

Closing the gap on health

ORR's review of health risk management in the rail industry for 2014 - 2019

November 2019



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Foreword

From Ian Prosser HM Chief Inspector of Railways

Director of Railway Safety and Health

More than a quarter of a million people work in Great Britain's rail industry. Protecting them from harm to their health caused by their work, at a time of increasing pressure on the system, needs to be at the forefront of all our efforts.



Demonstrating care for our people, physically and mentally, particularly when demands are high, is the bedrock of engagement with our workforce. Mental ill health is a genuine challenge for our industry and creating a culture where our people are confident to come forward for help and openly support each other should be a common aim. Working with industry suppliers and planners to design out health risks early, including harnessing new technologies, will mean that rail workers will not need to rely on protective equipment as the last line of defence.

During our second health programme, we have seen a step change in ambition, leadership and collaboration on health and wellbeing, which is now clearly signposted in the strategic priorities for the industry. Competence and capability on managing health and wellbeing across the sector has certainly improved, with some good examples provided by London Underground Limited building its understanding of emerging issues such as tunnel dust, and RSSB providing invaluable expertise to support delivery of the mainline Industry Health and Wellbeing Roadmap.

Although the industry is undoubtedly in a far better place on health than five years ago, there is still some way to go to achieve genuine parity between the management of health and of safety, and to achieve the industry's Healthier Rail Vision where a career in rail delivers better health than in other industries.

We need to see continued progress in tackling the most prevalent causes of ill health such as hand arm vibration syndrome, mental ill health, and musculoskeletal disorders but also an equal focus on less visible health hazards such as legionella in water systems and occupational lung disease from exposures to dust and fumes, where the harm may not be visible for many years. We want to see the wider use of ORR's Risk Management Maturity Model (RM3) for driving improved maturity in managing health risks, and we will support the industry to do this.

In order to close the performance gap on health, industry needs to collaborate in shared health services provision. Longer term investment is needed to build health management capability, creating better health risk assessment methods with a strong supporting evidence base. Risk modelling and prevention of long latency disease should be as mature as equivalent methods for the prevention of low frequency high consequence rail accidents. In the short term, we would encourage the industry to report publicly on a simple sickness absence rate, to support benchmarking and trend analysis while more sophisticated monitoring develops.

We have resourced and delivered prioritised inspection plans on health and have served 23 Notices during this five year health programme. Our continued commitment in this area will be outlined in our revised Strategic Risk Chapter on health.

We commend the industry's decision to take ownership for closing the performance gap on worker health and accept that strategic changes at industry level will take time. But we are clear that recent progress should not be allowed to stall and continuous improvement in managing health risks must be maintained. Once we have achieved that, we will be on target to a reduction in harm and improving wellbeing across the industry.

A handwritten signature in blue ink, appearing to read "Ian. Russell".

Executive summary

At the start of ORR's second health programme in 2014 we identified what success would look like after another five years. We wanted to see evidence based health risk assessments informed by reliable data; an understanding of hidden costs of ill health; competent managers supporting engaged workers; public commitment to ill health reduction driven by clear targets; and better collaboration across industry on health. While we have seen real progress in many areas, in others there is still work to be done.

The scale of the challenge on health

The health and wellbeing of the rail workforce is central to the success of the whole industry. Latest Health and Safety Executive (HSE) statistics estimate that across GB industry seven times more working days are lost to work-related ill health than to non-fatal injuries.

Despite clear intent and visible commitment to improve worker health and wellbeing, the rail industry does not yet have the data to support a full understanding of the extent and causes of work-related ill health in its workers. Rail industry reporting on ill health is currently limited to the statutory reporting of occupational diseases under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR), and some limited industry data on manual handling and shock/trauma incidents. In this review we have used best available evidence from government, RSSB, and key duty holders to estimate the scale of the challenge on health in rail.

Available data suggests that all sickness absence in rail is higher than national all-industry benchmarks. RSSB's 2019 estimate of a Lost Time Rate in rail of 4.28% compares with the latest Office of National Statistics (ONS) 2017 estimate of 1.9% for all industry and 1.7% for the private sector. Many rail companies are still unable to report on work-related sickness absence: this is key to understanding the areas where workplace interventions might have most impact.

Latest HSE data suggest rates of work-related ill health in rail workers (2-5%) broadly comparable with those in construction workers (3-5%), with levels of respiratory and skin diseases similar to those seen in all workers. There is no evidence of an increased risk of mesothelioma among current rail workers but there is a higher than average risk among former rail vehicle builders arising from historic exposures to asbestos. Recent claims for industrial injuries disablement benefit by rail workers are dominated by long latency asbestos related disease.

The available health data support the case for further action on the most prevalent causes of worker ill health, already recognised by rail employers as priorities. Musculoskeletal disorders and mental health are major drivers of industry sickness absence and referrals to occupational health services: about one in four. Diagnoses of hand arm vibration syndrome (HAVS) continue to dominate RIDDOR disease data, with 359 HAVS cases reported to ORR during our 2014-19 health programme. Further action is needed to reduce harm in these areas. However, the industry also needs to remain alert to and act to prevent harm from less visible health risks, including microbiological hazards such as legionella in water systems, and long latency occupational lung diseases linked to

exposures to hazardous dust and fumes, where ill health may not become evident for many years.

The potential business benefits from investing in worker health and wellbeing are clear: healthy workers take less time off sick, and work more efficiently. RSSB estimate sickness absence costs to the mainline industry to be around £355 million per year with 1.34 million days lost. If the costs resulting from presenteeism (being distracted and less productive at work due to poor health or low engagement) are included, cost estimates rise to almost £889 million per year. RSSB research suggests that for every £15 lost to sickness absence among rail workers, only £1 is spent on supporting their health. As well as the impact on affected individuals and the financial costs from worker ill health, the rail industry cannot afford to ignore potential reputational costs if it does not address emerging health concerns (such as poor air quality from diesel trains in stations) quickly enough.

Industry leadership and delivery

We welcome the increased focus, leadership, and capability seen on occupational health across all parts of the industry since 2014. Clear progress in driving the health agenda across the mainline over the last five years is evident, with work co-ordinated by the Health and Wellbeing Policy Group (HWPG) and supported by RSSB health and wellbeing specialist resource. We have witnessed a step change in industry collaboration on health, with a far more inclusive approach to targeted planning and oversight via the HWPG.

Active participation in HWPG working groups from across the industry, including contractors, plant and labour suppliers, rolling stock companies, and trade unions, as well infrastructure managers, passenger and freight operators, is testament to the importance that rail employers now place on worker health. We are keen to see the recent escalation in activity on health sustained to allow rail businesses to reap the business benefits from improved health and engagement in their workers.

We are encouraged by early progress and delivery in priority areas, including new good practice resources to support health by design and better mental health. Visible public commitment from rail industry employers to mental health and occupational cancer campaigns demonstrates leadership and accountability. But worker health is still not as consistently embedded in business performance reporting as worker safety, which ultimately drives priorities and action by decision makers. Public reporting on health can play a crucial role in influencing business attitude and practice. The rail sector has some way to go in order to match the best in class on this.

Our 2014-19 health programme identified the challenges created by an absence of reliable data on work-related ill health across the sector. Progress towards realising the goal of shared health data collection, and work to develop common health performance indicators to support benchmarking has been steady, but it is still some way from unlocking the benefits of an evidence based approach to managing health.

We recognise the challenges for rail companies in committing to a shared health data collection framework, and benchmarking using common health performance indicators, and support a staged approach to give businesses time to adjust their processes. We support HWPG work towards a combined health and safety metric which captures ill health outcomes, for potential use in a health risk model. We believe that capturing work-related

ill health in risk assessment and modelling at a sector level is fundamental to achieving a lasting improvement in the management of worker health and wellbeing.

While evidence based research to evaluate the effectiveness of training for managers on mental health is a really positive step, progress towards building the competence of managers in other aspects of occupational health has been slower. Our inspection work has found patchy understanding of health risk assessment and control among front line managers and supervisors, and there remain gaps in existing industry arrangements to build rail specific competency across occupational health service providers.

While the scale of the health risks facing tram and heritage operators may differ from the wider industry, we believe that more sharing of expertise and good practice within these sectors, and working with the wider industry on common health challenges, could bring real benefits. We believe that there is scope for the Heritage Rail Association, and in the longer term the Light Rail Safety and Standards Board, to support their sectors towards continuous improvement in managing health risk.

Management maturity on health

Our 2014-19 inspection work suggests that senior level commitments on health have not yet been consistently translated into improved compliance on the ground. While front line managers are better informed about potential health risks, we found serious weaknesses in site supervision, monitoring and assurance to ensure that the expected controls were actually in place. Without this key assurance activity, efforts to raise compliance standards on health will be undermined and significant investment on health wasted.

We found evidence of failure to meet minimum legal requirements across the industry. Over the last five years we issued 23 Notices for significant failings in health and welfare compliance, a quarter of all the enforcement notices served. We judge that compliance on occupational health in rail is still lagging behind comparable industry sectors.

Failure to conduct and apply the findings of a suitable and sufficient health risk assessment was an underlying cause in most, if not all, of the cases where we took formal enforcement action. Improved understanding of health risk assessment principles, supported by a sound evidence base, must be a priority if the industry is to improve its performance on health, and individual duty holders achieve consistent legal compliance.

Health by design needs to be firmly at the top of the industry's agenda. Failure to consider the reliability of controls in health risk assessments has driven continued reliance on personal protective equipment as the default control, rather than proper consideration to engineering controls. We are encouraged by the increasing recognition and willingness of the industry to work together to design out shared health risks, and have seen progress in key areas such as diesel fumes, silica dust in ballast handling, and manual handling, although in many cases this has been driven by ORR intervention. However, we want to see rail clients, contractors and suppliers do more to identify and implement sustainable solutions which design out the potential for health risk in the future.

Our RM3 (Risk Management Maturity Model) assessments suggest a modest improvement in management maturity for occupational health over the last five years, although maturity levels remain below those seen for managing safety across the sector. We also found much greater variability in the assessments for worker health than for

worker safety. We want to see a shift towards routine use of RM3 specifically for health by more rail companies to help them to identify where improvements are needed to close this maturity gap.

Organisational and structural changes within the industry, including deepening devolution within Network Rail and potential changes to the franchising model, may present opportunities to manage health even better. However, there is a real risk that they could distract attention and stall the progress we have seen on worker health in recent years. Clear and decisive leadership, and a relentless focus on health as a key business risk, is needed.

Assessing the impact of ORR's 2014-19 health programme

The absence of reliable rail industry health data has made it difficult to quantify the impact of ORR's health programmes since 2010. For our 2014-19 programme we learnt lessons from earlier reviews and simplified the health indicator measures we used to assess our impact: changes in the extent and cost of work-related ill health, and measures of industry awareness and visible leadership on health. We believe that our impact assessment demonstrates that ORR's strategic focus on health in the last five years has helped to build a better understanding of the scale of the challenge on health, and contributed to meaningful industry progress in filling the gaps.

Available data on the extent and causes of work-related ill health in rail provided only partial snapshots, making it difficult to infer any trends between 2014-15 and 2018-19. Evidence suggests that all sickness absence rates in rail remain higher than all industry averages, and that rates of work-related ill health in rail workers are comparable with construction workers. Increased levels of RIDDOR disease reporting, particularly of HAVS, has been sustained in the last five years. There is some evidence to suggest a downturn in more serious manual handling incidents during our 2014-19 health programme.

On the cost of work-related ill health, again there were insufficient industry data available to infer any trends over last five years. However there is good evidence of a much better understanding across industry of the cost burden from ill health, and the recognition of the business case for health and wellbeing interventions.

We found strong evidence of increased industry awareness on health during our 2014-19 health programme, based on sustained improvements in industry reporting of occupational diseases under RIDDOR; use of ORR (and RSSB) web site resources on worker health and wellbeing; and direct feedback from ORR's sample survey and interviews with industry leaders.

We judged that there was moderate evidence to demonstrate a direct impact from our 2014-19 programme on visible industry leadership, based on measures of public commitments to health campaigns across the industry and ORR sample survey responses. There was some limited evidence suggesting a closing of the gap between public reporting on worker health compared with worker safety. Feedback from a small survey and interviews with industry leaders suggests that ORR's 2014-19 programme messaging was successful in reaching senior levels in the industry and directly influenced health interventions, but also suggested some gaps in influencing the wider supply chain, and reaching front line staff.

Next steps: for the rail industry

Use of better intelligence to target workplace interventions has the potential to deliver long term benefits: improving the quality of rail workers' lives, securing more consistent legal compliance, and increasing productivity with associated cost savings, freeing up valuable industry resource.

We see the absence of reliable rail industry data on work related ill health as a key barrier to targeting improved health risk management. Consistent reporting of a basic all sickness absence metric could help to bridge the gap until use of the SMIS shared health collection platform is sufficiently mature. The longer term ambition should be for the wider industry to agree and report a common set of health metrics on sickness absence and work-related ill health.

The rail industry needs to collaborate to build its health management capability, creating better health risk assessment methods with a strong supporting evidence base. The aim should be for risk modelling and prevention of long latency disease to be as mature as equivalent methods for the prevention of low frequency high consequence rail accidents. We believe that the absence of an 'FWI equivalent for ill health' could perpetuate a continued focus on the immediate causes of sickness absence at the expense of longer term harm.

We recognise that changes towards shared health data collection and health risk modelling have long lead times and upfront organisational costs. But we believe that these changes are essential to delivering lasting improvements in how the industry manages health, with real benefits to workers and cost savings to employers.

Mainline processes for managing risks from individuals' fitness for work are still not sufficiently robust and a concerted effort to deliver real progress is needed in this area. Despite significant efforts to improve standards and processes used by third party occupational health providers, progress here has been slow.

We want to see more rail companies deliver on commitments to treat health like safety by publicly reporting on worker health against quantitative targets, in order to provide the transparency and accountability expected by company decision makers, shareholders and the public. Current HWPG work towards agreeing common health performance indicators and scorecards could help to further close the gap on public reporting on worker health.

If the ambition on health in Leading Health and Safety in Britain's Railways is to be realised, we are looking to industry leaders including the Rail Delivery Group and Industry Health and Safety Meeting to champion delivery and participation, particularly in those areas which require cross industry commitment and investment such as shared health data, benchmarking, and clinical support, industry standards and governance.

We want to see more routine use of RM3 2019 by rail dutyholders specifically for health to help them to identify where further improvements should be targeted. The HWPG project to develop a health and wellbeing maturity model has the potential to support rail companies in their use of RM3 by identifying relative strengths and weaknesses in specific areas of health and wellbeing management. We are particularly keen to see more use of RM3 2019 for health by the new adopters including Network Rail routes, contractors, tram, and larger heritage operators

We also want to see more sharing of challenges and solutions in managing occupational health within both the tram and heritage sectors, to support continuous improvement. In the medium term, once its core safety function is properly established, it may be appropriate for the Light Rail Safety and Standards Board to consider the case for extending its remit to include shared data, standards and guidance on occupational health. We believe that there is scope for the Heritage Rail Association to support its members to achieve more consistent compliance on health, and we will work with them in doing this.

Next steps: for ORR

While this review marks the end of ORR's formal health programmes, occupational health compliance will remain a key focus for us, not least because we have seen a continued need for formal enforcement action over the last five years. We will focus our resource on those activities that we as the regulator are best placed to deliver, ensuring legal compliance and supporting continuous improvement, increasingly measured by use of RM3 2019. Our inspection, investigation and assurance work on health will be informed by the priorities in a revised strategic risk chapter on health planned for early in 2020.

We will continue to use best available data together with evidence from our inspection work to assess performance on health, and will report progress in ORR's Annual Health and Safety Reports. We will publish regulatory guidance on health where there is a clear need. We will continue to publish available health data on our data portal; support industry efforts to improve health data quality; and look to include suitable health metrics in our internal benchmarking.

The industry will rightly have the lead on developing health research, industry standards, tools and good practice, as well as enabling better health management capability via health data, metrics, and benchmarking. While we propose to step back from the detail of project work under Leading Health and Safety on Britain's Railways we will maintain a proportionate level of oversight on delivery of key commitments. We will put in place appropriate checks to ensure that the progress seen in recent years on health does not stall and continue to review how we can best secure improved legal compliance and support continuous improvement on occupational health.

1. Introduction

- 1.1 A healthy and productive workforce is central to the industry's success, particularly at times of pressure such as performance challenges, and technological or structural change. With an ageing workforce, potential health impacts from obesity, diabetes, sedentary work, and shift patterns are likely to worsen. The legal, moral and business case for improving the physical and mental health of our rail workforce has never been greater.

Purpose

- 1.2 This report summarises the available evidence and our assessment of industry progress in managing work-related ill health by the end of ORR's 2014-19 health programme. It provides an update to our 2011 baseline health review and our 2015 Better Health is Happening Report. It covers the period 1 April 2014 to 31 March 2019, summarising the evidence on the scale and costs of work-related ill health, and the maturity of the industry in managing occupational health. It seeks to identify the areas where good progress has been made, but also to shine a spotlight on those areas where more needs to be done to deliver both the health and the economic benefits that arise from excellent health risk management. We will use the findings to inform the planned review of ORR's strategic risk chapter on health and our intervention plans for the future.
- 1.3 This report also seeks to assess the impact of ORR's second health programme by reviewing trends in a sample of health indicator measures used in our earlier (2011 and 2015) reviews.

