



## **Costs of impaired health across the network**



## Copyright

© RAIL SAFETY AND STANDARDS BOARD LTD. 2014 ALL RIGHTS RESERVED

This publication may be reproduced free of charge for research, private study or for internal circulation within an organisation. This is subject to it being reproduced and referenced accurately and not being used in a misleading context. The material must be acknowledged as the copyright of Rail Safety and Standards Board and the title of the publication specified accordingly. For any other use of the material please apply to RSSB's Industry strategy team for permission. Any additional queries can be directed to [enquirydesk@rssb.co.uk](mailto:enquirydesk@rssb.co.uk). This publication can be accessed via the RSSB website: [www.rssb.co.uk](http://www.rssb.co.uk).

# Table of Contents

Executive Summary .....	1
Introduction .....	3
Background .....	3
Previous rail industry health data .....	3
The wider health context .....	6
Aims and objectives .....	8
Aim .....	8
Objectives .....	8
Scope .....	8
Definitions .....	8
Absence .....	8
Presenteeism .....	9
Attrition .....	9
Well-being .....	9
Method .....	11
Cost analyses .....	11
Presenteeism .....	12
Attrition .....	13
Results .....	14
Case study 1 (TOC) .....	15
Background .....	15
Presenteeism .....	15
Attrition .....	15
Wellness programmes .....	15
Case study 2 (TOC) .....	17
Background .....	17
Presenteeism .....	17
Attrition .....	17
Wellness programmes .....	17
Case study 3 (FOC) .....	19
Background .....	19
Presenteeism .....	19
Attrition .....	19
Wellness programmes .....	19

Case study 4 (infrastructure contractor).....	20
Background .....	20
Presenteeism.....	20
Attrition .....	20
Wellness programmes.....	20
Costs and expenditure on health by type of rail operator.....	22
TOCs .....	22
FOCs .....	23
Infrastructure contractors.....	24
Observations and discussion .....	25
Data quality.....	25
Lost time rate.....	25
Cost of absence.....	26
Presenteeism.....	27
Attrition .....	27
Health and Well-Being initiatives .....	27
The size of the prize .....	28
Conclusion.....	28
About the author .....	29
Relevant literature .....	30
Appendix .....	32



## The costs of impaired health across the rail network

---

### Executive Summary

This study considers the costs of impaired health across the rail sector and compares this with the spend invested by operators to protect and promote the health of the 120,000 employees engaged within the rail industry. A summary of our overall findings is:

- 1 Sickness absence is the most common way in which organisations seek to evaluate levels of ill health. The accepted way to quantify this is by calculating the lost time rate (LTR) which is the percentage of total time lost to sickness absence. We believe the LTR across the rail sector is approximately 3.9%. This figure varies between different rail operators and amongst job families within a rail company.
- 2 This LTR translates into 1.06 million days lost to sickness. Another way of describing this figure is 4680 work years or the equivalent of an additional large train operator conducting business on GB rail.
- 3 Using this LTR we estimate the cost of direct and indirect sickness absence to be approximately £316m each year.
- 4 The costs of presenteeism have also been considered. For the purposes of this study we define presenteeism as the act of being distracted at work owing to a variety of reasons including poor health and low engagement. We estimate costs of presenteeism to be £474m each year.
- 5 Total annual costs of impaired health which combine sickness absence and presenteeism costs are therefore believed to be in the region of £790m.
- 6 By comparison, total spend on occupational health (OH) and wellness programmes is evaluated at approximately £24m each year which averages out at £201 per person each year.
- 7 Using these figures, for every £13 lost to sickness absence amongst employees, only £1 is spent on supporting their health. The cost-spend ratio for total impaired health is 33:1.
- 8 By any measure, these costs are large and offer clear opportunities to make savings. Simple arithmetic shows that a 10% cut in absence costs alone would lead to an annual

---

saving of £32m. Similarly, a 10% cut in overall impaired health costs would realise a saving of £79m.

- 9 Rather than focus on sickness, the rail industry should direct greater attention towards proactive wellness and health activity, to reduce the onset of preventable sickness in the first place. RSSB's road-mapping exercise puts forward specific suggestions on how this may be practically achieved.

---

## Introduction

### Background

RSSB's Industry Strategy team has been working to facilitate improvements in health and well-being management across the rail industry. Following a series of tasks completed to better set out the railway health context, most recently through a road-mapping exercise, the team is now preparing a RSSB board paper, which is to be presented in March 2014. The Board paper will set out the tasks a large body of stakeholders believe will improve health and well-being management and will request support to engage with the tasks identified.

As part of this board paper RSSB wish to put forward the business case for a revised approach to this area of operation. The team wishes to include the costs of ill health currently being borne by the rail sector. These costs will highlight the existing financial burden to rail companies and highlight opportunities where substantial savings may be made.

