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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Course Overview

- Discuss important principles in the MedDRA Term Selection: Points to Consider document
- Demonstrate some features of a MedDRA browser
- Discuss coding examples using a MedDRA browser
- Present some MedDRA coding “pearls”
- Conclude with a question and answer session
- Appendix – MedDRA’s scope, structure, and characteristics/Browsers
MedDRA Term Selection: Points to Consider Document

ICH M1 Points to Consider Working Group (PtC WG)

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

November 2017, Geneva, Switzerland
MedDRA Term Selection: Points to Consider (MTS:PTC)

- 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

Term Selection Points

- Diagnoses and Provisional Diagnoses with or without Signs and Symptoms
- Death and Other Patient Outcomes
- Suicide and Self-Harm
- Conflicting/Ambiguous/Vague Information
- Combination Terms
- Age vs. Event Specificity
- Body Site vs. Event Specificity
- Location-Specific vs. Microorganism-Specific Information
- Modification of Pre-existing Conditions
- Exposures During Pregnancy and Breast Feeding
- Congenital Terms
- Neoplasms
- Medical and Surgical Procedures
- Investigations
Term Selection Points (cont)

- Medication Errors, Accidental Exposures and Occupational Exposures
- Misuse, Abuse and Addiction
- Transmission of Infectious Agent via Product
- Overdose, Toxicity and Poisoning
- Device-related Terms
- Drug Interactions
- No Adverse Effect and “Normal” Terms
- Unexpected Therapeutic Effect
- Modification of Effect
- Social Circumstances
- Medical and Social History
- Indication for Product Use
- Off Label Use
- Product Quality Issues

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
## Diagnoses and Provisional Diagnoses

### SINGLE DIAGNOSIS

<table>
<thead>
<tr>
<th>DEFINITIVE DIAGNOSIS</th>
<th>PROVISIONAL DIAGNOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single diagnosis without signs and symptoms</td>
<td>Single provisional diagnosis without signs and symptoms</td>
</tr>
<tr>
<td>• Diagnosis (only possible option)</td>
<td>• Provisional diagnosis (only possible option)</td>
</tr>
</tbody>
</table>

**Example:** "Myocardial infarction" → select "Myocardial infarction"

**Example:** "Possible myocardial infarction" → select "Myocardial infarction" (select term as if definitive diagnosis)

Similar principles apply for multiple diagnoses

### Diagnoses and Provisional Diagnoses (cont)

<table>
<thead>
<tr>
<th>DEFINITIVE DIAGNOSIS</th>
<th>PROVISIONAL DIAGNOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single diagnosis with signs/symptoms</td>
<td>Single provisional diagnosis with signs/symptoms</td>
</tr>
<tr>
<td>• Preferred: Diagnosis only</td>
<td>• Preferred: Provisional diagnosis and signs/symptoms</td>
</tr>
</tbody>
</table>

**Example:** "Anaphylactic reaction with rash, dyspnoea, hypotension, and laryngospasm" → select "Anaphylactic reaction"

**Example:** "Possible myocardial infarction with chest pain, dyspnoea, diaphoresis" → select "Myocardial infarction" "Chest pain", "Dyspnoea", and "Diaphoresis"

Similar principles apply for multiple diagnoses
## Diagnoses and Provisional Diagnoses (cont)

### SINGLE DIAGNOSIS

<table>
<thead>
<tr>
<th>DEFINITIVE DIAGNOSIS</th>
<th>PROVISIONAL DIAGNOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single diagnosis with signs/symptoms</td>
<td>Single provisional diagnosis with signs/symptoms</td>
</tr>
<tr>
<td>• Alternate: Diagnosis and signs/symptoms</td>
<td>• Alternate: Signs/symptoms only (as provisional diagnosis may change)</td>
</tr>
</tbody>
</table>

Similar principles apply for multiple diagnoses

---

### Diagnoses and Provisional Diagnoses (cont)

- Always include signs/symptoms not associated with diagnosis

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction, chest pain, dyspnoea, diaphoresis, ECG changes and jaundice</td>
<td>Myocardial infarction Jaundice (note that jaundice is not typically associated with myocardial infarction)</td>
</tr>
</tbody>
</table>
## Conflicting/Ambiguous Information

- First, try to obtain more specific information

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperkalaemia with a serum potassium of 1.6 mEq/L</td>
<td>Serum potassium abnormal</td>
<td>LLT Serum potassium abnormal covers both of the reported concepts (note: serum potassium of 1.6 mEq/L is a low result, not high)</td>
</tr>
<tr>
<td>GU pain</td>
<td>Pain</td>
<td>“GU” could be either “genito-urinary” or “gastric ulcer”. If additional information is not available, then select a term to reflect the information that is known, i.e., LLT Pain</td>
</tr>
</tbody>
</table>

## Vague Information

- First, try to obtain more specific information

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turned green</td>
<td>Unevaluable event</td>
<td>“Turned green” reported alone is vague; this could refer to a patient condition or even to a product (e.g., pills)</td>
</tr>
<tr>
<td>Patient had a medical problem of unclear type</td>
<td>Ill-defined disorder</td>
<td>Since it is known that there is some form of a medical disorder, LLT Ill-defined disorder can be selected</td>
</tr>
</tbody>
</table>
**Investigations**

