.g. sick pay), on individuals (e.g. the human costs of pain, grief and suffering) and on the Government (e.g. health care expenditure). Many of these costs are financial costs which can be approximately calculated by estimating payments that have to be made and income that is lost because of workplace injury or ill health. However, a significant proportion of the total costs reflect non-financial costs which represent, to the extent that it can, what many may consider to be the ‘true’ cost of workplace injury and illness – the loss of health, grief, pain and suffering endured by those affected and their families.

Estimating costs of health and safety failures is not a new area for HSE: we have published estimates of the aggregate costs of health and safety failures periodically over the last two decades, most recently in an interim update in 2004 (giving figures for 2001/02). Unit costs or appraisal values for different types of injury and ill health have been published separately, for use in impact assessments (valuing benefits from HSE interventions). Up to now their methodologies have not been fully consistent.

HSE commissioned new research in 2009 to review and update the previous costing methodology. The research involved an external contractor (Risk Solutions) working with a number of leading academics in the field, including independent peer review, and with significant input from HSE economists and statisticians. This work produced a new costs model which in turn provided the estimates for 2006/07 that are published in a detailed methodology report<sup>1</sup>. HSE has now used this model to produce estimates for years up to 2009/10 (presented in constant 2009 prices to allow meaningful comparisons over time).

Unlike previous estimates, the new cost model aims to reflect the economic costs of workplace fatalities, workplace injuries, and new cases of work-related ill health associated with **current** working conditions (previous cost estimates also included the costs of cases arising from historic working conditions). However, as with previous estimates, it has not been possible to include some less common work-related illness conditions such as cancer, which we expect to be substantial. This gap in the cost estimates is acknowledged in the report, as are some other areas for further research, and discussed below (see section entitled ‘Future improvements and developments’ for more details).

The new methods are more accurate than those used previously:

- The range of costs, allowing for sampling uncertainty in the number of annual cases, is narrower (from £13 to £15 billion for the estimate of aggregate costs in 2009/10).
- Aggregate costs and unit costs have been calculated in a single integrated model, giving estimates of the appraisal values for 2006/07 onwards that are fully consistent with the aggregate cost estimates.
- For the first time it is possible to completely separate out costs to individuals, employers and the government, at the unit cost level.
- The new estimates reflect the costs of injuries and common ill health complaints resulting from current working conditions, and can be updated annually, making them more useful as an indicator of the current performance of the health and safety system.

A description of the methodological changes is given in the section ‘Methodological and data improvements to the cost model’ below on page 22. Further discussion of the main uses of aggregate and unit cost estimates are provided in the section ‘Uses of the economic cost estimates’ on page 19.

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<sup>1</sup> See [www.hse.gov.uk/research/rrhtm/rr897.htm](http://www.hse.gov.uk/research/rrhtm/rr897.htm)

## Number of workplace injury and work-related illness cases

The cost estimates presented in this report are based on annual estimates for 2009/10<sup>2</sup> of the number of workplace injury and newly occurring work-related illness cases. With the exception of cases of fatal injury, which are based on statutory notifications under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), estimates of injury and illness relate to self-reports of illness and injury from the Labour Force Survey (LFS).

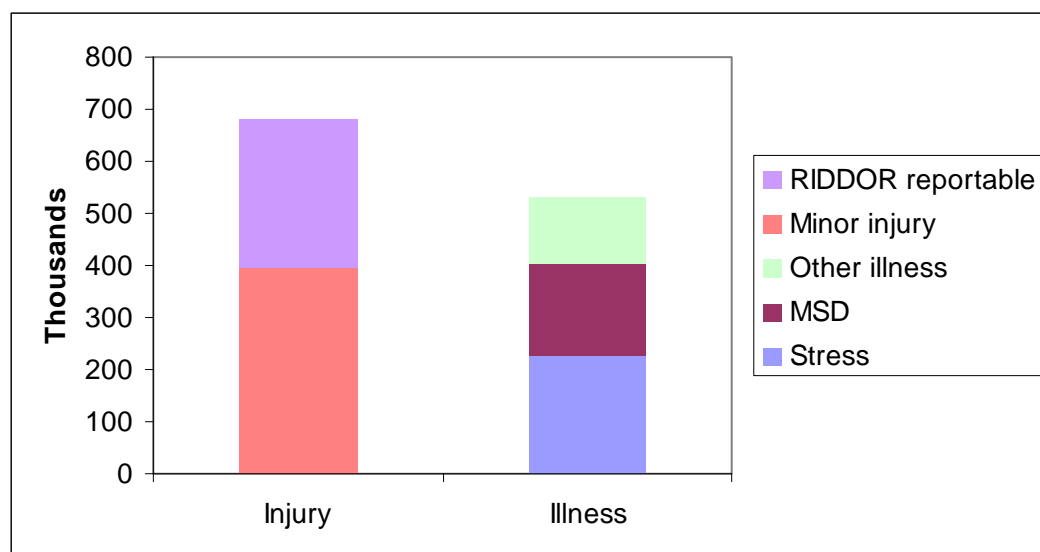
In 2009/10 there were an estimated 700,000 people who suffered a workplace injury: of these 400,000 sustained what we can term minor injury, that is, an injury resulting in less than 4 days absence from work, whilst an estimated further 300,000 sustained an injury that would be reportable under RIDDOR. There were 166 people fatally injured at work in this period (this number whilst included in the figure below is too small relative to the total injury number to be visible on the bar).

In terms of illness, there were an estimated 500,000 people who suffered a 'new' work-related illness in 2009/10; around 200 000 cases each of stress, depression or anxiety and musculoskeletal disorders (MSD) with a further 100,000 other illness types.

Further, we estimate that annually, around 16,000 people withdraw permanently from the labour market as a result of their workplace injury or work-related illness. These cases have high associated costs and are explicitly included in the cost model.

It should be noted that as these estimates are all largely survey based, they are subject to a degree of sampling error or uncertainty (as are all survey estimates). The resulting cost estimates allows for this by expressing costs in terms of a range of values (the 95% Confidence Interval) which accounts for the uncertainty in the underlying estimate of the annual number of cases.

**Figure 2: Average annual number of new workplace injury and work-related illness cases, 2009/10**



**Source:** RIDDOR (for fatalities) and estimates of injury and illness relate to self-reports of illness and injury from the Labour Force Survey

<sup>2</sup> Annual estimates for 2009/10 are based on the average annual estimate for 2008/09-2010/11.

## Economic costs by cost bearer

The Costs to Britain model ('the cost model') separates costs between three distinct groups on whom the costs of workplace injury and ill health fall:

- 'Individuals': those who suffer a work related incident, and their families.
- 'Employers': the employers of individuals affected by work related incidents.
- 'Government': the State, or ultimately the taxpayer.

Combining the costs of these three groups gives the total cost to society as a whole. It should be noted that the cost to society is net of transfers between one group and another. For example state benefits represent income to individuals but are a cost to the government (or taxpayers). For clarity on all of the transfers, the detailed methodology report and updated cost breakdown tables<sup>3</sup> shows the money inflows and money outflows between each party as well as the net cost.

More details of the cost breakdown for each group are set out in subsequent sections.

### Costs to individuals

This section presents monetary estimates of the net costs of workplace injury and work-related ill health to affected individuals and in some cases those who are close to them.

Costs to individuals of workplace injury and work-related ill health consist of both financial costs and non-financial costs. Financial costs can be approximately calculated by estimating payments that have to be made and income that is lost because of workplace injury or ill health. They include:

- Loss of income
- Compensation payments
- Health and rehabilitation costs
- Administrative costs

Non-financial costs on the other hand represent the monetary value given to an individual's pain, grief and suffering. The economic justification for including non financial costs is given below.

