



# Sentinel and alert systems to detect new work-related diseases

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# Background

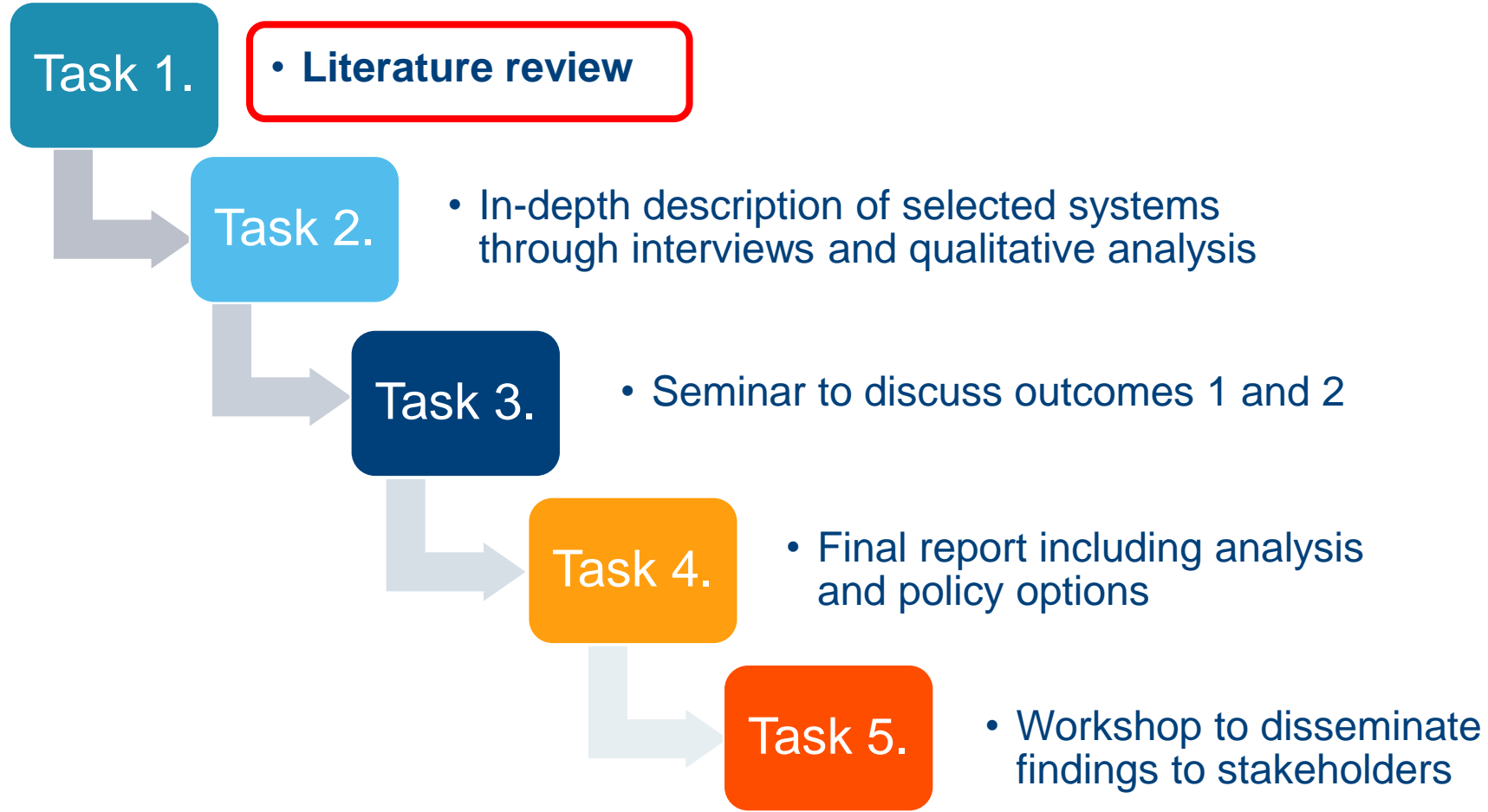
- Continuous changes in work and working conditions are followed by **new/emerging work-related diseases** (WRDs)
- **Additional instruments** from those already used for monitoring known occupational diseases (ODs);
- **Comprehensive approach** using several complementary methods, rather than a single method



# Objectives

1. Identify the existing OSH monitoring systems that are suitable for detection of **new and emerging** WRDs;
2. Describe their main **characteristics**;
3. Set up the basic **typology** of these systems.

