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Journal articles marked with an asterisk indicate an IWH scientist or adjunct scientist is included in the list of authors.

Abeyaratne M, Casolin A, and Luscombe G. Safety incidents and obstructive sleep apnoea in railway workers. *Occupational Medicine*. 2023; 73(2):97-102.

<https://doi.org/10.1093/occmmed/kqad015> [open access]

Abstract: BACKGROUND: Current evidence is lacking to justify more stringent screening for obstructive sleep apnoea (OSA) in the rail industry. Population-based studies indicate a complex association between body mass index, age, apnoea-hypopnoea index and vehicle crash risk. AIMS: To study the association between OSA severity and the occurrence of safety incidents in safety-critical rail workers with a confirmed diagnosis of OSA, and to identify if OSA treatment is associated with the occurrence of fewer safety incidents. METHODS: A retrospective medical file audit was conducted on railway workers attending health assessments between 2016 and 2018, who met the criteria to be referred for sleep studies. The association between OSA severity, treatment and the number of incidents in the 3 years before their health assessment appointment was explored using a Poisson log-linear regression. RESULTS: A substantial proportion (44%, 274/630) of railway workers with confirmed OSA had at least one incident in the 3 years prior to appointment. The odds of an incident were significantly reduced in those with moderate OSA compared with severe OSA (odds ratio [OR] 0.79, 95% confidence interval [CI] 0.64-0.98), but not those with mild OSA (OR 0.97, 95% CI 0.76-1.24). There was a statistically significant relationship between combined OSA severity and treatment status, where the likelihood of an incident increased in those with severe untreated OSA compared with those receiving treatment (OR 1.75, 95% CI 1.16-2.64). CONCLUSIONS: Our results suggest that more stringent screening to identify

severe OSA early, and close surveillance of treatment of those with severe OSA, should be considered

Alden AM. Operationalizing antiracism in health systems: strategies state government administrative organizations use towards racial and ethnic mental health equity. *Social Science & Medicine*. 2023; 322:115809.

<https://doi.org/10.1016/j.socscimed.2023.115809>

Abstract: Although a growing body of literature recommends strategies for improving racial equity in organizations and populations, little is known about how racial equity goals are operationalized in actuality, particularly in the context of state health and mental health authorities (SH/MHAs) attempting to promote population wellness while navigating bureaucratic and political constraints. This article seeks to examine the number of states engaging in racial equity work in mental health care, what strategies SH/MHAs use to improve their state's racial equity in mental health care, and how the workforce understands these strategies. A brief survey of 47 states found that all but one state (98%) is enacting racial equity interventions in mental health care. Through qualitative interviews with 58 SH/MHA employees in 31 states, I created a taxonomy of activities within six overarching strategies: 1) running a racial equity group; 2) gathering information and data about racial equity; 3) facilitating training and learning for staff and providers; 4) collaborating with partners and engaging with communities; 5) offering information or services to communities and organizations of color; and 6) promoting workforce diversity. I describe specific tactics within each of the strategies as well as the perceived benefits and challenges of the strategies. I argue that strategies bifurcate into development activities, which are activities creating higher-quality racial equity plans, and equity-advancing activities, which are actions directly impacting racial equity. The results have implications for how government reform efforts can impact mental health equity

Bonde JPE, Begtrup LM, Jensen JH, Flachs EM, Schlunssen V, Kolstad HA, et al. Occupational risk of SARS-CoV-2 infection: a nationwide register-based study of the Danish workforce during the COVID-19 pandemic, 2020-2021. *Occupational & Environmental Medicine*. 2023; 80(4):202-208.

<https://doi.org/10.1136/oemed-2022-108713> [open access]

Abstract: Objective: Most earlier studies on occupational risk of COVID-19 covering the entire workforce are based on relatively rare outcomes such as hospital admission and mortality. This study examines the incidence of SARS-CoV-2 infection by occupational group based on real-time PCR (RT-PCR) tests. Methods: The cohort includes 2.4 million Danish employees, 20-69 years of age. All data were retrieved from public registries. The incidence rate ratios (IRRs) of first-occurring positive RT-PCR test from week 8 of 2020 to week 50 of 2021 were computed by Poisson regression for each four-digit Danish Version of the International Standard Classification of Occupations job code with more than 100 male and 100 female employees (n=205). Occupational groups with low risk of workplace infection according to a

