



MedDRA as ICH Terminology Standard for Drug Safety Information, with Coding Exercises

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MedDRA MSSO





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



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MedDRA

Course Overview

- Gain knowledge of MedDRA's scope, structure, and characteristics
- Discuss important principles in the MedDRA Term Selection: Points to Consider document
- Learn about the available MedDRA browsers
- Discuss coding examples
- Present some MedDRA coding "pearls"
- Conclude with a question and answer session



MedDRA

MedDRA Overview





MedDRA

MedDRA Definition

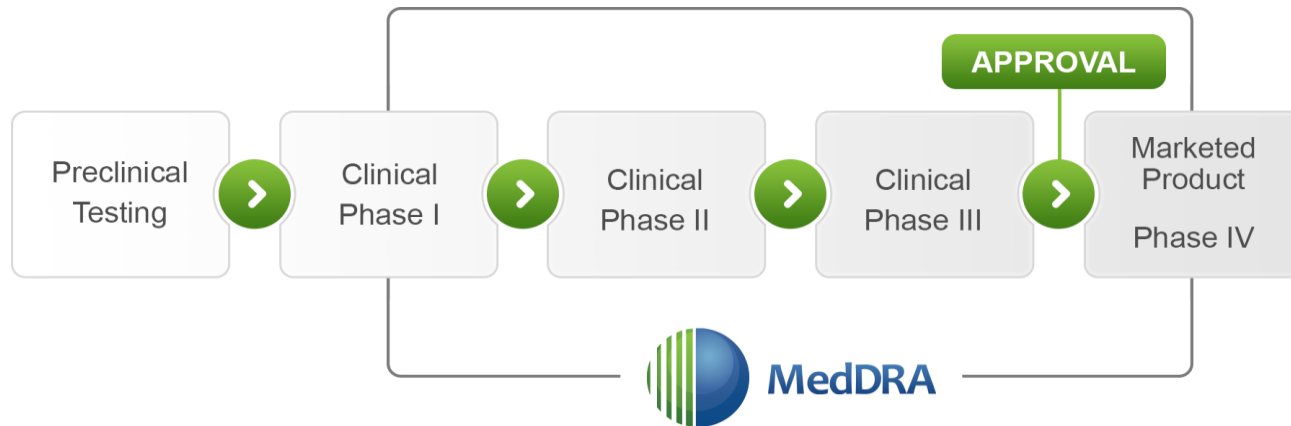
MedDRA is a clinically-validated international medical terminology used by regulatory authorities and the regulated biopharmaceutical industry. The terminology is used through the entire regulatory process, from pre-marketing to post-marketing, and for data entry, retrieval, evaluation, and presentation.





