



MedDRA

Supporting Public Health Globally via the Use of Terminology Standards

Use of MedDRA in Adverse Event Reporting





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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MedDRA

Objectives of this Presentation

- Role of MedDRA in supporting public health:
 - What is MedDRA?
 - How MedDRA used is used?
 - Who uses it?
 - Examples of use
- Role of MedDRA in helping to improve adverse event reporting
 - Use of mobile apps to report adverse drug reactions
 - Use of social media?





MedDRA

Background





MedDRA

What is MedDRA?

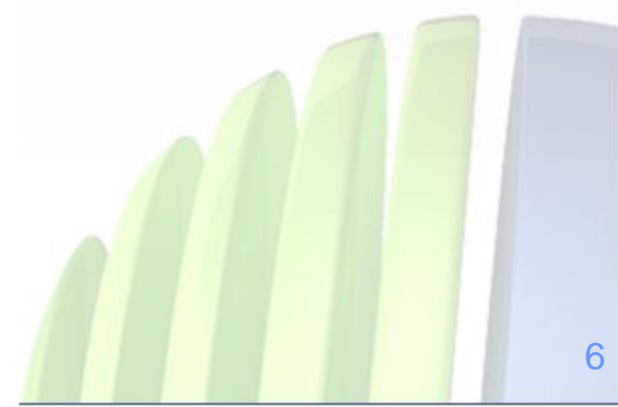
Med = Medical

D = Dictionary for

R = Regulatory

A = Activities

Supports public health by
facilitating safety monitoring of
medical products





MedDRA

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

MedDRA Features

- 80K terms arranged hierarchically
- Classification for a wide range of clinical data
- Available in 11 languages
- Rigorously maintained
- Required component for electronic reporting



MedDRA

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

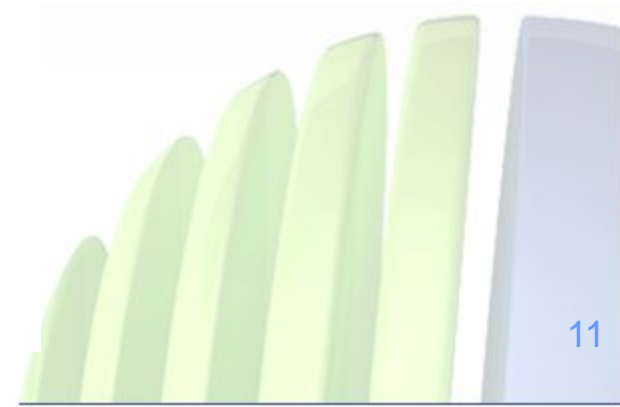
MedDRA Structure





MedDRA Structure (cont)

- [-] SOC Ear and labyrinth disorders
 - [+] HLT Aural disorders NEC
 - [+] HLT Congenital ear disorders (excl deafness)
 - [+] HLT External ear disorders (excl congenital)
 - [+] HLT Hearing disorders
 - [-] HLT Inner ear and VIIIth cranial nerve disorders
 - [+] HLT Inner ear disorders NEC
 - [+] HLT Inner ear infections and inflammations
 - [-] HLT Inner ear signs and symptoms
 - [+] PT Cogan's syndrome
 - [+] PT Motion sickness
 - [+] PT Tinnitus
 - [-] PT Vertigo
 - LLT Acute rotatory vertigo
 - LLT Head revolving around
 - LLT Head revolving round
 - LLT Head spinning
 - LLT Other and unspecified peripheral vertigo
 - LLT Other peripheral vertigo
 - LLT Peripheral vertigo, unspecified
 - LLT Room going round
 - LLT Rotatory vertigo
 - LLT Spinning





Users





MedDRA

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



MedDRA

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 5,000 subscribing organizations worldwide in more than 100 countries



MedDRA

Examples of Use





MedDRA

Where MedDRA is Used



Regulatory Authority and Industry Databases
Individual Case Safety Reports and Safety Summaries

Clinical Study Reports

Investigators' Brochures

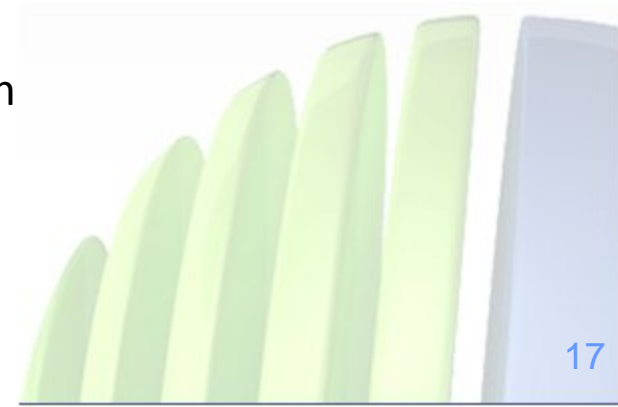
Core Company Safety Information

Marketing Applications

Publications

Prescribing Information

Advertising





How MedDRA is Used

...and by this SOC...

