







Occupational exposure to carcinogens in the European Union



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International Information System on Occupational Exposure to Carcinogens (CAREX)



- ⌘ European project on the estimation of the burden of occupational cancer in Europe
- ⌘ data on N exposed, level of exposure and dose-response relations was needed
- ⌘ an international team of industrial hygienists and epidemiologists developed CAREX (Carcinogen Exposure) database
- ⌘ N exposed by industry in 15 EU countries

Agents covered by CAREX



⌘ IARC Group 1: Carcinogenic to humans

☒ asbestos, benzene, UV & solar radiation, radon, wood dust, silica, Cr6, Ni comp, etc

⌘ IARC Group 2A: Probably carc to humans

☒ diesel exhaust, formaldehyde, butadiene, trichloroethylene, perchloroethylene

⌘ selected 2B: Possibly carc to humans

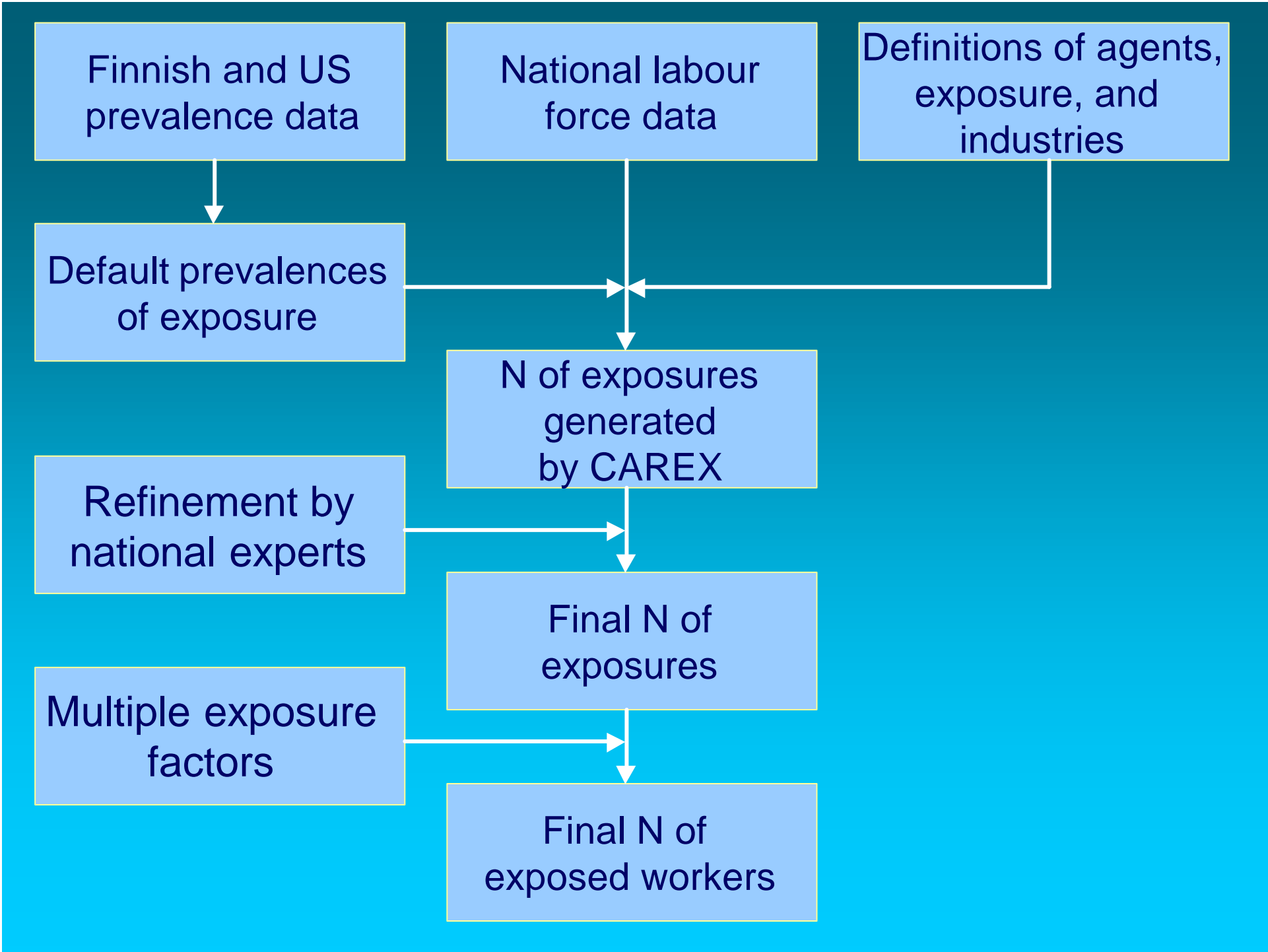
☒ methylene chloride, cobalt, lead, PCP, etc

⌘ ionizing radiation, merged PAHs

Industries in CAREX



- ⌘ 55 classes from UN ISIC Rev 2 (1968)
- ⌘ 3-digit level in manufacture and transport
 - ☒ eg, 353 Petroleum refineries
- ⌘ 2-digit level in most other sectors
 - ☒ eg, 11 Agriculture and hunting
- ⌘ 1-digit level if exposure rare or more specific levels not available
 - ☒ eg, 8 Financing etc, 5 construction

