IMPACT OF EUROPEAN DIRECTIVE 2002/44/EC ON THE RISK OF DEVELOPING HAND-ARM VIBRATION SYNDROME IN GREAT BRITAIN

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1. INTRODUCTION

European Directive 2002/44/EC (OJEU, 2002) – implemented in Great Britain through The Control of Vibration at Work Regulations 2005 (CoVR) (HSE, 2005) – requires control of the risk from occupational exposure to hand-arm vibration (HAV) by:

- identifying and keeping under review, risks from vibration and the adequacy of controls;
- minimizing exposures and the attendant risks; and
- providing information and training for vibration exposed workers.

Requirements are consistent with earlier Health & Safety Executive (HSE) guidance for industry as supported by general health and safety law. The CoVR, using the methods of ISO 5349-1 (2001), lowered the exposure action value, set a limit value a little above the earlier action level, and made health surveillance mandatory for high exposures.

Employers have achieved large reductions in exposure to HAV through their choice of machinery, materials and production methods, and by reduction in the time spent using powered hand-tools. Reduced exposure has been assisted by the increased availability of powered hand-tools with reduced vibration emissions and the reduced the availability of powered hand-tools with high vibration emissions. Vibration information supplied with powered hand-tools is important for selecting low vibration machines but remains a source of confusion for employers.

Trends in risk from HAV since 1994 are reported here, based on work for the HSE with employees, employers, suppliers and their vibration advisers. Work has included inspection of workplaces, investigation of reportable cases of hand-arm vibration syndrome (HAVS) and activities to raise awareness of risks from HAV and their control.

2. HSE INTERVENTIONS ON HAVS

2.1. HSE's Workplace Interventions

A HSE sponsored study in the mid 1990s found that about 5 million people were exposed to HAV at work in Great Britain. About 40% of exposures were estimated to be above the CoVR exposure action value; half of these were above the exposure limit value. HSE anticipated difficulty for some employers to comply with the exposure limit value, and it did not become binding in some cases until July 2010. HSE offered to work with industry from 2005 – 2010 if compliance with the limit appeared difficult.

HSE has sought compliance with all requirements of the CoVR (other than the exposure limit value) from their introduction in July 2005. To support compliance, HSE has updated its guidance on good practice, publicised case studies of successful management of exposure to vibration and challenged poor control of vibration risk.

2.2. HSE's Interventions With Suppliers and Others

The EC Machinery Directive (MD) (OJEU, 2006) addresses free trade and includes provisions to ensure that products for use in the workplace present minimum risks from vibration. HSE's inspections under this Directive have been designed to complement workplace interventions under the CoVR, by:

- advising that standards, which presume to conform with the vibration requirements of the MD, should promote low vibration by design, and provide information which enables use without risk from vibration; and
- researching the usefulness of declared vibration values.

In other areas, the HSE have:

- worked with the Faculty of Occupational Medicine of the Royal College of Physicians, UK (FOM) to produce a syllabus for training of medical professionals in health surveillance for HAVS;
- audited the quality of health surveillance provision; and
- intervened with other stakeholders such as consultants, suppliers of anti-vibration gloves, and suppliers of other products marketed as aids to risk management.

3. RESULTS

3.1. Rates of Injury

Industrial Injuries Disablement Benefit (IIDB) is paid for disabling cases of HAVS in specified industries and for Carpal Tunnel Syndrome (CTS) associated with exposure to vibration. Yearly totals of newly assessed IIDB payments for HAVS and CTS since 1995 are shown in Figure 1. New payments for HAVS have fallen slowly since 2004 but fell by over 60% between 2001 and 2004. Payments for CTS have varied slowly with a peak in 2003. It is too soon to see any impact of the CoVR because of the long latency of HAVS. Since 2007, IIDB has been paid for CTS not associated with vibration and for the neurological part of HAVS – payment was originally for vascular injury only.

It should be noted that employers' liability insurance makes more awards over a broader industry base, and for lesser injury, than the IIDB scheme.

