

# Survey of Outcomes in Cochrane Reviews



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# 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
    - Published in Journal of Clinical Epidemiology in 2015
  - 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 and 2013 reviews for their use of Summary of Findings tables

# Data Analysis



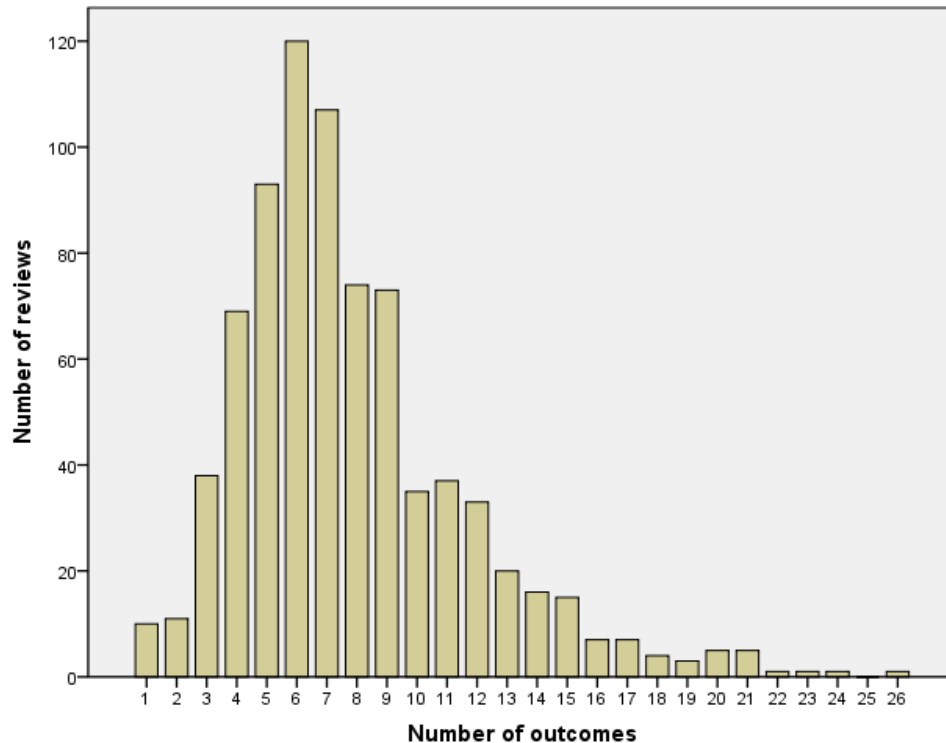
- In-depth exploration and description of specified and reported outcomes in the new reviews from each CRG
- Descriptive statistics
  - Proportions of outcomes specified versus reported
  - All outcomes
  - Primary outcomes only

# Results



	<b>2007</b>	<b>2011</b>	<b>2013</b>
No. of CRGs	47	50	50
No. of reviews	387	401	439
No. of specified outcomes	3010	3117	3644
Proportion of specified outcomes reported (after excluding empty reviews)	<b>61%</b> (1567 /2584)	<b>65%</b> (1800 /2779)	<b>68%</b> (2134 /3142)
No reason for non-report of an outcome <i>as a proportion of all specified outcomes</i>	<b>14%</b> (732 /5363)		<b>7%</b> (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 <sup>1</sup>
	AE: any	10	4 <sup>3</sup>
Mortality/survival	Mortality: all cause (maternal)	8	2 <sup>3</sup>
	Stillbirth	7	1 <sup>2</sup>
Infection	Pyrexia	15	3 <sup>4</sup>
	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 <sup>1</sup>
	Instrumental birth	11	7 <sup>2</sup>
	Apgar < 7 at 5 minutes	13	10 <sup>1</sup>
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 <sup>2</sup>
	Healthcare resource use	2	0 <sup>1</sup>
Hospital	Length of hospital stay	6	1 <sup>2</sup>
	Admission to NICU	15	9 <sup>3</sup>
Operative	Duration of operation	1	1
Compliance	Compliance with treatment	1	0
Withdrawal	Withdrawal from treatment	1	0
Satisfaction	Maternal satisfaction	13	4 <sup>2</sup>