job exposure matrix constituted the reference group. Risk estimates were adjusted by demographic, social and health characteristics including household size, completed COVID-19 vaccination, pandemic wave and occupation-specific frequency of testing. Results: IRRs of SARS-CoV-2 infection were elevated in seven healthcare occupations and 42 occupations in other sectors, mainly social work activities, residential care, education, defence and security, accommodation and transportation. No IRRs exceeded 2.0. The relative risk in healthcare, residential care and defence/security declined across pandemic waves. Decreased IRRs were observed in 12 occupations. Discussion: We observed a modestly increased risk of SARS-CoV-2 infection among employees in numerous occupations, indicating a large potential for preventive actions. Cautious interpretation of observed risk in specific occupations is needed because of methodological issues inherent in analyses of RT-PCR test results and because of multiple statistical tests.

Carriere JS, Donayre Pimentel S, Bou Saba S, Boehme B, Berbiche D, Coutu MF, et al. Recovery expectations can be assessed with single-item measures: findings of a systematic review and meta-analysis on the role of recovery expectations on return-to-work outcomes after musculoskeletal pain conditions. *Pain*. 2023; 164(4):e190-e206.

<https://doi.org/10.1097/j.pain.0000000000002789> [open access]

Abstract: The objective of this systematic review is to quantify the association between recovery expectations and return-to-work outcomes in adults with musculoskeletal pain conditions. In addition, this review has the second objective to compare the predictive utility of single-item and multi-item recovery expectation scales on return-to-work outcomes. Relevant articles were selected from Embase, PsycINFO, PubMed, Cochrane, and manual searches. Studies that assessed recovery expectations as predictors of return-to-work outcomes in adults with musculoskeletal pain conditions were eligible. Data were extracted on study characteristics, recovery expectations, return-to-work outcomes, and the quantitative association between recovery expectations and return-to-work outcomes. Risk of bias was assessed using the Effective Public Health Practice Project. Odds ratios were pooled to examine the effects of recovery expectations on return-to-work outcomes. Chi-square analyses compared the predictive utility of single-item and multi-item recovery expectation scales on return-to-work outcomes. Thirty studies on a total of 28,741 individuals with musculoskeletal pain conditions were included in this review. The odds of being work disabled at follow-up were twice as high in individuals with low recovery expectations (OR = 2.06 [95% CI 1.20-2.92] P < 0.001). Analyses also revealed no significant differences in the predictive value of validated and nonvalidated single-item measures of recovery expectations on work disability ($\chi^2 = 1.68$, P = 0.19). There is strong evidence that recovery expectations are associated with return-to-work outcomes. The results suggest that single-item measures of recovery expectations can validly be used to predict return-to-work outcomes in individuals with musculoskeletal pain conditions

Cuenca-Lozano MF and Ramirez-Garcia CO. Occupational hazards in firefighting: systematic literature review. *Safety and Health at Work*. 2023; 14(1):1-9.

<https://doi.org/10.1016/j.shaw.2023.01.005> [open access]

Abstract: BACKGROUND: Firefighting involves exposure of firefighters to risks related to this activity, serious injuries, and occupational diseases are recorded. There are other consequences such as thermal and emotional stress. This systematic review is proposed in order to analyze the risks and consequences faced by these workers and thus provide elements to improve safety management systems in institutions. METHOD: A descriptive observational study of systematic literature review on the risks and consequences of exposure to firefighters' activity was proposed, and the information was analyzed and described based on the available data and according to the variables determined. RESULTS: The studies showed data on mechanical, physical, chemical, psychosocial risks, workers' perception and resilience, and epidemiological data. Information related to firefighters' activity on falls and slips, exposure to noise, and high concentrations of carbon monoxide is detailed. In addition, the relationship between burnout, cognitive, and physical fatigue as adverse effects on health and performance is mentioned. CONCLUSIONS: Among the preventive measures, the use of personal protective equipment is suggested, incorporation in prevention programs of information on exposure to risk factors, as well as the implementation of models that can predict the perception of workers, additionally, the generation of management systems with safety climate models for fire departments

Farias L, Holmlund L, and Asaba E. Stakeholders' expectations of return-to-work after spinal cord injury: a 1-year follow-up. *OTJR: Occupation, Participation and Health*. 2023; 43(2):180-187.

