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National survey of the burden of sickness absence in the waste and recycling industry

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Research Report

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Health and Safety Executive

National survey of the burden of sickness absence in the waste and recycling industry

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The aim of the project was to provide HSE and the industry with reliable estimates of rates of sickness absence for specific categories of ill health and for key work tasks undertaken by workers.

32 different organisations provided data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations, collectively employing approximately 7700 workers. The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. Data was collected on 17,613 spells of absence taken by such workers, 8949 spells taken by local authority workers and 8664 taken by private sector workers.

The average number of working days lost to sickness absence in the waste and recycling workers surveyed as part of this study was 10.3 days. This equates to a working days absence rate of 4.0%. The sickness absence rates of the individual organisations participating in this survey varied widely, even when considering in isolation the rates for those organisations operating in the same industry sector and of similar size. For example, average local authority absence rates varied between a low of 7.8 days per worker per year up to a high of 24.0.

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KEY MESSAGES

The average number of working days lost to sickness absence in the waste and recycling workers surveyed as part of this study was 10.3 days. This equates to a working days absence rate of 4.0%. The sickness absence rates of the individual organisations participating in this survey varied widely, even when considering in isolation the rates for those organisations operating in the same industry sector and of similar size. For example, average local authority absence rates varied between a low of 7.8 days per worker per year up to a high of 24.0.

Approximately 60% of all working days lost to absences in the workers surveyed were attributable to long term absence spells (i.e. absence spells of 20 or more working days duration). This contribution is significantly higher than equivalent figures relating to long term absences reported by other sickness absence surveys. Mental health complaints, physical injuries and musculoskeletal disorders were the most important ill health contributors to long term absences in the workers surveyed, contributing 34.1%, 21.9% and 16.6% respectively, all ill health complaints where work related aetiologies are distinct possibilities.

No consistent trends in absence rates across waste work activities suggesting an important contributory role of poor health and safety at work were observed. Consistent with this, the difference in risk of absence in those workers delivering operational as opposed to administrative work roles was relatively small. These findings held true just when considering longer term absences only. However, given that comparison of absence rates observed in this study (i.e. both work related and non-work related) with the statistics HSE already holds on work related absence rates for the waste and recycling sector suggests the role played by work to be relatively minor (i.e. explaining only around a quarter of all absences), inferring work related effects from the data collected in this study is inevitably a challenge.

The most significant predictor of risk of a longer term absence from work was observed to be a worker's age. Thus, workers aged between 26 and 35 were 1.4 times more likely to take a longer term absence than workers aged between 16 and 25. The equivalent risks for workers aged 36 to 45, 46 to 55 and >55 were 2.0, 2.3 and 3.0 respectively.

Comparison of the number of days of absence taken by the private sector employed waste workers participating in this survey (i.e. an average 6.0 days per worker per year) to equivalent statistics for private sector manual workers generally, as highlighted by the results of other published surveys, suggest the two figures to be broadly comparable. However, benchmarking of the days of absence taken by the local authority employed waste workers participating in this survey (i.e. an average of 13.7 days per worker per year) against the results of other local authority surveys of sickness absence suggest the local authority absence rates observed in this survey to be around 60% higher.

The findings of this survey suggest reductions in sickness absence rates in the relatively short term are possible. For example, two organisations participating in the survey reduced their sickness absence rates by around 60% (down from an average of around 20 days per worker per year to between 8 and 9 days) over the period of study.

EXECUTIVE SUMMARY

Sickness absence is widely recognised to exert a significant burden on UK industry, both public and private. For example, recent estimates suggest that around 130 million working days are lost each year due to sickness absence in the UK. This level of absenteeism is estimated to cost the UK state £13 billion per year in health-related benefits costs and UK employers £9 billion per year in sick pay and associated costs.

Around 150 thousand workers are employed in the waste and recycling sector in GB, around a third employed by local authorities, responsible for the delivery of municipal waste and recycling services, and around two thirds working for private sector organisations delivering a combination of municipal services as well as commercial services for industry. Workers employed in the sector undertake a diverse range of work tasks that expose them to hazards that have the potential to cause ill health and injury and associated sickness absence.

The Health and Safety Executive's (HSE) Waste Industry Safety and Health (WISH) Sickness Absence Survey commenced in 2010. The survey was commissioned by HSE in order to add to the intelligence available to HSE on the potential burden of work related ill health in workers employed in the waste and recycling sector in GB. This report provides a background to the survey, the methods employed to collect data from participating organisations, a summary of findings and discusses potential implications for health and safety policy for the waste and recycling sector in GB.

The principal aim of the work was to characterise the burden of sickness absence across the waste and recycling sector. The survey undertaken aimed to provide HSE and the industry with reliable estimates of rates of sickness absence for specific categories of ill health and for key work tasks undertaken by workers. In doing so, the study aimed to be able to offer an opinion on whether the rates of sickness absence seen for the waste and recycling sector were higher than those seen for comparable industry sectors and if so, the extent to which work related factors might be contributory factors.

Study aims were met by delivering on the following specific objectives:

1. promotion of the adoption by organisations across the waste and recycling sector in GB of a standard set of sickness absence metrics advocated for use by HSE

2. recruitment of a sample of local authorities and private companies operating in the waste and recycling sector in GB, to participate in a nationwide survey of sickness absence

3. collection of data from participating organisations on the spells of sickness absence taken by their employees, along with the necessary supporting data enabling work task and ill health category specific rates of sickness absence to be calculated

4. analysis of the data collected to characterise trends in sickness absence, identify potential hotspots, and investigate possible work related contributions.

A pilot survey undertaken by the Health and Safety Laboratory (HSL) for HSE in 2008 documented that organisations operating in the waste and recycling sector employed markedly different practices for recording sickness absence, in particular, different categories

of ill health to which employee absences are recorded. This early work also highlighted that meaningful comparison of sickness absence rates across specific work tasks was problematic because of the absence of standard criteria for defining the different work tasks undertaken by workers employed in the sector.

In response to these difficulties, a standard set of metrics for recording sickness absence by organisations operating in the sector were agreed by key industry representatives contributing to the Waste Industry Safety and Health (WISH) forum, a waste/recycling industry working group comprised of key sector stakeholder groups. The data collection procedures used in this survey were developed with the WISH sickness absence data specifications in mind.

Data was collected from participating organisations by circulation by email of a pre-designed electronic spreadsheet for self-completion. The study spreadsheet provided participants with the facility to log the required data in a suitable, standard format and easily feed it back by return email to the study team. Data was requested annually from participating organisations over a three period between 2011 and 2013. The data collation spreadsheet was circulated around participating organisations on the 1 April of each year of study along with a request for participants to feedback their sickness absence data for the previous financial year.

Over the three years of study, 32 different organisations provided data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations, collectively employing approximately 7700 workers. The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. Data was collected on 17,613 spells of absence taken by such workers, 8949 spells taken by local authority workers and 8664 taken by private sector workers.

The average number of working days lost to sickness absence in the waste and recycling workers surveyed as part of this study was 10.3 days, equating to a working days absence rate of 4.0%. for local authority employed waste and recycling workers, the average number of working days lost to absences per worker per year was 13.7 days, and for private sector employed workers, 6.0 days. These levels of absence equate to working days absence rates of 5.3% and 2.3% respectively.

For both local authorities and private sector organisations, approximately 60% of all working days lost to absences were attributable to long term absence spells (i.e. absence spells of 20 or more working days duration). Organisational level sickness absence rates varied widely even when considering in isolation the rates for those organisations operating in the same industry sector and of similar size (e.g. average local authority rates varied between a low of 7.8 days per worker per year up to a high of 24.0). The average number of days lost to absences in private sector employed workers is broadly comparable to that of private sector manual workers generally, as indicated by published statistics from a number of other sickness absence surveys. Absence rates in local authority employed waste and recycling workers however are around 60% higher than the rates reported by other surveys of broadly comparable workers.

The contribution made by long term absence spells to the total number of absence days taken was higher for waste and recycling workers than equivalent figures reported by other sickness absence surveys. Mental health complaints, physical injuries and musculoskeletal disorders were the most important ill health contributors to long term absences in the workers

surveyed, contributing 34.1%, 21.9% and 16.6% respectively, all ill health complaints where work related aetiologies are distinct possibilities.

However, the results of more in depth analyses provided little evidence of the existence of significant associations between excessive sickness absence and the delivery of operational as opposed to office based job roles in waste and recycling. This might be due in large part to the challenge in inferring work related effects from the data collected in this study because of the seemingly minor role played by work factors in determining the total burden of sickness absence observed in the workers under study.

The most significant predictor of risk of a longer term absence from work was observed to be a worker's age. Thus, workers aged between 26 and 35 were 1.4 times more likely to take a longer term absence than workers aged between 16 and 25. The equivalent risks for workers aged 36 to 45, 46 to 55 and >55 were 2.0, 2.3 and 3.0 respectively.

The fact that the success of the practices used by organisations participating in the study to manage sickness absence appeared very variable, as highlighted by the results of the benchmarking exercises undertaken, suggests that both good and less good practices might exist across the waste and recycling sector generally. Findings also suggest that reductions in sickness absence rates in the relatively short term appear possible. For example, two organisations over the period of study reduced their sickness absence rates by around 60% (down from an average of around 20 days per worker per year to between 8 and 9 days). With respect to potential lessons to be learned to help organisations tackle particularly high rates of sickness absence, the experiences of those organisations that realised significant reductions in absence rates over the period of study highlight what may be possible if steps are taken to manage sickness absence better.

The findings of this survey are consistent with the findings of other sickness absence surveys of local government workers, which have also highlighted rates of sickness absence significantly higher than the national average. In addition, by exploring work task specific trends in sickness absence, the current survey offers some insight into the potential reasons for this, suggesting that factors operating at the work task level are on the whole of lesser importance than those operating across organisations and the public sector generally.

It is likely that measures to promote healthier lifestyles and improved health and wellbeing will be of particular benefit in waste and recycling workers, perhaps helping reduce the rates of long term absences observed for these workers in particular.

Dame Carol Black's and David Frost's independent review of sickness absence, published in 2011, identified as a priority area the need for public sector employers to take action to bring the worst performing parts of the public sector up to the standards of the best. The findings of this study lend further weight to the view that such action would be prudent.

This study also suggests that, in those organisations that participated, significant room for improvement exists in the way episodes of sickness absence taken by workers are recorded and the data on sickness absences is made use of. For example, better use of such datasets by managers may enable targeted measures that tackle local sickness absence problems to be implemented, bringing about the reductions in sickness absence rates desired.

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1. INTRODUCTION

1.1 BACKGROUND

The Waste Industry Safety and Health (WISH) Sickness Absence Survey commenced in 2010. The survey was commissioned by HSE in order to add to the intelligence available to HSE on the potential burden of work related ill health in workers employed in the waste and recycling sector in Great Britain (GB). A pilot survey undertaken by the Health and Safety Laboratory (HSL) for HSE in 2008 (see Holmes, 2008), documented that organisations operating in the waste and recycling sector employed markedly different practices for recording sickness absence, in particular, different categories of ill health to which employee absences are recorded. The HSL 2008 survey also highlighted that meaningful comparison of sickness absence rates across specific work tasks was problematic because of the absence of standard criteria for defining the different work tasks undertaken by workers employed in the sector. In response to these difficulties, Holmes (2008) recommended the uptake of standard metrics for recording sickness absence by organisations operating in the sector. A suitable set of metrics were later agreed by key industry representatives contributing to the WISH forum[1], With a standard set of sickness absence metrics available for use by organisations, HSE in 2010 commissioned a repeat of the 2008 survey. This report provides a background to survey, the methods employed, a summary of findings and discusses potential implications for health and safety policy for the waste and recycling sector in GB.

1.2 AIMS AND OBJECTIVES

The central aim of this work was to characterise the burden of sickness absence across the waste and recycling sector in GB, through the derivation of reliable estimates of rates of sickness absence for specific categories of ill health and for key work tasks undertaken by workers. In doing so, the study aimed to offer an opinion on whether the rates of sickness absence seen for the waste and recycling sector were higher than those seen for comparable industry sectors and if so, the extent to which work related factors might be contributory factors. These overarching aims were met by delivering on the following specific objectives:

1. promotion of the adoption of the WISH sickness absence metrics by organisations (both local authorities and private companies) operating in the waste and recycling sector in GB

2. recruitment of a sample of local authorities and private companies operating in the waste and recycling sector in GB, to participate in a nationwide survey of sickness absence

3. collection of data from participating organisations on the spells of sickness absence taken by their employees, along with the necessary supporting data enabling work task and ill health category specific rates of sickness absence to be calculated, i.e.

[1] *WISH has representation from HSE, main trade associations, professional associations, trade unions, recycling organisations and national and local government bodies involved in waste management and recycling.*

- average number of days absence per worker
- average number of spells of absence per worker
- % of working days lost to absence
- % of days' absence attributable to long term/short term absences etc.

4. analysis of the data collected to characterise trends in sickness absence, identify potential hotspots, and investigate possible work related contributions, by:
   - comparing rates for categories of ill health where a work related contribution is perceived to be more likely (e.g. MSD's, stomach/chest complaints, physical injuries)
   - comparing rates between higher risk and lower risk work tasks (e.g. operational versus office-based staff, as well as different categories of operational staff)
   - benchmarking headline rates against those for comparable industry sectors (published by other surveys of sickness absence)

1.3 BACKGROUND TO WORK

1.3.1 Waste and Recycling Industry in GB

Around 150 thousand workers are employed in the waste and recycling sector in GB, around a third employed by the 407 local authorities across GB responsible for the delivery of municipal waste and recycling services, and around two thirds working for private sector organisations delivering a combination of municipal services (on behalf of local authorities), as well as commercial services for industry[2]. Workers employed in the sector undertake a diverse range of work tasks that expose them to hazards that have the potential to cause ill health and injury; for example, health hazards that may be encountered include human faeces, animal wastes, dead animal carcasses, rodent infestations, hazardous liquids, car batteries, blood borne infectious material, broken glass and other sharp items, and dusts and bio-aerosols[3]. Ill health from such hazards can occur via four main pathways:

1. skin/eye contact (potentially leading to infected cuts, abrasions, wounds, dermatitis, conjunctivitis and other types of infections)
2. injection (through sharps injuries, potentially leading to (infected) cuts and blood borne infections)
3. ingestion (through hand to mouth contact, particularly when eating, drinking or smoking, potentially leading to gastro-intestinal complaints)

[2] 2012 Annual Population Survey estimates 147 thousand workers are employed across the sector, HSE believe true figure is nearer 150 thousand
[3] http://www.hse.gov.uk/waste/information.htm

4. inhalation (of dusts/aerosols, potentially triggering chest complaints)

In addition, many work tasks undertaken by workers employed in the waste and recycling sector involve physical exertion and heavy lifting, which may pose a hazard due to the risk of physical injuries and musculoskeletal related complaints[4].

1.3.2 Sickness Absence and its Predictors

Sickness absence, that is, non-attendance at work by an employee due to a certified health complaint when attendance is expected, is widely recognised to exert a significant burden on UK industry, both public and private. For example, recent estimates suggest that around 130 million working days are lost each year due to sickness absence in the UK[5]. This level of absenteeism is estimated to cost the UK state £13 billion per year in health-related benefits costs and UK employers £9 billion per year in sick pay and associated costs (Black and Frost, 2011)[6].

Surveys of ill-health in worker populations consistently indicate the strongest predictors of sickness absence to relate to the general health and wellbeing of workers (Marmot et al., 1995), for example, the existence of pre-existing ill health or disability (Blank and Diderichsen, 1995, Eriksen et al., 2003, Andrea et al., 2003), associated proxies such as socio-economic status (Wynn and Low, 2008), and lifestyle factors such as exercise, diet and smoking habits (Harrison and Martocchio, 1998, Dekkers-Snachez et al., 2008, Allebeck and Mastekaasa, 2004, North et al., 1993).

However, sickness absence has also been demonstrated to be associated, both directly and indirectly, with a wide range of other factors, including demographic factors, such as age, gender and ethnicity, occupational factors, for example whether manual or non-manual work is undertaken, organisational factors, such as industry sector and size, psychosocial factors, for example, employee engagement and perceptions of health, and day of the week and time of year (Virtanen et al., 2003, Briner, 1996, Judge et al., 1997, Moll van Charante and Mulder, 1997, Hackett, 1990, Reiso et al., 2001, Smulders and Nijhuis, 1999, Kivimaki et al., 1997, Bultmann et al., 2005).

It is a commonly held belief that sickness absence is typically lower in younger workers, the argument being that the general health of a worker tends to decline with increasing age (Brenner and Ahern, 2000, de Zwart et al., 1999). However, the results of studies suggest the association to be perhaps more complex, with a number reporting the particular type of absence and reasons for absence to vary with worker age. For example, studies have reported the risk of one-day absences and absences due to minor ailments to be higher in younger workers, but the risk of longer term absences to be higher in older workers (Vahtera et al., 2001, Taimela et al., 2009).

In addition, studies have also demonstrated the likelihood of sickness absence to be higher in females than males (Laaksonen et al., 2007) and in certain ethnic groups (Baker and Pocock, 1982). Because incidence of the most common causes of short-term sickness

[4] http://www.hse.gov.uk/waste/msd.htm
[5] Labour Force Survey Labour Market Bulletin, 15 May 2012
[6] Costs to UK employers are perhaps double the figure quoted if the indirect, more intangible costs of lost output/productivity are also included in the cost figure (CBI, 2010).

absence, namely colds, stomach upsets and headaches, tend to exhibit seasonal trends linked to factors that influence personal susceptibility to infection and the efficacy of infection spread, the frequency of spells of absence tend to show a seasonal trend also (Spears et al., 2013).

The Whitehall studies demonstrated an increased risk of ill health and associated sickness absence both with diminishing socio-economic status and occupational grade (Marmot et al., 1995, North et al., 1993, Kivimaki et al., 2006), both effects perhaps broadly reflective of how social deprivation factors operating at a community level may adversely impact on the general health and wellbeing of workers. The same broad effects may also explain why sickness absence tends to be higher in manual compared to non-manual occupations, where the same socio-economic gradient is often evident. However, it has also been postulated that the associations between ill health, sickness absence and lower occupational grade specifically, may be additionally reflective of a specific work related effect, where a parallel lack of decision authority and job control increases the likelihood of adverse health outcomes by increasing susceptibility to stress related ill-health (Marmot et al., 1995).

Differences in rates of sickness absence across organisations of differing size and operating within different industry sectors are a likely reflection of parallel differences in a range of specific organisational factors, including:

1. the procedures adopted for managing sickness absence within an organisation,
2. the ability, real or perceived, of an organisation to cope with non-attendance from a human resource perspective,
3. an organisation's employment terms and conditions, sick pay entitlement in particular,
4. levels of worker engagement within an organisation,
5. and the availability to workers of specific occupational health services and services promoting worker health and wellbeing more generally.

The procedures by which medical certificates are issued to workers suffering ill health will obviously have a major impact on observed rates of sickness absence. Employees in the UK are able to self-certify sickness absence spells that are up to 7 days in length, but longer absences require medical certification by a GP. Terms and conditions relating to the payment of statutory and occupational sick pay will also inevitably impact on the likelihood of employees taking sickness absence. It is a statutory requirement for employers to pay a minimum level of sick pay after the third consecutive day of absence for up to 28 weeks, after which workers may be eligible to claim state benefit. However, surveys have shown that more than 70% of employers pay sick pay in excess of the statutory requirement, often paying for the first three days of absence also, and often in excess of the minimum requirement i.e. paying half or even full salary for a predefined period (Black and Frost, 2011). Occupational sick pay entitlements in the UK are generally more generous for those employed in the public sector than the private sector and therefore it is perhaps unsurprising that sickness absence rates are observed to be consistently higher in public sector than private sector workers.

Several of the previously cited studies demonstrated sickness absence to be consistently higher in larger sized (i.e. >250 employees) compared to smaller sized organisations (i.e. <50 employees), which is widely attributed to absences being more easily accommodated

and therefore less disruptive in larger organisations and, as a result, being more likely taken by workers. In addition, it is also commonly argued that attendance tends to be less closely managed in larger sized organisations because of the lesser contact between employees and managers, which is also suggested to contribute to the higher rates of sickness absence observed.

The higher sickness absence rates in public sector than private sector organisations (which tend to be smaller) are widely believed to be attributable in part to organisational size related factors. Organisational factors such as occupational sick pay entitlement and the procedures employed for managing sickness absence are also likely to impact significantly upon psychosocial factors such as employee engagement, job satisfaction, attitudes to work and perceptions of health, which will have concomitant impacts on the likelihood of a worker being absent from work when suffering ill health.

Employee engagement, a term used to describe a worker's commitment to the organisation they work for and its success, is recognised as an important factor affecting the likelihood of non-attendance due to sickness absence. This may be attributable in part to the fact that a high level of employee engagement is likely to contribute to the general health and wellbeing of a worker, but also because it is likely to be indicative of an organisation where the general health and wellbeing of its workforce is taken seriously and therefore positive steps are taken to actively foster it.

Sickness absences may also be attributable to more direct and tangible work related effects, for example, the physical and mental demands associated with particular job roles, or exposure to particular health and safety hazards in the workplace directly resulting in ill health or injury.

1.3.3 Findings of Select UK Surveys of Sickness Absence

Several public, professional and trade bodies undertake repeat surveys of sickness absence, the most notable, in terms of size, being the Office for National Statistics' Labour Force Survey (typically based on quarterly surveys of ~50,000 households) and the sickness absence surveys undertaken by the Chartered Institute of Personnel and Development (592 member organisation employing ~2 million workers participating in 2011 survey), the Confederation of British Industry (respondents to the 2011 survey employing ~1 million workers), Local Government Employers (151 local authorities participating in the 2008/09 survey) and the Engineering Employers Federation (429 member organisations participating in 2012 survey). These surveys provide nationally representative estimates of rates of sickness absence for a range of categories of the UK working population, (including manual/non-manual workers), and specific industry sectors (including the public/local government sector, private sector and manufacturing/production sector).

Recent select survey results are summarised in Table 12 and Figure 15 of Appendix A, and suggest sickness absence rates generally of the order of 9 days per worker per year for public sector manual and local government sector workers (broadly equivalent to an absence rate of 4%) and around 6 to 7 days for private sector manual and manufacturing/production sector workers (i.e. around a 2.5% absence rate). The ONS in a 2012 Labour Market Bulletin reported a sickness absence rate of 4.5 days per worker per

year based on LFS data collected in 2011[7], somewhat lower than the equivalent all sector rates for 2011 published by the CBI and CIPD (of 6.5 and 5.7 days respectively).

Statistics based on the CBI's 2010 survey suggest long term absences (i.e. absences >20 days) to constitute between a quarter (in the private sector) and a half (in the public sector) of all days lost to sickness absence, although to represent only around 5 to 10% of all spells of absence. Interrogation of data from the last LGE sickness absence survey and 2011 data from the LFS (see Table 13 of Appendix A) suggests that around 20 to 25% of all absence days are attributable to minor chest complaints and infections, 20 to 25% to MSD's and 10 to 20% to poor mental health, other categories of ill-health, for example neurological, stomach and eye/ear/nose/throat complaints, typically contributing <10% of absence days taken.

LFS statistics published by the ONS, quantify sickness absence rates broken down across specific categories of ill health, based on self-reported data collected quarterly from around 50,000 LFS survey responders. HSE have a work specific module within the LFS questionnaire, enabling equivalent data to be collected from survey responders on the working days lost to ill health specifically attributable to work related factors. The average days lost per case of work related ill-health based on HSE's data collected as part of the LFS was 17 days for MSD's, 19 days for chest problems, 24 days for poor mental health, 7 days for physical injury and 17 days for all categories of ill-health/injury (see Table 14 of Appendix A). Such data suggests that a significant proportion of absence spells with a work related component are likely to be more long term than short term in nature (the formal threshold for differentiating between short term and long term absences generally being accepted as 20 working days duration or a total period of one month).

[7] Methodological differences in the collection of sickness absence data is likely to explain in part the lower rates of absence suggested by the ONS LFS sickness absence statistics.

2. IMPLICATIONS

This report summarises the findings of a nationwide survey of sickness absence across the waste and recycling industry in GB.

Over the three years of its delivery, 32 different organisations provided data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations, collectively employing approximately 7,700 workers. The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. This is regarded to be broadly representative of the general pattern of employment for the waste and recycling sector in GB, where around 33% of workers are employed by local authorities and 67% by private sector enterprises. Data was collected on 17,613 spells of absence taken by such workers, 8,949 spells taken by local authority workers and 8,664 taken by private sector workers.

Statistics on working days lost derived from data collected as part of the Labour Force Survey suggest that around a quarter of all days' absence (an average of 2.4 days per worker per year) might be attributable to work related factors. This provides an indication of the potential number of work days lost per worker that theoretically might be saved by better health and safety practices across the sector. Multiplying this figure up for all 150 thousand workers employed in the sector, this equates to around 360,000 working days lost to work-related ill health each year.

Figures published by the Confederation of British Industry, the Chartered Institute of Personnel and Development and BUPA suggest that the direct costs of a worker being absent from work for a day typically costs an organisation around £100 (and potentially double this figure if the indirect costs of lost productivity etc. are included also). Based on this figure, this suggests that inadequate health and safety may cost the waste and recycling sector in GB around £72 million per year. Given this, even reducing the burden of sickness absence by as little as 10% (leading to a potential financial saving of around £7 million across the entire sector) is by no means insignificant.

Measures to promote healthier lifestyles and improved health and wellbeing in waste and recycling workers are likely to be of further benefit, perhaps helping reduce the rates of long term absences observed for these workers in particular.