→ **SOC** Ear and labyrinth disorders

- + **HL GT** Aural disorders NEC
- + **HL GT** Congenital ear disorders (excl deafness)
- + **HL GT** External ear disorders (excl congenital)
- + **HL GT** Hearing disorders

...by this HLG...

→ **HL GT** Inner ear and VIIIth cranial nerve disorders

- + **HLT** Inner ear disorders NEC
- + **HLT** Inner ear infections and inflammations

...by this HLT...

→ **HLT** Inner ear signs and symptoms

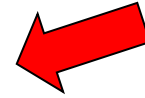
- + **PT** Cogan's syndrome
- + **PT** Motion sickness
- + **PT** Tinnitus

All of these reports are represented by this PT...

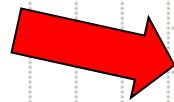
→ **PT** Vertigo

- ... **LLT** Acute rotatory vertigo
- ... **LLT** Head revolving around
- ... **LLT** Head revolving round
- ... **LLT** Head spinning
- ... **LLT** Other and unspecified peripheral vertigo
- ... **LLT** Other peripheral vertigo
- ... **LLT** Peripheral vertigo, unspecified
- ... **LLT** Room going round
- ... **LLT** Rotatory vertigo
- ... **LLT** Spinning

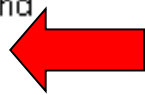
Report 1: "My head felt like it was revolving on an axis"



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



Report 2: Patient diagnosed with rotary vertigo





MedDRA

Codes and Languages



Electronic Submission





MedDRA

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-reported¹
 - Hospital staff did not report 86% of events to incident reporting systems²
- 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



The screenshot shows the WEB-RADR website homepage. At the top, there is a navigation bar with the following links: About Us, Goals, Work Packages, Partners, Governance, and Press & White Papers. Below the navigation bar, the page is divided into several sections:

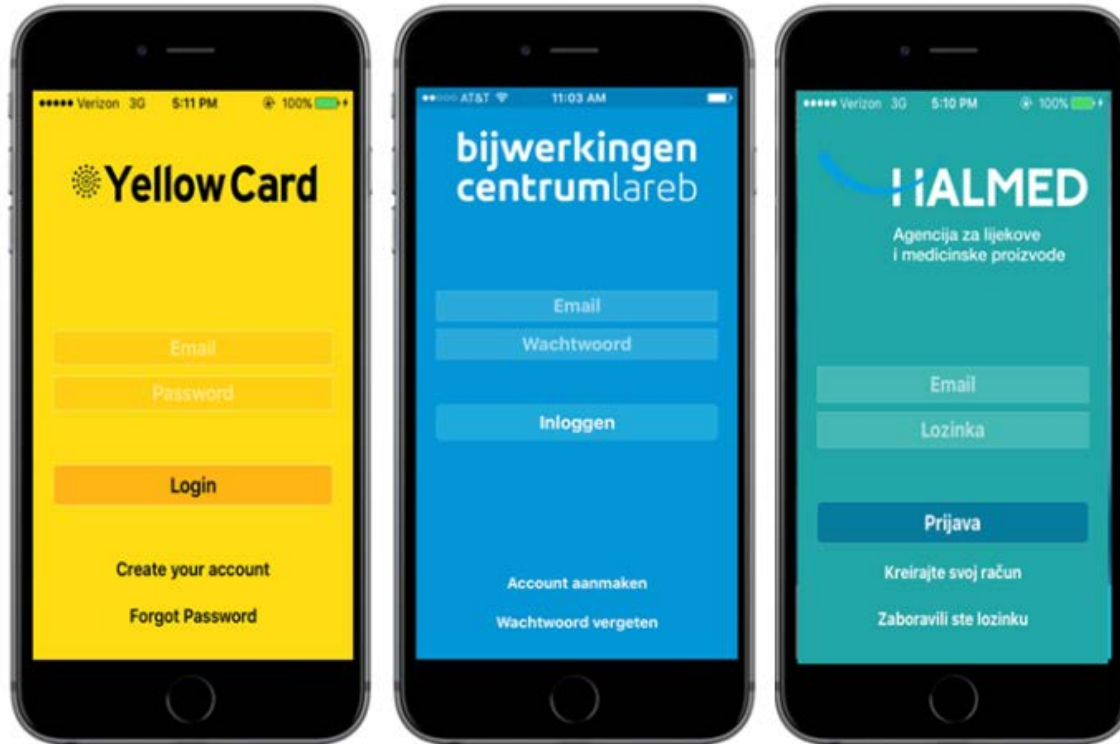
- PARTNERS:** A grid of logos for various organizations, including Novartis, MHRA, epidemicico, EURORDIS, University Medical Center Groningen, University of Liverpool, SRDC, UCL, HALMED, Lareb, European Medicines Agency, Uppsala Monitoring Centre, Janssen, Bayer, AstraZeneca, Sanofi, UCB, Amgen, GSK, and MedDRA.
- NEWS:** A list of recent news items, including:
 - WP3B Poster: Barriers and facilitators for a mobile app to report Adverse Drug Reactions & receive information about drugs (14 October 2015)
 - Social Media and Pharmacovigilance, British Journal of Clinical Pharmacology Publication (5 October 2015)
 - Innovative Medicines Initiative WEB-RADR Workshop Report (30 September 2015)
 - WEB-RADR Yellow Card app launch 14th July 2015 (23 July 2015)
 - First Innovative Medicines Initiative WEB-RADR Workshop: mobile technologies and social media as new tools in pharmacovigilance (5 January 2015)
- QUESTIONS OR COMMENTS?:** A section with the text: "Please send us questions or comments via our feedback form".

