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# **Improving occupational health risk management in SMEs: the role of major projects**

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**Summary Report**

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## Executive Summary

Management of occupational safety and health (OSH) in construction has been problematic historically, but there have been improvements in recent years. Health, however, is typically the poor relation to safety, despite evidence that the human costs of work-related ill-health far exceed those of accidents. Improving practices in small and medium enterprises (SMEs) can be particularly difficult. This research studied the construction of the Defence and National Rehabilitation Centre (DNRC), to explore how major projects can support their supply chain to develop good practices in occupational health (OH).

Many working on the DNRC felt that the high standards set to manage health risks, such as dust and vibration, were similar to those they had encountered on other major projects. They reported having changed the way they worked in recent years to enable them to bid for such work: and, as companies and their workers were introduced to new practices or technologies on major projects, they adopted them as the norm, thus raising their own standards.

Companies were less developed in their provision of health assessments and many failed to understand the legal requirements for health surveillance. A nominated OH provider visited the DNRC site so that health assessments could be arranged but there were still challenges arising, many relating to the itinerant nature of the construction workforce. Notwithstanding, several companies developed their own OH arrangements as a consequence of working on the DNRC, highlighting the importance of major projects setting high expectations in this respect.

An OH adviser based on site worked with contractors, encouraging them to arrange health assessments and advising them on risk assessment for workers with health conditions. This highlights the scope for specialists employed on major projects to educate and develop the supply chain. This could include occupational health advisers (OHAs) and also occupational hygienists, who are currently less common in the industry. Both can support SMEs to improve their management of health risk. However, there is a UK shortage of such practitioners which may constrain these developments.

If the management of health is to improve within construction, changes are needed at an industry level, not just on major projects. Knowledge deficiencies contribute to poor practices, especially lack of knowledge around the need for health surveillance. Some frontline workers fail to accurately understand the risks from work-related health conditions. An increased focus on health in recognised qualifications such as those delivered by NEBOSH might be beneficial; or increased uptake of specialist industry courses for managers, supervisors and OSH professionals which address these issues. Innovative and engaging training for the frontline workforce is also of ongoing importance.

Cost is a key barrier to managing health: it may relate to the inability (or unwillingness) to procure high quality tools, the costs of arranging health assessments (including compensating workers for their downtime), or workers being afraid to engage with health assessments because it might threaten their income in an insecure employment landscape.

Health management in construction is a challenge for all parties. Clients on major projects can drive improvements by setting and enforcing high standards; and ongoing engagement from major contractors and bodies such as the Health in Construction Leadership Group, Build UK and Working Well Together are important to propagate good practice through the supply chain. Wider interventions across the industry such as the development of a unified approach to health surveillance, ongoing technological advances in tools and techniques, and continued legal enforcement will be needed to support this.

A summary of recommendations to address the ongoing challenges of health risk management are given in the appendix.

# 1. Introduction

Although the management of health and safety in the construction industry has historically been problematic, there have been improvements in recent years. Accident rates have fallen by about 40% over the last 12 years, with fatalities falling even further: by around 75% since 2001. Work-related ill-health problems, however, are proving challenging to address. Conditions such as silicosis, noise-induced hearing loss and hand arm vibration syndrome may take many years to develop and can be less visible than the more obvious impacts from accidents; whilst musculoskeletal conditions and stress related ill-health are highly prevalent within the industry, affecting over 60,000 workers per year.<sup>1</sup> The costs of work-related disease are high, far exceeding those of accidents in construction. It has been estimated that work related ill-health in construction costs employers £848 million per annum (Gibb et al 2018).<sup>2</sup> The costs to individuals and wider society are likely to be even higher than this: and this excludes the substantial unquantifiable impact of ill-health on individuals and their families.



*Manual handling and poor working postures are an ongoing challenge in construction, contributing to musculoskeletal disorders which are costly and distressing*

Within UK construction, the majority of workers are employed within Small and Medium Enterprises (SMEs, generally defined as organisations which have fewer than 250 employees and a turnover of less than £25 million; but including many ‘micros’ which have fewer than 10 workers and are generally family companies<sup>3</sup>). There are particular challenges with managing health and safety in smaller organisations: practices here typically lag behind those within larger companies. Reasons given for this

<sup>1</sup> <http://www.hse.gov.uk/statistics/industry/construction/construction.pdf>

<sup>2</sup> Gibb et al, 2018. Costs of occupational ill-health in construction  
<https://www.ice.org.uk/ICEDevelopmentWebPortal/media/Documents/ Disciplines%20and%20Resources/Briefing%20Sheet/ Costs-of-occupational-ill-health-in-constructionformattedFINAL.pdf>

<sup>3</sup> <https://www.gov.uk/government/collections/mid-sized-businesses>

have included a lack of knowledge, a lack of resources and the influence that the company owner has over the culture of the organisation. Despite these challenges there is evidence that small organisations can manage their safety effectively: knowledge and good practices ‘trickle-down’ through the industry and many workers carry knowledge with them from experience on larger projects or with other companies.<sup>4</sup>

This research set out to assess whether this trickle-down works for health issues as it does for safety, and to identify what major projects need to do to drive improvements through the construction supply chain. It was conducted during the construction of the DNRC (Defence and National Rehabilitation Centre) which is providing state of the art rehabilitation services to military service personnel. Around 7000 people were involved in the construction project at some stage, with a peak of around 900 workers on site at the busiest time. A wide range of trades were involved including traditional construction activities such as groundworks, scaffolding, steel erection, bricklaying and electrical services; as well as more specialist areas such as heritage masonry and joinery.