- **Medical condition vs. investigation result**

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycaemia</td>
<td>Hypoglycaemia</td>
<td>LLT Hypoglycaemia links to SOC Metabolism and nutrition disorders</td>
</tr>
<tr>
<td>Decreased glucose</td>
<td>Glucose decreased</td>
<td>LLT Glucose decreased links to SOC Investigations</td>
</tr>
</tbody>
</table>

**Investigations (cont)**

- **Unambiguous investigation result**

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose 40 mg/dL</td>
<td>Glucose low</td>
<td>Glucose is clearly below the reference range</td>
</tr>
</tbody>
</table>

- **Ambiguous investigation result**

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>His glucose was 40</td>
<td>Glucose abnormal</td>
<td>No units have been reported. Select LLT Glucose abnormal if clarification cannot be obtained.</td>
</tr>
</tbody>
</table>
Investigations (cont)

• Investigation results consistent with diagnosis

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated potassium, K 7.0 mmol/L, and hyperkalaemia</td>
<td>Hyperkalaemia</td>
<td>It is not necessary to select LLT Potassium increased</td>
</tr>
</tbody>
</table>

• Grouped investigation result terms

<table>
<thead>
<tr>
<th>Reported</th>
<th>LLT Selected</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased alkaline phosphatase, increased SGPT, increased SGOT and elevated LDH</td>
<td>Alkaline phosphatase increased SGPT increased SGOT increased LDH increased</td>
<td>Select four individual terms. A single term such as LLT Liver function tests abnormal should not be selected.</td>
</tr>
</tbody>
</table>

MedDRA Browser Demonstration
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.
Which LLT Would You Select?

Verbatim: “Man with decreased fertility.”

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

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
Which LLT Would You Select?

Verbatim: “Turned very greasy”

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

Which LLT Would You Select?

Verbatim: “Deliberately took an overdose”

A. Intentional overdose
B. Overdose NOS
C. Deliberate overdose
D. Overdose
Which LLT Would You Select?

**Verbatim:** “Patient reported medical problem”

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

---

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
Which LLT Would You Select?

**Verbatim:** “Infection after surgery”

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

Which LLT Would You Select?

**Verbatim:** “He sold his father’s medication”

A. Drug diversion  
B. Intentional product misuse  
C. Drug use for unapproved indication  
D. Intentional drug misuse
Which LLT Would You Select?

Verbatim: “Had MI”

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

Which LLT Would You Select?

Verbatim: “Hyponatraemia (Serum sodium = 115 mEq/L)”

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

Which LLT Would You Select?

**Verbatim:** “Death from cerebral haemorrhage”

A. Sudden death
B. Death
C. Cerebral haemorrhage
D. Brain death
Which LLT Would You Select?

Verbatim: “Patient was found dead”

A. Death from natural causes
B. Death
C. Died in sleep
D. Found dead

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
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

---

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
Which LLT Would You Select?

Verbatim: “Abused by her husband”

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

Which LLT Would You Select?

Verbatim: “A 27-year-old woman took a 2-week course of antibiotics during her second trimester of pregnancy. She did not experience any side effects.”

What is the preferred option for the LLT(s) to be selected?

A. Maternal exposure during pregnancy
B. No adverse effect
C. Normal pregnancy
Which LLT Would You Select?

Verbatim: “After taking an antihistamine along with her prescribed proton pump inhibitor, a 53-year-old woman developed vertigo.”

A. Drug interaction NOS
B. Vertigo subjective
C. Vertigo
D. Drug interaction

Which LLT Would You Select?

Verbatim: “The medication was stored at room temperature instead of in the refrigerator where it belonged.”

A. Incorrect storage of drug
B. Improper storage of unused product
C. Intercepted medication error
D. Product storage error temperature too high
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

Some MedDRA Coding “Pearls”
Narrative vignette
A 75-year-old male receiving Drug X for *rheumatoid arthritis* developed symptomatic *aortic valve stenosis*. The patient’s medical history is significant for *colon cancer* and *cigarette smoking*. He underwent an *aortic valve replacement* and developed a *sternal wound infection* three days post-surgery.

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)
• 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

• And most important of all... get more coding training!
Summary

• Discussed important principles presented in the MedDRA Term Selection: Points to Consider document
• Demonstrated some features of a MedDRA browser
• Discussed coding examples using a MedDRA browser
• Presented some MedDRA coding “pearls”

MSSO Contacts

• Website
  – www.meddra.org
• Email
  – mssohelp@meddra.org
• Frequently Asked Questions
  – www.meddra.org/faq
Question and Answer Session

Appendix: MedDRA’s Scope, Structure, and Characteristics/Browsers
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.

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
- Product use issues
- Pharmacogenetic terms
- Toxicologic issues
- Standardized queries
- 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) (23,708)
- Lowest Level Term (LLT) (80,262)

**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
A Multi-Axial Terminology

- Multi-axial = the representation of a medical concept in multiple SOCs
  - 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

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
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 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