level perspective in the analysis. All costs and benefits were discounted to the beginning of the exposure reduction period. Various sensitivity analyses were undertaken with key parameters.

Findings suggest the net benefit is positive from 2055 onward for both reduction approaches, i.e., there is a positive return on investment at the societal level. The largest component of benefits is from health-related quality of life gains, with productivity/output gains accounting for the second largest component. Healthcare savings is the smallest component, primarily because cancer cases incur relatively modest health costs due to their short life-expectancy following diagnosis.

Promoting the use of personal protective equipment and engineering controls across the construction sector can substantially reduce exposures to silica dust and give rise to net benefits at the societal level in terms of improvements in health-related quality of life, increased productivity/output, and reduce healthcare costs.

Background Occupational epidemiological studies among silicotics showed that long-term smoking cessation had lowered lung cancer risk by over 50%, but the beneficial effect for reducing risks of other diseases remains unknown. We aimed to evaluate the impact of smoking cessation on the mortality from all-cause and all-cancer using a large historical cohort of 3185 Chinese silicotics since 1981 and followed-up till 2014.

Methods Each silicotic’s baseline information was collected including socio-demographics, occupational history and medical history. Smoking habits were assessed at the baseline and reassessed during the follow-up. Multiple Cox proportional hazards model was performed to evaluate the impact of smoking cessation on all-cause and all-cancer mortality using adjusted hazard ratio (AHR) and 95% confidence interval (95% CI).

Results By the end of 2014, a total of 1942 deaths occurred and 360 silicotics died from cancer. Compared with never smokers, silicotics who were new quitters had 30% and 65% higher risk of all-cause of death [AHR=1.30, 95% CI: 1.06–1.58] and all-cancer (AHR=1.65, 95% CI: 1.04–2.62), while persistent quitters had a 52% and 49% excess risk of all-cause of death (AHR=1.52, 95% CI: 1.25–1.84) and all-cancer (AHR=1.49, 95% CI: 0.94–2.36), respectively. AHR for all-cancer mortality among never quitters was 1.40 (95% CI: 1.14–1.73) while the HR for all-cancer was 2.08 (95% CI: 1.30–3.32). Both all-cause mortality and all-cancer mortality decreased sharply after 5 years of smoking cessation and their risks almost equalled to those of the never smokers if the quitters could have kept abstained for more than 20 years.

Conclusions Smoking cessation sharply decreased all-cause and all-cancer mortality among workers with silicosis, and the beneficial effect was prominent for the long-term quitters.

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