The DNRC project was chosen for this research as it set high standards for health management and had put a number of measures in place to facilitate this. At the same time, it was a relatively modest development in comparison to mega projects such as the Olympic park, Crossrail and Tideway: hence it would allow learning which is widely applicable across UK construction.

More than 60 people were interviewed in depth (including frontline workers, supervisors, directors and occupational safety and health (OSH) professionals) from 11 SMEs working on the project. Additional data were collected by interviewing managers, OSH professionals and occupational health (OH) practitioners directly employed by the principal contractor or working on the project through service providers.

## 2. Management of health risks

The requirements on the DNRC in respect of the management of health risks were in line with legal requirements and associated good practice. This is, anecdotally, a standard which many construction projects fail to achieve: HSE campaigns focusing on health risks found material breaches on one third of the sites they visited in 2014<sup>5</sup>. A similar picture emerged from campaigns in 2016, when they identified ‘ “significant” health risks in the form of exposure to asbestos and dusts, in particular wood dust and silica’<sup>6</sup>; and again in 2017.

Requirements on the project included the use of water suppression or on-tool extraction for dusty activities; assurance that face fit testing had been completed in the last 12 months; and a requirement to eliminate manual handling at source wherever possible.

Encouragingly, many of those working on the project considered that the arrangements for health risk management were similar to the way they usually worked, and particularly were consistent with the way that they would work on other high-profile

*We work for companies such as Interserve ...and Willmott Dixon and people like that..... So we kind of see the health and safety of all of them. And typically we have to raise to their game.*  
Company director

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<sup>4</sup> e.g. Pinder, James, et al. "Occupational safety and health and smaller organisations: research challenges and opportunities." *Policy and Practice in Health and Safety* 14.1 (2016): 34-49.

<sup>5</sup> <https://www.healthandsafetyatwork.com/content/hse-construction-health-blitz-finds-breaches-third-sites>

<sup>6</sup> <https://www.healthandsafetyatwork.com/hse/board-meeting-papers-december-2016>



projects. It was recognised that larger projects generally set high standards; and several companies reported having changed the way they worked in recent years to enable them to bid for such work. There was also acknowledgement that the management of health risks had improved substantially throughout the wider industry in recent years, with examples being given of new practices having been introduced that now felt like the norm.

*Obviously dust, so we have to use full extraction kits.....you will find that that's compulsory on all sites at the minute and has been for a few years, probably the last seven or eight years.*

*Supervisor*



*Portable dust extraction is increasingly used in construction to manage dust exposures*

*First time, it's a full extraction site.....Moving on the next job we think is full extraction as well, so that is happening in the industry now .....we had to offer like a pre-quote, and we said, we are now fully extracting, yes.*

*Supervisor*

Improved tool design and innovation had clearly contributed to reduced risk exposure. In some cases, SMEs had purchased new equipment to meet the requirements on this project, which had given them an insight into their benefits, and improved their commitment to use them elsewhere. The fact that they had now made a financial commitment increased their motivation to do so. This was reported in the context of manual handling and also in relation to dust management.

*We found that definitely the mechanical aids, things like tele-handlers, hoist trolleys, one is the obvious health benefits to our guys, but again they have commercial benefits that they speed things up..... I think that was realised here that it would cost up front but long term we would save a lot more than we spent.*

*Supervisor*

*So... you learn from these big contracts...when you go on another job, you're like, oh, well that was there for a reason, maybe I'll take it on to another job.*

*Frontline worker*

Many operational workers interviewed were well informed about risk and its management; they were also highly motivated to take care of their health. Seeing good practice on the current project and previous ones had helped them understand what was possible. This had become habit and was something that was likely to influence their future behaviours – even if they were working on projects where such practices were not mandatory.



*Once workers become used to working with on tool dust extraction, they are more likely to use it by choice on future jobs*

However, there were some interviewees who were less well informed. Some workers failed to appreciate the advantages of on-tool extraction over PPE for example; whilst others underestimated the importance of face fitting and being clean shaven.

