EU occupational diseases pilot stage trial some comments

GERT VAN DER LAAN,
CLAUDIO COLOSIO

LUXEMBOURGH, OKTOBER 26, 2016

ldoh
LEARNING AND DEVELOPING OCCUPATIONAL HEALTH

VUmc

Some comments:

- Listing Occupational Diseases
- OD's in ICD-11
- Historical backview: Eurotop-31
- Lessons learnt from Eurotop-31
- Recommendations from PROGRESS report
- Towards a common denominator?

Listing Occupational Diseases

Classification of Occupational Diseases:

- Lists of Occupational Diseases have a hybrid character: a mixture of categories defined by exposure and categories defined by disease.
- This causes problems for statistical comparison and use of the data.
- Not easy to change; example OD's caused by Lead
  - *Lead can cause a variety of health effects on the haematopoietic system, nervous system (CNS and PNS), renal function, gastro-intestinal function and reproductive effects (see Information Notices). This means that it is impossible to capture no.11200 of the EU List of OD's under one Health effect heading. It also means that cases of OD caused by lead should be specified in terms of health effects in order to make comparisons sensible.*

Occupational Diseases in ICD-11

- WHO-ILO Working group
- cross-references between ILO List of Occupational Diseases and ICD-11 classification taking aboard causal exposures

International Labour Organization

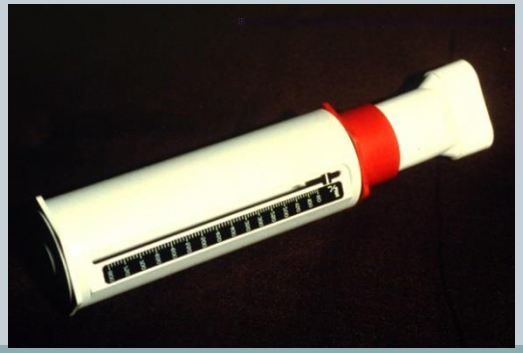
World Health Organization

Recognise and establish work-relatedness (example occupational asthma)

- Aware and suspect
- Occupational history
- Medical history suggesting work-relatedness
  - Symptoms started after employment
  - Improvement of symptoms during weekends and holidays
  - Worsening of symptoms on returning to work
- Objective testing

Objective testing to confirm work-relatedness (example occupational asthma)

- Pre and post-shift measurement of lung function
- Monitoring of PEF at and off work, each for a period of 2 weeks
- Specific inhalation challenges or occupational type of exposure tests - "gold standard"



Criteria for Diagnosis of OD's in EU Information Notices

Clinical features
Signs, symptoms, diagnostic tests

Occupational exposure
Occupational history, measurements, biological monitoring, records of incidents