- 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



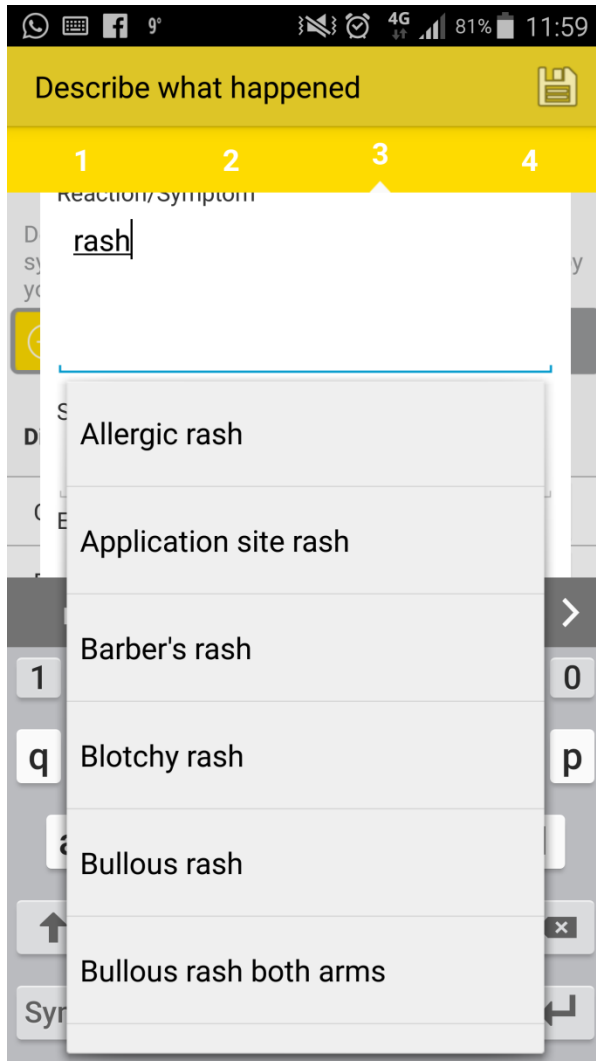
MedDRA

Mobile Apps



- Report adverse drug reactions
- Receive information and news alerts
- Patients, caregivers, healthcare professionals
- Mobile apps recently launched in Burkina Faso and Zambia

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





MedDRA

Patient Friendly Terms

- Developed a set of MedDRA terms that are “patient friendly” to support patient reporting through mobile apps and web portals
- Currently testing a set of ~1,500 terms
 - In Yellow Card app
 - Feedback from patient focus groups

All Headaches vs. Patient Friendly Headaches

Yellow Card Login

Enter Keyword(s) to Search

Home About Yellow Card Drug Analysis Profiles Downloads Contact Us

1. Reporter Details 2. Patient Details 3. Suspect Medicines 4. Suspect Reactions

4. Suspect Reactions

Please enter details of the reactions experienced by your patient below. A description can be entered in the free-text box at the bottom of the page and more than one reaction can be entered if needed, simply click 'Add Reaction'.