MedDRA

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





MedDRA

Electronic Transmission of Data



INTERNATIONAL CONFERENCE ON HARMONISATION OF
TECHNICAL REQUIREMENTS FOR REGISTRATION OF
PHARMACEUTICALS FOR HUMAN USE

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



MedDRA

Global View

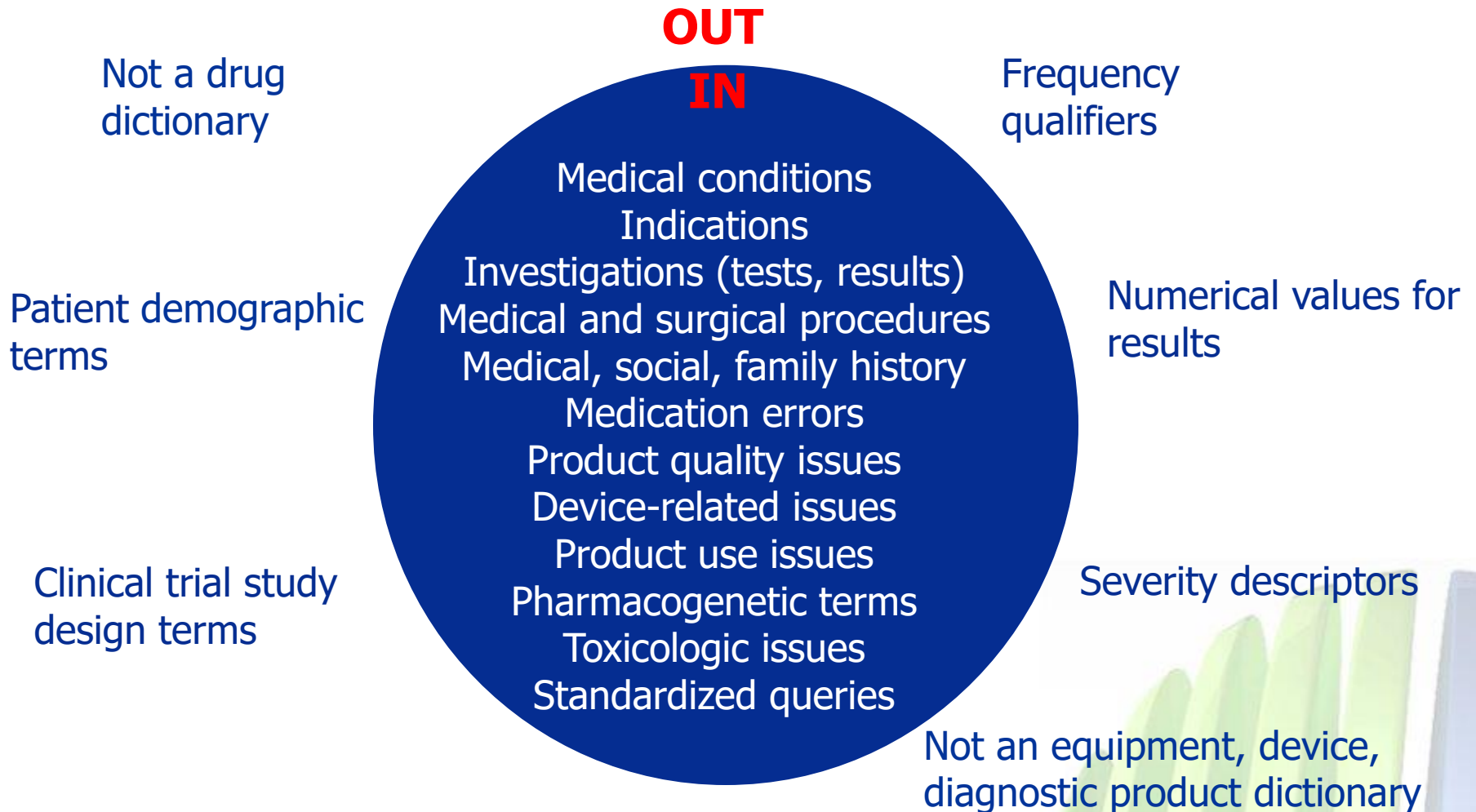


MedDRA is in 125 countries



MedDRA

Scope of MedDRA





MedDRA

MedDRA Structure

System Organ Class (SOC) (27)



High Level Group Term (HLGT) (337)



High Level Term (HLT) (1,737)



Preferred Term (PT) (23,708)



Lowest Level Term (LLT) (80,262)



