



Standardised MedDRA Queries (SMQs)

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Background of SMQ Development



CIOMS and SMQs

- CIOMS (Council for International Organizations of Medical Sciences): An international, non-governmental, non-profit organization established jointly by World Health Organization (WHO) and United Nations Educational, Scientific and Cultural Organization (UNESCO)
- CIOMS and ICH have established terms of reference for cooperative development of SMQs
- Maintenance of SMQs is the joint responsibility of the user community (through MSSO Change Request process) and the MSSO



SMQ Definition



Definition of SMQ

- Result of cooperative effort between CIOMS and ICH (MSSO)
- Groupings of terms from one or more MedDRA System Organ Classes (SOCs) related to defined medical condition or area of interest
- Included terms may relate to signs, symptoms, diagnoses, syndromes, physical findings, laboratory and other physiologic test data, etc., related to medical condition or area of interest
- Intended to aid in case identification



SMQs Development Status



SMQs in Production - Examples

- As of Version 15.1, a total of 87 in production
 - Agranulocytosis
 - Anaphylactic reaction
 - Cerebrovascular disorders
 - Convulsions
 - Depression and suicide/self-injury
 - Hepatic disorders
 - Ischaemic heart disease
 - Lack of efficacy/effect
 - Peripheral neuropathy
 - Pregnancy and neonatal topics
 - Pseudomembranous colitis
 - Rhabdomyolysis/myopathy
 - Severe cutaneous adverse reactions
 - Systemic lupus erythematosus



SMQ Production and Development List

- Refer to MSSO Web site for current status of SMQs in production and development

http://www.meddramsso.com/subscriber_smq.asp



SMQ Data Characteristics



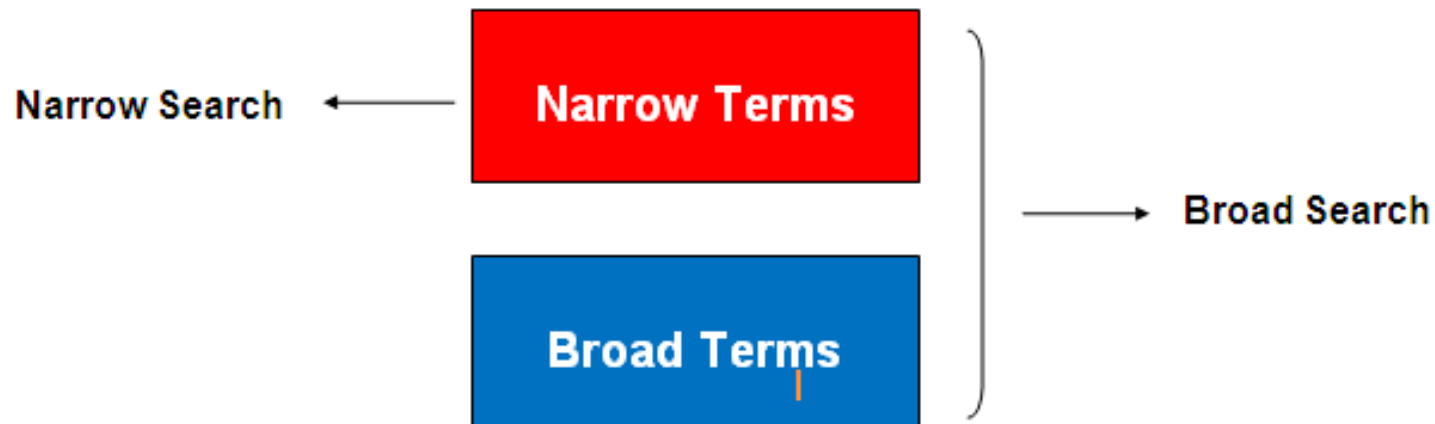
MedDRA Term Inclusion

- 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

Lactic acidosis (SMQ)

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: Symptoms: hyperventilation or dyspnea, stupor or coma, vomiting, drowsiness, and abdominal pain. 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 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



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



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*
 - *First use syndrome*
 - *Kounis syndrome*
 - *Shock*
 - *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
<i>Acute respiratory failure</i>	<i>Allergic oedema</i>	<i>Blood pressure decreased</i>
<i>Asthma</i>	<i>Angioedema</i>	<i>Blood pressure diastolic decreased</i>
<i>Bronchial oedema</i>	<i>Erythema</i>	<i>Blood pressure systolic decreased</i>

