

Survey of Outcomes in Cochrane Reviews



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Background



- The COMET Initiative - Strategic goals
 - To increase the number of COS developed using evidence-based methods,
 - To increase the impact of COS on the quality of research-based knowledge, by raising awareness and increasing implementation,
 - To establish standards for methods of COS development.

Background



- Objectives of work package 2
 - To support engagement between the COMET Initiative, The Cochrane Collaboration and the GRADE Working Group.
 - To develop a strategy to link the development of COS for trials with the specification of outcomes for Cochrane Reviews, including those to include in their Summary of Findings tables.
- As part of this work, in work package 2, we performed a survey of outcomes in Cochrane Reviews

Objectives



- To identify the variety of outcome measures used in Cochrane Reviews
- To identify and highlight the use of COS in reviews from Cochrane Review Groups
- To identify healthcare areas that might benefit from COS development

Methods



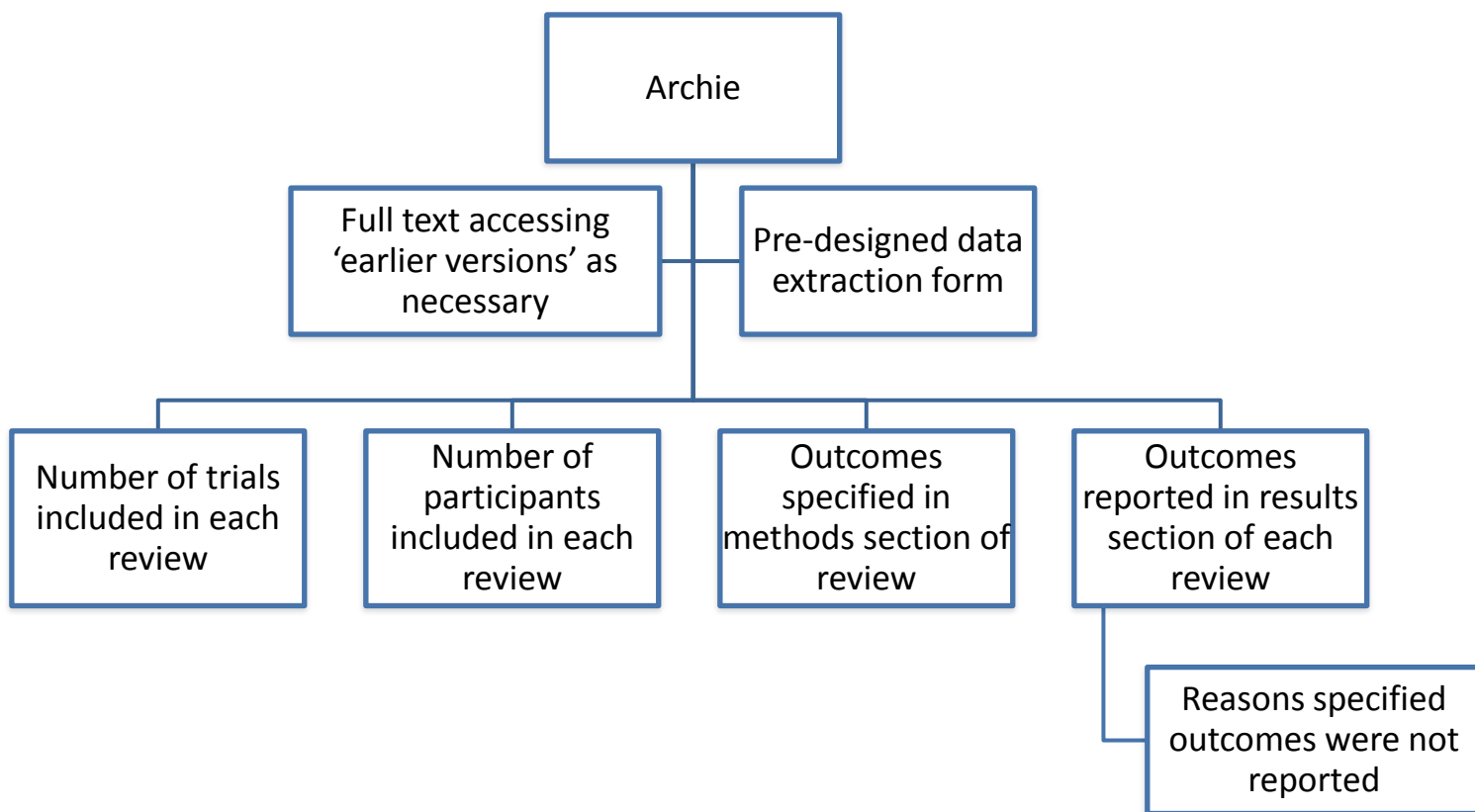
- Descriptive survey of Cochrane Reviews, divided by Cochrane Review Group (CRG), published in full for the first time in:
 - 2007 and 2011 (phase 1)
 - Conducted between November 2012 and April 2013
 - 2013 (phase 2; follow-up survey)
 - Conducted between March and August 2014