MedDRA

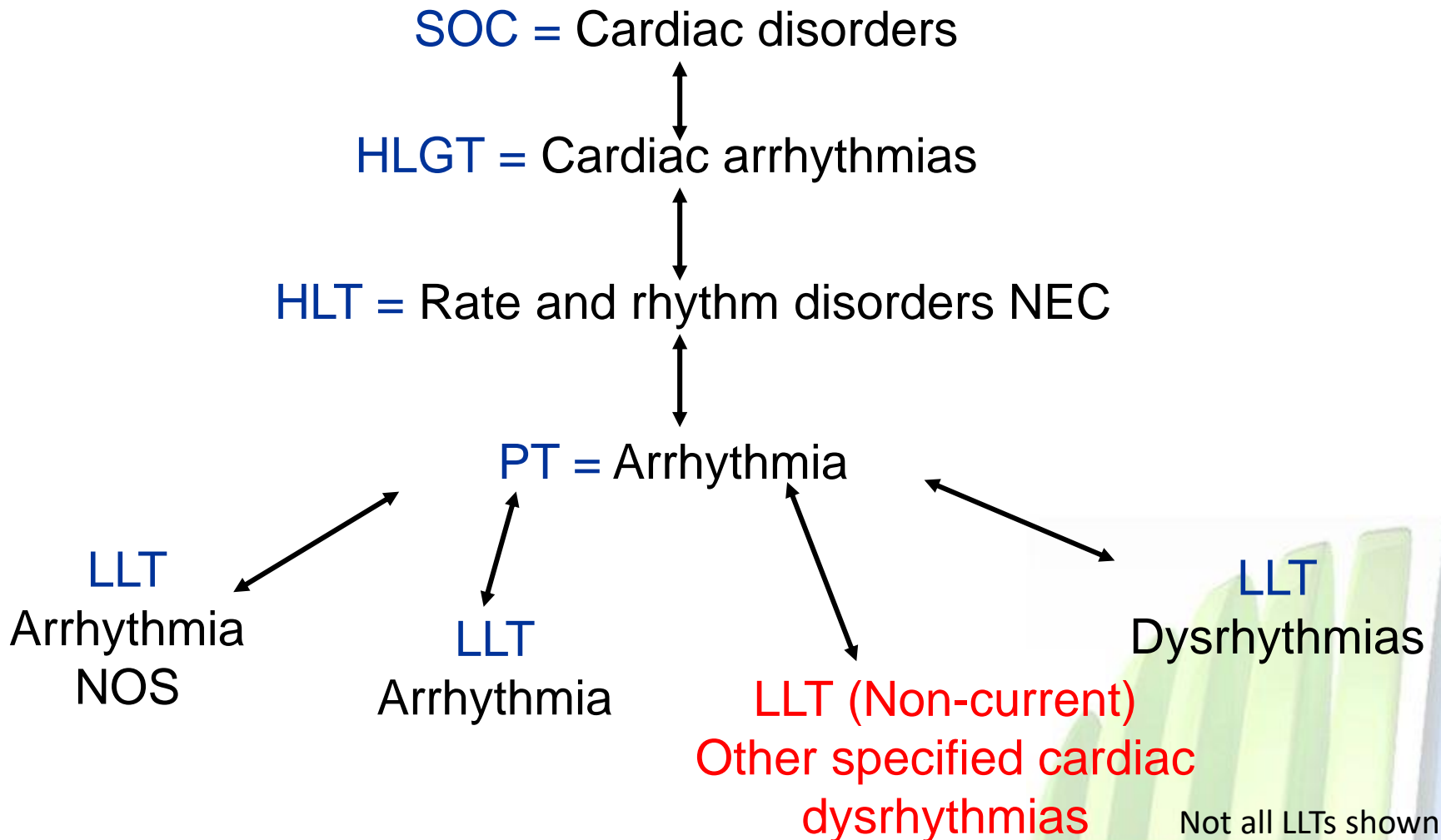
System Organ Classes

- 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



Lowest Level Term

Synonyms, lexical variants, sub-elements





MedDRA

Non-Current Terms

- Flagged at the LLT level in MedDRA
- Not recommended for continued use
- Retained to preserve historical data for retrieval and analysis
- Terms that are vague, ambiguous, outdated, truncated, or misspelled
- Terms derived from other terminologies that do not fit MedDRA rules



MedDRA

Codes and Languages





A Multi-Axial Terminology

- Multi-axial = the representation of a medical concept in multiple SOC's
 - Allows grouping by different classifications
 - Allows retrieval and presentation via different data sets
- All PTs assigned a primary SOC
 - Determines which SOC will represent a PT during cumulative data outputs
 - Prevents “double counting”
 - Supports standardized data presentation
 - Pre-defined allocations should not be changed by users

A Multi-Axial Terminology (cont)

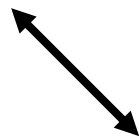
SOC = Respiratory, thoracic and
mediastinal disorders
(Secondary SOC)



HLGT = Respiratory tract
infections



HLT = Viral upper respiratory
tract infections



PT = Influenza

SOC = Infections and
infestations
(Primary SOC)



HLGT = Viral infectious
disorders



HLT = Influenza viral
infections



Rules for Primary SOC Allocation

- PTs represented in only one SOC are automatically assigned that SOC as primary
- PTs for diseases, signs and symptoms are assigned to prime manifestation site SOC
- Congenital and hereditary anomalies terms have SOC *Congenital, familial and genetic disorders* as Primary SOC
- Neoplasms terms have SOC *Neoplasms benign, malignant and unspecified (incl cysts and polyps)* as Primary SOC
 - **Exception:** Cysts and polyps have prime manifestation site SOC as Primary SOC
- Infections and infestations terms have SOC *Infections and infestations* as Primary SOC



Primary SOC Priority

If a PT links to more than one of the exceptions, the following priority will be used to determine primary SOC:

- 1st: Congenital, familial and genetic disorders*
- 2nd: Neoplasms benign, malignant and unspecified (incl cysts and polyps)*
- 3rd: Infections and infestations*



A Multi-Axial Terminology (cont)

PTs in the following SOCs **only** appear in that particular SOC and not in others, i.e., they are not multi-axial

- *Investigations*
- *Surgical and medical procedures*
- *Social circumstances*



MedDRA

MedDRA Term Selection: Points to Consider Document



What are Coding Conventions?

