



# MedDRA Workshop

42th Annual Meeting of Representatives of National  
Pharmacovigilance Centres participating in the WHO PIDM

Bogotá, Colombia

1 November 2019

Dr. Carol-Ann Wilson - MSSO

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MedDRA

# Session Overview

- MedDRA background, structure and scope
- General coding principles
- How to use the MedDRA browser
- MedDRA Term Selection: Points to Consider document
- Hands-on coding exercises
- Data Retrieval and Analysis of MedDRA Coded Data/ Standardised MedDRA Queries
- Useful resources



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# MedDRA Background, Structure and Scope





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).



MedDRA

# What is MedDRA?

Med = Medical

D = Dictionary for

R = Regulatory

A = Activities





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

# Scope of MedDRA

**OUT**  
**IN**

Not a drug  
dictionary

Frequency  
qualifiers

Patient demographic  
terms

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

Numerical values for  
results

Clinical trial study  
design terms

Severity descriptors

Not an equipment, device,  
diagnostic product dictionary





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)



# 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



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

# MedDRA Codes

- Each MedDRA term assigned an 8-digit numeric code starting with "1"
- The code is non-expressive
- Codes can fulfill a data field in various electronic submission types (e.g., E2B)
- New terms are assigned sequentially





MedDRA

# Codes and Languages





MedDRA

# 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)

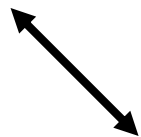
SOC = Respiratory, thoracic and  
mediastinal disorders  
(Secondary SOC)



HLGT = Respiratory tract  
infections



HLT = Viral upper respiratory  
tract infections



PT = Influenza

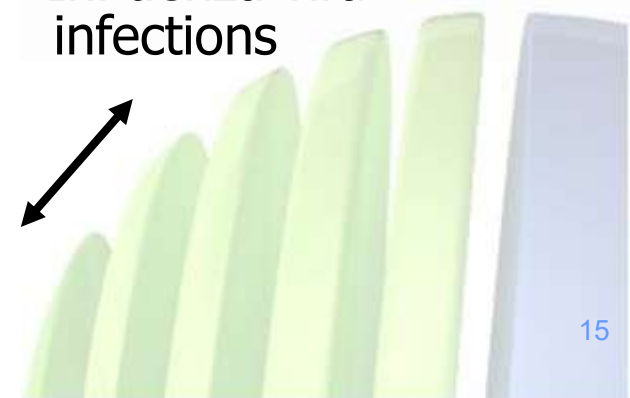
SOC = Infections and  
infestations  
(Primary SOC)



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





MedDRA

# Primary SOC Priority

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

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





# Can You Select the Primary SOC for This PT?

PT	HLT	HLGT	SOC
Congenital HIV infection	Viral infections congenital	Infections and infestations congenital	Congenital, familial and genetic disorders
	Congenital neonatal infections	Neonatal and perinatal conditions	Pregnancy, puerperium and perinatal conditions
	Retroviral infections	Viral infectious disorders	Infections and infestations
	Acquired immunodeficiency syndromes	Immunodeficiency syndromes	Immune system disorders



MedDRA

## Non-multiaxial SOC

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

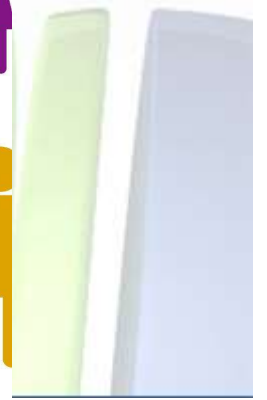
- *Investigations*
- *Surgical and medical procedures*
- *Social circumstances*





# General Coding Principles







MedDRA

# Why is Coding Important?



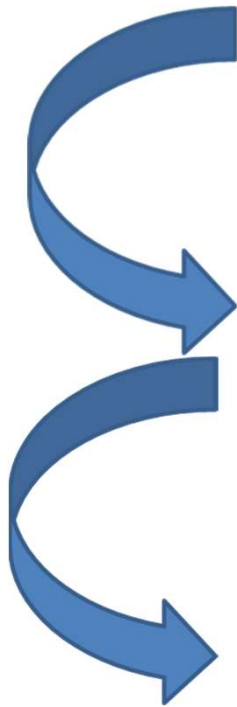


MedDRA

# Why is Coding Important?

## Coding quality

- Standardization
- Accuracy
- Consistency
- Transparency



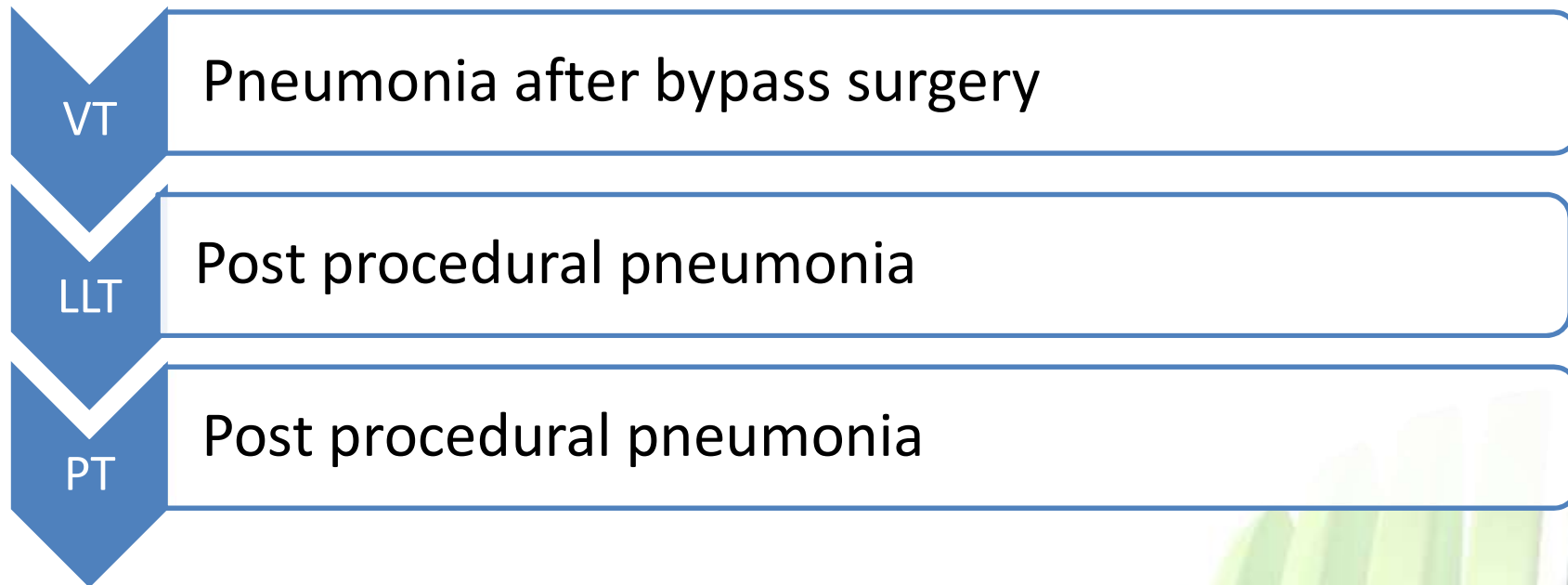
Efficient, effective and reproducible data retrieval, presentation and evaluation of safety data