Methods



- Outcomes specified in the *methods section* of each review and outcomes reported in the *results section* of each review were of interest
- We also evaluated the 2011 & 2013 reviews for their use of 'Summary of Findings' tables (SoFs)

Data Extraction



Data Analysis



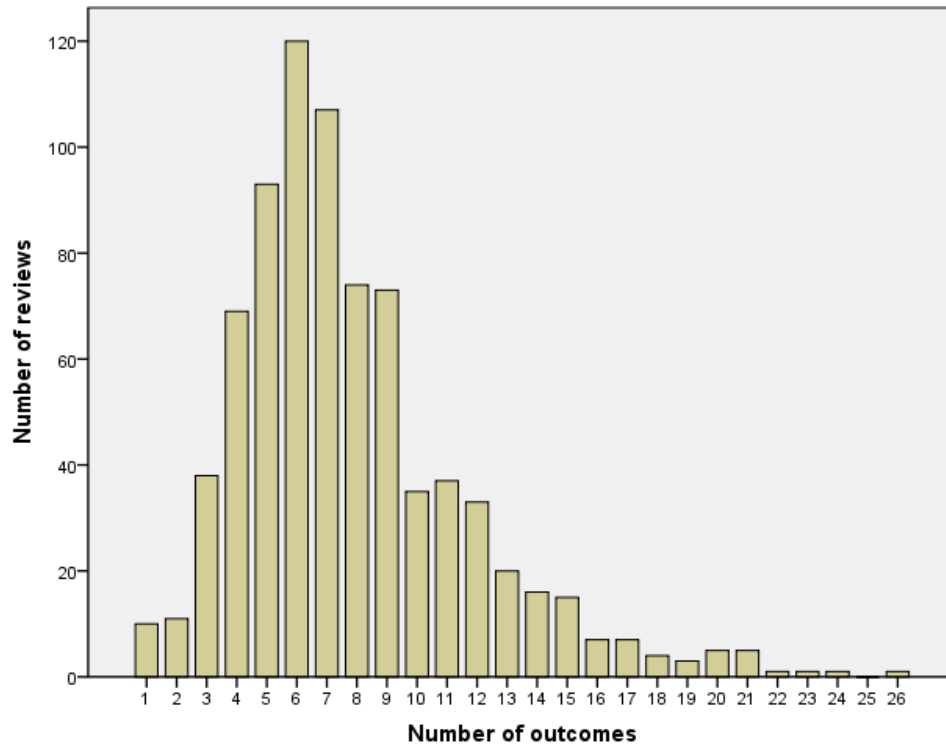
- In-depth exploration and description of specified and reported outcomes in the new reviews from each CRG
- Descriptive statistics
 - Proportions of outcomes specified versus reported
 - All outcomes
 - Primary outcomes only

Results



	2007	2011	2013
Number of CRGs	47	50	50
Number of reviews	387	401	439
Number of specified outcomes	3010	3117	3644
Proportion of specified outcomes reported after excluding reviews with 0 studies in them	61% (1567/2584)	65% (1800/2779)	68% (2134/3142)
No reason for non-report of specified outcome <i>as a proportion of all specified outcomes</i>	14% (732/5363)		7% (233/3142)