The following sections provide more detail on each of the above cost elements.

#### *Loss of income*

This includes the loss of gross earnings due to absence from work (both short-term absence in the current year, and absences in future years<sup>4</sup> for those whose illness or injury leads to their permanent withdrawal from the workforce), net of replacement income such as sick pay and state benefits. The 2009/10 estimates produce the following breakdown of lost income:

■ Gross loss of earnings:	£4,597 million
– Less sick pay income:	(£1,030 million)
– Less state benefits income:	(£1,829 million)
– Less saved tax and National Insurance:	(£935 million)
■ <b>Net loss of income:</b>	<b>£803 million</b>

Gross lost earnings are clearly substantial; although once replacement income is taken into account the net income loss is considerably smaller (although still substantial) at some **£803 million**.

#### *Compensation payments to individuals*

Compensation represents lump sum payments to individuals made from claims against Employers' Liability (EL) insurance cover, a compulsory insurance for all employers (other than the government). Data provided by the Association of British Insurers (ABI) gives the total value of such claims, though only a proportion of

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<sup>3</sup> See: [www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain](http://www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain)

<sup>4</sup> Future lost earnings (and benefits received) are expressed in terms of their discounted present value.

this total will result to current injury and new illness cases. We have no estimate of what this proportion may be, and moreover how this proportion may vary over time. We therefore take as the compensation payments to individuals for workplace injury and work-related illness the total payment made under EL insurance. Further this value has been held constant for the years 2006/07 to 2009/10. Relative to the overall net cost to society this is not expected to introduce substantial inaccuracy.

It is possible in some years that net income loss to individuals, also taking into account compensation, could be close to zero or even slightly positive (as it is in 2009/10) depending on the balance of lost earnings and replacement income in the cost model. However compensation does not solely cover loss of earnings, as it also compensates for loss of health and pain and suffering. In 2009/10 compensation to individuals is estimated to be **£988 million**.

### **Health and rehabilitation**

This reflects financial costs to individuals such as out of pocket medical expenses and travel costs to hospital. In 2009/10 these costs are estimated to be **£124 million**.

### **Administrative costs**

The main administrative cost to the individual or their friends and family is the time spent initiating and managing claims for sick pay and state benefits, and compensation and insurance payouts. Overall administrative costs to individuals in 2009/10 are estimated to be **£21 million**.

### **Non-financial human costs**

Non-financial costs are the monetary value that individuals would be willing to pay to avoid risk of death or ill health or injury. It is therefore a measure of the economic value that people place on risk reduction and is over and above any direct financial costs that they incur.

It is standard practice in the economics of public policy to place a monetary value on non-financial costs where possible. Successive governments have recognised the need for quantitative measurements for non-financial impacts on wellbeing. The Office for National Statistics (ONS) is currently exploring the potential for improved measurement of societal wellbeing<sup>5</sup>. It is developing better measures of national well-being which are intended to cover the quality of life of people in the UK, the environment and sustainability, as well as the economic performance of the country.

Sources of non-financial value typically provide quality of life. However, they are generally not products that can be purchased directly and are therefore often called 'non market goods and services'. Whilst market goods and services *are* represented in GDP figures, it is often the case that markets are not feasible or ethically acceptable. It is for that reason that they are not reflected in GDP and are thus 'non-financial', not that they are less important to quality of life than market goods.

Examples of non-market goods and services go much wider than health and safety, including protection from crime and environmental quality. If it were possible that markets could be created it would be possible (although not always ethical) to pay to secure more of these goods. Outside of the working context, there is often little controversy around paying for safety – consider the impact of safety features on car prices. But in the absence of markets, economists seek to find out how much people would *hypothetically* pay for safety or health *if* markets existed.

Whilst there is no substitute for *real* market data, exclusion of non-financial costs on the basis that they do not involve a financial transaction results in an underestimation of economic costs. This would undermine the usefulness of the costs as an indicator of economic value.

The cost model uses well established value, used by other Government Departments<sup>6</sup>, to estimate society's willingness to pay for avoided risk of fatality. However this value reflects what people would pay to *reduce risk*, not what they would accept in compensation for suffering. It can never fully capture the loss to victims

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<sup>5</sup> See [www.ons.gov.uk/ons/taxonomy/index.html?nscl=Measuring+Societal+Well-being](http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Measuring+Societal+Well-being)

<sup>6</sup> See Department of Transport's 'webTAG' guidance, unit 3.4.1 The Accidents Sub-Objective' which provides the origin of values of prevented fatalities [www.dft.gov.uk/webtag/documents/expert/unit3.4.1.php](http://www.dft.gov.uk/webtag/documents/expert/unit3.4.1.php)

and their families of *actual* work related fatalities. A full description of the method used in the cost model to calculate non financial values is provided in Annex 3 of the detailed methodology report<sup>7</sup>.

In 2009/10 these non-financial costs are estimated to be **£7,634 million**.

### Summary of costs to individuals

**Table 2** below summarises the detailed cost breakdown to individuals.

It can be seen from the table that non-financial costs to individuals account for the vast majority of the net cost to individuals. The table also shows that after allowing for the offsetting financial inflow from compensation payments, financial costs are close to zero

**Table 2: Summary of aggregate costs to individuals of workplace fatalities and injuries and work-related ill health in 2009/10**

	Estimates cost (£ millions)		
	central	95% C.I.	
		lower	upper
Net loss of income	803	557	1,050
Compensation	(988)	n/a	n/a
Non-financial human costs	7,634	7,049	8,220
Health and rehabilitation cost	124	121	127
Administrative costs	21	20	23
<b>Total costs</b>	<b>7,594</b>	<b>6,796</b>	<b>8,396</b>

**Note:** confidence intervals are not additive so do not sum to the total. Inflows are shown in parentheses.

### Costs to employers

This section presents estimates of the costs to employers of workplace injury and work related ill health in 2009/10. Costs to employers include:

- Sick pay payments
- Insurance premiums
- Production disturbance costs
- Administrative and legal costs

### Sick pay and associated National Insurance

Previous studies have assumed that the affected firm always seeks to maintain output when faced with temporary or permanent loss of an employee, and this is the assumption we continue to make in the cost model. If we further assume that output is maintained at the same marginal cost of production, then the net cost to the employer is the additional sick pay it makes to the absent employee.

Net costs of sick pay and associated National Insurance are calculated as follows:

- Payments to individuals: £1,030 million
- Less Government reimbursements<sup>8</sup>: (£8 million)
- National insurance on sick pay: £132 million
- **Total net cost of sick pay: £1,154 million**

<sup>7</sup> See [www.hse.gov.uk/research/rrhtm/rr897.htm](http://www.hse.gov.uk/research/rrhtm/rr897.htm)

<sup>8</sup> Payments by employers to individuals are offset by a small (estimated £8 million) reimbursement to employers from the Government through the Percentage Threshold Scheme. If in a tax month, the total Statutory Sick Pay (SSP) paid to all employees (including the underlying SSP that is part of any Occupational Sick Pay payments) is more than 13% of the total gross employers' plus employees' class 1 National Insurance contributions for the same tax month, the excess can be reclaimed from HM Revenue and Customs under the Percentage Threshold Scheme.