- Written guidelines for coding with MedDRA in your organization
- Support accuracy and consistency
- Common topics
 - Misspellings, abbreviations and acronyms
 - Combination terms and “due to” concepts
 - “Always query” terms, e.g., “Chest pain”
- Should be consistent with the MedDRA Term Selection: Points to Consider document



MedDRA

Why Do We Need Coding Conventions?

- Differences in medical aptitude of coders
- Consistency concerns (many more “choices” to manually code terms in MedDRA compared to older terminologies)
- Even with an autoencoder, may still need manual coding



ICH M1 Points to Consider Working Group (PtC WG)



November 2017, Geneva, Switzerland

- Regulators and industry from EU, US, and Japan
- Health Canada, Canada
- MFDS, Republic of Korea
- ANVISA, Brazil
- NMPA, China
- MSSO
- JMO
- WHO (Observer)



PtC Documents

PtC Category	PtC Document	Purpose	Languages	Release Cycle
Term Selection	MedDRA Term Selection: Points to Consider	Promote accurate and consistent coding with MedDRA	English and Japanese	Updated with each MedDRA release
	MedDRA Term Selection: Points to Consider Condensed Version	Shorter version focusing on general coding principles to promote accurate and consistent use of MedDRA worldwide	All MedDRA languages (except English and Japanese)	Update as needed
Data Retrieval and Presentation	MedDRA Data Retrieval and Presentation: Points to Consider	Demonstrate how data retrieval options impact the accuracy and consistency of data output	English and Japanese	Updated with each MedDRA release
	MedDRA Data Retrieval and Presentation: Points to Consider Condensed Version	Shorter version focusing on general retrieval and analysis principles to promote accurate and consistent use of MedDRA worldwide	All MedDRA languages (except English and Japanese)	Update as needed
General	MedDRA Points to Consider Companion Document	More detailed information, examples, and guidance on specific topics of regulatory importance. Intended as a “living” document with frequent updates based on users’ needs. First edition covers data quality and medication errors.	English and Japanese	Updated as needed



MedDRA Term Selection: Points to Consider (MTS:PTC)

MedDRA® TERM SELECTION: POINTS TO CONSIDER ICH-Endorsed Guide for MedDRA Users

Release 4.17
Based on MedDRA Version 22.0

1 March 2019

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- 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



MedDRA Term Selection: PTC (cont)

- Developed by a working group of the ICH Management Committee
- Updated twice yearly with each MedDRA release
- Available on MedDRA and JMO websites
 - English and Japanese
 - Word (“clean” and “redlined”), PDF, HTML formats
 - “Redlined” document identifies changes made from previous to current release of document



MTS:PTC Points of Note

- In some cases with more than one option for selecting terms, a “preferred option” is identified but this does not limit MedDRA users to applying that option. Organizations should be consistent in their choice of option.
- Section 4.1 – Versioning (Appendix)
 - 4.1.1 Versioning methodologies
 - 4.1.2 Timing of version implementation



General Term Selection Principles

- Quality of Source Data
- Quality Assurance
- Do Not Alter MedDRA
- Always Select a Lowest Level Term
- Select Only Current Lowest Level Terms
- When to Request a Term
- Use of Medical Judgment in Term Selection
- Selecting More than One Term
- Check the Hierarchy
- Select Terms for All Reported Information, Do Not Add Information



Quality of Source Data Quality Assurance

- Quality of original information impacts quality of output
- Obtain clarification of data
- Can be optimized by careful design of data collection forms and proper training of staff
- Organizations' coding guidelines should be consistent with MTS:PTC
- Review of term selection by qualified individuals
- Human oversight of automated coding results



MedDRA

Do Not Alter MedDRA

- MedDRA is a standardized terminology with a pre-defined term hierarchy
- Users must not make *ad hoc* structural alterations, including changing the primary SOC allocation
- If terms are incorrectly placed, submit a change request to the MSSO