Timing
Natural history and progress of the disease

Differential diagnostic issues

Additional information

Minimum intensity of exposure

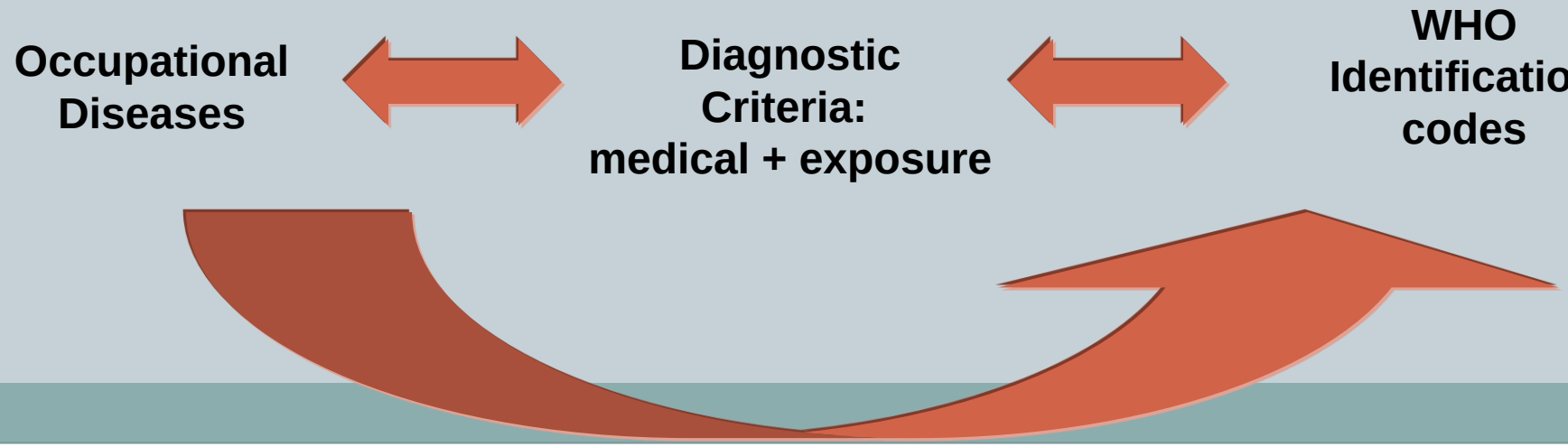
Minimum duration of exposure

Maximum latent period

Minimum induction period

WHO-ILO collaboration in OD's Classification

Merge of the ILO list of Occupational Diseases
with
the new edition of the WHO ICD-11



Meeting of Experts on the Revision of the List of Occupational Diseases (Recommendation No. 194)

27-30 Oct.2009, Geneva

Shengli Niu

International Labour Organization

ILO List of Occupational Diseases

(revised 2010)

ANNEX

List of occupational diseases [1] (revised 2010)

1.	**Occupational diseases caused by exposure to agents arising from work activities**
1.1.	**Diseases caused by chemical agents**
1.1.1.	Diseases caused by beryllium or its compounds
1.1.2.	Diseases caused by cadmium or its compounds
1.1.3.	Diseases caused by phosphorus or its compounds
1.1.4.	Diseases caused by chromium or its compounds
1.1.5.	Diseases caused by manganese or its compounds
1.1.6.	Diseases caused by arsenic or its compounds
1.1.7.	Diseases caused by mercury or its compounds
1.1.8.	Diseases caused by lead or its compounds
1.1.9.	Diseases caused by fluorine or its compounds
1.1.10.	Diseases caused by carbon disulfide
1.1.11.	Diseases caused by halogen derivatives of aliphatic or aromatic hydrocarbons
1.1.12.	Diseases caused by benzene or its homologues
1.1.13.	Diseases caused by nitro- and amino-derivatives of benzene or its homologues
1.1.14.	Diseases caused by nitroglycerine or other nitric acid esters
1.1.15.	Diseases caused by alcohols, glycols or ketones
1.1.16.	Diseases caused by asphyxiants like carbon monoxide, hydrogen sulfide, hydrogen cyanide or its derivatives
1.1.17.	Diseases caused by acrylonitrile
1.1.18.	Diseases caused by oxides of nitrogen
1.1.19.	Diseases caused by vanadium or its compounds
1.1.20.	Diseases caused by antimony or its compounds
1.1.21.	Diseases caused by hexane
1.1.22.	Diseases caused by mineral acids
1.1.23.	Diseases caused by pharmaceutical agents
1.1.24.	Diseases caused by nickel or its compounds
1.1.25.	Diseases caused by thallium or its compounds
1.1.26.	Diseases caused by osmium or its compounds
1.1.27.	Diseases caused by selenium or its compounds
1.1.28.	Diseases caused by copper or its compounds
1.1.29.	Diseases caused by platinum or its compounds
1.1.30.	Diseases caused by tin or its compounds
1.1.31.	Diseases caused by zinc or its compounds
1.1.32.	Diseases caused by phosgene
1.1.33.	Diseases caused by corneal irritants like benzoquinone
1.1.34.	Diseases caused by ammonia
1.1.35.	Diseases caused by isocyanates
1.1.36.	Diseases caused by pesticides

[1] In the application of this list the degree and type of exposure and the work or occupation involving a particular risk of exposure should be taken into account when appropriate.

