

epidemiological studies. Having access to workplaces where study subjects spent their working days is basically impossible. Within the SYNERGY project we set out to test the feasibility of using existing measurement databases and measurement data from research institutes to estimate quantitatively occupational exposure to five major lung carcinogens.

Methods Exposure data collection started September 2007 and finished August 2010. Existing exposure databases were identified and research institutes were approached in order to identify pertinent exposure measurement data. Individual air measurements data were entered following a standardized protocol.

Results ExpoSYN database currently includes almost 370 000 personal and stationary air measurements from 21 mainly European countries. Measurements are distributed as follows: respirable crystalline silica (44%), asbestos (20%), chromium (16%), nickel (14%), and polycyclic aromatic hydrocarbons (7%). Measurement data cover a time period from 1951 until present, but great majority of measurements were collected after 1975. Quality of data differed considerably between data sources and we noted that information on sampling purpose and strategy was not always available in an informative way. In addition, other exposure concentration affecting variables like sampling and analytical methods were closely linked to country of origin of measurements, and therefore hampering adequate adjustment.

Conclusions We have created a unique occupational exposure database covering a time period of more than 50 years. This database is being used to develop a country-, job-, and time-period-specific quantitative job exposure matrix (SYNJEM). SYNJEM will enable data-driven quantitative exposure assessment in the SYNERGY project.

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QUANTITATIVE OCCUPATIONAL EXPOSURE ASSESSMENT IN COMMUNITY-BASED STUDIES: THE SYNERGY EXPERIENCE

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Objectives Occupational exposure assessment is one of the major challenges for retrospective community-based