## Insurance premiums

As discussed in the section on entitled 'Compensation payments' on page 6, Employers Liability (EL) insurance is a compulsory insurance for all employers (apart from the government). Information from the ABI puts the total cost of premiums paid at £1,680 million (averaged over 2005-2007 returns to smooth in-year underwriting losses and gains and updated to 2009 prices). The earlier section also explains limitations in this estimate.

To this, we add corporate private health insurance premiums attributable to workplace accidents and work-related ill health (an optional insurance). These figures were sourced from an insurance company and were not considered easily updateable. They are therefore held constant based on the 2006/7 estimate. In 2009/10, these costs are estimated to be £52 million, and therefore total costs of insurance premiums are estimated to be **£1,732 million** in 2009/10.

## Production disturbance

Production disturbance costs are associated with work reorganisation and recruitment and induction of temporary or permanent replacement staff, in order to maintain output. In 2009/10 these costs are estimated to be **£118 million**.

## Administrative and legal costs

Costs to employers associated with administering sickness claims, insurance claims, compensation claims etc. amounted to an estimated £22 million in 2009/10. The cost model also accounts for employers' internal and legal costs arising from investigations and prosecutions for health and safety breaches by HSE or local authorities and the cost of any fines due to breach of regulation. Investigation and legal costs are estimated to be £33 million in 2009/10. The combined cost of administrative and legal costs is **£55 million** in 2009/10.

## Summary of costs to employers

Table 3 summarises all costs to employers in 2009/10.

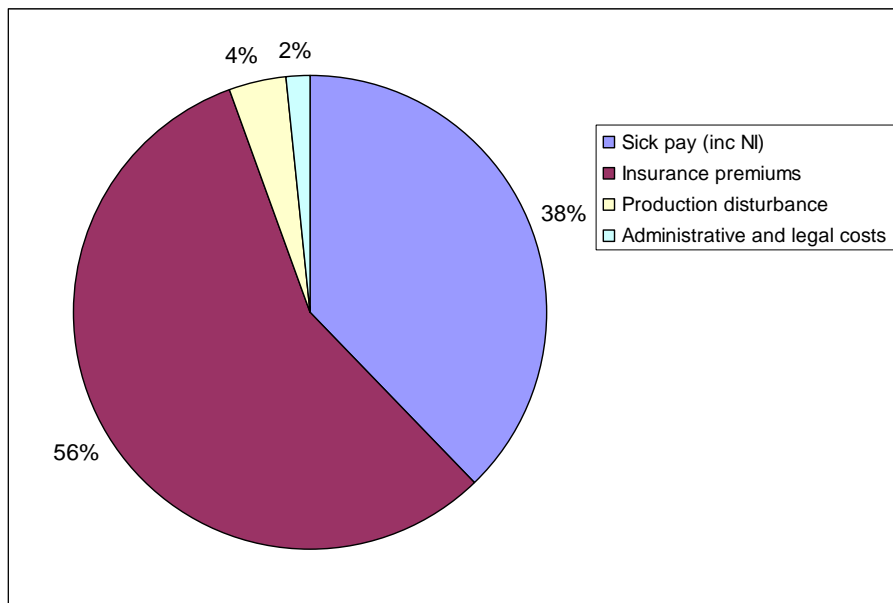
**Table 3: Summary of aggregate costs to employers of workplace fatalities and injuries and work-related ill health in 2009/10**

	Estimated cost (£ millions)		
	central	95% C.I.	
		lower	upper
Sick pay (inc NI)	1,154	1,083	1,224
Insurance premiums	1,732	n/a	n/a
Production disturbance	118	106	130
Administrative and legal costs	55	53	56
Total costs	3,059	2,979	3,139

**Note:** confidence intervals are not additive so do not sum to the total.

Figure 3 shows the proportional breakdown of the total cost to employers by cost category. In 2009/10 around 95% of employers' costs are accounted for by sick pay and compensation payments, similar to each of the previous three years.

**Figure 3: Breakdown of costs to employers, 2009/10**



### Costs to Government

This section presents estimates of the costs to the government of workplace injury and work-related ill health in 2009/10, i.e. any costs arising from workplace injury and work-related ill health that are not borne directly by the affected individuals or their employers. The relevant costs can be summarised as follows:

- Costs arising from loss of earnings to the individual (Benefits payments, reduction in tax and national insurance receipts)
- Medical treatment and rehabilitation costs
- Administration and legal costs

#### *Costs arising from loss of earnings to the individual*

The Government provides state benefits payments to individuals who are not able to work because of injury or ill health (this is an equal and opposite to the state benefits received by people not able to work). Also, as a further consequence of an individual's loss of earnings, the Government suffers reductions in income tax and national insurance receipts from individuals who no longer work due to work related injury or illness. However, the Government receives employers' national insurance contributions on sick pay although this is partially offset by national insurance contributions reclaimed by businesses under the percentage threshold scheme.

Therefore the Government incurs both costs and offsetting inflow. The net cost is calculated as follows:

■ State benefits payments to individuals:	£1,829 million
■ Reduction in income tax and NI receipts:	£935 million
– Less employers' national insurance contributions on sick pay:	(£132 million)
■ Percentage Threshold Scheme – reclaimed NI:	£8 million
■ <b>Total net cost to Government:</b>	<b>£2,640 million.</b>

#### *Health and rehabilitation*

Medical and rehabilitation costs are associated with providing National Health Service resources. This includes the cost of ambulances, hospital and clinical costs, general practitioner consultations, and prescription costs. Total costs for 2009/10 were estimated to be **£608 million**.

## Administration and legal costs

This category is made up of clerical overheads associated with administering state benefits and statutory sick pay combined with the internal costs borne by the Health and Safety Executive and Local Authorities for investigating work related incidents and time associated with prosecution. This is partially offset by the fines received following prosecutions for breach of health and safety law. Total costs for 2009/10 were estimated to be **£24 million**.

## Summary of costs to Government

Table 4 summarises all costs to government in 2009/10.

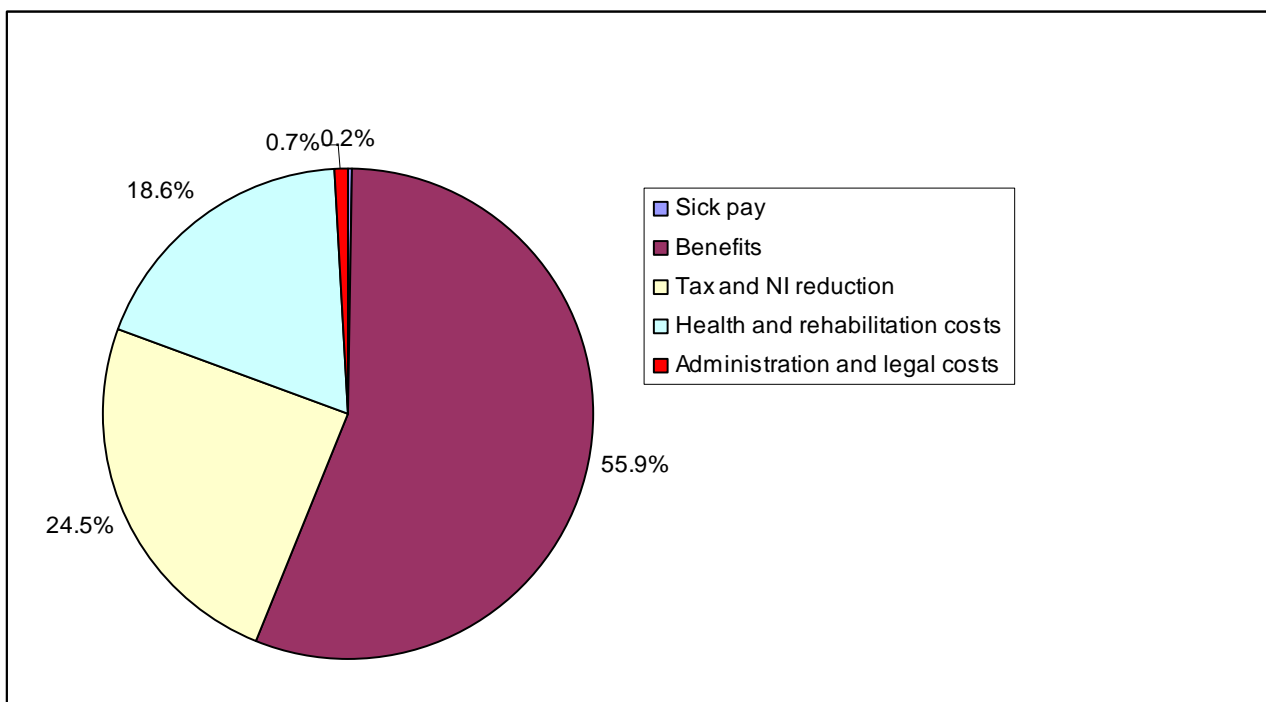
**Table 4: Summary of aggregate costs to Government of workplace fatalities and injuries and work-related ill health in 2009/10**