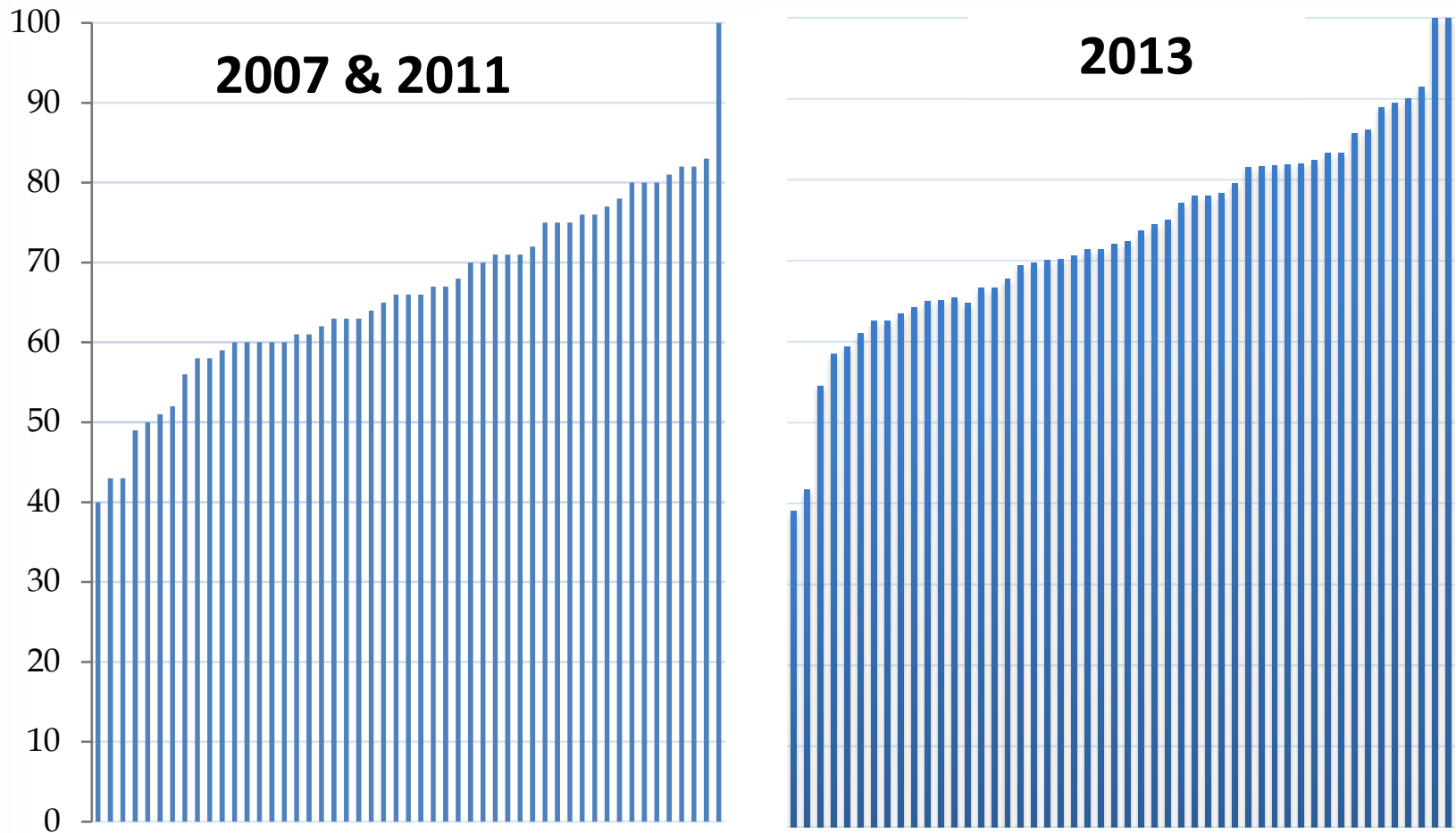
*" number of specified outcomes not reported due to 0 studies in reviews*