**Patient safety!**





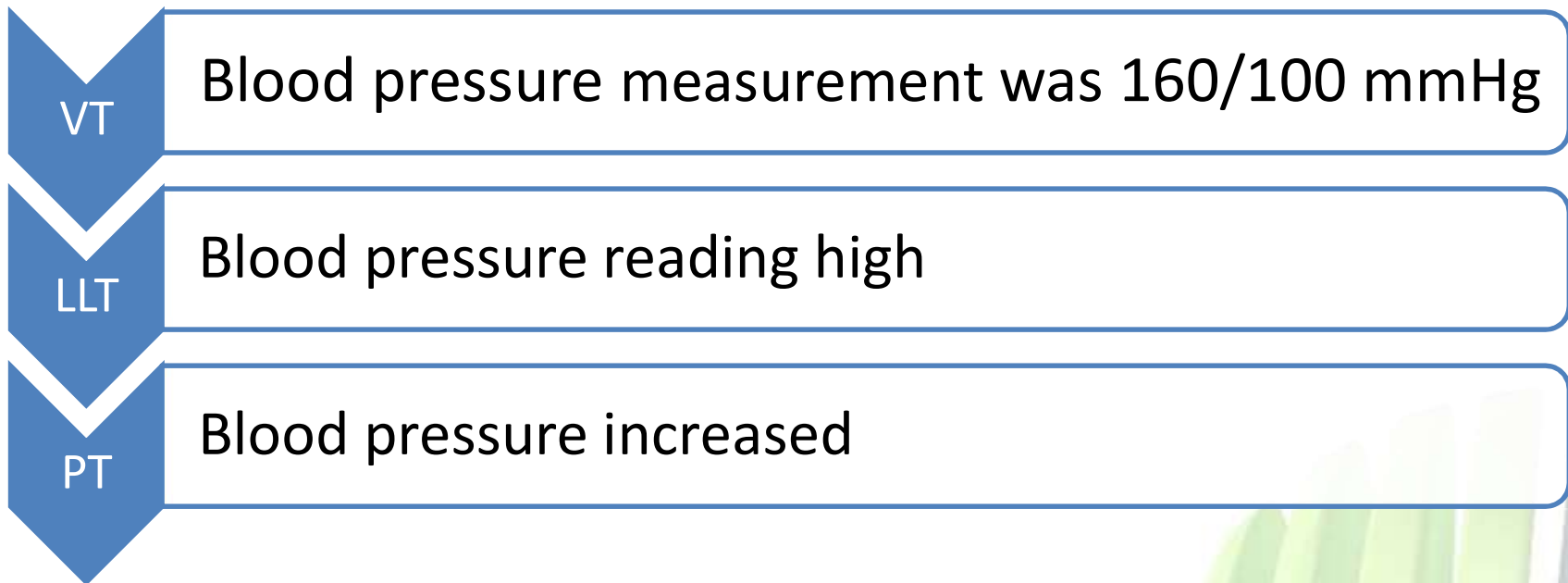
Select the closest matching LLT to capture all the reported information