Scope

- 1.4 This report is relevant to all parts of the rail industry, including rail operators, infrastructure managers, suppliers and contractors, whether on the mainline, light rail and trams, or heritage. It is aimed at industry leaders, those directly responsible for managing worker health, occupational health specialists, and should also be of interest to employees' representatives and wider industry groups. The main focus of ORR's health programmes is seeing the industry achieve consistent legal compliance and progress towards excellence in the management of health. This report primarily looks at the management of work-related (or occupational) ill health, which describes those conditions that are caused or made worse by work, for example, the adverse effects of exposure to dust, fume, asbestos, noise, vibration, musculoskeletal risk or work-related stress. There is, however, inevitably some overlap with wider aspects of worker health such as fitness to work and general wellbeing and lifestyle management.
- 1.5 This updated review has been informed by intelligence gathered from a wide range of sources, including published and internal reports, previously unpublished data, as well as information from ORR's strategic and inspection work with the rail industry. We have adapted our approach to data collection, learning from earlier reviews. Where data sources we had used previously proved unreliable (e.g. cost estimates

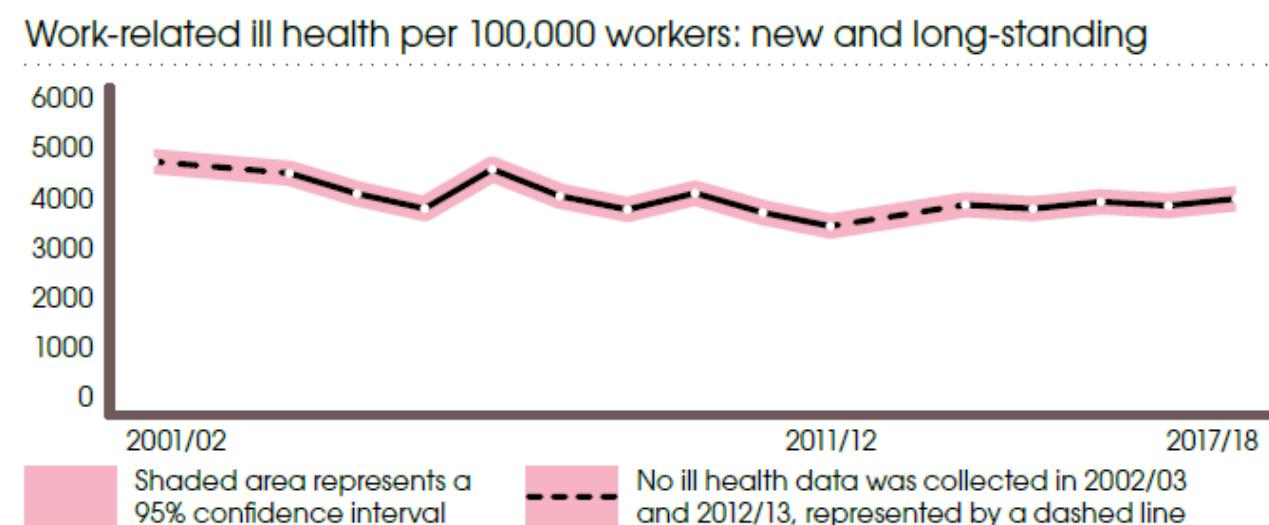
on health claims) or required disproportionate resource (e.g. detailed quantitative surveys of industry duty holders) we have used alternative qualitative measures, particularly in assessing our impact.

2. Work-related ill health across GB industry

Extent and causes of work-related ill health: all industry

- 2.1 Latest statistics¹ published by the Health and Safety Executive (HSE) estimate that in Great Britain (GB) in 2017/18 there were 1.4 million work-related ill health cases (new or long standing) resulting in 26.8 million working days lost. The number of working days lost due to work-related ill health was around seven times greater than for non-fatal workplace injuries (3.9 million days). The long term trend in the rate of self-reported cases of work related ill health (Figure 1) was downward up until around 2010/11, but since then has been broadly flat.

Figure 1: Long term trend in self-reported cases of work-related ill health 2001/02 to 2017/18



Source: HSE 2018 health and safety statistics summary¹. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence

- 2.2 HSE estimate that 15.4 million working days were lost due to work-related stress, depression and anxiety, and a further 6.6 million days due to work-related musculoskeletal disorders (MSDs), accounting for around 80% of the total ill health absences. HSE data show a long term downward trend in working days lost due to MSDs since 2011/12, but no clear long term trend in the rate of stress, depression and anxiety over the same period.
- 2.3 HSE estimate that occupational lung disease accounts for around 12,000 of the 13,000 total deaths each year linked to past exposures at work. Mesothelioma and asbestos related lung cancer linked to past exposures together account for 40% of estimated deaths from lung disease.
- 2.4 The rate of work-related ill health across the transport and storage sector was comparable with the all industry rate (no statistically significant difference).

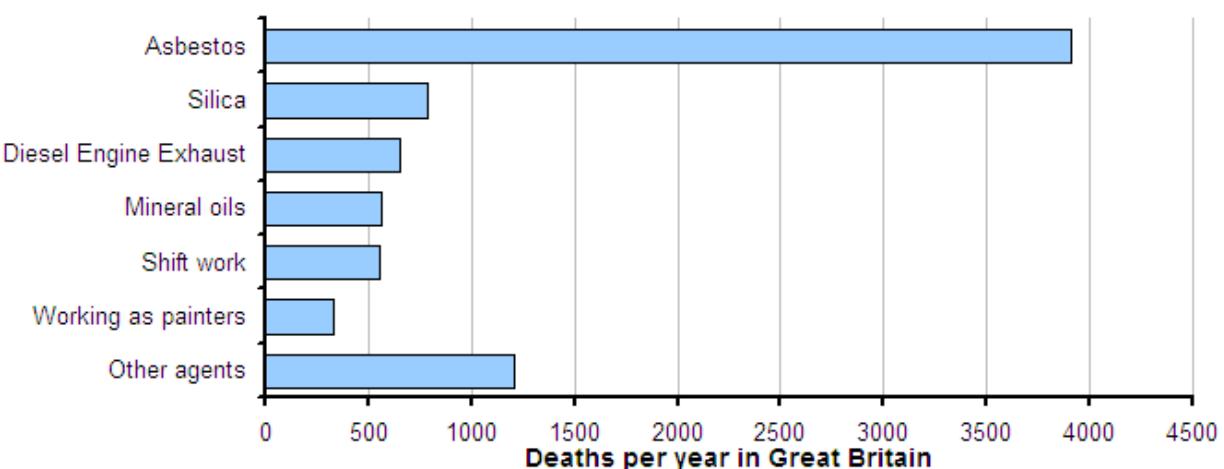
¹ <http://www.hse.gov.uk/statistics/overall/hssh1718.pdf>

- 2.5 The 2018 Health and Wellbeing at Work report² produced by the Chartered Institute of Personnel and Development (CIPD) and SimplyHealth shows a fluctuating but generally downward trend in average sickness rates since 2010 but with some suggestion of a flattening of the trend since 2016.

Occupational cancer: all industry and construction

- 2.6 HSE's 2018 statistics on occupational cancer in GB³ suggest that across all industry around 13,500 new cases of cancer each year are caused by past occupational exposures to known and probable carcinogens, and about 8,000 deaths. Past asbestos exposure is the leading cause of death from occupational cancer today, increasing from 4,000 deaths per year in the 2005 estimates to around 5,000 a year now.

Figure 2: Estimated occupational cancer deaths by cause in GB, 2005



Source: HSE statistics occupational cancer 2018³. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence

- 2.7 Many workers involved in rail renewals and construction may have similar work-related exposures to those working in the wider construction industry, which bears the largest burden (around 40%) of occupational cancer cases and deaths across all industry sectors. HSE estimate that the construction industry has about 3,500 cancer deaths and 5,500 cancer registrations (new cases) each year. About 3,500 cancer registrations each year are attributed to past exposures to asbestos and silica.
- 2.8 HSE estimates of future cancer cases (based on a number of assumptions and uncertainties) suggest that occupational exposures associated with asbestos exposure will decline significantly, and that occupational exposures to silica, diesel engine exhaust emissions (DEEE), solar radiation, shift work, and working as painters and welders may become the main causes of occupational cancer in the future.

² https://www.cipd.co.uk/Images/health-and-well-being-at-work_tcm18-40863.pdf

³ <http://www.hse.gov.uk/statistics/causdis/cancer.pdf>

- 2.9 The HSE report also highlights changes to the evidence base for some newly classified workplace carcinogens. All welding fume (including mild steel) is now classed as a carcinogen which can cause lung cancer and has the potential to cause kidney cancer, based on evidence of recently published research by the International Agency for Research on Cancer (IARC)⁴.
- 2.10 A 2019 report to HSE by the Workplace Health Expert Committee on lung cancer and DEEE⁵ estimated that currently approximately 400,000 workers are exposed to DEEE in GB, of which 60,000 could be exposed to medium ($>0.01\text{mg}/\text{m}^3$) or high levels ($>0.04\text{mg}/\text{m}^3$).

Costs of work-related ill health: all industry

- 2.11 The costs and productivity deficit resulting from working-age ill health remain high on government's agenda, with a recent focus particularly on mental health. Deloitte's 2017 report 'Mental health and employers: The case for investment'⁶, estimated that poor mental health costs UK employers £33-42bn each year, with presenteeism costs of £17-26bn, far exceeding the absence and turnover costs of £8bn each.
- 2.12 HSE estimate the annual costs of new cases of work-related ill health in 2016/17 to be £9.7 billion, far exceeding the £5.2 billion cost from workplace injury. This cost estimate excludes long latency illnesses such as cancer caused by past exposures. It comprises financial (or direct) costs such as those associated with lost productivity or healthcare, and a monetary value (non-financial cost) given to individuals' pain, grief and suffering. Almost a quarter of the total illness cost (£3 billion) fell to employers.

⁴ <http://publications.iarc.fr/569>.

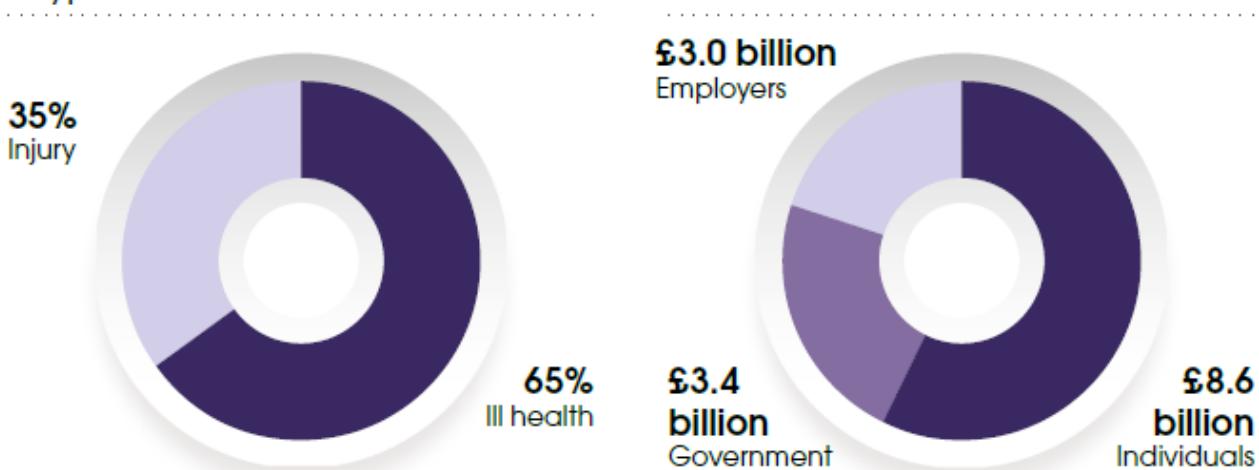
⁵ <http://www.hse.gov.uk/aboutus/meetings/committees/whec/index.htm>

⁶ <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/public-sector/deloitte-uk-mental-health-employers-monitor-deloitte-oct-2017.pdf>

Figure 3: HSE Cost to Britain estimates 2016/17

Costs to Britain of workplace injury and new cases of work-related ill health in 2016/17 by:

- type of incident



Source: HSE 2018 health and safety statistics summary¹. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence

2.13 HSE research published in 2016⁷ estimates the total annual economic costs to GB society of new cases of work-related cancers were £12.3 billion in 2010. It also suggests total costs per average case of occupational cancer at around £800,000 which includes costs to individuals, employers, and government. The long latency means that most affected workers will have retired by the time they are diagnosed.

⁷ <http://www.hse.gov.uk/research/rrhtm/rr1074.htm>

3. Extent and causes of work-related ill health: rail industry

3.1 In the absence of a comprehensive health data set for rail, we have used best available data from a range of reliable sources to inform our assessment of the extent and causes of work related ill health at the end of our 2014-19 health programme. These include available rail industry sickness absence estimates; HSE data on self-reported estimates of work-related ill health from the national Labour Force Survey (LFS), and specialist disease reporting schemes; HSE data on Department of Work and Pensions (DWP) Industrial Injuries Disablement Benefit (IIDB) scheme claims; occupational disease diagnoses reported to ORR under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR); trade union data from the biennial health and safety representatives survey; and industry data on manual handling and shock/trauma injuries resulting in lost time.

Key findings: sickness absence and work-related ill health in rail workers

- HSE data suggest rates of work-related ill health in rail workers (2-5%) comparable with those in the construction sector (3-5%), with levels of respiratory and skin diseases similar to those seen in all workers.
- Railway workers are at no higher risk of death from mesothelioma (serious asbestos-related disease) than the wider working population. Former railway vehicle body builder and repair workers have a higher than average risk of mesothelioma caused by past exposures to asbestos.
- The revised HSE data sets include an additional group of workers: rail travel assistants which include on board and platform staff, widening the scope of the rail occupations captured when compared with previous analyses.
- Available data on claims from railway operatives assessed under the Industrial Injuries Disablement Benefit scheme were dominated by asbestos related disease. Of the 350 long latency disease cases assessed between 2011- 2017, all were asbestos related except for two cases of pneumoconiosis. Of the 40 short latency disease claims over the same seven year period, 25 were associated with use of vibrating tools, with five cases each of occupational asthma and deafness. The incidence of new claims for non-asbestos related disease for rail operatives was half that in the wider working population.
- Available data suggests that all sickness absence (not just work-related absence) is higher in rail compared with national benchmarks. RSSB's 2019 estimate for the Lost Time Rate in rail is 4.28%, compared with the Office of National Statistics (ONS) 2017 estimate of 1.9% for all industry and 1.7% for the private sector.

- Industry data suggest that musculoskeletal disorders (MSDs), and mental health are major drivers of industry sickness absence and referrals to occupational health services: about 1 in 4.
- Data for the mainline and London Underground Limited (LUL) show a broadly downward trend in the more serious manual handling incidents resulting in lost time over the last three years. Data for lost time shock/trauma incidents show an upturn in 2018-19 compared with the previous year
- RIDDOR disease cases reported to ORR are dominated by diagnoses of hand arm vibration syndrome (HAVS), with 359 HAVS from a total of 399 disease cases reported to us over the five years of our second health programme. The upturn in reports of worsening HAVS diagnoses are of particular concern and since October 2017 such cases are considered by ORR for mandatory investigation. The relatively small number (40) of other RIDDOR diseases reported from across the industry included upper limb conditions due to repetitive work, occupational asthma, occupational dermatitis, and a case of occupational cancer.
- RIDDOR reporting of HAVS diagnoses by rail contractors and labour suppliers working with vibrating tools has increased in the last five years.
- Data published by Network Rail in their latest Annual Return data tables suggest an improving trends in key areas including sickness absence; safety critical workers judged fit for work; and a marked improvement in completion of required HAVS health surveillance checks since 2015-16.

Rail sickness absence data

- 3.2 In our previous health programme reviews we used detailed industry surveys to request data from rail companies on rates of work-related sickness absence. Most survey respondents were unable to provide this data. After our 2014 survey we concluded that the industry was not sufficiently mature in its health data collection to report absence data specifically for work-related ill health. Although not a direct measure of work-related ill health, broader sickness absence estimates are a more widely available measure for comparing rail with other industry sectors, and for tracking change over time.
- 3.3 The 2017 Office for National Statistics (ONS) report on sickness in the UK labour market⁸ provides a useful comparator for available rail industry estimates. The 2017 all industry absence average was 1.9% (4.1 days sickness absence per worker), down slightly from 2% (4.4 days per worker) in 2014. Sickness absence rates for 2017 were higher in the public sector (2.6%) compared with the private sector (1.7%).

⁸<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/sicknessabsenceinthelabourmarket>

- 3.4 In 2019 RSSB repeated its 2014 research⁹ on the costs of impaired health across the rail network to provide a revised baseline for rail industry absence. This latest RSSB research¹⁰ estimates a Lost Time Rate (LTR) for all sickness absence across the rail sector of 4.28% (the equivalent of 1.34 million days per year), higher than the 2017 ONS all industry rate.
- 3.5 In 2018 RSSB analysed data from a small pilot exercise¹¹ involving bulk upload of existing health data by three rail companies (one TOC and two Tier 1 contractors). This provides some additional insight, with reported sickness absence rates among the three participant companies (3.1%, 3.6%, and 4.1%) all above the national average per employee per annum published by the ONS (1.9% in 2017) and the CIPD (2.9% in 2018).
- 3.6 Sample absence data provided to ORR by Network Rail and LUL (Figure 4) also appear to support the conclusion that rail sickness absence rates remain high relative to the all industry average.

Figure 4: Comparison of average sickness absence per employee across sectors

Source absence data	Average days absence per employee 2014/15	Average days absence per employee 2018/19
LUL	9.8	12.6
Network Rail	8.7	7.6
CIPD all industry	6.6	5.9 (for 2018)
ONS all industry	4.4	4.1 (for 2017)

Source: London Underground 2014-15 and 2018-19 data from TfL People Analytics; Network Rail 2019 Annual Return Data tables¹²; CIPD SimplyHealth 2018 Health and Well-being at Work²; Office for National Statistics 2017 absence data¹³

- 3.7 In terms of the main causes of sickness absence, the 2017 ONS data report musculoskeletal problems (MSDs) as the reason for sickness absence in 17.5% of cases, with stress, anxiety and depression cited in 8% of cases. The ONS data also highlight the challenges of sickness absence in an ageing workforce, with the

⁹ <https://www.workandwellbeing.com/wp-content/uploads/2014/11/2014-02-report-WHWP-costs-of-impaired-health-across-network.pdf>

¹⁰ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Making-the-Case-for-Health-and-Wellbeing>

¹¹ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Contribute-to-sharing-cross-industry-health-and-wellbeing-data>

¹² <https://www.networkrail.co.uk/who-we-are/publications-resources/regulatory-and-licensing/annual-return/>

¹³ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/sicknessabsencefallstothelowestratein24years/2018-07-30>

absence rate among older workers (50-64) at 2.7% in 2017 almost twice that in the 25-34 age group (1.4%).