The findings of this survey highlight particularly high rates of sickness absence in local government employed workers engaged in waste and recycling work activities. More detailed analysis of study data suggests this to be a generic trend across both administrative and operational waste work activities. These findings are consistent with the findings of other sickness absence surveys of local government workers, which have also highlighted rates of sickness absence significantly higher than the national average.

Dame Carol Black's and David Frost's independent review of sickness absence, published in 2011, identified as a priority area the need for public sector employers to take action to bring the worst performing parts of the public sector up to the standards of the best. The findings of this study lend further weight to the view that such action would be prudent.

The results of the organisational level sickness absence benchmarking exercise undertaken as part of this survey suggest that the range of practices employed by participating

organisations to manage their sickness absence are met with very variable success. This suggests that both good and less good practices exist across the waste and recycling sector generally.

With respect to potential lessons to be learned to help organisations tackle particularly high rates of sickness absence, the experiences of those organisations that realised significant reductions in absence rates over the period of study highlight what may be possible if steps are taken to manage sickness absence better. Investigation of potential measures implemented by organisations over the study period to manage their sickness absence was outside the scope of this study. However, given the scale of reductions in absence rates realised by several organisations (most notably, -58% by one, and -60% by another), this may well be an informative exercise to undertake in the future.

This study also suggests that, in those organisations that participated, significant room for improvement exists in the way episodes of sickness absence taken by workers are recorded and the data on sickness absences is made use of. For example, better use of such datasets by managers may enable targeted measures that tackle local sickness absence problems to be implemented, bringing about the reductions in sickness absence rates desired.

3. METHODOLOGY

3.1 ENGAGEMENT WITH STAKEHOLDERS

Work on the study commenced with the production of study material about the study for circulation by email around study stakeholders. The material summarised the background to the work and the requirements for participation. Stakeholder engagement activities commenced with the generation of a list of key national stakeholder groups for the study and early efforts in 2010 to recruit organisations to the study focused on engaging with these groups. These included:

- Waste Industry Safety and Health Forum (WISH)

Local Authority Groups

- Local Government Employers (LGE) - England
- Welsh Local Government Association (WLGA) - Wales
- Convention of Scottish Local Authorities [Waste Managers Working Group] (COSLA) - Scotland
- Local Authority Waste Safety and Health Forum (LAWS)

Private Sector Groups

- Environmental Services Association (ESA)
- British Metals Recycling Association (BMRA)
- Renewable Energy Association (REA), formerly Association for Organics Recycling (AfOR).

Each of the above groups was contacted by the study team and arrangements made to attend a scheduled group meeting so that a background to the work could be provided and the logistics of participating be fully explained. Following these meetings, electronic copies of pre-prepared study information material were forwarded to meeting chairs for circulation by email around meeting attendees and wider group members using each group's electronic circulars.

The study information material included a study team point of contact in the event of further information being required and next steps for those agreeing to participate. A key element of the latter was the need to designate a point of contact at the participating organisation for the study team to liaise with when the main stage of data collection subsequently commenced. These early meetings were also used for networking purposes to identify other relevant stakeholder groups. Groups identified this way (which tended to be local authority waste managers and health and safety groups operating on a more regional scale) included:

Regional/Local Authority Groups

- Association of London Cleansing Officers (ALCO)
- West of England Waste and Safety Group
- West Midlands Health and Safety Officers
- Dorset Action on Safety and Health Group Meeting
- Kent Local Authorities Health and Safety Group

The above described engagement process was then repeated with these groups. Study marketing material was also shared with stakeholders by posting on group websites where this communication avenue was possible. Over the course of carrying out stakeholder engagement activities (and carrying out interim analyses of data already collected once data collection commenced) members of the study team were subsequently invited on several occasions to speak at a number of stakeholder events, including:

Stakeholder Events

- ESA Health and Safety Event, 2012, London
- IOSH National Safety Symposium Conference, 2012, Warrington
- HSE NE Local Authorities Health and Safety Event, 2011, Durham
- AfOR Health and Safety Event, 2011, Bournemouth

The study team was also invited in 2011 to write an article about the work being undertaken for publication in a trade association magazine (Letsrecycle). All these provided further opportunities to invite participation from relevant organisations.

3.2 DEVELOPMENT OF PROCEDURES TO COLLECT AND COLLATE STUDY DATA

Data collection procedures were developed in parallel with carrying out early stakeholder engagement activities. Opportunity was taken during the latter activities to canvass stakeholder views on how the sourcing of the required study data from participating organisations might be best accomplished. These opinions were then taken into account during the development of data collection procedures. The WISH sickness absence metrics, agreed by the WISH forum prior to the commencement of this work, established the primary data requirements for the survey. The criteria advocated by WISH for standard recording of sickness absence are as follows:

- Job title (using categories in the table below)
- Name or Person identifier
- Date of birth
- Sex
- Full- or part-time

- Date of first day of absence
- Number of days absent
- Reason for absence (using categories in the table below)
- Medical certificate/ self-certificate

Table: WISH standard work activity categories

Activity category	**Description and comment**
Landfill	All activities on landfill sites, including gas, leachate and power station operations with the exception of admin/office staff
RCV	RCV – refuse collection vehicle. Mainly household collection of wastes, but also commercial collections using same vehicle type
Skip / rollonoff	Commercial collections (excepting those conducted as part of household collections) including skips, RELs, rollonoffs etc
Tankers	Wastes moved by tanker, such as hazardous/special wastes, sewage and food wastes etc
Workshop / maintenance	All workshop and maintenance specific activities such as vehicles, static plant and heavy mobile plant maintenance
Transfer station	Simple transfer of wastes activities (note – if combined transfer and recycling use recycling category as below)
Treatment	Treatment and transfer of hazardous/special wastes including drum and IBC transfer and various treatment/recovery activities
Incineration	All incineration including energy from waste and combined heat and power plants
CA site	All civic amenity site (also called HWRC, RRC etc sites) activities – reception etc of wastes from member of the public
MRF	All non-hazardous/special waste recycling activities such as material recycling facilities, recycling plants, baling activities etc
Composting	All 'green waste' composting whether open wind-row, in-vessel etc (note – green waste only, see below on MBT/AD)
Total waste management	All waste activities embedded within customer premises and activities no matter the types of waste involved
Cleaning	Industrial cleaning and street cleansing activities including road sweeping and other cleaning activities
AD / MBT	All anaerobic digestion, mechanical biological treatment and similar activities (note – not green waste composting as above)
Office / admin	All office based administration, support and managerial type activities: That is non-operational activities

Notes: Where a site/facility has various activities on it, such as a combined transfer station and MRF, and employees work across activity boundaries the category chosen should be that which is likely to attract the higher occupational health exposures. The same logic as above should be applied to employees who have various job duties, such as a driver who operates RCV and commercial waste vehicles

Table: WISH Standard sickness absence categories

Absence category	**Description and comment**
Back / neck problems	Any back, neck or other spinal condition, low back pain, slipped or prolapsed disc, but not of other parts of the body (see below)
Other musculo-skeletal problems	Non-back and neck musculoskeletal disorders, such as those of the shoulder, arm, wrist, leg etc – please specify
Mental health	Stress, depression and other similar conditions such as anxiety, mental health, fatigue etc – please specify
Viral infections / colds / flu	Infections such as cold and flu (note – not specific and diagnosed chest or

Absence category	Description and comment
	respiratory infections as below)
Chest infections	Specific and diagnosed chest infections including bronchitis, pneumonia and other specific chest/respiratory infections
Other infections	Other infections and diseases such as infected wounds, measles, hepatitis, glandular fever (note – not chest infections as above)
Chest / respiratory other	Non-infection based chest/respiratory disorders such as asthma, respiratory sensitisations, allergic responses etc
Neurological / headache / migraine	Headaches, migraine, tension headaches, cluster headaches, trigeminal neuralgia etc
Eye	Cataracts, glaucoma etc
Ear / nose / throat	Toothaches, hearing disorders, vertigo, dizziness (if related to ENT condition), sinus problems etc
Genito-urinary / menstrual	Kidney/bladder disorders and infections, kidney stones, nephritis, prostate disease, cystitis etc including menstrual issues
Stomach and digestion	Upset stomach, food poisoning, D&V (diarrhoea and vomiting), bacterial and toxin based stomach disorders etc
Other internal disorders	Other kidney, stomach, liver, chest etc not covered above such as cancers, ulcers, irritable bowel, gall stones, cirrhosis etc
Pregnancy related	All pregnancy related disorders, but not including maternity leave or other planned absence relating to child birth and care
Heart, blood pressure and circulation	All heart disorders, heart attacks, angina, high blood pressure, myocardial infarction etc
Physical injuries	Other injuries etc not covered above such as fractures, burns, amputations, bruising etc (see below on workplace injuries)
Other	Any other disorder, disease, injury etc not covered above. A description of the specific issue should be used

Notes: Organisations may seek to add categories to the above for their own internal purposes, such as whether an absence may be work related or not. The most common example being physical injuries where these may be caused by, for example, a sports accident or an accident at work. Likewise the above only includes ill health related absences. Organisations may have other categories related to family emergencies, child care etc, but these are not included above as they are not ill health related.

Data collection procedures were developed for use in the study with the WISH data requirements in mind. A key challenge was to establish procedures that enabled the full range of WISH metrics data to be collected from survey participants in a time efficient manner. In addition, the procedures employed needed to take into account the fact that many participating organisations were likely to employ different methods for routinely recording their workforce's sickness absences to those advocated by WISH (at the outset of work at least). This was addressed by providing participants with the facility to communicate to the study team how their existing data recording criteria (in particular, the ill health and work task categories used) mapped against the WISH metrics criteria (rather than requesting that they reclassified their own data prior to returning).

In addition to the WISH metrics data, supplementary data on the total size of workforce, broken down across the various work tasks of interest, were also required. Collecting this data enabled the subsequent calculation of work task specific sickness absence rates per number of workers employed in each task. It was decided that the most suitable approach for collecting the required study data from participating organisations was by circulation by email of a pre-designed electronic spreadsheet for self-completion. Screenshots of the spreadsheet are provided in Appendix C. This approach provided participants with the facility to log the required data in a suitable, standard format and easily feed it back by return email to the study team.

The spreadsheet developed for use in the study was built with the capacity for users to encrypt personal identifiers (for example, names and National Insurance numbers) prior to returning to the study team. This ensured that the confidentiality of all data supplied by participators was retained, but enabled the study team to collect data at the individual level as required (i.e. on individual spells of absence). An email address for collective use by the HSL study team was also established to facilitate communication between the study team and study participants. Procedures were also developed to automate the process by which each organisation's returned sickness absence data was copied over to a secure central database.

Prior to starting the collection of data from study participants, final agreed data collection procedures were first piloted on a small number of organisations already recruited to test their efficacy. The results of piloting suggested the procedures worked effectively and the actual procedures used in the full study were implemented with only very minor revisions.

3.3 DATA COLLECTION

The data collation spreadsheet was circulated at the start of each data reporting period (i.e. 1 April 2011, 1 April 2012 and 1 April 2013) along with a request for participants to feedback their sickness absence data for the previous financial year (i.e. 1 April 2010 to 31 March 2011, 1 April 2011 to 31 March 2012 and 1 April 2012 to 31 March 2013). A deadline of 31 May for the return of completed spreadsheets was given. Screenshots of the data collection spreadsheet are provided in Appendix C.

3.4 FEEDBACK OF ANNUAL STATISTICS TO PARTICIPATING ORGANISATIONS

In order to encourage participation from as many different organisations as possible and to encourage continued participation of the same organisations over the three year duration of the survey, it was agreed to feedback summary results annually to participating organisations. This took the form of providing organisations with individualised sickness absence summary reports based on their data. As well as presenting summary statistics on an organisation's sickness absence performance for a particular reporting period, the summary reports also benchmarked (in an anonymous manner) an organisation's own data against that of all other organisations providing data for that reporting period. This enabled participating organisations to place their performance in the wider context of all other organisations providing data that reporting period. Feeding back summary statistics to participating organisations annually as part of the survey provided organisations with access to potentially useful intelligence on the current profile of sickness absence rates for their workforce, which theoretically could be acted on if organisations so desired. It was also conceivable that the positive effects of any subsequent action taken might be reflected in any data collected in subsequent years. A sample sickness absence summary report is provided in Appendix D.

3.5 TYPICAL ANNUAL WORK SCHEDULE

A summary of the typical annual work schedule, from 1 Jan 2011 onwards, is provided below:

- 1 Jan to 31 March – Stakeholder engagement
- 1 April to 31 May – Data collection
- 1 June to 31 July – Data processing and feeding back of individualised reports
- 1 Aug to 31 March – Stakeholder engagement

3.6 DATA ANALYSIS

Headline sickness absence statistics were calculated at the end of each of the three survey reporting periods. Specifically, the following metrics were calculated (for each organisation and aggregated across all organisations) and reported back to participating organisations:

1. average number of absence spells per employee per year
2. average number of working days absent per employee per year
3. % of total working time lost over year
4. % of employees with 1+ absence over year
5. % of absence spells over year attributable to a long term absence (i.e. 20 working days+ [or 4 weeks])
6. % of working time lost over year attributable to a long term absence

In addition, a comprehensive statistical analysis of all the data collected in each of the three reporting periods was undertaken in year 3.

Person year denominator data[8] was calculated to enable the subsequent calculation of per employee per year absence statistics (i.e. 1 and 2 above) using data on employee numbers provided each year by participating organisations. This is summarised in Table 2 of the Results Section. Estimates of total working time were derived (i.e. 3 above) assuming one person year to be equivalent to 260 working days. Individualised worker ID's provided by provided by participating organisations enabled data on individual absence spells to be assigned to specific workers. This was then used with the data on employee numbers also provided by participating organisations to calculate the % of workers taking at least one absence (4 above).

The quality of the sickness absence data returned in each of the three reporting periods was found to be very variable. The main data quality issues related to the difficulty many organisations had in differentiating between absences due to different respiratory complaints, different eye, ear and nose and throat complaints, different back/other musculoskeletal complaints, and different stomach/other internal complaints. In view of

[8] That is, the number of workers and length of reporting period that the total number of working days lost is divided by to give an absence rate for the workforce.

this, it was decided to analyse the complete dataset with a number of the WISH sickness absence categories merged. A revised list of ill health categories used in final analysis is shown in Table 17 of Appendix B.

The approach taken in the analysis of data was specifically tailored to address a core objective of the study, that is, to investigate whether the profile of sickness absence in workers employed in the waste and recycling sector was significantly different to that seen in comparable worker populations and if so, the degree to which work related factors might in theory play a role. These were addressed in data analysis via a number of specific ways:

1. by benchmarking headline sickness absence rates against those for comparable industry sectors (published by other sickness absence surveys)

2. by comparing sickness absence rates for categories of ill health where a work related contribution is perceived to be more likely (e.g. MSD's, stomach/chest complaints, physical injuries)

3. by comparing sickness absence rates between higher risk and lower risk work tasks (e.g. operational versus office-based staff, as well as different categories of operational staff)

To benchmark, the sickness absence statistics derived from the data collected from participating organisations was compared with equivalent statistics sourced from publically available literature published by the Office for National Statistics (ONS), the Confederation of British Industry (CBI), Engineering Employers Federation (EEF), the Chartered Institute of Personnel and Development (CIPD), Local Government Employers (LGE) and the Health and Safety Executive (HSE). A number of these surveys report on the contributions of specific categories of ill health to the total burden of sickness absence in the populations surveyed, providing the opportunity to compare such data with equivalent data collected as part of this study. Carrying out benchmarking of such data enables any ill health categories over represented in the workers surveyed in this study relative to workers generally, to be identified.

As well as using data external to the study to facilitate the interpretation of data collected as part of it, a key part of data analysis effort focused on the application of multivariate data analysis techniques to quantify the independent effects of work task on ill health outcomes, for example absence spell duration, by comparing outcomes in workers delivering operational versus non-operational (i.e. office-based /administrative) roles. A multivariate correspondence analysis of the dataset was first undertaken using Stata v11.1. (Multiple) Correspondence Analysis ([M]CA) is a descriptive, exploratory technique designed to analyse two-way (in the case of CA) and multi-way (in the case of MCA) contingency tables. The technique delivers a geometric representation of the profiles of the row and column category of a contingency table. A more detailed description of the CA approach is provided in Appendix F. Detailed results of the CA undertaken on the data collected as part of this study are also presented in Appendix F.

To complement the CA and enable further exploration of trends in the study dataset, logistic regression modelling was undertaken. A detailed summary of results is provided in Appendix F. Logistic regression models were constructed using SPSS for Windows v14.0. Absence spell duration was the binary independent variable (i.e. duration 1 to 7 days versus duration >7 days) in the regression model and work task, industry sector (private/public)

and worker age the predictor variables. Regression models were restricted to male workers only, as the vast majority of operational workers were male and office/admin workers female. Models were used to quantify the risk of longer (>7 days) relative to shorter absences (1 to 7 days) for various categories of worker, adjusted for the effects of all other factors included in the models. Estimates of relative risk were calculated for all categories of absences as well as for key ill health categories (specifically, MSD's, chest problems, stomach complaints, injuries, stress). Given the average working days lost per case of work related ill health is typically significantly greater than 7 days (see Table 7), this was considered a rational approach to adopt, as the likelihood of a case of absence having a work related contribution is likely to considerably greater in those absent for >7 days compared to those absent for 7 days or less. In addition, as the study dataset only had personal data on workers that had been absent from work over the period of study, it was not possible to include workers that had not been absent from work in the dataset analysed.

4. RESULTS

A comprehensive summary of study results in the form of cross tabulations is provided in Appendix E. Select findings of data analysis are described in detail in the sections below.

4.1 SURVEY PARTICIPATION RATES

Over the three years of data collection, 32 different organisations fed back data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations. This equated to 13,479 person years of data (around 3% of the total available assuming 150 thousand workers are employed across the entire waste/recycling sector). The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. This compares favourably with the total number of workers employed across the private and public waste/recycling sector in GB (see Table 1 below). The average number of workers employed in waste and recycling was 130 in participating local authorities and 940 in participating private sector organisations. A summary breakdown of participation over the three years of follow up is provided in Table 2 below.

Table 1: Size of public and private waste/recycling sectors in GB compared to person years of follow up in survey

Sector	Approximate number of workers employed across sector	% contribution of sector	PY of follow up in survey	% contribution of sector
Private	100,000	67%	7959	59%
Public	50,000	33%	5520	41%
All	150,000	100%	13,479	100%

Table 2: Summary of participation

	Data Year 1	Data Year 2	Data Year 3	PY Year 1	PY Year 2	PY Year 3	PY Total	Working days
Local authorities								
LA1	✓	✓	✓	185	159	160	504	131040
LA2	✓			97			97	25220
LA3	✓			110			110	28600
LA4	✓			109			109	28340
LA5		✓			72		72	18720
LA6	✓			509			509	132340
LA7	✓			126			126	32760
LA8	✓			74			74	19240
LA9		✓	✓		50	48	98	25480
LA10		✓			154		154	40040
LA11		✓			80		80	20800
LA12	✓			285			285	74100
LA13	✓	✓	✓	90	95	88	273	70980
LA14	✓			172			172	44720
LA15	✓	✓		112	123		235	61100
LA16		✓			70		70	18200
LA17	✓			116			116	30160
LA18	✓	✓		303	323		626	162760
LA19	✓	✓	✓	81	75	93	249	64740

	Data Year 1	Data Year 2	Data Year 3	PY Year 1	PY Year 2	PY Year 3	PY Total	Working days
LA20	✓	✓	✓	71	72	78	221	57460
LA21		✓	✓		39	39	78	20280
LA22	✓			54			54	14040
LA23	✓			155			155	40300
LA24	✓			192			192	49920
LA25		✓			87		87	22620
LA26	✓	✓		182	126		308	80080
LA27	✓		✓	71		70	141	36660
LA28	✓	✓	✓	111	106	108	325	84500
Private sector								
Company1		✓	✓		930	1307	2237	581620
Company2		✓	✓		1824	1824	3648	948480
Company3	✓		✓	22		129	151	39260
Company4	✓	✓		985	938		1923	499980
All local authorities				3205	1631	684	5520	1435200
All private sector				1007	3692	3260	7959	2069340

PY = Person Years; Working days = PY x 260.

4.2 SICKNESS ABSENCE RATES ACROSS ALL WORKERS AND CATEGORIES OF ILL HEALTH

This survey yielded data on 17,613 individual spells of sickness absence[9], 8949 spells taken by local authority workers and 8664 taken private sector workers. Frequency distributions of the length of absence spells taken by all workers, local authority workers only and private sector workers only are shown in Figures 1 to 3. Distributions can be seen to be strongly skewed with the majority of absence spells taken being of 1 or 2 days duration (49.9% of all spells, 45.9% of all local authority spells and 60.2% of all private sector spells). At the opposite end of the distribution, the percentage of absence spells of 20 days or more duration was 9.7% for local authority spells and 8.1% for private sector spells.

The average number of working days lost to sickness absence in the workers surveyed as part of this study was 10.3 days, equating to a working days absence rate of 4.0%. Approximately 60% of all working days lost to absences were attributable to long term absence spells (i.e. absence spells of 20 or more working days duration). The percentage contribution of broad categories of absence spell length to the total number of absence spells taken is shown in Figure 4. The biggest contrasts between local authority and private sector workers is for absence spells of 1 to 2 days and 3 to 7 days duration, with the former absence spells being approximately 10% less prevalent in local authority workers and the trend being reversed for the latter. The average number of working days lost to absences per worker was 13.7 days for local authorities and 6.0 days for private sector organisations, which equated to working days absence rates of 5.3% and 2.3% respectively. Organisational level sickness absence statistics are shown in Table 3.

[9] However, data quality issues relating to the returns from one participating private sector organisation effectively reduced this to 12,406 for the purposes of certain analyses undertaken.

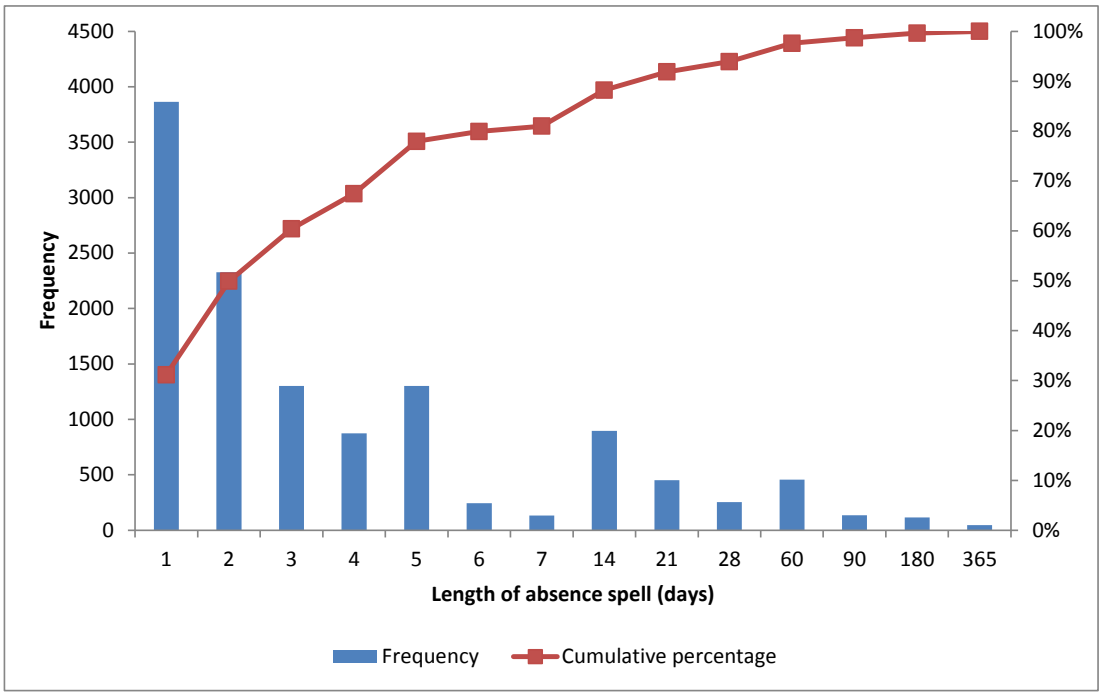

Figure 1: Frequency distributions of the length of absence spells taken by all workers

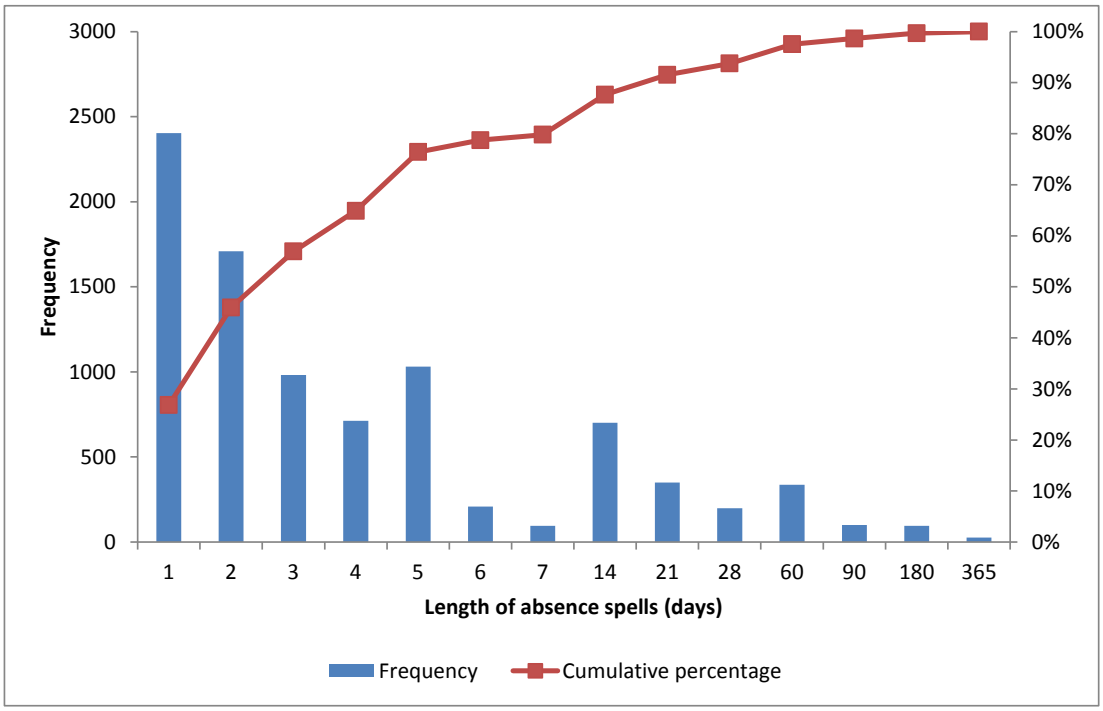

Figure 2: Frequency distributions of the length of absence spells taken by local authority workers