Do not add information, interpret or diagnose





Do not add information, interpret or diagnose

VT

Patient took more pills than prescribed during last week

LLT

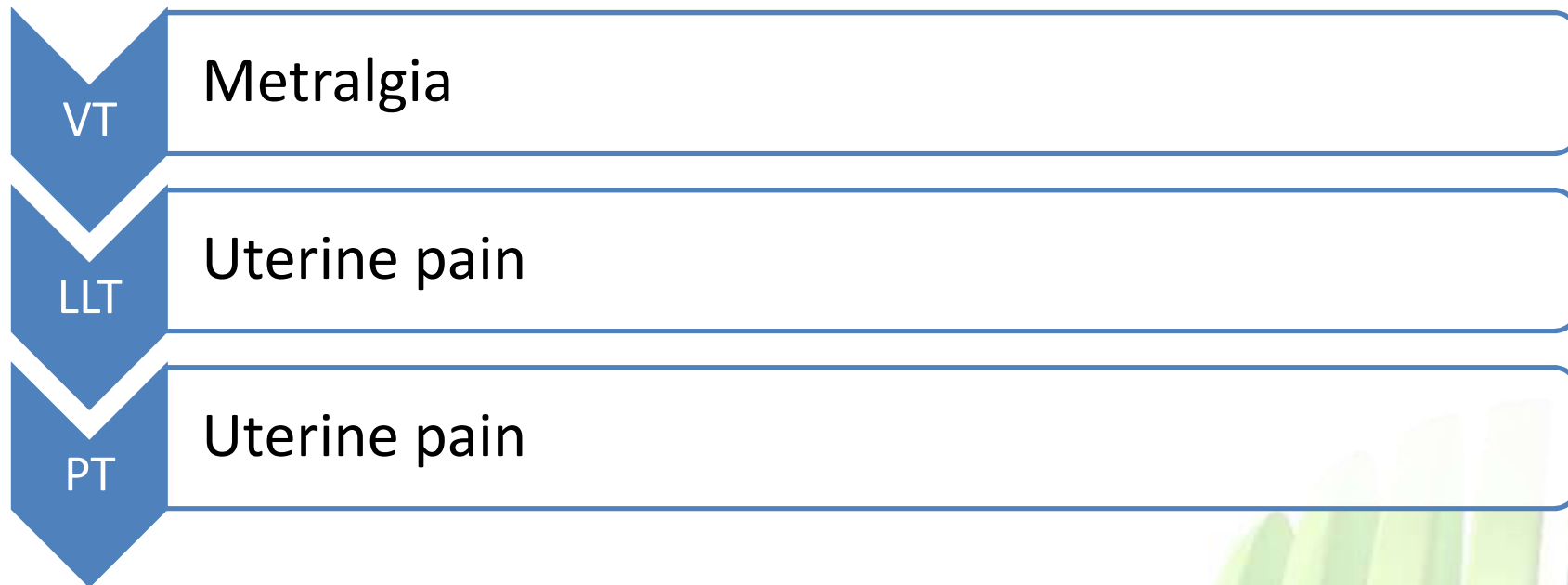
Extra dose administered

PT

Extra dose administered

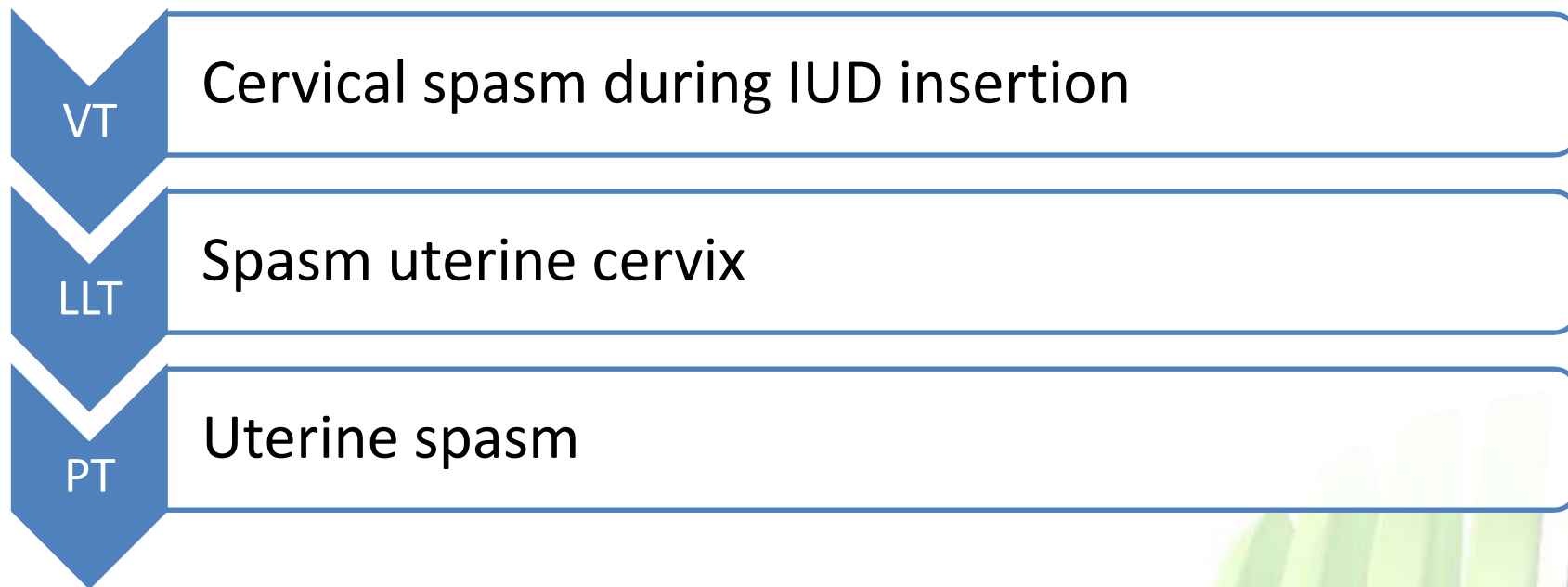


## Use medical judgment and references



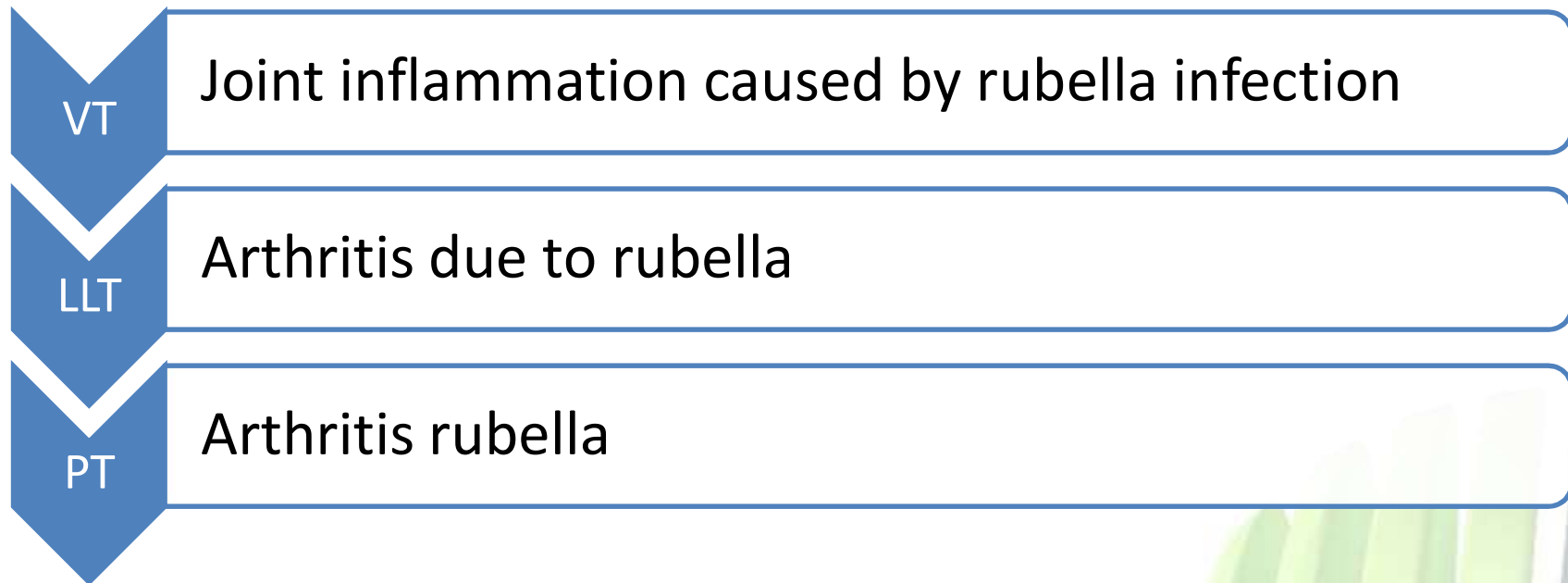


## Check the MedDRA hierarchy



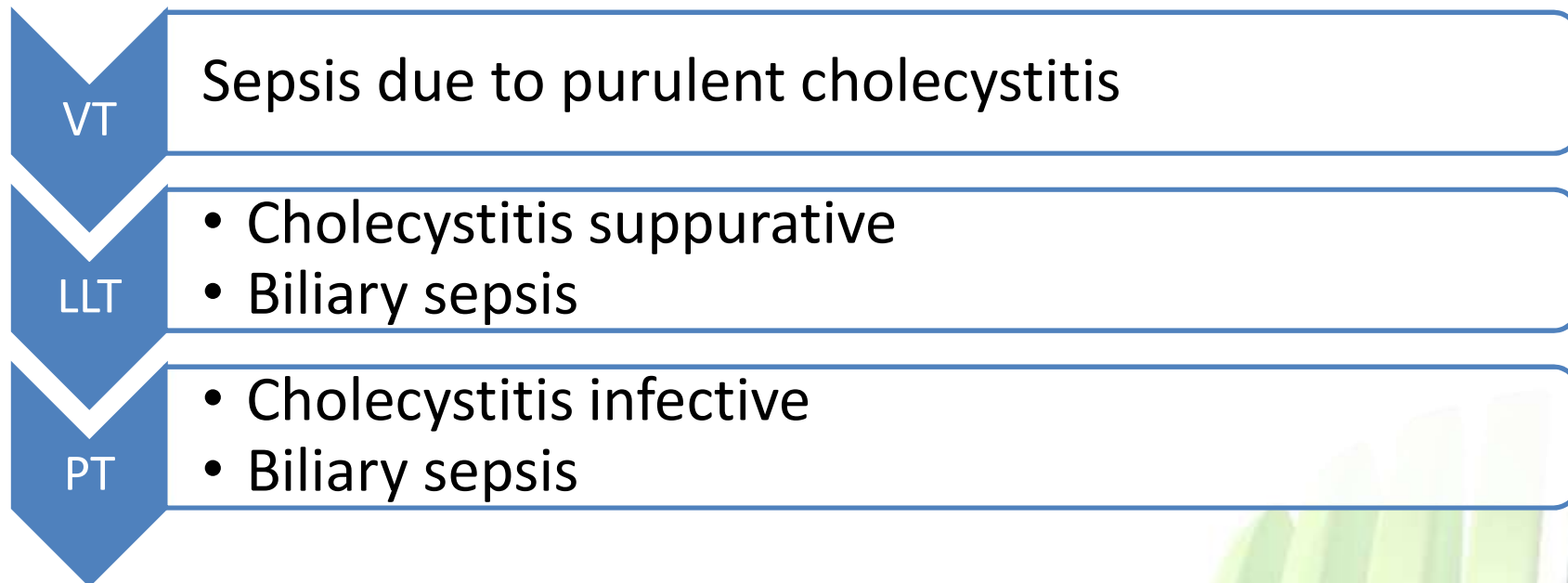


## Know how to handle combination terms



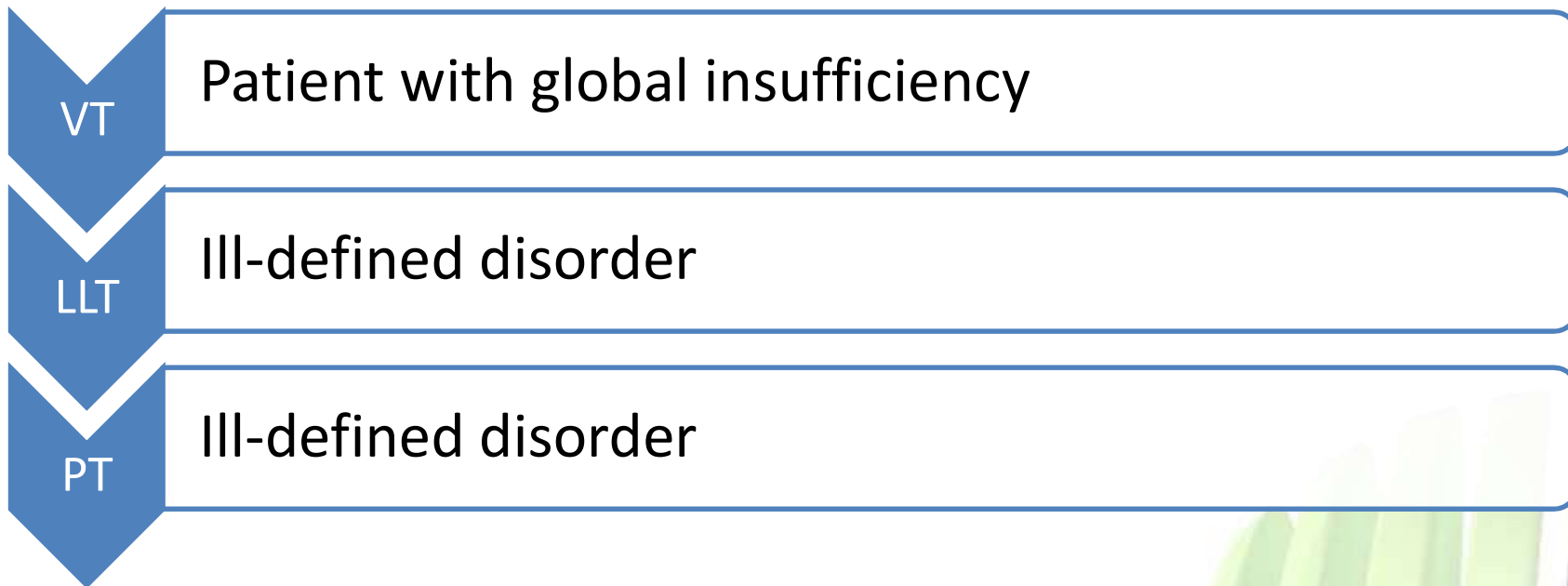


## Know how to handle combination terms





Seek clarification if vague or ambiguous verbatims are reported





# How to Use the MedDRA Browser

**WBB training credentials (temporary)**

**<https://tools.meddra.org/wbb>**

**Login: training**

**PWD: @MEDDRA22**







# 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 Browser Demonstration SOC View





# 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

# MedDRA Browsing Tips

- First, try using actual words from reporter
- Use “top-down” and “bottom-up” approaches
- Look at the “neighbors” and check the hierarchy
- Consider synonyms, e.g., “Liver” and “Hepatic”
- Use word stems, e.g., “Pancrea”
- Use available resources for difficult verbatim terms (web search, medical dictionaries and textbooks, colleagues)