1.1.37. Diseases caused by sulphur oxides
1.1.38. Diseases caused by organic solvents
1.1.39. Diseases caused by latex or latex-containing products
1.1.40. Diseases caused by chlorine
1.1.41. Diseases caused by other chemical agents at work not mentioned in the preceding item where a direct link is established scientifically, or determined by methods appropriate t national conditions and practice, between the exposure to these chemical agents arising fror work activities and the disease(s) contracted by the worker

1.2. Diseases caused by physical agents

1.2.1. Hearing impairment caused by noise
1.2.2. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral bloo vessels or peripheral nerves)
1.2.3. Diseases caused by compressed or decompressed air
1.2.4. Diseases caused by ionizing radiations
1.2.5. Diseases caused by optical (ultraviolet, visible light, infrared) radiations including laser
1.2.6. Diseases caused by exposure to extreme temperatures
1.2.7. Diseases caused by other physical agents at work not mentioned in the preceding item where a direct link is established scientifically, or determined by methods appropriate t national conditions and practice, between the exposure to these physical agents arising fror work activities and the disease(s) contracted by the worker

1.3. Biological agents and infectious or parasitic diseases

1.3.1. Brucellosis
1.3.2. Hepatitis viruses
1.3.3. Human immunodeficiency virus (HIV)
1.3.4. Tetanus
1.3.5. Tuberculosis
1.3.6. Toxic or inflammatory syndromes associated with bacterial or fungal contaminants
1.3.7. Anthrax
1.3.8. Leptospirosis
1.3.9. Diseases caused by other biological agents at work not mentioned in the preceding item where a direct link is established scientifically, or determined by methods appropriate t national conditions and practice, between the exposure to these biological agents arising fror work activities and the disease(s) contracted by the worker

2. Occupational diseases by target organ systems

2.1. Respiratory diseases

2.1.1. Pneumoconioses caused by fibrogenic mineral dust (silicosis, anthraco-silicosis, asbestosis)
2.1.2. Silicotuberculosis
2.1.3. Pneumoconioses caused by non-fibrogenic mineral dust
2.1.4. Siderosis
2.1.5. Bronchopulmonary diseases caused by hard-metal dust
2.1.6. Bronchopulmonary diseases caused by dust of cotton (byssinosis), flax, hemp, sisal or suga cane (bagassosis)

2.1.7. Asthma caused by recognized sensitizing agents or irritants inherent to the work process
2.1.8. Extrinsic allergic alveolitis caused by the inhalation of organic dusts or microbially contaminated aerosols, arising from work activities
2.1.9. Chronic obstructive pulmonary diseases caused by inhalation of coal dust, dust from stone quarries, wood dust, dust from cereals and agricultural work, dust in animal stables, dust from textiles, and paper dust, arising from work activities
2.1.10. Diseases of the lung caused by aluminium
2.1.11. Upper airways disorders caused by recognized sensitizing agents or irritants inherent to the work process
2.1.12. Other respiratory diseases not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the disease(s) contracted by the worker