Results



Median number of outcomes across all reviews in 2007 & 2011 = 7 (range 1-26)

Median number of outcomes across all reviews in 2013 = 7 (range 1-62)

Results



- During data extraction across all of the CRGs, fifteen broad categories of outcomes were identified:
 - Adverse events/effects (AE), Compliance, Economic, Hospital, Infection, Medication, Mortality/Survival, Operative, Pain, Other Physiological or Clinical, Psychosocial, Quality of Life, Activities of Daily Living (ADL), Satisfaction and Withdrawal (from study or treatment)
- These broad outcome categories, rather than attempting to define outcome domain systems, provided a structure for organising the outcomes extracted from each review for analyses

Pregnancy and Childbirth Group 2011 (32 reviews)			
Category	Outcomes	No. outcomes specified	No. outcomes reported
Adverse events/effects	AE: type specified	7	2 ¹
	AE: any	10	4 ³
Mortality/survival	Mortality: all cause (maternal)	8	2 ³
	Stillbirth	7	1 ²
Infection	Pyrexia	15	3 ⁴
	Neonatal sepsis	1	0
Pain	Pain: any/type unspecified	10	9
	Pain: relief/control of	4	4
Other physiological or clinical	Blood loss	5	2 ¹
	Instrumental birth	11	7 ²
	Apgar < 7 at 5 minutes	13	10 ¹
Psychosocial	Anxiety	4	4
	Depression	2	1
Quality of Life	Quality of Life-generic	2	0
Medication	Hypertensive drugs	1	0
	Use of magnesium sulphate	1	0
Economic	Cost	8	1 ²
	Healthcare resource use	2	0 ¹
Hospital	Length of hospital stay	6	1 ²
	Admission to NICU	15	9 ³
Operative	Duration of operation	1	1
Compliance	Compliance with treatment	1	0
Withdrawal	Withdrawal from treatment	1	0
Satisfaction	Maternal satisfaction	13	4 ²