- 3.8 Available data for the mainline industry also reflect the importance of MSDs and mental ill health in driving sickness absence. RSSB's 2018 analysis of the bulk upload of existing health data from the three participant companies suggested that around 1 in 4 days lost to sickness absence were due to mental ill health (26.7%) and to musculoskeletal problems (23.6%). Across the three participating companies 14% of referrals to occupational health for all conditions were reported by the employee as work-related. Of those employees referred for mental health reasons, 24% reported it as work-related. Collectively, these mental health cases make up 45% of all the referrals reported as being work-related.
- 3.9 Network Rail Annual Return data for 2019 suggest that almost half of all the occupational health referrals made for psychological conditions were assessed as work related or have an occupational element, and 22% of referrals for MSDs.

HSE data on the extent of work-related ill health in railway operatives

- 3.10 HSE has published a revised analysis of work-related ill health data for rail workers¹⁴ from the Labour Force Survey (LFS) and specialist respiratory and skin disease reporting schemes. We made some changes to the previous HSE dataset reported in our 2015 Better Health is Happening review¹⁵ in order to maximise the potential sample size and reliability of the rail industry data. The latest HSE analysis captures LFS data over nine years, covering (but not limited to) the period of ORR's dedicated health programmes between 2010 and 2018. An additional occupation code for rail travel assistants, which includes on board and platform staff, has been added to the occupation codes used previously.
- 3.11 This updated analysis should be viewed as a revised baseline up to the end of 2017-18, and cannot be compared directly with previous analyses to infer any trend. The estimates for railway operatives, which include rail construction and maintenance operatives, train and tram drivers, rail travel assistants, and rail transport operatives, represent an easily identified sub-set of the wider rail workforce but may not represent the entire workforce. Some rail workers may, for example, be employed in the construction industry but also work on the rail network and may not be captured in these data.
- 3.12 The updated LFS data (Figure 5) indicate that annually between 2% and 5% of railway operatives suffer ill health caused or made worse by work. Based on the range of values for the rate per 100,000 workers (between 2,350 and 5,140 for rail) it seems reasonable to conclude that the rate of work-related ill health in railway operatives is broadly comparable with the construction sector (3%- 5%) and with transport associate professionals (2-6%).

¹⁴ <http://www.hse.gov.uk/statistics/adhoc-analysis/work-related-ill-health-railway-operatives.pdf>

¹⁵ https://orr.gov.uk/_data/assets/pdf_file/0017/18233/better-health-is-happening.pdf

Figure 5 Estimated prevalence and rates of self-reported illness caused or made worse by current or most recent job, in railway related occupations and industry sector, for people working in the last 12 months, averaged 2008/09-2011/12 & 2013/14-2017/18

Type of illness Sector	Illness ascribed to their current/most recent job						Whether rates statistically significantly higher/lower than across all occupations	
	Averaged estimated prevalence (thousands)			Averaged rate per 100,000 employed in last 12 months				
	central	95% C.I.		central	95% C.I.			
		lower	upper		lower	upper		
All occupations (illness ascribed current/most recent job)	1,005	986	1,025	3,200	3,140	3,260	..	
Transportation and Storage (SIC H)	54	49	58	3,430	3,150	3,710	No	
Transport associate professionals (SOC351)	2	1	3	4,180	2,450	5,910	No#	
Construction operatives (SOC 814)	6	5	8	3,920	3,030	4,820	No	
Road transport drivers (SOC 821)	29	26	32	3,230	2,880	3,570	No	
Railway Operatives ^a (SOC 6215,8143,8231,8234)	2	1	3	3,740	2,350	5,140	No#	

^aDefined by the following Standard Occupational Classification (SOC) 2010 codes:
8143 Rail construction and maintenance operatives;
8231 Train and tram drivers; and
8234 Rail transport operatives.

Figures in italics are estimates based on fewer than 30 sample cases. The central estimates for these figures can be volatile because of the small sample sizes. The range around the central estimate (i.e. lower and upper 95% confidence intervals) should be quoted here, rather than the exact value.

No ill health data was collected in 2012/13.

Source: HSE 2019 ill health in railway operatives report¹⁴. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence.

HSE data on causes of ill health in rail workers

3.13 HSE data from ‘The Health and Occupation Research’ network (THOR) for 2008-2017 captures diagnoses of work-related ill health from a sample of specialist consultants in respiratory disease (SWORD scheme) and also skin disease (EPIDERM scheme). THOR data (Figure 6) suggest that rates of respiratory and skin diseases among rail operatives were not statistically different to the average across all workers, based on the very small sample of actual rail cases seen.

Figure 6 HSE THOR data 2008-2017

Total estimated physician diagnosed cases of respiratory and skin disease in SWORD and EPIDERM during 2008-2017 in the rail industry

		Rail workers ⁽⁴⁾	All occupations
All respiratory disease ⁽¹⁾	Estimated cases ⁽³⁾	41	17,713
	Rate per 100,000 workers per year	6.2	5.8
All skin diseases ⁽²⁾	Estimated cases ⁽³⁾	28	15,127
	Rate per 100,000 workers per year	4.3	5.0

Source: HSE 2019 ill health in railway operatives report¹⁴. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence

3.14 HSE data for 2011-2015 on mesothelioma deaths (one of the most serious asbestos-related diseases) indicate that the risk for railway workers is no higher than for all workers. The occupation group for former vehicle body builders and repairers has a higher than average risk of mesothelioma arising from direct work with asbestos in the past.

Figure 7 HSE data from mesothelioma register for rail industry occupations 2011-2015

Mesothelioma PMRs¹ by SOC2010 occupation for males aged 16-74 in Great Britain 2011-2015

Unit Group	Occupation	Deaths			95% Confidence Interval			Rank by digit of SOC2010			
		All causes	Mesothelioma	Expected	PMR	Lower	Upper	1	2	3	4
5232	Vehicle body builders and repairers	1,037	18	10.4	173.5	102.8	274.2				22
6215	Rail travel assistants	510	1	5.5	18.1	0.5	100.9				
8143	Rail construction and maintenance operatives	353	2	3.6	56.2	6.7	203.0				
8231	Train and tram drivers	653	4	6.6	60.5	16.5	155.0				
8234	Rail transport operatives	1,243	6	13.7	43.7	16.0	95.1				107

Notes:

¹ A Proportional Mortality Ratio (PMR) is a summary measure used to compare mortality from a particular cause among a particular occupation, e.g. mesothelioma in train drivers, with the mortality of the general working population. If the PMR is greater than or less than 100 for a particular occupation, then the observed number of mesothelioma deaths in that occupation is relatively greater than or less than the average for all occupations.

Rank by 1/2/3/4-digit SOC code is based on highest PMR for occupations with 10 or more actual or expected mesothelioma deaths for the period

Source: HSE 2019 ill health in railway operatives report¹⁴. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence

3.15 The HSE report also includes available data for railway operatives on new cases of ill health assessed under the Industrial Injuries Disablement Benefit (IIDB) scheme over

a ten year period 2008 – 2017. This dataset covers new claims assessed for certain prescribed industrial diseases for which government compensation may be payable, depending on the assessed degree of impairment. A change in the classification of industry sectors in 2010 means that the data for 2011-2017 are not comparable with the earlier years (a break in the time series).

- 3.16 Between 2011 and 2017, 40 new cases of short latency disease were assessed under the IIDB scheme: 25 cases were HAVS or carpal tunnel syndrome associated with use of vibrating tools; five cases of asthma; and five of occupational deafness. The other five cases of short latency disease are not identified in the IIDB data to comply with the rules of disclosure of individual cases. The rate of new claims assessed for non-asbestos related disease over this period was 1.9 per 100,000 workers, half that for the wider working population (3.8 per 100,000 workers).
- 3.17 Between 2011 and 2017, 350 new cases of long latency disease were assessed under the IIDB scheme. All were asbestos-related except two pneumoconiosis cases where the causal agent was not specified. Of the 65 pneumoconiosis cases assessed during 2008-2010, five cases were not caused by asbestos – four were due to coal and in one the causal agent was unspecified.

ORR and rail industry data on occupational health

- 3.18 Since July 2013, ORR has published available occupational health statistics for the rail industry on our data portal¹⁶. This includes occupational diseases reported to us from across the industry under RIDDOR, and industry data on manual handling and shock/trauma incidents captured by existing incident reporting databases (SMIS for the mainline and LUSEA/IE2 for London Underground Limited). Trends in the data for the five years 2014-19 are summarised below.
- 3.19 The introduction by RSSB of a new industry-wide Safety Management Intelligence System (SMIS) during our second health programme resulted in delay to ORR's annual publication of manual handling and shock/trauma data while residual system issues were addressed by RSSB. Occupational Health statistics for 2016-17, 2017-18, and 2018-19 were published on our data portal in a revised format on 31 May 2019.

RIDDOR data on occupational disease 2014-15 to 2018-19

- 3.20 RIDDOR disease data reported by all rail dutyholders up to 31 March 2019 is published on our data portal and summarised in an occupational health factsheet¹⁷. RIDDOR 2013 requires reporting of diagnoses of new or worsening symptoms for six short latency diseases plus occupational cancers. Further information on disease reporting can be found on ORR's web site¹⁸.

¹⁶ <https://dataportal.orr.gov.uk/statistics/health-and-safety/occupational-health/>

¹⁷ <https://dataportal.orr.gov.uk/media/1415/occupational-health-factsheet-2018-19.pdf>

¹⁸ <https://orr.gov.uk/rail/health-and-safety/occupational-health/reporting-occupational-diseases>

Figure 8 Occupational disease cases reported to ORR under RIDDOR 2014/15 to 2018/19

Disease Type	2014/15	2015/16	2016/17	2017/18	2018/19
Carpal tunnel syndrome	4	1	13	3	4
Cramp in the hand or forearm due to repetitive movements	0	0	0	0	0
Hand Arm Vibration Syndrome (HAVS)	83	30	97	58	91
Infectious disease due to biological agents	0	0	0	0	0
Occupational asthma	2	0	0	1	0
Occupational cancers	0	0	1	0	0
Occupational dermatitis	1	0	1	3	0
Tendonitis or tenosynovitis in hand or forearm	1	1	3	0	3
Total	91	31	115	64	98

Source: ORR. This data comprises the number of RIDDOR reportable diseases reported through the Safety Management Information System (SMIS) and the ORR web form. No further calculations are undertaken on the received data.

3.21 The level of RIDDOR disease reporting has increased markedly over the last nine years of ORR's health programmes, driven largely by better reporting by Network Rail. Between January 2005 and September 2010 (prior to our first health programme) a total of seven cases of occupational disease were reported to us under RIDDOR. Our first health programme (2010-2014) saw a marked increase, with 320 RIDDOR disease cases reported to us. The next five years (2014-19) saw this increase sustained, with 399 disease cases reported to us under RIDDOR.

3.22 Since 2010, the RIDDOR disease data have been dominated by HAVS cases. We said in our 2015 review that we expected to see this high level of HAVS reporting sustained in the short term as Network Rail's health surveillance and reporting systems matured further, and the remaining workers holding small tool competencies completed the required health surveillance checks. This has happened, with a total of 359 HAVS diagnoses reported to us over the five years of our second programme 2014-19, the majority by Network Rail. Fluctuations in the numbers of reported HAVS cases over the last five years reflect problems experienced with Network Rail's previous occupational health provider's computer systems, and with completing and reporting outcomes from scheduled health surveillance checks, a situation which they have worked hard to recover.

3.23 In 2017 ORR revised our criteria for mandatory investigation of reported incidents to capture occupational health, including reports of suspension from work due to

elevated blood lead levels; cases of legionella where the source may be a rail premise; and RIDDOR reports of occupational asthma and worsening HAVS diagnoses.

- 3.24 Of the 359 HAVS cases reported in the last five years, at least 21 could be clearly identified as worsening cases based on the information provided in the RIDDOR reports to ORR. Network Rail's 2019 Annual Return data tables suggest that the number may be higher with 19 worsening diagnoses in 2018-19. Worsening diagnoses are of particular concern as they are more likely to arise from vibration exposures in current jobs, rather than new diagnoses of pre-existing symptoms arising from exposures with previous employers. Our follow-up work with Network Rail on worsening HAVS has indicated some anomalies in the status of diagnoses reported into SMIS and to route management, who are required to produce an action plan to prevent further harm. Further quality assurance checks for each diagnosis have been implemented.
- 3.25 In our 2015 Better Health is Happening review we suggested that under-reporting of HAVS by other rail companies undertaking similar types of work with vibrating tools was likely. Between 1 April 2010 and 31 March 2014 a total of seven HAVS cases were reported to ORR by companies other than Network Rail. With a rail contractor workforce of more than 100,000 the historic low level of HAVS reporting was open to question. RIDDOR data for 2014-15 to 2018-19 show an increase in HAVS reporting across wider industry, with 35 HAVS cases reported to us, including 20 by rail contractors. Over the last five years we have clarified RIDDOR disease reporting requirements and will continue to challenge rail companies on their reporting arrangements under RIDDOR.
- 3.26 The RIDDOR HAVS data show the value of health surveillance in identifying vulnerable workers early, but also the need for better risk assessment and more robust control of exposure to hand arm vibration. ORR has worked with the Rail Principal Contractors Group, Network Rail, RSSB and trade unions to agree draft guidance for the supply chain on managing HAV risk and associated health surveillance for labour-only workers. The agreed process for sharing information on likely and actual HAV exposures between contractors and labour suppliers should allow labour suppliers to identify those workers at risk of HAVS and provide the appropriate health surveillance. By the end of our 2014-19 programme the mainline Infrastructure Safety Liaison Group (ISLG) had agreed to test the agreed process, but progress has slowed, meaning that the current gap in HAVS health surveillance for many labour-only workers remains. We want to see leadership from Network Rail and its contractors to deliver this good practice and suggest that the new mainline health and wellbeing risk assessment working group may be well placed to support this work.

Industry data on manual handling and shock/trauma

- 3.27 Given the dominance of musculoskeletal disorders and mental health in industry sickness absence data, ORR's publication of available data on manual handling and shock/trauma injuries from Network Rail and LUL aims to increase visibility in these important health risk areas.

3.28 Trends in industry data¹⁶ for the more serious lost time manual handling incidents over the last three years are broadly downwards, suggesting an improving position overall. Data for the lost time shock/trauma incidents show a 9.4% increase in 2018-19 compared with the previous year.

Figure 9 Trends in manual handling and shock/trauma incidents resulting in lost time between 2012-13 and 2018-19 (v2 updated May 2020 following RSSB review of SMIS data)



Source: RSSB* and LUL¹⁶

*The system for reporting manual handling and shock/trauma incidents was changed in 2017.

Network Rail Annual Return data

3.29 Since 2012 ORR has used the Network Licence to incentivise Network Rail to report against a range of health metrics in their published Annual Returns¹². We believe that this requirement has helped to drive more robust health data collection and analysis than previously.

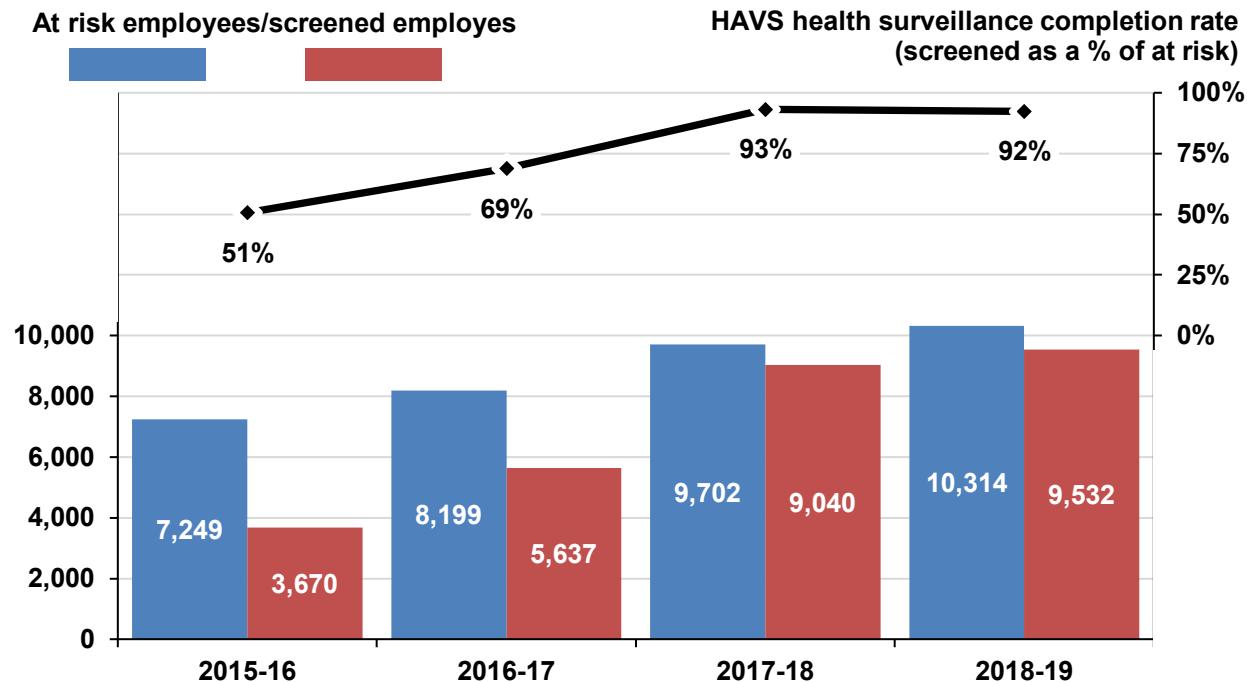
3.30 Network Rail has worked hard in recent years to address issues with the reliability and accuracy of its HAVS data, which had arisen mainly as a result of problems with computer systems and previous occupational health service provision. We are now looking for NR to improve the consistency and clarity of HAVS diagnoses reported into SMIS and to routes. Once the required improvements to health data quality are embedded, we will consider the case for a review of the reliability and accuracy of the health data in the Annual Return by the Independent Reporter, last carried out in 2012-13.

