Improving diagnosis, reporting and prevention of Occupational Diseases in the world: tools and proposed approach

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Summary

• The global burden of Occupational diseases; some numbers
• Are available data robust enough?
• The need for defining diagnostic and exposure criteria
• The ILO Working Group
• The product

Conclusions
Occupational & infectious diseases

- Identified by two components: clinical manifestation/s and external causal agent
- Affect specific populations ("exposed")
- Can be addressed by coping strategies

They both are AVOIDABLE

That means: the number of Ods should be "0"!
Definition of Ods: ILO and National Regulations

• ILO: “Any disease contracted as a result of an exposure to risk factors arising from work activity” (Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155))

• In most countries, a disease can be defined “occupational” when the national authorities responsible for occupational diseases diagnosis and reporting acknowledge its occupational origin

• The main tool available to national authorities to acknowledge the occupational origin of a disease are the LISTS
Global estimaters of work related accidents and diseases

Fatal accidents: **352,000**

Work Related diseases fatalities: **1,98 million**

Accidents causing absence of 4 or more days: **313 million**
The burden of occupational diseases: some data

Figure 1: Cost of work-related accidents and illnesses globally and in the EU-28

Global estimate

- Cost non-fatal cases: 1,473 Billion €
- Cost fatal cases: 1,207 Billion €

EU28 estimate

- Cost non-fatal cases: 216 Billion €
- Cost fatal cases: 260 Billion €

European Agency on Safety and Health at Work, 2017
The burden of occupational diseases: some data

Lesley Rushton, 2017. PMGF=particulate matter, gases and fumes
The burden of occupational diseases: some data

Lesley Rushton, 2017. PMGF=particulate matter, gases and fumes
Reporting of ODs: some thoughts

pleural plaques reported per year

Italy: 500 - 600
Austria: 10 - 12 (!)

An urgent need: harmonization!!!

How to reach?

Bureaucratic vs Substantial

No harmonization without CRITERIA!

Petar Bulat (Serbia)
Open points

1. How do we decide what is an ‘occupational disease’?
2. What do we do about entities that are primarily symptom based? e.g. Low back pain, asthma, migraine, epileptic attacks, burnout, Karoshi…
When listing an occupational disease?

- Need of strong evidence of the link exposure-disease
- Possibility of defining precise diagnostic criteria
- Difficulty in managing symptom-based conditions
Two steps:
– Step 1: definition of the disease
– Step 2: causality assessment
Definition of Disease

Disease is a (set of) dysfunction(s) in any of the body systems including:

- a known pattern of signs, symptoms & findings
  » symptomatology - manifestations
- probably with an underlying explanatory mechanism
  » etiology
- a distinct pattern of development over time
  » course and outcome
- a known pattern of response to interventions
  » treatment response
- with linkage to underlying genetic factors
  » genotypes, phenotypes and endophenotypes
- with linkage to interacting environmental factors
The relation exposure-effect-disease

Disease free interval

Exposure period

Genesis of the disease

Induction period

“real” latency

Conventional latency (surrogate!)
Diagnosis of an occupational disease

**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 diagnosis**

**Additional information**
- Minimum intensity of exposure
- Minimum duration of exposure
- Maximum latent period
- Minimum induction period
The scenario of ODs changes, in some cases very quickly:
New diseases from new risks
Known diseases from new risks
Old risks in new forms
know risks causing “new” diseases....
<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>New diseases due to changes in work / conditions</td>
<td>• Allergy to biological pesticides</td>
</tr>
<tr>
<td></td>
<td>• Neuropathy in swine slaughterhouse workers</td>
</tr>
<tr>
<td></td>
<td>• Legionnaires disease</td>
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<td></td>
<td>• Popcorn workers lung</td>
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<tr>
<td>New risks from known forms of stress</td>
<td>• Cardiovascular diseases caused by fine dust</td>
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<td></td>
<td>• Breast cancer and work at night</td>
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<td></td>
<td>• Lung infections due to welding fumes</td>
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<tr>
<td>Consequences of parents occupational exposure on offspring</td>
<td>• Congenital abnormalities</td>
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<tr>
<td></td>
<td>• Cancer in children</td>
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<td>• Delayed neuropsychological development</td>
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How to face the problem?