- 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

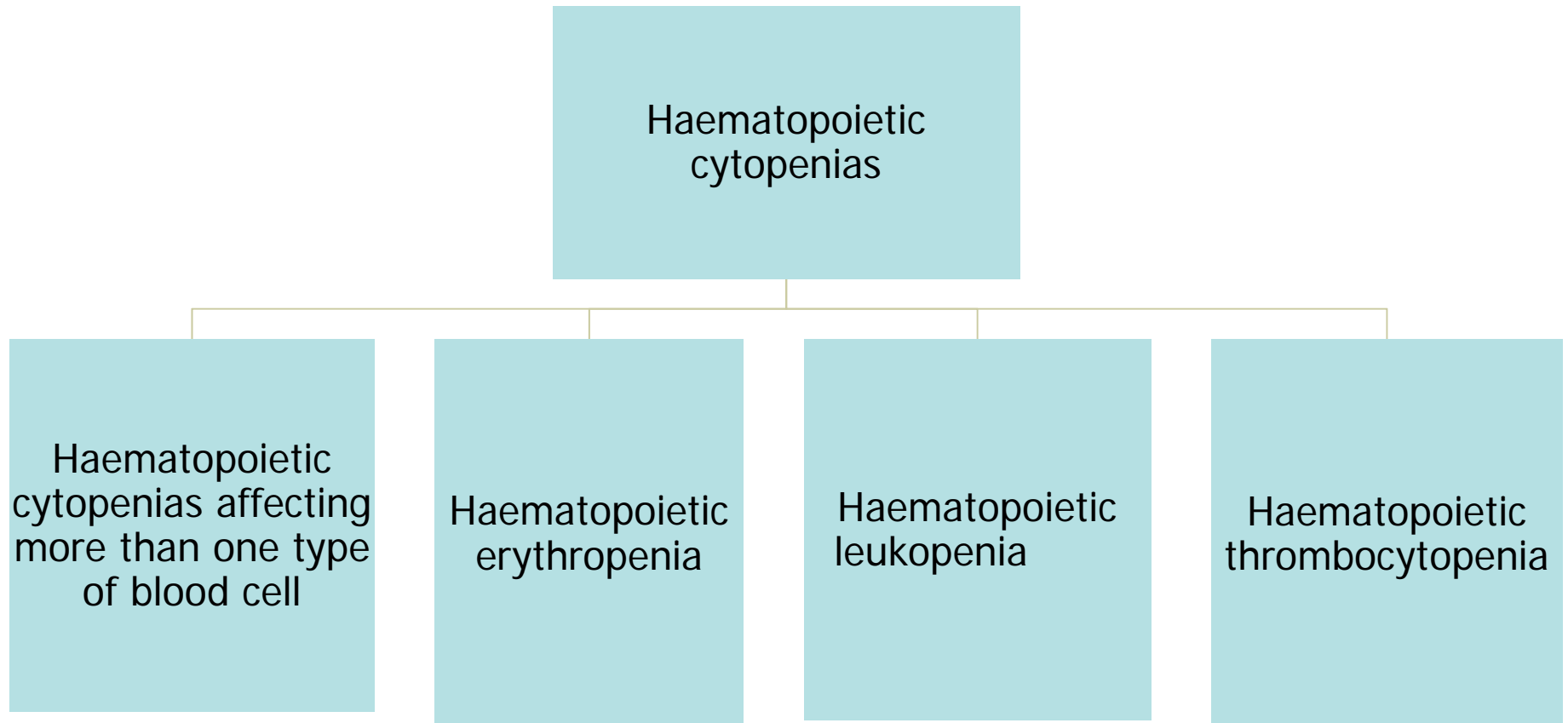


Hierarchical SMQs

- 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





Text Data Included in SMQ

- Description field
 - Additional information about each SMQ (from SMQ Introductory Guide)
- Source field
 - Medical references used in development/maintenance
- Development note
 - Pertinent notes for proper use
 - Description of algorithm (if applicable), and definition of categories



SMQ Testing and Production Maintenance



SMQ Development Summary

- Pre-release testing by CIOMS Working Group members
 - Typically, at least one company and one regulator database
 - Cases retrieved reviewed for relevance
 - Fine-tuning of SMQ may require several iterations
 - Reviewed and approved by CIOMS WG
- Production Phase: continue to be fine-tuned through the MSSO maintenance process



SMQ Production Maintenance

- Essentially a change request process
- Final disposition is not time limited
- MSSO reviews all new terms in new release for inclusion in existing SMQs
- MSSO reviews existing terms for impact of demotions, moves, etc.
- All SMQ change requests reviewed by CIOMS WG after 18-24 months in production



SMQ Production Maintenance (cont)

- SMQ change requests undergo the same process as other MedDRA change requests
 - SMQ change requests are considered simple change requests
 - SMQ change requests are part of the 100 allotted change requests for each core subscriber



SMQ Applications



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)
- Postmarketing
 - 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)



Summary

- Background of SMQ development
- SMQ definition
- SMQ development status
- SMQ data characteristics
- SMQ testing and maintenance
- SMQ applications



MSSO Contacts

- Web site
 - www.meddramsso.com
- Help Desk
 - Phone
 - International AT&T Toll Free: 877.258.8280
 - Direct Dial (USA): +1 571.313.2574
 - E-mail
 - mssohelp@mssotools.com