Previous work in this area has identified significant costs to the rail industry but the information is now aging or has been identified by the regulator. RSSB members would like to establish an up to date figure from an independent source.

### Previous rail industry health data

According to RSSB's review in 2005 the cost to the rail industry from the top 20 ill health conditions equates to £227m each year. However, the project notes that given the uncertainties in the cost calculations, some sensitivity calculations were performed using different data sets and assumptions. These indicate that the total cost is likely to lie within the range of £135m to £270m each year.

Cost of industry health issues:

- £227m each year – best estimate
- £135m each year – low estimate
- £270m each year – high estimate

Table 1 identifies the top 5 conditions included in the report.

**Table 1 - Earlier cost estimates for top 5 conditions**

Top 5 Conditions	Arguments for selection
Common mental health disorders (anxiety, depression, stress)	High sickness absence, performance impairment, increasing trend, impact on individual, management complexity, opportunity to improve
Musculoskeletal disorders (back pain)	As above
Endocrine disorders, such as diabetes	Increasing trend, safety risks, impact on individual, management complexity, opportunity to improve
Heart/circulatory condition (heart disease, high blood pressure)	Sickness absence, safety risks, impact on individual, management complexity, opportunity to improve
Sleep disorders (sleep apnoea, shift pattern related sleep disorder)	Emerging issue, limited awareness, safety risks, impact on individual, performance impairment, management complexity, opportunity to improve

In 2006, RSSB Project T389 had a scope to review:

- Current industry and organisation approaches to health management
- Current best practice for the management of occupational health in other safety related industries both in the UK and internationally

This project identified that:

- The rail industry spends an estimated £ 9.5m each year on healthcare provision.
- There is an estimated 1.17million working days lost to the industry each year through absence.
- The direct cost of ill-health is estimated to be £109m each year.
- The total cost (direct and indirect costs) of ill-health potentially lies between £218m and £327m each year.
- The ill health cost to prevention spend ratio is 10:1

In its overview of ill health the ORR (2010) undertook a baseline survey of 52 rail industry constituents for the sample period 1 April 2009 to 31 March 2010 and found:



- Total number hours lost due to work related ill health = 3.5m, which represents 27 hours' work related sickness absence for every one of 129,000 individuals employed.
- One train operating company reported a saving of £3m each year following health and well-being initiatives which reduced sickness absence from 6.2% to 4.2%.
- 35% of respondents (18) reported zero work related ill health absence – surprisingly these included 10 companies employing > 200 people, 3 of which employed >1000. 12 of the 18 'zero work related sickness absence' respondents were contractors.
- A further 12% of respondents (ORR 2010) were unable to identify work related sickness from their overall sickness absence totals; 5 of these were larger companies employing >1000.
- When contractor data (where 67% respondents either reported zero work related ill health absence or were unable to provide a figure) is excluded, the lost time absence rate for non-contractor companies increases to 1.7% of total hours worked.
- 15% of respondents report on ill health in annual reports and accounts against quantitative targets compared with 46% that report on safety issues.

Rail industry health data is often seen as having reliability issues and the following reasons have been recognised:

- It is difficult to gain individual organisational data using a common classification scheme.
- Absence data is often unreliable with many line managers failing to identify a specific cause.
- Detailed health data can often be held externally to the organisation by OH providers. These providers may not be able to supply information in the formats required.
- Data protection is used as a barrier to supply data internally within the organisation.
- The HSE has little reliable rail industry data. THOR data collected by Manchester University is regarded as not sufficient for the HSE and ORR to draw conclusions from.

---

## The wider health context

- It is difficult to engage organisations due to common knowledge that currently health data is hard to obtain.

The UK Government has for the last 10 years made concerted efforts to re-examine the Health, Work and Well-being of the working population. A series of work streams have been engaged to find ways of improving the coherence, effectiveness and cost of the existing national system for managing sickness absence. (Black, 2008, Department of Work and Pensions and Department of Health, 2008, Boorman, 2009, Macleod and Clarke, 2009)

An independent review of sickness absence by Dame Carol Black and David Frost CBE in 2011 found that there is a significant difference between the ideal 'system for sickness absence' and current patterns of management between employees, employers, the State and health professionals.

In an ideal system, people who are unable to work would be swiftly identified and supported; those with conditions that are compatible with their current work would receive early treatment and support to return quickly; and those needing to change jobs would be efficiently helped back into work. Costs would be fairly distributed between employers, individuals and the State, and incentives aligned to manage these costs.

Changing demographics of the UK workforce make this work important to the continuing competitiveness of UK industry, because of:

- An increase in workforce age and change in its composition
- Rising costs of chronic disease and ill-health

In regards to absence from work HSE Health and Safety Statistics 2009/10 (self-reported ill health data from Labour Force Survey) estimates the occupational ill health problem to be more than 4 times that of safety. Work related ill health accounted for 82% (23.4m days lost) compared with workplace injury (the realm of safety management) at 18% (5.1m days).

