



Practical Implementation of SMQs (at GSK)

Christina Winter, GlaxoSmithKline

Contents

- Planning implementation
- Maintenance
- SMQ browser on database
- Query screen
- Supporting information for users
- Other uses for SMQs

Planning implementation

- Aware of SMQ existence – early 2004
- Business case for implementation approved end 2004
- Need to develop new functions on bespoke safety database to accommodate SMQs
- Discussions involving System developers*, SMQ content advisor, Database users.
 - validation, training, timing of roll out, etc.
- Christmas present! SMQs “live” on database - Dec2005

**System developers' queries on ASCII files were answered by MSSO*

Maintenance

- SMQ version changes with MedDRA version
- User support materials (internal website) match MedDRA and SMQ version.
 - E.g. MSSO Introductory guide for SMQs, MSSO SMQ excel spreadsheet, etc.
- Single contact for user queries
 - E.g. Database helpdesk channels queries to IT or to SMQ content advisor as appropriate



SMQ browser on database

SMQ browser displays:

- Name of SMQ
- Description of SMQ
- Source (References)
- Current MedDRA version
- Sub-SMQs where applicable
- For each PT
 - Narrow or broad
 - Version added, version modified

SMQ Browser

Standardised MedDRA Queries

- SMQ-Rhabdomyolysis/myopathy (SMQ)
- SMQ-Acute renal failure (SMQ)
- SMQ-Hepatic disorders (SMQ)
 - SubSMQ-Possible drug related hepatic disorders (SMQ)
 - SubSMQ-Possible drug related hepatic disorders (SMQ)
 - SubSMQ-Liver related investigational medicinal products (SMQ)
 - SubSMQ-Cholestasis and jaundice (SMQ)
 - SubSMQ-Possible liver-related conditions (SMQ)
 - SubSMQ-Congenital, familial, neonatal (SMQ)
 - SubSMQ-Liver infections (SMQ)
 - SubSMQ-Events specifically reported (SMQ)
 - SubSMQ-Pregnancy-related hepatic conditions (SMQ)
- SMQ-Haemolytic disorders (SMQ)
- SMQ-Severe cutaneous adverse reaction (SMQ)

Query Details

Code: 20000002

Name: SMQ-Rhabdomyolysis/myopathy (SMQ)

Description: Myopathy is a disorder of striated muscle, with or without changes in muscle mass, and may be accompanied by muscle pain or tenderness. Rhabdomyolysis results from

Source: Basic requirements for the use of terms for reporting adverse drug reactions (IV). Pharmacoeconomics and Drug Safety 1993; 2:149-153. Myopathy. Reporting Adverse Drug Reactions: Definitions of Terms and Criteria for Their Use. Bankowski Z,

Note: 1. Renal impairment/failure terms included because of the frequent association with rhabdomyolysis

MedDRA Version: 9.1 Status: A Algorithm:

Draft Queries

Content

- Myopathy
- Myopathy toxic
- Myositis
- Oliguria
- Renal failure
- Renal failure acute
- Renal failure chronic
- Renal tubular necrosis
- Rhabdomyolysis
- Musculoskeletal disorder
- Muscle fatigue
- Musculoskeletal discomfort

Category: A Scope: 1 Status: A

Addition Version: 7.1 Modified Version: 7.1

SMQ Browser [X]

- Standardised MedDRA Queries
 - SMQ-Rhabdomyolysis/myopathy (SMQ)
 - SMQ-Acute renal failure (SMQ)
 - SMQ-Hepatic disorders (SMQ)
 - SMQ-Haemolytic disorders (SMQ)
 - SMQ-Severe cutaneous adverse reaction
 - SMQ-Anaphylactic reaction (SMQ)
 - SMQ-Acute pancreatitis (SMQ)
 - SMQ-Agranulocytosis (SMQ)
 - SMQ-Angioedema (SMQ)
 - SMQ-Asthma/bronchospasm (SMQ)
 - SMQ-Dyslipidaemia (SMQ)
 - SMQ-Haematopoietic cytopenias (SMQ)
 - SMQ-Lack of efficacy/effect (SMQ)
 - SMQ-Lactic acidosis (SMQ)

Query Details

Code: 20000002

Name: SMQ-Rhabdomyolysis/myopathy (SMQ)

Description: Myopathy is a disorder of striated muscle, with or without changes in muscle mass, and may be accompanied by muscle pain or tenderness. Rhabdomyolysis results from

Source: Basic requirements for the use of terms for reporting adverse drug reactions (IV). Pharmacoeconomics and Drug Safety 1993; 2:149-153. Myopathy. Reporting Adverse Drug Reactions: Definitions of Terms and Criteria for Their Use. Bankowski Z.