- Become familiar with the MedDRA Concept Descriptions



MedDRA

# Exercise

Two days old boy developed anemia and jaundice.

\_\_\_\_\_ LLT → \_\_\_\_\_ PT  
\_\_\_\_\_ LLT → \_\_\_\_\_ PT





MedDRA

# Exercise

The infusion solution was contaminated with Staphylococcus.

\_\_\_\_\_ LLT →

\_\_\_\_\_ PT





MedDRA

# Exercise

Enlargement of right breast in male patient.

\_\_\_\_\_ LLT →

\_\_\_\_\_ PT





# MedDRA Term Selection: Points to Consider Document







# 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



MedDRA

# 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



# Diagnoses and Provisional Diagnoses



SINGLE DIAGNOSIS	
DEFINITIVE DIAGNOSIS	PROVISIONAL DIAGNOSIS
<p>Single diagnosis without signs and symptoms</p> <ul style="list-style-type: none"> <li>•Diagnosis (only possible option)</li> </ul>	<p>Single provisional diagnosis without signs and symptoms</p> <ul style="list-style-type: none"> <li>•Provisional diagnosis (only possible option)</li> </ul>
<p>Example: “<i>Myocardial infarction</i>” → select “<i>Myocardial infarction</i>”</p>	<p>Example: “<i>Possible myocardial infarction</i>” → select “<i>Myocardial infarction</i>” (select term as if definitive diagnosis)</p>