3.31 The Network Rail Annual Return data tables a strategic dashboard of performance indicators on sickness absence, fitness for work, health surveillance completion rates, and diagnosis of new and worsening occupational health conditions. As other dashboard measures on physical activity, cardiovascular risk, and mental wellbeing have been reported only intermittently over the last five years, we have excluded these from our analysis. We have excluded the data on the staging of HAVS

diagnoses from our trend analysis for 2014-15 to 2018-19, due to data quality concerns noted above, but have included data on completion of HAVS health surveillance checks which we believe to be more reliable.

- 3.32 Network Rail's 2019 Annual Return data tables¹⁹ show a 9% increase in average days lost to employee absence from 8.7 days in 2014-15 and to 9.5 days in 2017-18, followed by a 20% decrease to 7.6 days in 2018-19. The proportion of safety critical workers assessed as fit for role declined by 13.9 percentage points from 99% fit in 2015-16 to 85.1% in 2017-18, but then recovered in 2018-19 with 98.4% assessed as fit for work.
- 3.33 Completion rates for scheduled HAVS health surveillance checks (Figure 10) increased over the three years 2015-16 to 2017-18, from just over half of at risk workers in 2015-16 to 93% in 2017-18 and 92.5% in 2018-19. This reflects concerted and sustained efforts by NR, both centrally and in the routes and functions, to recover the backlogs in HAVS health surveillance arising from problems with their previous health service providers. The number of at risk workers under HAVS health surveillance has increased by 42%, from 7,249 in 2015-16 to 10,314 in 2018-19.

Figure 10 Network Rail Hand Arm Vibration Syndrome (HAVS) health surveillance completion rate: screened employees as a percentage of at risk employees, 2015-16 to 2018-19

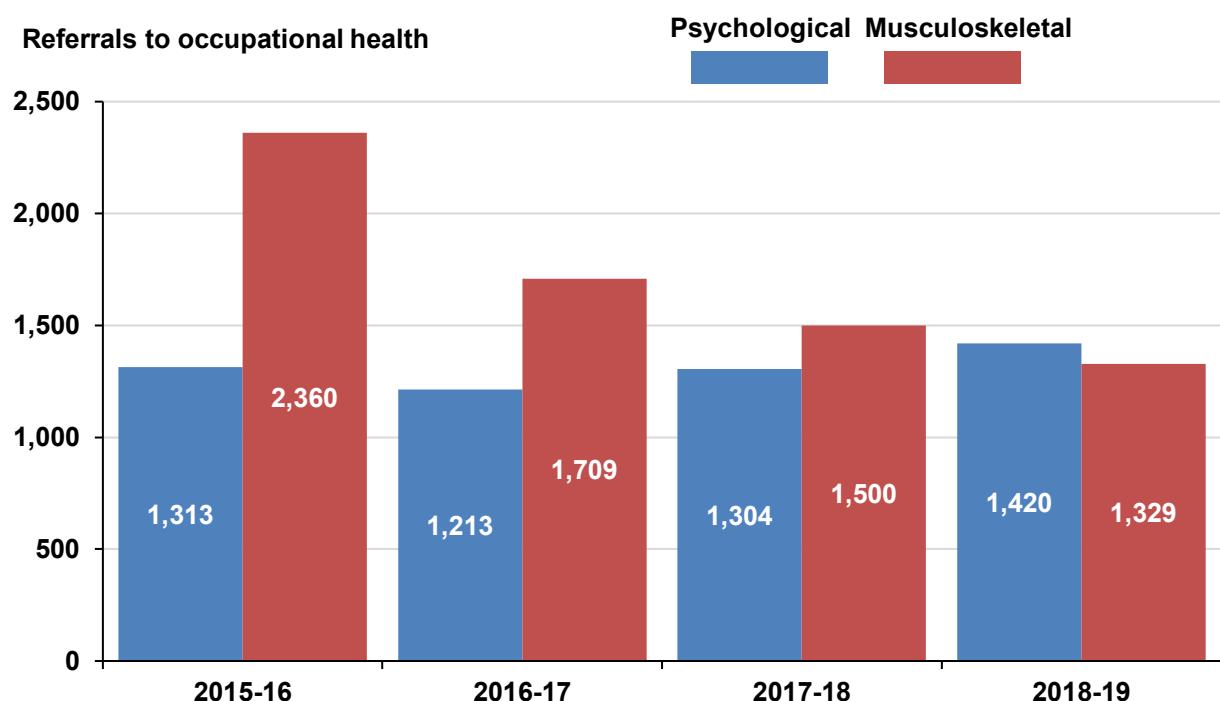


Source: Network Rail 2019 Annual Data tables¹⁹

¹⁹ <https://cdn.networkrail.co.uk/wp-content/uploads/2019/07/Network-Rail-Infrastructure-Limited-annual-return-2019-data-tables.xls>

3.34 Since 2015-16, NR referrals to occupational health for MSDs reduced by 44%, while those for psychological conditions remained broadly stable over the same period. There were 412 referrals for stress in 2018-19. This was close to the figures recorded in 2015-16 and 2016-17, but half of the number recorded in 2017-18. Just over half of the 2018-19 referrals for stress were self-reported as non-occupational, consistent with the proportion reported for previous three years.

Figure 11 Network Rail referrals to occupational health by condition type, 2015-16 to 2018-19



Source: Network Rail 2019 Annual Data tables¹⁹

3.35 Of the 2,879 workers screened for hearing loss in 2018-19, 83% had acceptable hearing. This is a 5.7% reduction compared with the previous year and the lowest reported during our 2014-19 health programme.

Trade union health data

3.36 The TUC surveys of health and safety representatives carried out every two years provide invaluable insight into the experience and concerns of front line workers across all industry sectors. The 12th biennial TUC survey in 2018²⁰ reported the top five health and safety concerns across all industry as stress (69%), bullying/harassment (45%), overwork (36%), back strains (32%), and slips, trips and falls on the level (31%). Responses specifically for the transport and communications sector show some variation in the ranking of key hazards but stress, bullying, slips on level, and back strain were the top four, with long hours in fifth place. The key

²⁰ <https://www.tuc.org.uk/research-analysis/reports/focus-health-and-safety>

concerns identified in the 2018 survey findings broadly align with the results in 2016 but with some movement in the ranking of individual hazards.

- 3.37 ASLEF reports separately on the key survey findings for its health and safety representatives, with 89 surveys returned in the 2018 biennial survey. The primary concerns for ASLEF representatives were stress (78%), back strains (70%), long hours of work (64%), noise (61%), bullying and harassment (59%) and repetitive strain injuries (59%). This broadly mirrors the national all industry survey results with stress, bullying, and back strains dominant, but with noise a greater concern for ASLEF respondents. ASLEF respondents also reported concerns around violence (47%), dust (47%) and physical working conditions including heat (44%), cold (37%) and cramped working conditions (39%). Concerns among ASLEF respondents around workplace exposures to vibration (37%), display screen equipment (35%) and asbestos (31%) ranked relatively higher when compared with all industry responses (4% vibration, 21% DSE, asbestos 10%).
- 3.38 In 2018 UNITE shared with ORR a register of concerns from its rail members about the levels and ill health effects of diesel fumes in enclosed locations, which we used to follow up complaints and to target inspection work in maintenance depots and enclosed stations.

4. The costs of work-related ill health in rail

Key findings: Costs of ill health in the rail industry

- We want to see more rail companies evaluate the cost effectiveness of health and wellbeing initiatives in order to target investment efficiently, and be able to demonstrate that the costs associated with ill health are at least as good as comparators within and outside the industry.
- HSE estimate that new cases of work-related illness in railway operatives cost rail employers £2.2 to £4.4 million each year. Data from HSE's Costs to Britain model suggests each new case of short-latency occupational illness for a railway worker costs rail employers around £4000.
- As the HSE estimate reflects the cost of illness arising from current working conditions, and excludes the costs of long latency disease such as cancer, actual costs are likely to be higher.
- RSSB's 2019 research estimates the direct and indirect cost of total sickness absence in the GB rail industry (based on an estimated 138,000 rail workers) at around £355 million annually. If costs of presenteeism are included, the total annual cost of impaired health is estimated to be almost £889 million.
- RSSB estimate that for every £15 lost to sickness absence among employees in the railway industry, only £1 is spent on supporting their health.

Cost estimates for rail

- 4.1 The potential business benefits from investing in worker health and wellbeing are well recognised: healthy workers take less time off sick, and work more efficiently. The 2017 Thriving at Work review²¹ for government demonstrated that workplace interventions on mental health showed an overwhelmingly positive return on investment, with an average return per £1 spent of £4.20. Good practice case studies²² from rail employers demonstrating real cost savings from targeted interventions on health have been shared on ORR's web site.
- 4.2 Striving for greater efficiency by reducing costs from workers suffering occupational ill health was a key focus of ORR's 2014-19 health programme. Reliable data on the costs of work-related ill health are difficult to source but current estimates indicate that the costs of failing to properly manage ill health are very significant, providing an opportunity to realise substantial savings.

²¹ <https://www.gov.uk/government/publications/thriving-at-work-a-review-of-mental-health-and-employers>

²² <https://orr.gov.uk/rail/health-and-safety/occupational-health/occupational-health-compliance-and-good-practice/case-studies>

- 4.3 HSE has used its 2016-17 Cost to Britain model²³ to estimate costs of new cases of short latency work-related illness in railway operatives. Costs of long-latency work-related disease (e.g. cancer) are not currently included in the HSE Costs to Britain model. HSE estimate total annual costs to GB society of new cases of work-related illness in rail operatives¹⁴ resulting from current working conditions to be of the order of £10 to £20 million, unchanged from its previous 2014-15 estimate reported in ORR's Better Health is Happening report.
- 4.4 Although there are some slight differences in where the cost burden falls, it is essentially unchanged considering the level of uncertainty. The model estimates that employers bear around 22% of the overall cost, with the cost burden on the individual at around 55%. Using this model, costs to rail employers of new cases of short latency work-related ill health in rail operatives would be of the order of £2.2 to £4.4 million per year. HSE estimate the unit cost of the average work-related illness to be £18,400 (based on 2016 prices), with the cost to the employer of £4,000 per case.
- 4.5 As HSE's Cost to Britain estimates include only the cost of cases arising from current working conditions, and exclude any costs arising from long latency disease such as cancer, actual costs to the rail industry from work-related ill health are likely to be higher.
- 4.6 In 2018-19 RSSB repeated its 2014 cost of impaired health across the network research⁹ to provide a revised baseline for the industry. As this latest research uses a different sample of rail companies, it is not valid to make comparisons or infer any trends in industry costs since the 2014 report.
- 4.7 RSSB's 2019 research¹⁰ on the costs on impaired health in the rail industry (based on an estimated 138,000 staff) estimates that 1.34 million days are lost to sickness absence each year, costing around £355 million annually. Overall sickness absence costs for TOCs (59,000 staff) were estimated at almost £152 million, and for FOCs (6,300 staff) at £16.2 million. If costs of presenteeism are included, the total cost of impaired health is estimated to be almost £889 million each year.
- 4.8 The 2019 RSSB research clearly reinforces the business case for a more proactive approach to reducing sickness absence and presenteeism. It estimates an average spend on health and wellbeing programme of just £174 per person per year. Most of this is likely to be spent on statutory requirements such as medicals, drug and alcohol testing, and rehabilitation. The cost-spend ratio for sickness absence was estimated at 15:1, meaning that for every £15 lost to sickness absence amongst rail workers, only £1 is spent on supporting their health. If presenteeism is included, the cost-spend ratio increases to 45:1, meaning that for every £45 lost to sickness and reduced productivity resulting from presenteeism, only £1 is spent on better health management and engagement.
- 4.9 RSSB has supported valuable work to develop a cost benefit analysis (CBA) tool to show a return on investment in health, facilitated workshops with industry to

²³ <http://www.hse.gov.uk/statistics/pdf/cost-to-britain.pdf>

demonstrate the benefits, and published²⁴ the tool and guidance on its web site. While we have seen evidence of industry support for the workshops and CBA tool, we are unsighted as to how far this has been reflected in building business cases to support investment in health on the ground.

²⁴ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Making-the-Case-for-Health-and-Wellbeing>

5. ORR's health maturity assessment: industry leadership and delivery

Key findings: industry leadership and delivery

- We commend the notable strengthening of leadership on worker health and wellbeing across the industry. Clear commitments are clearly signposted in Leading Health and Safety in Britain's Railways (LHSBR), with co-ordination and development led by the mainline Health and Wellbeing Policy Group.
- If the ambition on health in LHSBR is to be realised, we are looking to industry leaders including the Rail Delivery Group and Industry Health and Safety Meeting to champion delivery and participation particularly in those areas which require cross industry commitment and investment such as shared health data, benchmarking, and clinical support, industry standards and governance.
- Use of better data and intelligence on worker health to target workplace interventions has the potential to deliver long term benefits across the industry. An evidence based approach to managing occupational health and wider wellbeing will not only support more consistent legal compliance and improve the quality of rail workers' lives, but should also improve productivity and deliver real cost savings, freeing up essential resource in the longer term.
- We welcome the significant increase in health and wellbeing specialist resource and capability within RSSB, and are keen to see the recent escalation in activity on health sustained to allow rail businesses to reap the benefits from improved health and engagement in their workers.
- We have seen a step change in industry collaboration on health, with a far more inclusive approach to targeted planning and oversight via the HWPG. Active participation in associated health working groups from across the industry, including contractors, plant and labour suppliers, rolling stock companies, and trade unions, as well infrastructure managers, passenger and freight operators, is testament to the importance that rail employers now place on worker health.
- Early recognition by the industry of mental ill health and musculoskeletal disorders as key drivers of sickness absence and reduced productivity has driven good progress in these key areas. Recent examples of innovation and good practice in mitigating these risks (for example in post-incident trauma management) and supporting affected workers (for example early referral for physiotherapy) now need to be shared and adopted more widely.
- Our 2014-19 health programme identified the challenges created by an absence of reliable data on work-related ill health across the rail industry. We welcome the progress made towards a shared health data collection system in

SMIS, and development of health key performance indicators (KPIs) and benchmarking tools, driven strongly by RSSB and the HWPG with the support of a relatively small number of rail companies.

- We recognise the challenges for rail companies in committing to a shared health data collection framework, and benchmarking using common health KPIs, and support a staged approach to give businesses time to adjust their processes. But we believe that a firm commitment from industry leaders is essential to delivering a step change in worker health, productivity and business performance. We support early HWPG work towards a combined health and safety metric to capture ill health outcomes for potential use in a future health risk model. We believe that capturing work-related ill health in risk assessment and modelling at a sector level is fundamental to achieving lasting improvement in management of worker health and wellbeing. Senior industry support is vital if this is to happen.
- HWPG work to evaluate the effectiveness of training for line managers on mental health is a welcome step, however progress towards building the competence of managers in other aspects of occupational health has been slower. Understanding of health risk assessment and control among front line managers and supervisors remains patchy, and there remain gaps in the existing industry arrangements to build rail specific competency across occupational health service providers.
- We want to see more rail companies deliver on commitments to treat health like safety by publicly reporting on worker health against quantitative targets, to provide greater visibility and accountability to company decision makers, shareholders and the public.
- We would encourage more sharing of good practice on health risk management both within and outside the tram and heritage sectors. We believe that there may be scope for existing sector groups such as Heritage Rail Association, and in the longer term the Light Rail Safety and Standards Board, to lead this work.

Rail industry leadership and collaboration

- 5.1 Since 2014 there has been a notable strengthening of leadership and dedicated resource on health and wellbeing across the industry, but particularly for the mainline. ORR's Independent Review of RSSB²⁵ in 2016 judged that occupational health and wellbeing received inadequate attention across the sector, and that it merited the same cross-industry effort that RSSB facilitates on other health and safety issues. We recommended that RSSB give greater prominence to occupational health and well-being, putting in place an action plan and the necessary supporting resource. We have seen good evidence of RSSB enabling this rebalancing of effort towards health and well-being via its governance and internal resourcing.