" number of specified outcomes not reported due to 0 studies in reviews

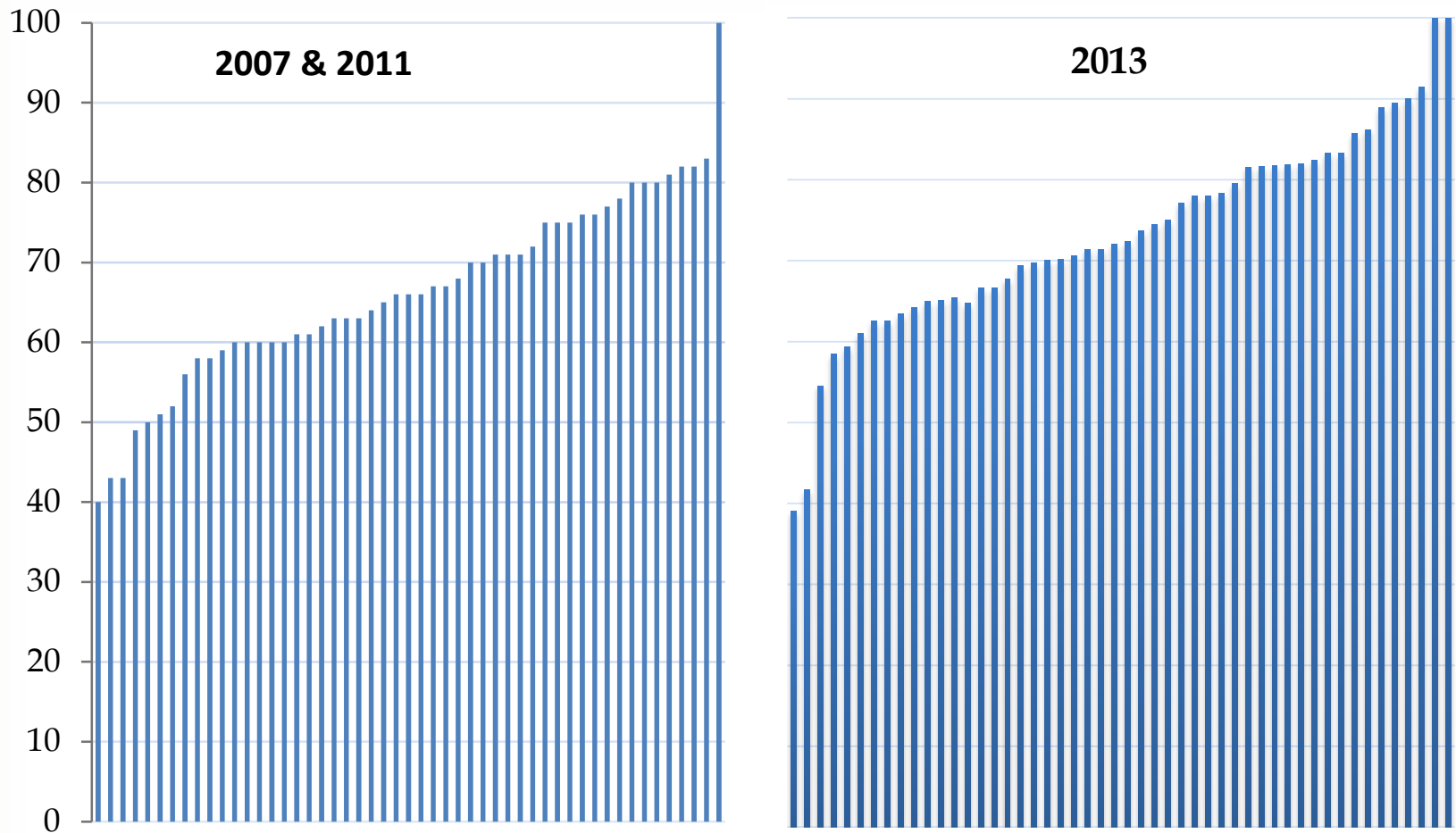
Outcome variation



- Although the survey found consistency in outcome categories across CRGs, the individual outcome measures were less consistent within some categories; for example:
- In 2007, outcomes in the category 'Hospital' were specified in reviews from 32 of the 47 CRGs (68%)
- A total of 84 'Hospital' outcomes were specified in these 32 reviews, and included 23 individual outcome types