Similar principles apply for multiple diagnoses



# Diagnoses and Provisional Diagnoses (cont)

SINGLE DIAGNOSIS	
DEFINITIVE DIAGNOSIS	PROVISIONAL DIAGNOSIS
<p>Single diagnosis with signs/symptoms</p> <ul style="list-style-type: none"> <li>•Preferred: Diagnosis only</li> </ul>	<p>Single provisional diagnosis with signs/symptoms</p> <ul style="list-style-type: none"> <li>•Preferred: Provisional diagnosis and signs/symptoms</li> </ul>
<p>Example: <i>“Anaphylactic reaction with rash, dyspnoea, hypotension, and laryngospasm”</i>            → select <i>“Anaphylactic reaction”</i></p>	<p>Example: <i>“Possible myocardial infarction with chest pain, dyspnoea, diaphoresis”</i> → select <i>“Myocardial infarction”</i> <i>“Chest pain”</i>, <i>“Dyspnoea”</i>, and <i>“Diaphoresis”</i></p>





# Diagnoses and Provisional Diagnoses (cont)

SINGLE DIAGNOSIS	
DEFINITIVE DIAGNOSIS	PROVISIONAL DIAGNOSIS
<p>Single diagnosis with signs/symptoms</p> <ul style="list-style-type: none"> <li>•Alternate: Diagnosis and signs/symptoms</li> </ul>	<p>Single provisional diagnosis with signs/symptoms</p> <ul style="list-style-type: none"> <li>•Alternate: Signs/symptoms only (as provisional diagnosis may change)</li> </ul>
<p>Example: <i>“Anaphylactic reaction with rash, dyspnoea, hypotension, and laryngospasm”</i> → select <i>“Anaphylactic reaction”, “Rash”, “Dyspnoea”, Hypotension”, and “Laryngospasm”</i></p>	<p>Example: <i>“Possible myocardial infarction with chest pain, dyspnoea, diaphoresis”</i> → select <i>“Chest pain”, “Dyspnoea”, and “Diaphoresis”</i></p>



# Diagnoses and Provisional Diagnoses (cont)

- Always include signs/symptoms not associated with diagnosis

Reported	LLT Selected
Myocardial infarction, chest pain, dyspnoea, diaphoresis, ECG changes and jaundice	Myocardial infarction Jaundice (note that jaundice is not typically associated with myocardial infarction)



- One condition is more specific than the other

Reported	LLT Selected
Arrhythmia due to atrial fibrillation	Atrial fibrillation
Hepatic function disorder (acute hepatitis)	Hepatitis acute

- A MedDRA combination term is available

Reported	LLT Selected
Retinopathy due to diabetes	Diabetic retinopathy
Rash with itching	Itchy rash



## Combination Terms (cont)

- If splitting provides more clinical information, select more than one term
- In all cases of combination terms, apply medical judgment

Reported	LLT Selected
Diarrhoea and vomiting	Diarrhoea Vomiting
Wrist fracture due to fall	Wrist fracture Fall



- In most cases MedDRA terms capture both infectious agent and affected site

The **preferred** option is to select terms for both the microorganism-specific infection **and** the anatomic location.

Alternatively, select a term that reflects the anatomic location **or** select a term that reflects the microorganism-specific infection. Medical judgment should be used in deciding whether anatomic location or the microorganism-specific infection should take priority.

Reported	LLT Selected	Preferred Option	Comment
Haemophilus respiratory infection	Haemophilus infection Respiratory infection	✓	Represents both microorganism-specific infection <b>and</b> anatomic location
	Respiratory infection		Represents location-specific infection
	Haemophilus infection		Represents microorganism-specific infection



# How to Code? Reported Verbatims for Discussion

DVT with pulmonary embolism

Blood culture positive/  
Salmonella blood infection

Chronic renal insufficiency  
with anemia,  
hypertension and  
interstitial pulmonary  
edema

Hypothyreosis with  
depressive symptoms,  
weight gain, constipation  
and aphasia

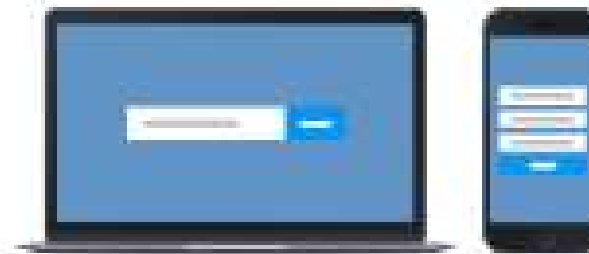


MedDRA

# Coding Exercises

## How to join

### Web



- 1 Go to **PolleEv.com**
- 2 Enter **MEDDRA174**
- 3 Respond to activity



MedDRA

## How to Code?



Suicide attempt with an overdose of sleeping and pain pills

- a) Suicide attempt
- b) Overdose
- c) Intentional overdose
- d) Suicide attempt AND Multiple drug overdose intentional
- e) Multiple drug overdose





# Suicide attempt with an overdose of sleeping and pain pills

Suicide attempt

Overdose

Intentional overdose

Suicide attempt AND Multiple  
drug overdose intentional

Multiple drug overdose





MedDRA

## How to Code?



Pharmacist dispensed wrong drug due to confusion of drug names. Patient took the drug for 5 days before the error was detected.

- a) Wrong drug dispensed
- b) Confusion
- c) Wrong drug dispensed AND Drug name confusion AND Wrong drug administered
- d) Wrong drug dispensed AND Confusion
- e) Wrong drug dispensed AND Wrong drug administered



# Pharmacist dispensed wrong drug due to confusion of drug names. Patient took the drug for 5 days before the error was detected.

Wrong drug dispensed

Confusion

Wrong drug dispensed AND Drug name confusion AND Wrong drug administered

Wrong drug dispensed AND Confusion

Wrong drug dispensed AND Wrong drug administered



MedDRA

## How to Code?



Patient accidentally swallowed Nitroglycerin  
(instead of correct sublingual administration)

- a) Incorrect route of drug administration
- b) Swallowing disorder
- c) Accident
- d) Accidental ingestion of drug





# Patient accidentally swallowed Nitroglycerin (instead of correct sublingual administration)

Incorrect route of  
drug administration

Swallowing  
disorder

Accident

Accidental  
ingestion of drug





MedDRA

## How to Code?

The ointment had a different consistency and the consumer reported severe skin irritation at site of administration

- a) Product quality issue AND Poor quality drug administered
- b) Product physical consistency issue AND Poor quality drug administered AND Application site irritation
- c) Poor quality drug administered AND Skin irritation
- d) Product physical consistency issue AND Skin irritation



# The ointment had a different consistency and the consumer reported severe skin irritation at site of administration

Product quality issue AND Poor quality drug  
administered

Product physical consistency issue AND Poor quality  
drug administered AND Application site irritation

Poor quality drug administered AND Skin irritation

Product physical consistency issue AND Skin  
irritation



MedDRA

## How to Code?



Fetal heart rate irregular while mother was on drug X

- a) Fetal exposure during pregnancy AND Fetal arrhythmia
- b) Fetal exposure during pregnancy AND Fetal heart rate abnormal
- c) Maternal exposure during pregnancy AND Fetal heart rate abnormal
- d) Drug exposure during pregnancy AND Fetal arrhythmia



