Supporting Public Health Globally via the Use of Terminology Standards

New Technologies to Report Adverse Drug Reactions

ICH
harmonisation for better health

Presenter Disclosures

Brian J. O'Hare

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

- I have been employed by Northrop Grumman
- I own stock in Northrop Grumman

MedDRA was developed under the auspices of the International Council for Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH). The activities of the MedDRA Maintenance and Support Services Organization (MSSO) are overseen by an ICH MedDRA Management Board, which is composed of the six ICH parties (EU, EFPIA, MHLW, JPMA, FDA, PhRMA), the Medicines and Healthcare products Regulatory Agency (MHRA) of the UK, Health Canada, and the WHO (as Observer).

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Objectives of this Presentation

Role of MedDRA in supporting public health via use of new technologies to report adverse drug reactions:

- Explain MedDRA
  - What is it?
  - How it is used?
  - Who uses it?
  - Examples of use
- Role of MedDRA to help improve adverse event reporting

Background

What is MedDRA?

Med = Medical

D = Dictionary for

R = Regulatory

A = Activities

Supports public health by facilitating safety monitoring of medicinal products.

MedDRA Definition

MedDRA is a clinically validated international medical terminology used by regulatory authorities and the regulated biopharmaceutical industry. The terminology is used through the entire regulatory process, from pre-marketing to post-marketing, and for data entry, retrieval, evaluation, and presentation.

MedDRA Features

- 76K terms arranged hierarchically
- Classification for a wide range of clinical data
- Available in 11 languages
- Rigorously maintained
- Required component for electronic reporting

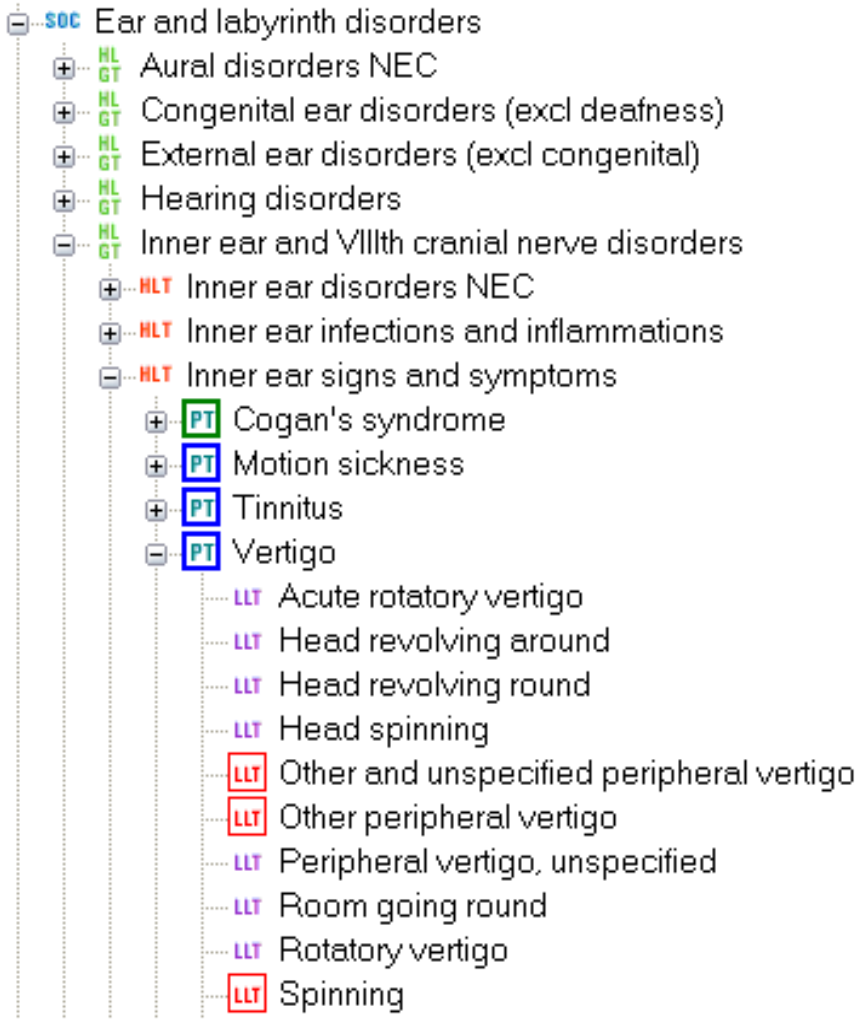
Scope of MedDRA

IN

Medical conditions
Indications
Investigations (tests, results)
Medical and surgical procedures
Medical, social, family history
Medication errors
Product quality issues
Device-related issues
Pharmacogenetic terms
Toxicologic issues
Standardized queries