²⁵ https://orr.gov.uk/_data/assets/pdf_file/0016/23317/independent-review-of-rssb-final-report-november-2016.pdf

- 5.2 The Rail Delivery Group is ultimately responsible for leading the mainline industry in implementation of the Leading Health and Safety on Britain's Railways (LHSBR) strategy²⁶ published in 2016. The senior level HWPG provides the key focus for leadership on health and wellbeing, and its equivalence with the wider System Safety Risk Group is welcome. It is positive that health and wellbeing continues to be discussed formally at senior level Industry Health and Safety Meetings, providing an opportunity to share best practice and raise any issues that warrant industry attention.
- 5.3 Priorities for action under the HWPG delivery plan fall under the themes of fatigue, mental health, MSDs, occupational health services and standards, reporting and monitoring, health risk assessment, and healthy behaviours, each with a dedicated working group. We commend the early progress seen on mental health, MSDs, and healthy behaviours in particular. We recognise the substantial work already undertaken to enable shared health data collection, common health metrics and benchmarking tools, and are keen to see the need for an evidence based approach championed by industry leaders and embraced by mainline companies.
- 5.4 RSSB's approach, working with industry across the HWPG themes, has been to encourage a holistic approach to health, moving away from consideration of physical and mental health separately, and informed by behavioural science on how to design and deliver effective interventions. We are encouraged to see parity of mental health with physical health across within HWPG projects, for example in the new Wellbeing Champions Toolbox²⁷.
- 5.5 RSSB specialist support has been key in driving progress by the HWPG. The expansion of its health and wellbeing expertise to provide specialist resource on mental health, occupational health, employee wellbeing, occupational hygiene, ergonomics, and data analysis and benchmarking adds real value to industry efforts, and will be key to supporting future evidence-based interventions on health and wellbeing. By significantly developing and extending its web based resources and guidance, RSSB has been pivotal in building the knowledge base and sharing good practice on health and wider well-being in key areas. Comprehensive RSSB guidance on health by design²⁸ is an example of industry partners working together to fill a key gap in understanding and practice.
- 5.6 The high level of commitment from across the industry to the HWPG agenda is clear, with over 30 organisations directly supporting its working groups, including key infrastructure managers, TOCs, FOCs, contractors and suppliers, rail trade unions, and expert groups or consultants, supported by RSSB. London Underground, HS2 and Eurostar have also engaged in this work, demonstrating commitment beyond GB mainline and RSSB's members. The active participation in HWPG work by trade union representatives is particularly valuable and to be encouraged. Others have shared their experience and expertise via RSSB's health and wellbeing web pages, and their quarterly health and wellbeing brief, which ORR handed over to RSSB in

²⁶ <https://www.rssb.co.uk/RSSB-and-the-rail-industry/Leading-health-and-safety-on-Britain-s-railway>

²⁷ <https://www.rssb.co.uk/Insights-and-News/Latest-Updates/RSSB-launches-Wellbeing-Champion-Toolbox>

²⁸ <https://www.rssb.co.uk/Pages/Health-by-Design.aspx>

autumn 2018 and which had a strong subscription base of over 1,000 within 12 months. The widespread support for the RSSB health and wellbeing conferences held in 2016 and 2019 illustrates the high level of engagement and interest in sharing good practice across the industry.

- 5.7 Since 2014, we have continued to see the positive impact of rail industry trade union campaigns in driving policy and practice on health. Notable examples include campaigns by the RMT on asbestos removal and discharge of effluent onto the tracks; UNITE on a register for diesel engine exhaust emissions in support of the TUC guidance on diesel exhaust in the workplace; ASLEF on comfort and ergonomics in driver cabs; and TSSA guidance for safety representatives on diesel fumes, noise and asbestos.
- 5.8 Effective leadership and collaboration on health is exemplified by the industry response to government's challenge to reduce emissions and remove diesel-only trains from the mainline network by 2040 under its decarbonisation and air quality work streams. Cross industry engagement on air quality via the RSSB-led Air Quality steering group and CLEAR (CLEan Air Research programme) should support an ambitious, evidence based approach to delivering the rail commitments in the national 2019 Clean Air Strategy²⁹. Consideration by DfT of reduction in diesel emissions within latest franchise specifications is also welcome, for example in the April 2019 East Midlands franchise award.
- 5.9 Mental health is another key area where industry leadership and collaboration has added value and promoted innovative approaches. Industry partners have shared learning to produce extensive practical guidance³⁰ on responding to traumatic incidents, which has been endorsed across industry and by the rail trade unions. RSSB has secured funding from the DWP to pilot a service providing direct support to a number of rail workers with mental ill health to remain in work, which, if successful, could act as a model for a wider industry-funded initiative³¹.
- 5.10 Across the mainline, a lack of rail-specific clinical support, expertise and guidance to third party occupational health providers (OHPs) continues to present challenges. A clear HWPG focus on developing improved health standards; rail-specific training for occupational health clinicians; and strategies for wellbeing and rehabilitation is being led by the Occupational Health Specialist Advisory Group (OHSAG). This should help to improve outcomes for individuals, support recognised professional and competency standards for medical providers, and contribute to future proofing the availability of quality occupational health provision for rail. This ambitious work has the potential to deliver real business benefits and efficiency savings where OH services are procured externally, for example by including direct reporting of

²⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

³⁰ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Mental-wellbeing/Responding-to-traumatic-incidents-in-rail>

³¹ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Mental-wellbeing/With-You-in-Mind---Employment-Service>

anonymised health data into shared industry reporting systems (such as the SMIS health module) via the contract specification.

- 5.11 Industry processes for managing risks from individuals' fitness (e.g. diabetes, visual acuity) are still not sufficiently robust and a concerted effort to deliver real progress is needed in this area.
- 5.12 ORR's 2016 audit of Recognised Doctors for train driver licensing identified weaknesses in the governance arrangements at the time, and recommended the development of audit protocols and a delivery plan for periodic audits. We are keen to see the industry make substantive progress in this area, including embedding audits of medical examinations carried out under the Train Driving Licences and Certificates Regulations 2010 within its RISQS supplier assurance regime. ORR is working with RSSB to consider whether guidance on this topic might be provided via the mainline industry standard RIS 3451. We welcome OHSAG proposals on a rail training package for clinicians to include sample audit protocols and tools.
- 5.13 With such an ambitious programme of work, early demonstration of the benefits of key projects and regular updates on progress against plan are important to broaden participation and maintain engagement. The quarterly LHSBR progress reports and the RSSB health and wellbeing quarterly brief are useful vehicles but timely publication will be important (following the delay in publication of the second health and wellbeing brief from January to May 2019) to maintain impetus.
- 5.14 While many non-mainline operators including TfL, HS2, Crossrail and Eurostar are increasingly engaging with mainline initiatives on health, the tram and heritage sectors appear to be largely self-contained in their management of worker health. We would encourage wider sharing of experience and good practice both outside and within these sectors, particularly on shared health issues such as mental health, MSDs, noise, vibration and chemical hazards.
- 5.15 For the tram and light rail sector, we recognise that the core purpose and immediate focus of Light Rail Safety and Standards Board (LRSSB) is to assist the sector to implement the recommendations arising from the overturning of a tram at Sandilands Junction. However, there may be scope in the longer term to consider the case for extending its remit to occupational health, including sector specific standards and guidance. Collating and sharing health data at sector level could add real value by informing trend analysis and benchmarking; provide insight into costs to inform business cases for health investment; and support evidence based health risk assessment. Sharing existing good practice and innovative approaches to managing health both within and outside the sector, for example by LRSSB, has the potential to drive improvements through the supply chain, particularly in construction and maintenance operations where the sector faces similar challenges to mainline clients and contractors.
- 5.16 We believe that there is scope for the Heritage Rail Association (HRA) to demonstrate clear leadership, and support better understanding and collaboration on health among its members, and we will support them in doing so.

Delivering an evidence based approach on health

- 5.17 The importance of health and wellbeing data in targeting investment decisions, driving improvements in health risk management, and improving productivity and business performance is now clearly recognised across the rail sector. The need for better cross industry health data collection is firmly embedded in LHSBR via the roadmaps for both the Health and Wellbeing Policy Group (HWPG) and the Risk Management Capability Group (RMCG). Under its reporting and monitoring theme the HWPG has progressed several projects to improve the quality and breadth of health and wellbeing data collection and analysis. The RMCG is also working on future capability to deliver improvements in data collection and benchmarking.
- 5.18 Since 2014, progress towards realising the goal of shared health data collection via SMIS has been steady, in the face of genuine and significant challenges around privacy, definition, capture, and sharing of health data across very diverse organisations. Agreement has been reached on a common set of six key health and wellbeing data measures covering sickness absence rates (total and work related absence) by standard disease classification; referrals to occupational health and outcomes; health surveillance compliance rates and outcomes; and psychological wellbeing scores. A small-scale pilot exercise¹¹ to test the feasibility of sharing these data by bulk upload highlighted the lack of consistency between companies in the categories used for recording sickness absence, definitions of work-related sickness, or a single model capturing psychological wellbeing at work.
- 5.19 The HWPG has proposed a staged approach to voluntary collection of shared health data to allow companies to adjust their processes and systems. The initial proposal is for companies to commit to a bulk upload to SMIS of available data from the standardised health and wellbeing dataset, on a six monthly basis. Recognising the variations in maturity between participants, the health data reporting level will progress from bronze level, through silver, to gold (all six measures). This will require some alignment of company data collection to a common industry standard in SMIS over time. Supporting rail companies to capture work-related sickness absence is needed to support much better understanding of the areas where workplace interventions might have most impact.
- 5.20 Good progress has been made towards agreeing performance indicators for health to support benchmarking of mainline rail companies internally and externally. RSSB has trialled rail industry participation in the free and widely used Britain's Healthiest Workplace (BHW) survey³² using a broad set of questions covering lifestyle, clinical and mental health, engagement and productivity at work, and workplace interventions provided by employers. Learning from this pilot exercise, work is under way to develop a health and wellbeing survey tailored to the needs of the rail industry and accessed via a SMIS App to enable maximum reach across the rail workforce.
- 5.21 A further project has sought to agree a set of common activity (leading) and outcome (lagging) key performance indicators (KPIs) for health and wellbeing covering sickness management, health leadership, health strategy, and health evaluation. The

³² <https://www.vitality.co.uk/business/healthiest-workplace/>

proposal is for these rail KPIs to be added to an existing commercial tool designed for benchmarking the provision of occupational health clinical services, adding value for rail companies choosing to use this platform. Longer term projects being explored by HWPG and RMCG include the development of a health and wellbeing maturity model to support and align with ORR's RM3 model, and exploring the feasibility of a combined health and safety metric to capture the value of preventing ill health events as well as injury (FWI), for potential use in cost benefit analysis decision making and a health risk model. We believe that capturing work-related ill health in risk assessment and modelling at a sector level is fundamental to achieving lasting improvement in management of worker health and wellbeing.

- 5.22 The rail industry clearly recognises the potential value that healthier behaviours can deliver, and companies have worked hard to deliver this through wellbeing campaigns and interventions in key areas of nutrition, sleep, physical activity, and mental wellbeing. A recent report produced by the HWPG Healthy Behaviours Group indicates a lack of reliable evidence on the impact of such wellbeing campaigns, and suggests that existing anonymised health data (on for example BMI and type 2 diabetes status) already collected by rail employers as part of fitness for work or wellbeing checks could potentially be used to fill this gap. ORR supports industry efforts to use an evidence based approach in this area and would encourage rail companies to work with their health provider to make best use of available anonymised health data at population level to evaluate 'what works' in improving wider worker wellbeing.
- 5.23 Although the pace of delivery towards shared health data and performance indicators might appear modest, we recognise that extensive scoping, testing, and evaluation of various options has been essential in ensuring value for users, and invaluable in shaping realistic proposals for a way forward. We share the ambition within RSSB for SMIS to become the main intelligence platform for health, safety, quality, and environment data for its members.

Industry competence and capability on health

- 5.24 Our 2015 Better Health is Happening review identified a lack of competence and capability on occupational health among line managers and front line supervisors. Our inspection and enforcement work since then suggests that, although awareness of health risk has certainly improved, significant gaps remain in understanding of suitable and sufficient health risk assessment, and on what good health risk management looks like.
- 5.25 We have seen good progress towards developing the capability of line managers in managing mental ill health. Innovative RSSB research³³ to assess the effectiveness of line manager training on mental health used a 'gold-standard' randomised control study approach with 212 participants to test the control, where managers receive no mental health training, against both face to face training and e-learning. The initial research has provided useful insight to inform a follow up study looking at the impact of mental health refresher training for line managers. The focus by RSSB and

³³ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Mental-wellbeing/Towards-better-line-management-training-on-mental-health>

industry working groups on evaluating the impact of health and wellbeing interventions, and the evidence based approach being demonstrated, lends real credibility to their emerging research findings on health and wellbeing.

- 5.26 While we have seen early progress towards training for managers on mental health, progress towards building the competence of managers in other aspects of occupational health has been slower. During our second health programme ORR worked closely with the Construction Industry Training Board (CITB) and with RSSB to produce health and wellbeing training and assessment resources aimed at rail industry line managers, and we delivered two pilot training courses with rail companies in September 2015 and May 2016. Transfer of ownership for these training resources from ORR to RSSB took place in November 2016, but by the end of our 2014-19 health programme we had seen little appetite among rail companies for this to be rolled out further.

Public reporting on health

- 5.27 Public reporting on worker health is an important indicator of visible leadership and accountability, and is one of the measures that ORR has used to assess progress under our health programmes.
- 5.28 Our 2015 review tracked public commitment by rail companies under the Department of Health Public Health Responsibility Deal launched in 2011. In view of the suspension of recent updates to the PHR deal, we have instead looked at public commitment by rail organisations to other prominent health and wellbeing campaigns including IOSH's No Time to lose (NTTL) occupational cancer campaign and mental health campaigns including 'This is Me' and 'Time to Change', as indicators of visible leadership and public accountability on health.
- 5.29 Since the launch of IOSH's NTTL campaign in November 2014, 19 organisations working in the rail industry have publicly stated their commitment to raise awareness around early detection and prevention of occupational cancers. These include three large rail infrastructure managers; nine rail contractors; four plant and labour suppliers, and others including CIRAS, UNITE, and ORR. Almost two thirds of these have pledged to take specific action under the campaign. Network Rail contributed a detailed case study on control of silica dust from rail ballast, as well as producing co-branded NTTL resources on silica dust for its track workers.
- 5.30 On mental health, 22 organisations operating in the rail sector (including larger construction companies with divisions working in rail) had publicly pledged their support to the Time to Change campaign³⁴ by March 2019. This involves committing publicly to an action plan to get employees talking about mental health. Rail signatories include four infrastructure managers, three train operators, nine contractors, four suppliers (including one ROSCO), plus TSSA and RSSB. In the past two years RSSB has also actively supported participation in the 'This is Me, This is Rail' green ribbon campaign on mental health³⁵. More recently we have seen

³⁴ <https://www.time-to-change.org.uk/get-involved/get-your-workplace-involved/employer-pledge>

³⁵ <https://www.rssb.co.uk/Insights-and-News/Industry-Topics/Health-and-Wellbeing/Mental-wellbeing/Tools-for-World-Mental-Health-Day-2019>

widespread support from across the rail industry, including ORR, to the Samaritans Million Hour Challenge³⁶ to support suicide prevention and improve the mental wellbeing of the rail industry volunteers.

- 5.31 Beyond mental health commitment, The London Healthy Workplace Charter³⁷ provides a useful self-assessment framework of standards for managing wider health and wellbeing, with external support and accreditation from London Boroughs. TfL, Crossrail, RSSB and several contractors have pledged support as a public commitment to continuous improvement in managing health and wellbeing.
- 5.32 The broad support from across the rail industry to public commitments on health, including from the wider supply chain of contractors and specialist suppliers, is a positive indicator of public accountability on health. The level of visible public commitment to major campaigns on occupational cancers and mental health from within the train operator community appears limited to a small number of operators. This is surprising given the level of activity by TOCs on mental health, particularly post-incident trauma management, and the challenges around further reducing exposures to diesel fumes.
- 5.33 We also asked the industry directly about their public reporting on health compared with safety. In November 2018, we carried out a short survey targeted at industry leaders from across key rail duty holders, trade unions, RSSB, RDG, contractor and supplier groups, occupational health professionals, and other stakeholders. We asked whether organisations reported publicly against quantitative targets on health, a question included in our earlier (2010 and 2014) industry surveys.
- 5.34 From the 88 survey invitations sent, we received 19 responses (22%) providing some useful insight into the current position, albeit from a relatively modest sample who chose to respond.
- 5.35 Although the number of responses to the 2018 survey was much smaller than in our previous surveys, the results might suggest a continued upturn in public reporting by rail companies on both health and safety, but with a welcome closing of the gap on health reporting. Survey responses suggest that public reporting on health against quantitative targets was up from 22% of those organisations who responded in 2014, to 42% in our 2018 survey, although caution is clearly needed due to the small sample size.

³⁶ <https://www.samaritans.org/support-us/volunteer/million-hour-challenge/>

³⁷ https://www.london.gov.uk/sites/default/files/self-assessment_framework.pdf

6. ORR's health maturity assessment: inspection and enforcement

Key findings: ORR inspection and enforcement

- Evidence from our 2014-19 inspection work suggests that the senior level focus and commitments we have seen on health have not yet been consistently translated into improved compliance on the ground. While front line managers were better informed about potential health risks, we found serious weaknesses in site supervision, monitoring and assurance to ensure that the expected controls were actually in place.
- Despite better awareness of health hazards, the industry is still not where it needs to be. We found evidence of failure to meet minimum legal requirements across the industry, which in too many cases required formal enforcement action. We judge that compliance on occupational health in rail is still lagging behind comparable industry sectors.
- Failure to conduct and apply the findings of a suitable and sufficient health risk assessment was an underlying cause in most, if not all, of the cases where we took formal enforcement action. Improved understanding of health risk assessment principles, supported by a sound evidence base, must be a priority if the industry is to improve its performance on health, and individual duty holders achieve consistent legal compliance.
- Health by design needs to be firmly at the top of the industry's agenda. We are encouraged by the increasing recognition and willingness of the industry to work together to manage shared risks. We have seen progress towards designing out health risks in key areas such as DEEE, silica dust in ballast handling, and manual handling, although in many cases this was driven by ORR intervention. However we are clear that the industry needs to do more to identify and implement sustainable solutions which design out the potential for health risk in the future.
- More effective monitoring and assurance on health, including through the supply chain, will be essential to achieving consistent legal compliance across the industry. Without this key assurance activity in place, efforts to raise compliance standards on health will be undermined and significant investment on health wasted.
- Our RM3 (Risk Management Maturity Model) assessments suggest modest improvement in management maturity for occupational health over the last five years, although it remains below that seen for managing safety across duty holder groups. We also found much greater variability in the assessments for

worker health than for worker safety. We want to see a shift towards routine use of RM3 specifically for health by more rail companies, particularly Network Rail routes and new adopters such as trams and larger heritage operators, to help them to identify where improvements are needed.

