Occupational Diseases
Sentinel Clinical **Watch** System project: *a model to be generalised?*

On behalf of Modernet: V.Bonneterre\(^1\), S.Faye\(^2\), M. Le Barbier\(^2\)

1. Grenoble University & Grenoble Teaching Hospital, France
2. ANSES: French Agency for Health Safety in Food, Work and Environment

Conference: “Occupational Diseases in the EU. The system(s) and their role. ‘Together for disease-free workers’ ”. Brussels, 4th of December 2013
Early detection of new WRD / OD

• It is a **societal challenge** to detect early New Work-Related Diseases (WRD) / Occupational Diseases (OD) in order to **take appropriate actions in due time**

• **Risk-first approach** -> Emerging Risk Observatory set up by EU-OSHA (relies mainly on **identified “drivers”** of a priori risks identified by expert focus)

• Is there a place for a **Disease-first approach** as done in toxicovigilance, pharmacovigilance, etc?
  – WRD discovery history: most often starts with clinical description, etc
  – Nevertheless, nothing has been structured yet
**Modernet** (EU COST Project 2011-2014)

“a network for development of **new techniques** for discovering trends in OD & WRD, and tracing new and emerging risks”

**Modernet WG3**

“**New techniques** for tracing newly occurring WRD & OD”

- **DEFINITION of « Newly occurring occupational diseases »**
  - New couple (disease x agent)
  - New triad (disease x agent x circumstance of exposure)

- **METHOD: Multiple approach**
  - 1st, Clinical: Sentinel Clinical Watch System: OccWatch Project
  - Data mining within databases related to WRD. Lead = F (RNV3P)
  - + Developpement regarding QSARS (asthma). Lead = UK (Manchester Univ)
  - + Developpement regarding Text mining. Lead = NL (TNO)
OccWatch OBJECTIVES

1. CAPTURE case-reports of potentially new WRD
2. EXCHANGE AND ANALYSE the relevance of clinical signals
   – Challenge diagnosis, exposure, work-relatedness, hypotheses on causative agents, physiopathology and prevention issues
   – Seek similar cases
3. SUMMARIZE: produce a common expertise
   – If possible within 2 months after the case has been posted
   – Reach a conclusion, regarding medical data but also including first information on risk assessment (population potentially exposed, severity), and proposals for actions to be taken if necessary
4. DISSEMINATE
   – Possible dissemination of this briefing note to institutions concerned: national agencies, EU-OSHA
   – These institutions might decide to raise alerts or not, take specific actions, etc
METHODS

1. **Regarding CAPTURE**
   - Modernet partners as a first instance
   - Template defined (2011-2012)
   - Patient inform consent (as for publications)

2. **EXCHANGE AND ANALYSE**
   - User-charter (2011)
   - Web-based tool (pilot developed by Serge Faye, hosted by ANSES) (2013)

3. **SUMMARIZE: produce a common expertise**
   - Model of the briefing note (as done by Emrisk for EFSA) in order to propose useful information to institutions if to be disseminated

4. **DISSEMINATE**
https://occwatch.anses.fr/

Welcome to OccWatch Web Site
Please enter your login and password.

User Name
Password

Remember Me
Log in

If you do not have a login, please Register here...
What is OccWatch?

OccWatch stands for "Occupational Diseases Watch". It is a Sentinel Clinical Watch System dedicated to the highlighting of newly occurring Occupational Diseases (OD).

OccWatch is designed for physicians as well as key persons involved in occupational diseases surveillance. Currently, it is still a pilot, reserved to Modernet members, in order to test the whole approach: starting with case-capture, followed by structured comments in order to build progressively a common expertise which will be summarised 2 months later, and submitted for approval to OccWatch scientific committee.

The accepted conclusion, with "OccWatch stamp", might be further disseminated (level of dissemination according to its public health importance).
Notify a case report

FAQs - Notify a case report

Do I need patient inform consent?
How should I submit the case?
What will happen once the case submitted?
Which case-reports are worth being notified

Data Base

Report a new case
Editable cases
Commentable Cases

How To

Join us
Notify a case-report
How I comment
# MODERNET's CASE-REPORT TEMPLATE
for sharing new cases of potentially emerging work-related diseases
(16th November 2012, version 2 for Modernet Members)

## Date and Authors

<table>
<thead>
<tr>
<th>Date of report</th>
<th>Authors</th>
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## New disease - exposure association or new disease – exposure - occupational

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<td>Yes</td>
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## Occupational exposure of high concern for health surveillance, as identified previously within Modernet?

<table>
<thead>
<tr>
<th>Nanoparticles</th>
<th>Endocrine Disruptors</th>
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<td>Yes</td>
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- **Pulmonary alveolar proteinosis in a hairdresser associated with hairspray exposure.**
  Written by Stephan

- **Bronchial Asthma due to potassium-aluminum tetrafluoride exposure**
  Written by Andrea

- **Liver cirrhosis associated with accidental domestic exposure to hydrochlorofluorocarbons or chlorofluorocarbons**
  Written by Stephan

- **Heavy exposure to Nanoalumina and early onset Parkinson Disease**
  Written by BONNETERRE

- **Multiple proliferating Skin lesions following long term contacts with EPOXY paints**
  Written by BONNETERRE
Multiple proliferating Skin lesions following long term contacts with EPOXY paints

Case Title
Multiple proliferating Skin lesions following long term contacts with EPOXY paints