MedDRA Structure

MedDRA Structure (cont)



Users

Regulatory Use

- True international standard for adverse event (AE) reporting and analysis
- US FDA
  - Not mandated but *de facto* standard in US
  - Used in several FDA databases
- Japanese Ministry of Health, Labour and Welfare
  - Mandatory use in electronic reporting
- European Union
  - Mandatory use in electronic reporting
  - EudraVigilance database
  - Good Pharmacovigilance Practices (GVP) specifically mention MedDRA
- Biopharmaceutical industry

Regulatory Use (cont)

- US FDA databases using MedDRA
  - Center for Drug Evaluation and Research (CDER)
    - FAERS (drugs and biologics)
  - Center for Biologics Evaluation and Research (CBER)
    - VAERS (vaccines)
  - Center for Food Safety and Applied Nutrition
    - CAERS (food, dietary supplements, cosmetics)

Who Else Uses MedDRA?

- Non-ICH regions
- WHO's international drug monitoring center (Uppsala Monitoring Centre)
- Academic researchers
- CDC
- Toxicologists
- Others

More than 4,000 subscribing organizations worldwide in more than 90 countries

Examples of Use

Where MedDRA is Used

Regulatory Authority and Industry Databases

Individual Case Safety Reports and Safety Summaries

Clinical Study Reports

Investigators' Brochures

Core Company Safety Information

Marketing Applications

Publications

Prescribing Information

Advertising

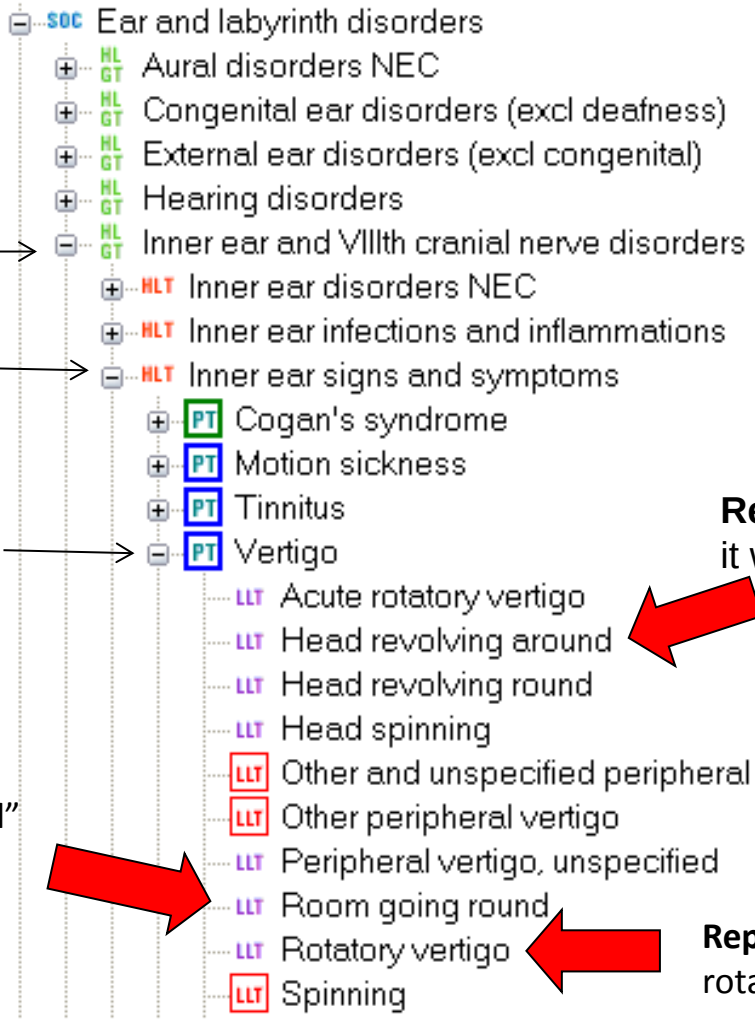
How MedDRA is Used

…and by this SOC…

…by this HLGT…

…by this HLT…

All of these reports are represented by this PT…



Report 1: "My head felt like it was revolving on an axis"