<https://doi.org/10.1177/15394492221097355> [open access]

Abstract: Understanding the process of return-to-work is key to supporting people's social participation and health after a disability. This phenomenographic study aimed to explore the expectations and ways of understanding return-to-work from the perspectives of three stakeholder types: three workers with spinal cord injuries, their employers, and an occupational therapist coordinator. Participants were interviewed twice, at 6 and 12 months, after having participated in a research-based return-to-work intervention in Sweden. A phenomenographic approach was used to analyze the data. The findings highlight how stakeholders' different expectations prevented them from openly discussing more flexible arrangements to make return-to-work viable and sustainable. The study contributes to occupational therapy practice by raising awareness of the challenges of work reintegration. It also adds to the body of knowledge in occupational science by illuminating how normative social expectations and policy concerning work/productivity influence the return-to-work process

Fazel SS, Fenton S, Braun N, Forsman-Phillips L, Linn HD, Kalia S, et al. Tailored sun safety messages for outdoor workers. *Safety and Health at Work*. 2023; 14(1):43-49.

<https://doi.org/10.1016/j.shaw.2023.01.001> [open access]

Abstract: BACKGROUND: Messaging surrounding skin cancer prevention has previously focused on the general public and emphasized how or when activities should be undertaken to reduce solar ultraviolet radiation (UVR) exposure. Generic messages may not be applicable to all settings, and should be tailored to protect unique and/or highly susceptible subpopulations, such as outdoor workers. The primary objective of this study was to develop a set of tailored, practical, harm-reducing sun safety messages that will better support outdoor workers and their employers in reducing the risk of solar UVR exposure and UVR-related occupational illnesses. METHODS: We adapted a core set of sun safety messages previously developed for the general population to be more applicable and actionable by outdoor workers and their employers. This study used an integrated knowledge translation approach and a modified Delphi method (which uses a survey-based consensus process) to tailor the established set of sun safety messages for use for outdoor worker populations. RESULTS: The tailored messages were created with a consideration for what is feasible for outdoor workers, and provide users with key facts, recommendations, and tips related to preventing skin cancer, eye damage, and heat stress, specifically when working outdoors. CONCLUSION: The resulting tailored messages are a set of evidence-based, expert- approved, and stakeholder-workshopped messages that can be used in a variety of work settings as part of an exposure control plan for employers with outdoor workers

van Kampen J, Lammers M, Steijn W, Guldenmund F, and Groeneweg J. What works in safety. The use and perceived effectiveness of 48 safety interventions. *Safety Science*. 2023; 162:106072.

<https://doi.org/10.1016/j.ssci.2023.106072> [open access]

Abstract: In the Netherlands, approximately 2.300 workers have a serious reportable accident at work every year, of which around 60 are fatal (Inspectie SZW, 2020; Bellamy et al., 2014). Safety practitioners employ many methods to improve occupational safety for workers within their companies. Interventions might, for example, be aimed at improving companies' overall 'safety culture', at the introduction of a safety management system (e.g. Robson et al., 2007), or at improving the compliance of workers to specific safety rules (e.g. Peuscher and Groeneweg, 2012, Bryden et al., 2016). However, the effectiveness of many of those interventions remains largely unclear (Dyrborg et al, 2015). The Dutch National Institute for Public Health and the Environment (RIVM) has started a project with the ultimate goal of developing a database filled with effective safety interventions. Developers can submit their interventions using a fixed protocol. To support this project, we developed a survey, which was sent to all members of the Dutch Society for Safety Science (NVVK). In the survey, we used a list of 48 predefined descriptions of common interventions. Respondents could indicate whether they made use of these common interventions and the extent to which they considered these effective. The survey thus provided an extensive overview of the use and

perceived effectiveness of 48 specific safety interventions. In the future, these insights can support the development and testing of more effective safety interventions.

Kebede MM, Le Cornet C, and Fortner RT. In-depth evaluation of machine learning methods for semi-automating article screening in a systematic review of mechanistic literature. *Research Synthesis Methods*. 2023; 14(2):156-172.