The HSE's Chief Inspector of Construction agrees that the scale of the challenge to OH management is larger than the safety challenge (Health and Safety lecture for the Institute of Civil Engineers and Costain Prestige, 6 December 2011). He recognised that within the construction industry approximately 4000 construction workers die each year from work related health

and safety causes. Only 50 of these deaths arise from safety related issues whereas OH related deaths account for the rest.

The scale of the OH management issue that already burdens UK organisations can present benefits to proactive organisations. A PwC report on the business case for OH reviewed 7 case studies for the return on investment, in terms of a benefit-cost ratio, for every unit of cost expenditure spent on OH programmes. It was found that £4.17 in programme benefits was identified for every £1 spent. These numbers were not validated. Similarly Transport for London noted a return on investment associated with the reduced sickness absence of physiotherapy interventions as estimated to be £10.30 for every £1 spent. However, the PwC report goes on to note that:

*Employers in the UK have not in general considered it their role to improve the health and well-being of their employees. While they may believe that a healthy workforce is a key to their success, they have been slow to act. A number of factors may contribute to this:*

- *Lack of a clear definition for workplace wellness and core wellness service*
- *Incentives to increase employee buy-in are poorly understood*
- *No clear business case and evaluation of direct financial return that demonstrates wellness programmes' impact on tangible business benefits.*

---

## Aims and objectives

### Aim

The aim of this task is to calculate the current cost burden of impaired health across the rail sector.

### Objectives

- To develop a credible and defensible methodology to identify rail industry health costs.
- To develop a cross-industry cost of ill health that can be broken down across a number of defined categories.

### Scope

Costs should include all TOCs, FOCS, Network Rail and infrastructure contractors. In all, this accounts for some 120,000 staff based on the most recent HLOS (High Level Output Specification) values.

Analyses should consider, as a minimum:

- Absence (prevalence, reasons, direct and indirect costs)
- Presenteeism (prevalence, costs)
- Attrition (prevalence, costs)
- Health and Well-Being Initiatives - spend on either returning staff to work promptly or protecting them from ill health initially, such as on OH services:
  - Fitness for work (such as safety critical tasks, drugs and alcohol testing, health assessments)
  - Remedial health programmes (such as sickness absence management, rehabilitation)
  - Proactive health programmes (such as health promotion and lifestyle education)

## Definitions

### Absence

This study uses Lost Time Rate (LTR) to describe sickness absence levels. LTR is calculated as:

$$\frac{\text{\# days sickness absence each year}}{\text{Average \# employees} \times \text{\# of working days each year}} \times 100$$

The distinction between short-term and long-term absence is changeable across the health industry. NICE defines long-term absence as a period over 4 weeks. For the purposes of this work the NICE definition will be used.

## Presenteeism

The term presenteeism is often interpreted in different ways. For the purposes of this study, presenteeism refers to being distracted at work. This describes reduced productivity at work owing to health problems (Johns 2010) or other states experienced by staff such as low morale and poor levels of engagement. Robertson and Cooper (2011) suggest three attributes to the term:

- Attending work when unwell
- Putting in long hours but not working all of the time (often known as 'face time')
- Working at a reduced level because of distractions (for example, going online)

The issue of presenteeism is not new to the rail sector. In its work for research project T382, RSSB refers to presenteeism as 'performance impairment' and industry stakeholders acknowledge how the term may be applied to people who have a health risk factor that inhibits their ability to do their job (for example, obesity and manual work).

Over recent years, presenteeism has attracted more interest amongst organisations as effective management of presenteeism offers a distinct source of competitive advantage (Hemp, 2004, Macleod and Clarke, 2009). However, it is recognised that research on the prevalence and prevention of presenteeism is at an early stage as are prescriptive actions to address it.

## Attrition

In the context of this study, attrition references the costs of losing employees from the sector owing to impaired health. This may be due to being retired early on health grounds or people leaving their employment voluntarily because of the impact of factors such as shift work and poor management which have had a negative impact on their overall health and well-being

## Well-being

The definition for well-being is taken from the research by Juniper et al. (2011), who make the distinction between work-related well-being and well-being that is impaired by other factors external to the workplace. They describe work-related well-being as:

*'That part of an employee's overall well-being that they perceive to be determined primarily by work and which can be influenced by work-place intervention.'*

---

Importantly, this definition limits aspects of well-being to practical factors that an employer may modify through a work-place intervention. Depending on the workforce sector under examination, factors may range from psychological and physical health aspects through to social (manager, colleagues), developmental and workplace facility provision.