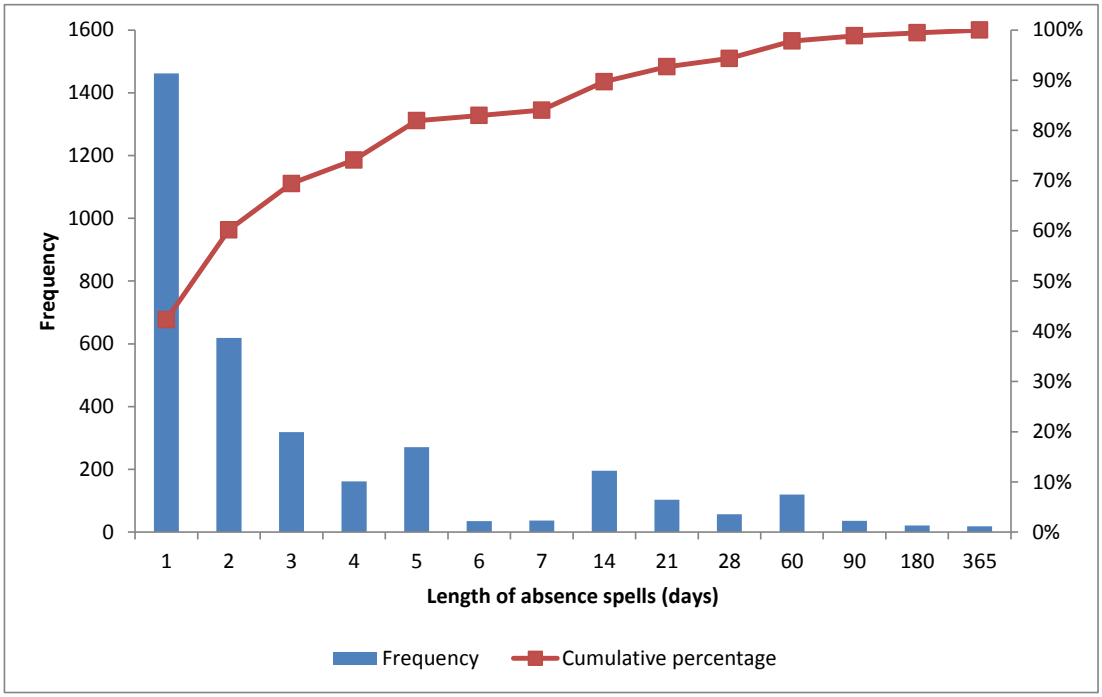

Figure 3: Frequency distributions of the length of absence spells taken by private sector workers

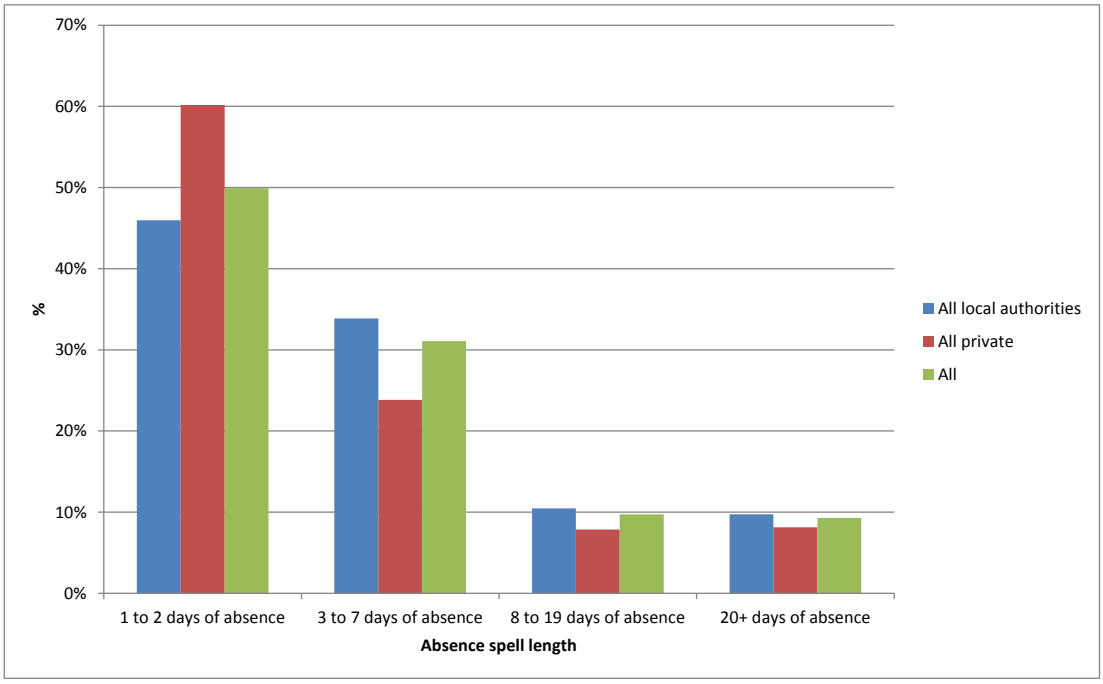

Figure 4: Comparison of absence spell profiles of local authority and private sector workers

Table 3: Absence days (totals and rates), % of working days lost and % of absence days due to long term absences for participating organisations

	Total days absence	Average number of days absence per employee	% of working days lost to absence	% of absence days due to long term absences
Local authorities				
LA1	8340	16.5	6.4	49.3
LA2	1362	14.0	5.4	43.0
LA3	1500	13.6	5.2	43.1
LA4	850	7.8	3.0	55.4
LA5	1179	16.4	6.3	57.5
LA6	8357	16.4	6.3	59.8
LA7	1788	14.2	5.5	67.8
LA8	929	12.6	4.8	52.4
LA9	1512	15.4	5.9	59.7
LA10	1361	8.8	3.4	65.2
LA11	1677	21.0	8.1	71.4
LA12	2452	8.6	3.3	41.7
LA13	2857	10.5	4.0	56.0
LA14	1939	11.3	4.3	54.6
LA15	2371	10.1	3.9	72.3
LA16	955	13.6	5.2	51.3
LA17	1483	12.8	4.9	84.6
LA18	8398	13.4	5.2	71.1
LA19	4036	16.2	6.2	63.5
LA20	2839	12.8	4.9	59.1
LA21	980	12.6	4.8	26.8
LA22	883	16.4	6.3	51.8
LA23	2499	16.1	6.2	63.6
LA24	831	4.3	1.7	73.0
LA25	1391	16.0	6.1	80.2
LA26	6619	21.5	8.3	57.1
LA27	1692	12.0	4.6	78.8
LA28	4596	14.1	5.4	72.0
Private sector				
Company1	8103	3.6	1.4	50.4
Company2*	-	-	-	-
Company3	1163	7.7	3.0	61.1
Company4	16689	8.7	3.3	70.6
All local authorities	75676	13.7	5.3	60.8
All private sector	25955	6.0	2.3	63.9

*Quality checks on sickness absence data suggested the existence of reporting errors in the data provided by one organisation, specifically in relation to the length of each absence episode. In view of this, data provided by this organisation was excluded from calculations when deriving metrics requiring the use of such data.

4.3 SICKNESS ABSENCE RATES ACROSS SPECIFIC CATEGORIES OF ILL HEALTH

Table 4 below illustrates the relative predominance of different categories of absence spell length with data stratified according to the reason for absence (in terms of ill health suffered). The most common reasons for absences of 1 to 2 days duration were neurological, stomach and eye/ear/nose/throat complaints, with such ill health categories constituting between 55 and 75% of all such absences. Long term absences (i.e. absences of 20 days or more) were predominated by mental health (34.1%) and cardiovascular complaints (30.1%), physical injuries (21.9%) and MSD's (16.6%). The relative contribution of different categories of ill health to the total number of days lost to sickness absence is illustrated for the waste and recycling workers surveyed in this work in Figure 5 and Table 5.

Table 4: Absence spell length by ill health category

Ill-health category	1 to 2 days of absence N (%)	3 to 7 days of absence N (%)	8 to 19 days of absence N (%)	20+ days of absence N (%)	All absences N (%)
Back/neck/other MS complaint	770 (31.2)	865 (35.1)	422 (17.1)	409 (16.6)	2466 (100.0)
Mental health	119 (21.1)	138 (24.5)	114 (20.2)	192 (34.1)	563 (100.0)
Respiratory/infection	1128 (44.6)	1133 (44.8)	196 (7.7)	73 (2.9)	2530 (100.0)
Neurological	414 (75.5)	99 (18.1)	20 (3.6)	15 (2.7)	548 (100.0)
Eye, ear, nose, throat	314 (55.3)	182 (32.0)	50 (8.8)	22 (3.9)	568 (100.0)
Genito-urinary, menstrual, pregnancy	40 (33.9)	46 (39.0)	19 (16.1)	13 (11.0)	118 (100.0)
Stomach/other internal	2233 (71.2)	705 (22.5)	105 (3.3)	93 (3.0)	3136 (100.0)
Cardiovascular	60 (32.8)	40 (21.9)	28 (15.3)	55 (30.1)	183(100.0)
Physical injury	143 (25.4)	204 (36.3)	92 (16.4)	123 (21.9)	562 (100.0)

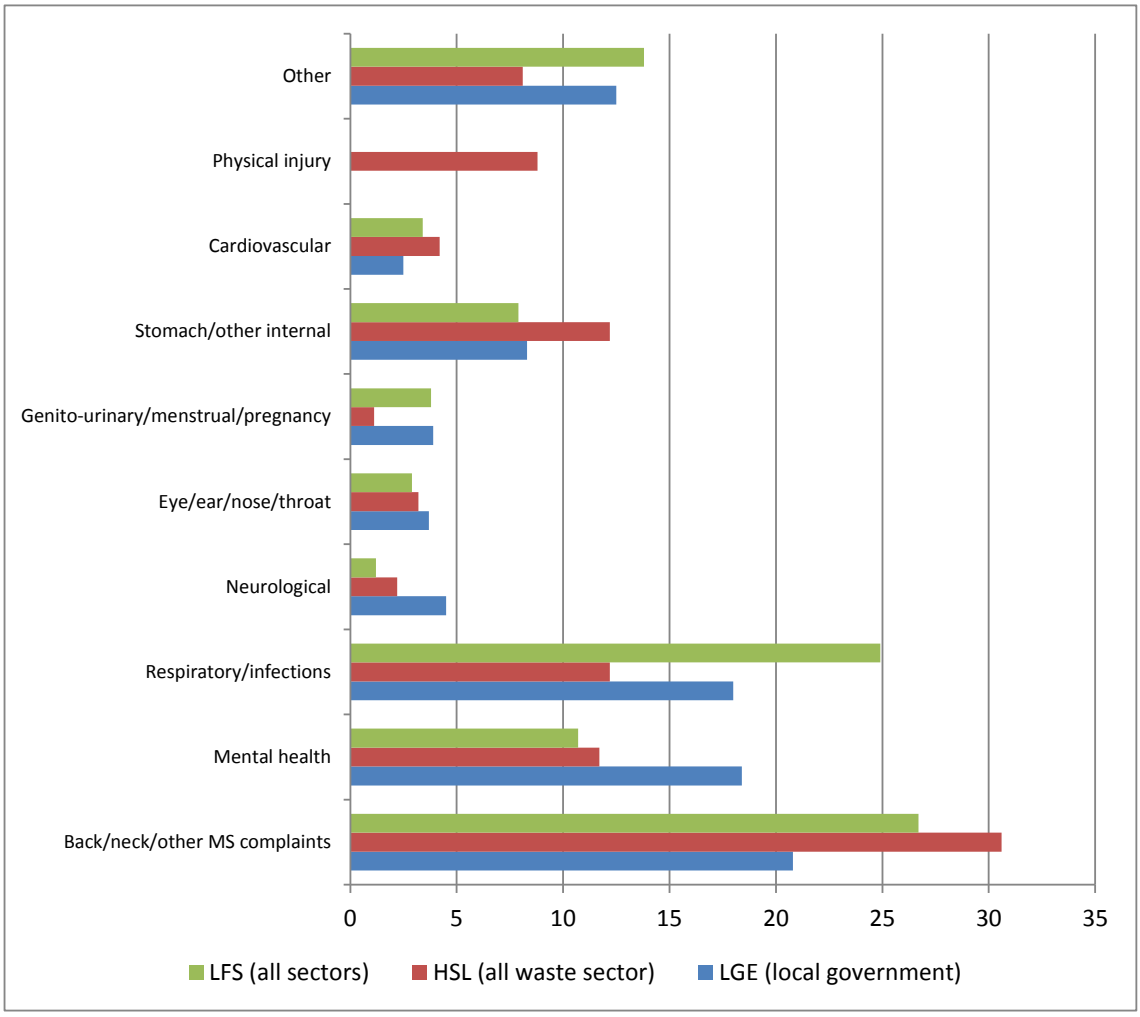

Figure 5: Relative contribution of different categories of ill health to the total number of days lost to sickness absence

Note: Physical injuries included in "Other" category in LFS and LGE surveys

Table 5: Benchmarking of HSL data on percentage contributions of different categories of ill health to total absence days taken against equivalent LFS and LGE data

	LGE (local government)	LFS (all sectors)	HSL (public/private waste sector)
Back/neck/other MS complaints	20.8	26.7	30.6
Mental health	18.4	10.7	11.7
Respiratory/infections	18	24.9	12.2
Neurological	4.5	1.2	2.2
Eye/ear/nose/throat	3.7	2.9	3.2
Genito-urinary/menstrual/pregnancy	3.9	3.8	1.1
Stomach/other internal	8.3	7.9	12.2
Cardiovascular	2.5	3.4	4.2
Physical injury	-	-	8.8
Other	12.5	13.8	8.1

Note: Physical injuries included in "Other" category in LFS and LGE surveys

4.4 SICKNESS ABSENCE RATES ACROSS SPECIFIC CATEGORIES OF WORK ACTIVITY

The survey undertaken as part of this work involved the sourcing of sickness absence data pertaining to workers delivering a wide range of different waste and recycling work activities, both operational (i.e. involving responsibilities leading to day-to-day contact with waste and recyclables and activities used in their management) and non-operational (i.e. involving office-based, administration of waste management activities). A breakdown of the person years of follow-up for specific work activities and for private and local authority workers is provided in Table 6 below. The majority of the workers making up the study sample collected domestic refuse on behalf of local authorities, the next largest worker groups (in descending order) being office workers, street cleaners, material recycling facility workers, civic amenity site workers, then workers at landfill sites. The other worker groups, taken collectively, constituted just over 10% of the total study sample.

Table 6: Person years (PY) for specific work activities

	All sectors		Public sector		Private sector	
Work activities	PY	%	PY	%	PY	%
Landfill	903	6.7%	17	0.3%	886	11.2%
Refuse collection	6090	45.3%	3820	69.3%	2270	28.6%
Skip/roll on/off	441	3.3%	39	0.7%	402	5.1%
Tankers	10	0.1%	1	0.0%	9	0.1%
Maintenance	202	1.5%	88	1.6%	114	1.4%
Transfer station	290	2.2%	32	0.6%	258	3.3%
Treatment	104	0.8%	0	0.0%	104	1.3%
Incineration	372	2.8%	0	0.0%	372	4.7%
Civic amenity site	1077	8.0%	111	2.0%	966	12.2%
Material recycling facility	1140	8.5%	221	4.0%	919	11.6%
Composting	17	0.1%	3	0.1%	14	0.2%
Total waste management	24	0.2%	19	0.3%	5	0.1%
Cleaning	1200	8.9%	772	14.0%	428	5.4%
Anaerobic digestion	230	1.7%	0	0.0%	230	2.9%
Office	1350	10.0%	389	7.1%	961	12.1%
All work activities	13450	100.0%	5512	100.0%	7938	100.0%

Statistics quantifying the average number of absence spells per worker for specific categories of work stratified by industry sector are shown in Table 7 below. Absence rates for operational work categories are expressed relative to rates for non-operational (office) workers, thereby enabling any association between absence risk and the performing of an operational role to be characterised. Differences in absence rates were most pronounced for local authority refuse collectors (rate relative to office workers (RR) = 3.13), material recyclers (RR=1.75) and street cleaners (RR=1.84). However, perhaps curiously, all such contrasts were almost completely reversed for workers delivering such work activities in the private sector. The significantly lower rate of absence spells in local authority employed office workers compared to the same workers employed in the private sector is likely to contribute in large part to such trends.

The ratio of the absence spell rate in local authority relative to private sector workers is presented in Table 8 for each work activity category, thus illustrating how rates for the same work activity vary between the public and private sectors. The effect of industry sector on the average number of absence spells taken by workers was not consistent across

work activities, with rates for those employed by local authorities higher for refuse collection workers, maintenance workers and street cleaners. For those based in the private sector however, rates were higher for workers at material recycling facilities, civic amenity sites and for office workers.

Table 7: Absence spell rates and rate ratios for specific sectors and work activities

	Public sector		Private sector	
Work activities	Absence spell rate	Rate ratio	Absence spell rate	Rate ratio
Landfill	0.82	1.34	1.39	1.22
Refuse collection	1.92	3.13	0.86	0.76
Skip/roll on/off	0.56	0.92	1.13	0.99
Tankers	-	0.00	-	0.00
Maintenance	0.89	1.44	0.51	0.45
Transfer station	0.50	0.81	0.62	0.55
Treatment	-	-	2.19	1.92
Incineration	-	-	0.85	0.75
Civic amenity site	0.75	1.22	1.48	1.30
Material recycling facility	1.08	1.75	1.12	0.98
Composting	-	0.00	0.14	0.13
Total waste management	1.68	2.74	1.40	1.23
Cleaning	1.13	1.84	0.48	0.42
Anaerobic digestion	-	-	0.74	0.65
Office	0.61	RC	1.14	RC

Rate ratios calculated relative to rate for office workers

Table 8: Ratio of public to private absence spell rates for specific work activities

Work activities	Average no of absence spells per worker per year		Ratio of public to private rate
Work activities	Public sector	Private sector	
Landfill	0.82	1.39	0.59
Refuse collection	1.92	0.86	2.23
Skip/roll on/off	0.56	1.13	0.50
Tankers	-	-	-
Maintenance	0.89	0.51	1.74
Transfer station	0.50	0.62	0.80
Treatment	-	2.19	-
Incineration	-	0.85	-
Civic amenity site	0.75	1.48	0.50
Material recycling facility	1.08	1.12	0.96
Composting	-	0.14	-
Total waste management	1.68	1.40	1.20
Cleaning	1.13	0.48	2.37
Anaerobic digestion	-	0.74	-
Office	0.61	1.14	0.54

Charts of work activity versus category of absence spell are shown in Figures 6 to 9, with absence spells first categorised on the basis of absence spell length (Figures 6 and 7) and then category of ill health (Figures 8 and 9).

Figures 6 and 7 highlight that the contribution of long term spells of absence (i.e. of 20 plus days duration) to all absence spells taken tended to be greater for operational work activity categories than for office workers. This was particularly the case for the landfill, skip/roll on/off, material recycling facility and maintenance work categories, where long term absences contributed between 11 and 15% of all absence spells. For private sector office workers in contrast, long term absences only constituted 5% of all absence spells. The relative contribution of absence spells of 1 to 2 days duration to all absences was higher in private sector refuse collectors, office workers, street cleaners and civic amenity site workers. Such work activity categories tended to have a correspondingly lower contribution of absences of 3 to 7 days duration.

Referring to Figures 8 and 9 it can be seen that MSD's tended to make up a smaller proportion of the absences experienced by office workers; this was highest for those working in waste treatment and at civic amenity sites. Like MSD's, the proportion of absence spells attributable to physical injuries was similarly low in office workers and highest for private sector refuse collectors and workers at anaerobic digestion sites. However, perhaps rather spuriously, the relative contribution of physical injuries to absence spells in public sector refuse collectors was low. Whilst chest complaints and infections tended to predominate the absences experienced by office workers, these were less important contributors to absences in a number of operational work activities, including civic amenity site workers, refuse collectors and street cleaners.

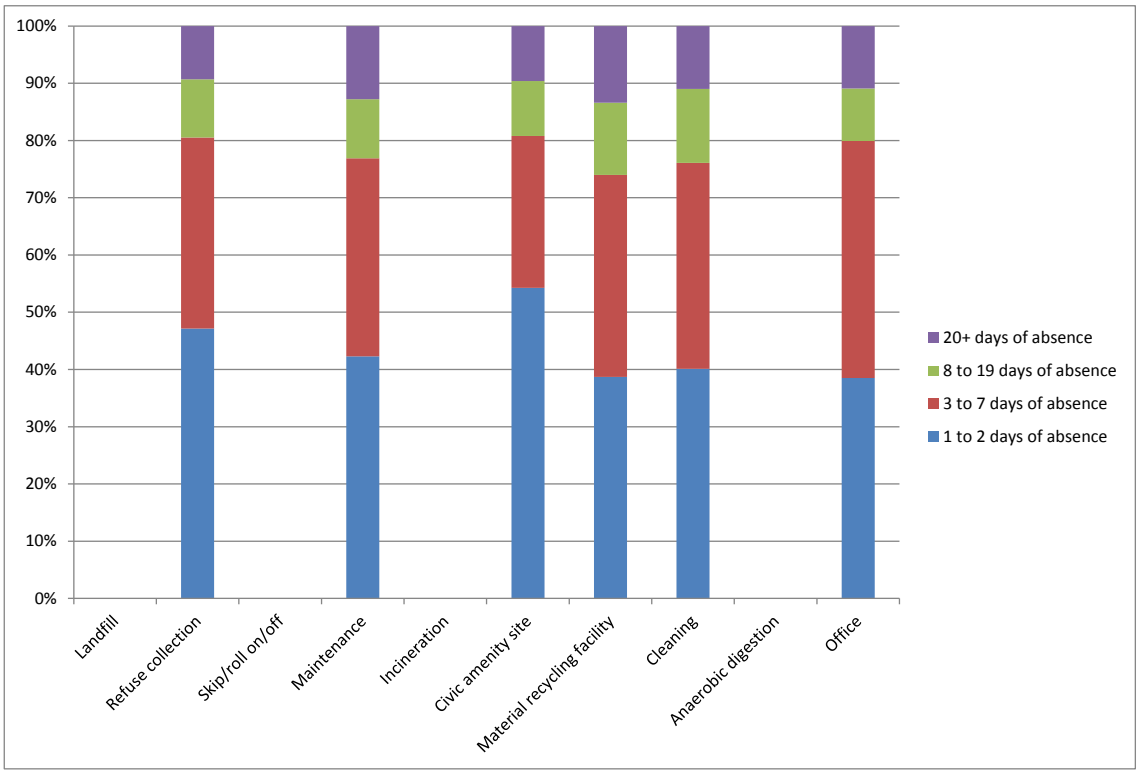

Figure 6: Profile of absence spell length for specific work activities - Public sector workers

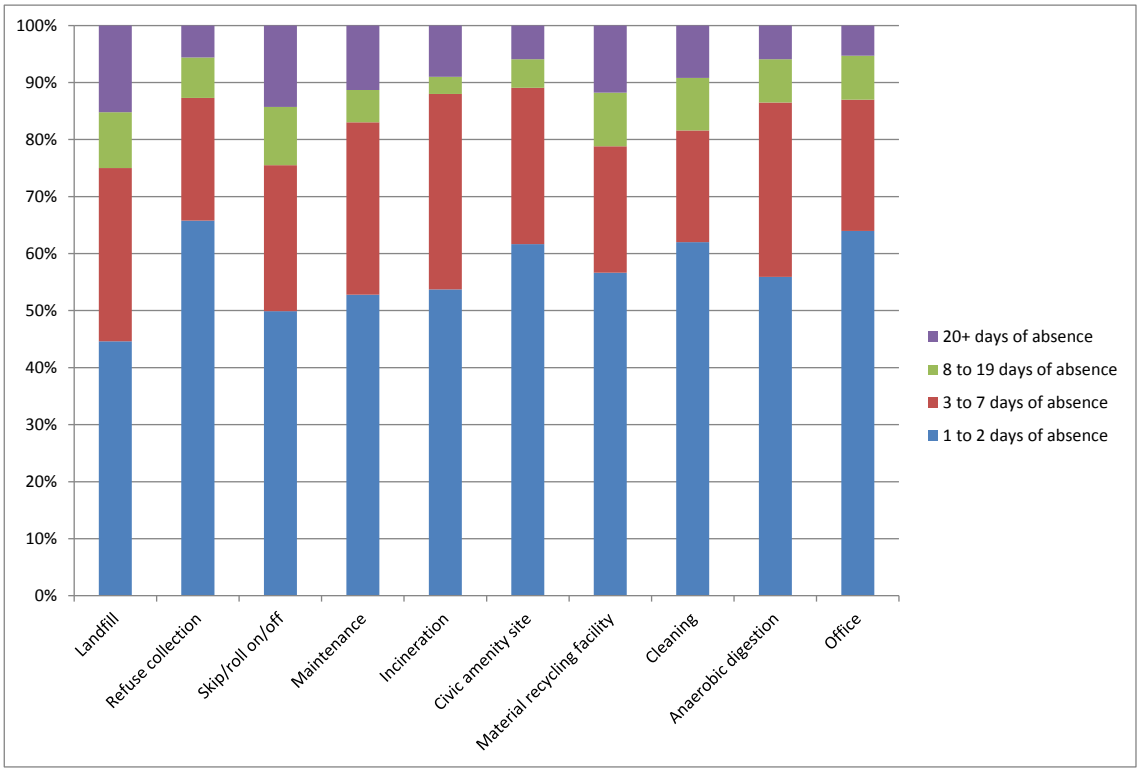

Figure 7: Profile of absence spell length for specific work activities - Private sector workers