# Role in the overall project





# Methodology



## Scientific literature

### Databases:

- MEDLINE (PUBMED)
- Embase
- Web of Science

## Grey literature

**Databases:** OpenGrey, OSH-update

**Existing data** from 3 surveys

**Websites**

➔ Contacting authors to retrieve the missing information

# Methodology

## Data extraction:

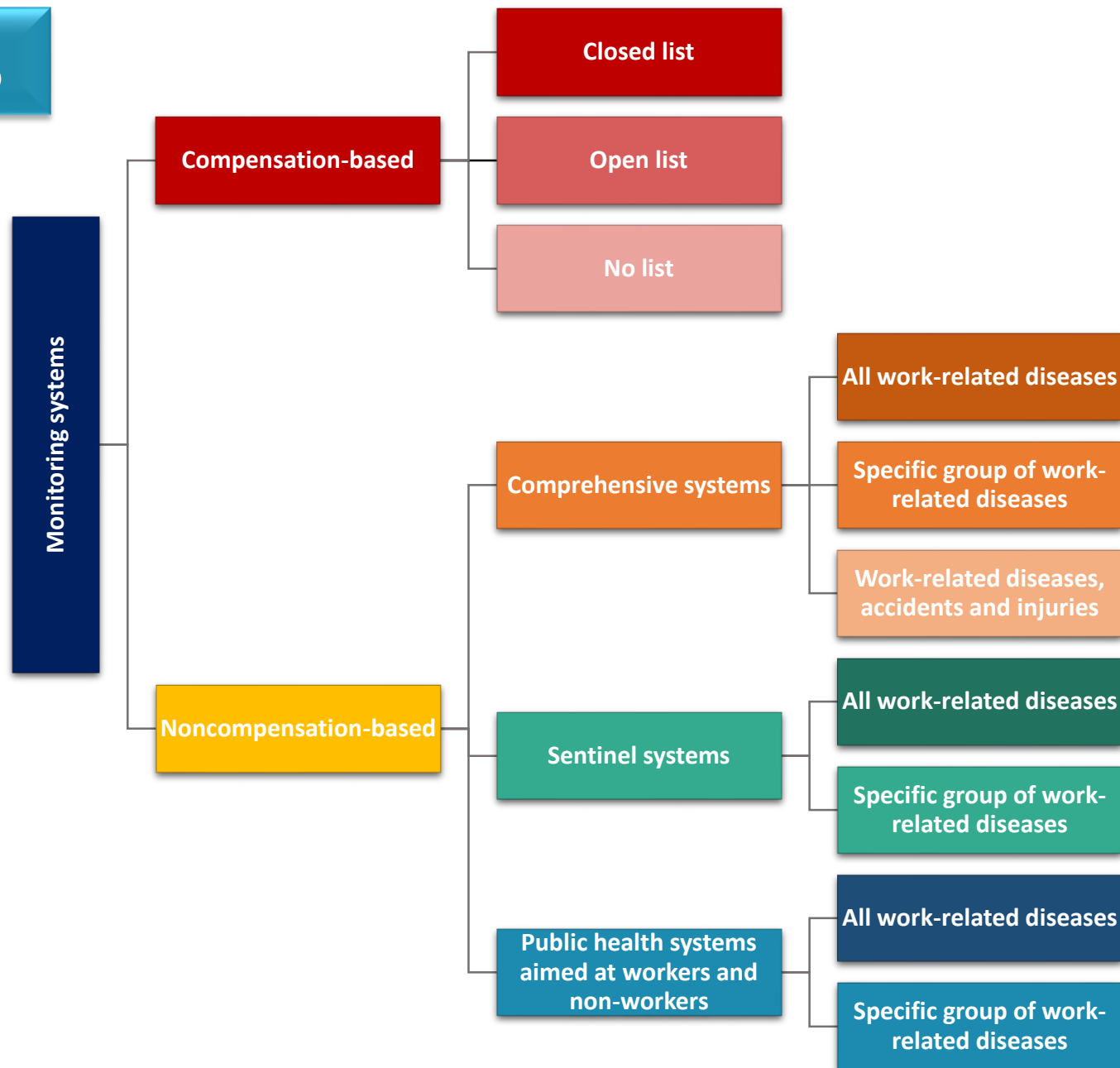
- **General information:** country, organization/ institution maintaining the system, website
- **Aim** of data collection, **coverage**
- **Reporting mechanism**
- **Evaluation** of work-relatedness, **follow-up**
- **Dissemination**, link with **prevention**