Note: 1. Renal impairment/failure terms included because of the frequent association with rhabdomyolysis

MedDRA Version: 9.1 Status: A Algorithm:

- Draft Queries

Content

- Myositis
- Oliguria
- Renal failure
- Renal failure acute
- Renal failure chronic
- Renal tubular necrosis
- Rhabdomyolysis
- Musculoskeletal disorder
- Muscle fatigue
- Musculoskeletal discomfort
- Muscle enzyme increased
- Myoglobinaemia

Category: A Scope: 2 Status: A

Addition Version: 7.1 Modified Version: 7.1

SMQ Browser

- Standardised MedDRA Queries
 - SMQ-Rhabdomyolysis/myopathy (SMQ)
 - SMQ-Acute renal failure (SMQ)
 - SMQ-Hepatic disorders (SMQ)
 - SMQ-Haemolytic disorders (SMQ)
 - SMQ-Severe cutaneous adverse reaction
 - SMQ-Anaphylactic reaction (SMQ)
 - SMQ-Acute pancreatitis (SMQ)
 - SMQ-Agranulocytosis (SMQ)
 - SMQ-Angioedema (SMQ)
 - SMQ-Asthma/bronchospasm (SMQ)
 - SMQ-Dyslipidaemia (SMQ)
 - SMQ-Haematopoietic cytopenias (SMQ)
 - SMQ-Lack of efficacy/effect (SMQ)
 - SMQ-Lactic acidosis (SMQ)

Query Details

Code: 20000002

Name: SMQ-Rhabdomyolysis/myopathy (SMQ)

Description: Myopathy is a disorder of striated muscle, with or without changes in muscle mass, and may be accompanied by muscle pain or tenderness. Rhabdomyolysis results from

Source: Basic requirements for the use of terms for reporting adverse drug reactions (IV). Pharmacoeconomics and Drug Safety 1993; 2:149-153. Myopathy. Reporting Adverse Drug Reactions: Definitions of Terms and Criteria for Their Use. Bankowski Z.

Note: 1. Renal impairment/failure terms included because of the frequent association with rhabdomyolysis

MedDRA Version: 9.1 Status: A Algorithm:

- Draft Queries

Content

- Myositis
- Oliguria**
- Renal failure
- Renal failure acute
- Renal failure chronic
- Renal tubular necrosis
- Rhabdomyolysis
- Musculoskeletal disorder
- Muscle fatigue
- Musculoskeletal discomfort
- Muscle enzyme increased
- Myoglobinaemia

Category: A Scope: 1 Status: A

Addition Version: 7.1 Modified Version: 7.1

Limitation of browser

- Description and source fields – limited space. If lengthy text, user has to refer to the MSSO Introductory guide for SMQs.
- Need to select each PT to view whether it is narrow or broad.
- Does not permit copy/paste of any displayed information into documentation.