Inspection and enforcement on health: industry level

- 6.1 During our second health programme we targeted our planned inspection resource at mainline duty holders, particularly maintenance, renewals and enhancements work by Network Rail and their contractors, and with train operators. This was based on evidence from previous inspections and the priorities in ORR's strategic risk chapter on health³⁸. We also carried out more inspection work on health with heritage operators.
- 6.2 We reduced planned inspection work on health with TfL, based on evidence from previous years of a mature understanding of the hazards, and a generally high standard of control. Management of occupational health in the tram and light rail sector was addressed as part of ongoing health and safety liaison meetings, based on our previous experience, lack of RIDDOR disease reports, or concerns on worker health from trade unions and workers.
- 6.3 Reactive work, including investigation of complaints and reported health-related incidents continued across the industry. Investigations on health were informed by our mandatory investigation policy, revised in October 2017 to include cases of Legionnaires Disease linked to railway premises; suspension from work due to high blood lead levels; cases of occupational asthma; and cases of worsening HAVS.

Weaknesses

- 6.4 Despite clear evidence of an increased focus on occupational health across the industry, our inspection work suggests that the senior level strategic focus we have seen on health is not consistently translated to improved compliance at ground level, with a sustained level of formal enforcement action on health needed during our 2014-19 health programme.
- 6.5 Over the five years of our second health programme, ORR served 23 formal enforcement notices for failures to adequately control risks to workers' health and welfare by mainline duty holders. Four of these were prohibition notices arising from failure to control a serious risk to health arising from manual handling of excessively heavy loads, with a further prohibition notice for failures in assessment and control of legionella bacteria in a train wash plant. We served four improvement notices on the management of asbestos; two improvement notices on the assessment and control of manual handling risks; and a further two on assessment and control of HAV risk. The remainder were targeted at risks from exposures to silica dust, diesel engine exhaust emissions, legionella and other hazardous substances. Three improvement notices required the provision of adequate welfare facilities for workers.

³⁸ https://orr.gov.uk/_data/assets/pdf_file/0013/6421/safety-strategy-chapter-9.pdf

- 6.6 This sustained level of enforcement on health compares with 20 enforcement notices issued during our 2010-14 health programme and suggests that compliance on health still falls short of where it should be. Details of ORR enforcement notices are available on ORR's public register³⁹.
- 6.7 December 2015 saw the prosecution of a Network Rail contractor for a fatality at the Tay Bridge, resulting in a £200,000 fine. A man died in 2010 while working on the stripping and repainting of the bridge support piers in a confined space; he was overcome by toluene fumes.
- 6.8 Failure to conduct and apply the findings of a suitable and sufficient health risk assessment was an underlying cause in most, if not all, of the cases where we took formal enforcement action. Improved understanding of health risk assessment principles, supported by a sound evidence base, must be a priority if the industry is to improve its performance on health, and individual duty holders achieve consistent legal compliance. Our inspection work suggests the need for an evidence based approach to assessing the likelihood of ill health outcomes, with those tasked with carrying out the assessments understand what low, medium, and high risk tasks might look like. Existing health risk assessment tools such as the HSE MAC tool⁴⁰ could be more widely applied, and there is scope for the industry to work together to develop risk assessment approaches for other priority areas, particularly for carcinogens where any ill health effects may not be visible for many years, sharing anonymised exposure data where available.
- 6.9 A common weakness across the industry was the failure to effectively monitor and assure compliance with agreed health risk controls on the ground. We believe that, without this key assurance activity in place, efforts to raise compliance standards on health will be undermined and significant investment on health wasted.

Strengths

- 6.10 A better understanding of health risk across the sector has helped to drive improved control, with welcome progress towards designing out health risk by engineering means rather than sole reliance on systems of work and protective equipment. We are encouraged by the increasing recognition and willingness of the industry to work together to manage shared risks. Rail employers have responded positively and collaboratively to reduce DEEE exposures in enclosed locations such as tunnels, stations, and depots. The cross industry approach at Birmingham New Street station is an exemplar, with Network Rail, TOCs, ROSCOs, ORR and trade unions working together to minimise DEEE from train idling by retro fitting phased automatic engine shut down to class 220 diesel trains, and enhancements to the fan and gas sensors on the station platforms, as well as operational controls.
- 6.11 Manual handling is a key driver of sickness absence and we have seen examples of a collaborative approach across the industry. Freyssinet, working on the Glasgow Subway, won the 2018 HSE MSD design award for installation of an overhead chain conveyor system and a bespoke lightweight concrete drilling rig, improving

³⁹ <https://orr.gov.uk/rail/publications/public-register>

⁴⁰ <http://www.hse.gov.uk/msd/mac/introduction.htm>

ergonomics and also reducing dust exposures. Working with their maintenance staff, tool manufacturers, and tool suppliers, Network Rail redesigned a heavy plain line grinder to provide a lighter modular design to reduce manual handling risks. On the mainline we have found examples of heavy petrol-operated power tools substituted for battery operated tools (for example in vegetation clearance), reducing both the HAV and manual handling risk. Increasing automation, for example use of remotely operated rail cutters or high vibration tools mounted on rail vehicles, should also support better health risk management.

- 6.12 While recent success in sharing best practice on health by design for specific projects is a positive step, the real challenge for the industry will be in revising their contract and procurement arrangements to deliver healthier design by default.

ORR inspection findings: duty holder level

Network Rail

Management Maturity

- 6.13 During our second health programme, we significantly extended the use RM3 to assess the maturity of key elements of occupational health risk management across the industry. Our RM3 assessments over this five year period provide good evidence of Network Rail's health risk management journey.
- 6.14 Overall, our RM3 assessments suggest sustained incremental improvements in Network Rail's performance from a low baseline (level 1 'ad hoc') in 2014-15, but with a wider range of findings on worker health than for worker safety. This reflects significant variability in management maturity across different health risks and also between routes and functions. By the end of our 2014-19 health programme, leadership and culture on health were assessed at level 4 ('predictable') with welcome improvements in maturity for worker involvement, communication, target setting and change management assessed at level 3 ('standardised'). Disappointingly, management maturity in some fundamental areas such as risk assessment, safe systems of work, workload planning, management accountability and proactive monitoring, had stagnated at level 2 ('managed'). We believe that this may reflect uncertainties regarding role, authority and accountability for occupational health delivery particularly at route level.

Evidence

- 6.15 Over the last five years we have seen a clear commitment from Network Rail to improve its management of employee health and wellbeing and to better comply with the law. Like the construction industry, much of Network Rail's maintenance and renewals work has the potential for harm from manual handling, noise, vibration, dust and fume, with particular challenges in providing engineering solutions in limited access windows and often remote locations.
- 6.16 There has been a strong central focus in Network Rail to create the framework for suitable prevention, controls and mitigations. However, we have continued to find inconsistent implementation of the required controls within routes and projects, and

the level of formal enforcement on health shows that good practice is not yet consistently embedded. As Network Rail implements its ‘Putting Passengers First’ restructuring, and devolves more decision making to routes and regions, it will need to ensure proper accountability and robust oversight to drive the delivery of its Occupational Health and Wellbeing strategy.

- 6.17 During our second health programme, a strengthened central Safety, Technical and Engineering (STE) health and wellbeing team has provided dedicated support and expertise to routes and functions, and led on the development of consistent standards in priority areas. Where effort has been directed through dedicated projects such as its Home Safe Plan, most notably on respiratory health, asbestos, HAV, and manual handling, we have seen significant progress. The use of a project management approach on health (for example the national manual handling project) together with targeted support from the central Health and Wellbeing Team (for example on the HAVS project) have improved visibility and performance in priority areas.
- 6.18 Difficulties in recruitment and retention of Occupational Health and Wellbeing Managers within some routes has impacted the pace of delivery on the ground. The recent move by several routes to appoint senior level Health and Wellbeing Managers/ Directors to support and strengthen delivery is to be commended. The programme to roll out a centralised ‘one stop shop’ in each route for occupational health and wellbeing services should improve access to enhanced occupational health services.
- 6.19 The development of a new internal health and wellbeing dashboard to track progress at national, route and function level on key performance measures for management of risk from HAV, respiratory health, mental health, and musculoskeletal disorders demonstrates a commitment to enhanced accountability and transparency on health, and has the potential to drive improved compliance and sharing of what works.
- 6.20 Network Rail has continued work to implement its centrally-led asbestos management programme, and in the last year has made great efforts to move responsibility and accountability for its delivery to the routes. Despite clear direction and good leadership from the central programme team, milestones for completion of asbestos surveys of its higher and medium risk assets in some routes were missed. We have issued two Improvement Notices to in response to delays in completing planned asbestos surveys: in 2018 on Anglia Route, and in 2019 on LNW route. We continue to monitor progress and will take action where appropriate.
- 6.21 Network Rail has encountered significant challenges in delivering its plans to better manage HAV risk. The last five years have seen repeated disruption to the systems for arranging and recording a range of health service provision, particularly in the health surveillance checks required for at risk workers. Network Rail routes worked hard to recover the slippages in the planned HAVS health surveillance programme, with strong support and leadership from the centre, removing those in the backlog from work with vibrating tools in the interim. By the end of our 2018-19 health programme, HAVS health surveillance compliance was at 92.5%. While visibility of HAVS health surveillance outcomes within routes has improved, we found that the quality of investigation of any worsening diagnoses was variable, with failure to

identify root causes and use this to improve HAV risk control for other workers doing similar tasks.

- 6.22 Despite the considerable resource invested by Network Rail both centrally and in the routes over the last five years, we continued to find examples of fundamental weaknesses in the management of HAV risk at site level, and failure to deliver against agreed route level HAV action plans. During our second health programme we served two Improvement Notices on LNW route for failings in assessment and control of vibration risk from hand tools. The evidence from our inspection, coupled with reporting by Network Rail of significant numbers of worsening HAVS diagnoses, is a concern and supports the need for a renewed focus and sustained priority by Network Rail. Deepening devolution within the routes may present increased challenges to maintain progress in this area, requiring strong leadership and adequate resources to deliver the improvement needed.
- 6.23 Network Rail has responded positively to the particular challenges of improving control of silica in ballast dust during conventional track renewals work. Updates to Network Rail's Infrastructure Plant Manual requiring reasonably practicable control of ballast dust for all new on-track plant and machinery, and changes to its product acceptance procedures to provide assurance of compliance against the new dust control requirements, is an overdue but welcome development. The last five years have, however, seen a loss of pace in collaborative working with Network Rail's contractors, suppliers and trade unions via the Ballast Dust Working Group. With deepening devolution, Network Rail needs to consider how best to engage to ensure a consistent approach and communicate clear expectations on silica dust control across routes and through external supply chains.
- 6.24 Manual handling remains a challenge for Network Rail. Following significant formal enforcement early in our second health programme we have seen signs of steady progress on manual handling risk assessment, training and design changes. The structured approach and accountability for delivery by the manual handling project means that there is motivation and impetus for it to succeed. However, significant and sustainable improvements are still needed in order to change historic working practices and challenge the perception that heavy manual handling on the mainline is unavoidable.
- 6.25 Our assessment over the past five years show that Network Rail needs to do more to assure itself that it applies its own risk controls and procedures for managing health consistently and robustly. Effective monitoring, audit and review processes will be important in obtaining this assurance and in driving greater consistency of maturity. While further devolution under its 'Putting Passengers First' programme should enhance Network Rail's ability to develop local solutions for particular health risks, the challenge will be to do so in a way that underpins consistent risk management across the network.

Mainline contractors and suppliers

- 6.26 Work by ORR in 2015-16 to review compliance with RIDDOR reporting of HAVS by contractors and suppliers, suggested that a significant part of the contingent labour force was not under a level of health surveillance needed to detect HAVS at an early

stage and to prevent disease progression. Efforts by labour suppliers to manage the HAVS health surveillance process were hampered by poor communication of vibration exposure information by those they supply contingent labour to, as well as frequent movement of labour between suppliers and contractors.

- 6.27 ORR subsequently worked with RSSB, Network Rail, trade unions, and the mainline Rail Principal Contractor's Group (RPCG) to agree a set of principles for sharing vibration exposure data and fitness for work with vibrating tools through the supply chain. This should enable labour suppliers to identify at risk workers who require HAVS health surveillance. Although the Infrastructure Safety Liaison Group (ISLG), which sponsors RPCG, supported the guidance, they wanted to see it tested before formal endorsement. Delays in progressing a trial of the guidance mean that it remained unpublished by the end of March 2019. We are particularly keen to see mainline duty holders deliver progress in this area.
- 6.28 We have been encouraged by some plant suppliers and contractors trialling innovative approaches to control of ballast dust, particularly for work in stations. Although provision of dust control, particularly on existing recertified plant may be challenging, plant suppliers will need to take further steps to ensure that they are fully compliant with their legal supply duties.

Mainline operators: train, freight and charter

Management maturity

- 6.29 For duty holders other than Network Rail we have continued to build our understanding of health maturity using RM3, but do not yet have a complete picture across all operators. Our RM3 health assessments for TOCs and FOCs over the five years 2014-19 used evidence from inspections on noise, HAV, dust, fume, legionella and asbestos, as well as stress and trauma management among TOC drivers. We also carried out combined RM3 assessments of both health and safety in depots and for driver management, resulting in some combined RM3 assessment scores.
- 6.30 We found considerable variations in maturity between train and freight operators, but also in how well individual companies manage different aspects of health. Separate RM3 assessments on depot health risks and on stress within one TOC in 2016-17 revealed more mature management for stress, assessed at level 3-4 ('standardised – predictable'), compared with management of health risks within depots, assessed at level 2 ('managed').
- 6.31 Based on the evidence available, RM3 scores for the majority of train operators were assessed at level 3 (standardised) for health. It is difficult to discern any clear trend in the RM3 assessed levels for health over the period 2014-19. However, a common theme across the mainline operator RM3 assessments is of strong governance, policy and leadership (level 4 predictable), but with capability within planning and implementation of risk controls less well developed (level 2 managed), evidenced in the failure to deliver consistent health risk management on the ground.

Evidence

- 6.32 Occupational health inspection work with TOCs and FOCs over the last five years has focused mainly on stations and depots, and has included risks from manual handling of ramps and catering trolleys; work related stress arising from traumatic incidents including staff assault; use of hazardous substances in property and rolling stock maintenance; risks from legionella contamination of water sources including train washes, on-train water systems, and tanking facilities; and exposure to diesel engine exhaust emissions (DEEE).
- 6.33 Train operators have generally been keen to adopt and share good practice on worker health. Several TOCs have worked closely with RSSB to collate and agree comprehensive new industry guidance on good practice in responding to potentially traumatic incidents. We have seen innovation in using GPS controlled systems on some older rolling stock (without retention tanks) to prevent discharge of toilet effluent at specific locations; and a TOC depot investing in a blown sand filling system to reducing manual handling of sandbags. We have seen other examples where, following a thorough review of health management arrangements, TOCs have introduced additional health surveillance for groups of staff, and also seen moves towards health being managed in the line management chain rather than solely via human resources and occupational health providers.
- 6.34 Although understanding of key health risks among TOCs is generally good and standards overall reasonable, we have found failings particularly in those in areas where the potential risk to health is less visible. The range of health issues on which we have taken enforcement action is illustrative of the need for improved industry leadership and vigour.
- 6.35 We have dealt with a number of complaints about DEEE in depots and enclosed stations, with specific examples of poor fume control provided to us by the Unite trade union. This has helped us to target our inspection. We have found maintenance depots with faulty ventilation fans in the roof, or with fans located in the wrong position relative to train exhausts, often due to changes in rolling stock type using the depot (for example designed for high speed trains but use by diesel multiple units). As DEEE is a suspect carcinogen we have high expectations for how workforce exposure is controlled. In 2018 we took enforcement action for lack of a suitable and sufficient DEEE risk assessment in a busy train maintenance depot.
- 6.36 As public and political concern about poor outside air quality has increased in recent years, the industry is responding to the challenge to improve air quality inside enclosed stations for the benefit of workers and passengers. ORR has been working closely with the TOCs and Network Rail at Birmingham New Street Station to reduce DEEE, which has included introduction of automatic staged engine shut down to minimise train idling, driver training and enhanced monitoring of compliance, alongside enhancements to the ventilation and gas sensor system on the platforms.
- 6.37 We found inadequate welfare facilities at a TOC depot, including no showers despite dirty work; no separate facilities for male and female staff; no electricity to a staff rest room and lockers; insufficient tables and chairs in the rest room; and no drying room

for wet clothing following outdoor work. We served an improvement notice requiring proper provision in a short timescale, which was achieved.

- 6.38 Control of biological hazards, including Legionella bacteria in water systems and bacteria from exposure to human effluent during carriage maintenance, is an area where the industry could do more. Research carried out for ORR in 2018-19 found a risk to carriage maintenance workers on trains without effluent retention tanks of exposure to faecal bacteria - consistent with levels that can lead to ill health - through both inhalation and via the skin. Train maintenance operators need to review their Coshh risk assessments, and consider exposure monitoring for bioaerosol to assess the effectiveness of their control measures.
- 6.39 In February 2019 ORR issued an immediate Prohibition Notice and Improvement Notice for deficiencies in management of legionella risk in a train wash plant. The train wash was identified as a potential source by Public Health England and HSE in their investigation into four cases of Legionnaires' disease, although testing for a direct link with the railway site was inconclusive. Further ORR inspection work of other train wash facilities followed to check that standards are suitable.
- 6.40 ORR has continued to work with mainline charter operators, and with Network Rail, on progress towards the design and fitment of controlled emission toilets on older rolling stock, with one charter operator successfully trialling the fitment of an effluent retention tank. We will continue to work with the sector towards this goal by March 2023.

Heritage operators

Maturity

- 6.41 Our use of RM3 to assess health risk management capability in the heritage sector has been very limited. Recent sample assessments against a small number of RM3 criteria suggest relatively stronger arrangements for health risk policy, incident investigation, and competence on health, with less well developed arrangements for health risk assessments (with some key health hazards missed) and monitoring, including health surveillance.
- 6.42 As part of our approach to supporting the heritage sector to strengthen their management systems, we will continue work with the Heritage Rail Association to develop guidance on management of key health risks. We are also promoting RM3 2019 as a tool to help heritage operators and ORR assess their capability, and identify areas for development. With HRA's support, we will hold a number of seminars during autumn 2019, initially focusing on a small number of RM3 criteria identified with the HRA.