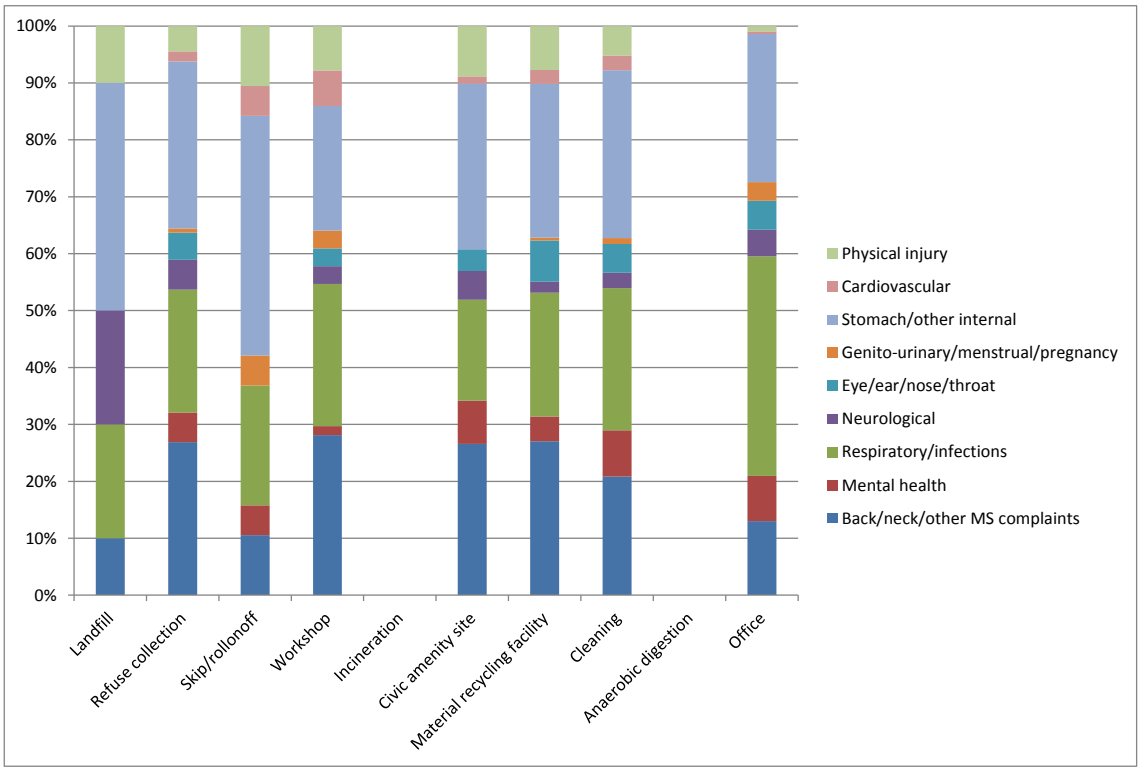

Figure 8: Contribution of different categories of ill health to absence experienced by various waste work groups - Public sector workers

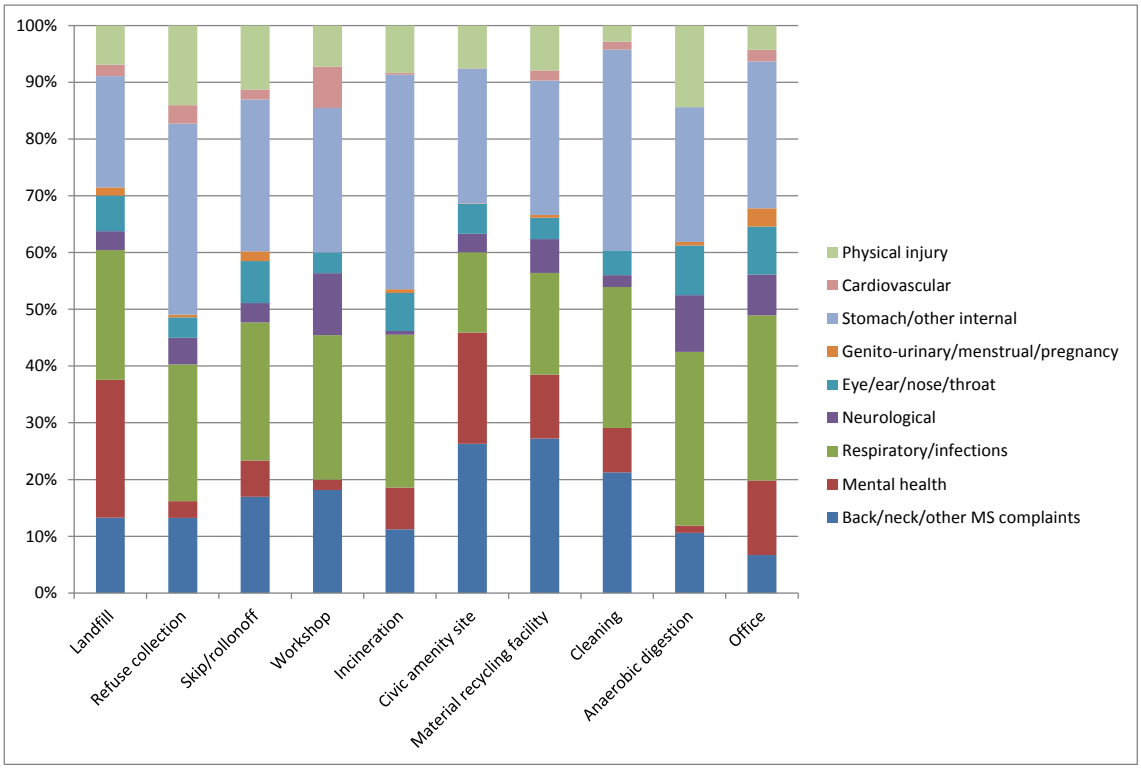

Figure 9: Contribution of different categories of ill health to absence experienced by various waste work groups - Private sector workers

4.5 BENCHMARKING OF SICKNESS ABSENCE RATES

Levels of sickness absence in those organisations participating in the current study are benchmarked against levels seen for broadly comparable industry sectors in Table 9 and illustrated in Figures 10 to 12.

The average number of days lost to absences in private sector employed waste and recycling workers can be seen to be similar to that of private sector manual workers generally (based on published statistics from a number of other surveys). However, absence rates in local authority employed waste and recycling workers can be seen to be around 60% higher. Comparison of statistics quantifying the contribution made by long term absence spells to the total number of absence days taken also suggest values to be higher in waste and recycling workers.

The data reported earlier in Figure 5 and Table 5 benchmark HSL survey data on the relative contribution of different categories of ill health to the total days of absence taken with equivalent data from the LFS and the LGE 2008/09 sickness absence surveys. Benchmarking of such data indicate that MSD's and stomach related complaints both contributed more to the total number of days absence in this survey than in the LFS and LGE surveys.

Figure 13 internally benchmarks sickness absence rates at the organisational level (for all local authorities and all private sector organisations) for each of the three reporting periods (i.e. 2010/11, 2011/12 and 2012/13). Taken collectively, the results indicate the existence of wide variability in organisational level sickness absence rates, even when considering in

isolation the rates for those organisations operating in the same industry sector and therefore in all likelihood delivering similar work tasks.

Table 9: Benchmarking of HSL statistics against other survey data

Survey	Average no of days absence per worker	% of working days lost	% absence days due to long term absences
CIPD manufacturing and production (manual)	6.2	2.7	-
CIPD private services (manual)	5.3	2.3	-
CIPD public services (manual)	6.3	2.8	-
CIPD local government	9.6	4.2	-
LGE local government	9.2	-	-
CBI private (manual)	6.4	-	-
CBI public (manual)	9.1	-	-
CBI manual	7.0	3.6	-
CBI private	-	-	27
CBI public	-	-	47
EEF manual	6.9	2.7	-
HSL private waste sector (manual)	6.0	2.3	62
HSL local government waste sector (manual)	13.7	5.3	61

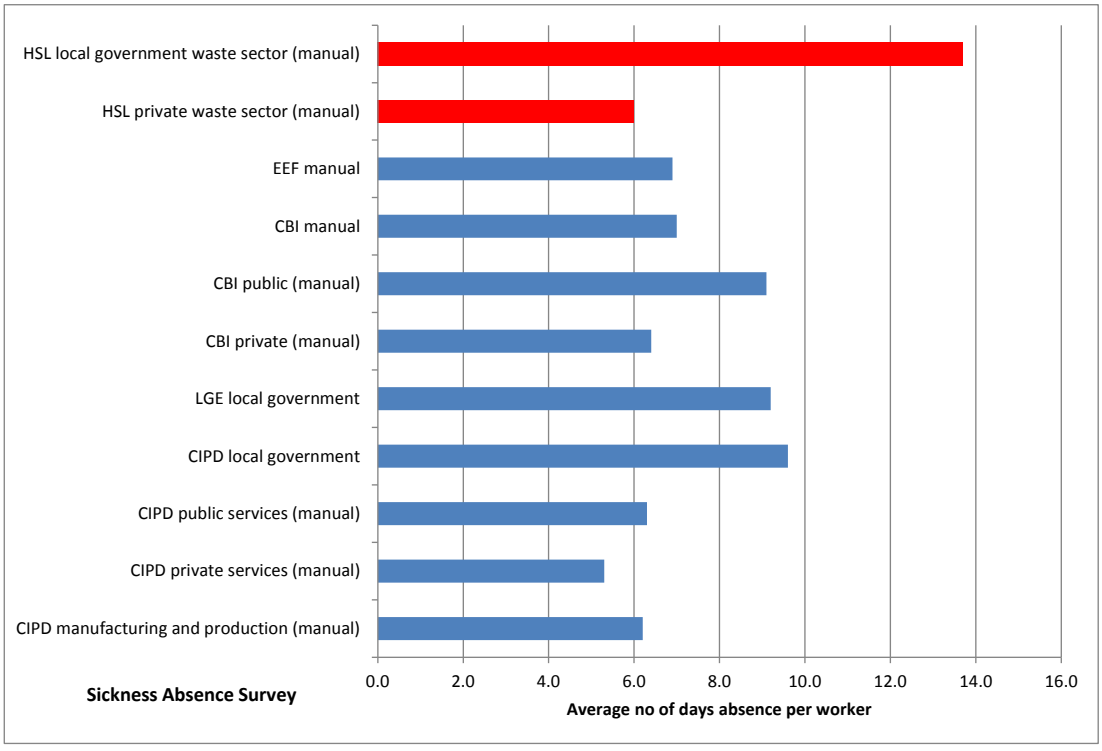

Figure 10: Benchmarking of HSL statistics against other survey data – Days absence per worker per year

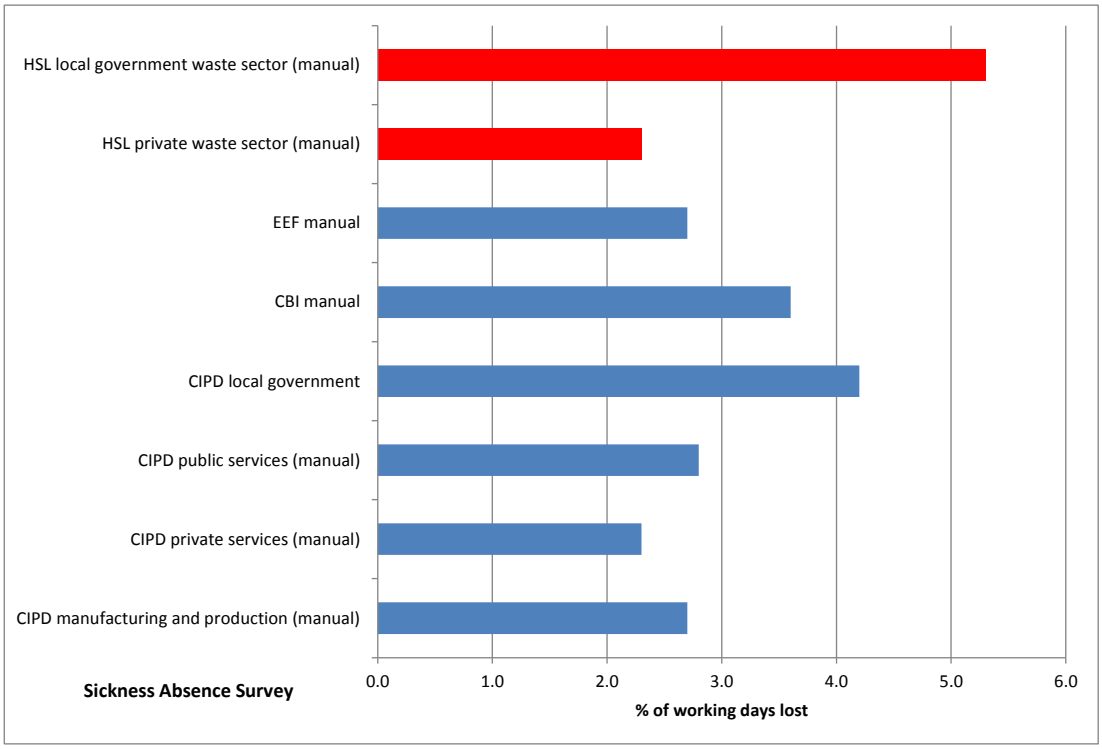

Figure 11: Benchmarking of HSL statistics against other survey data – Percentage of working days lost per year

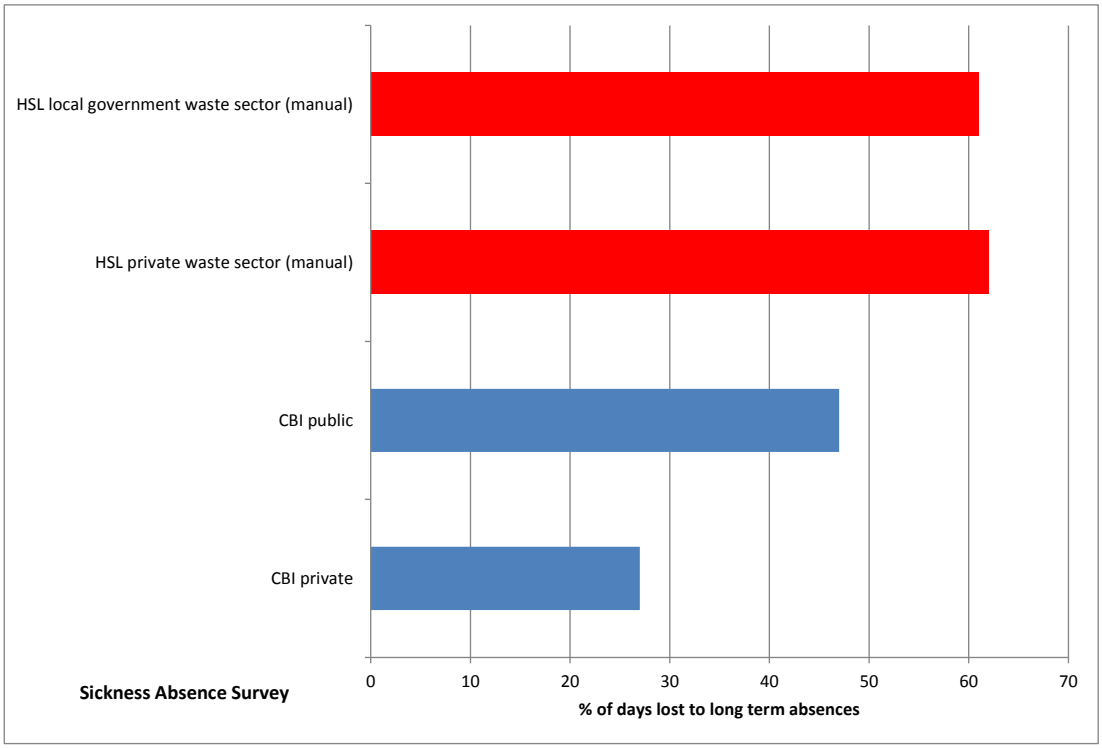

Figure 12: Benchmarking of HSL statistics against other survey data – Percentage of days lost to long term absence

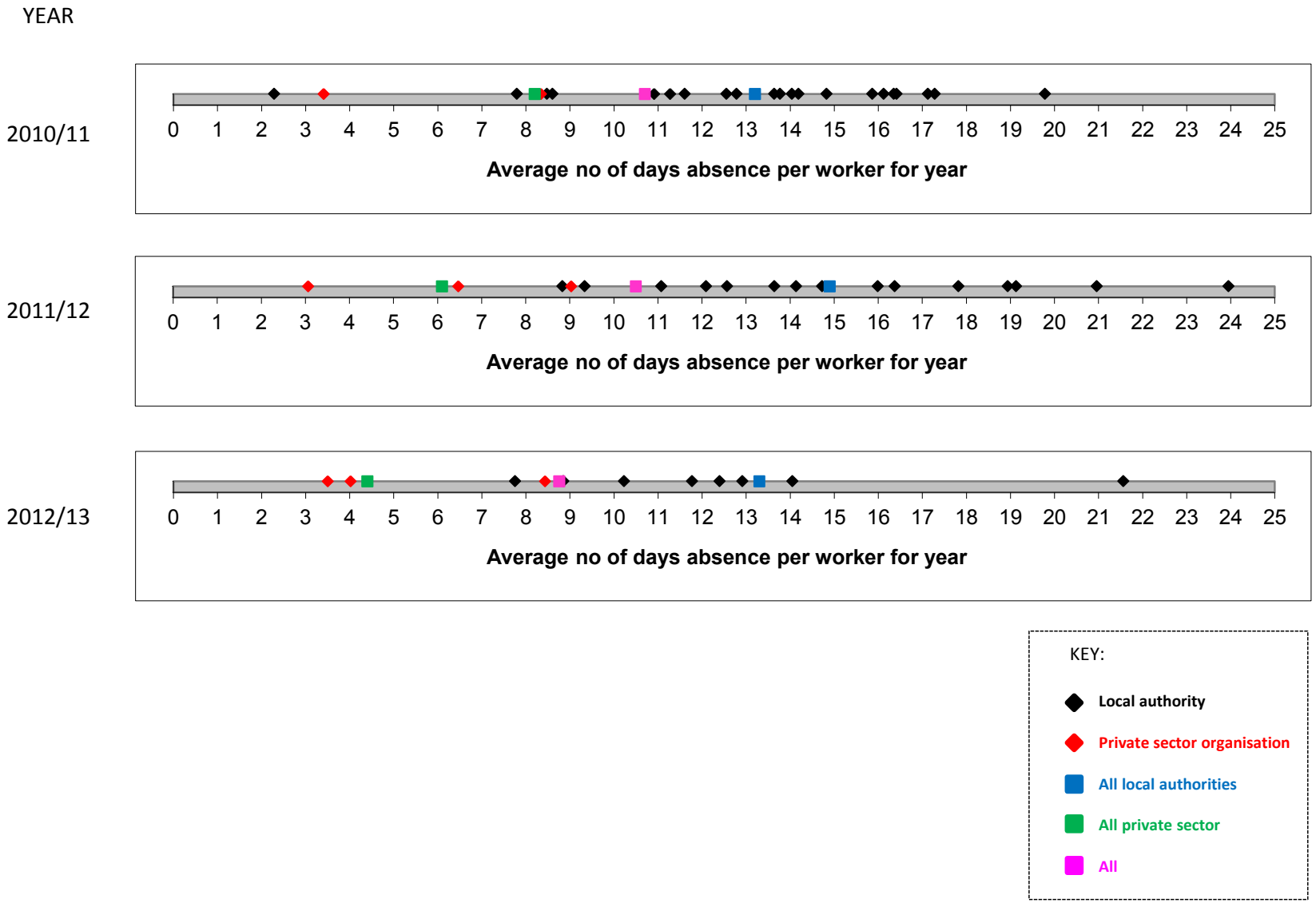

Figure 13: Internal benchmarking of organisational level sickness absence rates

4.6 TIME TRENDS IN SICKNESS ABSENCE RATES

Time trends in annualised sickness absence rates (including the average number of days absence per worker, the average number of spells per worker, the % of working days lost and the % of workers taking one or more absence) are illustrated in Table 10 below. Statistics are presented for all public and private sector organisations combined, as well as just for those organisations that provided data in each of the three study reporting periods. The statistics relating to the latter category of organisations that observed reductions in absence over the study period are highlighted in red for emphasis; these numbered two of the five in total.

Absence rates for all organisations participating in the survey declined from a high of 10.7 days per worker per year in 2010/11 to 8.9 days in 2012/13, probably due in large part to the greater participation in the survey of private sector organisations in the final two reporting periods. Combined rates for local authorities only, remained relatively static over the three years of study. However, equivalent rates for private sector organisations only, declined from a high of 8.2 days in 2010/11 to 4.4 days in 2012/13. This latter finding is likely to be attributable in part to the small number of particularly large private sector organisations participating over the course of the survey, meaning that the average absence rate for the private sector overall, was particular sensitive to which organisations provided data in each of the three reporting periods. Of those organisations that participated in each of the three years of the survey and achieved reductions in sickness absence (numbering two), it can be seen that both achieved their reductions by reducing the number of absence spells taken by each worker. This is reflected in the reduction in percentage of workers taking one or more absence (down from 76 to 56% for organisation 1, and down from 66% to 57% for organisation 2), and the reduction in average number of spells taken by the workforce as a whole (down from 2.0 to 0.9 spells for organisation 1, and down from 1.3 to 1.0 spells for organisation 2). The net result is that both organisations realised a significant reduction in the average number of days absence per worker recorded over the period (down from 20.3 to 7.8 days for organisation 1 (60% decrease), and down from 20.8 to 8.8 days for organisation 2 (58% decrease)).

Table 10: Time trends in sickness absence rates for those organisations participating in each of the three survey reporting periods

	2010/11	2011/12	2012/13
Average number of absence days per worker			
LA1	13.8	14.9	21.6
LA13	9.0	15.3	10.2
LA19	17.3	19.1	12.9
LA20	**20.3**	**14.1**	**7.8**
LA28	**20.8**	**17.8**	**8.8**
All private sector	8.2	6.1	4.4
All public sector	13.2	14.9	13.3
Average number of absence spells per worker			
LA1	3.0	1.8	3.0
LA13	1.4	1.3	1.2
LA19	1.5	2.2	1.5
LA20	**2.0**	**1.6**	**0.9**

	2010/11	2011/12	2012/13
LA28	**1.3**	**1.0**	**1.0**
All private sector	0.9	1.3	0.9
All public sector	1.6	1.6	1.7
% of working days lost			
LA1	5.3	5.7	8.3
LA13	3.5	5.9	3.9
LA19	6.6	7.3	5.0
LA20	**7.8**	**5.4**	**3.0**
LA28	**8.0**	**6.9**	**3.4**
All private sector	3.2	2.3	1.7
All public sector	5.1	5.7	5.1
% of workers taking 1 or more absence spell			
LA1	75.1	70.4	67.5
LA13	63.3	54.7	54.6
LA19	71.6	89.3	73.1
LA20	**76.1**	**80.6**	**56.4**
LA28	**65.8**	**60.4**	**57.4**
All private sector	44.4	43.1	40.3
All public sector	67.3	69.4	64.6

4.7 RESULTS OF MULTIVARIATE ANALYSES

The results of the multivariate correspondence analysis undertaken are summarised in Table 36 in Appendix F. The correspondence analysis biplots (Figures 16 to 20 in Appendix F) provide a graphical summary of the most significant associations between factors based on the correspondence analysis.

Approximately 60% of the total variation (or inertia) in the study dataset was explained by the first two dimensions of the correspondence analysis, dimension one explaining 40.2% and dimension two 17.9%. Interpretation of the biplots and underlying statistics suggested dimension one to effectively characterise the nature of the absence spells taken, whether that be their duration or the ill health suffered. Dimension two in contrast appeared to characterise the nature of work undertaken, including whether public or private sector based, or the specific work tasks performed.

Factors describing the nature of the work undertaken (see Figure 16) varied in the main in the horizontal dimension, i.e. along dimension 2 in the biplot, a finding consistent with the null finding of an association between the nature of absence and nature of work undertaken from the regression analysis (see below). Looking more closely at Figure 16, the spread of points appeared to be largely a reflection of the public-private sector split between the different categories of work undertaken. Consistent with this, the points in Figure 18 largely parallel those in Figure 16, with “public sector” located in the upper right quadrant, and “private sector” in the lower left quadrant. Table 36 quantifies the individual work task category contributions to dimension two inertia, highlighting that specific contributions were on the whole largely insignificant (<3%).

In contrast, the spread of points in the biplot for worker age (see Figure 20) is suggestive of an association between absence duration and a worker's age (also highlighted by the results of the regression analysis, see below), with the points for the respective age categories spread in the biplot predominantly in the vertical and in age order (with age progressively decreasing from the bottom right to the top left of the plot). Moreover, collective interrogation of Figures 17, 19 and 20 (the biplots for worker age, absence duration and ill health type respectively), suggest that it is workers aged >45 that tended to suffer from the ailments most commonly associated with absences of longer duration, that is, MSD's, stress and circulatory complaints.