<https://doi.org/10.1002/jrsm.1589>

Abstract: We aimed to evaluate the performance of supervised machine learning algorithms in predicting articles relevant for full-text review in a systematic review. Overall, 16,430 manually screened titles/abstracts, including 861 references identified relevant for full-text review were used for the analysis. Of these, 40% (n = 6573) were sub-divided for training (70%) and testing (30%) the algorithms. The remaining 60% (n = 9857) were used as a validation set. We evaluated down- and up-sampling methods and compared unigram, bigram, and singular value decomposition (SVD) approaches. For each approach, Naïve Bayes, Support Vector Machines (SVM), regularized logistic regressions, neural networks, random forest, Logit boost, and XGBoost were implemented using simple term frequency or Tf-Idf feature representations. Performance was evaluated using sensitivity, specificity, precision and area under the Curve. We combined predictions of the best-performing algorithms (Youden Index ≥ 0.3 with sensitivity/specificity $\geq 70/60\%$). In a down-sample unigram approach, Naïve Bayes, SVM/quantada text models with Tf-Idf, and linear SVM e1071 package with Tf-Idf achieved $>90\%$ sensitivity at specificity $>65\%$. Combining the predictions of the 10 best-performing algorithms improved the performance to reach 95% sensitivity and 64% specificity in the validation set. Crude screening burden was reduced by 61% (5979) (adjusted: 80.3%) with 5% (27) false negativity rate. All the other approaches yielded relatively poorer performances. The down-sampling unigram approach achieved good performance in our data. Combining the predictions of algorithms improved sensitivity while screening burden was reduced by almost two-third. Implementing machine learning approaches in title/abstract screening should be investigated further toward refining these tools and automating their implementation.

Kuronen J, Winell K, Kopra J, and Rasanen K. Health check-ups as interventions for work disability management: supervisors and occupational healthcare follow the recommendations to a great extent. *Occupational & Environmental Medicine*. 2023; 80(3):170-176.

<https://doi.org/10.1136/oemed-2022-108613> [open access]

Abstract: OBJECTIVES: Work disability management is a problem globally. This study was designed to find out whether the initiation, process and outcome of health check-ups (HCUs) follow the national legislation and whether supervisors and occupational healthcare (OHC) units act according to the legislation-based recommendations. METHODS: Data of 1092 employees with reduced work ability were collected during 2013-2018 in 15 OHC units across Finland. Nine reasons for HCUs, eight process activities and three recommendations were

analysed. Cross-tabulation and multinomial logistic regression analysis were used in the analyses. RESULTS: Employees themselves initiated an HCU for early support more often (OR with 95% CI 2.37; 1.04 to 5.40) compared with supervisors. Personnel in OHC units initiated an HCU in musculoskeletal disorders more often (OR 1.58; 95% CI 1.05 to 2.37) and in mental disorders less often (OR 0.52; 95% CI 0.35 to 0.76) compared with supervisors. These findings were reflected in the recommendations after the HCU, where rehabilitation was recommended for employees with musculoskeletal disorders more often than for employees with mental disorders (ORs 5.48; 95% CI 1.91 to 15.67 and 1.59; 95% CI 0.74 to 3.43, respectively). CONCLUSION: Supervisors and OHC units followed the recommendations for management of work disability to a great extent. Employees were active in looking for help early when they had problems with work ability. This positive finding should be promoted even more. OHC units did not initiate HCUs or recommend rehabilitation in mental disorders as actively as they did in musculoskeletal disorders. Support of employees with mental disorders should be improved and studied more. Registration of the study The study protocol was approved and registered on 22 September 2017 by the Doctoral Program of Health Sciences, Faculty of Medicine, University of Eastern Finland, registration no. 189067

Miguel C, Amarnath A, Akhtar A, Malik A, Baranyi G, Barbui C, et al. Universal, selective and indicated interventions for supporting mental health at the workplace: an umbrella review of meta-analyses. *Occupational & Environmental Medicine*. 2023; 80(4):225-236.

<https://doi.org/10.1136/oemed-2022-108698> [open access]

Abstract: The current umbrella review aimed to assess and summarise evidence on universal, selective and indicated interventions for mental health at the workplace. This umbrella review forms one of the evidence reviews which were commissioned by the WHO to develop global guidelines on mental health at work. We conducted systematic searches in five bibliographic databases (PubMed, Embase, PsycINFO, Cochrane and Global Medicus Index) and included meta-analyses of randomised trials examining psychosocial, physical activity and lifestyle interventions delivered to all general workers (universal interventions), at-risk workers (selective interventions) and workers already experiencing symptoms of mental disorders (indicated interventions). We included outcomes from seven domains: symptoms of mental health conditions, positive mental health, quality of life, work-related outcomes, substance use, suicide-related outcomes and potential adverse effects. We identified 16 meta-analyses producing 66 pooled effect sizes of the examined interventions, mostly on symptoms of mental health conditions (n=43 pooled effect sizes) (eg, burnout, insomnia, stress) and positive mental health (n=15) (eg, well-being). Most of the evidence on universal, selective and indicated interventions was focused on psychosocial interventions, showing small to moderate effects across the various outcomes. Certainty levels according to GRADE (Grading of Recommendations Assessment, Development and Evaluation) were low to very low in almost all of the examined outcomes. The results of existing meta-analyses are promising for the use of preventative and early treatment interventions in the workplace.

