“This Drug May Cause….”
The use of MedDRA in Clinical Trials and Pharmacovigilance

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Patient Information Leaflets

- Patients receive information about the drug they have been prescribed or have bought, including possible adverse reactions.

- Where does the information originate?
  - Reports from patients in clinical trials, or taking a drug already on the market.
  - Frequencies of medical conditions are assessed to identify risks.
Classification of Adverse Event Reports

- **Headache**
  - Pulsing pain in head
  - All over head dull ache
  - Cephalgia

- **Pyrexia**
  - Feeling feverish
  - Slight temperature
  - Pyrexial

- **Night sweats**
  - Profuse perspiration at night
  - Wakes up hot and sweaty
  - Nocturnal hidrosis
Importance of ‘Coding’

- Accuracy
- Consistency
- Transparency
- Standardisation
- Analysis
- Evaluation

- Patient Safety
Coding in everyday life?
Coding in everyday life?
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MedDRA Definition

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

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’s Purpose

- Facilitate the exchange of clinical information through standardization
- Important tool for product evaluation, monitoring, communication, electronic records exchange, and oversight
- Supports coding (data entry) and retrieval and analysis of clinical information about human medical products including pharmaceuticals, biologics, vaccines, and drug-device combination products
MedDRA and the MSSO

- International support and development of terminology
- Foster use of MedDRA through communications and educational offerings
- “Custodians”, not owners, of the terminology
- JMO (partner organization for Japanese-language MedDRA)
- Governed by a Management Committee (industry, regulators, multi-national, other interested parties)
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
Scope of MedDRA

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

**OUT**
- Not a drug dictionary
- Patient demographic terms
- Clinical trial study design terms

**Frequency qualifiers**
- Numerical values for results
- Severity descriptors

**Not an equipment, device, diagnostic product dictionary**
MedDRA Structure

- System Organ Class (SOC) (27)
- High Level Group Term (HLGT) (337)
- High Level Term (HLT) (1,737)
- Preferred Term (PT) (23,389)
- Lowest Level Term (LLT) (79,507)
System Organ Classes

• Blood and lymphatic system disorders
• Cardiac disorders
• Congenital, familial and genetic disorders
• Ear and labyrinth disorders
• Endocrine disorders
• Eye disorders
• Gastrointestinal disorders
• General disorders and administration site conditions
• Hepatobiliary disorders
• Immune system disorders
• Infections and infestations
• Injury, poisoning and procedural complications
• Investigations
• Metabolism and nutrition disorders
• Musculoskeletal and connective tissue disorders
• Neoplasms benign, malignant and unspecified (incl cysts and polyps)
• Nervous system disorders
• Pregnancy, puerperium and perinatal conditions
• Product issues
• Psychiatric disorders
• Renal and urinary disorders
• Reproductive system and breast disorders
• Respiratory, thoracic and mediastinal disorders
• Skin and subcutaneous tissue disorders
• Social circumstances
• Surgical and medical procedures
• Vascular disorders
Types of Data for Coding

- Medical history
- Indication
- Signs & Symptoms
- Therapeutic procedures
- Diagnosis
- Social circumstances
- Test results
- Product quality issues
- Medication errors
- Causes of death
MedDRA Browsers

- **MedDRA Desktop Browser (MDB)**
  - Download MDB and release files from MedDRA website
- **MedDRA Web-Based Browser (WBB)**
  - [https://tools.meddra.org/wbb/](https://tools.meddra.org/wbb/)
- **Features**
  - Both require MedDRA ID and password
  - View/search MedDRA and SMQs
  - Support for all MedDRA languages
  - Language specific interface
  - Ability to export search results and Research Bin to local file system
How is MedDRA Used for Coding?

- The MedDRA Lowest Level Term that most accurately reflects the reported verbatim information should be selected.
- If there is no exact match in MedDRA, use medical judgment to match to an existing term that adequately represents the concept.

