Recommended and priority indicators for monitoring COPD and asthma in the European Union: results from the IMCA I Project

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Abstract

Introduction: European nations lack a standardized system to compare the burden of chronic respiratory diseases (CRD).

Objective: To agree a set of indicators to monitor major CRD in the EU suitable for inclusion in the DG SANCO European Community Health Indicators Project.

Methods: For asthma and COPD a panel of specialist in respiratory medicine, public health and epidemiology was set up to develop a methodology and elaborate a list of indicators according to the DG SANCO ECHI Group Framework.

Conclusion: Across the EU, routine health information systems and nationally based health examination surveys should aim to obtain data to generate these indicators.

Background

European nations lack a standardised system to compare the burden of chronic respiratory diseases (CRD) and to evaluate the impact of preventive strategies and clinical management on health outcomes. DG SANCO is developing a new health information system that should help to monitor medical conditions with high prevalence and important impact on health of the population. Most of the current information available comes from routine and administrative databases and does not provide the information needed. It is important to define the indicators to be collected and their level of priority for data collection in the future European Health Examination Survey (EHES).

Aim

To agree a set of indicators to monitor major CRD in the EU suitable for inclusion in the DG SANCO European Community Health Indicators Project.

Methods

A panel of specialists in respiratory medicine, public health and epidemiology was set up to develop a methodology and reach an agreement on a set of indicators to monitor CRD in the EU suitable for inclusion in the DG SANCO European Community Health Indicators Framework described in Table I. The task was developed according to the described following steps:

Step 1: Following a literature review this list was modified into four main groups: a) demography and socio-economic, b) health status, c) determinants of health and d) health systems. Initial selection of areas according to IMCA criteria (measures of frequency, risk factors, clinical management and outcomes) and development of the initial matrix list of indicators IMCA / European Community Health Indicators (ECHI) was created.

Step 2: Annotated list of indicators with a summary report for each group of indicators.The report included the following sections: rationale, aims, data sources, data quality, data presentation, potential use, international consistency, availability and national consistency and priority.

Step 3: Assessment of the consistency of the list of indicators at the international level.

Step 4: Assessment of the consistency of the list of indicators at the international level and availability.

Step 5: Final selection and prioritization of the list of indicators.

Table I – DG SANCO European Community Health Indicators Framework

Demographic and socio-economic factors
- 1.1 Population
- 1.2 Socio-economic factors

Health status
- 2.1 Mortality
- 2.2 Morbidity, disease specific
- 2.3 Generic health status
- 2.4 Composite health status measures

Determinants of health
- 3.1 Personal and biological factors
- 3.2 Health bahaviours
- 3.3 Living and working conditions

Health systems
- 4.1 Prevention, health protection and health promotio
- 4.2 Health care resources
- 4.3 Health care utilisatio
- 4.4 Health expenditures and financing
- 4.5 Health care quality / performance

Results

As a result of the work developed in the step 1 an initial matrix list of indicators combining IMCA and ECHI criteria was created. The following table shows an example for two groups of indicators.

Indicator Definition and Group	IMCA Operational definition	IMCA Specifications	Availability
Class 1: Demography and socioeconomic situation			
1.1 Population *The demographic data provide the denominator for calculation of many other indicators, including the stratification by gender, age or region, and the calculation of standardized rates(i.e. corrected for differences in population structures between countries).*			
• Population composition.	• Stratification by age: Population ≤ 5; Population >5 to 10; Population >10 to 15; Population >15 to 20; Population >20 to 40; Population >40 to 50; Population >50 to 60; Population >60 to 70; Population >70	• This age stratification suggested here is only a proposal on how to stratify by age several indicators proposed for COPD in this document. • An laternative proposal for age stratification (depending on the analysis) the following groups were suggested: a) Adolescent. b) Young adults. c) Elderly. • This stratification should be available by gender.	• National census databases. • This stratification should be available at national, sub-national and desireble for other geographical areas according to Eurostat or ISARE project definitons.
Class 2: Health Status			
2.2 Mortality, cause-specific *For the causes of death we follow **the 65 European shortlist**; this includes all ICD chapters plus a few main groups within these which represent a large share of total mortality. The shortlist is also selected for applicability of regional and age/gender partitions, and for usability across ICD versions. In addition, some specific causes are selected as associated with avoidable or quality of care.*			
2.2.8 respiratory system • COPD mortality.	• Total number of death.	• The codes used in the 65 European shorlist of causes of death should not be used as it is now. **Asthma and COPD are not distinguished.**	• National mortality registries. • International databases. (Eurostat, WHO, and OECD).

Based on the summary report developed in step 2, for each group of indicators a final list including its definition was agreed. The following table shows an example on the list of indicators defined for COPD.

Indicator	Definition
2.3.8 Respiratory system.	
• **Prevalence of chronic symptoms (cough, phleghm or sputum production).**	• Proportion of individuals having cough and/or phleghm from the chest, usually in winter, and as long as 3 months each year and for at least two successive years.
• **Prevalence of chronic bronchitis.**	• Proportion of individuals reporting to have suffered chronic bronchitis.
• **Prevalence of airway obstruction.**	• Proportion of individuals with FEV_1/FVC <70% with or without chronic symptoms (post bronchodilator).
• **Prevalence of physician diagnosed COPD.**	• Proportion of individuals reporting to have been diagnosed of COPD by a physician.

National availability was assessed by each panel expert and for all indicators selected. In most European countries **only** indicators coming from routine or administrative database were available **at national level**.

Prevalence or risk factor indicators were available only for specific geographical areas and provided mainly by large epidemiological research studies.

In summary a total of **262** indicators were defined, **117** for COPD and **145** for asthma. As a result of the step 5 of the process the **top 4** and **top 20** indicators were selected.

The top 20 indicators selected for COPD were:

Currents smokers, past smokers, **hospital admissions**, **age-specific death rate**, standardized death rate (SDR), interventions to prevent tobacco exposure, emergency room visits, prevalence of chronic respiratory symptoms, **prevalence of physician diagnosed COPD,** gender, COPD patients invited to stop smoking, COPD patients who followed a stop smoking program, prevalence of chronic bronchitis, prevalence of airway obstruction, crude death rates, current smokers, COPD patients that have managed stop smoking, hospitalization costs and total number of death. The top four priority indicators are marked in bold.

The top 20 indicators selected for ASTHMA were:

Prevalence of physician diagnosed asthma, **prevalence of wheeze, prevalence of asthma attacks,** inhaled corticosteroids, **hospital admission rates,** currents smokers, prevalence of asthma treatment, age-specific death rate, past smokers, current ETS exposure at present, standardized death rates (SDR), short acting b2 agonists, total number of death, crude death rates, ETS at home, ETS exposure at work, smoking exposure during mother pregnancy, hospitalization cost, total cost of medicines prescribed for asthma treatment and cost of total asthma care. The top four priority indicators are marked in bold.

For more specific details you can go to the following address: www.imca.cat.

Conclusion

Across the EU, routine health information systems and nationally based health examination surveys should aim to obtain data to generate these indicators. The future European Health Examination Survey should include a module including questions and measurements required to develop at least the priority indicators.

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