Report 3: "Felt like the room was going around"

Report 2: Patient diagnosed with rotary vertigo

Codes and Languages

Cefaleia
Portuguese

Hoofdpijn
Dutch

Kopfschmerz
German

Headache
English

10019211

Fejfájás
Hungarian

Céphalée
French

Cefalea
Italian

Bolest hlavy
Czech

頭痛
Japanese

头痛
Chinese

Cefalea
Spanish

Electronic Submission

Improving adverse event reporting

State of Adverse Event Reporting

- Publications describe high levels of under-reported adverse events
  - 95% of all AEs and 80% of serious AEs are under-reported[1]
  - Hospital staff did not report 86% of events to incident reporting systems[2]
- This leaves a large percentage of data to be collected

Sources: 1 – Hazell L, Shakir S. Under-Reporting of Adverse Drug Reactions - A Systematic Review. Drug Safety. 2006.
2 – Levinson D. Hospital incident reporting systems do not capture most patient harm. OEI-06-09-00091. 2012

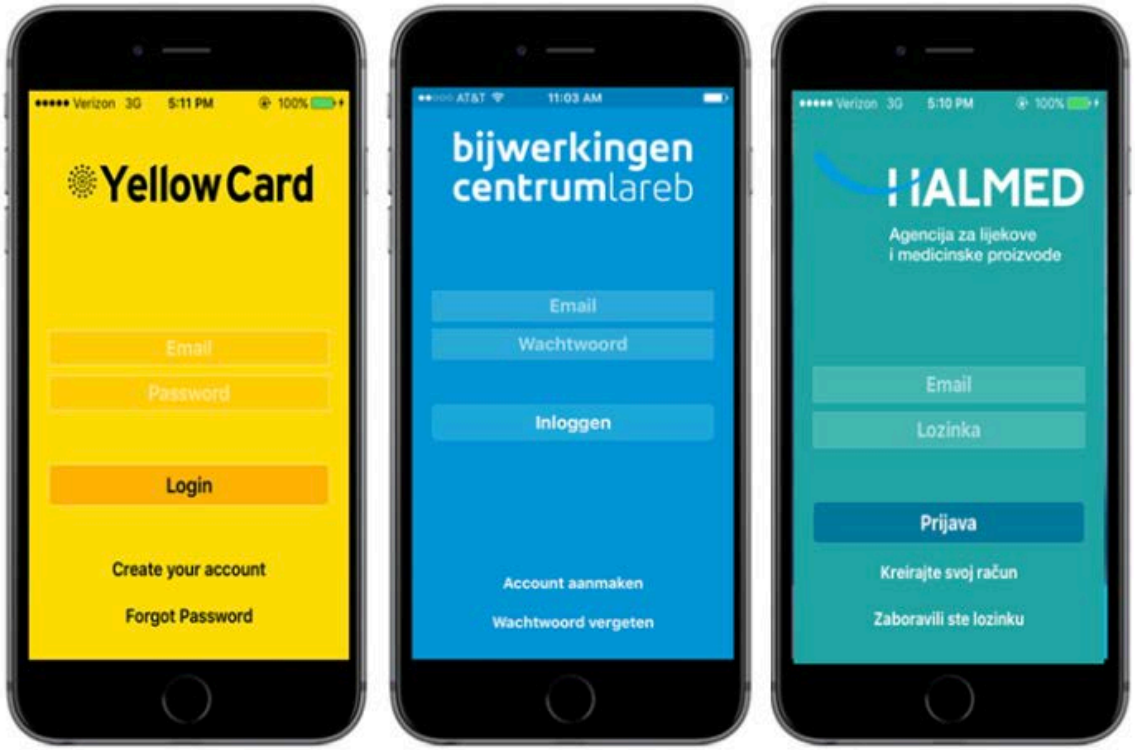
Collecting More Data

- In response to the known under-reporting of AEs, regulators and industry are under pressure to be more proactive to find alternative sources
  - Mining electronic health records
  - Mining claims data
  - Social media sources
  - Direct patient reporting via mobile apps and web portals