	Estimated cost (£ millions)		
	central	95% C.I.	
		lower	upper
Benefits, reduced tax/NI receipts	2,640	2,243	3,036
Health and rehabilitation costs	608	579	638
Administrative and legal costs	24	22	25
<b>Total costs</b>	<b>3,272</b>	<b>2,865</b>	<b>3,678</b>

**Note:** confidence intervals are not additive so do not sum to the total.

Figure 4 shows the proportional breakdown of the total cost to government from workplace injury and ill health by cost category. This is a roughly similar proportion to each of the previous three years,

**Figure 4: Breakdown of costs to Government (taxpayers), 2009/10**



## Total costs to society

As previously noted the overall costs to society of workplace injury and work-related ill health in 2009/10 need to include all genuine resource costs but should not include cost transfers between one sector of the economy and another. For example state benefits represent income to individuals but are an equal and opposite cost to the government.

The detailed cost breakdown for years 2006/07 to 2009/10<sup>9</sup> shows each individual inflow and outflow by cost bearer. The net cost to society is obtained by summing across the columns (for individuals, employers and government), resulting in some net costs amounting to zero.

Remaining costs (after accounting for transfers) are:

- Loss of gross output
- Compensation
- Non-financial human costs
- Production Disturbance
- Health and rehabilitation
- Administration and legal

The relevant cost categories at the societal level are summarised in the following sections.

### Loss of output

At the societal level, the total loss of output to the economy arising from an individual's absence from work due to a workplace injury or illness is assumed to be equivalent to the gross loss of earnings of the affected individuals. Whilst the model assumes that the firms affected by individuals' absence will seek to maintain their output (for example through work reorganisation or recruitment), a further underlying assumption of the model is that the economy has full employment. Therefore at the macro (or economy wide) level, it is reasonable to assume that the affect of the absence of a worker results in one less worker elsewhere in the labour market after the general churn to replace this worker. This reduction in the labour market results in loss of output to the wider economy. In 2009/10 loss of output is estimated to cost society **£4,597 million**.

Other elements of loss of earnings (e.g. sick pay, tax, national insurance and benefits) are costs transferred between one cost bearing group and another and so at the society level all cancel each other out.

### Compensation

The net cost to society after transfers is the difference between the total premium paid by employers for Employers' Liability Insurance (£1,680 million) and the total claim value received by the affected individuals (£988 million). It represents the profit margin and overheads for the insurance companies and the claim value consumed in legal costs and expenses. In 2009/10 this is estimated to be around: **£692 million**.

### Non-financial human costs

The non-financial costs borne by individuals are the largest single component (over 50%) of the overall cost to society (**£7,634 million** in 2009/10).

### Production Disturbance

Production disturbance costs are borne solely by the employer. These costs, which are described in more detail under the section on employers cost, total **£118 million** in 2009/10.

### Health, rehabilitation and health insurance

The majority of the health and rehabilitation costs associated with workplace injury and work-related ill health are borne by the government through the funding of the National Health Service, but there are some additional costs borne by individuals for prescription charges etc.

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<sup>9</sup> [www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain](http://www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain)

Added to this is the difference between the total premium paid by individuals and employers for private health insurance and the total claim value paid out to fund treatment. This represents the profit margin and overheads for the insurance companies.

The net total of these elements in 2009/10 is estimated to be around **£784 million**.

### Administration and legal

Individuals, employers and the government all incur some administrative costs for informing people about sickness and processing the associated money inflows and outflows as outlined in the sections above. The total legal costs and internal man power costs incurred by employers, HSE and local authorities are also a net cost to society, the only transfer being fines paid to the Government by employers following prosecution. Total net costs in 2009/10 are estimated to be around **£100 million**.

### Summary of costs to society

Table 5 below summarises the detailed cost breakdown to society.

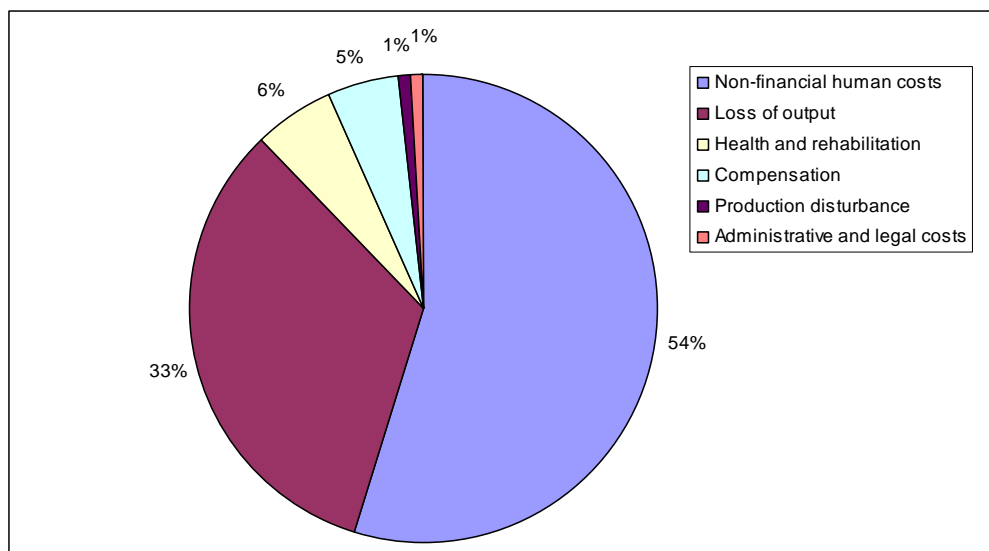
**Table 5: Aggregate costs to society of workplace fatalities and injuries and work-related ill health in 2009/10**

	Estimated costs (£ millions)		
	central	95% C.I.	
		lower	upper
Non-financial human costs	7,634	7,049	8,220
Loss of output	4,597	3,948	5,245
Health and rehabilitation	784	753	817
Compensation	692	n/a	n/a
Production disturbance	118	106	130
Administrative and legal costs	100	96	104
<b>Total costs</b>	<b>13,925</b>	<b>12,720</b>	<b>15,131</b>

**Note:** confidence intervals are not additive so do not sum to the total.

The proportional breakdown of these costs remains fairly stable across the years 2006/07 to 2009/10 (the time period for which consistent estimates are available). The breakdown for 2009/10, set out in Figure 5, shows that non-financial costs accounted for just over half of the total cost to society, with loss of gross output accounting for a third of the total cost.