*But my beard what I've got now, is what I passed with a face-fit mask, that were the effect of it. They act like a filter in effect.*

*Frontline worker*

*And it's not that bad a contaminant is it, stone? Apart from silica, because it's just dust isn't it, it just blends into the soil, it's not like it's a chemical or anything like that, it's a natural contaminant, you know. Extraction doesn't really work. It cuts it down, but it doesn't eliminate it. That's where you're back to your masks, you know, you know you're hundred-percent there.*

*Frontline worker*

*I mean it does get more of the dust up, but it's just awkward to use..... you've got a workbench and you've got that, when you lean, pulling against it, it [gets] caught on it, you know.*

*Frontline worker*

Even where the importance of managing risk was understood, there were still reported barriers to the adoption of good practice on this project and on others. There were practical barriers, particularly in relation to dust control - wearing dust masks made goggles steam up; and using on-tool extraction increased the manual handling demands due to the need to transport ventilation units, or to manipulate a tool with an extra nozzle attached.

An additional challenge was the high number of contractors and trades working on site, increasing the likelihood of conflict between them, and of health hazards from one group affecting others. Many interviewees commented that their main exposure to health hazards arose from the activities of others, particularly noise and dust. Mitigation measures were in place such as cutting stations and acoustic booths. However, some exposures were less easily or well managed and, in these cases, the only protection available to workers was PPE.

*It's like yesterday, they were knocking a wall down and the blokes working down the far end of the building, the wind was blowing through and the people knocking the wall down were all kitted up but the blokes just down the corridor were just stood doing their normal work and all the dust was blowing down towards them.*

*Frontline worker*

*Yeah, it's got like some sort of suspension system in it or whatever it is.....It's massive changes in technology. But you pay for it. And again, it comes down to what people can afford to pay for these things.*

*Supervisor*

Cost was also seen as barrier to good management of health risks – not particularly on this project, but in relation to smaller projects and companies adopting better practices. Some interviewees who could see the benefits of good practice would nevertheless accept poor quality jobs out of financial necessity or would go along with whatever was the norm on a project.



*That last company I worked for didn't even have an extractor. Didn't even know what one was.....I'd be on a Stihl saw cutting doors up with a chuffing roll-up in my mouth.*

*Frontline worker*

*If we worked for another company, say, you would more than likely just knuckle down and get on with it because they'd just replace you with someone waiting behind you.*

*Frontline worker*

There was, in summary, evidence that, by setting high standards for health risk management, this project and others like it are improving practice in SMEs and increasing the knowledge of their workforce. However, this by itself is unlikely to be sufficient to change practice on the smallest sites or where there is a lack of motivation or severe cost constraints.

### **3. Health assessments**

The client and principal contractor had set high standards on the DNRC, procuring an OH provider for the site and requiring that all contractors arranged health checks for their workers. This was an area where many of the companies that took part in the research were falling below recognised good practice. For example, there were only three companies with internal procedures for health surveillance; although some carried out health checks which were a requirement of other large projects or had processes in place for exposure to high risk substances such as asbestos or lead.

Many factors contributed to the low provision of health assessments to workers, even though such assessments are, in many cases, not just good practice but a legal requirement. One of the biggest barriers was a lack of knowledge amongst supervisors, managers, directors and health and safety professionals. Many managers and OSH professionals failed to distinguish clearly between health surveillance (which is a legal requirement in some circumstances) and other health checks such as those to assess fitness for work e.g. for LGV drivers (mandatory) or crane operators (good practice); or voluntary health checks (e.g. for heart disease risks or diabetes).

Some companies commonly used questionnaires, reviewed by a manager or someone from Human Resources, to assess worker health. Detailed health questionnaires may be acceptable where overseen by a health professional, and to fulfil a legal requirement such as a health surveillance programme, but not otherwise. The information commissioner's guidance to the Data Protection Act (DPA) states that 'the interpretation of medical information should be left to a suitably qualified health professional'<sup>7</sup>. Both the DPA and its replacement, the General Data Protection Regulation (GDPR) require that special arrangements are in place where sensitive data (such as health information) are processed, and that such information should not be collected without specific justification

A second major barrier to effective systems for health assessment was the transient nature of the workforce. Workers may move around different sites on behalf of their employer; others change employers frequently and many are self-employed or work through agencies. This makes it difficult to motivate employers to take responsibility for health assessments; even where they do, it is difficult to get medical records to follow workers from one employer or OH provider to another.

The geographical mobility of the workforce was addressed on the DNRC by the engagement of an OH provider with mobile facilities which they could bring to site. However, there were challenges with booking and coordinating these; and they are not available through all OH providers.

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<sup>7</sup> [https://ico.org.uk/media/for-organisations/documents/1064/the\\_employment\\_practices\\_code.pdf](https://ico.org.uk/media/for-organisations/documents/1064/the_employment_practices_code.pdf)

The movement of the workforce between companies, agencies and self-employment was initially addressed on this project by mandating membership of CBH (Constructing Better Health) which has a central clinical database. All subcontractors were required to register so that worker health data could be uploaded to this and would be accessible in future should those workers move to different companies or have health checks through different providers.