However, the quality and certainty of the evidence were very modest, and further research on the effectiveness of these interventions is warranted

Neal JW, Posner S, and Brutzman B. Understanding brokers, intermediaries, and boundary spanners: a multi-sectoral review of strategies, skills, and outcomes. Evidence & Policy. 2023; 19(1):95-115.

<https://doi.org/10.1332/174426421X16328416007542>

Platts LG, Sacco LB, Hiyoshi A, Westerlund H, Cahill KE, and Konig S. Job quality in the late career in Sweden, Japan and the United States. Research on Aging. 2023; 45(3-4):259-279.

<https://doi.org/10.1177/01640275221075985> [open access]

Abstract: Increasing numbers of older workers continue to work after being eligible to claim a state pension, yet little is known about the quality of these jobs. We examine how psychosocial and physical job quality as well as job satisfaction vary over the late career in three contrasting national settings: Sweden, Japan and the United States. Analyses using random effects modelling drew on data from the Swedish Longitudinal Occupational Survey of Health (n = 13,936-15,520), Japanese Study of Ageing and Retirement (n = 3704) and the Health and Retirement Study (n = 6239 and 8002). Age was modelled with spline functions in which two knots were placed at ages indicating eligibility for pensions claiming or mandatory retirement. In each country, post-pensionable-age jobs were generally less stressful, freer and more satisfying than jobs held by younger workers, results that held irrespective of gender or education level

Pollack CC, Deverakonda A, Hassan F, Haque S, Desai AN, and Majumder MS. The impact of state paid sick leave policies on weekday workplace mobility during the COVID-19 pandemic. Public Health. 2023; 215:118-123.

<https://doi.org/10.1016/j.puhe.2022.08.019> [open access]

Abstract: Objectives: This study aimed to evaluate whether the Families First Coronavirus Response Act (FFCRA) modified the association between pre-existing state paid sick leave (PSL) and weekday workplace mobility between February 15 and July 7, 2020. Study design: This was a longitudinal, observational study. Methods: The 50 US states and Washington, D.C., were divided into exposure groups based on the presence or absence of pre-existing state PSL policies. Derived from Google COVID-19 Community Mobility Reports, the outcome was measured as the daily percent change in weekday workplace mobility. Mixed-effects, interrupted time series regression was performed to evaluate weekday workplace mobility after the implementation of the FFCRA on April 1, 2020. Results: States with pre-existing PSL policies exhibited a greater drop in mobility following the passage of the FFCRA ($\beta = -8.86$, 95% confidence interval: -11.6, -6.10, $P < 0.01$). This remained significant after adjusting for state-level health, economic, and sociodemographic indicators ($\beta = -3.13$, 95% confidence interval: -5.92, -0.34; $P = .039$). Conclusions: Pre-existing PSL policies were associated with a significant decline in weekday workplace mobility after the FFCRA, which may have

influenced local health outcomes. The presence of pre-existing state policies may differentially influence the impact of federal legislation enacted during emergencies.

Rajah N, Webb EJD, Hulme C, Kingsbury SR, West R, and Martin A. How does arthritis affect employment? Longitudinal evidence on 18,000 British adults with arthritis compared to matched controls. *Social Science & Medicine*. 2023; 321:115606.

<https://doi.org/10.1016/j.socscimed.2022.115606> [open access]

Abstract: INTRODUCTION: One in ten working age people in the UK live with arthritis or a similar condition affecting their joints. This impacts their quality of life, including through their work. But little is known about how arthritis affects labour market outcomes and the types of people most likely to be affected. METHODS: Data from three population-representative household panel surveys (BHPS, ELSA, UKHLS) collected in 2001-2019 was harmonised. Propensity score matching was used to match 18,014 UK adults aged 18-80 who have arthritis with comparable adults without arthritis. The relationship between arthritis and employment, and earnings and work hours conditional on employment, were assessed using multilevel regression modelling. Heterogeneity in these relationships were assessed by age, gender, degree-level education status, NS-SEC job classification and employer type. RESULTS: On average, arthritis was associated with a 3 percentage point reduction in the probability of employment. The effect size varied over people's life course and was larger amongst females, people without a degree, and those in routine or intermediate occupations (when compared to those in professional occupations) or working for small private companies (when compared to large private companies and non-private employers). Our models predict, for instance, that arthritis is associated with an 11 percentage point reduction in the probability of employment among 50-year-old women without a degree. This contrasts with a 5 percentage point reduction among 50-year-old men without a degree. If employed, men with a degree earned less if they had arthritis, whereas others (including women with a degree and men without a degree) had similar earnings regardless of their arthritis status. Those in professional occupations with arthritis also earned less, especially if they were women aged over 40, with indications that this was driven by reduced work hours. CONCLUSION: Policy interventions to support people with arthritis who wish to remain in work might be designed with people in routine work in mind, and targeted at those working in smaller private firms. More research on the cost-effectiveness of those interventions is needed

