PATCHWORK 2.0
Public Access to Toxicity data of Chemicals Hazardous to Human Health

Paul T.J. Scheepers PhD
toxicologist, occupational hygienist,
public health advisor hazmat

Radboud University Nijmegen Medical Centre

Toxicity information
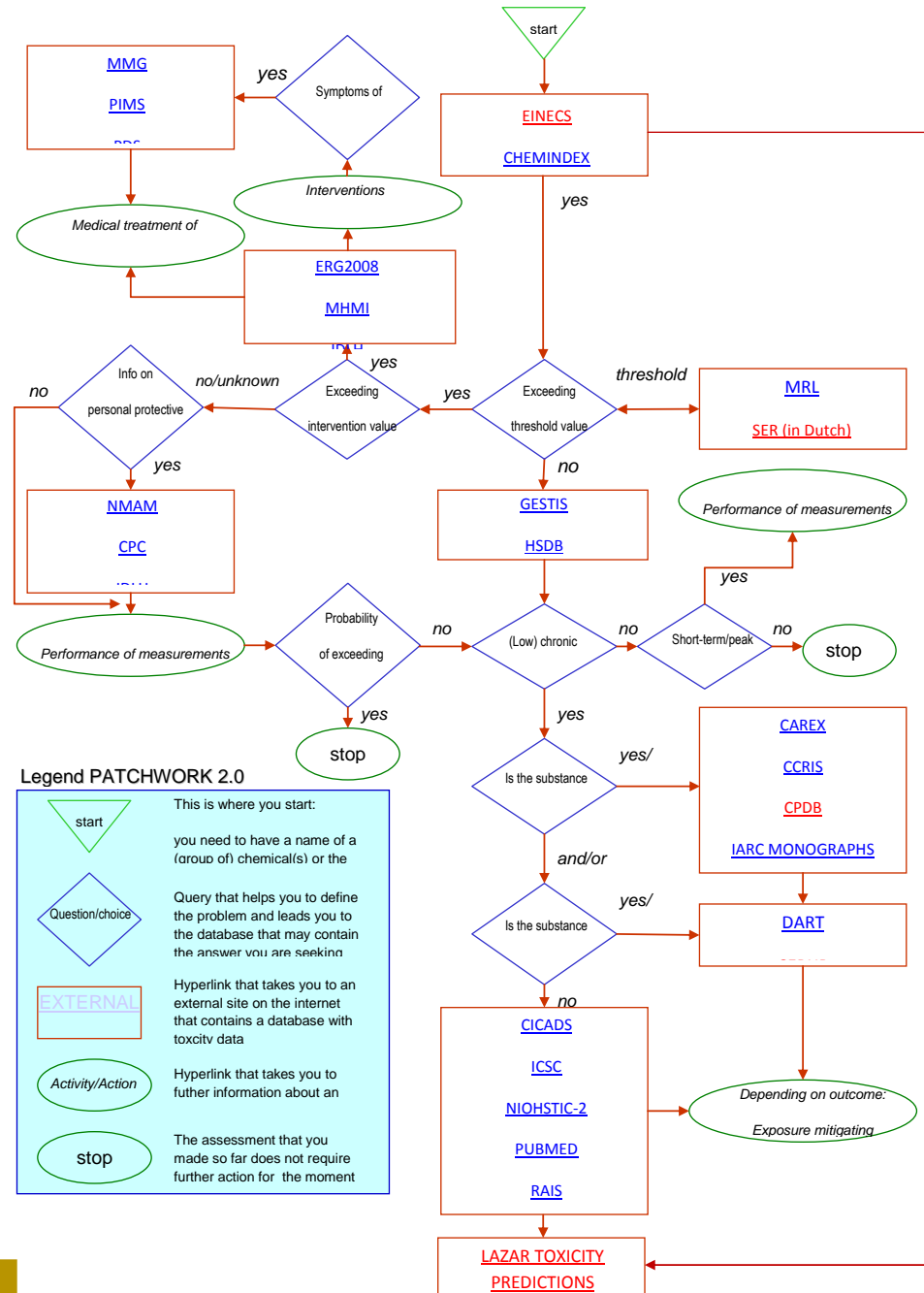
About > 100,000 chemical subsances

Is spread out over the World Wide Web

Like patches on a quilt.

How do I find what I am looking for?

PATCHWORK 2.0

- 38 selected databases
- National/international authorities or universities
- Arranged in flow diagram
- It works like a game of goose …

Find the relevant toxicity data in four steps

- <u>Step 1</u>

  What is de identity of the substance of interest?

- <u>Step 2</u>

  Is the exposure above an established limit?

- <u>Step 3</u>

  Targeted search for carcinogenicity/reprotoxicity data

- <u>Step 4</u>

  Intervention (exposure mitigation/treatment intoxication)

Step 1: Verify identity

- Verify composition of an industrial product using MSDS
- Verify the scientific name if only a trivial name is available
- Copy the CAS number (☝)
- Paste the CAS number in the appropriate search field (☝)
- Go for large databases first
- Verify each and every piece of critical information by cross reference using at least one independent source

Step 2: Determine which limit is exceeded

- Exposure (presumably) > intervention or threshold value
  - <u>No</u> signs of toxicity: use MHMI, IDLH, ERG2000, <u>WISER</u>
  - Signs of intoxication: use MMG, PIM and PDS
- Exposure (presumably) < threshold value

  Use large databases GESTIS, HSDB, SOLV-DB for a general profile of toxicity
- If you do not find the substances go to bibliographic databases (PUBMED, SCIRUS, TOXLINE, NIOSHTIC, <u>TOXSUBPORTAL</u>, etc.)
- If you know how to operate Quantative Structure Activity Relationships you can try to use <u>LAZAR TOXICITY PREDICTIONS</u> as a last resort

Step 3: Verify CMR-classification

Always check for

- Carcinogenicity and mutagenicity classificaiton (GENETOX, IARC MONOGRAPHS)

- Reproductive toxicity classification (DART or CERHR)

- Kennisdossier CMR stoffen (not in PATCHWORK)

- Verify Staatscourant (not in PATCHWORK) for most recent Dutch list of carcinogenic substances and processes

Step 4: Consider which interventions are needed

- If treatment of symptoms is needed (PIMS, PDS, MMG)

- If air samples need to be taken (NMAM)

- If biological monitoring is required ([BIOTOX](#))

- If protective clothing is required (CPC, IDLH)

Interactieve demonstratie

http://ebh-webeducation.ruhosting.nl/Patchwork/Patchwork.pdf

UMC St Radboud

Summarizing …

- Verification of identity is an important first step
- Use CAS in searches using your mouse
- Verify CRM classification and listing
- Use cross reference to verify your findings
- Document your findings in a copy-paste report
- Let PATCHWORK help to structure your search and make it more efficient