# Fetal heart rate irregular while mother was on drug X

Fetal exposure during pregnancy  
AND Fetal arrhythmia

Fetal exposure during pregnancy  
AND Fetal heart rate abnormal

Maternal exposure during pregnancy  
AND Fetal heart rate abnormal

Drug exposure during pregnancy  
AND Fetal arrhythmia



MedDRA

# How to Code?

## Bump on leg

- a) Skin mass
- b) Mass
- c) Lower extremity mass
- d) Local swelling
- e) Lower limb deformity
- f) Unilateral leg swelling



# Bump on leg

Skin mass

Mass

Lower extremity mass

Lower limb deformity

Unilateral leg swelling



MedDRA

# How to Code?

## Viral carditis

- a) Viral infection
- b) Carditis
- c) Cardiac infection
- d) Viral infection AND Cardiac infection
- e) Viral myocarditis



# Viral carditis

Viral infection

Carditis

Cardiac infection

Viral infection AND  
Cardiac infection

Viral myocarditis



MedDRA

# How to Code?

## Cardia insufficiency

- a) Cardiac insufficiency
- b) Ill-defined disorder
- c) Unevaluable event
- d) Incompetent cardia





# Cardia insufficiency



Cardiac  
insufficiency

Ill-defined  
disorder

Unevaluabe  
event

Incompetent  
cardia



MedDRA

## How to Code?

Pain in hand, severe pain in leg and toe

- a) Pain
- b) Musculoskeletal pain
- c) Pain in hand AND Pain in leg AND Pain in toe
- d) Pain in extremity
- e) Pain in hand AND Pain in leg





# Pain in hand, severe pain in leg and toe

Pain

Musculoskeletal pain

Pain in hand AND Pain  
in leg AND Pain in toe

Pain in extremity

Pain in hand AND Pain  
in leg



MedDRA

## How to Code?

### Left foot and left ankle swelling

- a) Swelling of feet AND Ankle swelling
- b) Peripheral swelling
- c) Unilateral leg swelling
- d) Local swelling





# Left foot and left ankle swelling

Swelling of feet  
AND Ankle swelling

Peripheral swelling

Unilateral leg  
swelling

Local swelling



MedDRA

## How to Code?

### Asplenia after previous spleen resection

- a) Asplenia AND Splenectomy
- b) Asplenia
- c) Splenectomy
- d) Acquired asplenia



# Asplenia after previous spleen resection

Asplenia AND  
Splenectomy

Asplenia

Splenectomy

Acquired  
asplenia



MedDRA

## How to Code?



### Myocardial infarction leading to sudden death

- a) Sudden death
- b) Cardiac death
- c) Acute myocardial infarction
- d) Sudden cardiac death AND Myocardial infarction





# Myocardial infarction leading to sudden death



Sudden death

Cardiac death

Acute myocardial infarction

Sudden cardiac death AND  
Myocardial infarction



Medical Dictionary  
for Regulatory Activities

Further questions?







# Data Retrieval and Analysis of MedDRA Coded Data

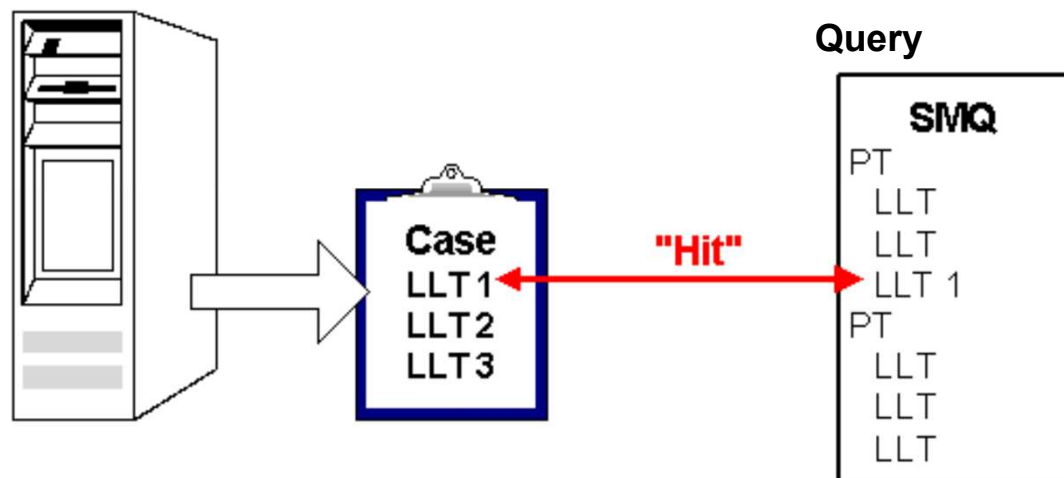




MedDRA

# What is a Query?

Clinical Trial Database  
Safety Database





# MedDRA Data Retrieval and Presentation: Points to Consider (DRP:PTC)

## **MedDRA® DATA RETRIEVAL AND PRESENTATION: POINTS TO CONSIDER** ICH-Endorsed Guide for MedDRA Users on Data Output

*Release 3.17*  
*Based on MedDRA Version 22.0*

**1 March 2019**

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- 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



## MedDRA Data Retrieval and Presentation: PTC (cont)

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



# Data Retrieval PTC Points Addressed

- General Principles
  - Quality of Source Data
  - Documentation of Data Retrieval and Presentation Practices
  - Do Not Alter MedDRA
  - Organisation-Specific Data Characteristics
  - Characteristics of MedDRA that Impact Data Retrieval and Analysis
  - MedDRA Versioning
- General Queries and Retrieval
- Standardised MedDRA Queries
- Customised Searches





# 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



# 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



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# 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)





# SMQ in Production - Examples

- As of Version 22.0, a total of 104 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



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# SMQ Data Characteristics

- MedDRA term inclusion
- Broad/narrow
- Algorithms
- Hierarchy
- SMQ status/term status within an SMQ
- SMQ files and documents





