

Meeting date:

Open Govt. Status:

Fully Open

Type of paper:

Paper File Ref:

Exemptions:

WATCH COMMITTEE

Review of the evidence for chronic respiratory ill health in construction workers

Issue

1. Review of the published literature on chronic obstructive pulmonary disease (COPD) and silicosis/mixed-dust pneumoconiosis in construction workers.

Timing Considerations

2. HSE wishes to make a decision soon on the justification for commencing work to develop and implement a number of risk reduction activities in the construction sector during the 2006/07 financial year. The opinion of WATCH on the review presented here is crucial in this respect.

Recommendation

3. WATCH is invited to consider the issues noted in this cover paper and to respond to the actions in paragraph 15.

Background

4. This review was undertaken because in the early stages of the HSE Disease Reduction Programme (DRP), when the evidence-base for occupational lung diseases was first being compiled, it was observed that a number of population surveys pointed to a possible association between construction work and an increased risk of COPD. HSE decided that, given the size of the construction sector in the UK and the absence of documented evidence concerning respiratory health in UK construction workers, it was worthwhile to explore the published literature to try to characterise this issue further. This is one major aspect of the review presented here.

5. Respirable crystalline silica (RCS) is another priority within the respiratory disease element of the DRP. HSE is currently carrying out a survey to obtain measured exposure data for RCS in four industry sectors where there is judged to be the most concern for exposure but for which there is little or no current measurement data available: these sectors are construction, quarrying, brick manufacture and stonemasonry. Although it is known that certain tasks within the construction industry have the potential for high exposures to dusts containing RCS, there is no data on the possible extent of silicosis/mixed-dust pneumoconiosis in UK construction workers. It therefore seemed appropriate that this review should cover not only COPD/chronic bronchitis/emphysema but also silicosis and mixed-dust pneumoconiosis.

Argument

COPD

6. The draft review presented at annex 1 concludes that there is a consistency of findings from many studies of different designs and from different countries revealing that construction workers show moderate (2 to 3-fold) increases in morbidity and mortality from COPD compared to the general population and also when compared with a number of other occupational groups. Smoking is a key confounding factor, particularly in the mortality studies where smoking status could not be taken into account. However, it seems unlikely that the findings could be entirely explained by the effects of cigarette smoking, given that all of the general population surveys involved the use of age- and smoking-matched controls. Hence,

the HSE authors of the review have concluded that construction work itself has created an elevated risk of COPD. The occurrence and magnitude of this risk is a key issue for consideration by WATCH.

7. One issue is that most of the studies were conducted in industrialised countries outside of the UK, for example the US, Germany, the Netherlands and Sweden. HSE suggests that the working practices involved in general construction activities in the UK would have been similar to those in these other countries and would have led to broadly similar exposures. Therefore, HSE's thinking is that the evidence presented in this review is relevant to UK construction workers. The view of WATCH is sought on this point.

8. Two further aims of this review then arose. One was to identify the potential causative agents associated with COPD in construction work. However, few studies included an investigation of causal factors. A number of studies, in particular a large-scale study in Swedish construction workers, pointed to a general role of dusts and irritants. One study in tunnel construction workers also pointed to a role of nitrogen dioxide (from diesel engine exhaust emissions and also from blasting fumes). Overall, there is little evidence available that allows one to specify a particular causative agent or agents.

9. The other further aim of this review was to identify particular tasks/occupational groups at most risk. Although there are a number of studies in different construction trades such as joiners, painters, heavy equipment operators, roofers etc., in general these were isolated studies and did not allow meaningful comparisons of the health risks associated with one type of trade to another. With the possible exception of tunnel construction workers it is therefore difficult to identify groups at particular risk. Again, based on the evidence presented in this review, the view of WATCH is sought on both of these further points.

Silicosis/mixed-dust pneumoconiosis

10. Silicosis/mixed-dust pneumoconiosis has not been well investigated in construction workers. The limited evidence available suggests that there is likely to be, in general, a low prevalence of silicosis among general construction workers (a prevalence of around 1% of low grade radiological severity found in Dutch and Swedish construction workers). Higher prevalences of mixed-dust pneumoconiosis ranging from about 2-10% have been found (ILO category $\geq 1/0$). It should also be noted that reference has been made to a substantial number of cases of silicosis in German construction workers as recently as 1998 (see page 40 of annex 1), which raises the possibility that there could be undetected cases also in the UK. WATCH is asked to express an opinion on the appropriate judgement to make about the threat of silicosis within the UK construction industry.

Number of workers involved

11. Up to 1,600,000 workers could be employed in the UK construction industry at any one time. Hence, any significant excess in the individual risks of contracting long-term respiratory disease is potentially relevant to a very large workforce. This is a key issue in HSE's thinking in relation to the significance of this review and any consequent follow up action.

Link to HSC Strategy

12. This work falls under the Disease Reduction Programme (DRP) of HSE's "Fit3" Strategic Programme; it forms part of the Respiratory Disease Project within the DRP.

Consultation

13. No wider consultation on the content of this cover paper beyond HSE has been undertaken at this stage.

European Context

14. There are no specific links to EU procedures or activities.

Action

15. WATCH is asked to consider the issues described in this paper and to develop a position on:

- i) How accurately the review has characterised the available evidence;
- ii) What conclusions can be drawn and the strength of the evidence on such conclusions;
- iii) Whether or not the findings presented in this review are likely to be relevant to current working conditions in UK construction workers;
- iv) Whether or not the appropriate conclusions of this review justify a priority being given to the development and implementation of intervention activities aimed at combating long-term respiratory diseases in this industry sector.

Contact:

Nicola Gregg
WATCH Secretariat

References / Attachments

Annex 1 Review of the evidence for chronic respiratory ill health in construction Workers, including Appendix A