Sedeh FB, Michaeisdottir TE, Jemec GBE, Mortensen OS, and Ibler KS. Prevalence, risk factors, and prevention of occupational contact dermatitis among professional cleaners: a systematic review. *International Archives of Occupational & Environmental Health*. 2023; 96(3):345-354.

<https://doi.org/10.1007/s00420-022-01937-6>

Abstract: OBJECTIVE: The aim of this study was to investigate the prevalence, risk factors, and prevention of occupational contact dermatitis (OCD), as well as risk factors and consequences of OCD among professional cleaners. METHODS: A systematic review following PRISMA guidelines was performed using Medline, EMBASE, and Cochrane Library. RESULTS: Thirty-nine studies containing over 109.000 participants were included in the review. The prevalence of OCD varied between 2.2% and 30.1%. Main occupational risk factors for developing OCD among cleaners included wet work and irritants in cleaning products (bleach, chlorine, ammonia, multi-use-cleaning) and skin contact to metal. The most common contact allergies included rubber, biocides, nickel/cobalt, and perfumes. Other risk factors were inconsistent use of protective gloves and low educational level. Consequences associated with OCD included significant impairment in quality of life, tendency to have unscheduled absence from work, sick leave, increased rate of disability, and recognized degree of injury. Only one prevention study has been published investigating the effect of an educative course in skin-protective behavior in cleaners. The study reported a higher degree of knowledge of skin protection, a decrease in the severity of hand eczema, and a shift toward fewer daily hand washings at follow-up after 3 months. CONCLUSION: Our study proves that OCD is common in cleaners, and the main risk factors included wet work, irritants, and contact allergies, as well as inconsistent use of protective gloves and low educational level. More focus and a greater number of studies are needed on skin protection in this population

Walker-Bone K, Benke G, Macfarlane E, Klebe S, Takahashi K, Brims F, et al. Incidence and mortality from malignant mesothelioma 1982-2020 and relationship with asbestos exposure: the Australian Mesothelioma Registry. *Occupational & Environmental Medicine*. 2023; 80(4):186-191.

<https://doi.org/10.1136/oemed-2022-108669>

Abstract: OBJECTIVES: Malignant mesothelioma is an uncommon cancer associated with asbestos exposure, predominantly occupational. Asbestos has been banned in Australia since 2003 but mesothelioma has a long latency and incident cases continue to present. The Australian Mesothelioma Registry was incepted to collect systematic data about incidence and mortality alongside asbestos exposure. METHODS: Benefiting from the Australian national system of cancer notification, all incident cases of mesothelioma in all states and territories are fast-tracked and notified regularly. Notified patients are contacted asking for consent to collect exposure information, initially by postal questionnaire and subsequently by telephone interview. Age-standardised annual incidence rates and mortality rates were calculated. Asbestos exposure was categorised as occupational, non-occupational, neither or, both; and as low, or high, probability of exposure. RESULTS: Mesothelioma incidence appears

to have peaked. The age-standardised incidence rates have declined steadily since the early 2000s (peaking in males at 5.9/100 000 and in all-persons at 3.2/100 000), driven by rates in males, who comprise the majority of diagnosed cases. Rates in women have remained fairly stable since that time. Age-standardised mortality rates have followed similar trends. Mesothelioma remains the most common in those aged over 80 years. Nearly all (94%) cases were linked with asbestos exposure (78% occupational in men; 6.8% in women).

CONCLUSIONS: With effective control of occupational asbestos use, the decline in age-standardised incidence and death rates has occurred. Incidence rates among women, in whom occupational asbestos exposure is rarely detectable, remain unchanged, pointing to the role of household and /or environmental asbestos exposure

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