2.2. Skin diseases

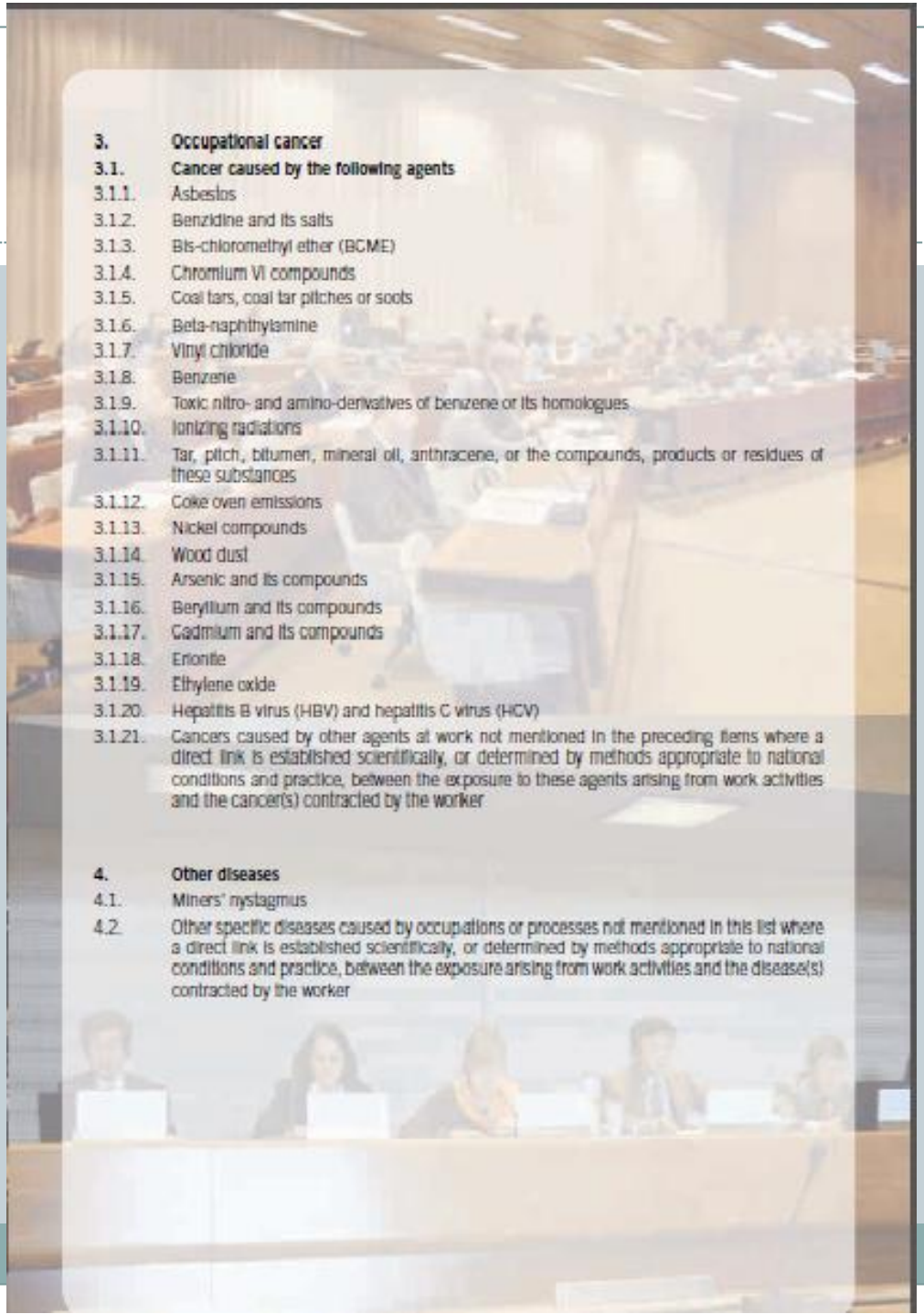
2.2.1. Allergic contact dermatoses and contact urticaria caused by other recognized allergy-provoking agents arising from work activities not included in other items
2.2.2. Irritant contact dermatoses caused by other recognized irritant agents arising from work activities not included in other items
2.2.3. Vitiligo caused by other recognized agents arising from work activities not included in other items
2.2.4. Other skin diseases caused by physical, chemical or biological agents at work not included under other items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the skin disease(s) contracted by the worker

2.3. Musculoskeletal disorders

2.3.1. Radial styloid tenosynovitis due to repetitive movements, forceful exertions and extreme postures of the wrist
2.3.2. Chronic tenosynovitis of hand and wrist due to repetitive movements, forceful exertions and extreme postures of the wrist
2.3.3. Olecranon bursitis due to prolonged pressure of the elbow region
2.3.4. Prepatellar bursitis due to prolonged stay in kneeling position
2.3.5. Epicondylitis due to repetitive forceful work
2.3.6. Meniscus lesions following extended periods of work in a kneeling or squatting position
2.3.7. Carpal tunnel syndrome due to extended periods of repetitive forceful work, work involving vibration, extreme postures of the wrist, or a combination of the three
2.3.8. Other musculoskeletal disorders not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the musculoskeletal disorder(s) contracted by the worker

2.4. Mental and behavioural disorders

2.4.1. Post-traumatic stress disorder
2.4.2. Other mental or behavioural disorders not mentioned in the preceding item where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the mental and behavioural disorder(s) contracted by the worker