Unfortunately, this process caused upset due to the costs of membership to the employer, the extra administrative load of sharing data and the reported refusal of some workers to have their data managed in this way. Additionally, there were problems within CBH itself (which changed owners during the early stage of DNRC construction) which prevented some worker data from being uploaded and also made it difficult to manage recalls and referrals. As a consequence, the process acted as a barrier rather than an enabler to the provision of OH services and the requirement for subcontractors to be members of CBH was relaxed part way through the project.

The difficulties on the DNRC in this respect notwithstanding, it is still important that a structured way of managing worker health data in construction is developed. CBH is now owned by B&CE (Building and Civil Engineering) who are seeking to launch an OH surveillance framework to support a consistent approach across the industry. They are also developing a process for workers' health data to follow them through the industry whilst still clearly owned by the individual. Establishment of a robust mechanism such as this is essential to underpin future improvement in OH in construction; to be successful, it will need support from all the key stakeholders including OH providers and major clients and contractors. Commitment from the major industry bodies such as the Health in Construction Leadership Group, Build UK and Working Well Together could be a key part of this.

*It's highlighted my hearing problem, which I didn't realise was a problem. Looking back on it, it has caused problems, and now it's manageable... it's actually knowing that's made my life a little easier.*

*Frontline worker*

Around 500 workers on the DNRC had medicals through the recommended provider. For many workers, this was their first experience of being seen by a health professional at work. Generally, it was considered to be a positive intervention, as workers valued being alerted to hidden health issues so that they could take action.

A particular challenge on the DNRC related to follow up or recall appointments. Hardly any workers who were referred for these following initial health checks were seen again by the OH provider. It is difficult to know the exact reasons for this. It may have reflected poor communication and a lack of understanding by the employers of the importance of these; it may reflect the reluctance of the employer to incur extra costs or inconvenience; it may reflect the geographical issues, and the difficulties of workers seeing their GP when they are working and living a long way from home; or it is possible that in some cases at least it arose because the individual concerned was no longer being employed, perhaps specifically because of the concerns raised over their health.

*First time you have a HAVS assessment, got to go back in three months or six months and you end up then having individuals with seven different elements requiring about four different recall dates which is difficult to manage outside of a factory environment.*

*OSH professional*

A key positive finding of this research in relation to occupational health is that several companies which had not done health assessments previously said they would now continue with them; or,

where they were doing this to a limited degree they had used the project to drive the process forward internally.

*Yes, so we always had an ambition to carry out health surveillance, it kind of fell by the way side a little bit and this job helps us push that, it prompted our thoughts a little bit more.*

*Supervisor*

This confirms the importance of clients and principal contractors setting clear expectations that the supply chain will carry out worker health checks. This gives companies a motivation and an opportunity to address an issue that many find particularly challenging: taking these initial steps makes it more likely that they will adopt this as a longer-term practice.

*It's something that we were already in the process of doing before we went on DNRC. We did push it to get it done faster. We do a basic health screen when we start a new employee, which is a question and answer scenario for a new employee. But about twelve months ago, before we started on there, we knew that it needed to go to the next level, which is actually to get a proper official health company in. And we have done that with all of our guys.*

*OSH professional*

However, as with the management of health risks, there is a limit to the impact that large projects can have in isolation. Despite the substantial efforts made, less than 10% of the workforce on the DNRC attended for health checks. This highlights the persisting challenges in this area.

#### **4. Other OH aspects**

Health interventions in construction go beyond the provision of routine medicals and health checks. An OH adviser (OHA) was directly employed on the project for around 18 months (out of the total 3-year project time) and this was recognised by the HSE (Health and Safety Executive) as a positive intervention and contributed to skills development by the contractors. As well as working with SMEs to encourage take up of medicals with the external provider, the OHA also worked with supervisors to help them undertake risk assessments in relation to individuals with health conditions.

Making such reasonable adjustments to accommodate health problems is a legal requirement under the Equality Act, 2010. All workers on the site were asked to complete a health questionnaire as part of their induction to identify any health conditions which required adjustments, and this process was overseen by the OSH team when there was no OHA available. In fact, this was to some extent common practice down the supply chain - companies which didn't have access to specialist OH advice were generally still familiar with the concept of making adjustments for workers with health conditions, and often did it as a matter of course, with guidance from the GP where necessary. Such adjustments were generally reported as being usual practice regardless of whether workers were directly employed, self-employed or subcontracted.

*If someone has an incident or if somebody has done something at work or outside of work, we would generally bring them back in and let them do a different task and ease him back into it.*

*Supervisor*

Where a health professional is not involved in this process it is important that employers ask for only as much detail as is required and that specialist advice is sought where necessary. It will usually be more appropriate to ask 'do you require adjustments?' than to ask workers to give details of their health history to a non-qualified person.

There were also concerns raised by some workers that admitting to health issues put them at risk of losing their job on some projects. This is likely to be an ongoing challenge due to the unstable nature of employment for many in the construction workforce.