The various regression analyses undertaken enabled the association between type of work and length of any sickness absence taken to be quantified, adjusted for the effects of potential confounding and effect modifying factors, for example, worker age, gender and industry sector of employment. Regression analysis results are summarised in Table 37 in Appendix F.

The fact that office workers were predominantly female and operational workers overwhelmingly male, presented problems when comparing absence rates between workers performing operational as opposed to office based job roles. This was addressed by restricting regression analysis to episodes of absence taken by male workers only.

The statistics in Table 37 present point estimates and associated 95% confidence limits of the relative risk of a longer than 7 day absence spell for different categories of workers. Relative risks are presented for specific categories of ill health, e.g., MSD's, mental health complaints etc., as well as for any ill health. The reference categories used in the calculation of relative risks are identified in the table with a 'RC' label. So, for example, workers aged >55 were 3 times more likely to take a longer (>7 day) absence spell than workers aged 16 to 25 (RR=2.98, 95%CI 2.29-3.87). Statistically significant deviations from unity (i.e. no difference between the respective odds) are highlighted in red.

Taking results collectively, the regression analyses indicated little association between work task and the risk of taking a >7 day absence. Risk was only significantly elevated for chest complaints/infections in street cleaners relative to office workers, (RR=3.33, 95%CI 1.22-9.14), besides an apparent protective effect of street cleaning against mental health complaints, no other associations with work task reached statistical significance. In addition, whether employed in the private or public sector also appeared to have little bearing on the likelihood of a >7 day absence. The strongest predictor of a >7 day absence was a worker's age, with significant dose response relationships evident for any ill health, as well as MSD's, mental health complaints, chest complaints/infections, and stomach complaints.

5. DISCUSSION

This report summarises the findings of a nationwide survey of sickness absence across the waste and recycling industry in GB. Over the three years of study, 32 different organisations provided data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations, collectively employing approximately 7700 workers. Data was collected on 17,613 spells of absence taken by workers, 8949 spells taken by local authority workers and 8664 taken private sector workers. The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. This is regarded to be broadly representative of the general pattern of employment across the waste and recycling sector in GB, where around 37% of workers are employed by local authorities and 63% by private sector enterprises.

The number of different organisations from the private sector participating in the survey was lower than targeted at the outset and this meant that a number of waste work activities were poorly represented in the study dataset. This was particularly true for workers involved in waste composting, total waste management activities and the driving of tankers. Even so, given that the most important waste and recycling work activities (in terms of numbers employed in such roles) were well represented in the study dataset, the study is regarded to provide an informative snapshot of sickness absence trends across the waste and recycling sector in GB generally.

Whilst the volume of data on spells of sickness absence collected as part of this study was substantial, the quality of the data provided by some participating organisations was on occasions poor. The main data quality issue related to the failure of some of the data fed back by participating organisations to adequately differentiate between several of the ill health categories advocated by WISH. This was particularly the case for a number of the respiratory and “other internal” complaints and for different categories of MSD’s. The result was that the study was less able to investigate ill health trends for certain categories of ill health at the resolutions originally intended.

High level comparison of the findings of this survey with the results of other published surveys of sickness absence suggest that the rates of recorded sickness absence observed waste and recycling workers are higher than the rates seen for other comparable workforces surveyed as part of the Confederation of British Industry, the Chartered Institute of Personnel and Development, Local Government Employers and the Engineering Employers Federation sickness absence surveys. A closer look at findings suggests that this is in large part due to particularly high rates of sickness absence in local authority employed workers.

The diverse range of factors impacting on the likelihood of a worker being absent from work has been discussed in an earlier section of this report. For the purpose of brevity and to facilitate the discussion sections that follow, these factors are summarised in Figure 14 below. A key challenge faced in studies of sickness absence is determining the degree to which observed trends are reflective of genuine differences in ill health as opposed to differences in influence of more voluntary, psychosocial determinants of absence, often referred to as an organisation’s sickness absence culture.

The principal factors underlying the higher rates of sickness absence observed in the local authority workers in this study is equally difficult to ascertain. Comparison of sickness absence rates between workers delivering the same job role but employed in a different industry sector

supports this view, with absence rates in the local authority workers being consistently higher than that in their private sector equivalents. Job satisfaction, or a lack of, may well contribute to the higher absence rates generally for this category of workers and this coupled with the greater pressures faced by private sector workers to avoid absences from work (i.e. because of the financial repercussions) may explain the higher rates of sickness absence in the local authority employed workers.

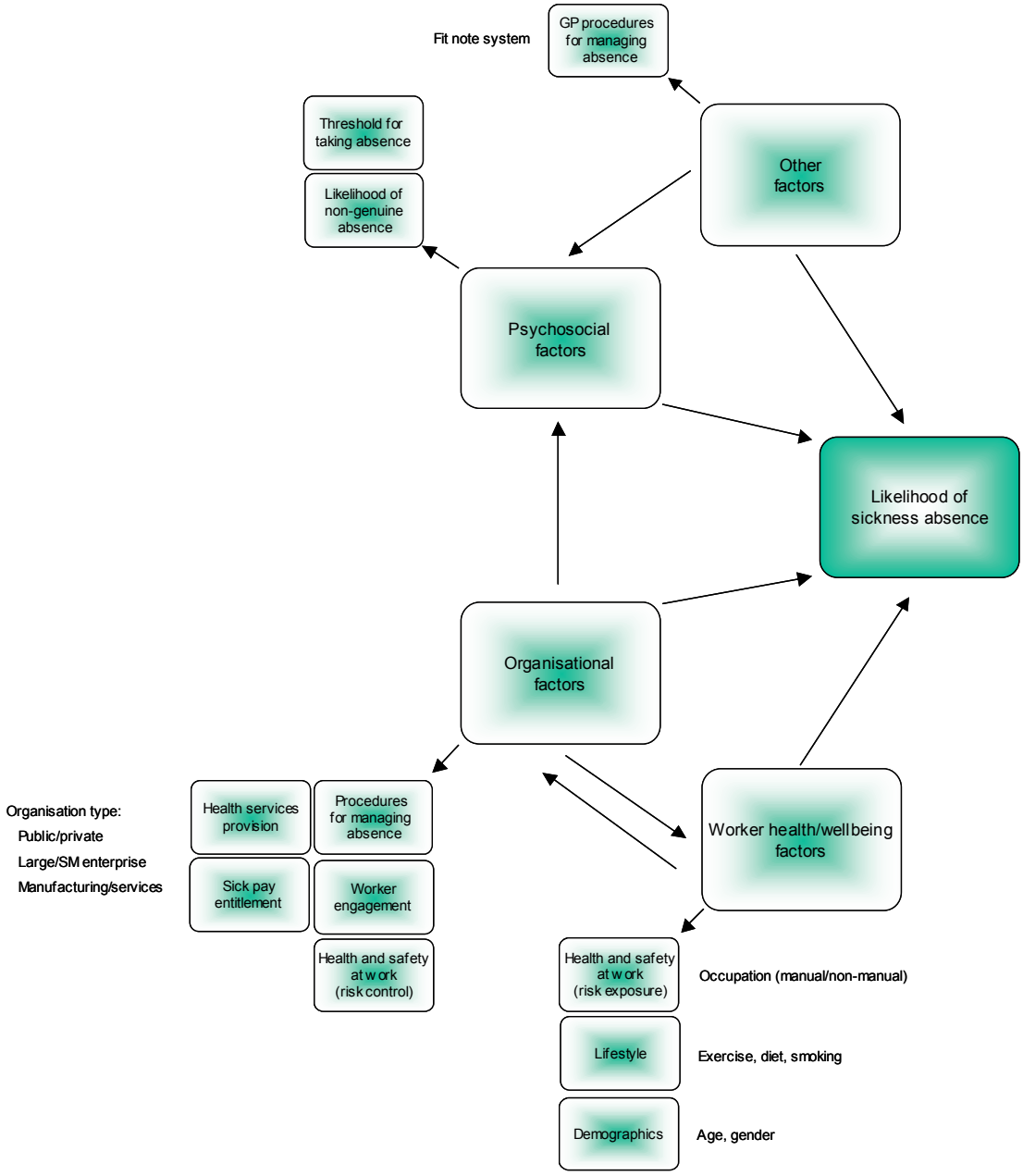

Figure 14: Factors affecting the likelihood of sickness absence

As well as potentially impacting on the absolute number of working days lost to sickness absence, it was also considered conceivable that particular waste and recycling job roles might affect the reasons for taking absences independent of the actual number of absence days taken. Therefore, whether certain categories of ill health constituted a greater or lesser proportion of all working days lost to absences in waste and recycling workers compared to other manual worker groups was also investigated.

These investigations suggested that long term absences (i.e. greater than 20 days) contributed a larger portion of all working days lost to sickness absence in this survey compared to that expected based on the results of other comparable surveys. This suggests either that the ill health underlying long term absences is inherently more common in waste and recycling workers, or that returns to work following prolonged absences are less well managed by line managers in the waste and recycling sector, resulting in more prolonged periods of absence than perhaps necessary. It may also be that such a trend is an artefact of poor record keeping on the part of the organisations surveyed, particularly given the often poor quality of the sickness absence data fed back to the study team by survey participators.

But what of the potential contribution of specific work related factors? Comparison of HSE data collected as part of the Labour Force Survey with the data collected as part of this survey provides some indication of the burden of working days lost to sickness absence in waste and recycling workers that might be work related. Table 11 below provides estimates of days off work and average days lost per worker and per case due to self-reported work-related illness or workplace injury for the waste and recycling sector. Comparing such statistics to equivalent statistics from the current survey, it is estimated that approximately 23% of all days absence in the waste and recycling workers surveyed as part of this study might be work related. For categories of ill health where the potential for work to impact on health is greater (for example, physical injuries, musculoskeletal disorders and stress), this figure is likely to be greater.

Given the apparent minor contribution of work related factors to the total burden of sickness absence, inferring work related effects from the data collected in this study is inevitably a challenge. However, an attempt was made to facilitate this by focussing data analysis on particular categories of absence where, given the workers surveyed, a work related effect was regarded as more likely. This was believed to be the case for longer term absences (as opposed to shorter term absences due to minor illnesses), as well as for absences due to stomach complaints, physical injuries and musculoskeletal disorders. These analyses highlighted that long term absences were most commonly associated with MSD's (16.6%), physical injuries (21.9%) and mental health complaints (34.1%) in the waste and recycling workers surveyed in this study, all complaints where work related aetiologies are distinct possibilities. Furthermore, analyses showed the contribution of stomach complaints to the number of days of sickness absence to be higher in waste and recycling workers (i.e. 12% compared to an average of around 8% for the workers surveyed as part of the Local Government Employers' absence survey and the Labour Force Survey).

The potential role of work in determining risk of sickness absence in the waste and recycling workers surveyed in this study was explored in more detail by way of a series of logistic regressions. The results of these analyses suggested little association between the risk of a greater than 7 day absence from work and delivering an operational as opposed to office based job role. The most significant factor associated with the risk of a greater than 7 day absence from work was observed to be a worker's age. Thus, workers aged between 26 and 35

were 1.4 times more likely to take a greater than 7 day absence than workers aged between 16 and 25. The equivalent risks for workers aged 36 to 45, 46 to 55 and >55 were 2.0, 2.3 and 3.0 respectively (all with P values <0.05). The association between longer term sickness absence and older age is well recognised (Brenner, 2000, de Zwart et al., 1999), the widely held belief being that a person's general health declines with increasing age and therefore sickness absence is more likely. This effect certainly appears evident in the waste and recycling workers providing the focus for this study, perhaps because the general health and wellbeing of such workers in later life is somewhat more depressed relative to the norm for workers generally.

5.1 CONCLUSIONS

Taken collectively, the findings of this survey support the multifaceted nature of sickness absence, with both general health and wellbeing factors as well as psychosocial factors believed to be key explanatory factors for the trends in sickness absence observed in the study dataset.

The figure of 2.4 days per worker per year for the average number of work related days lost reported in Table 11 provides an indication of the potential number of work days lost per worker per year that theoretically might be saved by better health and safety practices across the sector. Multiplying this figure up for all 150 thousand workers employed in the sector, this equates to around 360,000 working days lost to work-related ill health each year. Figures published by the Confederation of British Industry, the Chartered Institute of Personnel and Development and BUPA suggest that the direct costs of a worker being absent from work for a day typically costs an organisation around £100 (and potentially double this figure if the indirect costs of lost productivity etc. are included also). Based on this figure, this suggests that inadequate health and safety may cost the waste and recycling sector in GB around £70 million per year. Given this, even reducing the burden of sickness absence by as little as 10% (leading to a potential financial saving of around £7 million across the entire sector) is by no means insignificant.

The fact that the success of the practices used by organisations participating in the study to manage sickness absence appears so variable (as highlighted by the results of the benchmarking exercises undertaken), certainly suggests that both good and less good practices exist across the waste and recycling sector generally.

With respect to potential lessons to be learned to help organisations tackle particularly high rates of sickness absence, the experiences of those organisations that realised significant reductions in absence rates over the period of study, highlight what may be possible if steps are taken to manage sickness absence better. Investigation of potential measures implemented by organisations over the study period to manage their sickness absence was outside the scope of this study. However, given the scale of reductions in absence rates realised by several organisations (most notably, -58% by one, and -60% by another), this may well be an informative exercise to undertake in the future.

It is likely that measures to promote healthier lifestyles and improved health and wellbeing will be of particular benefit in waste and recycling workers, perhaps helping reduce the rates of long term absences observed for these workers in particular.

Finally, Dame Carol Black's and David Frost's independent review of sickness absence, published in 2011, identified as a priority area the need for public sector employers to take action to bring the worst performing parts of the public sector up to the standards of the best. The findings of this study lend further weight to the view that such action would be prudent.

Table 11: Work-related Days Lost in the Waste and Recycling Industry

Estimated days (full-day equivalent) off work and average days lost per (full-time equivalent) worker and per case due to self-reported work-related illness or workplace injury ascribed to current or most recent job, by industry, for people working in the last 12 months averaged 2009/10 - 2011/12

Industry	Illness/injury ascribed to current/most recent job								
	Averaged estimated days lost (thousands)			Average days lost per worker			Average days lost per case		
	Central	95% C.I.		Central	95% C.I.		Central	95% C.I.	
		Lower	Upper		Lower	Upper		Lower	Upper
Work-related Days lost - Illness and injury									
Waste and recycling (SIC 38 + 46.77)	*296*	*104*	*488*	*2.43*	*0.85*	*4.00*	*22.0*	*8.9*	*35.1*
Water supply; sewerage, waste (SIC E)	298	107	489	1.53	0.55	2.52	19.6	7.9	31.3
Manufacturing (SIC C)	2420	1922	2918	0.95	0.76	1.15	16.6	13.4	19.7
Construction (SIC F)	2320	1752	2888	1.15	0.87	1.44	17.2	13.2	21.1
All industry	23614	22090	25138	1.01	0.95	1.08	15.6	14.7	16.5

Source: Labour Force Survey (LFS)

Notes
Figures in italics are estimates based on fewer than 40 sample cases.
Estimated days lost, days lost per worker and days lost per case due to workplace injury include all those sustained as a result of a non-road traffic accident.
+ "case" refers to persons suffering from a workplace injury or a particular type of work-related illness.
Details of Standard Industrial Classification can be found here http://www.hse.gov.uk/statistics/industry/sic2007.htm

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Appendix A

Table 12: Average days absence, percentage of working days lost and percentage of absence days due to long term absences based on CIPD, LGE, CBI, EEF and LFS survey data

Survey	Average no of days absence per worker	% of working days lost	% absence days due to long term absences
CIPD manufacturing and production (manual) – 2011 survey	6.2	2.7	-
CIPD private services (manual) – 2011 survey	5.3	2.3	-
CIPD public services (manual) – 2011 survey	6.3	2.8	-
CIPD local government – 2011 survey	9.6	4.2	-
LGE local government – 2008/09 survey	9.2	-	-
CBI private (manual) – 2011 survey	6.4	-	-
CBI public (manual) – 2011 survey	9.1	-	-
CBI manual – 2011 survey	7.0	3.6	-
CBI private – 2010 survey	-	-	27
CBI public – 2010 survey	-	-	47
EEF manual – 2012 survey	6.9	2.7	-

Data sources: CIPD data from CIPD (2012), LGE data from LGE (2009), CBI data from CBI (2011) and CBI (2012), EEF data from EEF (2012).

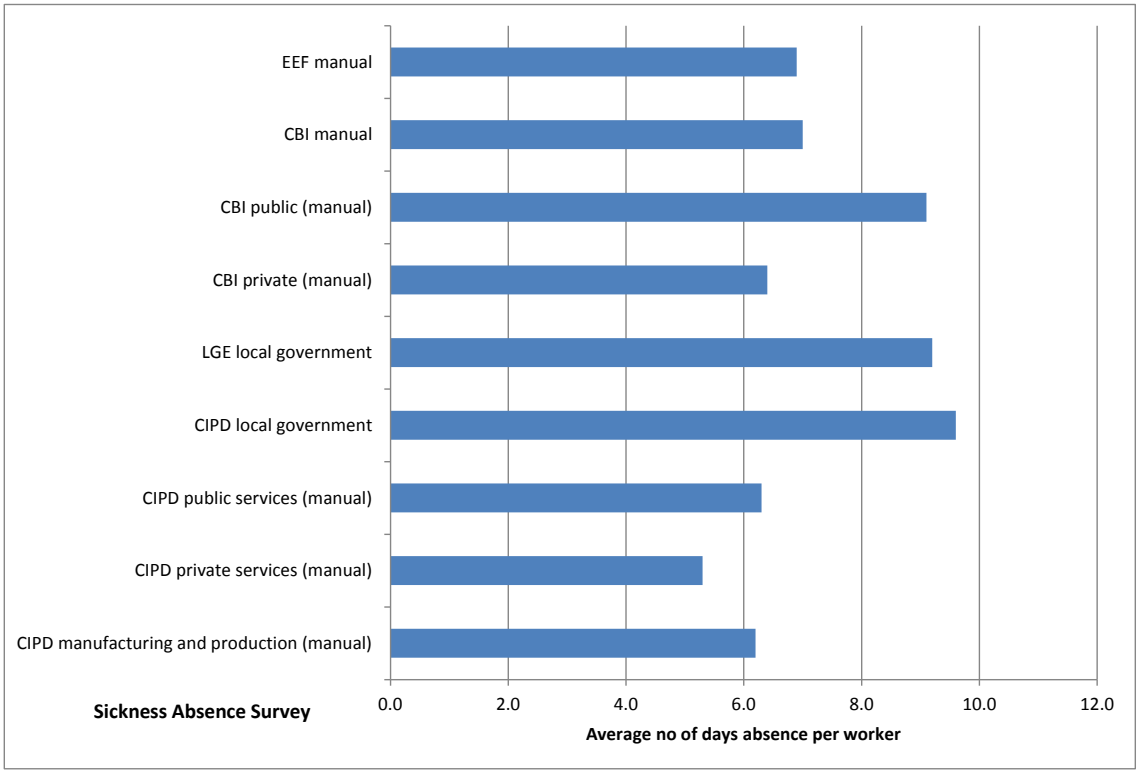


Figure 15: Average days absence based on CIPD, LGE, CBI, and EEF survey data

Table 13: Percentage contributions of different categories of ill health to total absence days

Survey	LGE survey	LFS
Back/neck/other MS complaints	20.8	26.7
Mental health	18.4	10.7
Respiratory/infections	18	24.9
Neurological	4.5	1.2
Eye/ear/nose/throat	3.7	2.9
Genito-urinary/menstrual/pregnancy	3.9	3.8
Stomach/other internal	8.3	7.9
Cardiovascular	2.5	3.4
Physical injury	-	-
Other	12.5	13.8
Unknown	-	4.7

Based on LGE 2008/09 survey data and LFS 2011 data

Table 14: Average days lost per case of work related illness/injury

Survey	Average days lost per case	95% CI (lower)	95% CI (upper)
Back/neck/other MS complaints	17.1	13.6	20.6
Breathing or lung problems	19.3	8.4	30.1
Mental health	24.2	21.0	27.5
Infectious disease (virus, bacteria)	15.6	3.5	27.7
Physical injury	7.3	6.0	8.7
All ill health/injury	16.8	15.2	18.4

Based on 2011/12 LFS data

Appendix B

Table 15: WISH standard work activity categories

Activity category	**Description and comment**
Landfill	All activities on landfill sites, including gas, leachate and power station operations with the exception of admin/office staff
RCV	RCV – refuse collection vehicle. Mainly household collection of wastes, but also commercial collections using same vehicle type
Skip / rollonoff	Commercial collections (excepting those conducted as part of household collections) including skips, RELs, rollonoffs etc
Tankers	Wastes moved by tanker, such as hazardous/special wastes, sewage and food wastes etc
Workshop / maintenance	All workshop and maintenance specific activities such as vehicles, static plant and heavy mobile plant maintenance
Transfer station	Simple transfer of wastes activities (note – if combined transfer and recycling use recycling category as below)
Treatment	Treatment and transfer of hazardous/special wastes including drum and IBC transfer and various treatment/recovery activities
Incineration	All incineration including energy from waste and combined heat and power plants
CA site	All civic amenity site (also called HWRC, RRC etc sites) activities – reception etc of wastes from member of the public
MRF	All non-hazardous/special waste recycling activities such as material recycling facilities, recycling plants, baling activities etc
Composting	All 'green waste' composting whether open wind-row, in-vessel etc (note – green waste only, see below on MBT/AD)
Total waste management	All waste activities embedded within customer premises and activities no matter the types of waste involved
Cleaning	Industrial cleaning and street cleansing activities including road sweeping and other cleaning activities
AD / MBT	All anaerobic digestion, mechanical biological treatment and similar activities (note – not green waste composting as above)
Office / admin	All office based administration, support and managerial type activities: That is non-operational activities

Notes: Where a site/facility has various activities on it, such as a combined transfer station and MRF, and employees work across activity boundaries the category chosen should be that which is likely to attract the higher occupational health exposures. The same logic as above should be applied to employees who have various job duties, such as a driver who operates RCV and commercial waste vehicles

Table 16: WISH Standard sickness absence categories

Absence category	**Description and comment**
Back / neck problems	Any back, neck or other spinal condition, low back pain, slipped or prolapsed disc, but not of other parts of the body (see below)
Other musculo-skeletal problems	Non-back and neck musculoskeletal disorders, such as those of the shoulder, arm, wrist, leg etc – please specify
Mental health	Stress, depression and other similar conditions such as anxiety, mental health, fatigue etc – please specify
Viral infections / colds / flu	Infections such as cold and flu (note – not specific and diagnosed chest or respiratory infections as below)
Chest infections	Specific and diagnosed chest infections including bronchitis, pneumonia and other specific chest/respiratory infections

Absence category	Description and comment
Other infections	Other infections and diseases such as infected wounds, measles, hepatitis, glandular fever (note – not chest infections as above)
Chest / respiratory other	Non-infection based chest/respiratory disorders such as asthma, respiratory sensitisations, allergic responses etc
Neurological / headache / migraine	Headaches, migraine, tension headaches, cluster headaches, trigeminal neuralgia etc
Eye	Cataracts, glaucoma etc
Ear / nose / throat	Toothaches, hearing disorders, vertigo, dizziness (if related to ENT condition), sinus problems etc
Genito-urinary / menstrual	Kidney/bladder disorders and infections, kidney stones, nephritis, prostate disease, cystitis etc including menstrual issues
Stomach and digestion	Upset stomach, food poisoning, D&V (diarrhoea and vomiting), bacterial and toxin based stomach disorders etc
Other internal disorders	Other kidney, stomach, liver, chest etc not covered above such as cancers, ulcers, irritable bowel, gall stones, cirrhosis etc
Pregnancy related	All pregnancy related disorders, but not including maternity leave or other planned absence relating to child birth and care
Heart, blood pressure and circulation	All heart disorders, heart attacks, angina, high blood pressure, myocardial infarction etc
Physical injuries	Other injuries etc not covered above such as fractures, burns, amputations, bruising etc (see below on workplace injuries)
Other	Any other disorder, disease, injury etc not covered above. A description of the specific issue should be used

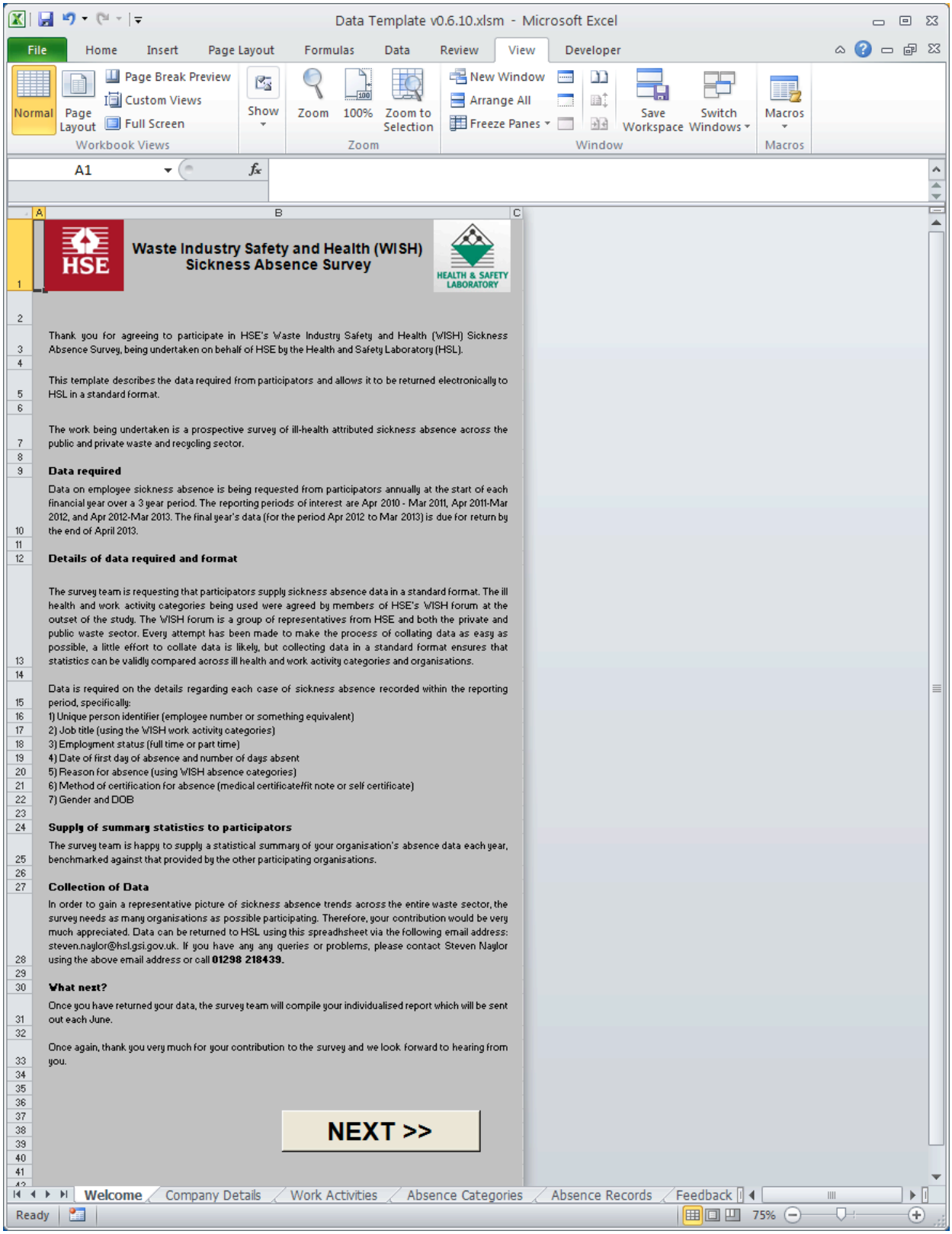
Notes: Organisations may seek to add categories to the above for their own internal purposes, such as whether an absence may be work related or not. The most common example being physical injuries where these may be caused by, for example, a sports accident or an accident at work. Likewise the above only includes ill health related absences. Organisations may have other categories related to family emergencies, child care etc, but these are not included above as they are not ill health related.