---

## Method

The method used for this study was two-fold. Firstly, available sickness absence data from the rail industry were considered. While these data allowed approximate estimations of costs associated with sickness data, they lacked the necessary detail to validate and verify existing figures. To address this, a second approach was used which was used successfully by the Institute of Employment Studies (Bevan and Hayday, 2001) to cost sickness absence in the UK. This involved conducting in-depth (anonymised) case studies with a selection of rail sector organisations to provide a detailed understanding of impaired health costs. The calculations from these exercises were then applied to the wider sector so that a comparison with existing sickness absence figures could be made.

In line with views of Huczynski and Fitzpatrick (1989), the following data points were sought, where possible, from the case study participants:

## Cost analyses

- Lost time rate (assumes 227 working days a year per employee)
- Split between short-term and long-term absence (bouts over 4 weeks)
- Reasons recorded for sickness absence
- Prevalence across different roles
- Direct absence costs
  - Salary
  - Employers' National Insurance contribution
  - Employers' Pension contribution
- Indirect absence costs
  - Overtime for replacements
  - Costs of temporary staff
  - Overstaffing to cover for unscheduled absence
  - Cost of recruiting and training replacement staff
  - Management time devoted to dealing with absence-related issues
  - Reduced productivity owing to work not being done, or being done by less experienced staff
  - Lower product quality of work due to replacement staff
  - Cost of disruptions and penalties, such as late trains due to staff shortages

- 
- Extra costs incurred to meet slipped deadlines
  - Loss of customers due to impact of absence on service offered
  - Low morale amongst employees cause by lax attendance from colleagues
  - Costs of absence management 'apparatus' such as OH, absence management service

It was agreed, from existing knowledge, that where case participants were unable to proffer these details for establishing indirect costs, 20% of direct absence costs would be applied. Given the requisite need for rail companies to arrange replacement cover for absentees in order to maintain their service as well as the other elements listed above, this was deemed an appropriate figure. It is worth noting that this is a conservative approximation compared to published studies by authors such as Bevan and Hayday (2001) and Huczynski and Fitzpatrick (1989) who have estimated indirect absence costs of up to 100% of direct absence costs across a variety of different sectors. It is also worth noting that indirect costs for sickness absence in T389 were calculated by adding either 100% or 200% of direct sickness absence costs (£109m) to arrive at the final figure ranging from £218m to £327m.

Formulae for this study's absence cost calculations may be found in the appendix.

## Presenteeism

### **Cost as a percentage of sickness absence** (Johns, 2010)

Coming to work when unwell represents particular risk concerns for rail operators. The *Management of health conditions and diseases* project defines it as 'inefficiency against normal job performance without sickness absence'. The authors of the project considered the cost of different health conditions on the impact of worker efficiency and concluded that performance impairment was potentially *more* costly to the rail industry than sickness absence. For example, the prevalence of back pain was estimated to account for 21% of working days lost compared to the condition's contribution to sickness absence of 9%.

Where no level of presenteeism was recorded and drawing on the agreed definition (see page 8), it was agreed that a multiplier of 1.5 costs of absence would be used. This is consistent with the report cited by Dame Carol Black (2008) in her review of health



amongst Britain's working age population which references reduced productivity at work owing to mental health problems (The Sainsbury Centre for Mental Health, 2007). *Occupational Medicine* (2008) has put the figure at 1.8 times the cost of sickness absence.

A multiplier of 1.5 is considered a conservative estimate given the qualifiers referenced above and the fact that our definition combines both reduced performance owing to ill health *and* reduced morale at work.

## Attrition

Costs of replacing people who leave owing to impaired health (or retired early on health grounds).

Health and Well-Being Initiatives:

- Spend on provision of OH services such as drug and alcohol testing, rehabilitation, medical
- Spend on any wellness initiatives such as health promotion initiatives and gym subsidies
- Evidence of wellness programmes' impact on absence patterns

It was agreed that expenditure of £95 per employee (taken from RSSB project *Management of health needs*) would be applied, if case study participants were unable to offer a figure for annual health and well-being activity.

---

## Results

Included in the overall analyses were:

- 25 TOCs (57,100 employees)
- 5 FOCs (5,691 employees)
- 17 Infrastructure Contractors (20,000 employees)
- Network Rail (35,793 employees)

This totals some 120,000 staff.

A total of 5 rail organisations participated in the detailed case studies. The breakdown was:

- 2 TOCs
- 1 FOC
- 1 infrastructure contractor
- Network Rail<sup>1</sup>

---

<sup>1</sup> Owing to sensitivities on data, we cannot share the detailed analyses for Network Rail in this report. However, Network Rail supplied the same details as the other case study participants and these figures are included in the overall calculations for impaired health across the sector which can be found on page 26 in this report.