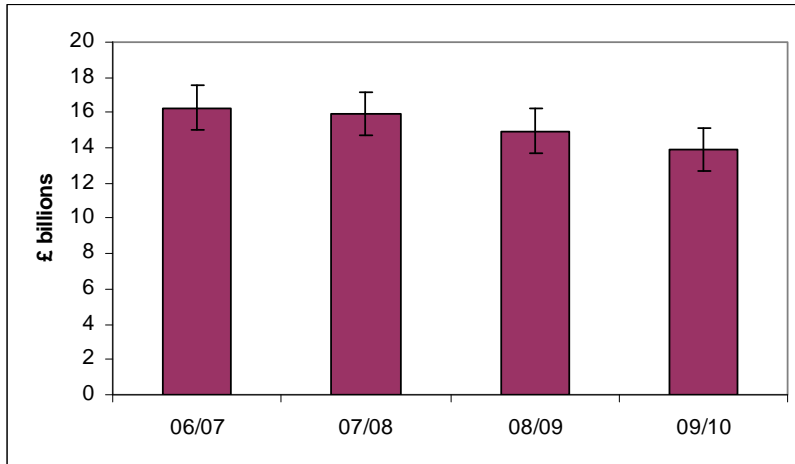
**Figure 5: Breakdown of costs to society, 2009/10**



## Changes in cost estimates between 2006/07 and 2009/10

Between 2006/07 and 2009/10 (the time period for which consistent cost estimates are available) the total cost to society arising from workplace injury and ill health (excluding occupational cancer) fell an estimated 15% from £16.3 billion to £13.9 billion. This total has fallen in each of the last 3 years, reflecting the downward movement in illness and particularly injury numbers and decline in the average number of days lost per case.

**Figure 6: changes in estimate of total cost to society between 2006/07 and 2009/10**



**Source:** HSE cost model.

However, it should be noted when considering changes in cost over time that some cost components are held roughly constant between years, due to data limitations and availability. The impact of this is that the estimated changes in cost over time may be an under or over statement of the true underlying movement in total costs. Despite this, it remains our best estimate of both the direction and magnitude of the change in cost over time.

The most notable example of costs being held constant is in the estimate of costs attributable to the 'never return' cases: these costs are held roughly constant at around £5 billion each year. (The high cost is driven by long periods of lost income together with greater non-financial costs associated with serious injury or ill health). The reason for holding these costs roughly constant is due to the difficulty in measuring the actual annual number of such cases (it is actually the number of cases that is held constant). Compensation costs – both payments to individuals and employers premiums for Employers Liability insurance – are also held constant in the model, representing £0.7 billion of the total costs to society.

## Economic costs by incidence type

Cost estimates can be broken down by incidence type: namely by fatal injury, RIDDOR reportable injury, minor injury and ill health. This is the greatest breakdown by incidence type currently available because of limitations in disaggregating the estimate of 'never returns' by incidence type (though this is something we will be looking to improve in the future).

The breakdown of the aggregate cost estimate by incidence type in 2009/10 are summarised in Table 6.

**Table 6: Aggregate costs to society of workplace fatalities and injuries and work-related ill health in 2009/10, grouped by injury and ill health category**

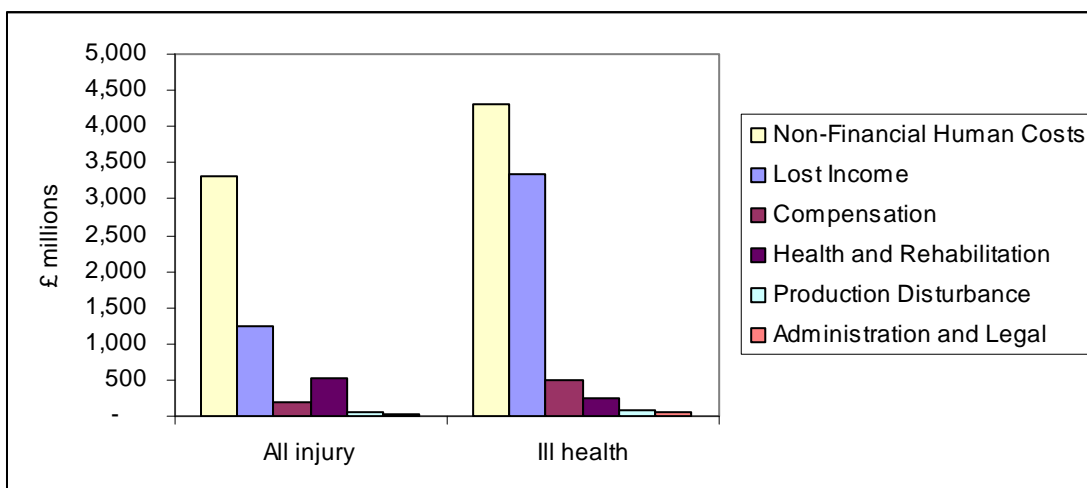
	central	95% C.I.	
		lower	upper
Fatal injuries	249	248	251
Reportable injuries	5,012	4,543	5,482
Minor injuries	114	108	120
Ill health	8,550	7,632	9,468
Total costs	13,925	12,720	15,131

**Note:** confidence intervals are not additive so do not sum to the total.

As can be seen from the table above, the majority of total costs to society (around 61%) are attributable to ill health. Just over a third (36%) are attributable to reportable injuries, whilst minor injuries and fatalities account for much smaller portions of total cost (1% and 2% respectively, the former due to the low unit cost incurred by such injuries, the latter due to the relative few numbers of such cases). Whilst fatalities are a small component of overall cost (see Table 6), they are clearly an important one.

The following figure shows the cost of incidents by cost category. Lost income is a greater proportion of total costs due to a greater proportion of people who will never return to work being apportioned to ill health than injury. People who never return to work incur a high cost associated with lost income. The LFS estimate of 'never returns' is apportioned between workplace injury and work-related ill health using the ratio of injuries to total injuries and ill health that have resulted in at least 3 months off work in the past 12 months as an indicator of the likely proportion of people who will eventually decide to give up work as a result of their injury.

**Figure 7: costs by broad incident type by cost component**



## Economic costs by region

Estimates of costs to society in the regions and nations of Britain are obtained by multiplying the estimated regional incidence of work-related ill health and workplace injury by the relevant unit cost per case. The unit cost per case is therefore assumed to be the same across regions.

This approach does not allow for regional wage variations, which might be significant for Greater London where the average wage is markedly greater than in the rest of Great Britain. However, regional wage variations are affected by the industry composition of employment within a region (for example, a larger percentage of professional jobs in Greater London). Since the industry composition of employment within a region does not necessarily mirror the industry composition of workplace fatalities and self reports within a region, an adjustment for regional salary variations was judged as potentially having an unknown distorting effect on the cost estimates. It was therefore felt more prudent to use the unit costs which are based on the national average salary.