3. Occupational cancer

3.1. Cancer caused by the following agents

3.1.1. Asbestos

3.1.2. Benzidine and its salts

3.1.3. Bis-chloromethyl ether (BCME)

3.1.4. Chromium VI compounds

3.1.5. Coal tars, coal tar pitches or soots

3.1.6. Beta-naphthylamine

3.1.7. Vinyl chloride

3.1.8. Benzene

3.1.9. Toxic nitro- and amino-derivatives of benzene or its homologues

3.1.10. Ionizing radiations

3.1.11. Tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products or residues of these substances

3.1.12. Coke oven emissions

3.1.13. Nickel compounds

3.1.14. Wood dust

3.1.15. Arsenic and its compounds

3.1.16. Beryllium and its compounds

3.1.17. Cadmium and its compounds

3.1.18. Erionite

3.1.19. Ethylene oxide

3.1.20. Hepatitis B virus (HBV) and hepatitis C virus (HCV)

3.1.21. Cancers caused by other agents at work not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure to these agents arising from work activities and the cancer(s) contracted by the worker

4. Other diseases

4.1. Miners' nystagmus

4.2. Other specific diseases caused by occupations or processes not mentioned in this list where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between the exposure arising from work activities and the disease(s) contracted by the worker

Shengli Niu

From the Archives: Eurotop-31

Annex II. Selected 31 items from the European Schedule of Occupational Diseases.

10403	Diseases caused by isocyanates
10500	Diseases caused by cadmium or compounds thereof
10600	Diseases caused by chromium or compounds thereof
10700	Diseases caused by mercury or compounds thereof
10800	Diseases caused by manganese or compounds thereof
11000	Diseases caused by nickel or compounds thereof
11200	Diseases caused by lead or compounds thereof
11303	Diseases caused by carbon disulphide
12601	Diseases caused by benzene or counterparts thereof (the counterparts of benzene are defined by the formula: C_nH_{2n-6})
12700	Diseases caused by halogenated derivatives of the aromatic hydrocarbons
20109	Skin diseases and skin cancers caused by by-products of the distillation of coal
20200	Occupational skin ailments caused by scientifically recognised allergy provoking or irritative substances not included under other headings
30111	Silicosis
30121	Asbestosis
30122	Mesothelioma following the inhalation of asbestos dust
30131	Pneumoconioses caused by dusts of silicates
30200	Complication of asbestos in the form of bronchial cancer
30300	Bronco-pulmonary ailments caused by dusts from sintered metals
30403	Respiratory ailments of an allergic nature caused by the inhalation of substances consistently recognised as causing allergies and inherent to the type of work
30404	Respiratory ailments caused by the inhalation of dust from cobalt, tin, barium and graphite
40100	Infectious or parasitic diseases transmitted to man by animals or remains of animals
40300	Brucellosis
40400	Viral hepatitis
40500	Tuberculosis
50201	Cataracts caused by heat radiation
50300	Hypoacousis or deafness caused by noise
50501	Osteoarticular diseases of the hands and wrists caused by mechanical vibration
50502	Angioneurotic diseases caused by mechanical vibration
50610	Diseases of the periarticular sacs due to pressure
50640	Paralysis of the nerves due to pressure
50800	Diseases caused by ionising radiation

Lessons learnt from the evaluation of the Eurotop-31 project (1)

- *Definition of the reference population:* self-employed, family workers, agricultural workers and civil servants are not covered similarly by national recognition systems
- *Inclusion criteria* should be well defined and not differ too much between countries (see example ARLC)
- *Coding of the medical diagnosis* should be carried out in some detail. This enables comparison of subcategories which are similarly recognised in Member States.
- *Recognition of mild cases*. Some occupational diseases are recognised in an early stage and might develop gradually (for example noise-induced hearing loss). Future data sets should contain both incident cases and aggravated cases to increase comparability.

Asbestos Related Lung Cancer (ARLC) and mesothelioma (compensated)

Country	# ARLC	# Mesothelioma	Rate ARLC/Mesothelioma
UK	285	2311	0,12
Belgium	72	175	0,41
Germany	793	970	0,81
France	1517	690	2,1
Australia (NSW)	35	159	0,22
The Netherlands	5	420	0,01

Lessons learnt from the evaluation of the Eurotop-31 project (2)

- *Underreporting*. This is a universal problem in occupational diseases surveillance. Differences in the grade of underreporting between countries can be explained by differences in recognition systems:
  - active versus passive surveillance,
  - incentives for victims and medical doctors,
  - different inclusion criteria,
  - differences between recognised and compensated cases).