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# MedDRA Term Inclusion

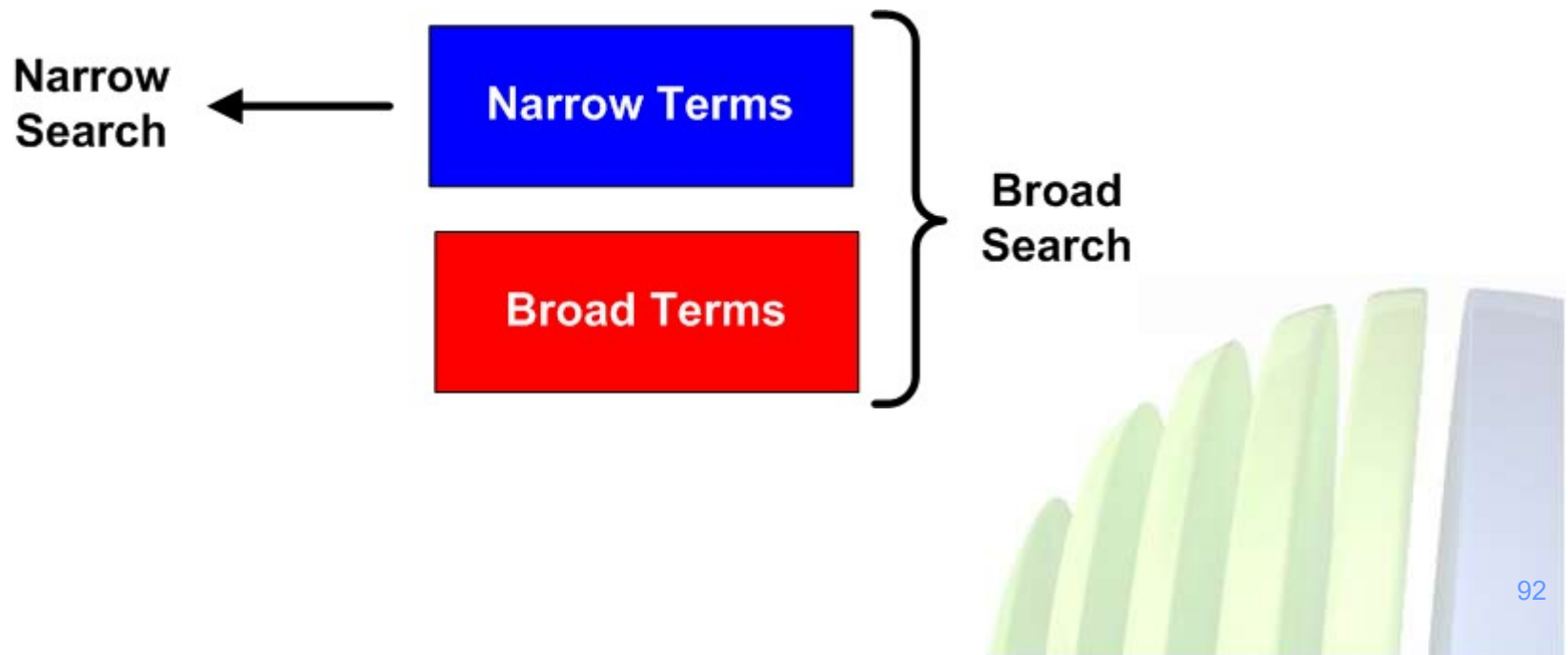
- SMQs are constructed at MedDRA PT level
- LLTs that are subordinate to an included PT are also included





# Narrow and Broad Searches

- “Narrow” scope – specificity (cases highly likely to be condition of interest)
- “Broad” scope – sensitivity (all possible cases)
- “Broad search” = All broad + all narrow terms





# Narrow vs. Broad Example

## SMQ *Lactic acidosis*

### Definition

Lactic acidosis is a form of high anion gap metabolic acidosis - Intrinsic cardiac contractility may be depressed, but inotropic function can be normal because of catecholamine release- Peripheral arterial vasodilatation and central vasoconstriction can be present - Central nervous system function is depressed, with headache, lethargy, stupor, and, in some cases, even coma - Glucose intolerance may occur - Characterized by an increase in plasma L-lactate - Acidosis is seldom significant unless blood lactate exceeds 5 mmol/l - Clinical presentation in type B lactic acidosis: o Symptoms: hyperventilation or dyspnea, stupor or coma, vomiting, drowsiness, and abdominal pain o Onset of symptoms and signs is usually rapid accompanied by deterioration in the level of consciousness.

### Source

1. Braunwald E, Fauci A, Kasper D. Harrison's Principles of Internal Medicine. 15th Edition, 2001 pp 285-9
2. Weatherall D, Ledingham J and Warrell D. Oxford Textbook of Medicine. Third edition, 1996; volume 2 pp 1541-44

### Note

Testing in two regulatory databases confirmed that the term list is adequate; in one regulatory database, the term "acidosis" identified cases, but this may be a phenomenon of the database characteristics (coding of verbatims to terms of an older terminology or other coding conventions).

### Narrow Terms

Blood lactic acid increased
Hyperlactacidaemia
Lactic acidosis

### Broad Terms

Acid base balance abnormal
Acidosis
Anion gap abnormal
Anion gap increased
Blood alkalisation therapy
Blood bicarbonate abnormal
Blood bicarbonate decreased
Blood gases abnormal
Blood lactic acid abnormal
Blood pH abnormal
Blood pH decreased
Coma acidotic
Kussmaul respiration
Metabolic acidosis
PCO2 abnormal
PCO2 decreased
Urine lactic acid increased



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# Algorithmic SMQs

- Some SMQs are designed to utilize algorithms
- Better case identification among broad search terms may result if cases are selected by a defined combination of selected terms





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# Algorithmic SMQ Example

- *Anaphylactic reaction (SMQ):*
  - A case with any of the following PTs:
    - *Anaphylactic reaction*
    - *Anaphylactic shock*
    - *Anaphylactic transfusion reaction*
    - *Anaphylactoid reaction*
    - *Anaphylactoid shock*
    - *Circulatory collapse*
    - *Dialysis membrane reaction*
    - *Kounis syndrome*
    - *Procedural shock*
    - *Shock*
    - *Shock symptom*
    - *Type I hypersensitivity*

(Narrow search terms = Category A)





# Algorithmic SMQ Example (cont)

Category B – Upper airway/Respiratory	Category C – Angioedema/ Urticaria, etc.	Category D – Cardiovascular/ Hypotension
Acute respiratory failure	Allergic oedema	Blood pressure decreased
Asthma	Angioedema	Blood pressure diastolic decreased
Bronchial oedema	Erythema	Blood pressure systolic decreased

- Case = A (Narrow terms)
- Or Term from Category B **and** term from Category C
- Or Term from **either** Category B or Category C **plus** Term from Category D