Query Screen

Query Wizard - Safety Evaluation

Common Fields	Other Fields	Run Query	Query Results
Case Type: <input type="text"/>	Country: <input type="text"/>	Event Browser: <input type="text"/>	SOC Code: <input type="text"/>
Date Recvd by Safety Dept: <input type="text"/>	to: <input type="text"/>	Standard Query Library: <input type="text"/>	Broad or Narrow: <input type="text"/>
Initial Only: <input type="checkbox"/>	Exclude Void Cases: <input checked="" type="checkbox"/>	Diagnostic Results: <input type="checkbox"/>	Labs outside normal range: <input type="checkbox"/>
HitList Number: <input type="text"/>		Age ----- Child: <input type="text"/>	Elderly: <input type="text"/>
Drug PT Code: <input type="text"/>	Drug Type: <input type="text"/>	Protocol ID: <input type="text"/>	Gender: <input type="text"/>
Drug Names to Exclude: <input type="text"/>	Route: <input type="text"/>	OR Project ID: <input type="text"/>	Other Protocol ID: <input type="text"/>
Dose Type: <input type="text"/>	Dose Value: <input type="text"/>	Patient Died: <input type="text"/>	Reason for Serious: <input type="text"/>
Dose Form: <input type="text"/>	Drug Listedness: <input type="text"/>	Outcome (Case): <input type="text"/>	Serious (Case): <input type="text"/>
Dechallenge/Rechallenge: <input type="text"/>		Outcome (Event): <input type="text"/>	Serious (Event): <input type="text"/>
Indication LLT Code: <input type="text"/>		Attributable Cases: <input type="checkbox"/>	Attributable Events: <input type="checkbox"/>
Drug Event Expectedness: <input type="text"/>		In-house Search Code: <input type="text"/>	
Medical History		Non-Healthcare Professional Cases: <input type="checkbox"/>	Non-HCP/Lawyer Cases: <input type="checkbox"/>
Condition Type: <input type="text"/>	LLT Code: <input type="text"/>	Healthcare Professional Cases: <input type="checkbox"/>	HCP and Lawyer Cases: <input type="checkbox"/>
		Exclude Reg Auth Rpt Source Non-Serious Cases: <input type="checkbox"/>	Reg Authority Rpt Source Non-Serious Cases Only: <input type="checkbox"/>
Subpopulations			
Pregnancy: <input type="checkbox"/>	Adolescents: <input type="checkbox"/>	Drug Interactions: <input type="checkbox"/>	Abuse Potential: <input type="checkbox"/>
Children: <input type="checkbox"/>	Elderly: <input type="checkbox"/>	Fatality: <input type="checkbox"/>	Overdose: <input type="checkbox"/>
			Product Complaint: <input type="checkbox"/>

How does the query work?

- SMQs without complex structure
 - Select entire SMQ
 - Select narrow or broad search if appropriate
- SMQs with complex structure (sub-SMQs)
 - Select each sub-SMQ required
 - Select narrow or broad search if appropriate

Query Wizard - Safety Evaluation [X]

Common Fields	Other Fields	Run Query	Query Results
Case Type: <input type="text"/>	Country: <input type="text"/>	Event Browser: <input type="text"/>	SOC Code: <input type="text"/>
Date Recvd by Safety Dept: <input type="text"/>	to: <input type="text"/>	Standard Query Library: <input type="text"/>	Broad or Narrow: <input type="text"/>
Initial Only: <input type="checkbox"/>	Exclude Void Cases: <input checked="" type="checkbox"/>	Diagnostic Results: <input type="text"/>	<input type="checkbox"/>
HitList Number: <input type="text"/>		Age ----- Child: <input type="text"/>	<input type="text"/>
Drug PT Code: <input type="text"/>	Drug Type: <input type="text"/>	Elderly: <input type="text"/>	<input type="text"/>
Drug Names to Exclude: <input type="text"/>	Route: <input type="text"/>	Protocol ID: <input type="text"/>	<input type="text"/>
Dose Type: <input type="text"/>	Dose Value: <input type="text"/>	OR Project ID: <input type="text"/>	<input type="text"/>
Dose Form: <input type="text"/>	Drug Listedness: <input type="text"/>	Patient Died: <input type="text"/>	Reason for Serious: <input type="text"/>
Dechallenge/Rechallenge: <input type="text"/>		Outcome (Case): <input type="text"/>	Serious (Case): <input type="text"/>
Indication LLT Code: <input type="text"/>		Outcome (Event): <input type="text"/>	Serious (Event): <input type="text"/>
Drug Event Expectedness: <input type="text"/>		Attributable Cases: <input type="checkbox"/>	Attributable Events: <input type="checkbox"/>
Medical History		In-house Search Code: <input type="text"/>	
Condition Type: <input type="text"/>	LLT Code: <input type="text"/>	Non-Healthcare Professional Cases: <input type="checkbox"/>	Non-HCP/Lawyer Cases: <input type="checkbox"/>
		Healthcare Professional Cases: <input type="checkbox"/>	HCP and Lawyer Cases: <input type="checkbox"/>
		Exclude Reg Auth Rpt Source Non-Serious Cases: <input type="checkbox"/>	Reg Authority Rpt Source Non-Serious Cases Only: <input type="checkbox"/>
Subpopulations			
Pregnancy: <input type="checkbox"/>	Adolescents: <input type="checkbox"/>	Drug Interactions: <input type="checkbox"/>	Abuse Potential: <input type="checkbox"/>
Children: <input type="checkbox"/>	Elderly: <input type="checkbox"/>	Fatality: <input type="checkbox"/>	Overdose: <input type="checkbox"/>
			Product Complaint: <input type="checkbox"/>