- Awareness of these differences is important. Trend analysis over years may be considered.

Lessons learnt from the evaluation of the Eurotop-31 project (3)

- *Future data collection*: the hybrid character of the Lists of Occupational Diseases, being a mixture of categories defined by exposure and categories defined by disease, causes problems for statistical comparison and use of the data.

- These can be solved if the medical diagnosis and the exposure (in connection with each other) are coded as separate variables in future data collection instead of one number.

- It is not realistic to expect that MS's change their recognition criteria just for this pilot

PROGRESS report: Recording and reporting

- **Main Findings:**

- Substantial differences in reporting accurency
- Problem of underreporting
- Incentives for reporting vary (payment of reporters/facilitation of asessments of OD's)
- Technical improvements (electronic notification sytems

PROGRESS report: Recording and reporting

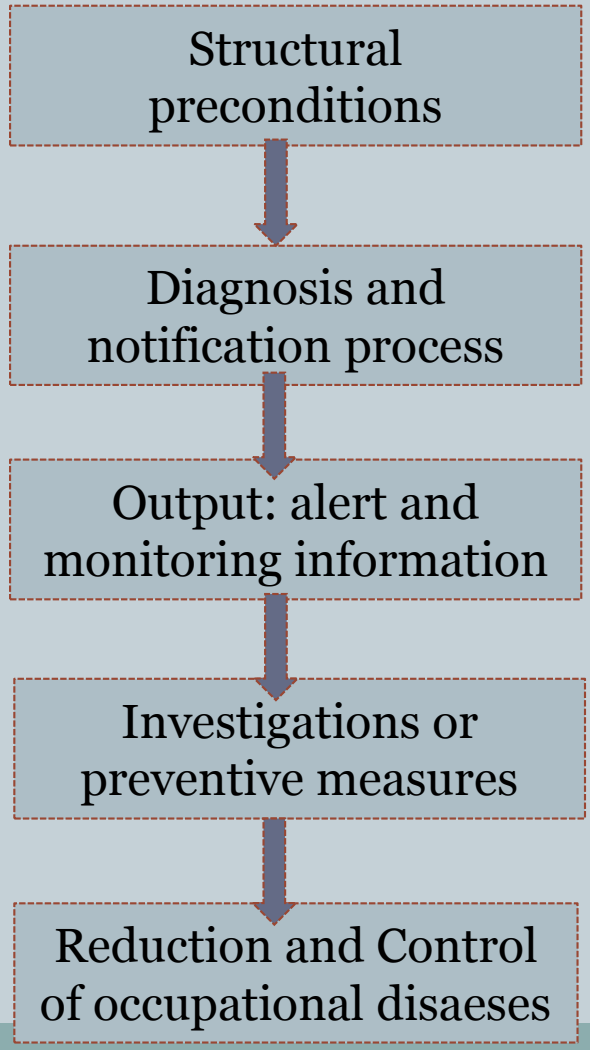
- **Suggestions:**

- Stimulate the multi-source approach ('Occupational Disease Intelligence System)
- Cross border exchange information
- Criteria development at EU level

How to go together in the right direction?

- In search of OD's in which comparison between countries make sense:
  - Capture OD's without big differences in inclusion criteria
  - Leave out the rare diseases
  - Take recognized cases aboard, not just focus on compensated cases

Registries for Occupational Diseases; Quality indicators (Dick Spreeuwers 2008)



- Coverage of registration
- Criteria or guidelines for notification
- Completeness of notification form
- Education and training
-
- Diagnostic procedures
- Completeness of registration
- Statistical methods used
- Investigation of special cases
-
- Alert information
- Monitoring information; details and presentation of output:
  - Incidences and distribution
  - Validity of incident rates
  - Additional information

Take the right track!

Thanks for your attention

g.vanderlaan@occmed.eu
claudiocolosio@unimil.it