---

## Case study 1 (TOC)

### Background

This TOC is a suburban rail operator. It has a system in place to record all sickness absence and managers responsible believe the data to be an accurate representation of sickness absence levels. The TOC has recently invested considerable time in training managers to report sickness absence in their teams in a timely and efficient manner. Additionally, this TOC has carried out a health and well-being assessment to evaluate how the work of employees impacts on health. This initiative identified some particular aspects of rail work (such as service disruption, mess facilities and uniform provision) that had a direct link with absence patterns. The company was recognised for its work by winning a national health and well-being award in 2013.

### Presenteeism

No information on presenteeism is held.

### Attrition

Voluntary attrition is minimal. Ill health severance costs in 2013 totalled £142,998.10 (6 employees).

### Wellness programmes

This TOC's wellness activity includes: occupational health, drug and alcohol testing, a medical helpline, and a well-being study amongst its driver population.

**Table 2 - Costs of impaired health TOC 1**

Item	Data	Absence Cost (£)
Number of employees (FTEs)	1144	
Annual payroll	£50.18m	
Employer NIC as percentage of salary	12.8%	
Reported Sickness Absence Rate	3.2%	1,811,297
Estimated unreported sickness absence rate	0%	0
Employer Pension contributions as percentage of salary	13.29%	213,406
Estimated indirect absence costs as percentage of direct absence costs	20%	404,941
Total working days lost to sickness absence	8310	
Cost of 1 day's sickness absence		292.38
Cost of sickness absence per employee each year		2,123.81
Total cost of sickness absence		2,429,643
Presenteeism		3,644,464 (E)
Attrition		142,998
Total spend on wellness programmes		90,000
Total cost of impaired health		6,217,105
Total cost of impaired health per employee		5,434
Total spend on wellness programmes per employee		78.67

---

## Case study 2 (TOC)

### Background

This TOC is a commuter rail operator. It believes it captures sickness absence in a fairly accurate manner. While its overall LTR is 3.8%, the level amongst the driver population is much higher at 5.21%. For Customer Services staff, the LTR is 3.94%.

### Presenteeism

No information on presenteeism is held.

### Attrition

Voluntary attrition is minimal. Four drivers were retired in 2013 on health grounds.

### Wellness programmes

As well as the typical OH services expected of a rail operator, this TOC has a health and well-being programme running throughout the year. Different initiatives are offered each month, often coinciding with national programmes such as Diabetes and Depression Awareness Campaigns. The company also conducted a well-being assessment amongst its driver and customer service populations to better understand the health issues associated with these types of role.

**Table 3 - Costs of impaired health TOC 2**

Item	Data	Absence Cost (£)
Number of employees (FTEs)	780	
Annual payroll	£51m	
Employer NIC as percentage of salary	13.8%	
Reported Sickness Absence Rate	3.8%	2,205,444
Estimated unreported sickness absence rate	0.5%	290,190
Employer Pension contributions as percentage of salary	17.1%	375,003
Estimated indirect absence costs as percentage of direct absence costs	20%	574,127
Total working days lost to sickness absence	7614	
Cost of 1 day's sickness absence		452.45
Cost of sickness absence per employee each year		4,416.36
Total cost of sickness absence		3,444,764
Presenteeism		5,167,146 (E)
Attrition		Data unavailable
Total spend on wellness programmes		74,100 (E)
Total cost of impaired health		8,661,910
Total cost of impaired health per employee		11,105
Total spend on wellness per employee		95

## Case study 3 (FOC)

### Background

This FOC is one of the UK's leading rail freight companies. It does not place a large emphasis on measuring absence as it believes that sickness is not an issue of concern. As a consequence, very little data on sickness absence patterns is held.

### Presenteeism

No information on presenteeism is held.

### Attrition

Voluntary attrition owing to ill health is minimal.

### Wellness programmes

OH services are outsourced. This FOC does not offer any preventative health programmes or initiatives.

**Table 4 - Costs of impaired health FOC**

Item	Data	Absence Cost (£)
Number of employees (FTEs)	1990	
Annual payroll	£80m	
Employer NIC as percentage of salary	13.8%	
Reported Sickness Absence Rate	2%	1,820,800
Estimated unreported sickness absence rate	0.5%	910,400
Employer Pension contributions as percentage of salary	16%	320,000
Estimated indirect absence costs as percentage of direct absence costs	20%	519,200
Total working days lost to sickness absence	9035	
Cost of 1 day's sickness absence		£275.85
Cost of sickness absence per employee each year		£1,565.43
Total cost of sickness absence		3,115,200
Presenteeism		4,672,800 (E)
Attrition		Data unavailable
Wellness programmes		189,050 (E)
Total cost of impaired health		7,788,000
Total cost of impaired health per employee		3,913
Total spend on wellness programmes per employee		95

---

## Case study 4 (infrastructure contractor)

### Background

This infrastructure contractor is a well-established UK railway infrastructure contractor. Similar to the FOC listed above, this organisation does not believe it has issues relating to sickness absence (in particular, short term non-attendance) although the ability to validate this is limited since little data on absence patterns are held. The company places more of a focus on early intervention and support to long-term sick cases which are much more easily reported and monitored. 2013 saw 21 long-term sickness absence cases.