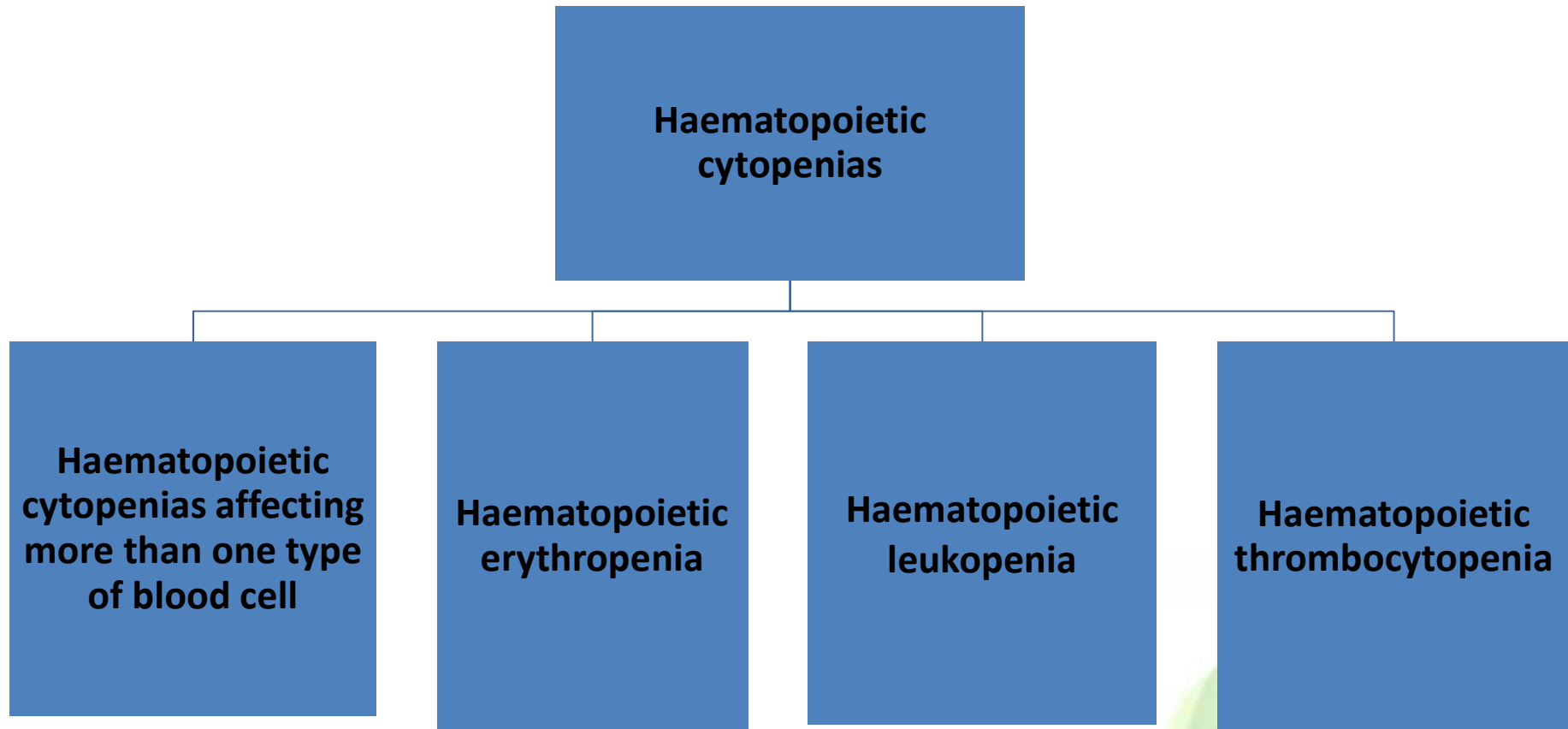
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## Hierarchical SMQs

- Some SMQs may develop as set of queries related to one another in a hierarchical relationship
- Not related to MedDRA standard hierarchy
- One or more subordinate SMQs combined to create a superordinate, more inclusive SMQ



# Hierarchical SMQ Example





## SMQ Status/Term Status

- Each SMQ has a status (Active/Inactive)
- Similar in concept to MedDRA currency
- Terms assigned to an SMQ also have a status flag
  - Once a term is added to an SMQ, it will always be included in the SMQ but the status may be inactive





# MedDRA Browser Demonstration

## SMQ View





# SMQ Files and Documents

- MedDRA distributed files unchanged by inclusion of SMQ files
- SMQ Introductory Guide
  - Recommended reading for optimal use of SMQs
  - Details of individual SMQs
  - Notes for implementation and/or expectation of results
- Production SMQ Spreadsheet
  - SMQs and included terms, SMQ summary
- SMQ changes: “What’s New” document, Version Report, MVAT
- Original CIOMS Working Group documentation



# Useful Resources





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# Useful Resources

- MedDRA Concept Descriptions
- MedDRA Introductory Guide
- MedDRA Term Selection: Points to Consider
- MedDRA Points to Consider Companion Document
- Introductory Guide for Standardised MedDRA Queries (SMQs)
- MedDRA Data Retrieval and Presentation: Points to Consider
- MedDRA Website
- MedDRA Version Reports



MedDRA

# Concept Descriptions

- Descriptions of how a concept is interpreted, used, and classified in MedDRA
- Not a definition
- Intended to aid accurate and consistent use of MedDRA in coding and retrieval
- Overcome differences in medical practice worldwide
  - Descriptions aim to be broadly consistent with definitions across different regulatory regions
- See Appendix B of MedDRA Introductory Guide
- Accessible in MSSO's Browsers





# Concept Descriptions (cont)

The screenshot displays the MedDRA Browser interface. At the top, there are navigation tabs for 'MedDRA Concept Descriptions', 'Legends', and 'About'. Below this is a 'Language and Version Options' section with dropdown menus for 'English', 'English', 'English', and '19.1'. A blue arrow points to the first 'English' dropdown. To the right, there are 'Browser View' and 'Display O' options. The main content area shows a window titled 'mssotools.com' with the heading 'MedDRA CONCEPT DESCRIPTIONS'. The text explains that concept descriptions are used to aid in the consistent and accurate use of MedDRA terminology. Below the text is an alphabetical index 'A B C D E F G H I J K L M N O P Q R S T U V W X Y Z'. Under the letter 'A', the term 'Abuse' is listed with its definition: 'For the purposes of term selection and analysis of MedDRA-coded data, abuse is the intentional, non-therapeutic use by a patient or consumer of a product – over-the counter or prescription – for a perceived reward or desired non-therapeutic effect including, but not limited to, “getting high”(euphoria). Abuse may occur with a single use, sporadic use or persistent use of the product.'



# PTC Companion Document

## **MedDRA<sup>®</sup> POINTS TO CONSIDER COMPANION DOCUMENT**

**ICH-Endorsed Guide for MedDRA Users**

*Release 1.0*

**June 2018**

- New document providing details, examples and further guidance on specific topics
- “Living” document that is updated based on users needs
- Detailed guidance on coding of medication errors



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# MedDRA Website



MedDRA

Medical Dictionary for  
Regulatory Activities

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## Welcome to MedDRA

In the late 1990s, the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) developed MedDRA, a rich and highly specific standardised medical terminology to facilitate sharing of regulatory information internationally for medical products used by humans... (more)

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**Help to Shape the MedDRA Terminology**

by submitting change requests. Your contribution will then be considered by the MSSO/JMO.

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# MSSO Contacts

- Website
  - [www.meddra.org](http://www.meddra.org)
- Email
  - [mssohelp@meddra.org](mailto:mssohelp@meddra.org)
- Frequently Asked Questions
  - [www.meddra.org/faq](http://www.meddra.org/faq)





Medical Dictionary  
for Regulatory Activities

Thank you!  
Further questions?