Evidence

- 6.43 Over the last five years we have extended our inspection work on occupational health risk management to a number of larger heritage railway maintenance depots with a focus on control of exposure to noise, HAV, lead, asbestos, welding fume, and manual handling risks. As with other parts of industry, we found a mixed picture. Overall, we judge that the level of awareness of risks to health in heritage operations

has improved with widespread recognition of key health risk areas, but with incomplete understanding of what legal compliance looks like. Heritage operators need to remain alert to new evidence on potential health hazards, such as the recognition that mild steel welding fume is a carcinogen, and the potential for exposure to harmful bacteria from gloves contaminated with human effluent on carriages not fitted with retention tanks, during cleaning, fit to run checks, and coupling/uncoupling.

- 6.44 We found pockets of good practice among larger operators, for example fitting on-tool extraction to sanders to control dust during engine/carriage refurbishment, in conjunction with suitable RPE. This included provision of powered respirators, rather than reliance on the usual tight fitting masks, which are not suitable for periods of use exceeding an hour. Where information on vibration exposures for older hand tools was not available from the manufacturer, one operator had used data from vibration monitoring technology to inform their HAVS risk assessment.
- 6.45 However, we also found significant weaknesses in management of HAV risk with an acceptance of working right up to the Exposure Limit Value (ELV). This is not a safe limit and the law requires that exposures be controlled as far below the ELV as reasonably practicable. The need for statutory health surveillance, particularly for noise and hand arm vibration exposure, had not been fully considered by some heritage operators, with reliance placed on periodic fitness for work assessments. We also found gaps in some heritage operators' risk assessments for repetitive manual handling tasks, and for handling of heavy or awkward loads. Whilst the majority of such tasks are long standing, such gaps in risk assessment increase the likelihood that any change, for example in worker capability, is not identified and properly addressed.
- 6.46 We continue to review these issues as part of routine inspection work. ORR's work with the HRA to develop health guidance should assist heritage operators to identify and manage key health risks in the sector.
- 6.47 In 2017 stripping of asbestos insulating board from Mark 1 type compartment stock by a heritage operator without the required controls in place resulted in HSE (as the enforcing authority in this particular case) issuing a Prohibition Notice.
- 6.48 In order to allow second hand railway vehicles (including heritage vehicles) containing asbestos to continue to be sold, leased, and loaned, ORR re-authorised a general exemption to REACH enforcement regulations in December 2018, retaining the same detailed conditions that those operating under the exemption must meet.

London Underground Limited

Maturity

- 6.49 Our assessment at the end of ORR's 2010-14 health programme concluded that health management maturity within LUL rated highly relative to the rest of the sector. Our decision to reduce the level of scrutiny on LUL's health risk management during our second programme has resulted in limited health-specific RM3 assessments.

ORR's overall conclusion over the period has been that LUL has continued to deliver a high level of health and safety for its workforce and the travelling public.

Evidence

- 6.50 During our 2014-19 health programme we took a decision to scale back our planned inspection activity on occupational health, based on our assessment from previous years that LUL has the capability to deliver high standards of health risk management. Reactive work on health continued and in 2016 investigation of complaints about the management of asbestos on the Northern City Line found significant weaknesses.
- 6.51 TfL, including LUL, is recognised as an industry leader in managing mental health. TfL's Young People's Mental Wellbeing in the Changing World of Work initiative recognises and responds to the unique challenges that young workers, including apprentices and graduates, can face in knowing where and how to get help. Direct support and signposting for new starters from a graduate mental health working group, and peer support via buddies and sponsors with a pastoral role, combined with annual surveys, events and newsletters aim to provide practical support and keep the mental health conversation going.
- 6.52 TfL has shared its proactive approach to the management of asbestos in a case study⁴¹ on ORR's web site. Wide ranging and detailed survey work over three years ensured access to a comprehensive and up-to-date asbestos register, with access to asbestos surveys, photographs and management plans for a wide range of assets.
- 6.53 During our 2014-19 health programme LUL and their contractors have continued to show innovative approaches to health risk controls, for example trials of dust suppression additives in water spray systems for control of both silica dust and diesel fume particulates in track renewals.
- 6.54 Major organisational changes resulting from the TfL transformation programme in 2017-18 and 2018-19 will need continued careful management to ensure that the historically mature health risk arrangements are properly embedded in the new structures and teams.

Tramways and other metros

Maturity

- 6.55 We currently have limited RM3 assessments specifically on health for the tramway sector. However, ORR's 2019 strategy for regulation of health and safety risks in the tramway sector recognises the need to encourage the sector to use RM3 as means to identify success and areas for improvement, and commits ORR to evaluate the evidence from our interventions against RM3 to build a more in-depth picture of dutyholders' health and safety management capability. This should help to build the evidence base on health for the future.

⁴¹ https://orr.gov.uk/_data/assets/pdf_file/0019/23554/asbestos-control-2016-12-19.pdf

Evidence

- 6.56 On the basis of current injury and ill health data, previous sample inspection work, and a lack of any intelligence from staff representatives, ORR does not believe that there are systemic problems across the light rail/tramway sector that affect the occupational health and welfare of staff. Over the last five years we have continued to monitor incident and ill-health RIDDOR reporting, and engage with tram companies as and when specific health issues arose.
- 6.57 Our current strategy for regulating tramways focuses primarily on passenger and public safety, including embedding the learning from the overturning of a tram at Sandilands Junction, Croydon. However we recognise the need to continue monitoring and promoting occupational health in this growing sector through regular liaison, review of the RIDDOR data, and through our investigation of incidents and complaints.

7. Assessing the impact of ORR's second health programme

Key findings: assessing our impact by 2018-19

- **Incidence of work-related ill health:** lack of reliable industry data makes it difficult to assess any change in the overall incidence of work-related ill health in rail between 2014-15 and 2018-19. However, there is strong evidence that sickness absence rates in rail remain higher than all industry averages, and that rates of work-related ill health in rail workers are comparable with construction workers. There is some evidence of a downturn in the more serious manual handling incidents in recent years.
- **Cost of work-related ill health:** lack of reliable industry data makes it difficult to assess any change in costs of work related ill health in rail over last five years. However there is good evidence of a better understanding of the scale of costs from sickness absence and presenteeism. RSSB's latest research suggests a very significant cost burden to the rail industry from sickness absence (about £355 million each year) and impaired health (about £888 million). Case studies in the rail sector and wider industry have demonstrated a positive return on investment for workplace health interventions.
- **Visible leadership on health:** there is moderate evidence of an increased level of public reporting on worker health by 2018-19 based on industry responses to ORR's 2018 survey, and our assessment of public commitment by rail companies to worker health campaigns. There is some limited evidence of a closing of the gap between public reporting on health compared with safety.
- **Industry awareness on health:** there is strong evidence of increased industry awareness on health based on sustained improvement in industry reporting of occupational diseases under RIDDOR; increasing industry use of ORR and RSSB web resources on worker health and wellbeing; and direct feedback from ORR survey and interviews with industry leaders.
- **Industry leaders' views on impact:** subjective evidence from a small survey and interviews with industry leaders suggests that ORR's 2014-19 programme messaging was successful in reaching senior levels in the industry although some respondents perceived gaps in influencing the wider supply chain and front line staff. The importance of ORR's health programme in providing strategic direction to company health plans and interventions emerged in several survey responses.

How we assessed our impact by 2018-19

- 7.1 The absence of reliable health data for the rail sector has made it difficult to quantify the impact of ORR's health programmes since 2010. In our previous impact assessments we used detailed surveys to collect rail employer data on the incidence of work-related sickness absence; the cost (number and value) of Employers Liability Compulsory Insurance claims on health; and public reporting on work-related ill health against quantitative targets. We used ORR data on numbers of RIDDOR disease reports and traffic to our health web pages to gauge levels of industry awareness.
- 7.2 In our 2015 Better Health is Happening report we concluded that the industry was not sufficiently mature to reliably report against common metrics on the extent and cost of work-related ill health. Despite continued best efforts and industry progress towards the adoption of a shared health data collection system and common health performance indicators, this was still work in progress by the end of our 2014-19 programme.
- 7.3 We judged that to repeat our previous requests for quantitative data from rail companies on incidence and cost of work-related ill health would be unreliable and disproportionate. Instead we opted for a simple survey to update our impact measure on public reporting on health against quantitative targets, and to seek industry views (using scores from 1 low to 5 high) on the impact of our health programme on individual organisations and the wider industry.
- 7.4 A short survey, carried out in November 2018, was targeted at industry leaders from Network Rail, LUL, TOCs, FOCs, trams, light rail, heritage, rail trade unions, contractor and suppliers group, occupational health professionals, RSSB, RDG, and HSE. From the 88 survey invitations sent, we received 19 responses (22%) providing useful insight, albeit from a relatively modest sample who chose to respond. Not all respondents answered every question. Although we achieved higher response rates in previous surveys, the data quality was very mixed, with significant gaps. The responses to the 2018 survey, although smaller, are more complete.
- 7.5 A revised basket of measures for assessing the impact of ORR's 2014-19 health programme is summarised in Figure 11.

Figure 11 Indicator measures used to assess the impact of ORR's health programmes

Health indicator	2014/15 measure	2018/19 measure	2014-19 impact assessment
Incidence of work-related ill health in rail	Rail industry survey: proportion of available working time lost due to work-related ill health	Best available evidence from latest HSE, ORR and industry datasets	Rail sickness absence rates remain above all industry benchmarks, with rates of work related ill health comparable with construction sector. Upturn in RIDDOR HAVS cases driven by better awareness. Some evidence of downturn in more serious manual handling incidents.
Cost of work-related ill health in rail	Rail industry survey: number and value of employers' liability claims related to occupational ill health	Updated HSE cost model and RSSB cost estimates	Costs of ill health to individuals and industry remain high. Good evidence of better understanding of scale of costs and cost benefit analysis to support targeted investment
Visible leadership on health	Rail industry survey: proportion of rail companies who report publicly on OH against quantitative targets	(Smaller) rail industry survey: proportion of rail companies who report publicly on health against quantitative targets	Some evidence of increased public reporting on health from survey responses and public commitment to mental health campaigns
Industry awareness on health	ORR data: number of reports of prescribed diseases reported under RIDDOR to ORR	ORR data: number of reports of prescribed diseases reported under RIDDOR to ORR, and traffic to ORR health web pages	Strong evidence of increased industry awareness based on sustained disease reporting under RIDDOR and use of ORR web resources on health, with shift towards RSSB as their health resources have developed
ORR impact on industry	New measure for 2018-19	ORR survey and meetings with industry leaders: sample qualitative feedback	Subjective assessment indicates strong impact overall but some gaps particularly influencing the supply chain and messages reaching those on the ground

What progress has been made?

Incidence of work-related ill health

- 7.6 **What we expect to see on incidence of work-related ill health:** An increase in the proportion of rail companies who collect reliable data on work-related sickness absence. Allied to this, a short term increase in the reported incidence of work-related ill health. In the longer term we would expect to see a decreasing trend in the incidence of work-related ill health as health risk management improves.
- 7.7 **Progress by 2018/19:** Trends in the incidence of work-related ill health by the end of our 2014-19 health programme are difficult to assess, with limited data sources capturing only partial snapshots of the wider picture. The latest HSE data suggest that the incidence of work-related ill health among railway operatives is broadly comparable with that in the construction industry, a known higher risk sector. The HSE data cannot be used to infer any changes in the extent of work-related ill health in rail in the last five years, due to the large overlap in the 2010-14 and 2014-19 datasets and changes to the rail industry occupation codes used.
- 7.8 Available evidence suggests that all sickness absence rates in the rail sector remain higher than national all industry benchmarks. Recent data for the mainline and LUL suggest an improving trend in the more serious manual handling incidents.
- 7.9 Despite good progress, the ambition for shared health data collection for the mainline has still to be realised. The 2018 RSSB pilot exercise for the bulk upload of existing absence data suggests that the mainline is still some way from being able to reliably and consistently report causes of work-related sickness absence.

Cost of work-related ill health

- 7.10 **What we expect to see on cost of work-related ill health:** Increased understanding and visibility on the cost of ill health by rail companies and the industry
- 7.11 **Progress by 2018/19:** Good progress has been made towards understanding and quantifying the direct and the hidden costs of sickness absence and impaired health for the mainline. Latest RSSB research, which provides a revised baseline for 2018-19, estimates all sickness absence costs to the industry of about £355 million each year. RSSB has used population data to estimate the costs of mental health related absence at £36 million per year. The revised HSE cost of ill health estimate for railway operatives was broadly unchanged from 2014.
- 7.12 There are insufficient data at industry level to gauge any trends in relative cost of work-related ill health at sector level over the last five years.
- 7.13 The development by RSSB of a Cost Benefit Analysis tool should help individual companies to demonstrate the efficiency gains from investment in health and wellbeing.

Visible leadership on health

- 7.14 **What we expect to see on visible leadership on health:** An increase in the proportion of rail companies reporting publicly on worker health against quantitative targets.

7.15 Progress by 2018/19: in our 2018 sample survey of industry leaders we asked whether organisations reported publically against quantitative targets on both worker health and worker safety, providing continuity with our 2010 baseline and 2014 surveys. As the number and proportion of respondents to our 2018 survey was lower than in previous years, the results are likely to be less reliable. Responses to our 2018 survey suggest an upturn in public reporting by rail companies on both worker health and safety, but with a welcome closing of the gap on health reporting (Figure 12). If this small sample is representative of the wider industry, it might suggest a strengthening of leadership and public accountability on health in the last five years.

7.16 The upturn in rail companies committing publicly to health campaigns on occupational cancer and mental health since 2014 provides additional supporting evidence on progress with this measure of visible leadership.

Figure 12 ORR surveys of industry: public reporting on health against quantitative targets

ORR survey year	Public reporting on worker safety against targets	Public reporting on worker health against targets	Overall survey response rate
2009/10	40% (n=21)	16% (n=8)	56% (n=52/93)
2013/14	39% (n=35)	22% (n= 20)	81% (n=91/113)
2018/19	58% (n=11)	42% (n=8)	22% (n=19/88)

Source: ORR. Not all survey respondents answered every question

Awareness on health: RIDDOR disease reporting

7.17 What we expect to see on awareness on health: Increasing awareness on health, as measured by improved reporting of occupational diseases under RIDDOR 2013.

7.18 Progress by 2018/19: We saw a sustained increase in reporting of RIDDOR disease diagnoses during our 2014-19 health programme, continuing the upward trend seen in our 2010-14 health programme. During our 2014-19 health programme 399 cases of occupational disease were reported to ORR under RIDDOR. This compares with a total of 320 reports during our 2010-14 health programme. This sustained level of reporting was driven mainly by HAVS diagnoses reported by Network Rail resulting from their rolling three year programme of health surveillance checks. Reporting of RIDDOR diseases by duty holders other than Network Rail also increased, particularly among TOCS and contractors. The marked increase in RIDDOR disease reporting over the last eight years provides strong evidence that ORR's health programmes have had significant impact on industry awareness of legal requirements on health.

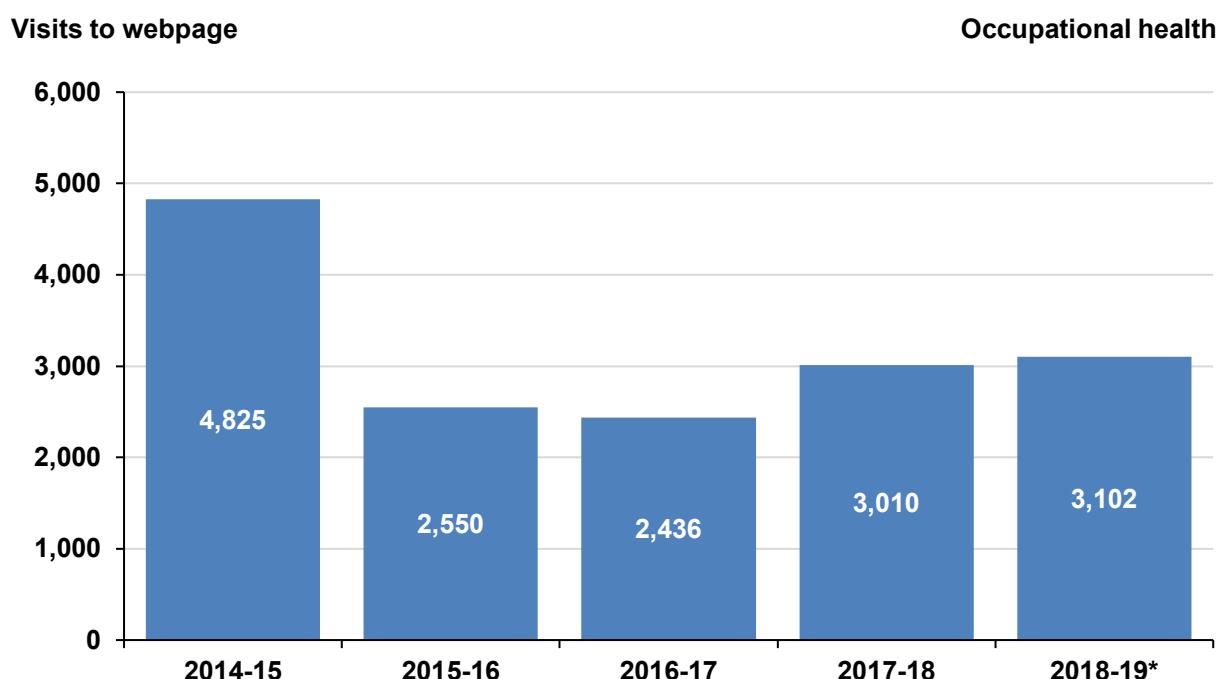
Awareness on health: ORR health web site traffic

7.19 What we expect to see on industry awareness on health: Increasing awareness on health, with sustained industry interest in ORR resources on health. As the

industry matures and develops its own health and wellbeing guidance and resources, we might expect to see traffic on ORR's health pages level out.