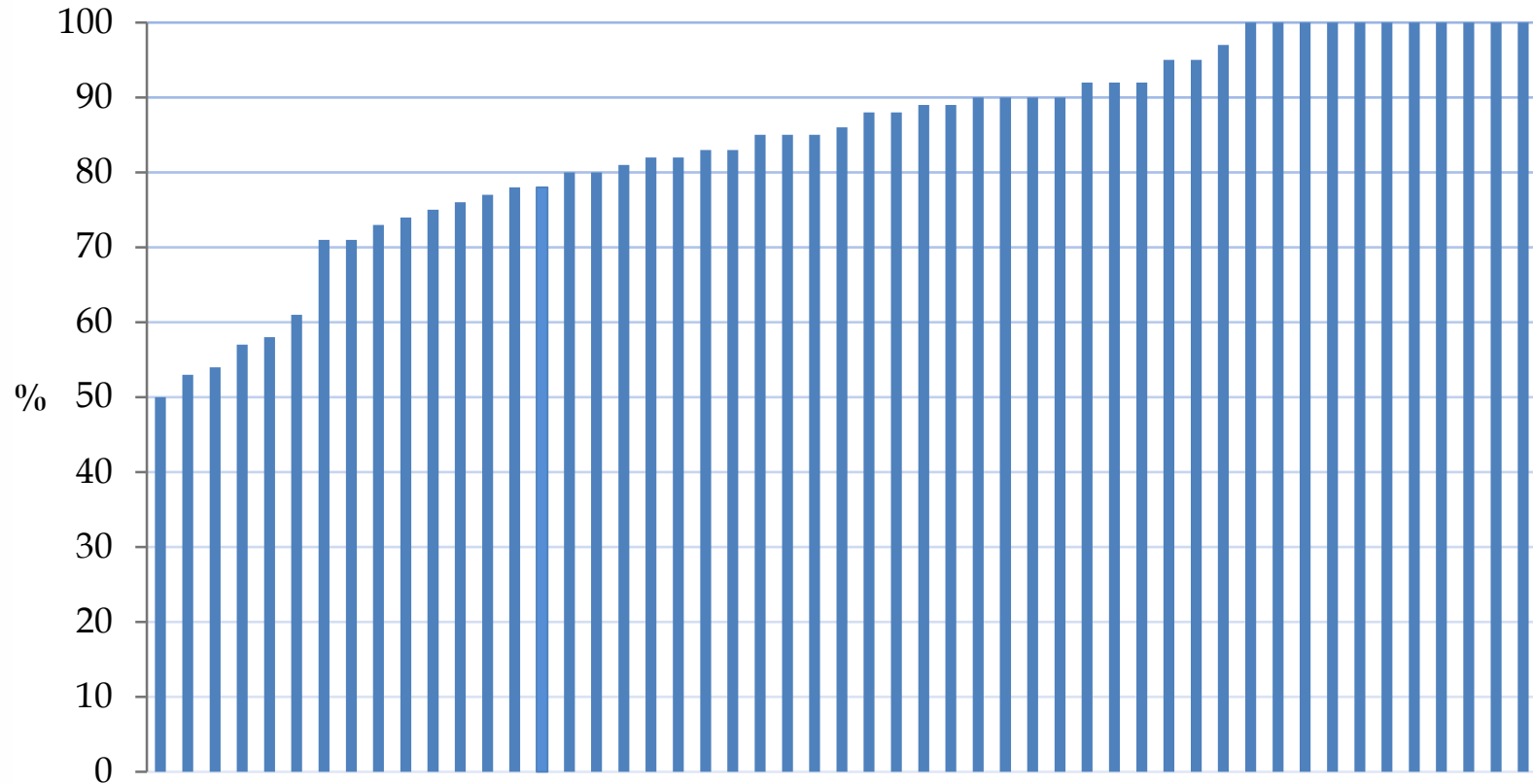
'Hospital' outcomes: 2007, 32 CRGs (68%)	Number (%) of CRGs with this outcome in at least one new review in 2007
Length of hospital stay	26 (81)
Hospital admission	15 (47)
Readmission to hospital	8 (25)
Admission to ICU/NICU	5 (17)
ED visit	5 (17)
Length of stay ICU/NICU	3 (10)
Length of ED visit	1 (3)
Mean reduction in ED visit	1 (3)
Appointment length	1 (3)
Length of therapy	1 (3)
Time with therapist	1 (3)

Outcome category	Individual outcome	No of CRGs with outcome in ≥ 1 review/No CRGs using outcome category (%)		
		2007	2011	2013
Infection	Infection (type specific)	12/23 (52)	7/20 (35)	20/21 (95)
	Infection (any)	10/23 (43)	9/20 (45)	3/21 (14)
	Duration of infection	3/23 (13)	-	2/21 (10)
	Fever	3/23 (13)	1/20 (5)	1/21 (5)
Medication	Need for rescue medication	6/24 (25)	8/18 (44)	6/29 (21)
	Change to medication	3/24 (13)	-	-
	Prescription rates	-	2/18 (11)	7/29 (24)
	Medication free days	-	1/18 (6)	1/29 (3)
Mortality/Survival	Mortality (all cause)	13/33 (39)	19/35 (54)	34/35 (97)
	Mortality (cause specific)	17/33 (52)	17/35 (49)	18/35 (51)
	Survival (overall)	10/33 (30)	7/35 (20)	12/35 (34)
	Survival (disease-free)	5/33 (15)	4/35 (11)	4/35 (11)
	Survival (progression-free)	3/33 (9)	3/35 (9)	-
Pain	Pain (any)	16/27 (59)	12/21 (57)	15/21 (71)
	Pain relief/control	7/27 (26)	12/21 (57)	7/21 (33)
	Pain intensity	7/27 (26)	7/21 (33)	6/21 (29)
	Pain score	6/27 (22)	4/21 (19)	1/21 (5)
	Duration of pain	3/27 (11)	-	1/21 (5)
Economic	Costs	19/31 (61)	22/30 (73)	22/35 (63)
	Healthcare resource use	13/31 (42)	11/30 (37)	12/35 (34)
	Economic data	2/31 (1)	2/30 (1)	12/35 (34)