# Results

- **75** identified systems from the EU countries, as well as outside Europe (USA, Canada, Australia, Singapore, Taiwan etc.)
- Algorithm - **typology**

Nr	Question	Answers
1	Is the system aimed at workers or at the general public?	Workers/General public including workers
2	Which type of surveillance is used in the system?	Passive/Active/Sentinel
3	Is the system linked to workers' compensation? If yes, what type of system	Yes/No Closed list/ open list/no list at all
4	Which diseases or health problems are reported?	Comprehensive (all diseases)/Specific (one or subset of diseases)
5	Is the system among others aimed to alert on new and emerging work-related health problems?	Yes/No

# Results





# Compensation-based systems



# Compensation-based systems

- Collect data for **compensation purposes** → reporting is driven by insurance services
- Closed list / open list / no list
- Swiss **SUVA** and Taiwanese **NODIS** - **additional data set** which enables link with prevention regardless of compensation
- Data collection: reporting + **data mining** in Washington Workers' Compensation claims (Washington **SHARP**)

# Compensation-based systems

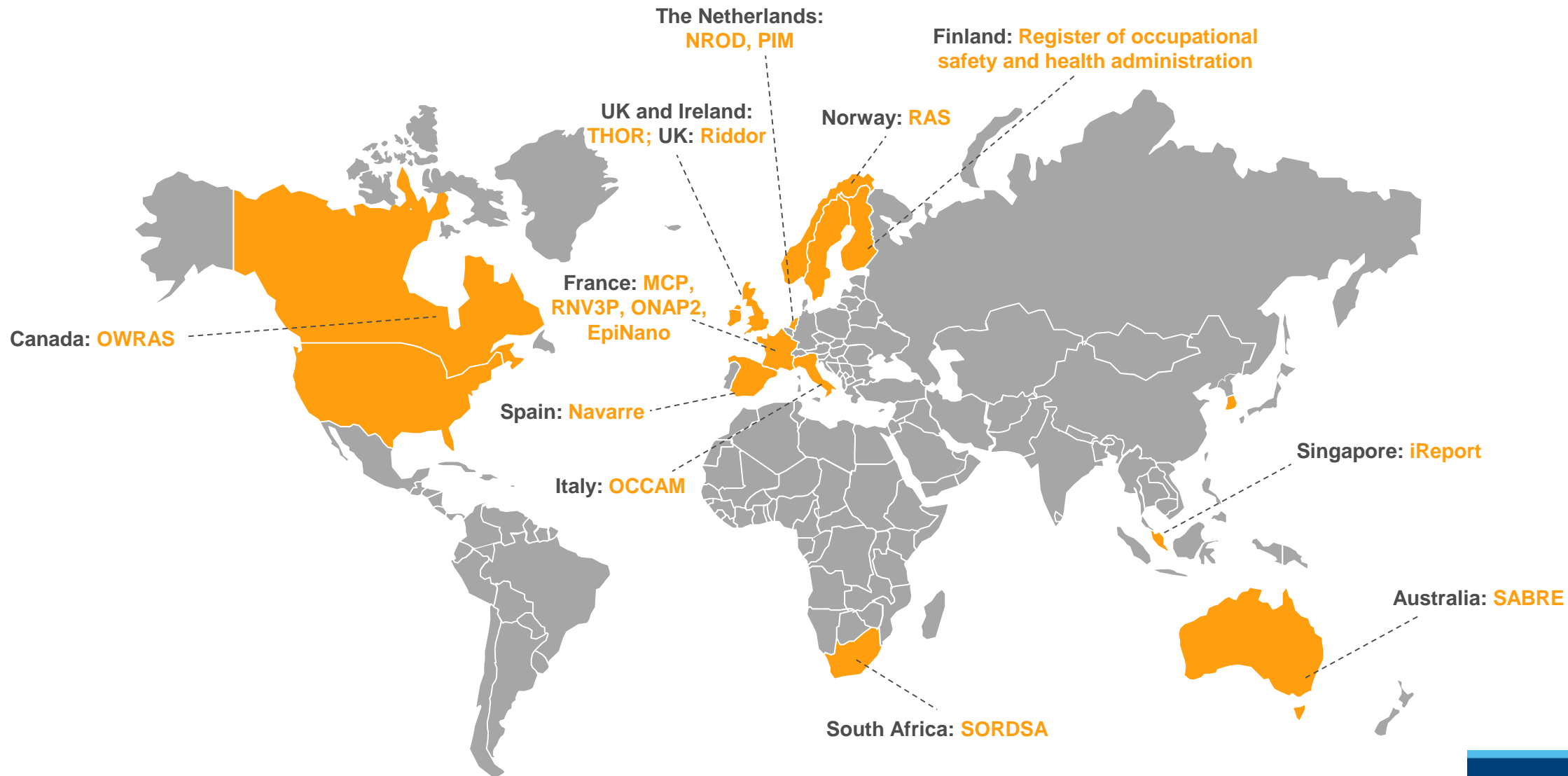
- **Direct workplace prevention**
  - Medical screening
  - Workplace inspections after identification of a WRD
- Possibility to implement preventive actions regardless of compensation