Fields that you must complete are marked with this symbol: **required**

Suspect Reaction **required**

headac

- Analgesic rebound headache
- Band-like headache
- Cervicogenic headache
- Chronic headaches
- Cluster headache
- Cluster headaches
- Cold-stimulus headache
- Drug withdrawal headache
- Drug-induced headache
- Exertional headache
- External compression headache

75 terms

Yellow Card Login

Enter Keyword(s) to Search

Home About Yellow Card Drug Analysis Profiles Downloads Contact Us

1. Reporter Details 2. Whose Side Effect 3. About the Medicines 4. Side Effects 5. Additional Details 6. Overview

4. Side Effects

Please enter details of the side effects experienced. A description of the side effects can be entered in the free-text box at the bottom of the page and more than one side effect can be entered if needed, simply click 'Add another Side Effect'.

As part of the MHRA's efforts to continually improve side effect reporting forms we are piloting a new 'pick list' of side effects terms that we hope will provide you with the most appropriate term to choose. After you have submitted your form you will be asked to take part in a short, voluntary survey which we will give us valuable feedback

Fields that you must complete are marked with this symbol: **required**

Side effect **required**

headac

- Frequent headaches
- Headache
- Migraine headache
- Sinus headache
- Tension headache

5 terms



Use of Social Media to Identify Adverse Events?

- WEB-RADR project investigated using Facebook, Twitter, internet patient forums as data sources
 - Look for mention of drug name and words that might represent an adverse event
 - Could “adverse event” words be converted into MedDRA terms for reporting?



Twitter Data



- 
samantha @anais_sin 1/23/13
 Omg I found a forum where ppl are talking about a class action suit because viibryd's intense dreams have caused literal medical psychosis
- 
Best Psychology @PsychoBest 1/13/13
 is anyone on viibryd : Clinical Depression Forum - Psych forums dlvr.it/2nQZz8 #psychology
- 
Alvin B. Lin @alvinblin 12/23/12
 Just posted an answer on @Healthtap to: I've been on Viibryd 20 mg for 3 mos, started having tightness in t... htap.us/7rha
- 
meridian child @sweet_bream 12/22/12
 We opened our presents, my family unfortunately forgot viibryd made me fat and not a small anymore
- 
EP Confessions @EP_Confessions 12/20/12
 New Confession: Enough....: I take cymbalta as well as viibryd for anxiety/depression I guess. I quit drinking o... bit.ly/UJ8NSp
- 
BAMA FOREVER @EndAthleteAbuse 12/18/12
 I started taking #Viibryd for fibromyalgia and have been to the hospital twice in 10 days with heart attack like symptoms. Stopped taking it
- 
Free RX @DPrescriptio 12/12/12
 #heartburn Viibryd - Bad Acid Reflux and Bloating?: Question posted in: gerd, abdominal dis... bit.ly/UCZQbq bit.ly/PIA3hD
- 
Gray @icky_names 12/9/12
 Starting #viibryd tomorrow. Absolutely terrified of these medicines. If anyone's been on it, I'd appreciate your feedback.
- 
eHealthMe.com @eHealthMe 12/1/12
 Taking with Lyrica is Sevela for the nerve pain. Also taking viibryd for depression, which hasn't helped at tinyurl.com/bwwdm69
- 
Attack Anxiety @AttackAnxiety 12/1/12
 #healthinfo Positive Opinion of Viibryd (I thought r/anxiety needed one).: So, I started takin... q.gs/2iQbB #TFB #FF #F4F #SV
- 
Bipolar Awareness @Stopstigma 11/24/12
 Fan Post: When I over eat, my meds (seroquel, abilify, viibryd) makes me throw up or poop immediately. Anyone... fb.me/2aGo1UJO1
- 
eHealthMe.com @eHealthMe 11/22/12
 same here...I'm 42 years old male. As soon as i started taken viibryd i got hit bay low voltage shock sensatio tinyurl.com/8sd2kfv





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Use of Social Media to Identify Adverse Events? (cont)

- Study showed limited utility of social media to detect drug safety issues
 - May be niche areas where it is more useful
 - Misuse and abuse
 - Product quality complaints
- Regulatory authorities do not recommend any changes in current adverse event reporting practices
- Use of social media data is optional



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

- Support for safety monitoring of medical 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 by healthcare professionals and patients via mobile apps and web portals



MedDRA

Medical Dictionary
for Regulatory Activities

Brian J. O'Hare
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