Load Query

Save Query

Clear Query

Query Wizard - Safety Evaluation X

Common Fields	Other Fields	Run Query	Query Results
Case Type: <input type="text"/>	Country: <input type="text"/>	Event Browser: <input type="text"/>	SOC Code: <input type="text"/>
Date Recvd by Safety Dept: <input type="text"/>	to: <input type="text"/>	Standard Query Library: SMQ-Rhabdomyolysis/myopathy (SMQ)	Broad or Narrow: <input type="text"/>
Initial Only: <input type="checkbox"/>	Exclude Void Cases: <input checked="" type="checkbox"/>	Diagnostic Results: <input type="text"/>	<input type="checkbox"/>
HitList Number: <input type="text"/>		Age ----- Child <input type="checkbox"/>	<input type="checkbox"/>
Drug PT Code: <input type="text"/>	Drug Type: <input type="text"/>	Elderly <input type="checkbox"/>	<input type="checkbox"/>
Drug Names to Exclude: <input type="text"/>	Route: <input type="text"/>	Protocol ID: <input type="text"/>	<input type="text"/>
Dose Type: <input type="text"/>	Dose Value: <input type="text"/>	OR Project ID: <input type="text"/>	<input type="text"/>
Dose Form: <input type="text"/>	Drug Listedness: <input type="text"/>	Patient Died: <input type="text"/>	Reason for Serious: <input type="text"/>
Dechallenge/Rechallenge: <input type="text"/>		Outcome (Case): <input type="text"/>	Serious (Case): <input type="text"/>
Indication LLT Code: <input type="text"/>		Outcome (Event): <input type="text"/>	Serious (Event): <input type="text"/>
Drug Event Expectedness: <input type="text"/>		Attributable Cases: <input type="checkbox"/>	Attributable Events: <input type="checkbox"/>
Medical History		In-house Search Code: <input type="text"/>	
Condition Type: <input type="text"/>	LLT Code: <input type="text"/>	Non-Healthcare Professional Cases: <input type="checkbox"/>	Non-HCP/Lawyer Cases: <input type="checkbox"/>
		Healthcare Professional Cases: <input type="checkbox"/>	HCP and Lawyer Cases: <input type="checkbox"/>
		Exclude Reg Auth Rpt Source Non-Serious Cases: <input type="checkbox"/>	Reg Authority Rpt Source Non-Serious Cases Only: <input type="checkbox"/>
Subpopulations			
Pregnancy: <input type="checkbox"/>	Adolescents: <input type="checkbox"/>	Drug Interactions: <input type="checkbox"/>	Abuse Potential: <input type="checkbox"/>
Children: <input type="checkbox"/>	Elderly: <input type="checkbox"/>	Fatality: <input type="checkbox"/>	Overdose: <input type="checkbox"/>
			Product Complaint: <input type="checkbox"/>

Query Wizard - Safety Evaluation [X]