**Table 7: Aggregate costs to society in 2009/10, broken down by government office region**

	Estimated costs (£ millions)		
	central	95% C. I.	
		lower	upper
North East	701	642	761
North West	1,323	1,212	1,434
Yorkshire and The Humber	1,342	1,228	1,456
East Midlands	1,107	1,014	1,200
West Midlands	1,060	970	1,150
East	1,476	1,348	1,606
London	1,555	1,419	1,692
South East	2,222	2,027	2,418
South West	1,407	1,288	1,528
Scotland	1,126	1,032	1,221
Wales	603	552	654
Unknown	3	3	4
Total (inc. unknown)	13,925	12,720	15,131

**Note:** confidence intervals are not additive so do not sum to the total. Employment numbers vary significantly by region. However, it should be noted that other factors as well as employment levels will determine the actual number of work related ill health and injury cases within a region, for example the industrial and occupational mix of employment.

## Economic costs by industry

Estimates of costs to society by industry are obtained by multiplying the estimated industry incidence of work-related ill health and workplace injury by the relevant unit cost per case, adjusted to take into account industry wage differentials. Estimating industry estimates in this way makes the assumption that the severity of illness and injury outcomes by industry will be similar. In particular, it is assumed that a 'never return' case is equally likely to occur across the industry groups. Whilst this assumption may be simplistic, it gives a reasonable basis for estimated costs by industry.

In the cost model, industry specific unit cost estimates have been calculated by factoring the loss of earnings component of the national appraisal values by the ratio of industry wage to national average wage. All other components of the national appraisal value are assumed to be the same across industry. The differences between industry average wages and the national average are set out in Table 8.

**Table 8: Differences between industry wages and national average wage 2009**

	Industry average wage	Difference versus national average wage
A: Agriculture, forestry and fishing	£87	-26%
B, D, E: Mining, utilities & waste	£133	14%
C: Manufacturing	£113	-4%
F: Construction	£117	0%
G: Wholesale and retail, repair of vehicles	£91	-22%
H: Transportation and storage	£107	-8%
I: Accommodation and food	£67	-43%
J-N: Technical, financial, scientific and professional service	£144	23%
O: Public administration	£121	4%
P: Education	£125	7%
Q: Health	£114	-2%
R-U: Arts, entertainment, recreation and other services.	£100	-14%
National average wage	£117	n/a

**Source:** Annual Survey of Hours and Earnings data for 2009.

Based on these wage rates, Table 9 sets out the aggregate costs by industry sector.

**Table 9: Aggregate costs to society of workplace fatalities, workplace injury and work-related ill health in 2009/10, broken down by industry (£ millions)**

	Estimated costs (£ millions)		
	central	95% C.I.	
		lower	upper
A: Agriculture, forestry and fishing	216	164	268
C: Manufacturing	1,350	1,174	1,525
F: Construction	1,360	1,180	1,539
G: Wholesale and retail, repair of vehicles	1,483	1,293	1,673
H: Transportation and storage	942	801	1,083
I: Accommodation and food	411	327	496
J-N: Technical, financial, scientific and professional service	2,022	1,757	2,287
O: Public administration	1,056	899	1,212
P: Education	1,457	1,257	1,657
Q: Health	2,626	2,325	2,927
R-U: Arts, entertainment, recreation and other services.	655	541	768

**Note:** confidence intervals are not additive so do not sum to the total. Sample numbers are too small to provide estimates for sectors B, D and E. Employment numbers vary significantly by industry group. Not surprisingly, this has a significant bearing on the distribution of injury and ill health incidence and thus costs across industry. Differences in costs between industry groups do not in themselves indicate differences in risk between industry groups.

## Uses of the economic cost estimates

As discussed in the Introduction, the new research has produced estimates of both aggregate and unit costs as well as a consistent model to provide annual updates. This section describes the important uses to which each of these sets of figures can be put, and explains how the new estimates are designed to meet these needs more fully than has been possible in the past.

### Uses of the aggregate costs

Estimates of the aggregate costs of workplace injuries and work-related ill health are used for three broad purposes by HSE and other stakeholders: to indicate the overall scale of the problem; to describe its distribution; and to show how it is changing over time.

For the **overall scale** of health and safety failings, the cost estimates provide a means of adding together very different health and safety outcomes (for example fatalities and minor injuries) so that they can be presented in a single summary measure. There is interest in such a measure from a wide range of stakeholders: Government departments; the media; private sector organisations; employer organisations; trade unions; academics and the public. HSE believes that this overall measure needs to be robust, transparent and based on sound evidence: the new methodology involved external input and peer review and is fully documented in the detailed methodology report.

It is important to note that this figure is the scale of the *remaining* problem, after all existing regulations and other risk control actions by the health and safety system have had their effects: it is *not* in itself a measure of the benefits from such actions (which could be compared with the costs e.g. of regulation). However, the unit costs can be used in this way for particular interventions, as described below, and can also be employed to show the 'cost savings' from the historical improvements achieved in health and safety outcomes, or from the fact that Britain has a better health and safety record than the European average.

The **distribution** of the costs is also of interest, as illustrated in the various analyses presented in earlier sections of this document. In particular, the share of the costs borne by different groups – individuals, employers and government – is useful in understanding the incentives operating on each of these with respect to taking risk control measures. The breakdown by incidence type can help inform strategic policy and new programme development, for example concerning interventions in the area of safety or of health. And the costs in different regions and different industry sectors are of interest to those who live or work in them.

Finally, **changes over time** in the aggregate costs provide an indicator of movements in the overall performance of the health and safety system. The new estimates provide a better indication of current performance, because they focus on costs due to current working conditions. The new model means that, for the first time, the costs can now be updated each year when the annual health and safety statistics become available. And because of this, the estimates will not become out of date as they have in the past (the previous estimates related to 2001/02, and the last ones involving a full review of methods date back to 1995/96).

### Uses of the 'appraisal values'

The unit costs to society per each incidence of workplace fatality, workplace injury and work-related ill health are most commonly referred to as the 'appraisal values'. For the latest year, they are calculated by dividing the aggregate costs to society in 2009/10 (as calculated by the cost model) by the number of new incidence cases in 2009/10 for each category of injury and ill health.

The primary use of appraisal values is in HSE's appraisal, e.g. **impact assessment** of proposed interventions. When valued, the benefits of avoided health and safety impacts can be compared with any cost to employers and/or government of the measure being appraised. Strictly speaking, the appraisal values are average costs rather than marginal costs, but as the majority of costs are proportional to the number of new incidence cases this subtlety is not likely to be significant.

Whilst the appraisal values reflect the same range of cost categories as the costs to society (see section 'Total costs to society' for details), for simplicity of presentation the appraisal values can be divided into two main component costs **non-financial human costs**; and **financial costs**.

It should be noted that the 2009/10 appraisal values are not directly comparable with earlier published estimates, being based on the new improved costing methodology.

The average appraisal values for all workers are summarised in Table 10. In most cases, these are the values which should be used for appraisal of HSE interventions<sup>10</sup>.

**Table 10: Cost to society per case - average appraisal value estimates for 2009/10 for all workers (£ in 2009 prices)**

	Non-Financial Human Costs (rounded)	Financial Costs (rounded)	Total Costs (rounded)
Workplace fatal accidents	1,004,000	498,000	1,502,000
Reportable injuries	10,900	6,500	17,400
Minor injuries	20	270	290
Ill Health	8,100	8,000	16,100

**Note:** totals may not sum due to rounding. These estimates are subject to sampling variability which is not shown in the table.

### Appraisal values specific to individuals, employers or government

Unit cost for separate cost bearers reflect only the costs to one group in society and do not take into account the net effects of transfers, such as benefits payments from government to individuals. They therefore are not normally suitable for sole use in social cost benefit analysis of interventions. However it can be useful to demonstrate the impact of a policy on a particular group within distributional cost analysis - for example using the costs to employers' appraisal values to estimate benefits to employers of reduced injury or ill health, or net costs to business of an intervention. Indeed enquiries to HSE on the costs of work related injuries and ill health often request the cost to only one group, such as 'employers' or 'workers'.