Table 17: Revised WISH sickness absence categories

Absence Category	Description and Comment
Back / neck problems	Any back, neck or other spinal condition, low back pain, slipped or prolapsed disc, but not of other parts of the body (see below)
Other musculo-skeletal problems	Non-back and neck musculoskeletal disorders, such as those of the shoulder, arm, wrist, leg etc – please specify
Mental health	Stress, depression and other similar conditions such as anxiety, mental health, fatigue etc – please specify
Viral infections, colds, flu	Infections such as cold and flu (note – not specific and diagnosed chest or respiratory infections as below)
Chest infections	Specific and diagnosed chest infections including bronchitis, pneumonia and other specific chest/respiratory infections
Other infections	Other infections and diseases such as infected wounds, measles, hepatitis, glandular fever (note – not chest infections as above)
Chest / respiratory other	Non-infection based chest/respiratory disorders such as asthma, respiratory sensitisations, allergic responses etc
Neurological, headache, migraine	Headaches, migraine, tension headaches, cluster headaches, trigeminal neuralgia etc
Eye	Cataracts, glaucoma etc
Ear, nose, throat	Toothaches, hearing disorders, vertigo, dizziness (if related to ENT condition), sinus problems etc
Genito-urinary, menstrual	Kidney/bladder disorders and infections, kidney stones, nephritis, prostate disease, cystitis etc including menstrual issues
Stomach and digestion	Upset stomach, food poisoning, D&V (diarrhoea and vomiting), bacterial and toxin based stomach disorders etc
Other internal disorders	Other kidney, stomach, liver, chest etc not covered above such as cancers, ulcers, irritable

Absence Category	Description and Comment
	bowel, gall stones, cirrhosis etc
Pregnancy related	All pregnancy related disorders, but not including maternity leave or other planned absence relating to child birth and care
Heart, blood pressure and circulation	All heart disorders, heart attacks, angina, high blood pressure, myocardial infarction etc
Physical injuries	Other injuries etc not covered above such as fractures, burns, amputations, bruising etc (see below on workplace injuries)
Other	Any other disorder, disease, injury etc not covered above. A description of the specific issue should be used

Appendix C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HSE
Waste Industry Safety and Health (WISH) Sickness Absence Survey
HEALTH & SAFETY LABORATORY
Thank you for agreeing to participate in HSE's Waste Industry Safety and Health (WISH) Sickness Absence Survey, being undertaken on behalf of HSE by the Health and Safety Laboratory (HSL).
This template describes the data required from participators and allows it to be returned electronically to HSL in a standard format.
The work being undertaken is a prospective survey of ill-health attributed sickness absence across the public and private waste and recycling sector.
Data required
Data on employee sickness absence is being requested from participators annually at the start of each financial year over a 3 year period. The reporting periods of interest are Apr 2010 - Mar 2011, Apr 2011-Mar 2012, and Apr 2012-Mar 2013. The final year's data (for the period Apr 2012 to Mar 2013) is due for return by the end of April 2013.
Details of data required and format
The survey team is requesting that participators supply sickness absence data in a standard format. The ill health and work activity categories being used were agreed by members of HSE's WISH forum at the outset of the study. The WISH forum is a group of representatives from HSE and both the private and public waste sector. Every attempt has been made to make the process of collating data as easy as possible, a little effort to collate data is likely, but collecting data in a standard format ensures that statistics can be validly compared across ill health and work activity categories and organisations.
Data is required on the details regarding each case of sickness absence recorded within the reporting period, specifically:
1) Unique person identifier (employee number or something equivalent)
2) Job title (using the WISH work activity categories)
3) Employment status (full time or part time)
4) Date of first day of absence and number of days absent
5) Reason for absence (using WISH absence categories)
6) Method of certification for absence (medical certificate/fit note or self certificate)
7) Gender and DOB
Supply of summary statistics to participators
The survey team is happy to supply a statistical summary of your organisation's absence data each year, benchmarked against that provided by the other participating organisations.
Collection of Data
In order to gain a representative picture of sickness absence trends across the entire waste sector, the survey needs as many organisations as possible participating. Therefore, your contribution would be very much appreciated. Data can be returned to HSL using this spreadhsheet via the following email address: steven.naylor@hsl.gsi.gov.uk. If you have any any queries or problems, please contact Steven Naylor using the above email address or call 01298 218439.
What next?
Once you have returned your data, the survey team will compile your individualised report which will be sent out each June.
Once again, thank you very much for your contribution to the survey and we look forward to hearing from you.
NEXT >>
Welcome
Company Details
Work Activities
Absence Categories
Absence Records
Feedback
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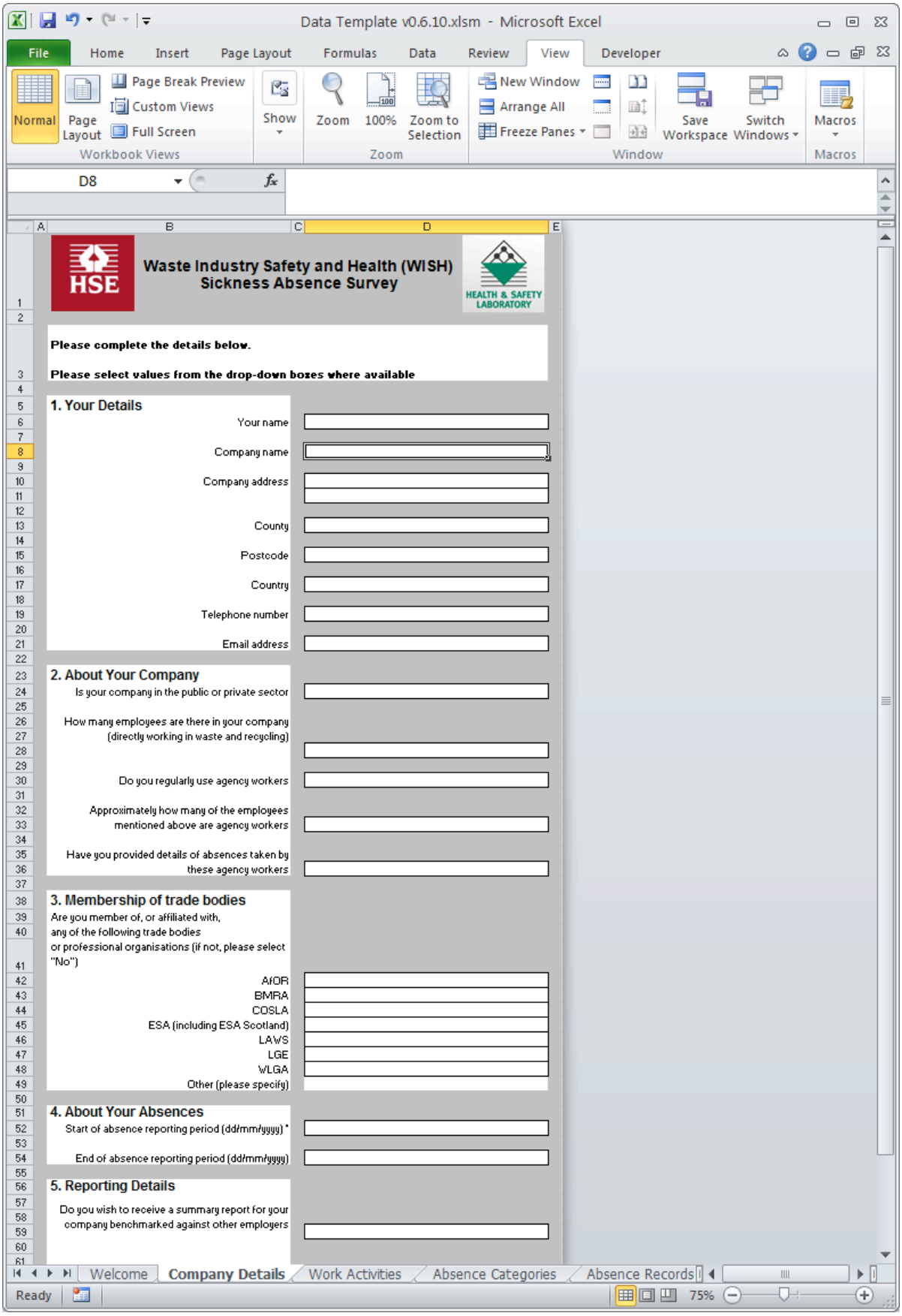
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Waste Industry Safety and Health (WISH)
Sickness Absence Survey
HEALTH & SAFETY LABORATORY
Please complete the details below.
Please select values from the drop-down boxes where available
1. Your Details
Your name
Company name
Company address
County
Postcode
Country
Telephone number
Email address
2. About Your Company
Is your company in the public or private sector
How many employees are there in your company (directly working in waste and recycling)
Do you regularly use agency workers
Approximately how many of the employees mentioned above are agency workers
Have you provided details of absences taken by these agency workers
3. Membership of trade bodies
Are you member of, or affiliated with, any of the following trade bodies or professional organisations (if not, please select "No")
AfOR
BMRA
COSLA
ESA (including ESA Scotland)
LAWS
LGE
WLGA
Other (please specify)
4. About Your Absences
Start of absence reporting period (dd/mm/yyyy) *
End of absence reporting period (dd/mm/yyyy)
5. Reporting Details
Do you wish to receive a summary report for your company benchmarked against other employers
Welcome
Company Details
Work Activities
Absence Categories
Absence Records
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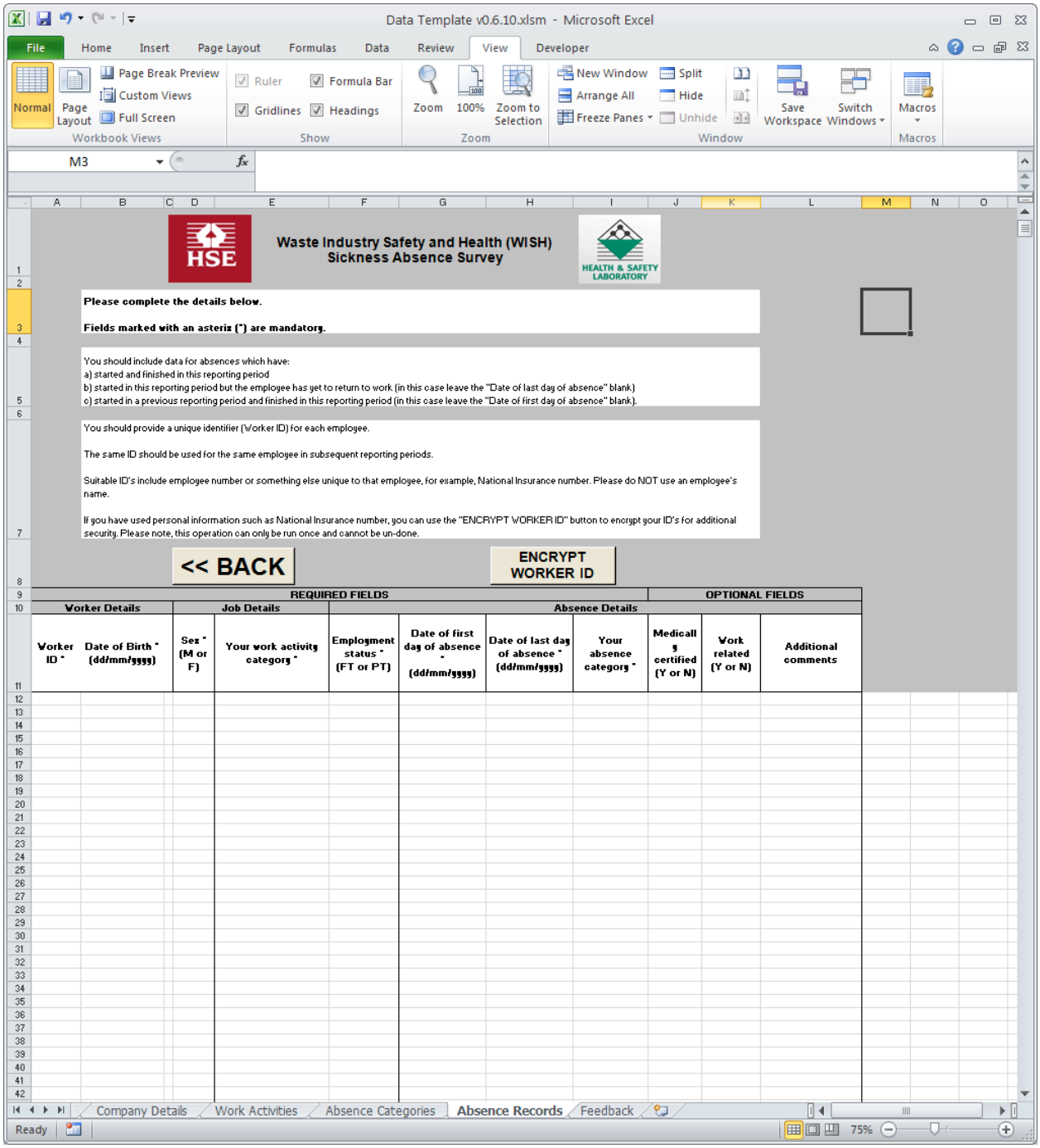
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Freeze Panes
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HSE
Waste Industry Safety and Health (WISH)
Sickness Absence Survey
HEALTH & SAFETY LABORATORY
Please complete the details below.
Fields marked with an asterix (*) are mandatory.
You should include data for absences which have:
a) started and finished in this reporting period
b) started in this reporting period but the employee has yet to return to work (in this case leave the "Date of last day of absence" blank)
c) started in a previous reporting period and finished in this reporting period (in this case leave the "Date of first day of absence" blank).
You should provide a unique identifier (Worker ID) for each employee.
The same ID should be used for the same employee in subsequent reporting periods.
Suitable ID's include employee number or something else unique to that employee, for example, National Insurance number. Please do NOT use an employee's name.
If you have used personal information such as National Insurance number, you can use the "ENCRYPT WORKER ID" button to encrypt your ID's for additional security. Please note, this operation can only be run once and cannot be un-done.
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OPTIONAL FIELDS
Worker Details
Job Details
Absence Details
Worker ID *
Date of Birth * (dd/mm/yyyy)
Sex * (M or F)
Your work activity category *
Employment status * (FT or PT)
Date of first day of absence * (dd/mm/yyyy)
Date of last day of absence * (dd/mm/yyyy)
Your absence category *
Medically certified (Y or N)
Work related (Y or N)
Additional comments
Company Details
Work Activities
Absence Categories
Absence Records
Feedback
Ready
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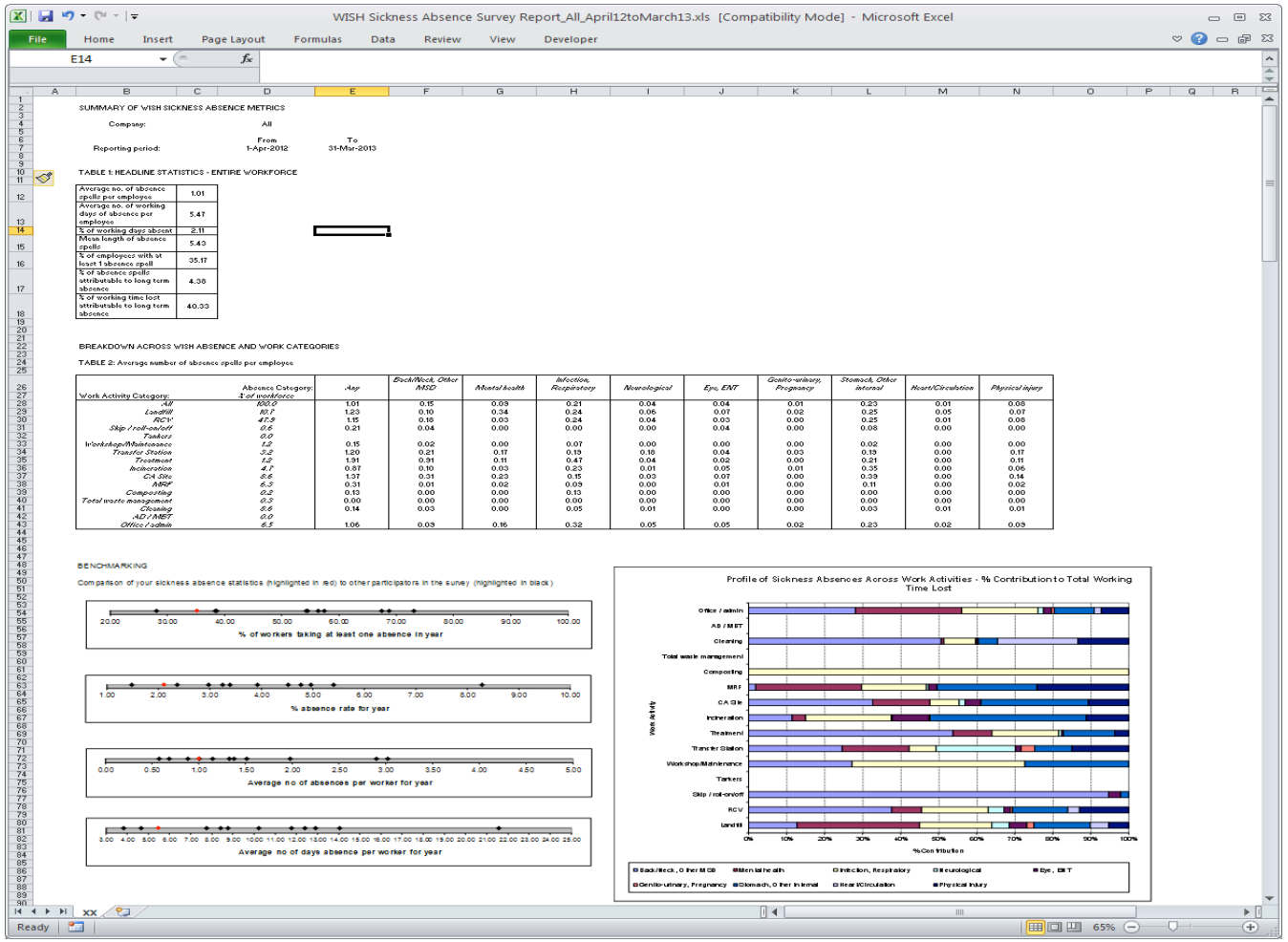
Appendix D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SUMMARY OF WISH SICKNESS ABSENCE METRICS
Company:
All
Reporting period:
From
1-Apr-2012
To
31-Mar-2013
TABLE 1: HEADLINE STATISTICS - ENTIRE WORKFORCE
Average no. of absence spells per employee 1.01
Average no. of working days of absence per employee 5.47
% of working days absent 2.11
Mean length of absence spells 5.43
% of employees with at least 1 absence spell 35.17
% of absence spells attributable to long term absence 4.36
% of working time lost attributable to long term absence 40.33
BREAKDOWN ACROSS WISH ABSENCE AND WORK CATEGORIES
TABLE 2: Average number of absence spells per employee
Work Activity Category:
Absence Category: % of workforce
Any
Back/Neck, Other MSD
Mental health
Infection, Respiratory
Neurological
Eye, ENT
Genito-urinary, Pregnancy
Stomach, Other internal
Heart/Circulation
Physical injury
All 100.0 1.01 0.15 0.09 0.21 0.04 0.04 0.01 0.23 0.01 0.08
Landfill 10.1 1.23 0.10 0.04 0.24 0.06 0.07 0.02 0.25 0.05 0.07
RCV 47.8 1.15 0.18 0.03 0.24 0.04 0.03 0.00 0.25 0.01 0.08
Skip / roll-on/off 0.6 0.21 0.04 0.00 0.00 0.00 0.04 0.00 0.08 0.00 0.00
Tankers 0.0
Workshop/Maintenance 1.8 0.15 0.02 0.00 0.07 0.00 0.00 0.00 0.02 0.00 0.00
Transfer Station 3.3 1.20 0.21 0.17 0.19 0.16 0.04 0.03 0.19 0.00 0.17
Treatment 1.2 1.31 0.31 0.11 0.47 0.04 0.02 0.00 0.21 0.00 0.11
Incineration 4.1 0.87 0.10 0.03 0.23 0.01 0.05 0.01 0.35 0.00 0.06
CA Site 8.6 1.37 0.31 0.23 0.15 0.03 0.07 0.00 0.39 0.00 0.14
MRF 6.3 0.31 0.01 0.02 0.09 0.00 0.01 0.00 0.11 0.00 0.02
Composting 0.3 0.13 0.00 0.00 0.13 0.00 0.00 0.00 0.00 0.00 0.00
Total waste management 0.3 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Cleaning 8.6 0.14 0.03 0.00 0.05 0.01 0.00 0.00 0.03 0.01 0.01
AD / MBT 0.0
Office / admin 6.5 1.06 0.09 0.16 0.32 0.05 0.05 0.02 0.23 0.02 0.09
BENCHMARKING
Comparison of your sickness absence statistics (highlighted in red) to other participators in the survey (highlighted in black)
% of workers taking at least one absence in year
% absence rate for year
Average no of absences per worker for year
Average no of days absence per worker for year
Profile of Sickness Absences Across Work Activities - % Contribution to Total Working Time Lost
Work activity
% Contribution
Back/Neck, Other MSD
Mental health
Infection, Respiratory
Neurological
Eye, ENT
Genito-urinary, Pregnancy
Stomach, Other internal
Heart/Circulation
Physical injury
Ready
65%

Appendix E

Table 18: Absence spells (counts and rates) by duration of spell for participating organisations

	All absence spells	Per PY	1 to 2 days absence	Per PY	3 to 7 days absence	Per PY	8 to 19 days absence	Per PY	20+days absence	Per PY
Local authorities										
LA1	1322	2.62	686	1.36	425	0.84	124	0.25	87	0.17
LA2	241	2.48	120	1.24	89	0.92	20	0.21	12	0.12
LA3	362	3.29	251	2.28	79	0.72	19	0.17	13	0.12
LA4	117	`	65	0.60	33	0.30	13	0.12	6	0.06
LA5	143	1.99	62	0.86	52	0.72	17	0.24	12	0.17
LA6	694	1.36	97	0.19	367	0.72	131	0.26	99	0.19
LA7	188	1.49	87	0.69	66	0.52	16	0.13	19	0.15
LA8	133	1.80	56	0.76	59	0.80	8	0.11	10	0.14
LA9	187	1.91	97	0.99	56	0.57	19	0.19	15	0.15
LA10	153	0.99	75	0.49	46	0.30	17	0.11	15	0.10
LA11	130	1.63	47	0.59	48	0.60	16	0.20	19	0.24
LA12	426	1.49	204	0.72	129	0.45	50	0.18	43	0.15
LA13	346	1.27	120	0.44	161	0.59	33	0.12	32	0.12
LA14	302	1.76	195	1.13	64	0.37	27	0.16	16	0.09
LA15	177	0.75	57	0.24	69	0.29	22	0.09	29	0.12
LA16	156	2.23	85	1.21	35	0.50	14	0.20	22	0.31
LA17	58	0.50	21	0.18	20	0.17	8	0.07	9	0.08
LA18	982	1.57	579	0.92	209	0.33	75	0.12	119	0.19
LA19	429	1.72	190	0.76	136	0.55	51	0.20	52	0.21
LA20	316	1.43	128	0.58	111	0.50	43	0.19	34	0.15
LA21	191	2.45	71	0.91	89	1.14	20	0.26	11	0.14
LA22	106	1.96	26	0.48	58	1.07	11	0.20	11	0.20
LA23	282	1.82	128	0.83	108	0.70	25	0.16	21	0.14
LA24	78	0.41	38	0.20	20	0.10	7	0.04	13	0.07
LA25	96	1.10	43	0.49	26	0.30	9	0.10	18	0.21
LA26	860	2.79	405	1.31	319	1.04	80	0.26	56	0.18
LA27	115	0.82	63	0.45	23	0.16	14	0.10	15	0.11
LA28	359	1.10	116	0.36	133	0.41	47	0.14	63	0.19
Private sector										
Company1	1510	0.68	949	0.42	353	0.16	114	0.05	95	0.04
Company2	5207	1.43	-	-	-	-	-	-	-	-
Company3	203	1.34	145	0.96	42	0.28	8	0.05	8	0.05