### Presenteeism

No information on presenteeism is held.

### Attrition

Voluntary attrition owing to ill health is minimal.

### Wellness programmes

OH services are provided in-house. Rehabilitation services (such as physiotherapy), support services (medical support, medication check), drugs and alcohol screening, immunisations, drop in clinics (wellbeing days), campaigns and communications are offered.



**Table 5 - Costs of impaired health infrastructure contractor**

Item	Data	Absence Cost (£)
Number of employees (FTEs)	2127	
Annual payroll	£71.33m	
Employer NIC as percentage of salary	13.8%	
Reported Sickness Absence Rate	3%	2,435,365
Estimated unreported sickness absence rate	0.5%	405,894
Employer Pension contributions as percentage of salary	8%	199,737
Estimated indirect absence costs as percentage of direct absence costs	20%	608,199
Total working days lost to sickness absence	16899	
Cost of 1 day's sickness absence		215.94
Cost of sickness absence for each employee each year		1,715
Total cost of sickness absence		3,649,195
Presenteeism		5,473,792 (E)
Attrition		-
Wellness programmes		260,000
Total cost of impaired health		9,122,987
Total cost of impaired health for each employee		4,289
Total spend on wellness programmes for each employee		122

## Costs and expenditure on health by type of rail operator

### TOCs

Based on the 2 TOC case studies, we have estimated the following costs and spend on health, based on mean averages taken from both companies.

**Table 6 - TOC estimated ill-health costs**

Item	Value or cost (£)
Lost time rate	3.75%
Cost of sickness absence for each employee	£3,270.09
Attrition	minimal
Average spend on health and well-being initiatives for each employee	£86.84
Average overall cost of impaired health for each employee	£8,269.50
Overall cost of sickness absence for TOCs (57,100 staff)	£186,722,139
Overall cost of impaired health for TOCs (57,100 staff)	£472,188,450
Sickness absence cost: health and well-being cost ratio	38:1
Overall impaired health cost: health and well-being spend ratio	95:1

## FOCs

Based on the 1 FOC case study, we have estimated costs and spend on health for this section of the rail industry.

**Table 7 - FOC estimated ill-health costs**

Item	Value or Cost (£)
Lost Time Rate	2.5%
Cost of sickness absence for each employee	£1,565.43
Attrition	minimal
Average spend on health and well-being initiatives for each employee	£95
Average overall cost of impaired health for each employee	£3,913
Overall cost of sickness absence for FOCs (5691 staff)	£8,908,862
Overall cost of impaired health for FOCs (5691 staff)	£22,268,883
Sickness absence cost: health and well-being cost ratio	17:1
Overall impaired health cost: health and well-being spend ratio	41:1

## Infrastructure contractors

Based on the one infrastructure case study, we have estimated costs and spend on health for this section of the rail industry.

**Table 8 - Infrastructure contractor estimated ill-health costs**

Item	Value or cost (£)
Lost time rate	3.5%
Cost of sickness absence for each employee	£1,715
Attrition	minimal
Average spend on health and well-being initiatives for each employee	£122
Average overall cost of impaired health for each employee	£4,289
Overall cost of sickness absence for infrastructure contractors (20,000 staff)	£34,300,000
Overall cost of impaired health for infrastructure contractors (20,000 staff)	£85,780,000
Sickness absence cost: health and well-being spend ratio	14:1
Impaired health cost: health and well-being spend ratio	35:1

---

## Observations and discussion

### Data quality

Any discussion about sickness absence and related costs should be moderated by the quality of data available. From speaking with different participants it is clear that the collection of accurate and timely data is a challenge for all rail companies. As a consequence, only basic information was made available for analyses. Breakdown of absence data by reason, duration, and prevalence was very limited. Insights into absences that were work-related and non-work related absence were unavailable.

However, we believe this study to be the most comprehensive of its type for the rail industry.

### Lost time rate

The results from the 4 case studies suggest the average LTR across the rail sector is 3.3%. We believe this figure masks discernibly higher absence levels amongst certain job families within rail companies as demonstrated by the second TOC case study presented. (see page 17).

An LTR of 3.3% is significantly lower than the *Management of health needs* project, which estimated the figure to be 5.15%. In between these two values, are the results of a study by ATOC in (2012) where the LTR was calculated to be 3.9%.

On balance, we believe the true LTR to be greater than 3.3%. Because of the limited ability by rail companies to record sickness absence, it is highly likely that sickness absence levels are being under-reported. Based on our experience, we estimate that the LTR is nearer to the 3.9% identified by ATOC. We have therefore applied this overall figure in the *Costs of absence* section below.

