

Silicosis in Western Australia from 1984 to 1993

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ABSTRACT This communication describes results of an investigation to determine the actual occurrence of silicosis cases in relation to exposure to silica. The statistical data for this review were based on 110 case records of workers certified by the Pneumoconiosis Medical Panel to have silicosis over the ten years period 1984 to 1993. The findings indicate that of the 110 cases registered only three patients had their work period after 1968 and none after 1974. The absence of cases for the past 19 years corresponds to the implementation of the 0.2 mg/m^3 respirable crystalline silica exposure standard.

Key Words : Silicosis, silica, compensation investigation

Introduction

This review has been conducted to verify the number of new cases of silicosis in relation to their commencement of work exposure to silica. The objective of the review is to determine the actual occurrence of cases in relation to their past exposure to airborne silica. This review has been conducted because the number of cases published in the Western Australian Workers' Compensation and Rehabilitation Commission (WCRC) Annual Report reflect only the cases recorded by year of certification and not their exposure to silica at the year of certification. The review will show whether there have been new cases of silicosis since the

implementation the current exposure standard of 0.2 mg/m^3 for respirable crystalline silica in Western Australia.

Method

Schedule 3 of the Workers' Compensation and Rehabilitation Act Western Australia (WCRA) contains a list of specified industrial diseases for which workers' compensation may be obtained. Eligibility for compensation for pneumoconiosis is determined by the Pneumoconiosis Medical Panel (PMP) of three medical practitioners. The Panel consists of a Mines Medical Officer, a physician specialising in occupational diseases and a physician specialising

from less than one per cent to 100 per cent. However, the respirable fraction, in the majority of samples were less than 25 per cent crystalline silica.

Data obtained from the CONTAM database indicates that average exposure levels to airborne crystalline silica dust are generally less than 0.2 mg/m^3 respirable fraction for all job groups. The exception to this average exposure level is the laboratory and sample preparation job group, which a mean exposure of 0.3 mg/m^3 . By mineral mines, the average exposure levels were again generally less than 0.2 mg/m^3 ¹³.

Conclusion

The number of silicosis cases in Western Australia shows a progressively declining trend. When the new cases still arising as a legacy of the past have all been accounted for, this disease would be virtually eradicated.

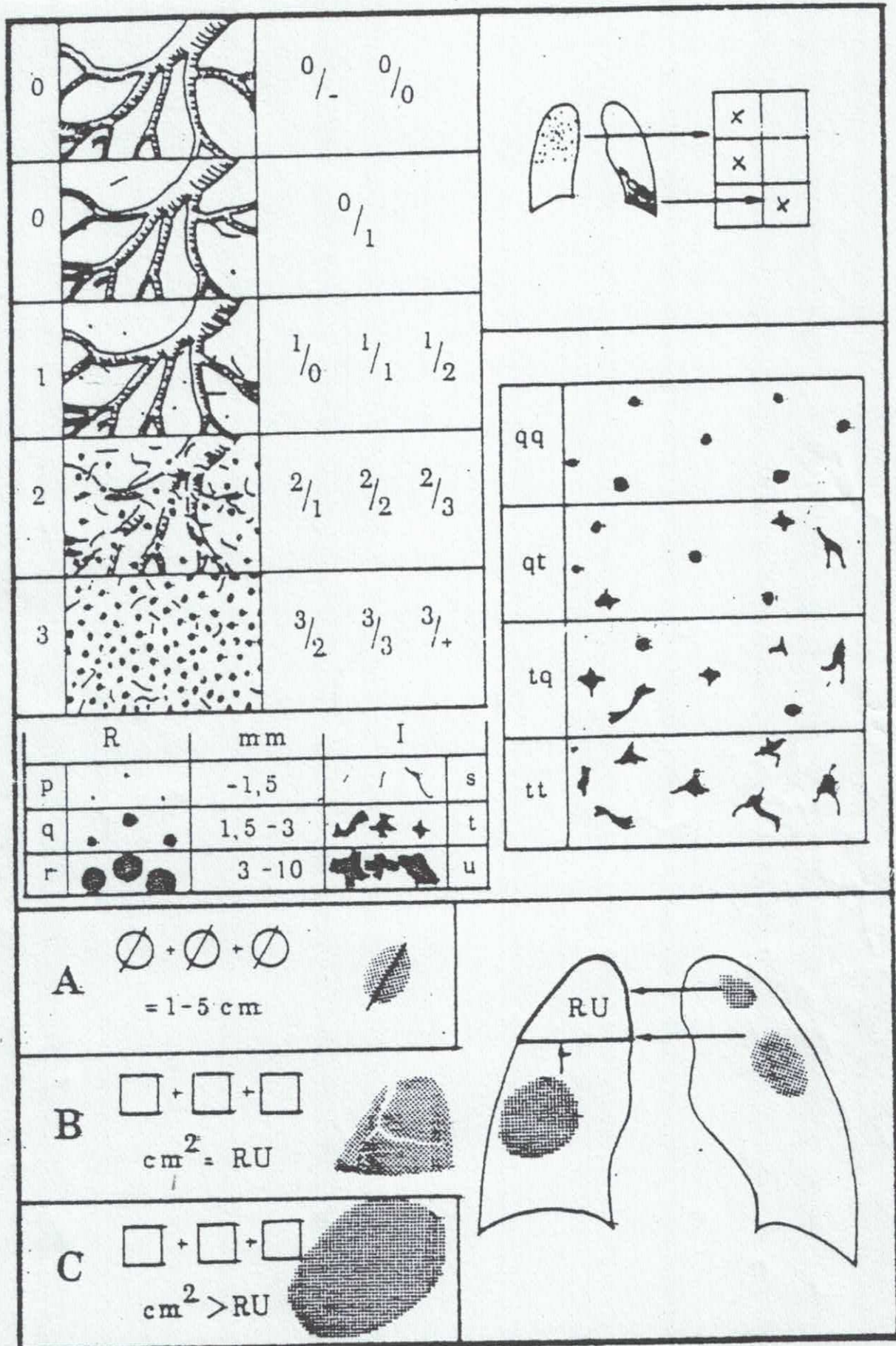
The gradient of this decline will not become steeper by lowering of the Exposure Standard because of compulsory medical examination for miners required by law in Western Australia and the absence of cases in the last 19 years. Indeed the stricter standard may have a detrimental effect. At the present Standard (0.2 mg/m^3), it is possible to direct surveillance at a small group of companies that have difficulty in meeting that Standard. With the proposed Standard (0.1 mg/m^3), direct surveillance will have to be spread over a wider spectrum since more companies will then not comply. This, in effect, means that, for the same resources, one is getting a shallower degree of surveillance which inevitably will lead to lowered compliance.

While it is realised that these Exposure Standards are meant to be guidelines to be used by appropriately qualified officers to assess a working environment, it is inevitable that these standards will be used as a measure of compliance with relevant legislation and as fine lines between acceptability and non-acceptability. The ALARA principle should still prevail. Unless there are sound scientific reasons, exposure standards which cannot be met or can only be met with great difficulty should not be set since this is bound to lead to unnecessary industrial conflict and disharmony without significantly increasing the protection for workers.

The Western Australian experience is that with high compliance of 90 per cent or more with the current 0.2 mg/m^3 respirable crystalline silica standard rather than lowering the Exposure Standard there has been no further cases of silicosis since 1974 (24 years). However, as the mean latency period is 38.3 years (SD 10.8), it may be too soon for all cases to become diagnosable.

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