Another role for OH professionals is in health promotion to the workforce in relation to both work-related health risks such as noise, dust and vibration; and wider risks such as cardiac disease and mental health issues. For example, the OHA on the DNRC worked with the client on a number of health interventions such as the provision of an Employee Assistance Programme (open to all on site and their families); training of ten mental health first aiders; and collaboration with a local college to increase availability of healthy food options on site. Detailed discussion of these is outside the scope of this report but is covered separately elsewhere.<sup>8</sup>

Expertise in workplace health promotion and health risk management might be held by those other than OHAs. For example, expertise on risk management is also the province of occupational hygienists who, ‘...control risks to health, by designing out hazards and applying engineering controls to reduce exposures to a minimum.’<sup>9</sup> Increased use of noise and dust monitoring by such specialists would highlight those areas where better controls are needed. Involving them more strategically and also in the design phase of a project would allow early identification of risks which could be designed out or otherwise mitigated. Occupational hygienists were employed on the London Olympics between 2005 and 2012. Since then there has been growing recognition of what they can bring to construction but they are not widely employed in the industry except on very large projects such as Tideway and HS2. Where OH professionals are not employed, for example on small projects, it is particularly important to upskill OSH professionals in these areas.



*Cutting stations can prevent noise and dust exposures to colleagues working nearby: reducing risk closer to the source and reducing the need for PPE*

<sup>8</sup> DNRC legacy report, link to be added

<sup>9</sup> <http://www.bohs.org/protecting-workers-health/>

In summary, the client and principal contractor on large projects can have an impact through the supply chain by employing specialists such as OH advisers and occupational hygienists and by sharing this expertise to increase the knowledge of others such as the operational workforce and the OSH professionals and managers in smaller companies.

As more projects and companies take these requirements on board there may be challenges relating to the availability of suitable specialists. For example, one company on this project which had a good provider had difficulty getting enough clinical time to cover their needs. Another had trouble finding a provider that was affordable within their geographical area. This may reflect the wider shortage of OH practitioners, which is not specific to construction. The UK shortfall of specialist practitioners is estimated at over 1000 OH physicians, 1000 occupational hygienists and 10,000 OH Advisers/nurses<sup>10</sup>. There are similar (or greater) shortfalls for other specialists such as ergonomists, physiotherapists and psychologists. This limits the pool of practitioners which construction can recruit from and is something which is being addressed by the Council for Work and Health.

## **5. Industry wide issues**

There was evidence on this project that good practice on the part of the client and principal contractor drives good practices on the part of the subcontractors, and that this can influence their longer-term behaviours. This was most apparent in the case of health assessments but was also in evidence for aspects of health risk management and other occupational health interventions. However, the impact that individual projects can have is limited, particularly in influencing the practices of the smaller companies which don't aspire to work on large projects. Ongoing intervention is therefore needed at an industry level.

### **High expectations and consistency**

There is a recognition within construction of the need to increase the focus on health issues. For example the Health in Construction Leadership Group (HCLG) was established in 2014 to 'unite the construction industry in order to eradicate the ill health and disease caused by exposures to health hazards on building sites.'

This commitment needs to flow through into the various processes which underpin OSH management more widely. For example, many large clients require their subcontractors to demonstrate a minimum OSH standard through completion of prequalification documentation such as PAS 91 or accreditation with schemes such as CHAS and Achilles. It is important that such schemes consider health to the same level as they do safety, setting high standards for health risk management and the provision of health checks where indicated. Similarly, the industry training standards which underpin CSCS (Construction Skills Certification Scheme) cards need to ensure that health is given sufficient weight, especially in manager and supervisor training.

The industry also needs to work hard to address some of the more challenging underlying issues. For example, there has been excellent progress in recent years (for example by Mates in Mind) in raising awareness of mental health issues and promoting discussion of these. However, it is not sufficient to increase awareness of the fact that construction is a high risk industry for mental ill-health and suicide; it is also important to take action to address the underlying causes (such as unstable and sporadic employment, living away from home, a predominantly male population and a historically macho culture). This is likely to require concerted action at an industry wide level.

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<sup>10</sup>

<http://www.councilforworkandhealth.org.uk/images/uploads/library/Final%20Report%20-%20Planning%20the%20Future%20-%20Implications%20for%20OH%20-%20Proof%202.pdf>



## Cost constraints and their impact

Keeping costs under control is a key driver in construction, highlighted in the government report, Construction 2025.<sup>11</sup> This report anticipated a reduction in the initial cost of construction and the whole life cost of built assets of 33% over a 10-year period. Such a narrow focus can be problematic. A review of government procurement following the recent catastrophic collapse of Carillion recommends a change in attitude to ensure that decision making is influenced by quality and systemic risk as well as by price.<sup>12</sup>

Interviews conducted for this research indicated that financial issues do impact on risk management. Workers talked about smaller companies buying cheaper tools rather than those which reduced risks. Although there are longer term benefits for investment in better tools, this may not be realistic for smaller projects constrained by cash flow; and a particular challenge for self-employed workers who are purchasing their own tools. They are unlikely to pay more for tools unless they clearly understand the benefits. Cost was also a barrier to workers attending for health checks: where there were more negative views expressed about these they often related to the impact on workers of having to take time off to sort out issues.