WEB-RADR

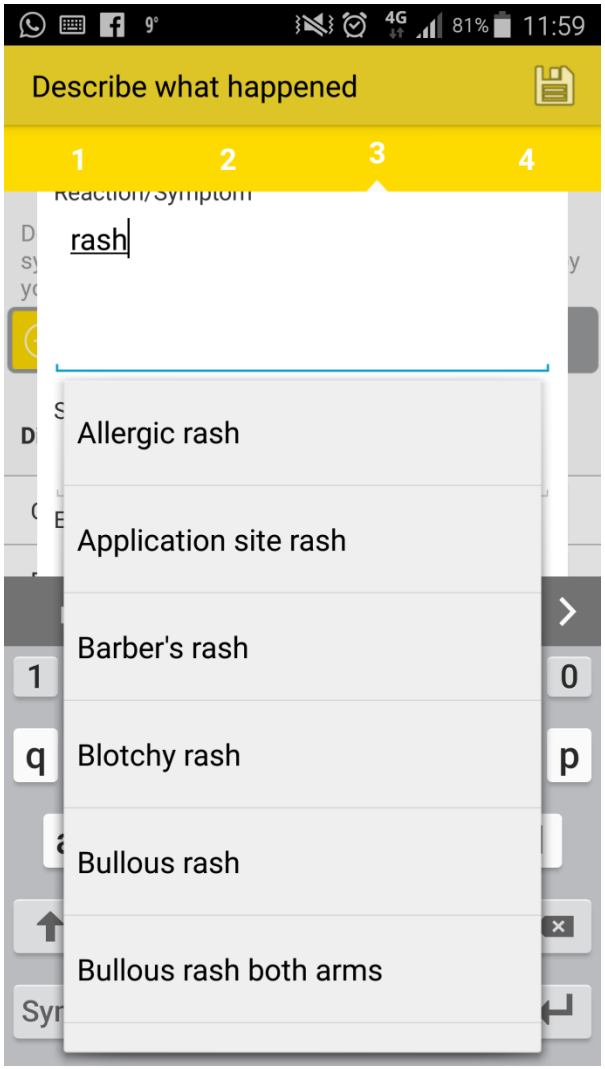
- WEB Recognising Adverse Drug Reactions
- EU consortium under Innovative Medicines Initiative
- Three year project (Sep 2014-2017)
- Developing mobile apps for ADR reporting
- Investigating use of social media to identify drug safety issues

Mobile Apps



- Report adverse drug reactions
- Receive information and news alerts
- Patients, caregivers, healthcare professionals

Yellow Card App



- MedDRA PTs/LLTs embedded
- Free text option
- Good specificity for analysis
- MedDRA can present challenges
  - >200 “rash” terms
  - Granularity may overwhelm users

Patient Friendly Terms

- Developing a set of MedDRA terms that are “patient friendly” to support patient reporting through mobile apps and web portals
- Start with patient-reported data provided by WEB-RADR partners

Patient Friendly Terms (cont)

- Medical review of data to identify terms frequently used and commonly understood
  - Signs and symptoms
  - Natural word order
  - US and UK English spellings
- Goal is ~2-3,000 patient friendly terms out of >70K MedDRA terms
- Testing of initial list in 2017
  - In Yellow Card app
  - Feedback from patient groups

Conclusion

MedDRA supports global public health and positively impacts patient safety by providing:

- Support for safety monitoring of medicinal products
  - Facilitates the collection of data for analysis of potential safety signals
  - An international standard used by regulatory authorities, biopharmaceutical industry and others
  - Support for improving adverse event reporting

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