	All absence spells	Per PY	1 to 2 days absence	Per PY	3 to 7 days absence	Per PY	8 to 19 days absence	Per PY	20+days absence	Per PY
Company4	1744	0.91	987	0.51	429	0.22	150	0.08	178	0.09
All local authorities	8949	1.62	4112	0.74	3030	0.55	936	0.17	871	0.16
All private sector*	8664	1.09	2081	0.48	824	0.19	272	0.06	281	0.07

PY = Person Years; All spells count based on complete dataset, counts for 1 to 2 days, 3 to 7 days, 8 to 19 days and 20+ days absence based on reduced dataset (n=12,406)

Table 19: Percentage of spells due to long term absence (20+ days) for participating organisations

	% of absence spells due to long term absences
Local authorities	
LA1	6.6
LA2	5.0
LA3	3.6
LA4	5.1
LA5	8.4
LA6	14.3
LA7	10.1
LA8	7.5
LA9	8.0
LA10	9.8
LA11	14.6
LA12	10.1
LA13	9.2
LA14	5.3
LA15	16.4
LA16	14.1
LA17	15.5
LA18	12.1
LA19	12.1
LA20	10.8
LA21	5.8
LA22	10.4
LA23	7.4
LA24	16.7
LA25	18.8
LA26	6.5
LA27	13.0
LA28	17.5
Private sector	
Company1	6.3
Company2	-
Company3	3.9
Company4	10.2
All local authorities	9.7
All private sector	8.1

Table 20: Absence spells (counts) by category of ill health for participating organisations

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Local authorities										
LA1	231	58	280	128	35	16	333	42	73	56
LA2	62	8	54	13	1		70	1	5	5
LA3	85	12	70	4			98		18	55
LA4	18	3	22	3	6		38	2	9	14
LA5	51	7	26	4	8	1	39			7
LA6	110	41	160	18	33	3	132	13	78	68
LA7	45	8	57	11	9	1	29	5		23
LA8	28	14	35	1	5	1	22		21	6
LA9	60	4	61	12	7	1	33	8		1
LA10	36	8	28	6	5		51	6		13
LA11	39	11	17	2	8	3	36	1		13
LA12	62	34	88	7	19	6	124	9	19	58
LA13	90	18	87	14	6	1	93	6	23	8
LA14	68	9	56	23	20		79	5	32	1
LA15	45	21	33	1	12	1	33	5	11	15
LA16	34	11	26	2	14		46	11		12
LA17	16	3	11	1			18	1		8
LA18	286	56	173	46	47	2	283	8		80
LA19	140	19	75	6	29	4	135	1	10	10
LA20	128	19	69	8	9	2	60	2		19
LA21	12	2	64	3	1		87	1	17	4
LA22	31	5	24	3	3	2	23	3	7	5
LA23	41	4	67	17	12	1	79		42	19
LA24	23	6	3	1	5	1	35			2
LA25	34	7	9	3	4	1	30	3	5	
LA26	193	24	126	46	67	21	212	12	3	33
LA27	31	5	27	1	8	1	39	1		2
LA28	77	28	54	10	15		85	5	4	18
Private sector										
Company1	161	35	234	35	39	15	302	15	38	13
Company2	997	825	969	208	239	28	1239	75	466	55
Company3	21	12	59	11	13	2	55	1	15	14

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Company4	208	71	435	109	127	32	437	16	137	171
All local authorities	2076	445	1802	394	388	69	2342	151	377	555
All private sector	1387	943	1697	363	418	77	2033	107	656	253

Table 21: Absence spells (rates) by category of ill health for participating organisations

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Local authorities										
LA1	0.46	0.12	0.56	0.25	0.07	0.03	0.66	0.08	0.14	0.11
LA2	0.64	0.08	0.56	0.13	0.01		0.72	0.01	0.05	0.05
LA3	0.77	0.11	0.64	0.04			0.89		0.16	0.50
LA4	0.17	0.03	0.20	0.03	0.06		0.35	0.02	0.08	0.13
LA5	0.71	0.10	0.36	0.06	0.11	0.01	0.54	0.00		0.10
LA6	0.22	0.08	0.31	0.04	0.06	0.01	0.26	0.03	0.15	0.13
LA7	0.36	0.06	0.45	0.09	0.07	0.01	0.23	0.04		0.18
LA8	0.38	0.19	0.47	0.01	0.07	0.01	0.30		0.28	0.08
LA9	0.61	0.04	0.62	0.12	0.07	0.01	0.34	0.08		0.01
LA10	0.23	0.05	0.18	0.04	0.03	0.00	0.33	0.04		0.08
LA11	0.49	0.14	0.21	0.03	0.10	0.04	0.45	0.01		0.16
LA12	0.22	0.12	0.31	0.02	0.07	0.02	0.44	0.03	0.07	0.20
LA13	0.33	0.07	0.32	0.05	0.02	0.00	0.34	0.02	0.08	0.03
LA14	0.40	0.05	0.33	0.13	0.12		0.46	0.03	0.19	0.01
LA15	0.19	0.09	0.14	0.00	0.05	0.00	0.14	0.02	0.05	0.06
LA16	0.49	0.16	0.37	0.03	0.20		0.66	0.16		0.17
LA17	0.14	0.03	0.09	0.01			0.16	0.01		0.07
LA18	0.46	0.09	0.28	0.07	0.08	0.00	0.45	0.01		0.13
LA19	0.56	0.08	0.30	0.02	0.12	0.02	0.54	0.00	0.04	0.04
LA20	0.58	0.09	0.31	0.04	0.04	0.01	0.27	0.01		0.09
LA21	0.15	0.03	0.82	0.04	0.01		1.12	0.01	0.22	0.05
LA22	0.57	0.09	0.44	0.06	0.06	0.04	0.43	0.06	0.13	0.09
LA23	0.26	0.03	0.43	0.11	0.08	0.01	0.51		0.27	0.12
LA24	0.12	0.03	0.02	0.01	0.03	0.01	0.18			0.01
LA25	0.39	0.08	0.10	0.03	0.05	0.01	0.34	0.03	0.06	0.00
LA26	0.63	0.08	0.41	0.15	0.22	0.07	0.69	0.04	0.01	0.11

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
LA27	0.22	0.04	0.19	0.01	0.06	0.01	0.28	0.01		0.01
LA28	0.24	0.09	0.17	0.03	0.05		0.26	0.02	0.01	0.06
Private sector										
Company1	0.07	0.02	0.10	0.02	0.02	0.01	0.14	0.01	0.02	0.01
Company2	0.27	0.23	0.27	0.06	0.07	0.01	0.34	0.02	0.13	0.02
Company3	0.14	0.08	0.39	0.07	0.09	0.01	0.36	0.01	0.10	0.09
Company4	0.11	0.04	0.23	0.06	0.07	0.02	0.23	0.01	0.07	0.09
All local authorities	0.38	0.08	0.33	0.07	0.07	0.01	0.42	0.03	0.07	0.10
All private sector	0.17	0.12	0.21	0.05	0.05	0.01	0.26	0.01	0.08	0.03

Table 22: Absence days (totals) by category of ill health for participating organisations

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Local authorities										
LA1	2530	760	1225	419	99	219	745	543	785	622
LA2	354	35	345	148	9		259	4	7	12
LA3	394	162	170	11			256		138	206
LA4	153	58	72	9	16		76	13	352	70
LA5	706	222	95	5	29	4	90			28
LA6	1487	937	982	285	170	21	934	286	1540	1456
LA7	831	57	374	17	42	1	60	87		319
LA8	303	200	157	1	13	2	46		137	70
LA9	768	139	181	46	21	1	87	266		3
LA10	560	198	133	11	13		269	67		110
LA11	663	614	79	6	86	22	127	2		78
LA12	491	401	442	11	71	31	376	126	207	764
LA13	764	306	420	32	16	4	931	71	179	134
LA14	620	45	149	215	55		228	84	502	3
LA15	856	228	146	1	166	3	359	249	288	75
LA16	283	55	208	7	68		225	35		74
LA17	487	47	42		260		300	17		330
LA18	3427	1467	504	252	288	15	776	429		1173
LA19	1915	263	312	12	86	7	659	120	429	233

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
LA20	1688	405	234	15	58	9	215	19		196
LA21	118	12	320	9	4		386	2	98	31
LA22	292	40	131	10	9	33	174	101	35	58
LA23	372	41	1156	28	50	3	217		472	160
LA24	267	176	69	2	193	5	93			10
LA25	686	203	57	6	46	7	373	6		7
LA26	3127	546	511	89	317	267	639	221	10	532
LA27	589	370	405	1	29	2	197	1		98
LA28	1210	911	387	41	58		534	282	118	52
Private sector										
Company1	2351	371	899	53	172	109	743	196	766	106
Company2										
Company3	94	166	273	276	25	2	80	15	174	69
Company4	2821	2659	2149	508	776	385	1992	1083	2853	1203
All local authorities	25941	8898	9306	1689	2272	656	9631	3031	5297	6904
All private sector	5266	3196	3321	837	973	496	2815	1294	3793	1378

Table 23: Absence days (rates) by category of ill health for participating organisations

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Local authorities										
LA1	5.02	1.51	2.43	0.83	0.20	0.43	1.48	1.08	1.56	1.23
LA2	3.65	0.36	3.56	1.53	0.09		2.67	0.04	0.07	0.12
LA3	3.58	1.47	1.55	0.10	0.00		2.33		1.25	1.87
LA4	1.40	0.53	0.66	0.08	0.15		0.70	0.12	3.23	0.64
LA5	9.81	3.08	1.32	0.07	0.40	0.06	1.25			0.39
LA6	2.92	1.84	1.93	0.56	0.33	0.04	1.83	0.56	3.03	2.86
LA7	6.60	0.45	2.97	0.13	0.33	0.01	0.48	0.69	0.00	2.53
LA8	4.09	2.70	2.12	0.01	0.18	0.03	0.62		1.85	0.95
LA9	7.84	1.42	1.85	0.47	0.21	0.01	0.89	2.71		0.03
LA10	3.64	1.29	0.86	0.07	0.08		1.75	0.44		0.71
LA11	8.29	7.68	0.99	0.08	1.08	0.28	1.59	0.03		0.98
LA12	1.72	1.41	1.55	0.04	0.25	0.11	1.32	0.44	0.73	2.68

	Back, other MSD	Mental health	Chest, infections	Neurological	Eye, ear, nose, throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
LA13	2.80	1.12	1.54	0.12	0.06	0.01	3.41	0.26	0.66	0.49
LA14	3.60	0.26	0.87	1.25	0.32		1.33	0.49	2.92	0.02
LA15	3.64	0.97	0.62	0.00	0.71	0.01	1.53	1.06	1.23	0.32
LA16	4.04	0.79	2.97	0.10	0.97		3.21	0.50		1.06
LA17	4.20	0.41	0.36		2.24		2.59	0.15		2.84
LA18	5.47	2.34	0.81	0.40	0.46	0.02	1.24	0.69		1.87
LA19	7.69	1.06	1.25	0.05	0.35	0.03	2.65	0.48	1.72	0.94
LA20	7.64	1.83	1.06	0.07	0.26	0.04	0.97	0.09		0.89
LA21	1.51	0.15	4.10	0.12	0.05		4.95	0.03	1.26	0.40
LA22	5.41	0.74	2.43	0.19	0.17	0.61	3.22	1.87	0.65	1.07
LA23	2.40	0.26	7.46	0.18	0.32	0.02	1.40		3.05	1.03
LA24	1.39	0.92	0.36	0.01	1.01	0.03	0.48			0.05
LA25	7.89	2.33	0.66	0.07	0.53	0.08	4.29	0.07		0.08
LA26	10.15	1.77	1.66	0.29	1.03	0.87	2.07	0.72	0.03	1.73
LA27	4.18	2.62	2.87	0.01	0.21	0.01	1.40	0.01		0.70
LA28	3.72	2.80	1.19	0.13	0.18		1.64	0.87	0.36	0.16
Private sector										
Company1	1.05	0.17	0.40	0.02	0.08	0.05	0.33	0.09	0.34	0.05
Company2										
Company3	0.62	1.10	1.81	1.83	0.17	0.01	0.53	0.10	1.15	0.46
Company4	1.47	1.38	1.12	0.26	0.40	0.20	1.04	0.56	1.48	0.63
All local authorities	4.70	1.61	1.69	0.31	0.41	0.12	1.74	0.55	0.96	1.25
All private sector	0.66	0.40	0.42	0.11	0.12	0.06	0.35	0.16	0.48	0.17

Table 24: Absence spells (counts and rates) – for specific work activities

Work activities	Spells - All	Spells per PY - All
Landfill	1242	1.38
Refuse collection	9305	1.53
Skip/roll on/off	475	1.08
Tankers	0	-
Maintenance	136	0.67
Transfer station	177	0.61
Treatment	228	2.19
Incineration	318	0.85
Civic amenity site	1517	1.41
Material recycling facility	1270	1.11
Composting	2	0.12
Total waste management	39	1.63
Cleaning	1077	0.90
Anaerobic digestion	170	0.74
Office	1335	0.99

Table 25: Absence spells (counts and rates) – for specific public sector work activities

Work activities	Spells - Public	Spells per PY - Public
Landfill	14	0.82
Refuse collection	7349	1.92
Skip/roll on/off	22	0.56
Tankers	0	-
Maintenance	78	0.89
Transfer station	16	0.50
Treatment	0	-
Incineration	0	-
Civic amenity site	83	0.75
Material recycling facility	238	1.08
Composting	0	-
Total waste management	32	1.68
Cleaning	873	1.13
Anaerobic digestion	0	-
Office	239	0.61

Table 26: Absence spells (counts and rates) – for specific private sector work activities

Work activities	Spells - Private	Spells per PY - Private
Landfill	1228	1.39
Refuse collection	1956	0.86
Skip/roll on/off	453	1.13
Tankers	0	-
Maintenance	58	0.51
Transfer station	161	0.62
Treatment	228	2.19
Incineration	318	0.85
Civic amenity site	1434	1.48
Material recycling facility	1032	1.12
Composting	2	0.14
Total waste management	7	1.40
Cleaning	204	0.48
Anaerobic digestion	170	0.74
Office	1096	1.14

Table 27: Absence days (totals and rates) – for specific work activities

Work activities	Days - All	Days per PY - All
Landfill	1161	5.6
Refuse collection	65387	14.2
Skip/roll on/off	7266	16.5

Work activities	Days - All	Days per PY - All
Tankers	0	-
Maintenance	1531	8.1
Transfer station	260	0.9
Treatment	33	3.3
Incineration	334	2.6
Civic amenity site	2200	4.6
Material recycling facility	6175	7.6
Composting	1	0.3
Total waste management	209	8.7
Cleaning	9480	7.9
Anaerobic digestion	957	4.2
Office	6575	5.6

Table 28: Absence days (totals and rates) – for specific public sector work activities

Work activities	Days - Public	Days per PY - Public
Landfill	96	5.6
Refuse collection	59335	15.5
Skip/roll on/off	547	14.0
Tankers	0	-
Maintenance	1208	13.7
Transfer station	80	2.5
Treatment	0	-
Incineration	0	-
Civic amenity site	650	5.9
Material recycling facility	2360	10.7
Composting	0	-
Total waste management	194	10.2
Cleaning	8231	10.7
Anaerobic digestion	0	-
Office	2913	7.5

Table 29: Absence days (totals and rates) – for specific private sector work activities

Work activities	Days - Private	Days per PY - Private
Landfill	1065	5.6
Refuse collection	6052	7.6
Skip/roll on/off	6719	16.7
Tankers	0	-
Maintenance	323	3.2
Transfer station	180	0.7
Treatment	33	3.3
Incineration	334	2.6
Civic amenity site	1550	4.2
Material recycling facility	3815	6.5
Composting	0	-
Total waste management	15	3.0
Cleaning	1249	2.9
Anaerobic digestion	957	4.2
Office	3662	4.7

Table 30: Number of absence spells for specific categories of ill health across public sector work activities

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Landfill										
Refuse collection	1782	344	1431	347	317	49	1943	117	296	435
Skip/roll on/off										
Tankers										
Maintenance	18	1	16	2	2	2	14	4	5	10
Transfer station										
Treatment										
Incineration										
Civic amenity site	21	6	14	4	3		23	1	7	1
Material recycling facility	56	9	45	4	15	1	56	5	16	16
Composting										
Total waste management										
Cleaning	161	63	193	21	39	8	228	20	40	77
Anaerobic digestion										
Office	28	17	83	10	11	7	56	1	2	14

Table 31: Percentage of absence spells attributable to specific categories of ill health for specific public sector work activities

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Landfill										
Refuse collection	25.2%	4.9%	20.3%	4.9%	4.5%	0.7%	27.5%	1.7%	4.2%	6.2%
Skip/roll on/off										
Tankers										
Maintenance	24.3%	1.4%	21.6%	2.7%	2.7%	2.7%	18.9%	5.4%	6.8%	13.5%
Transfer station										
Treatment										
Incineration										
Civic amenity site	26.3%	7.5%	17.5%	5.0%	3.8%	0.0%	28.8%	1.3%	8.8%	1.3%
Material recycling facility	25.1%	4.0%	20.2%	1.8%	6.7%	0.4%	25.1%	2.2%	7.2%	7.2%
Composting										
Total waste management										
Cleaning	18.9%	7.4%	22.7%	2.5%	4.6%	0.9%	26.8%	2.4%	4.7%	9.1%

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Anaerobic digestion										
Office	12.2%	7.4%	36.2%	4.4%	4.8%	3.1%	24.5%	0.4%	0.9%	6.1%

Table 32 Number of absence spells for specific categories of ill health across private sector work activities

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Landfill	159	291	274	40	75	17	235	24	83	4
Refuse collection	183	41	333	65	50	6	466	45	194	34
Skip/roll on/off	69	26	99	14	30	7	109	7	46	44
Tankers										
Maintenance	10	1	14	6	2		14	4	4	1
Transfer station	31	21	25	23	5	4	26		23	1
Treatment	93	5	51	4	3		46		14	3
Incineration	35	23	84	2	21	2	118	1	26	
Civic amenity site	363	271	195	45	73	1	328	1	104	21
Material recycling facility	261	108	172	57	36	5	227	17	76	58
Composting			2							
Total waste management			2		2		3			
Cleaning	30	11	35	3	6		50	2	4	2
Anaerobic digestion	17	2	49	16	14	1	38		23	10
Office	69	135	299	74	87	33	266	21	44	59

Table 33: Percentage of absence spells attributable to specific categories of ill health for specific private sector work activities

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Landfill	13.2%	24.2%	22.8%	3.3%	6.2%	1.4%	19.6%	2.0%	6.9%	0.3%
Refuse collection	12.9%	2.9%	23.5%	4.6%	3.5%	0.4%	32.9%	3.2%	13.7%	2.4%
Skip/roll on/off	15.3%	5.8%	22.0%	3.1%	6.7%	1.6%	24.2%	1.6%	10.2%	9.8%
Tankers										
Maintenance	17.9%	1.8%	25.0%	10.7%	3.6%	0.0%	25.0%	7.1%	7.1%	1.8%
Transfer station	19.5%	13.2%	15.7%	14.5%	3.1%	2.5%	16.4%	0.0%	14.5%	0.6%
Treatment	42.5%	2.3%	23.3%	1.8%	1.4%	0.0%	21.0%	0.0%	6.4%	1.4%
Incineration	11.2%	7.4%	26.9%	0.6%	6.7%	0.6%	37.8%	0.3%	8.3%	0.0%

Ill-health categories Work activities	Back, MSD	Mental	Chest, infection	Neurological	Eye, ear, nose throat	Genito-urinary, menstrual, pregnancy	Stomach, other internal	Circulation	Injury	Other
Civic amenity site	25.9%	19.3%	13.9%	3.2%	5.2%	0.1%	23.4%	0.1%	7.4%	1.5%
Material recycling facility	25.7%	10.6%	16.9%	5.6%	3.5%	0.5%	22.3%	1.7%	7.5%	5.7%
Composting										
Total waste management										
Cleaning	21.0%	7.7%	24.5%	2.1%	4.2%		35.0%	1.4%	2.8%	1.4%
Anaerobic digestion	10.0%	1.2%	28.8%	9.4%	8.2%	0.6%	22.4%		13.5%	5.9%
Office	6.3%	12.4%	27.5%	6.8%	8.0%	3.0%	24.5%	1.9%	4.0%	5.4%

Table 34: Work activity versus absence spell length for local authority workers (no of absence spells and % contribution of each absence spell length to total no of absence spells)

Absence length categories Work activities	1 to 2 days Count	%	3 to 7 days Count	%	8 to 19 days Count	%	20+ days Count	%
Landfill								
Refuse collection	3467	47.2%	2451	33.4%	746	10.2%	685	9.3%
Skip/roll on/off								
Tankers								
Maintenance	33	42.3%	27	34.6%	8	10.3%	10	12.8%
Transfer station								
Treatment								
Incineration								
Civic amenity site	45	54.2%	22	26.5%	8	9.6%	8	9.6%
Material recycling facility	92	38.7%	84	35.3%	30	12.6%	32	13.4%
Composting								
Total waste management								
Cleaning	350	40.1%	314	36.0%	113	12.9%	96	11.0%
Anaerobic digestion								
Office	92	38.5%	99	41.4%	22	9.2%	26	10.9%

Table 35: Work activity versus absence spell length for private sector workers (no of absence spells and % contribution of each absence spell length to total no of absence spells)

Absence length categories Work activities	1 to 2 days Count	%	3 to 7 days Count	%	8 to 19 days Count	%	20+ days Count	%
Landfill	50	44.6%	34	30.4%	11	9.8%	17	15.2%
Refuse collection	734	65.8%	240	21.5%	79	7.1%	62	5.6%
Skip/roll on/off	226	49.9%	116	25.6%	46	10.2%	65	14.3%
Tankers								
Maintenance	28	52.8%	16	30.2%	3	5.7%	6	11.3%
Transfer station								
Treatment								

Absence length categories Work activities	1 to 2 days Count	%	3 to 7 days Count	%	8 to 19 days Count	%	20+ days Count	%
Incineration	36	53.7%	23	34.3%	2	3.0%	6	9.0%
Civic amenity site	135	61.6%	60	27.4%	11	5.0%	13	5.9%
Material recycling facility	230	56.7%	90	22.2%	38	9.4%	48	11.8%
Composting								
Total waste management								
Cleaning	114	62.0%	36	19.6%	17	9.2%	17	9.2%
Anaerobic digestion	95	55.9%	52	30.6%	13	7.6%	10	5.9%
Office	408	63.9%	147	23.0%	49	7.7%	34	5.3%

Appendix F

Correspondence Analysis

(Multiple) Correspondence Analysis ([M]CA) is a descriptive, exploratory technique designed to analyse two-way (in the case of CA) and multi-way (in the case of MCA) contingency tables. The technique delivers a geometric representation of the profiles of the row and column category of a contingency table.

Two principal characteristics of the data in a contingency table are described: 1) the variation between the categories of each variable, and 2) the associations between the variables. The total data variance in a contingency table is quantified in CA using a measure known as inertia, which is a function of the difference between observed cell counts and those expected assuming independence between the variables (traditionally described for a contingency table by the chi-squared statistic).

The CA plot effectively delivers a low dimensional (typically 2D) representation of how the various row and column categories contribute to the total inertia in a contingency table. In doing so, the plot effectively decomposes the total inertia by identifying a small number of dimensions in which the principal components of the total inertia can be represented. The points on the plot represent each of the row and column categories in the contingency table and are positioned in space on the plot relative to one another and the plot's origin so as to reflect the variation between the categories of each variable and/or the overall associations between the variables. The plots are calibrated in such a way that the plot origin reflects the average row and column profile for the contingency table (i.e. the average across all row/column categories combined). The result is that individual points further away from the plot origin differ from the average profile more significantly, whilst those closer to the origin are more comparable to the average. A further result is that the points of a variable more similar to one another are positioned closer, whilst points more dissimilar are positioned further apart. Associations between row and column variables are characterised in a CA plot by the relative positioning of the vectors of the row and column points, the vector for a point represented by a line connecting the point to the plot origin. The result is that row and column variables that are positively associated have vectors that point in similar directions, whereas variables negatively associated have vectors that point in opposite directions. Where vectors are roughly orthogonal (i.e. at 90 degrees), this indicates little or no association between variables.