• Creating systems able to detect “early signals”
• Performing active research of cases
• Continuously exploring dangerous trades
• Creating robust data reporting systems
How to deal with entities that are primarily symptom based?

If they
• cause a burden (expressed in dalys)
• Long term affect working capacity

Should be considered as a disease - need diagnostic criteria
(already done in some national lists («Low Back pain»))
How to harmonize the approach in the whole UN scenario?

- ICD 11
- The New ILO List of Occupational diseases and the related criteria
WHO report on OH in ICD10

• To have information on both diagnosis and exposure
• A guideline on how to use ICD-10 codes for coding the medical diagnosis of notified occupational diseases
• Non-exhaustive lists of exposures relevant for each of the diseases
• To help in making international comparisons and in building OD reporting systems in countries not having a well-established system
23. WHO will define indicators and promote regional and global information platforms for surveillance of workers’ health, will determine international exposure and diagnostic criteria for early detection of occupational diseases, and will include occupational causes of diseases in the eleventh revision of the International Statistical Classification of Diseases, and Related Health Problems.
From OH10 to ICD11

- 2010 – Comparative analysis ICD11 and ILO list
- 2011 – Global working group on occupational health in ICD11
  - Anil Adisesh (UK) – chair
  - Members: USA, Colombia, South Africa, UAE, Italy, India, China, South Korea, Australia
- 2012 – Global master plan of WHO and CCs for OH
  - Surveys of the use of ICD in OH
  - Field testing
  - Review and comments
- ILO exposure and diagnostic criteria for occupational diseases

http://www.who.int/classifications/icd/revision/en/
The LAST UPDATING of the THE ILO list of Occupational Diseases (approved on March 25 2010 by the ILO Governing Body)

<table>
<thead>
<tr>
<th>ILO CODE</th>
<th>ILO ENTRY</th>
</tr>
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<tbody>
<tr>
<td>1.01</td>
<td>Occupational diseases caused by chemical agents</td>
</tr>
</tbody>
</table>

40 + 1 by chemical agent; 6 + 1 by physical agents; 8 + 1 by biological agents;

Per organ: 11 + 1 respiratory; 3 + 1 skin; 7 + 1 musculoskeletal; 1+1 mental; 20 + 1 cancer; 1 + 1 “Other”

There is an opportunity to add more occupational diseases to the list according to scientific evidence and to the necessity to protect emerging working population from new work – related hazards
Above the list: prospects

- Different approaches and procedures for diagnosis
- Different meanings of words in different languages
- Difficulty in comparing data from different countries
- Main need: an harmonized approach (agreed diagnostic and exposure criteria)
The background consideration

**while**

the ILO secretariat coordinates the technical activity on the preparation of guidance on diagnostic and exposure criteria for occupational diseases in the ILO list

**however**

the ILO relies on the contributions and collaborations from the world scientific community, professional bodies and social partners.
The ILO working group on the diagnostic criteria

- Appointed in 2011
- Task: preparing documents on diagnostic and exposure criteria
- 1 mini-monograph for each of the diseases/entities in the ILO list
- “Open Items”: examples
- Work finalized this year
The ILO working group’s approach

- Prepared 100 six-section short monographs
- Taken into account national practices
- Taken in consideration different systems in different regions
- Used expert opinions to summarize evidence.
- Retrieved scientific, technical and regulatory information
Six sections:
1. General characteristics of the causal agent/disease;
2. Occupational exposures;
3. Short profile of the toxic agent/disease;
4. Name(s) of the disease(s) and the related ICD-10 codes
   - acute, chronic and long term criteria for diagnosis,
   - minimum levels of exposure,
   - latency and induction period
5. Criteria for prevention
6. Further reading
Final considerations

• This product was a cooperative effort of volunteering scientists
• All main geographic and economic areas of the world represented
• This product in printed and digital forms will empower health and safety professionals and stakeholders in particular the developing countries
• Unique tool to promote harmonization of the approach to recognition, diagnosis, prevention and compensation of occupational diseases
The UN world united for the benefit of human kind

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

- Occupational diseases
- Diagnostic criteria
- WHO Identification codes

Diagram showing the integration of occupational diseases with diagnostic criteria and WHO identification codes.
Thank you very much for your kind attention