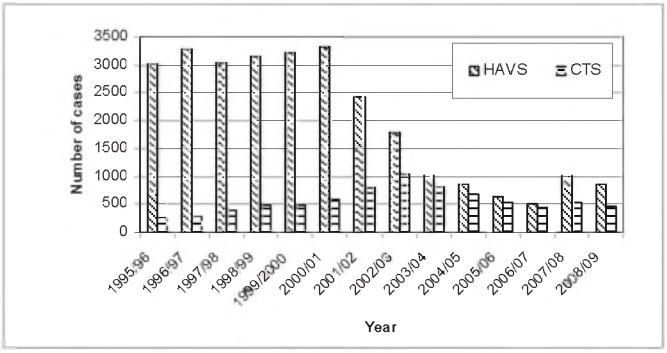

Figure 1. New IIDB Payments for Vibration Injury

3.2. Trends in Workplace HAV Controls

Employers' changes in process and re-negotiation of specifications to reduce HAV have usually been commercially rewarding in their own right. For example, use of laser-profiling machines have produced more accurate components with little need for rework and eliminating most of the exposure to HAV. Changing to non-metallic materials has reduced cost and weight of the product and fettling of plastic involves little exposure to HAV. Re-negotiation of product specifications to avoid time-consuming (cosmetic/finishing) re-work has reduced HAV exposure for the manufacturer and cost for the customer. Changing from powered hand-held tools to hand-guided machinery has brought ergonomic and production benefits alongside reduction in HAV exposure.

Employers' rationalisation of powered hand-tools and avoidance of unnecessarily high vibration models has greatly reduced HAV exposure. In 1995, there could be a factor of six between the HAV emissions of competing tools whereas now, HAV emissions are usually similar.

Many providers of health surveillance have received training according to the HSE/FOM HAVS syllabus since 2005 but there are still frequent examples of poor quality service. Large companies have generally made provision for health surveillance but many small companies have not. Health surveillance has helped set priorities for management of high risk and to prevent further cases of non-disabling HAVS – commonly reported in employees approaching retirement. Health surveillance has identified HAVS cases in some industries not previously associated with the injury.

Employers who have found it difficult to achieve control of vibration risk have usually put too much emphasis on quantification of exposure and too little on taking proven steps to manage the risk. Employers' dissatisfaction with manufacturers' declared vibration emissions has often been cited as the reason for measuring employee HAV exposures even though risk was frequently evident, alternative production methods could have been introduced and manufacturers' data generally helped compare the vibration hazard of competing tools.

There have been few cases where it has not been reasonably practicable to comply with the exposure limit value. Limiting exposure duration has often been necessary and is an example of where knowledge of the range of HAV magnitudes is necessary – possibly requiring measurement.

3.3. Supply of Lower Vibration Equipment

Where use of powered hand-tools has continued, it has often been possible to re-equip with lower vibration models. Action has often been reinforced by most of the main suppliers of powered hand-tools running campaigns promoting their lower vibration models. Hire companies are influential in the UK market and have increased the supply and use of low vibration tools by avoiding and discontinuing supply of unnecessarily high vibration tools.

Companies hiring out power tools (amongst others) have lobbied manufacturers for supply of good vibration information, including declarations representative of workplace emissions. A specification for test codes to achieve this was agreed in 2005 and reinforced by the recast MD in 2006. Improvements in the representation of workplace HAV have been seen in recently revised Standards, but weaknesses remain and vibration declarations remain unreliable for use in estimating likely workplace exposures.

4. CONCLUSIONS

Directive 2002/44/EC provided a renewed focus for control of risks from HAV in Great Britain, using an established and effective approach. It encouraged more use of vibration information provided under trading legislation.

Control of exposure to HAV has been seen to be achievable despite large uncertainties in both the vibration emissions of powered hand-tools and in employees' HAV exposures.

Investment by employers', power-tool manufacturers' and others' in compliance with legislation based on ISO 5349-1 appears to have reduced risk from HAV, but it is too soon to see an impact on the incidence of HAVS.

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