The NeTWoRM Project: Net-based Training for Work-Related Medicine

K. Radon, S. Kolb, L. Wengenroth
and the NeTWoRM Team

Learning objectives of this presentation

The audience should be able to:

- **explain** the term NeTWoRM  
  level 2
- **interpret** different dissemination possibilities  
  level 3
- **formulate** the objective of NeTWoRM  
  level 5
- **analyse** the structure of a VP  
  level 4
- **name** the possibilities of the web platform CASUS  
  level 1
- **assess** chances and risks of the NetWoRM project  
  level 6
### Background

**Why Occupational Medicine?**

- Training in OM is mandatory for medical students in Germany
- 600 students/year are taught in OM in Munich
- Implementing patients during lecture is difficult
- Wrong ideas about tasks of OM among students
- Students’ interest and motivation for OM was low and had to be improved
Requirements

Web-platform CASUS (Instruct AG)

- Creation of and work with the cases independent form place and time
- Web-surface easy to handle
- Evaluation of the learning success
- Evaluation of the acceptance by the users

Case structure

- Chief complaint
- History
- Occupational history
- Physical and technical examinations
- Diagnosis
- Prognosis

„red line“ + background

parallel:
- Expert opinion
- Questions
- Answer comments
- Hyperlinks
- Background information
1. Baker’s asthma
2. Miners (ZeBWIs)
3. Asbestosis
4. Lung carcinoma, Legal procedure
5. Tuberculosis in health service
6. Latex allergy in health service
7. Needle stick injury (Hepatitis) in health service
8. Forestry worker (Vasospastic syndrome)
9. Thumbness of finger (Carpal tunnel syndrome)
10. Workplace „Rescue service“
11. Bladder carcinoma (Aromatic Amines)
12. Nasal septum perforation (Galvaniser/Chrome)
13. Livercirrhosis (Halogenated hydrocarbons)
14. Lead intoxication
15. Occupational accident

16. Flight attendant with Diabetes mellitus
17. Radiation protection (An exotic choice)
18. Epidemiologic study (Statistic thesis)
19. Preventive medical check up (noise)
20. Outbreak (SARS)

Cases from other Universities (selection):
21. psychosocial stress at work and heart attack
22. occupational skin diseases
23. ...)
Objective of NetWoRM

- Set-up an international network to improve medical training in occupational medicine for

1. Undergraduate medical students
2. Postgraduate physicians / CME
3. Occupational health nurses
4. Health and safety inspectors
5. Workers
6. Teenager and adolescent at time of job selection
Case adaptation within the EU-Project

Local case

Translation into English

Language check (Birmingham)

Basic case

English standard

adaptation

Internal review
Expert review
student evaluation

National version

New cases by international partners

Workplace survey
Protection of the unborn child
Pleura mesothelioma
Construction worker with skin carcinoma
Steroiddermatosis
Silicosis
Psychosocial problems at work

Hypersensitivity pneumonitis (HP)
Welder with maculopathy
Workplace accident due to alcohol
Occupational asthma / HP Trichloroethanol intoxication
Salt workers
Surveillance programm for asbestos
Overall evaluation of the cases within the European project
1(poor) to 15(excellent)

NetWoRM Europa

Coordination: Institute for Occupational Medicine
LMU Munich
Technologie: INSTRUCT AG

France (n=24)
Germany (n=3684)
Great Britain (n=42)
Poland (n=32)
Romania (n=863)
Spain (n=172)

(Finland (n=79; scale 1-10))
**International Cooperation**

**Dr. Diego**

28 years, spouse (student), 2 children  
Company physician at a hospital in a district town (Valdivia)  
No formal training in Occupational Medicine  
Few English knowledge

Distance Valdivia-Stgo.  
732 km

**airplane:**
price 340,- Euro  
duration 2,5 h

**Bus:**
price 10,- Euro  
duration 12 h

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**NeTWoRM Latin America**

- Exchange of students and lecturers for creation and implementation of Virtual Patients
- Country specific Virtual Patients for main problems in emerging countries
- Partner cases: Virtual Patients describing topics from the Brazilian, Chilean and German point of view
Partners in Latin America

- University of Santiago (Santiago, Chile)
- Universidad Austral (Valdivia, Chile)
- Federal University of Paraná (Curitiba, Brazil)
- Funded by the German Academic Exchange Service (DAAD)

Example: Workplace accident

www.chile.casus.net
Chronic lead intoxication

Evaluation

Case:

**Chronic lead intoxication**

- 66 Participants (computer lab), 1st time users of e-cases
- Mean (SD) duration worked on the case: 43 (13) min
- Mean (SD) % of questions answered correctly: 60 (14) %
- 49 students evaluated the case (74%), results (median, 25/75er percentile):
  - Case interesting (1 very – 6 not at all): 1 (1/2)
  - Level of the case (1 too easy, 6 too difficult): 3 (3/4)
  - Overall rating (1 poor – 15 excellent): 13 (11/14)
Conclusion: chances

- Virtual Patients in OM are liked by health professionals at each step of their training and enrich traditional training
- International cooperation in training is enriching for students and lecturers
- (Re-)Using of existing software is effective and efficient
- E-Learning is the method to pass distances
Conclusion: risks

- Creation and update of high quality cases need time
- Translation could be complex
- VPs have to be a win-win situation for students and teachers
- Implementation takes time and local strategies
- Continuous update is necessary
- Implementation and dissemination is necessary to guarantee sustainability
- Long-term financing is necessary

The future

- Focus on dissemination and sustainability
  - Development of specific business models
  - Development of the web platform CASUS
    - Automatic self registration
    - Forum for online discussions
- **New Virtual Patients** for Continuing Medical Education, secondary school children, epidemiology, environmental medicine
- Continuous update of VPs
- Development of a distance degree course for Latin America (DAAD EXCEED) with blended learning concept
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