**New/emerging WRDs** are also tackled by preventive actions

**SUVA** – screening and prevention of burnout in companies



# Comprehensive systems



# Comprehensive systems

- Aim: **data collection and analysis** to measure incidences and trends in OSH
- Based on voluntary participation of physicians
- Disease-specific systems:
  - **respiratory** diseases;
  - **skin** diseases;
  - occupational **cancer**;
  - **infectious** diseases and
  - WRDs related to **nanomaterials** exposure
- Final decision made by reporter VS. **work-relatedness evaluation by experts**
- **Lack of exposure assessment**

**Mental  
diseases** !

# Comprehensive systems

- Prevention is mainly implemented on a wider level, in **communication with governing bodies**
- These systems use collected data to provide OSH statistics and input for **national preventive strategies and policies**

## THOR

Sophisticated statistics



**Health and Safety Executive**  
Preventive programs targeting specific industries, age groups, etc.

## MALPROF

Local units



**Local stakeholders:**  
companies, unions, representative of workers' safety, local authorities, etc.

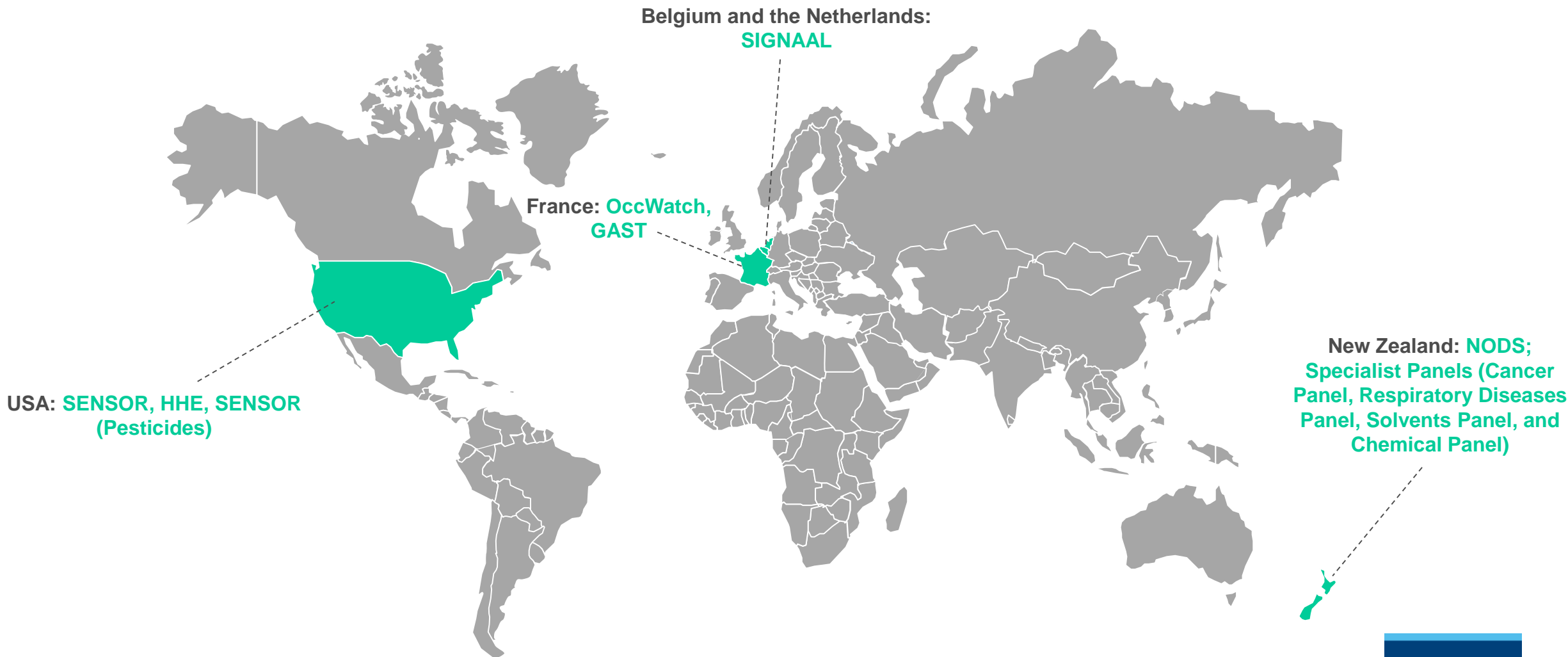
## RNV3P

Alert



- 1) RNV3P physicians
- 2) Other physicians and partners
- 3) Regional and national level

# Sentinel systems



# Sentinel systems

- Designed on the **Sentinel Health Event** (SHE) model
- Based on voluntary participation of physicians
- 2 international systems: **SIGNAAL** (Belgium and the Netherlands), **OccWatch** (MODERNET)
- Mainly monitor all types of WRDs; some have additional schemes for specific WRDs:

✘ **SENSOR Pesticides**

✘ **NODS Specialist Panels:**

- Cancer
- Chemical
- Respiratory Diseases
- Solvent Panel



reviewing cases notified by **registries**





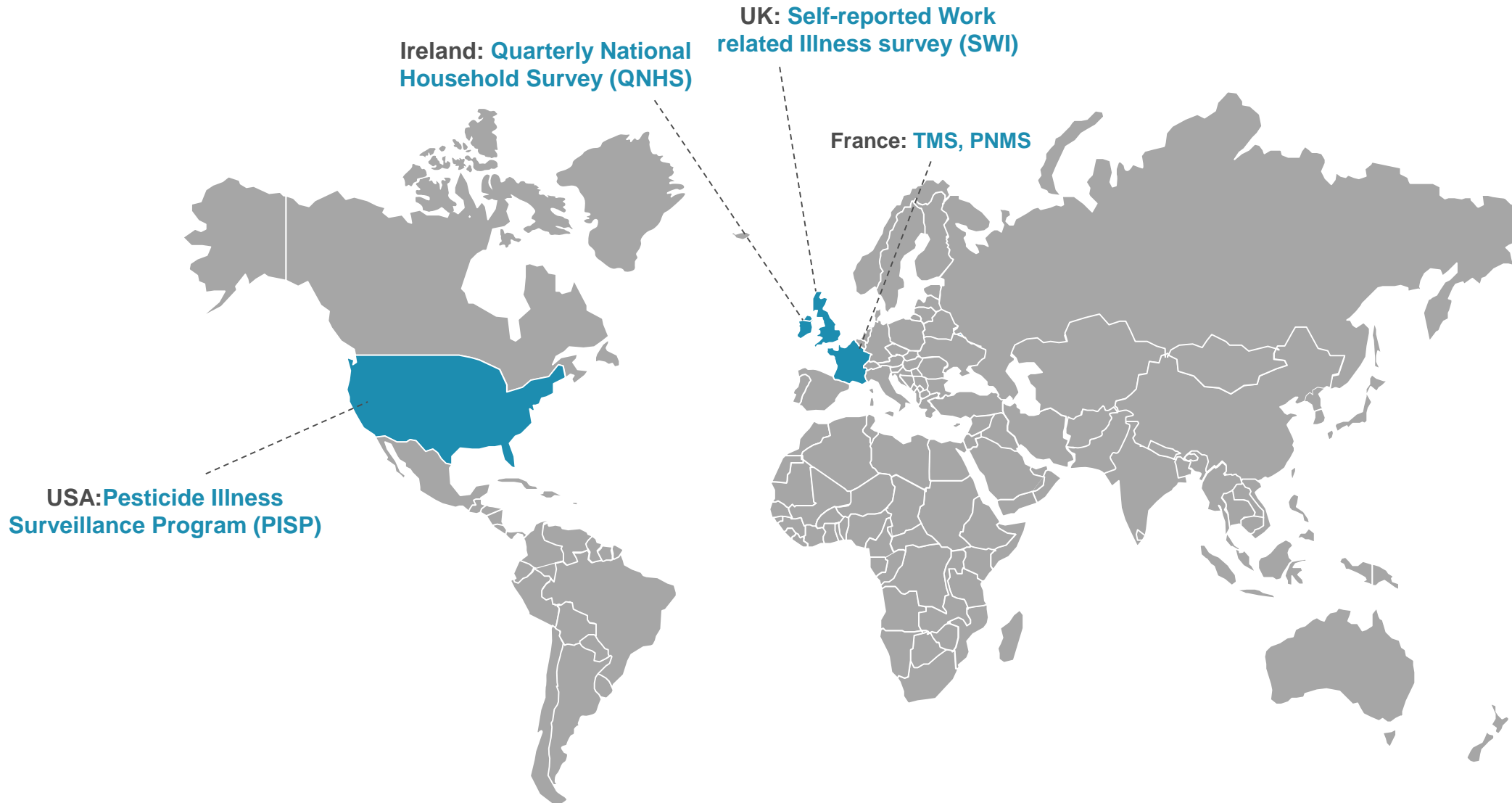
# Sentinel systems



- Information on **exposure**: more thorough description while reporting / workplace inspections with data gathering
- **Work-relatedness**: team of experts; **SIGNAAL**, **OccWatch** – international platform
- Strong link with **prevention** by providing an alert signal:
  - ➡ Communication between different stakeholders
  - ➡ Direct workplace interventions



# Public health systems



# Public health systems

- Aimed at health surveillance of workers and **general population**

All types of  
WRDs

Specific type of  
WRDs

- Survey-based systems: **QNHS** (Ireland), **SWI** (UK); **active surveillance**
- Data collection on a 3 month periods, through **interviews** with workers (randomly selected) – reporting of health problems
- No evaluation nor follow-up
- “Classic” reporting systems
  - France **TMS** - musculoskeletal disorders;
  - **PNMS** - pleural mesothelioma;
  - USA **PISP** – diseases related to pesticides exposure
- **Reporting:** voluntary; medical specialist
- **Work-relatedness evaluation:** experts

# Public health systems

- Link with prevention

## Pesticide Illness Surveillance Program (PISP)

Environmental Protection Agency

Ongoing re-evaluation process of new chemicals

Restrictions on pesticides use

Identification of **vulnerable** groups  
(pregnant farm workers, adolescent workers, etc.)

Preventive actions and policies



# Conclusions

**Integrating different approaches** to detect new/emerging WRDs

**Disease coverage:** mental diseases !

**Detailed exposure assessment:** cause-effect

**Dissemination of knowledge:** international network

**Better link with prevention:**

- Direct link with workplace preventive actions: **SUVA**
- Identification of high-risk economic sectors and industries: **THOR**
- Link with policies: **Pesticide Illness Surveillance Program (PISP)**



**Thank you for your attention!**

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