Example:
- Verbatim: Terrible itch all over both arms
- Lowest Level Term: Itchy upper limbs
- Preferred Term: Pruritus
- System Organ Class: Skin and subcutaneous tissue disorders
Provides term selection advice for industry and regulatory purposes

Objective is to promote accurate and consistent term selection to facilitate a common understanding of shared data

Recommended to be used as basis for individual organization’s own coding conventions
How is MedDRA Used for Analysis?

- MedDRA can be used to summarise large volumes of data
  - Standard approach is to list data at PT and SOC levels for overview

- Focused searches can be made using features of MedDRA:
  - Searching for specific PTs
  - Summarising at HLT or HLGT levels
  - Using multiaxial links to group diagnoses with signs and symptoms
  - Selecting a set of relevant PTs which reflect the condition of interest
  - Using Standardised MedDRA Queries (SMQs) for signal detection
Standardised MedDRA Queries (SMQs)

- Collaboration between CIOMS (Council for International Organizations of Medical Sciences) and ICH (MSSO)
- Groupings of terms from one or more MedDRA SOCs related to medical condition or area of interest
- Terms relate to signs/symptoms, diagnoses, syndromes, physical findings, laboratory and other test data, etc.
- Intended to aid in case identification
SMQs in Production - Examples

As of Version 21.1, a total of 103 level 1 SMQs in production

- Agranulocytosis
- Anaphylactic reaction
- Cerebrovascular disorders
- Convulsions
- Depression and suicide/self-injury
- Hepatic disorders
- Hypersensitivity
- Ischaemic heart disease
- Lack of efficacy/effect
- Medication errors
- Osteonecrosis
- Peripheral neuropathy
- Pregnancy and neonatal topics
- Pseudomembranous colitis
- Rhabdomyolysis/myopathy
- Severe cutaneous adverse reactions
- Systemic lupus erythematosus
SMQ Benefits and Limitations

Benefits
- Application across multiple therapeutic areas
- Validated reusable search logic
- Standardized communication of safety information
- Consistent data retrieval
- Maintenance by MSSO/JMO

Limitations
- Do not cover all medical topics or safety issues
- Will evolve and undergo further refinement even though they have been tested during development
SMQ Applications

► Clinical trials
  • Where safety profile is not fully established, use multiple SMQs on routine basis as screening tool
  • Selected SMQs to evaluate previously identified issue (pre-clinical data or class effect)

► Post-marketing
  • Selected SMQs to retrieve cases for suspected or known safety issue
  • Signal detection (multiple SMQs employed)
  • Single case alerts
  • Periodic reporting (aggregate cases for safety and other issues, e.g., lack of efficacy)
Provides data retrieval and presentation options for industry or regulatory purposes

Most effective when used in conjunction with MedDRA Term Selection: PTC document

Recommended to be used as basis for individual organization’s own data retrieval conventions
Wanting to learn more?.....
MSSO Contacts

▶ Website
  – www.meddra.org

▶ Email
  – mssohelp@meddra.org

▶ Frequently Asked Questions
  – www.meddra.org/faq
What skills does this work need?

- **Coding**
  - Logical approach
  - Ability to apply rules
  - Clinical knowledge
  - Research skills
  - Language abilities
  - Good memory
  - Desire to understand
  - Attention to detail
  - Ability to explain to others

- **Analysis**
  - Clinical knowledge
  - Desire to understand
  - Patience
  - Lateral thinking
  - Willingness to explore data
  - Ability to remain unbiased
Which Job Roles Involve Use of MedDRA?

- Awareness of MedDRA is vital to most roles within Clinical Trials and Pharmacovigilance.
- Further understanding will enhance performance and enjoyment of any role.
- Specific MedDRA knowledge and experience will open up specialist roles.
Specialist Roles Relating to MedDRA

- Coder – Codes Clinical Trials and Pharmacovigilance data
- Drug Safety Associate – Enters cases for monitoring & reporting
- Clinical Scientist – Evaluates & analyses clinical trial data
- Drug Safety Physician – Performs periodic reporting & signal detection
- Others
  - Investigator site staff
  - CRA/Monitor
  - Data Manager
  - Statistician
  - Quality & documentation
  - Software designer
  - Database programmer