The following tables present appraisal values reflecting only the costs to a particular cost bearer.

**Table 11: Costs to individuals per case – average unit cost for 2009/10 (£ in 2009 prices)**

	Non-Financial Human Costs (rounded)	Financial Costs (rounded)	Total Costs (rounded)
Workplace fatal accidents	1,004,000	217,000	1,221,000
Reportable injuries	10,900	-	10,900
Minor injuries	20	20	50
Ill Health	8,100	- 100	8,000

**Note:** totals may not sum due to rounding. These estimates are subject to sampling variability which is not shown in the table.

<sup>10</sup> Ideally, specific estimates of particular injury or illness types should be made for each new policy appraisal. For example, for occupational asthma HSE has produced research which outlines a specific economic value (see detailed methodology report: [www.hse.gov.uk/research/rrhtm/rr474.htm](http://www.hse.gov.uk/research/rrhtm/rr474.htm)). Where available, these values should be used. However, it can be expensive to research the economic cost of specific conditions, therefore in most cases the appraisal values are likely to be used.

**Table 12: Costs to employers per case – average unit cost for 2009/10 for all workers, (£ in 2009 prices)**

	Non-Financial Human Costs (rounded)	Financial Costs (rounded)	Total Costs (rounded)
Workplace fatal accidents	-	160,000	160,000
Reportable injuries	-	3,100	3,100
Minor injuries	-	30	30
Ill Health	-	4,000	4,000

**Note:** totals may not sum due to rounding. These estimates are subject to sampling variability which is not shown in the table.

**Table 13: Costs to Government per case – average unit cost for 2009/10 for all workers, (£ in 2009 prices)**

	Non-Financial Human Costs (rounded)	Financial Costs (rounded)	Total Costs (rounded)
Workplace fatal accidents	-	120,000	120,000
Reportable injuries	-	3,400	3,400
Minor injuries	-	210	210
Ill Health	-	4,100	4,100

**Note:** totals may not sum due to rounding. These estimates are subject to sampling variability which is not shown in the table.

# Comparison of current cost estimates for 2006/07 onwards with earlier estimates

Cost estimates for 2006/07 and onwards are not directly comparable with previously published figures, being based on new, more accurate methods. They are considered more reliable than previous estimates, and represent the best estimates of the costs of health and safety failure in Great Britain given the data and methods currently available (and subject to the exclusion of cancer and other long-latency disease). A key strength of the estimates is that they have been externally validated by academic experts.

There is considerable literature on the cost of health and safety incidents and a rich body of economic research is expected to continue to provide possible improvements. As such, the Costs to Britain method is best regarded as a continually evolving methodology.

## Methodological and data improvements to the cost model

Prior to the new detailed methodology report, the most recent comprehensive update of the cost of workplace injuries and work-related ill health, by Gordon and Risley<sup>11</sup> estimated the aggregate cost to society at between £14.5 billion and £18.1 billion in 1995 prices.

In 2001/02, an interim update estimated the cost at between £20.0 billion and £31.8 billion in 2001 prices. This interim update did not involve comprehensive methodological review.

The 2011 detailed methodology report<sup>12</sup> provides a comprehensive review and update to the Costs to Britain methodology. It introduces a range of methodological and data improvements to the previous cost model. Estimates from the new cost model appear considerably lower than previous estimates. While this in part reflects underlying changes in the incidence of workplace injuries and work-related ill health, this is difficult to quantify due to the significant methodological and data improvements that have also been applied. Details of each of these, and estimates of their impact, are given in Appendix 5 of the detailed research report, including an estimate of the cost implications of changes.

The main changes are as follows:

- Use of incidence data rather than prevalence data for work-related ill health to better capture costs of current working conditions.
- Exclusion of damage costs and non-injury accidents because of lack of robust data to quantify the cost
- Reduction in the estimated number of 'never returns' (i.e. people permanently withdrawing from the labour market as a result of a workplace condition) between 1995/96 and 2006/2007. It is very difficult to estimate the size of this group, and it is not possible to quantify how much reflects a real reduction in cases and how much is because different definitions are used in the two time periods.
- Different approaches to grading the severity of 'never returns' injury and illness for the purpose of valuing non-financial costs.
- No inflation of wages for 'overheads' following the 2011 review.
- Changes in recruitment and administration costs methods.

These changes all would have reduced the costs estimates versus the previous methodology, except for changes in recruitment and administration which may have had a small increase in the new method.

Further, when HSE implemented the model across the years 2006/07 through 2009/10 a number of data limitations in some of the key input variables became apparent which resulted in further methodological adaptations to the model. These changes highlight that the economic cost estimates can never be 100% accurate. As with most economic models, it is impossible to exactly replicate all costs, and in fact they require the combination of data with assumptions.

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<sup>11</sup> Gordon, F, Risley, D, and EAU economists, 1999. The costs to Britain of workplace accidents and work related ill health in 1995/96. Second Edition. HSE Books ISBN 0 7176 1709 2

<sup>12</sup> Download the detailed methodology report at [www.hse.gov.uk/research/rrhtm/rr474.htm](http://www.hse.gov.uk/research/rrhtm/rr474.htm)

These further changes were intended to improve the Costs to Britain results as a useful economic indicator of performance, where the change from year to year is important as well as the overall figure in any one year. On this basis the following changes were made:

- **Holding 'never returns' constant across years.** Those people whose illness or injury results in their permanent withdrawal from the labour market are an important subset of cases, because of their high associated costs. However, it is difficult to estimate the numbers who permanently withdraw from the labour market both now and in the future as a result of a workplace illness or injury arising from current working conditions. The LFS currently provides the best basis for estimating the magnitude of this group, though it is recognised to be an imperfect measure of the absolute number and subject to measurement error (since it requires respondents to predict whether their injury or illness will result in them never working again). For this reason the estimate of 'never returns' is held constant in the model, to represent the order of magnitude of costs that these cases incur each year, whilst recognising that updating the estimate each year could infer spurious change in costs because of the potential measurement error in the data itself.
- **Linking new claimants of Industrial Injuries Disablement Benefit (IIDB) to incidence.** It was intended that the cost model would use actual data on new claimants of IIDB within each year to estimate the total annual IIDB benefits received by individuals'. However, looking at number of new claimants across the years, it is clear that there is considerable uncertainty around the link between emergence of new claimants of IIDB and actual new cases of injury or illness. This is because IIDB can be claimed for pre-existing conditions (before the particular year of the Cost to Britain accounting period), and that as new conditions become eligible for IIDB, this creates a 'surge' of applicants. In the short term we have addressed this problem of peaks and troughs in the numbers of claimants by taking the number of claimants in 2006/07 as the base year, and updating this number annually based on the change in incidence between the new year and 2006/07 (i.e. by assuming a relationship between the number of new incidence cases and the number of IIDB claimants). This approach ensures that the economic cost estimates reflect the trends across years.

## Future improvements and developments

HSE economists and statisticians are engaged with experts internationally on the methodology for costing occupational injury and illness.

### Occupational cancer

The LFS is a very good source for estimating the incidence of work-related injuries and common ill health conditions, but is severely limited in terms of measuring the much rarer long latency conditions such as occupational cancers or chronic obstructive pulmonary disease (COPD). This is because the LFS estimates are based on an individual's self assessment of the link between their newly occurring ill health and their work (which for long-latency disease will include work from many years ago).