*After their medicals they had to go off to their doctors and have further check-ups, which meant they missed time off work and stuff like that.*

*Supervisor*

*Sometimes the health and safety on smaller jobs will go out the window because they can just replace you in a heartbeat.*

*Frontline worker*

The need to control costs is also a contributor to the current employment model of the industry, which uses a high proportion of subcontract, self-employed or agency workers. In the worst companies this is reported as having a substantial impact on job security and the extent to which workers might voice any concerns about OSH.

On the DNRC, the high turnover of workers on site had an impact on training, safety culture and the costs and provision of health assessments. However, there were also examples of this not being an issue: many companies used the same subcontractors or self-employed workers regularly or were actively increasing the number of workers they employed directly. There would be benefits in the industry adopting this approach more widely: perhaps through clients rewarding subcontractors which adopt this model, rather than encouraging tenders which are at the lowest possible price and will inevitably rely on bought-in labour or further subcontracting.

*We don't know what the background is, where they've come from, what sort of upbringing they've had, or what sort of past safety training. It's very difficult.....the development of a safety culture with a workforce that's transient is not easy.*

*OSH professional*

*That's why we're trying to be a bit more streamlined with our supply chain now. We're trying to work and build up relationships with contractors that do know people, that have worked with people long-term.*

*OSH professional*

*We are using agency labourers so, ideally, we should be giving them manual handling training. I suppose I'm just presuming that they have got it.*

*Supervisor*

<sup>11</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf)

<sup>12</sup> <https://publications.parliament.uk/pa/cm201719/cmselect/cmpubadm/748/748.pdf>

## Knowledge

Adequate knowledge of health risks, how to control these and the related legal obligations are essential to support proper management. On the DNRC, subcontractors were required to engage a chartered OSH professional to audit their work in addition to having an in-house practitioner qualified at least to NEBOSH Health and Safety Certificate standard. The NEBOSH Certificate in Construction is the typical qualification in the industry, but within it, health risks are addressed only at a relatively low level. For example, the time allocated to radiation, stress, vibration and noise is only five hours in total (compared to seven hours for working at height and six hours for fire and explosion). It is therefore

*My job title has been health and safety manager for the last twenty-seven years, but I would say the health side of it has been very limited in the past. It's always been safety related.*

*OSH professional*

*It's a few years since I did my NEBOSH course, so I don't know if that's something that's included now, but it certainly wasn't.*

*Supervisor*

not surprising that some practitioners have gaps in their knowledge. There is a particular need for education regarding the practicalities and legalities of health checks, including the correction of misinformation. Small employers need to understand clearly what they should do (e.g. carry out legally required health surveillance where risk assessment shows it to be necessary; make adjustments for workers with health problems, in line with the Equalities Act); and what they should not (e.g. gather detailed health data without good justification).

Increasing the time spent on the legal and practical issues around health management within NEBOSH training would increase the likelihood of practitioners being confident and competent. Attendance at specific OH courses for managers and OSH professionals is another way of increasing understanding and expertise. A range of courses are available including the BOHS "Certificate in Controlling Health Risks in Construction" which focuses on management of health risks, and is aimed at managers and supervisors; the IOSH "Managing Occupational Health and Wellbeing" course which targets those supporting worker with health issues; and the CITB "Occupational Health Stay Well At Work" course. Upskilling OSH professionals is particularly important where they do not have access to specialist OH resource.

Training is essential, not just for managers and OSH professionals, but also for the wider workforce. On the DNRC, all workers were required to attend a one day Site Safety Plus course or equivalent (some found this helpful, some felt it added little to their existing knowledge); the worker induction, particularly in the earlier stage of the project, was designed to be highly interactive and engaging and included promotion of the onsite arrangements to support health such as the EAP and the existence of the OH service; and subcontractors were required to deliver at least two tool box talks each month on topics mandated by the principal contractor. It is important that companies and providers work together to develop participative and innovative training tools rather than relying entirely on 'PowerPoint' type presentations or one-way worker briefings. This might include presentations from construction workers who have suffered work-related ill-health, improved audio-visual resources, and tools for experiential learning such as the LUSKInS wearable simulations.<sup>13</sup>

<sup>13</sup> <https://www.icevirtuallibrary.com/doi/abs/10.1680/cien.14.00055>



*The LUSKInS simulate the impact of HAVS and dermatitis, and have been used to good effect with construction apprentices and workers*

## Closing thoughts

Many of the small and medium sized companies which participated in this research were trying hard to manage their health risks. Their workers were motivated to take care of themselves and were often well-informed

It was apparent that the 'trickle-down' process that has been observed for safety practices applies to health also - workers and companies learn from being on large projects and take that expertise and those expectations with them. Additionally, the need to achieve certain standards in order to bid for such work is clearly a major driver for good practice in SMEs. It is therefore essential that major projects such as the DNRC continue to set and consistently enforce the highest standards of occupational health.

