Role of MedDRA® in Public Health

How terminology standards can positively impact patient safety
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 public health and positive impact on patient safety:

- Background
- Users
- Examples of Use
- Relationship to other terminologies
What is MedDRA?

Med = Medical
D = Dictionary for
R = Regulatory
A = Activities

Supports public health by facilitating safety monitoring of medicinal products.
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

- 74K 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

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

- System Organ Classes: 26
- High Level Group Terms: > 330
- High Level Terms: > 1,700
- Preferred Terms: > 20,000
- Lowest Level Terms: > 70,000
MedDRA Structure (cont)

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

- True international standard for adverse event 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 60 countries
Examples of Use
Where MedDRA is Used

Preclinical Testing → Clinical Phase I → Clinical Phase II → Clinical Phase III → Marketed Product Phase IV

- 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 2: Patient diagnosed with rotary vertigo

Report 3: “Felt like the room was going around”
ICH E2B Expert Working Group

Implementation Guide for
Electronic Transmission of Individual Case Safety Reports
(ICSRs)

E2B(R3) Data Elements and Message Specification

Version 5.01, 12 April 2013
Use of MedDRA at the FDA

Acknowledgement: Dr. Chuck Cooper, Office of Translational Sciences, CDER, FDA
Standardised MedDRA Queries (SMQs)

- Bring together MedDRA terms from multiple SOCs, all related to a condition of interest
- From a company perspective, these are pre-packaged queries than can be used for safety monitoring, responding to regulatory queries, etc.
- From a regulator perspective, allows a **standard terms list** for more efficient comparison of safety issues
SMQs in Production - Examples

• As of Version 18.1, a total of 98 in production

  • Agranulocytosis
  • Anaphylactic reaction
  • Cerebrovascular disorders
  • Convulsions
  • Depression and suicide/self-injury
  • Hepatic disorders
  • Hypersensitivity
  • Ischaemic heart disease
  • Lack of efficacy/effect

  • Osteonecrosis
  • Peripheral neuropathy
  • Pregnancy and neonatal topics
  • Pseudomembranous colitis
  • Rhabdomyolysis/myopathy
  • Severe cutaneous adverse reactions
  • Systemic lupus erythematosus
How to “Run” an SMQ

Clinical Trial Database
Safety Database

Case
LLT1
LLT2
LLT3

"Hit"

SMQ
PT
LLT
LLT
LLT 1
PT
LLT
LLT
LLT
Use of SMQs at FDA

Acknowledgement: Dr. Chuck Cooper, Office of Translational Sciences, CDER, FDA
Medical records, billing/insurance claims, morbidity & mortality

SNOMED-CT
ICD-9-CM
ICD-10-CM – in 2015

Adverse events in clinical trials and post-marketing

WHO-ART
CTCAE (National Cancer Institute)

Exploring mappings/interoperability

Subsets of MedDRA
MedDRA supports 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
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