Common Fields	Other Fields	Run Query	Query Results
Case Type: <input type="text"/>	Country: <input type="text"/>	Event Browser: <input type="text"/>	SOC Code: <input type="text"/>
Date Recvd by Safety Dept: <input type="text"/>	to: <input type="text"/>	Standard Query Library: <input type="text" value="SMQ-Rhabdomyolysis/myopathy (SMQ)"/>	Broad or Narrow: <input type="text" value="N"/>
Initial Only: <input type="checkbox"/>	Exclude Void Cases: <input checked="" type="checkbox"/>	Diagnostic Results: <input type="checkbox"/>	Labs outside normal range: <input type="checkbox"/>
HitList Number: <input type="text"/>		Age ----- Child: <input type="text"/> Elderly: <input type="text"/>	
Drug PT Code: <input type="text"/>	Drug Type: <input type="text"/>	Protocol ID: <input type="text"/>	Gender: <input type="text"/>
Drug Names to Exclude: <input type="text"/>	Route: <input type="text"/>	OR Project ID: <input type="text"/>	Other Protocol ID: <input type="text"/>
Dose Type: <input type="text"/>	Dose Value: <input type="text"/>	Patient Died: <input type="text"/>	Reason for Serious: <input type="text"/>
Dose Form: <input type="text"/>	Drug Listedness: <input type="text"/>	Outcome (Case): <input type="text"/>	Serious (Case): <input type="text"/>
Dechallenge/Rechallenge: <input type="text"/>		Outcome (Event): <input type="text"/>	Serious (Event): <input type="text"/>
Indication LLT Code: <input type="text"/>		Attributable Cases: <input type="checkbox"/>	Attributable Events: <input type="checkbox"/>
Drug Event Expectedness: <input type="text"/>		In-house Search Code: <input type="text"/>	
Medical History		Non-Healthcare Professional Cases: <input type="checkbox"/>	Non-HCP/Lawyer Cases: <input type="checkbox"/>
Condition Type: <input type="text"/>	LLT Code: <input type="text"/>	Healthcare Professional Cases: <input type="checkbox"/>	HCP and Lawyer Cases: <input type="checkbox"/>
Subpopulations		Exclude Reg Auth Rpt Source Non-Serious Cases: <input type="checkbox"/>	Reg Authority Rpt Source Non-Serious Cases Only: <input type="checkbox"/>
Pregnancy: <input type="checkbox"/>	Adolescents: <input type="checkbox"/>	Drug Interactions: <input type="checkbox"/>	Abuse Potential: <input type="checkbox"/>
Children: <input type="checkbox"/>	Elderly: <input type="checkbox"/>	Fatality: <input type="checkbox"/>	Overdose: <input type="checkbox"/> Product Complaint: <input type="checkbox"/>

B	Broad
N	Narrow

Limits of query tool

- Will not permit subtraction or addition of terms to SMQ search
- If product specific search requires modification of search criteria
 - Search using SMQ
 - Separate search for additional terms
 - Combine “hit lists” of cases retrieved
- Search criteria stored at LLT level
- Does not permit copy/paste of PTs into documentation

SMQs with algorithms

- System cannot cope with these yet
- Algorithm function being developed
- SMQs with algorithms are used in narrow and broad format at present



Supporting information for users

Internal website

- MSSO's Introductory guide for SMQs
- MSSO's excel spreadsheet of PTs in each SMQ
[Permits copy/paste of PTs into review document.]
- Internal guidance for searching using SMQs

A11 Acute pancreatitis (SMQ)

SMQ	PT/sub-SMQ	Scop	ACTIVE/HIS TORIC	Version added	Version modifie
Acute pancreatitis (SMQ)	Abdominal distension	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Abdominal pain	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Abdominal pain upper	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Abdominal rebound tenderness	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Abdominal rigidity	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Abdominal tenderness	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Acute abdomen	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Ascites	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Blood amylase abnormal	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Blood amylase increased	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Blood bilirubin increased	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Blood trypsin increased	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Bowel sounds abnormal	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Cullen's sign	Narrow	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Fat necrosis	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Gastrointestinal pain	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Haemorrhagic ascites	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Hereditary pancreatitis	Narrow	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Hyperbilirubinaemia	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Ileus paralytic	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Ischaemic pancreatitis	Narrow	ACTIVE	9.1	9.1
Acute pancreatitis (SMQ)	Jaundice	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Lipase abnormal	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Lipase increased	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Lipase urine increased	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Nausea	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Oedematous pancreatitis	Narrow	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Pancreatic abscess	Narrow	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Pancreatic enzyme abnormality	Broad	ACTIVE	8.1	8.1
Acute pancreatitis (SMQ)	Pancreatic enzymes abnormal	Broad	ACTIVE	8.1	8.1



Other uses for SMQs

Signal generation

- Tool initially showed signal score for each PT in narrow SMQ (if narrow and broad options available)
- Recent update of tool
 - Shows aggregate signal score for entire “narrow” SMQ
 - Shows signal score for individual PTs within that “narrow” SMQ
- Whether SMQs will accurately detect signals has yet to be determined

Other ideas

- Use as basis for building internal standardised searches that need a wider scope?

- E.g. Pregnancy search for PSURs.

Recently released (v10.0) “*SMQ Adverse pregnancy outcome/reproductive toxicity (incl neonatal disorders)*” would gather most of the data required. Possibly add normals and some database fields (pregnancy = yes)

- Clinical trial data?



Questions?