*I think the Olympics was the one that really, really brought it home because they had a massive culture on occupational health as well as health and safety. And it really did bring it home....Then if you are doing it, it becomes a habit, if you get a habit then, like I have taken the habit from the last job to this one.*

*OSH professional*

The biggest area of impact on this project was for health assessments. This is an area of practice which has not yet been widely embedded across the industry. Partly this is because it is challenging to do, can be expensive, and can be hampered by the limited availability of suitable specialist resource. Additionally, many of the megaprojects which led the way in this area such as London 2012 and Heathrow Terminal 5 focussed on providing services free at the point of use for all workers, regardless of employment status. Consequently, the subcontracting companies did not need to take any ownership for the provision of services. The DNRC, by comparison, established a process which was specifically designed to encourage SMEs to take the services forward for themselves. Although this met with its own challenges, it was a good model, in principle, which other projects of this size could follow.

*In order for them to compete against each other they have to cut corners.... we have lost a lot of work, because we price it right.*

*Supervisor*

The issue of cost was discussed frequently during this research. Good management of occupational health should reduce worker ill-health in the future with both social and financial benefits for all parties. However, it would be naive to ignore the increased costs that come with good practices in the short to medium term. For example, health checks incur short-term direct costs (paying for the service) and indirect costs (e.g. releasing workers for time to attend appointments, modifying work to take account of newly diagnosed health conditions). Reducing worker exposures through the provision of high quality tools involves additional costs which may or may not be offset by improved efficiencies, at least short-term.

These changes will be particularly difficult to embed in smaller projects with lower margins and/or unenlightened or disinterested clients. They are also potentially problematic in the context of an industry model with an overly narrow focus on minimising construction costs. Continued drive and commitment on major projects is essential and ongoing engagement from major contractors and bodies such as the Health in Construction Leadership Group, Build UK and Working Well Together are important to propagate good practice through the supply chain. Wider interventions across the industry such as the development of a unified approach to health surveillance, ongoing technological advances in tools and techniques, and continued legal enforcement will be needed to support this.

## Appendix

### Summary of recommendations

(These are taken verbatim from the main research report for this work. Some have been covered elsewhere in this report, generally with a lower level of detail)

#### 1. OH practices on major projects

The management of OH is developing in construction but continued effort and interventions are needed to ensure that improvements continue. Some of these can be driven by major projects: several companies on this project had made or were making changes to their practices as a direct response to their experience on the DNRC. Others had already made such changes as a consequence of work on other large projects. There was therefore strong evidence of a 'trickle-down' effect, that raising standards on major projects has an impact which spreads down the supply chain and establishes new norms. There are several steps that large projects should consider to support this development.

##### Set and enforce high standards

Companies with the scope and aspiration i.e. those for whom such standards are 'within reach' will rise to the expectations. Additionally, the workforce will be exposed to this level of practice, understand what is achievable and adopt good practices as habit. In some cases, this will enable them to encourage good practice elsewhere or at least, to decline to work in unhealthy situations. It is essential that these expectations are made clear at the tender stage to ensure that bids are priced to take this into account.

##### Set expectations for the provision of health assessments

Setting clear expectations that the supply chain will carry out worker health checks gives companies a motivation and an opportunity to address an issue that many find particularly challenging: taking these initial steps makes it more likely that they will adopt this as a longer-term practice. This could include expectations on labour agencies to arrange health checks for the workforce they supply. Again, clarity of expectations at the tender stage is crucial.

##### Employ suitable specialists

Occupational health clinicians such as nurses and physicians can educate site managers and supervisors to ensure that provision isn't limited to medicals and health checks but can include broader interventions to support the workforce and make adjustments for those with health issues. They can also provide specialist expertise regarding the management of hazards such as noise, dust and vibration.

The employment of an embedded OH adviser, who was a qualified nurse, on this project contributed to a number of positive outcomes and was identified as an example of good practice by the HSE.

Expertise on health risk management is also the province of occupational hygienists who, '...control risks to health, by designing out hazards and applying engineering controls to reduce exposures to a minimum.<sup>14</sup> For example, increased use of noise and dust monitoring by such specialists would highlight those areas where better controls are needed. Involving them more strategically and also in the design phase of the project would allow early identification of risks which could be designed out or otherwise mitigated.

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<sup>14</sup> <http://www.bohs.org/protecting-workers-health/>



Occupational hygienists were employed on the construction of the London 2012 Olympic Park between 2005 and 2012. Since then there has been growing recognition of what they can bring to construction but they are not widely employed in the industry except on very large projects such as Tideway and HS2.

#### Actively develop knowledge in the supply chain

Projects which employ specialists such as OH advisers and occupational hygienists can share this expertise to increase the knowledge of others such as the operational workforce and the managers in smaller companies.