Proportion of specified outcomes that were reported, after removing reviews that did not include any studies for each CRG, was calculated

Primary Outcomes (2007 and 2011 combined)

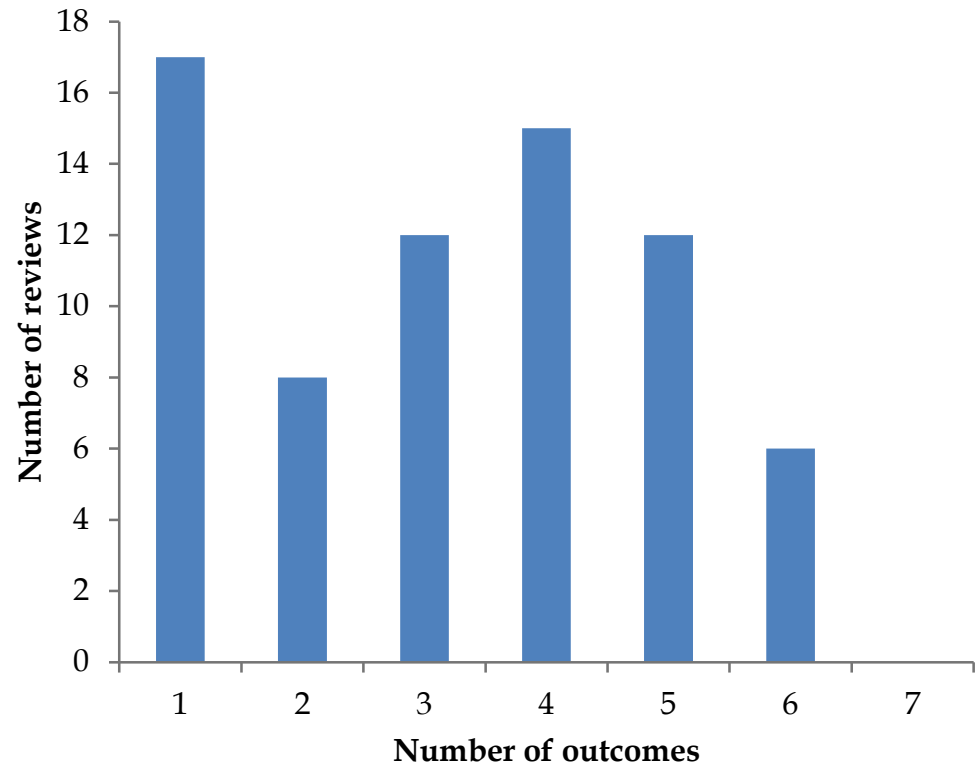


Proportion of specified primary outcomes that were reported, after removing reviews that did not include any studies for each CRG, was calculated

Summary of Findings



We found that 31% (113/361) of the 2011 reviews that had studies in them used a SoF