Always Select a Lowest Level Term

Select Only Current LLTs

- Lowest Level Term that most accurately reflects the reported verbatim information should be selected
- Degree of specificity may be challenging
 - Example: "*Abscess on face*" → select "*Facial abscess*," not simply "*Abscess*"
- Select current LLTs only
 - Non-current terms for legacy conversion/historical purposes



When to Request a Term Use of Medical Judgment

- Avoid company-specific “work-arounds” for MedDRA deficiencies. If concept not adequately represented in MedDRA, submit Change Request to MSSO.
- If no exact match in MedDRA, use medical judgment to match to an existing term that adequately represents the concept



MedDRA

Introduction to the MedDRA Browsers



MSSO's MedDRA Browsers

- MedDRA Desktop Browser (MDB)
 - Download MDB and release files from MedDRA website
- MedDRA Web-Based Browser (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



MedDRA

MedDRA Desktop Browser (MDB) and Web-Based Browser (WBB) Update

- New functionality for users
 - Preview upcoming (supplemental) changes in next release*
 - View primary **and** secondary link information
 - Upload terms to run against SMQs
 - Advanced search options (e.g., NOT, OR)

*Supplemental view not available on MDB



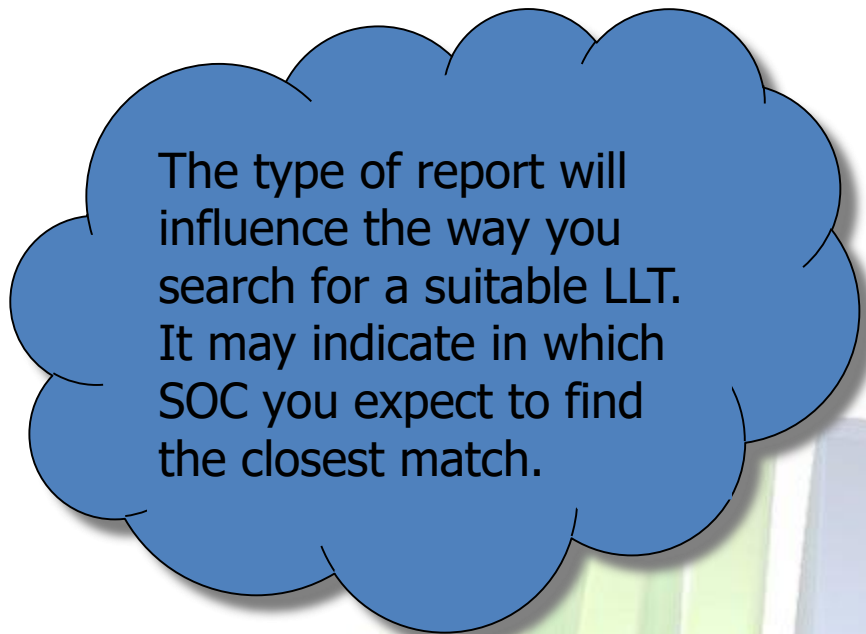
MedDRA

Coding Exercises



Assessing the Reported Information

- Consider what is being reported. Is it a:
 - Clinical condition - Diagnosis, sign or symptom?
 - Indication?
 - Test result?
 - Injury?
 - Procedure?
 - Medication error?
 - Product use issue?
 - Product quality issue?
 - Social circumstance?
 - Device issue?
 - Procedural complication?
- **Is it a combination of these?**



The type of report will influence the way you search for a suitable LLT. It may indicate in which SOC you expect to find the closest match.



MedDRA

Coding Exercise 1

Which LLT Would You Select?

Verbatim: “Man with decreased fertility.”

- A. Infertility
- B. Fertility decreased male
- C. Infertility male
- D. Fertility decreased





MedDRA

Coding Exercise 2

Which LLT Would You Select?

Verbatim: “Became color blind in adolescence”

- A. Color blindness
- B. Blindness color
- C. Colour blindness acquired
- D. Color blindness acquired





MedDRA

Coding Exercise 3

Which LLT Would You Select?

Verbatim: "Turned very greasy"

- A. Ill-defined disorder
- B. Unevaluable event
- C. Skin greasy
- D. Unevaluable reaction





Coding Exercise 4

Which LLT Would You Select?