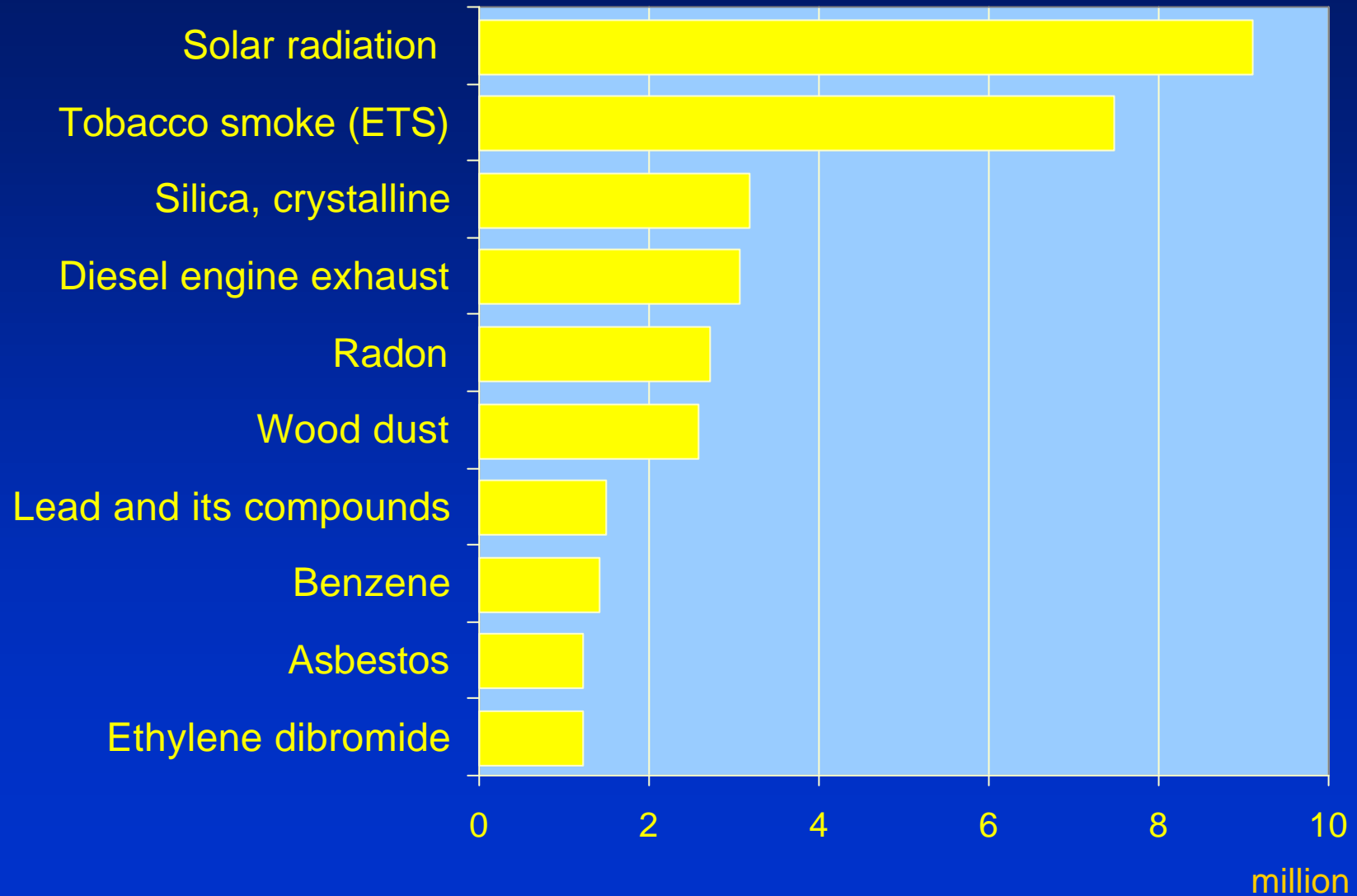


N of exposed in the EU in 1990-93 (CAREX)



- ⌘ About 32 million workers (23 % of those employed) EU were exposed to agents covered by CAREX
- ⌘ At least 22 million workers were exposed to IARC Group 1 carcinogens
- ⌘ The exposed workers had altogether 42 million exposures (1.3 exposures/exposed worker)

Carex - Most common occupational exposures to IARC agents in the EU (1990-93)



Carex - Occupational exposure to crystalline silica by industry in the EU (1990-93)



Strengths of CAREX



⌘ systematic approach

- ☑ applies same definitions and procedures to each country (comparability and consistency of results)

⌘ wide coverage

- ☑ covers all industries, 15 EU countries (expandable), and major carcinogens at work

⌘ ease of use

- ☑ PC-version, large selection of reports

Weaknesses of CAREX



- ⌘ Lack of estimates on level of exposure
 - ☒ exposure data included but not applied
- ⌘ Includes only carcinogens
- ⌘ Covers only 15 EU countries
- ⌘ Estimates partially unreliable
 - ☒ scarce country-specific information
 - ☒ company surveys on exposure lacking

Successors of CAREX



- ⌘ Extention to 4 East European countries (FIBELLC-project)
- ⌘ Extention to pesticides in Costa Rica (TICAREX)
- ⌘ Regional application with estimates on exposure levels in Finland (KymCAREX)
- ⌘ Integration with company survey, country questionnaire and exposure data of wood dust in Europe (WOODEX)

Brazilian CAREX?



- ⌘ Requires labour force data by industrial sector and estimates on 'informal sector'
- ⌘ Requires experts who know about exposures in different sectors or who can collect data from companies (eg, postal questionnaire survey)
- ⌘ Requires planning and system work based on CAREX and its successors
- ⌘ Provides informative overview of exposure

