SDQs – Standardized Drug Queries

Daniel von Sydow
Sunil G. Singh
Outline

• The project
• Background
• Current analysis tools
• Ideas for future development
Under development

- A working group has been set up with members from the industry
- The group is identifying ‘prototype’ queries
- The content, distribution format and versioning are also being discussed
- The ‘prototype’ queries will be launched to the pilot group in March 2009
- First ‘official’ SDQs launched in March 2010
Background

- WHO Drug Dictionary Enhanced is used for coding and analysis.
  - The coder selects an entry
  - Code entered into database
  - Codes and hierarchies are used for aggregation and statistical analysis
Background

• What is analyzed?
  – Interactions
  – ADRs
  – Drug effectiveness
  – Protocol violations
  – Other conditions
Current analysis tools

• **Drug code**
  – Useful to aggregate drugs with the same ingredient(s)

• **ATC/Herbal ATC.**
  – Useful mainly for statistical analysis
  – Also useful to make pharmacological/Medical analysis
New ideas

• Other needs
  – Sometimes aggregation of statistics could use other groupings than ATC.
  – Statistical analysis is often followed by medical analysis – what is the mechanism behind an interaction?
  – Sometimes a list of “Drugs of Special interest” is used in a trial.
Pharmacological classes

- The SDQs could be a pharmacological class; NSAIDs, Colinergic drugs and Steroids

- These groups appears in several places in the ATC hierarchy depending on therapeutic use
Metabolism

• The SDQs could list drugs that are metabolized by certain enzymes.
  – Example: Substrates, inducers and inhibitors of CYP 2C19

• This could be used to explain interactions, increased effect or lack of effect.

• The SDQs can be used to produce lists of “drugs of special interest”.

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Conditions

• The SDQs could list drugs that are likely to be ‘proxy for conditions’.

• Sometimes medical conditions are not reported as such, but medication taken by patients may indicate that conditions exist.
Implementing SDQs in TMS 4.6

• Current Filter dictionary approach can be used, with the same type of Informative Notes for Description and Source.
• Concept of hierarchical SMQs is also possible
• Similar Algorithm Informative notes can also be used for identifying related terms.
[X] SDQ Filter Dictionary Definition
**[X] SDQ Domain Mapping**

**Define Domains**

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<tr>
<th>Domains</th>
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[X] SDQ NRLs: Substrates, Inhibitors, Inducers
[X] SDQ Activation Group
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**Approved?**: Yes

**Value_1**: 403BX

**Error Msg**:

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**Valid until**: 15-AUG-3501 00:00:00

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**Global?**: Yes

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**Approved?**: Yes

**Value 1**: 70

**Value 2**: M

**Value 3**: 03

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**Created By**: TMS_LOAD

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Terminology Management System

Terminologies | Verbatim Term Assignment | Verbatim Term Status | Hierarchies

Logged in as/Database ORACLE_0PAPPS,
Last Updated 15-Oct-2008 09:54:16

Terminologies

Simple search
Enter search criteria or click Advanced Search for additional options.

Terminology: SDQ Filter Dictionary
Domain: SDQ_DOMAIN
Term: CYP3A4

Results

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About TMS Version 4.6
### Related terms

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**[X] VT Coding for SDQ**

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### Verbatim Terms

#### Simple search

Enter search criteria or click Advanced Search for additional options.

- **Terminology:** WHODrug
- **Domain:** SDQ_DOMAIN
- **Term:** TERMKIT STRONG

#### Results

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About TMS Version 4.0
[X] VT Coding for SDQ (2)

Pharmaceuticals
Terminology Management System

Term: TERMIKIT STRONG
Approved: Yes

Level: Term subtype: Accepted

Paths
Select a path to see its details below

Select Path

- ANTI-INFECTIVE PRODUCTS, INSECTICIDES AND REPELLENTS, P
- ANTIPROTOZOALS, P01
- AGENTS AGAINST AMOEBAIS AND OTHER PROTOZOAIS DIS., P01A
- NITROIMIDAZOLE DERIVATIVES, P01AB
- ORFLAZ
- TERMIKIT

Term Details

- LEVEL: ATC1
- CODE: P

- LEVEL: ATC2
- CODE: P01

- LEVEL: ATC3
- CODE: P01A

- LEVEL: ATC4
- CODE: P01AB

- LEVEL: Preferred Name
- CODE: 0543001001

- LEVEL: Synonym
- CODE: 0543001003

Related terms

- LEVEL: SYN
- TERM: TERMIKIT
- RELATION: Strong
- DOMAIN: SDQ_DOMAIN
- RELATED TERM: TERMIKIT STRONG

Terms Viewed

- TERMIKIT STRONG
- ORFLAZ
- GYP3A4

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Conclusion

• SDQs will be a new tool for WHO Drug Dictionary Enhanced users

• The SDQs can be used for:
  – statistical analysis – e.g. finding patterns using pharmacological classes
  – medical analysis – e.g. finding mechanism based on metabolism information
  – finding protocol violations – e.g. if NSAIDs are a prohibited class of drugs
  – finding otherwise unreported condition