## Cost of absence

These figures include details supplied by Network Rail that we are unable to disclose separately owing to issues of confidentiality.

**Table 9 - Overall sickness absence costs to rail sector**

Item	Value or cost (£)
Average lost time rate	3.9%
Average cost of sickness absence per employee	£2,631
Average cost of 1 day's sickness absence	£300
Estimated number of working days lost	1,062,360
Number of work years lost to sickness absence	4680

Using these estimates in Table 9, we can estimate that the overall annual cost of sickness absence in the sector is £316m.

It is instructive to compare this cost estimate with earlier studies. Of direct comparison are the findings in T389 which calculated costs based on a higher LTR of 5.15% and a total sector size of 100,000 staff. The *Management of health needs* project estimated direct and indirect absence costs to be in the region of £218m to £327m.

Details on how the authors of the *Management of health needs guidance notes* arrived at these values are limited; the HSE's average daily wage for all industries of £92.94 was used to calculate direct costs and then indirect costs were estimated to be equal to or double the direct absence costs. By comparison, our direct sickness absence costs are greater proportionately at £263m (compared to £109m quoted in the project) because we have used wage data directly from rail companies and have considered a total sector size of 120,000 staff. Our indirect costs are much smaller as we have added 20% to our direct absence figures (as in our methodology) rather than 100% or 200% as in T389.

For direct comparison purposes, our cost of direct absence per person totals £219 for a workforce of 100,000 compared to a figure of £109 per person presented in the *Management of health needs* project.

## Presenteeism

This study includes conservative estimates for the impact of presenteeism. We believe the inclusion of presenteeism adds an important element to any debate on managing the costs of ill health within the sector. This is because a debate without the inclusion of presenteeism will not include the full picture of what is happening within the organisation and shall limit any solutions provided. For instance, if absenteeism figures are driven down without an awareness of presenteeism then the organisation may arrive at a low absence rate but at the cost of productivity because those with impaired health are at work in spite of a state of health that reduces their capacity to achieve.

Notwithstanding the considerations around presenteeism already discussed (See the *Definitions* section), we estimate that presenteeism is currently costing the rail sector in the region of £474m each year.

## Attrition

Unlike many other sectors, there is only minimal attrition from the rail sector owing to ill health. Because of this, no calculations pertaining to attrition are presented in the report.

## Health and Well-Being initiatives

According to our analysis, an average of £201 per person is spent on health and well-being programmes annually. This equates to an expenditure of approximately £24m each year and is over double the estimate of spend put forward in the *Management of health needs* project. From our discussions with case study participants, it is apparent that almost all of this cost is trained on Health and Safety statutory requirements such as medicals, drugs and alcohol testing, and rehabilitation services. Very little spend is invested in programmes to help prevent the onset of absence in the first place.

Our calculations suggest that the ratio between cost to spend is in the region of 13:1 for sickness absence and 33:1 for overall impaired health. If it is the intention of the rail industry to reduce sickness absence levels, then an obvious opportunity available to the sector is to consider introducing more preventative measures. To put this another way and to echo the observations of Edington (2009), the cost of waiting for employees to get sick far exceeds the cost of helping healthy people to stay healthy. Rather than focus on sickness, it is suggested that the rail industry considers a greater focus on wellness and health promotion, which seeks to prevent the occurrence of ill health before its onset.

## The size of the prize

For an industry that is under pressure to realise savings and efficiencies, these findings on the costs of impaired health offer the sector clear opportunities.

If the costs of absence and presenteeism are combined, we can venture that the overall costs of impaired health are in the region of £790m each year.

Simple arithmetic shows that a 10% cut in absence costs alone would lead to an annual saving of £32m. Similarly, a 10% cut in overall impaired health costs would realise a saving of £79m.

Reducing absence costs is no easy feat. Sickness absence (and presenteeism) are complex issues that need to be addressed strategically. The best possible evidence must be amassed to inform a programme that is effective and delivers the changes required. An LTR of 0% is unrealistic. However, the average value for LTR across all sectors is substantially lower at 1.8% (ONS, 2012). and we are firmly of the view that existing levels of ill-health can be reduced significantly to deliver valuable and sustainable savings.

## Conclusion

This report provides an up to date estimate for costs of ill health across the rail sector. Our direct costs of sickness absence alone were found to be almost 2.5 times higher than earlier calculations. By adding on additional (conservative) costs of indirect absence costs we have concluded that sickness absence is costing approximately £316m annually. If presenteeism is factored in, this figure rises to £790m.

While this is a large number by any measure, the value in a study such as this lies in the ability to offer observations on the viability of being able to reduce it.

Detailed recommendations on how to reduce sickness absence is beyond the scope of this report. However, we do believe that there are real opportunities to ease this burden significantly. This is predicated on the fact that absence levels are high compared to normative values and current investment to prevent the onset of ill health is only minimal. The adage 'An ounce of prevention is worth a pound of cure' applies.