Verbatim: “Deliberately took an overdose”

- A. Intentional overdose
- B. Overdose NOS
- C. Deliberate overdose
- D. Overdose





Coding Exercise 5

Which LLT Would You Select?

Verbatim: “The 2-year-old accidentally took his mother’s medication”

- A. Accidental overdose
- B. Accidental exposure to product by child
- C. Accidental drug intake by child
- D. Accidental ingestion



Coding Exercise 6

Which LLT Would You Select?

Verbatim: “Infection after surgery”

- A. Infection
- B. Postoperative wound infection
- C. Surgical wound infection
- D. Postoperative infection





Coding Exercise 7

Which LLT Would You Select?

Verbatim: "Had MI"

- A. Myocardial infarction
- B. Ill-defined disorder
- C. MI
- D. Unevaluable event





Coding Exercise 8

Which LLT Would You Select?

Verbatim:

"Hypernatraemia (Serum sodium = 115 mEq/L)"

- A. Serum sodium abnormal
- B. Hypernatraemia
- C. Hyponatraemia
- D. Serum sodium decreased





MedDRA

Coding Exercise 9

Which LLT Would You Select?

Verbatim: “Took intramuscular drug by mouth”

- A. Wrong route of administration
- B. Drug administered via inappropriate route
- C. Medication error
- D. Intramuscular formulation administered by other route



MedDRA

Coding Exercise 10

Which LLT Would You Select?

Verbatim: "Death from cerebral haemorrhage"

- A. Sudden death
- B. Death
- C. Cerebral haemorrhage
- D. Brain death





Coding Exercise 11

Which LLT Would You Select?

Verbatim: “The doctor mistakenly prescribed the wrong drug; the pharmacist noticed the error before dispensing the drug”

- A. Wrong drug dispensed
- B. Medication error
- C. Intercepted drug prescribing error
- D. Intercepted drug dispensing error



MedDRA

Coding Exercise 12

Which LLT Would You Select?

Verbatim: "Died as a result of a suicide attempt"

- A. Suicide gesture
- B. Attempted suicide
- C. Completed suicide
- D. Death





Coding Exercise 13

Which LLT Would You Select?

Verbatim: “Dose taken was below the minimum recommended dose in the product label”

- A. Underdose
- B. Drug administration error
- C. Accidental underdose
- D. Incorrect dosage administered



MedDRA

Coding Exercise 14

Which LLT Would You Select?

Verbatim: “Abused by her husband”

- A. Physical abuse
- B. Battered wife
- C. Spousal abuse
- D. Victim of spousal abuse





Coding Exercise 15

Which LLTs Would You Select?

Verbatim: "Because the label on the package was missing the wording on dosing information, the patient took the drug twice daily instead of once daily, resulting in the administration of an overdose."

- A. Product label issue
- B. Product label missing
- C. Product label missing text

- D. Wrong dose administered
- E. Once daily dose taken more frequently
- F. Inappropriate schedule of drug administration

- G. Overdose
- H. Accidental overdose



MedDRA

Some MedDRA Coding “Pearls”





MedDRA

MedDRA Coding “Pearls”

- First, try using reporter’s actual words
- Be aware of MedDRA’s specificity
- Exploit MedDRA’s hierarchy – if an LLT is close to what you need, look at its “siblings” and “parent”
- Check where the LLT lies in MedDRA (i.e., check the hierarchy above to be sure it represents the verbatim term accurately)





MedDRA Coding “Pearls” (cont)

- Use “top-down” and “bottom-up” navigation
- Use available resources for difficult verbatim terms (web search, medical dictionaries, colleagues)
- Use advanced Boolean search terms features (i.e., “begins with”, “exact match”, “ends with”, “not contains”, “and”, “or”) when needed
- Become familiar with MedDRA Concept Descriptions



MedDRA Coding “Pearls” (cont)

- And most important of all... get more coding training!





In this course, we:

- Reviewed the scope, structure, and characteristics of MedDRA
- Were introduced to the MedDRA Term Selection: Points to Consider document and some of its specific principles
- Were introduced to the MedDRA browsers
- Discussed coding examples with answers
- Presented some MedDRA coding “pearls”



MedDRA

MSSO Contacts

- Website
 - www.meddra.org
- Email
 - mssohelp@meddra.org
- Frequently Asked Questions
 - www.meddra.org/faq





MedDRA

Medical Dictionary
for Regulatory Activities

Thank You, any questions?