Now that new estimates of the burden of occupational cancer are available (in work by Rushton et al, 2010<sup>13</sup>), HSE has begun developing a cost model which includes cancer costs. This requires further work to establish both (i) the appropriate value to be placed on a fatal cancer (this is currently under review in a separate research project by Newcastle University) and (ii) which estimates of current or predicted future cancers due to current exposures can best be reconciled with the model's aim of reflecting illness arising from current working conditions.

We expect the inclusion of cancer would have a considerable impact on the total costs.

### Other refinements

There are various possible extensions of the cost model to include more cost elements than are currently identifiable as gaps. However, the cost model is currently focused on the most reliably estimated costs, i.e. direct costs. Second order effects of incidents are much harder to estimate. Examples include:

- Carer costs for those who are incapacitated by occupational injury or illness;
- Impacts on earnings growth for individual are affected by a health and safety accident or illness.

Presentational changes to the value of preventing a fatality (VPF) are currently being considered by the Department for Transport (DfT). These would have a minimal effect on total values, but would make the presentation of a VPF more in line with changes recently proposed to DfT in a research report<sup>14</sup>.

Injuries and health states are assigned a weight in the model according to their severity and duration. This allows a non-financial human cost to be assigned to different injury and health states. It is possible that new research could be improved by developing alternative methods of weighting injury and ill-health potentially allowing for greater disaggregation of illness and injury by type. HSE is exploring the potential to produce more widely disaggregated estimates of the human cost of different types and severities of injury and ill health.

Additional questions are planned for the next run of the LFS between January to March 2012 which is intended to explore the health states of those who say they do not expect to return to work due to a work related injury or illness. This may help us to gain more insight into the likely severity and nature of the injuries and illnesses which cause people to not return to work.

Changes to the benefits regimes would affect the costs to Government and individuals' net income loss. Any such changes will be considered as the model is kept under review.

### Update of the costs model

It is intended that HSE will update these cost estimates annually (each annual update will include a time series from 2006/07 to current year, expressed in the current year prices). This presents the opportunity to improve the model where better data or methods have emerged, allowing any changes to be carried through to previous years' estimates. At minimum, the incidence figures will be updated, and unit costs for specific cost elements will also be refreshed and adjusted to the most recent year's prices.

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<sup>13</sup> See Rushton et al (2010). The burden of occupational cancer in Great Britain. HSE research report RR800 [www.hse.gov.uk/research/rrhtm/rr800.htm](http://www.hse.gov.uk/research/rrhtm/rr800.htm)

<sup>14</sup> See NERA (2011). Updating the VPF and VPIs: Phase 1: Final Report for the Department for Transport. <http://assets.dft.gov.uk/publications/pgr-economics-rdg-updatingvpfvpi-pdf/vpivpfreport.pdf>

## Annex 1: Technical summary of data issues and methods

This annex summarises technical data issue and methods used in the development of the cost estimates. Many of them are discussed in the previous sections, but this annex provides a single summary of the issues.

The HSE cost model has been developed to estimate the costs of injury and common ill health complaints arising from current working conditions. It uses the number of annual fatalities reported under RIDDOR and the estimated annual number of people reporting a non-fatal workplace injury or work-related illness in the LFS (the latter are restricted to reports of newly occurring illness to best capture costs arising from current working conditions). The cost model explicitly allows for those people who permanently leave the labour market as a result of their workplace injury or illness, again estimated from the LFS.

To increase the robustness of the estimated number of cases derived from the LFS, and particularly the detailed breakdown of these cases for costing purposes, annual estimates are based on the average of three successive years' data. For example the estimated number of cases of illness and injury in 2009/10 are based on the average annual number for 2008/09, 2009/10 and 2010/11. Therefore, costs for successive years are based on overlapping samples. Whilst this gives an indication of the direction in which costs are moving, to get a more definitive picture of changes in cost over time, cost estimates for independent time periods should be compared (e.g. 2006/07 compared with 2009/10).

Those people whose illness or injury results in their permanent withdrawal from the labour market are an important subset of cases, because of their high associated costs. However, it is difficult to estimate the numbers who permanently withdraw from the labour market both now and in the future as a result of a workplace illness or injury arising from current working conditions. The LFS currently provides the best basis for estimating the magnitude of this group, though it is recognised to be an imperfect measure of the absolute number. For this reason, the number of these 'never returns' is held constant in the model across years.

The model estimates both the financial costs (actual monetary costs) and non-financial costs (monetary values given to individuals' 'pain, grief and suffering') of these cases of injury and illness.

Financial costs include loss of income, compensation, production disturbance, health and rehabilitation and administrative and legal costs. Information on financial costs needed to quantify the different cost categories come from a wide range of sources including ONS surveys on earnings, NHS data on treatment costs and DWP figures on benefit rates. Some cost elements are limited by availability of robust data to quantify the financial impact. For example, non-injury accidents may cause damage to machinery or equipment and thus incur cost, whilst 'presenteeism', whereby a worker's health impairment results in their reduced productivity, also incurs cost. However, the lack of robust data for such cost elements means that we cannot quantify their costs with any degree of accuracy at this point in time and so they are currently omitted from the cost model.

Non-financial costs are based on the value that individuals would be willing to pay to have reduced risk of death or avoid reductions in quality of life which result from injury or illness.

The cost estimates only include first-order effects; any second-order effects such as employers or government passing on the costs of workplace injury and ill health in the form of higher prices or taxation have not been considered. The cost model approach uses similar methods to other Government Departments.

The costs of workplace injuries and ill health are apportioned between three distinct groups: the individuals directly affected; their employers; and the government. In some cases, a cost to one group is an equal and opposite benefit for another group. For example sick pay represents a cost to the employer but is an equal and opposite benefit to the individual who receives it. Total costs to society, estimated by summing across the three groups, are net of transfers between one group and another.

The cost estimates are subject to uncertainty, due to both sampling error in the estimated number of annual illness, injury and 'never return to work' cases and the underpinning assumptions used to assign costs. The cost model accounts for the former uncertainty and estimates are often expressed as 95% confidence intervals – the range of values which has a 95% chance of containing the true cost. When comparing costs over time, it is important that any judgement on change in costs is based on a consideration of the confidence interval, rather than the central estimate itself.

Further work is underway to estimate costs of less common work-related illness conditions such as cancer. The LFS is limited in terms of measuring rarer long latency conditions such as occupational cancers or

chronic obstructive pulmonary disease. This is because the LFS estimates are based on an individual's self assessment of the link between their newly occurring ill health and their work (which for long-latency disease will include work from many years ago). New research by Imperial College has recently been completed on the portion of cancer registrations that can be attributed to occupational exposures. HSE is also conducting research on the valuation of cancer fatality risk. Once complete, the cost model can be extended to cancer and it is anticipated that the addition to overall costs could be considerable.

The cost data resulting from this new model has not yet been assessed for National Statistics accreditation. We intend to ask the UK Statistics Authority to undertake this assessment in 2012.

## Links

For more information about costs of workplace fatalities, injuries and ill health in Great Britain see:

- Detailed report of the methods used to estimate economic costs:  
[www.hse.gov.uk/research/rrhtm/rr897.htm](http://www.hse.gov.uk/research/rrhtm/rr897.htm)
- Detailed cost breakdown for years 2006/07 to 2009/10:  
[www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain](http://www.hse.gov.uk/statistics/tables/index.htm#cost-to-britain)

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