Date of report
2013-09-05

Authors
V.Bonneterre1, J.Charles2, D.Salameire3, JL.Bourrain2, I.Templier2, JC.Beani2, MT.Leccia2, Grenoble Teaching Hospital, France (1-Occupational Disease Centre, 2- Department of Dermatology, 3- Department of pathology)

First report checked
yes

Is it a new disease - exposure association?
yes
Currently, well-argued/documented commentaries of 10 members from 7 other countries

Annet
The skin lesions are impressive and their spreading pattern fits the exposure to the resins this floor-layer used for a long time. I did not find any literature about this type of work and the health problem either. Looking for causes of epidermal hyperplasia and skin cancer I found some abstracts on tattoo ink and this type of skin lesions. I also noted that there is a discussion on a two-stage carcinogenesis in skin cancer starting with a break down of the skin barrier, for instance by a contact dermatitis, which creates an opportunity to carcinogens to enter the skin and body more easily. Not everybody seems to be convinced this is a good model, but you could imagine it in this case.

Annet In reply to: Annet
I found three articles on pseudoepidermal hyperplasia and tattoo inks and I attach them underneath.

Attachments:
- Kluger 2008 Pseudoepitheliomatosus Epidermal Hyperplasia in Tattoos.pdf
- Cui 2007 Pseudoepitheliomatous hyperplasia an unusual reaction following tattoo.pdf
- Breza 2013 Pseudoepitheliomatous Hyperplasia An Unusual Tattoo Reaction.pdf
SUMMARY regarding previous case (1/2)

CONTRIBUTORS (1st of December 2013, 2 months after case-report publication on OccWatch pilot) Eleven Modernet partners from 8 countries (France, NL, Italy, Finland, Belgium, UK, Norway, Spain) contributed to the discussion of this case. This case was previously discussed at within French RNV3P working group dedicated to potentially new work-related diseases. Four experts asked specific advice of a leading dermatologist regarding work-related skin diseases, and three made their own bibliographic search (in addition of what had already been done at the French level).

DIAGNOSIS: Pseudo Epitheliomatous Hyperplasia (PEH). The associated verrucous carcinoma is challenged by 4 experts. The fact that previous contact dermatitis was related to epoxy resins was not demonstrated by a local reaction on patch test.

REGARDING EXPOSURE. Questions are raised regarding additives, and the use of model to assess skin exposure as well as dermal absorption.

ARE ANY OTHER CASES REPORTED IN THE LITERATURE OR KNOWN BY EXPERTS? No similar case was ever seen by experts, or reported in French, UK or Norway databases registering work-related diseases (Italian INAIL database could not be questioned through an agent variable). Regarding medical literature, the only related case was published in the 1980's in France. The exposure to epoxy resins occurred in a different context (Hands and upper limbs contamination), and the patient developed "pre-epitheliomatous keratosis" "kerato-acanthoma" and "spinocellular epithelioma". Nevertheless, similar PEH have been related to tattoo inks (always red colors).
REGARDING WORK-RELATEDNESS.
The fact that the skin was wounded and that the lesions occur only in epoxy-exposed area, led us think that work-relatedness is possible. Nevertheless, due to large use of epoxy resins, the effect would be very rare.

It might be an indirect and non specific consequence of chronic irritation (contact dermatitis) and scratching lesions which wounded the skin. Indeed, PEH might be triggered by various stimuli including chronic irritation, chronic wound healing, trauma, and less specific dermal inflammatory process, and tattoos. The hypothesis that it would be related to epoxy resins themselves or their additives is not impossible (cf the swelling and discharge of lesions located on the limbs when patch test with epoxy were applied on the patient’s back), but would deserve more information.

CONCLUSION.
Also the report is interesting, it seems there is no real public health concern at the moment. This might be published in order to be accessible to anybody who would face similar case.
Remaining Challenges: from pilot to fully operational

- Legal and Data protection issues
  - currently discussed with ANSES jurists: no obstacle

- Expertise:
  - Time consuming
  - Need optimisation of the webtool (quantitative indicators to help summarise: level of agreement with diagnosis, with work-relatedness, etc)
  - Beside the medical part, include a part dedicated to exposure and risk assessment

- Dissemination strategy
  - Methods to ensure Reproductibility and Transparency (already tested at French level)

- Institutionnall support (back-up) in several countries would be welcomed ± EU-OSHA?

- Extension beyond Modernet borders

Further developments possible only if funding
Towards a systematic and integrated system for detection of emerging WRD issues? ("WRD Vigilance")

**DATA CAPTURE** (« Incubator », « Soup »)

- Clinically certified information
  - **OccWatch**
  - 1-
  - 2- (Automatic) screening of existing WRD databases
    - Data mining
    - Signals within temporal trends
    - Occupational exposome

**Signals Assessment and Expertise**

- Matching up of information
- Searching similar cases
- Scoring (imputability, severity, number of cases)
- Briefing note including recommendations

**Complementary sources of information**

- QSARS
- Text Mining
- Bibliographic Watch

**Dissemination**
Thank you for your attention!

Acknowledgments:

• Modernet members and supporters
• ANSES: for webtool developpement (Serge Faye), support and hosting OccWatch website

V Bonneterre@chu-grenoble.fr
Cf Mandate of EFSA on emerging risks regarding Food

**Regulation N°178/2002** of the EU Parliament and of the Council (28/01/2002) regarding European Food Safety Authority

- **Article 34 regarding identification of emerging risks**

  • “The Authority shall establish monitoring procedures for systematic searching for, collecting, collating and analysing information and data with a view to the identification of emerging risks in the fields within its mission”