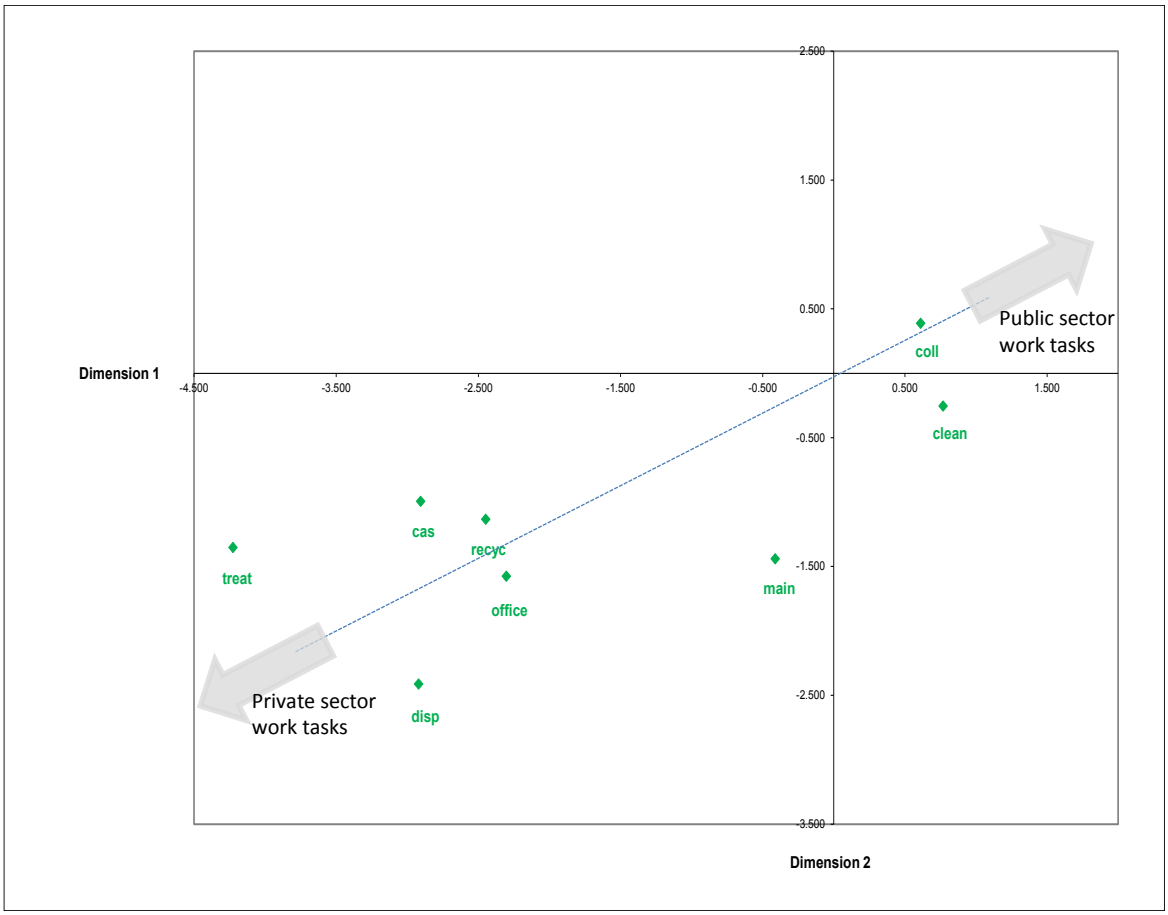
MCA may be considered as an extension of CA to more than two variables. However, whereas a CA of two variables is carried out on data expressed in the form of a two-way contingency table, a MCA is effectively carried out on data expressed as an indicator matrix, i.e. where the columns of the matrix are the variable categories and each row is an individual case from the population[10]. The key focus of a MCA is the exploration of relationships within a set of variables (as opposed to relationships between two sets of variables).

A number of methods for carrying out a MCA are available. The analytic method used to analyse the dataset in this study involved a CA on the Burt Matrix with adjustment of principal inertias and with plot co-ordinates calculated in standardised normalisation.

[10] Typically, an MCA involves analysis of the inner product of an indicator matrix, known as a Burt Matrix.

Table 36: Results of correspondence analysis

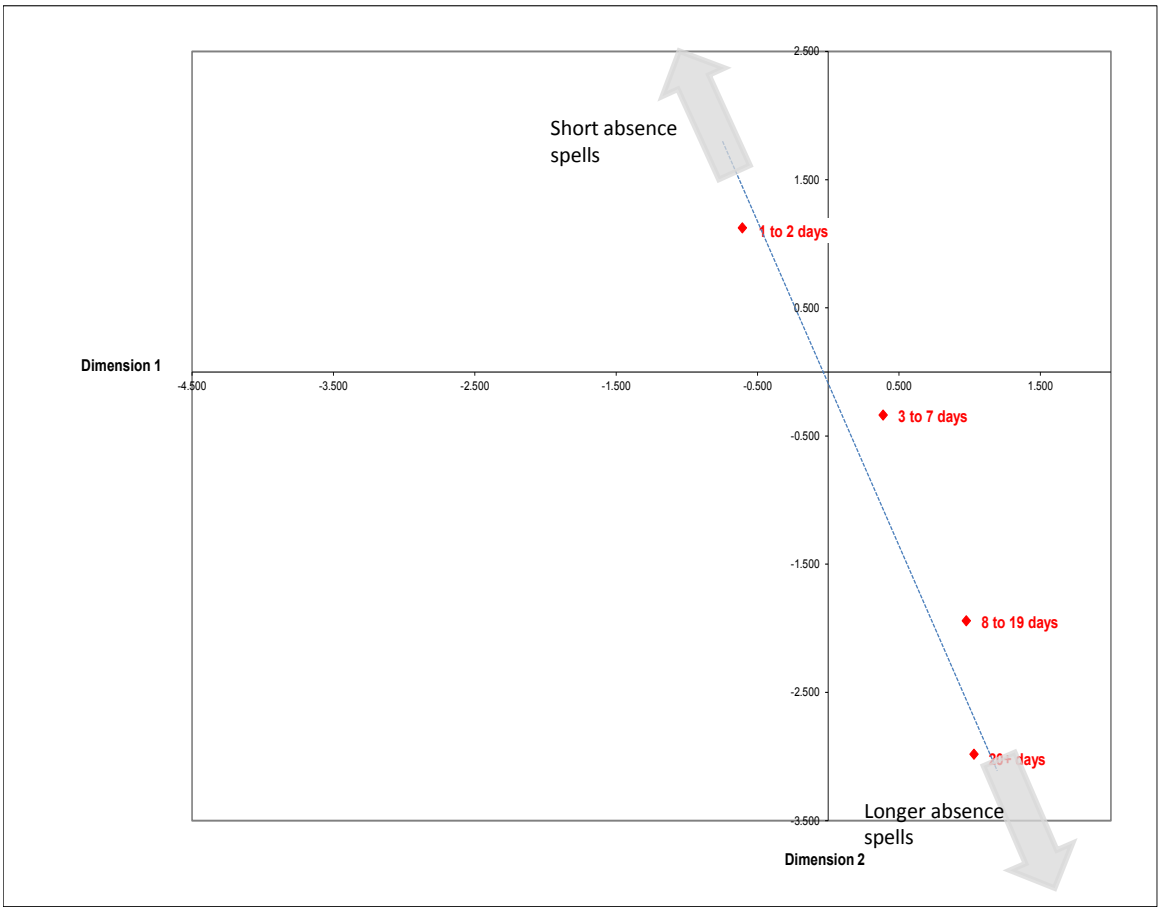
	Dimension 1	Dimension 2
Contribution to total inertia (%)	40.2	17.9
Top 5 category contributions to inertia (%)		
Private sector	28.2	-
Public sector	10.6	-
Treatment related work activity	10.1	-
Recycling related work activity	8.0	-
Musculoskeletal complaint related absence	6.5	-
20+ days absence	-	17.2
Stomach complaint related absence	-	14.2
1 to 2 days absence	-	12.9
8 to 19 days absence	-	7.2
Injury complaint related absence	-	6.9
Work activity category contributions to inertia in dimension 2 (%)		
Collection related work activity	-	2.2
Disposal related work activity	-	1.9
Maintenance related work activity	-	0.5
Treatment related work activity	-	1.0
Civic Amenity related work activity	-	0.6
Recycling related work activity	-	1.7
Cleaning related work activity	-	0.1
Office/administration related work activity	-	1.7
Industry sector category contributions to inertia in dimension 2 (%)		
Private sector	-	4.7
Public sector	-	1.8



KEY:

Work task:	Disposal (disp); Treatment (treat); Office (office); Recycling (recyc); Civic Amenity (cas); Maintenance (main); Collections (coll); Cleaning (clean).
Ill health category:	Stress (stress); Circulatory (circ); MSD (msd); GU, menstrual, pregnancy (gump); Injury (inj); Chest/infection (inf); Eye, ear, nose, throat (eent); Neurological (neuro); Stomach (stom); Other (other).
Length of absence:	1 to 2 days; 3 to 7 days; 8 to 19 days; 20+ days.
Sector:	Public (pub); Private (pri).
Age:	16 to 25; 26 to 35; 36 to 45; 46 to 55; >55.

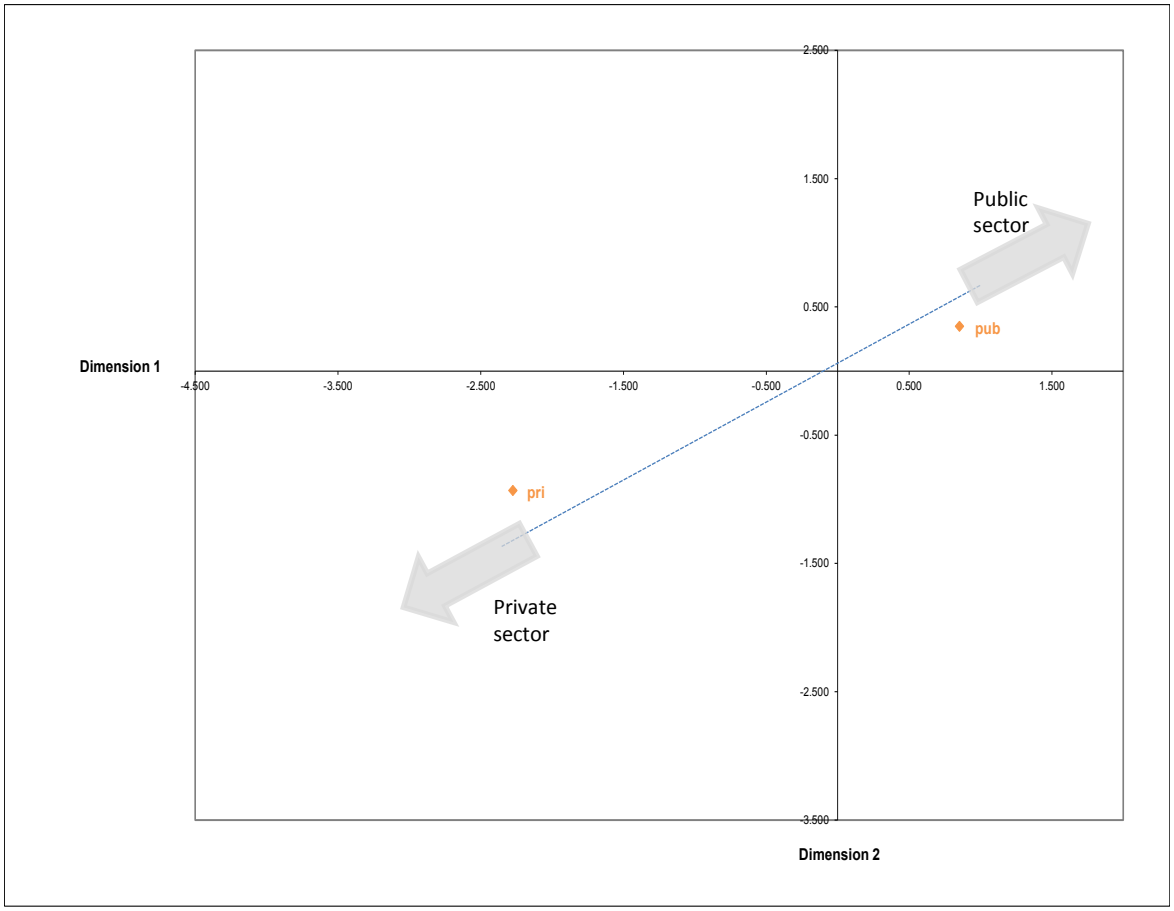
Figure 16: Correspondence analysis biplot – Work task



KEY:

Work task:	Disposal (disp); Treatment (treat); Office (office); Recycling (recyc); Civic Amenity (cas); Maintenance (main); Collections (coll); Cleaning (clean).
Ill health category:	Stress (stress); Circulatory (circ); MSD (msd); GU, menstrual, pregnancy (gump); Injury (inj); Chest/infection (inf); Eye, ear, nose, throat (eent); Neurological (neuro); Stomach (stom); Other (other).
Length of absence:	1 to 2 days; 3 to 7 days; 8 to 19 days; 20+ days.
Sector:	Public (pub); Private (pri).
Age:	16 to 25; 26 to 35; 36 to 45; 46 to 55; >55.

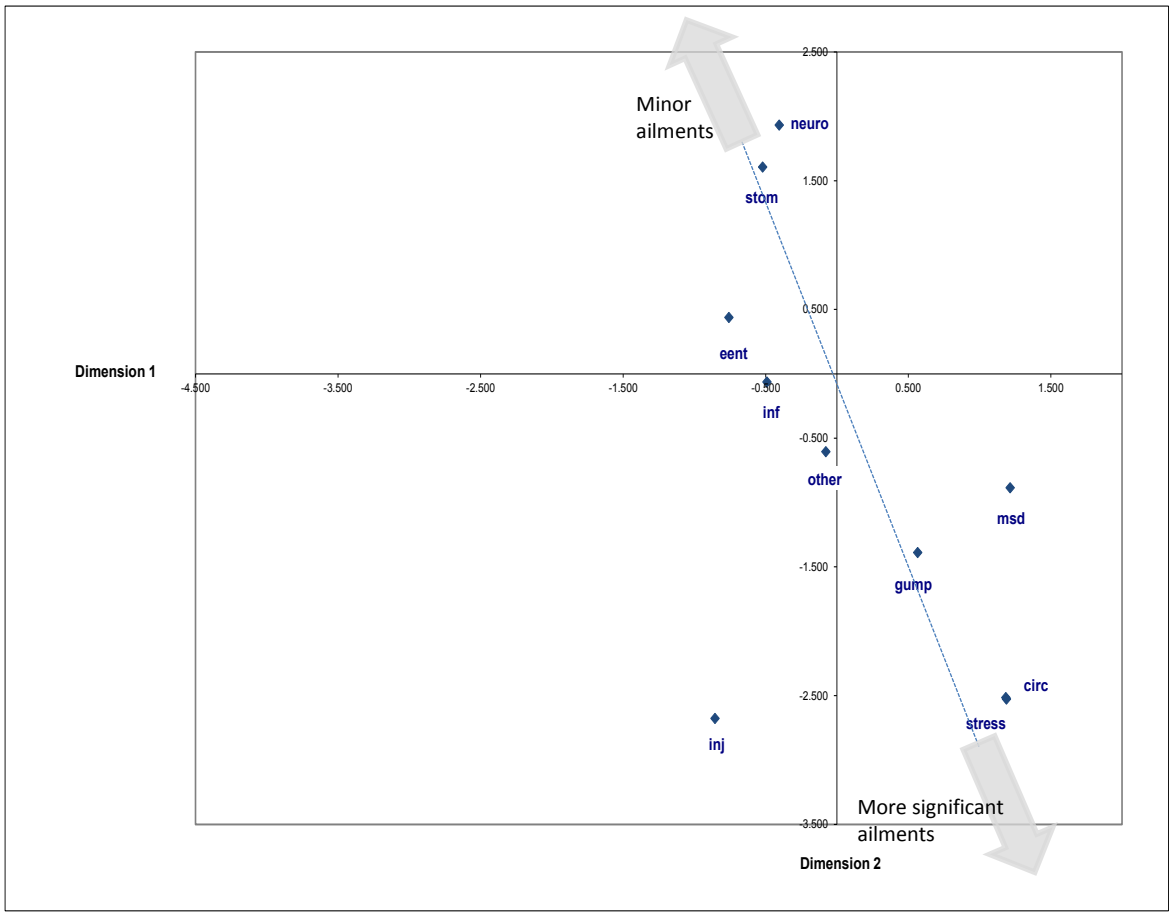
Figure 17: Correspondence analysis biplot – Length of absence



KEY:

Work task:	Disposal (disp); Treatment (treat); Office (office); Recycling (recyc); Civic Amenity (cas); Maintenance (main); Collections (coll); Cleaning (clean).
Ill health category:	Stress (stress); Circulatory (circ); MSD (msd); GU, menstrual, pregnancy (gump); Injury (inj); Chest/infection (inf); Eye, ear, nose, throat (eent); Neurological (neuro); Stomach (stom); Other (other).
Length of absence:	1 to 2 days; 3 to 7 days; 8 to 19 days; 20+ days.
Sector:	Public (pub); Private (pri).
Age:	16 to 25; 26 to 35; 36 to 45; 46 to 55; >55.

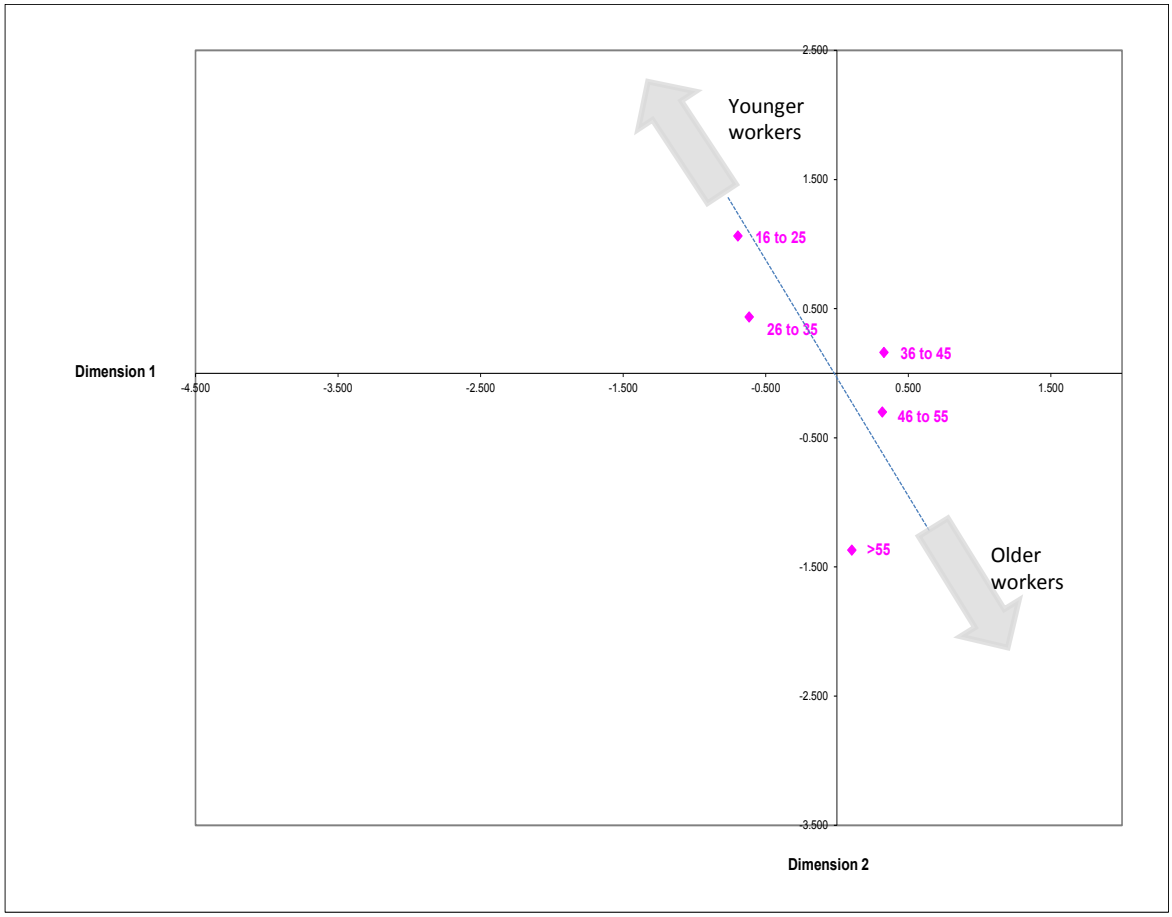
Figure 18: Correspondence analysis biplot – Industry sector



KEY:

Work task:	Disposal (disp); Treatment (treat); Office (office); Recycling (recyc); Civic Amenity (cas); Maintenance (main); Collections (coll); Cleaning (clean).
Ill health category:	Stress (stress); Circulatory (circ); MSD (msd); GU, menstrual, pregnancy (gump); Injury (inj); Chest/infection (inf); Eye, ear, nose, throat (eent); Neurological (neuro); Stomach (stom); Other (other).
Length of absence:	1 to 2 days; 3 to 7 days; 8 to 19 days; 20+ days.
Sector:	Public (pub); Private (pri).
Age:	16 to 25; 26 to 35; 36 to 45; 46 to 55; >55.

Figure 19: Correspondence analysis biplot – Ill health category



KEY:

Work task:	Disposal (disp); Treatment (treat); Office (office); Recycling (recyc); Civic Amenity (cas); Maintenance (main); Collections (coll); Cleaning (clean).
Ill health category:	Stress (stress); Circulatory (circ); MSD (msd); GU, menstrual, pregnancy (gump); Injury (inj); Chest/infection (inf); Eye, ear, nose, throat (eent); Neurological (neuro); Stomach (stom); Other (other).
Length of absence:	1 to 2 days; 3 to 7 days; 8 to 19 days; 20+ days.
Sector:	Public (pub); Private (pri).
Age:	16 to 25; 26 to 35; 36 to 45; 46 to 55; >55.

Figure 20: Correspondence analysis biplot – Worker age

Table 37: Risk of longer (>7days) absence spells by work activity, industry sector and worker age

Ill-health categories	All	MSD	Mental	Chest/inf	Stomach	Injury
Work activities						
Operational work activities						
Collection/transfer	1.06 (0.78-1.44)	1.06 (0.49-2.29)	0.49 (0.18-1.33)	2.08 (0.82-5.30)	0.51 (0.19-1.33)	2.63 (0.52-13.38)
Disposal	1.28 (0.78-2.09)	1.85 (0.58-5.85)	0.82 (0.13-5.30)	2.18 (0.49-9.74)	0.52 (0.10-2.88)	1.86 (0.17-20.76)
Maintenance	1.23 (0.72-2.10)	0.57 (0.17-1.89)	0.22 (0.01-4.65)	0.65 (0.07-5.86)	1.70 (0.37-7.86)	6.46 (0.71-58.90)
Treatment	0.61 (0.37-0.99)	0.29 (0.08-1.09)	0.26 (0.01-4.84)	2.87 (0.88-9.34)	0.21 (0.02-1.88)	0.95 (0.16-5.79)
Civic amenity	0.64 (0.40-1.00)	0.52 (0.19-1.45)	0.26 (0.05-1.29)	1.34 (0.34-5.21)	1.39 (0.42-4.56)	0.68 (0.09-5.17)
Recycling	1.35 (0.94-1.92)	1.43 (0.60-3.39)	0.62 (0.17-2.23)	2.31 (0.78-6.82)	1.09 (0.36-3.27)	4.03 (0.75-21.67)
Cleaning	1.14 (0.80-1.62)	0.92 (0.40-2.12)	**0.30 (0.10-0.94)**	**3.33 (1.22-9.14)**	0.65 (0.22-1.91)	3.83 (0.61-23.97)
Non-operational						
Office/admin	RC	RC	RC	RC	RC	RC
Industry sector						
Public	1.02 (0.88-1.18)	0.76 (0.58-1.00)	0.60 (0.34-1.07)	1.40 (0.92-2.12)	1.44 (0.88-2.33)	**0.53 (0.34-0.85)**
Private	RC	RC	RC	RC	RC	RC
Age						
16 to 25	RC	RC	RC	RC	RC	RC
26 to 35	**1.43 (1.11-1.84)**	1.25 (0.82-1.89)	1.16 (0.55-2.46)	2.15 (0.88-5.26)	1.78 (0.75-4.21)	1.62 (0.67-3.92)
36 to 45	**1.95 (1.54-2.48)**	**1.80 (1.21-2.67)**	1.56 (0.78-3.12)	**2.78 (1.17-6.62)**	2.22 (0.97-5.09)	1.55 (0.63-3.79)
46 to 55	**2.27 (1.79-2.88)**	**1.53 (1.03-2.27)**	1.87 (0.91-3.83)	**3.52 (1.49-8.30)**	**3.18 (1.41-7.16)**	2.12 (0.88-5.12)
>55	**2.98 (2.29-3.87)**	**2.34 (1.50-3.65)**	**3.59 (1.23-10.51)**	**3.57 (1.45-8.80)**	**4.37 (1.81-10.58)**	2.49 (0.96-6.46)

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HSE

Health and Safety Executive

National survey of the burden of sickness absence in the waste and recycling industry

The aim of the project was to provide HSE and the industry with reliable estimates of rates of sickness absence for specific categories of ill health and for key work tasks undertaken by workers.

32 different organisations provided data on the spells of sickness absence taken by their workforce, 28 local authorities and four private sector organisations, collectively employing approximately 7700 workers. The contribution of local authorities and private sector organisations to the total person years of follow up in the study was 41% and 59% respectively. Data was collected on 17,613 spells of absence taken by such workers, 8949 spells taken by local authority workers and 8664 taken by private sector workers.

The average number of working days lost to sickness absence in the waste and recycling workers surveyed as part of this study was 10.3 days. This equates to a working days absence rate of 4.0%. The sickness absence rates of the individual organisations participating in this survey varied widely, even when considering in isolation the rates for those organisations operating in the same industry sector and of similar size. For example, average local authority absence rates varied between a low of 7.8 days per worker per year up to a high of 24.0.

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