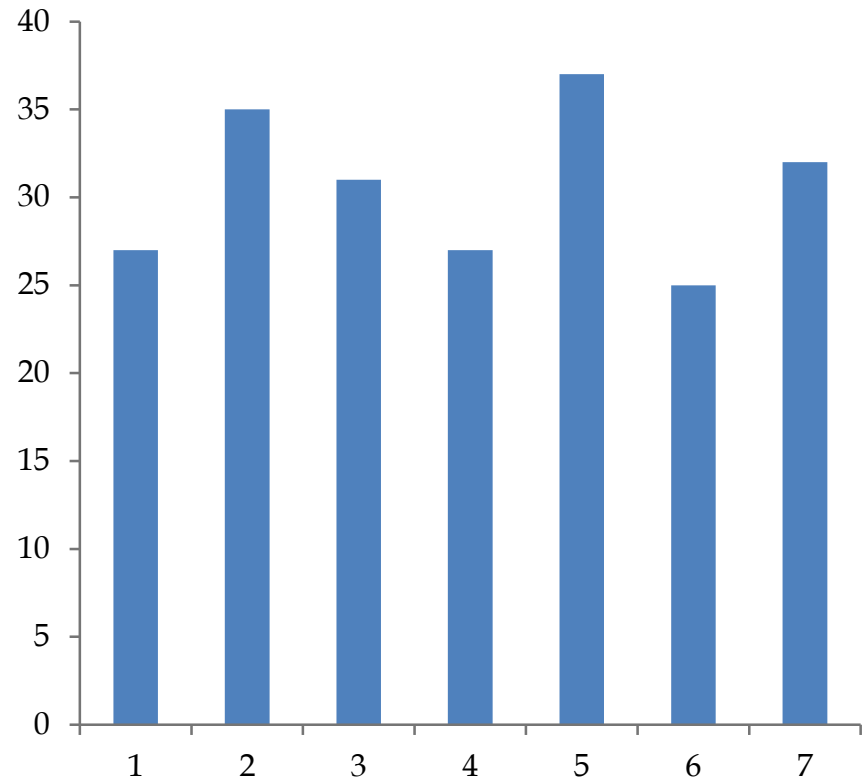


Summary of Findings



In 2013, 57% (216/375) of the reviews that had studies included in them used a SoF table.

1 review had 8 outcomes and 1 had 9 outcomes in their SoF



Commonly used outcomes in CRGs



- Individual outcomes which were used in more than half of the included reviews for each CRG were explored
 - To identify commonly listed outcomes in each CRG
 - Might help identify the current use of COS by CRGs
 - Might help identify areas where COS development might be targeted

Review Group	Outcome	No of reviews (%) 2007	No of reviews (%) 2011
Airways	Adverse events/effects	9 (82)	7 (70)
	Exacerbations	9 (82)	5 (50)
	Lung function	6 (55)	6 (60)
	Symptoms/symptom scores	9 (82)	8 (80)
	Quality of Life: generic	-	6 (60)
Colorectal Cancer	Adverse events/effects	-	9 (82)
	Length of hospital stay	-	9 (82)
	Duration of operation	-	8 (73)
	Pain	-	7 (64)
Dementia and Cognitive Improvement	Adverse events/effects	3 (60)	5 (71)
	Costs	3 (60)	-
	Behavioural outcomes	5 (100)	-
	Quality of Life: generic	3 (60)	5 (71)
	Activity of Daily Living	3 (60)	-
	Functioning	4 (80)	4 (57)
Epilepsy	Adverse events/effects	-	6 (100)
	Seizure: reduction	5 (71)	3 (50)
	Seizure: free	5 (71)	-
	Seizure: frequency	3 (43)	5 (83)
	Seizure: severity	5 (71)	-
	Quality of Life: generic	6 (86)	-
Incontinence	Adverse events/effects	5 (100)	3 (100)
	Cost	5 (100)	3 (100)
	Urinary symptom scores	3 (60)	3 (100)
	Urodynamic measures	3 (60)	3 (100)
	Quality of Life: generic	5 (100)	3 (100)
	Quality of Life: specific	4 (80)	3 (100)
	Patient satisfaction	3 (60)	-

Conclusion



- There is wide variation in outcomes reported in CRGs
- There has been minimal use and implementation of COS in Cochrane Reviews
 - No review in 2007, 2011 or 2013, explicitly stated that it used a COS
- Outcome reporting, is increasing over time, however, for a large proportion of outcomes, a reason for not reporting the specified outcome is not provided
 - Indicates that outcome reporting bias might be a problem for some systematic reviews

Final thoughts



- Consider the number of outcomes when specifying these for reporting in Cochrane reviews
- Provide reason(s) as to why outcomes are not reported
- Consider conditions within CRGs for COS development
- Use of SoF tables has increased

Further work required

The COMET Initiative, through collaboration, stakeholder involvement, consensus, review and feedback is committed to advancing methods for rigorous COS development and implementation

Acknowledgement



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- Although authors are members of The Cochrane Collaboration, the views expressed in this presentation are not necessarily those of the Collaboration or the Cochrane groups with which they are associated

Thank you