As already noted, there is no simple, straightforward prescription to improve the health of rail workers. Much more detailed data must be collected so a more accurate narrative on the



components of sickness absence can be built. This will identify the basis of a strategic approach and which kind of measures will be most effective.

The size of the prize makes this a worthwhile initiative. RSSB and its members have recognised this and are currently engaged in a cross-industry consultation to establish a framework. We welcome this work and urge the sector to commit itself to bringing about change to the way sickness absence is perceived and managed. There are real gains to be made which will not only benefit the 120,000 staff employed on the railways but the wide range of publics that they serve.

## About the author

Dr Bridget Juniper who is an acknowledged expert in the field of employee health and well-being.

Bridget's PhD examined the measurement of employee well-being. She set up Work and Well-Being Ltd in 2005 which specialises solely in the evaluation of corporate health practices. A chartered occupational psychologist, she is highly experienced in employee health and engagement matters and continues her award-winning research at Cranfield University where she is a guest lecturer. Bridget has been awarded an Honorary Research Fellowship at the School of Business, Economics and Informatics at Birkbeck College, University of London and lectures on the Work and Well-Being module of the Organizational Psychology MSc programme. She is also a Visiting Research Fellow at the Royal Institution of Great Britain.

[www.workandwellbeing.com](http://www.workandwellbeing.com)

---

## Relevant literature

Andrzej Huczynski, Michael Fitzpatrick, (1989) End of the Mystery - Calculating the True Cost of Employee Absence, Employee Relations, Vol. 11 Iss: 6, pp.12 - 15

ATOC (2012) HEROH Forum 2011, Average Absence/Sickness for Drivers by TOC By Sector - Anonymous Format

Black, C. (2008) Working for a healthier tomorrow, Dame Carol Black's review of the health of Britain's working age population, Presented to the Secretary of State for Health and the Secretary of State for Work and Pensions. Norwich: The Stationary Office

Black, C, Frost, D (2011) Health at work – an independent review of sickness absence. Norwich: The Stationary Office

Boorman, S. (2009). NHS Health and Well-being, Final Report November 2009. Leeds: Department of Health.

Department of Work and Pensions and Department of Health (2008). Improving health and work: changing lives. The Government's Response to Dame Carol Black's Review of the health of Britain's working-age population. Norwich: The Stationary Office

Paul Hemp, 'Presenteeism: At work but out of it', Harvard Business Review, October 2004

Institute of Employment Studies, Bevan and Hayday (2001)

Juniper, B. A., Bellamy, P. and White, N. (2011) "Testing the performance of a new approach to measuring employee well-being", Leadership & Organization Development Journal, 32(4), pp. 344-357.

Macleod, D. Clarke, N. (2009). Engaging for success: Enhancing performance through employee engagement, A report for Government by David Macleod and Nita Clarke. Crown Copyright

Occupational Medicine (2008), 58: Editorial, pp522-524

ORR. (2010). Overview of work related ill health in the GB rail industry 2010 - June 2011. London: ORR

RSSB. (2005). RSSB research project T382 Risk Assessment of Health Conditions in the UK Rail Industry. London: RSSB.

RSSB. (2006). RSSB research project T389 Management of Health Needs Report 1: The current position. London: RSSB.

---

Mental Health at Work: Developing the Business Case (2007),  
Policy Paper 8, London: The Sainsbury Centre for Mental Health

Robertson Cooper, <http://www.robertsoncooper.com/news/1-latest-news/167-presenteeism-on-the-rise-as-an-estimated-quarter-of-uk-employees-admit-to-working-when-ill>. website visited 17.12.13

Dee Eddington Zero Trends, Health as a Serious Economic Strategy 2009

Office of National Statistics, Sickness Absence in the Labour Market April 2012

---

## Appendix

**Table 10 - Absence cost calculations**

Cost of reported absence	= (payroll x NIC) x reported absence rate	A
Cost of unreported absence	= (payroll x NIC) x unreported absence rate	B
Total absence rate	= reported absence rate + unreported absence rate	C
Employer pension contributions	= (payroll x C) x employer pension contribution rate	D
Indirect absence costs	= (A+B+D) x indirect costs rate	E
Total working days lost	= (workforce size x 227) x C	F
Cost of 1 day's absence	= $\frac{A + B + D + E}{F}$	G
Total cost of sickness absence	= F x G	H
Total cost of impaired health	= (H x 1.5) + attrition costs	

RSSB Research Programme  
Block 2 Angel Square  
1 Torrens Street  
London  
EC1V 1NY

[enquirydesk@rssb.co.uk](mailto:enquirydesk@rssb.co.uk)

[www.rssb.co.uk/research/Pages/main.aspx](http://www.rssb.co.uk/research/Pages/main.aspx)