- 7.20 **Progress by 2018/19:** There is good evidence of sustained industry awareness on health driving traffic to ORR's occupational health web pages. During our 2014-19 health programme, traffic to our main occupational health page⁴² totalled 15,923 visits exceeding the 10,045 visits during our first 2010-2014 health programme. Traffic was highest in 2014/15, when ORR's 2014-19 health programme and Better Health is Happening Report were published.
- 7.21 The 3,102 visits to the ORR's health landing page in 2018/19 represent 13% of the visit rate to ORR's main health and safety regulation page over the same period. At the end of our first health programme in 2013-14, visits to ORR's health landing page as a proportion of those to our main health and safety regulation page was higher at 34%.

Figure 13 Visits to the ORR occupational health landing page, 2014-15 to 2018-19



Source: ORR. * Figures adjusted due to data for January, February and March 2019 being unavailable.

- 7.22 During our 2014-19 health programme the most popular health topic web pages were ORR's occupational news – quarterly updates for the rail industry⁴³ (4,389 visits); occupational health and RM3⁴⁴ (3,830 visits); managing work-related stress⁴⁵ (3,472

⁴² <https://orr.gov.uk/rail/health-and-safety/occupational-health>

⁴³ <https://orr.gov.uk/rail/health-and-safety/occupational-health/occupational-health-quarterly-updates>

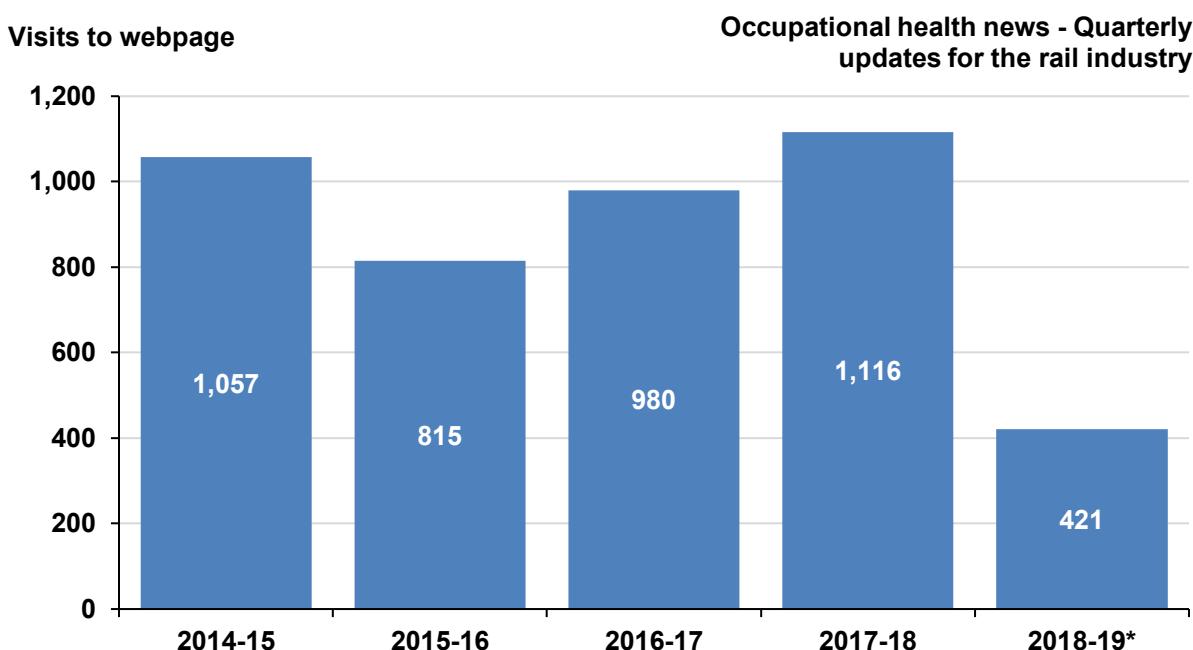
⁴⁴ <https://orr.gov.uk/rail/health-and-safety/occupational-health/occupational-health-compliance-and-good-practice/occupational-health-and-the-risk-management-maturity-model>

⁴⁵ <https://orr.gov.uk/rail/health-and-safety/occupational-health/topic-specific-guidance/work-related-stress>

visits); and first aid at railway stations⁴⁶ (2,374 visits). Visits to individual topic pages were inevitably influenced by some content being refreshed or removed during this period.

- 7.23 Industry subscription to ORR's quarterly occupational health update is a useful additional marker for awareness on health. Our campaign data for the quarterly health newsletter suggest sustained industry interest over the last five years, with 403 subscribers and 51.8% open rate for the May 2014 newsletter, compared with 654 subscribers and 38.6% open rate for the February 2019 newsletter (compared with government average open rate of 21.4%)
- 7.24 We published our final quarterly occupational health update in May 2018, handing ownership for future updates to RSSB, which is reflected in the marked reduction in 2018-19 visits to the associated web page.

Figure 14 Visits to the occupational health news - quarterly updates for the rail industry webpage, 2014-15 to 2018-19



Source: ORR. * Figures adjusted due to data for January, February and March 2019 being unavailable.

- 7.25 Over the last five years RSSB has significantly and successfully expanded its online health and wellbeing resources. RSSB's evaluation of a pilot for their health and wellbeing web content shows a clear upturn in page views and upload of documents between 2015 and 2017, when its health and wellbeing platform was redesigned. RSSB data show 8,632 page views on its health and wellbeing landing page between 1 April 2014 and 1 October 2017, and 1,175 views between 1 October 2017 and 31

⁴⁶ <https://orr.gov.uk/rail/health-and-safety/occupational-health/topic-specific-guidance/first-aid-at-railway-stations>

January 2018 on the new platform. Key areas of interest for users included the Industry Roadmap; employee engagement; workplace health hazards; behavioural change; and reporting and monitoring including health data.

- 7.26 As RSSB's leadership and capability has increased, we have progressively scaled back our promotional work on health, including our web content. We have prioritised publications on health in those areas where we can add most value, for example to clarify expectations on legal compliance. During our 2014-19 health programme this included revised ORR guidance on fitness for work⁴⁷; ORR's position on off-tool continuous monitoring technology for HAV risk assessment⁴⁸; and updated inspector guidance on control of silica dust⁴⁹ and DEEE⁵⁰. We also published two videos on 'One Man's Story'⁵¹ providing powerful first-hand accounts of the impact of silicosis and HAVS which achieved widespread reach through social media. We have contributed key ORR messages on health by design, and on HAV compliance, in the September 2018 and January 2019 RSSB quarterly newsletters.

Industry views: impact of ORR's 2014-19 health programme [new measure]

- 7.27 **What we expect to see on impact:** subjective evidence from sample ORR survey and interviews with industry leaders that the rail industry has been influenced by the priorities in ORR's 2014-19 health programme
- 7.28 **Progress by 2018/19:** We used our 2018 sample survey of industry leaders to seek feedback on awareness and impact of our 2014-19 health programme. From 88 survey invitations sent out, we received 19 responses, and not all respondents answered every question. Therefore the results of this survey need to be treated with caution, as they may not represent the views of the whole industry.
- 7.29 The majority of the respondents reported a good or reasonable level of awareness (79% n=15/19) of ORR's 2014-19 occupational health programme. When asked the same question about their teams/staff, awareness was lower with 65% (n=11/17) reporting only 'slight' or 'no' awareness, raising questions about how far the messages in ORR's health programme have reached the wider workforce below senior management level.
- 7.30 Almost all the survey respondents (94% n= 15/16) rated ORR's health programme as reasonably, significantly or highly relevant to their own organisation. When asked about the impact of our health programme on wider industry leadership, the vast majority of respondents (82% n=14/17) rated the impact as reasonable or significant. When asked about the impact of our health programme on industry collaboration, the

⁴⁷ https://orr.gov.uk/_data/assets/pdf_file/0007/26269/fitness-for-work-guidance.pdf

⁴⁸ https://orr.gov.uk/_data/assets/pdf_file/0003/39459/Continuous-HAV-Monitoring-002.pdf

⁴⁹ https://orr.gov.uk/_data/assets/pdf_file/0017/25073/rig-2017-01-respirable-crystalline-silica-in-the-rail-industry.pdf

⁵⁰ https://orr.gov.uk/_data/assets/pdf_file/0019/15157/rig-2014-04-diesel-engine-exhaust-emissions-deee-in-the-railway-sector.pdf

⁵¹ <https://orr.gov.uk/rail/health-and-safety/occupational-health/silicosis-and-havs-one-mans-story>

figure was lower, with 65% (n=11/17) judging the impact to be reasonable or significant.

7.31 Our survey invited qualitative feedback on our health programme, including how it had influenced organisational priorities on health. The importance of ORR's health programme in providing strategic direction to company health plans and interventions emerged in several responses. Other responses identified the need for even closer collaboration on health across the industry, and specifically better engagement with contractors and suppliers particularly on the mainline.

We aligned our own health and safety policy to the ORR's programme. We used it to enhance our RM3 scores

Provides priorities based on ORR evidence. It is useful to utilise to inform the workforce at all levels when delivering specific health initiatives.

The programme focus was particularly on Network Rail and failed to....hold other duty holders in the supply chain to account

7.32 We also carried out structured interviews with senior decision makers from Network Rail, LUL, RMT, RDG, RSSB and OHSAG to supplement our 2018 survey. We were keen to listen to the industry's views on the impact of our 2014-19 health programme and priorities for the future. We sought views on where the industry had got to by 2018/19, what remains to be done on health, and who is best placed to lead. We will use this insight to inform our planned review of ORR's strategic risk chapter on health in 2020.

7.33 A wide range of varied opinions and perspectives from industry leaders included:

ORR's health programmes have driven progress in key strategic areas such as health data and benchmarking, as well as better health risk assessment and control, particularly for HAV and respiratory hazards, with ORR's quarterly health update a valuable resource.

Much better co-operation and engagement on health ...strengthened by expertise and support from RSSB. However there is still some lack of clarity as to the roles of various mainline industry governance groups, and their contribution on health under LHSBR.

We still need closer collaboration across the industry beyond current core participants, particularly closer involvement of trade unions, freight operators, the supply chain (contractors and suppliers), and health service providers, to maximise the reach and impact of current RSSB work.

Key outstanding priorities for the industry include mental health, with a particular focus on tackling workplace stressors rather than building individual resilience, and mitigating stress/trauma associated with staff assaults; as well as musculoskeletal disorders in an ageing workforce.

8. Conclusions and next steps:

For the rail industry:

- 8.1 Use of better intelligence to target workplace interventions on health has the potential to deliver long term benefits including consistent legal compliance and improving the quality of rail workers' lives, as well as improved productivity and cost savings, freeing up valuable industry resource.
- 8.2 We see the absence of reliable rail industry data on work-related ill health as a key barrier to targeting improved health risk management, as well as supporting increased productivity and associated cost savings. While the mainline industry accepts the costs and embraces the benefits of a sophisticated mandatory safety reporting system, it appears cautious to do the same for health. Consistent reporting of a basic all sickness absence metric could help to bridge the gap until use of the SMIS shared health collection platform is sufficiently mature. This could allow some trend analysis and comparison with national benchmarks such as ONS and CIPD survey data. The longer term ambition should be for the wider industry to collaborate to report a common set of health metrics on sickness absence and work-related ill health.
- 8.3 We believe that for the industry to deliver the ambition in LHSBR it needs to develop its health risk assessment capability. The available rail health data support the case for a continued focus on the most prevalent health conditions such as mental ill health, MSDs and HAVS which are still causing visible harm and are driving industry efforts. But the industry also needs to understand the potential harm from less visible health risks, including microbiological hazards such as legionella in water systems, but also long latency ill health such as occupational lung diseases from exposure to silica dust, asbestos, welding fume, and diesel engine exhausts, where ill health may not be evident for very many years.
- 8.4 The aim should be for risk modelling and prevention of long latency disease to be as mature as equivalent methods for the prevention of low frequency high consequence rail accidents. Development of a measure of comparative harm for different ill health outcomes (low frequency high consequence vs high frequency lower consequence), effectively an FWI equivalent for ill health, would support better evidence based risk assessment and targeting of investment. The absence of such a measure to inform priorities at industry and company level could perpetuate a continued focus on the immediate causes of sickness absence at the expense of longer term harm.
- 8.5 We believe that the HWPG group on health and wellbeing risk assessment has the potential to support rail employers by developing benchmarks for scoring the consequence and likelihood of specific work-related ill health outcomes such as legionella, DEEE, and work related stress.
- 8.6 A much stronger focus on health by design is needed by rail clients, contractors and suppliers across the industry. ORR continues to find examples of failure to follow 'hierarchy of control' principles in managing health risks, with missed opportunities to design or engineer-out risk, with the resultant over reliance on use of personal protective equipment. Health by design needs to be properly considered in the

procurement, planning, and delivery of work, as well as in assurance through the supply chain.

- 8.7 Mainline industry processes for managing risks from individuals' fitness (e.g. diabetes, visual acuity) are still not sufficiently robust and a concerted effort to deliver real progress is needed in this area. Despite significant effort to improve standards and processes used by third party occupational health providers, progress by the end of our 2014-19 programme had been slow.
- 8.8 We want to see more rail companies deliver on commitments to treat health like safety by publicly reporting on worker health against quantitative targets, in order to provide greater transparency and accountability to company decision makers, shareholders and the public. While public reporting on health is not explicitly captured in current HWPG outputs, the current work on agreeing common health performance indicators and scorecards could help to support more consistent reporting on worker health across the mainline.
- 8.9 We believe that routine use of RM3 2019 by rail dutyholders specifically for health would help them to identify where further improvements should be targeted. The HWPG project to develop a health and wellbeing maturity model has the potential to support mainline companies in their use of RM3 for health by identifying relative strengths and weaknesses in specific areas of their health and wellbeing management. We are particularly keen to see more use of RM3 2019 for health by the new adopters including Network Rail routes and regions, contractors, tram/light rail, and larger heritage operators.
- 8.10 We want to see more sharing of challenges and solutions in managing occupational health within both the tram and heritage sectors, to support continuous improvement. In the medium term, once its core safety function is properly established, it may be appropriate for the Light Rail Safety and Standards Board to consider the case for extending its remit to include shared health data, standards and guidance on occupational health. We believe that there is scope for the Heritage Rail Association to support its members to achieve more consistent compliance on health, and we will support them in doing this.

For ORR:

- 8.11 Given the recent strengthening of industry leadership and capability on health, ORR has concluded that a further dedicated health programme is not necessary for now. While this review marks the end of ORR's formal health programmes, occupational health compliance will remain a key focus for us, not least because of the continued need for formal enforcement action over the last five years.
- 8.12 We will focus our resource on those activities that the regulator is best placed to deliver, ensuring legal compliance and supporting continuous improvement, increasingly measured by use of RM3 2019. We believe that wider use of RM3 by dutyholders specifically for health is key to understanding where the opportunities are to deliver consistent legal compliance, and unlock the business benefits from a healthier, more productive workforce. We recognise the additional stretch built into

RM3 2019 and will factor in changes to the evidence needed for each maturity level when assessing performance against previous RM3 assessments on health.

- 8.13 Our inspection, investigation and assurance work on health will be informed by the priorities in a revised strategic risk chapter on health planned for 2020.
- 8.14 We will continue to use best available data and evidence from our inspection work to assess performance on health, and will report progress in our Annual Health and Safety Reports. We will publish regulatory guidance on health where there is a clear need. We will continue to publish available health data on our data portal; support industry efforts to improve health data quality; and look to include suitable health metrics in our internal benchmarking.
- 8.15 The industry will have the clear lead on developing health research, industry standards, tools and good practice, as well as enabling better health management capability via health data, metrics, and benchmarking. While we propose to step back from the detail of this work under Leading Health and Safety on Britain's Railways we will maintain a proportionate level of oversight on delivery of key commitments. We will put in place appropriate checks to ensure that the progress seen in recent years on health does not stall and continue to review how we can best secure consistent legal compliance on occupational health.

Annex A: Glossary

ASLEF	= Associated Society of Locomotive Engineers and Firemen
BDWG	= Ballast Dust Working Group
CBA	= Cost Benefit Analysis
CIPD	= Chartered Institute of Personnel and Development
CIRAS	= Confidential Incident Reporting and Analysis System
CITB	= Construction Industry Training Board
DEEE	= Diesel Engine Exhaust Emissions
FOC	= Freight Operating Company
DWP	= Department for Work and Pensions
HAVS	= Hand Arm Vibration Syndrome
HRA	= Heritage Rail Association
HSE	= Health and Safety Executive
HWPG	= Health and Wellbeing Policy Group
IIDB	= Industrial Injuries Disablement Benefit
IOSH	= Institution of Occupational Safety and Health
ISLG	= Infrastructure Safety Liaison Group
KPI	= Key Performance Indicator
LHSBR	=Leading Health and Safety on Britain's Railways
LFS	= Labour Force Survey
LTR	= Lost Time Rate
LUL	= London Underground Limited
MSDs	= Musculoskeletal Disorders
NTTL	= No Time To Lose (IOSH occupational cancer campaign)
OHSAG	= Occupational Health Specialist Advisory Group
ONS	= Office for National Statistics
PPE	= Personal Protective Equipment
REACH	= Registration, Evaluation, Authorisation and Restriction of Chemicals Regulations 2007
RDG	= Rail Delivery Group
RICA	= Rail Industry Contractors Association
RIDDOR	= Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RM3	= Risk Management Maturity Model

RMT	= National Union of Rail, Maritime and Transport Workers
ROSCO	= Rolling Stock Companies
RSSB	= Rail Safety & Standards Board
SMIS	= Safety Management Intelligence System
TfL	= Transport for London
THOR	= The Health and Occupation Research network
TOC	= Train (passenger) Operating Company
TSSA	= Transport Salaried Staffs' Association
UNITE	= UNITE the union (trade union)



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