#### Manage the interactions between contractors

It was commonly reported in this project that workers were exposed to health risks by the activities of others. Active management of the interactions between contractors is essential. Options to enable this include careful work planning so that particularly noisy or dusty work is scheduled for times when other workers are elsewhere; and separation of work from workers, e.g. through the use of cutting stations, noise exclusion zones and noise barriers.

## 2. What else is needed

Embedding good practice on major projects is insufficient by itself: companies working on the DNRC are typically those which are already aspiring to good health and safety practice. To achieve higher standards elsewhere in the industry, particularly with very small companies, other interventions are needed. Some of this will come from good practice trickling along the supply chain, but a general increase in the expertise in the industry is also important.

#### Consistency within the industry

Many large clients require their subcontractors to demonstrate a minimum OSH standard through completion of prequalification documentation such as PAS 91 or accreditation with schemes such as CHAS and Achilles. It is important that such schemes consider health to the same level as they do safety, setting high standards for health risk management and the provision of health checks where required.

#### Ongoing training commitment

Being knowledgeable was a key contributor to the workforce making good decisions about the management of health risks; at the same time, incorrect or incomplete knowledge underpinned some poor decision making. It is therefore essential that the overall level of expertise and knowledge continues to be developed.

The typical qualification for OSH professionals in the industry is the NEBOSH Certificate in Construction Health and Safety, although those on larger projects and working independently might be qualified to a higher level e.g. NEBOSH National Diploma in Health and Safety. Within the construction certificate, health risks are addressed to a relatively low level. For example, the time allocated to radiation, stress, vibration and noise is only five hours in total (compared to seven hours for working at height and six hours for fire and explosion).

Increasing the time spent on the legal and practical issues around health management within such training would increase the likelihood of practitioners being confident and competent in tackling these. Attendance at specific OH courses for managers and OSH professionals is another way of increasing understanding and expertise. A range of these are available including include the BOHS “Certificate in Controlling Health Risks in Construction” which focuses on management of health risks and is aimed at managers and supervisors; the IOSH “Managing Occupational Health and Wellbeing” course which

targets those supporting workers with health issues; and the CITB “Occupational Health Stay Well At Work” course. Upskilling OSH professionals is particularly important where they do not have access to specialist OH resource. Education is also important for others in the construction process such as architects, designers, surveyors and those working in procurement, so that they understand the impact they have on the health of the workforce.

### Improved training materials

Training is essential not just for managers and OSH professionals but also for the wider workforce, and again there are many resources available to facilitate this. It is important that companies and providers work together to develop participative and innovative training tools rather than relying entirely on Toolbox Talks. This might include presentations from construction workers who have suffered work-related ill-health, improved audio-visual resources, and tools for experiential learning such as the LUSKInS wearable simulations.<sup>15</sup>

### Increased education regarding OH/medical obligations

There is a need for education regarding the practicalities and legalities of health checks, including the correction of misinformation. Small employers need to understand clearly what they should do (carry out legally required health surveillance where risk assessment shows it to be necessary; make adjustments for workers with health problems, in line with the Equalities Act); and what they should not.

This could be addressed within the courses mentioned above: it is particularly important for decision makers such as company managers and health and safety professionals.

### Processes for sharing OH data

The need for a structured way of managing worker health data in construction is widely recognised. Following research which was launched in 2001, and pilot work from 2004, a proposal was made for a centralised database, similar to the CSCS (Construction safety card scheme). Constructing Better Health (CBH) was formally established in 2007 to meet this need but faced ongoing challenges. It is now owned by B&CE (Building and Civil Engineering) who are seeking to launch an OH surveillance framework to support a consistent approach across the industry. They are also developing a process for workers’ health data to follow them through the industry whilst still clearly belonging to the individual.

Establishment of a robust mechanism such as this is essential to underpin future improvement in OH in construction; to be successful, it will need support from all the key stakeholders including OH providers and major clients and contractors. Commitment from the major industry bodies such as the Health in Construction Leadership Group, Build UK and Working Well Together could be a key part of this. Such a process could then be adopted as a minimum standard, operating alongside the current requirement for each worker to have a CSCS card.

### Availability of specialist resource

It was discussed in sections 0 and 0 that major projects should employ specialist resource, such as OH advisers, OH physicians and occupational hygienists to improve their own arrangements and that of their supply chain. However, this will be impossible if sufficient specialists are not available. There is a UK shortfall of specialist practitioners in OH (not specific to construction), estimated at over 1000 OH

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<sup>15</sup> <https://www.icevirtuallibrary.com/doi/abs/10.1680/cien.14.00055>

physicians, 1000 occupational hygienists and 10,000 OH Advisers/nurses.<sup>16</sup> There are similar (or greater) shortfalls for other specialists such as ergonomists, physiotherapists and psychologists. This will need to be addressed if there is to be sufficient pool of practitioners for construction to recruit from.

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<sup>16</sup>

<http://www.councilforworkandhealth.org.uk/images/uploads/library/Final%20Report%20-%20Planning%20the%20Future%20-%20Implications%20for%20OH%20-%20Proof%202.pdf>