# Outcome variation



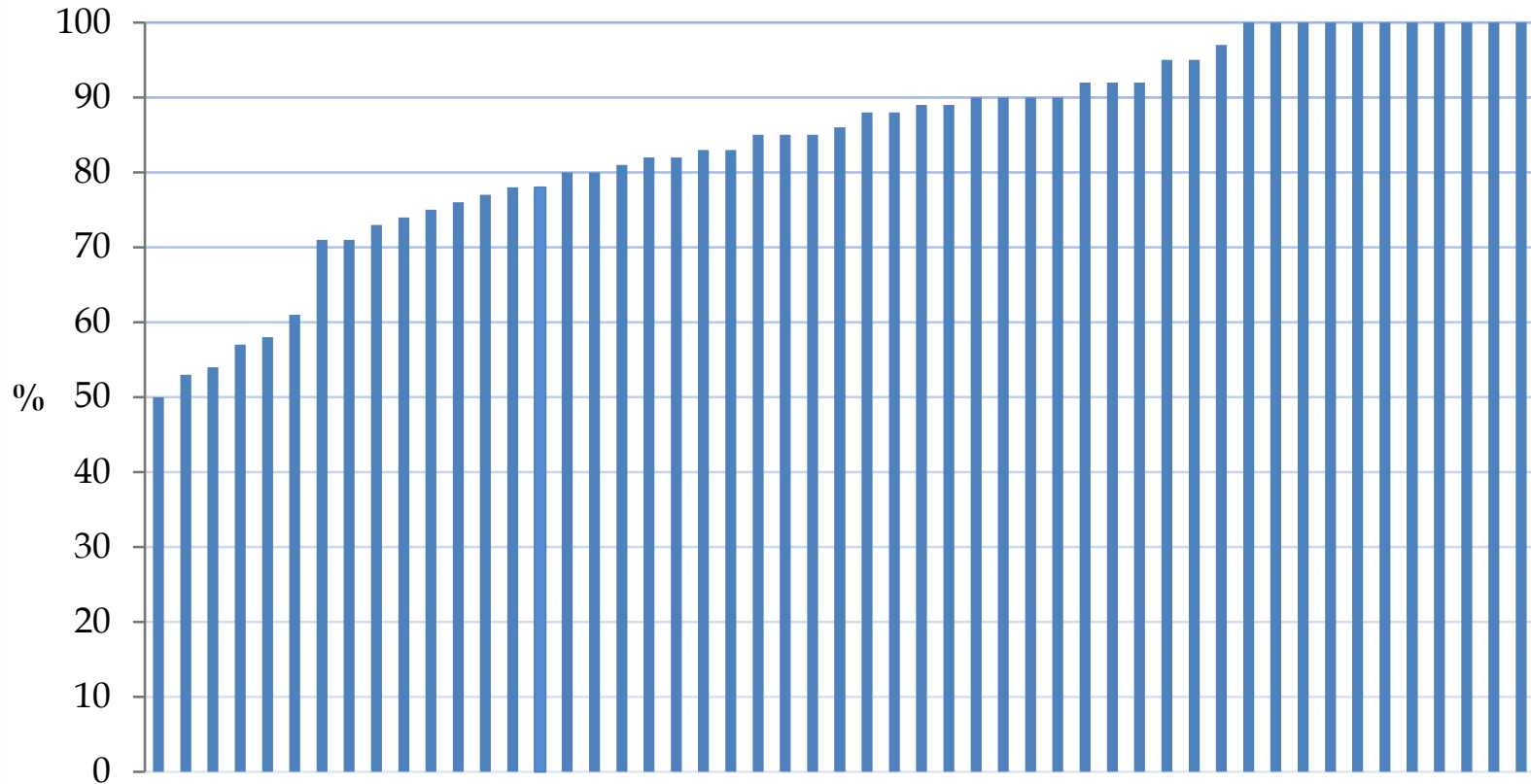
- There was consistency in outcome categories across CRGs, but individual outcome measures were less consistent within some categories; for example:
- In 2007, 'Hospital' outcomes were specified in reviews from 32 of the 47 CRGs (68%)
- A total of 84 'Hospital' outcomes were specified in these 32 reviews,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

<b>'Hospital' outcomes: 2007, 32 CRGs (68%)</b>	<b>Number (%) of CRGs with this outcome in at least one new review in 2007</b>
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)



Proportion of specified outcomes that were reported,  
after removing empty reviews

## Primary Outcomes (2007 and 2011 combined)

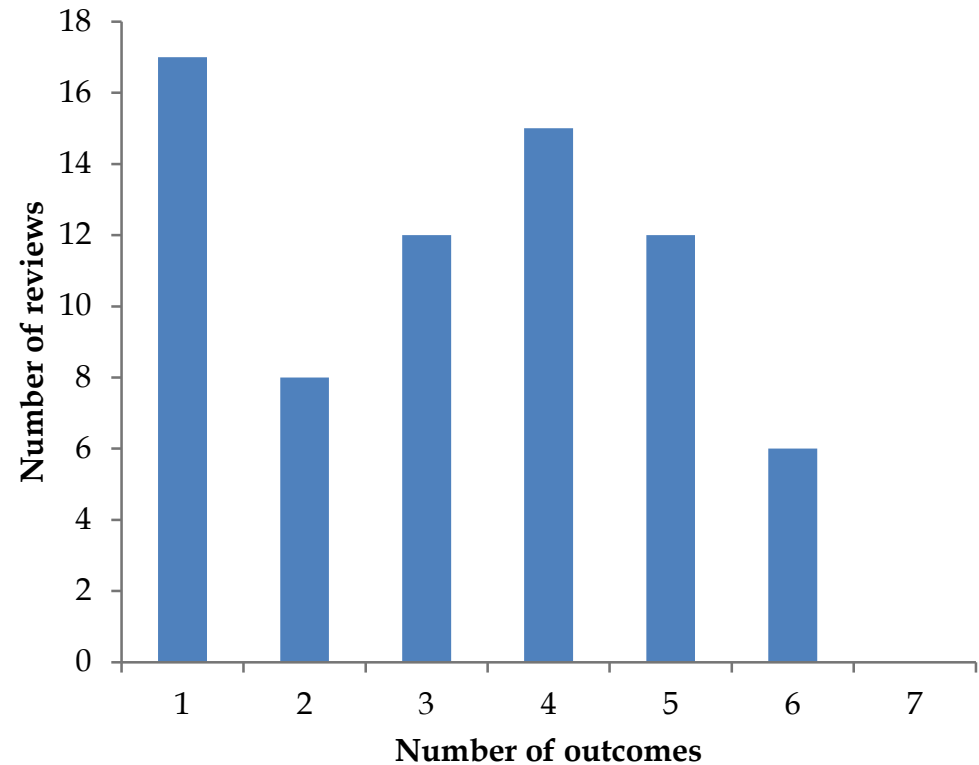


Proportion of specified primary outcomes that were reported, after removing empty reviews for each CRG

# Summary of Findings



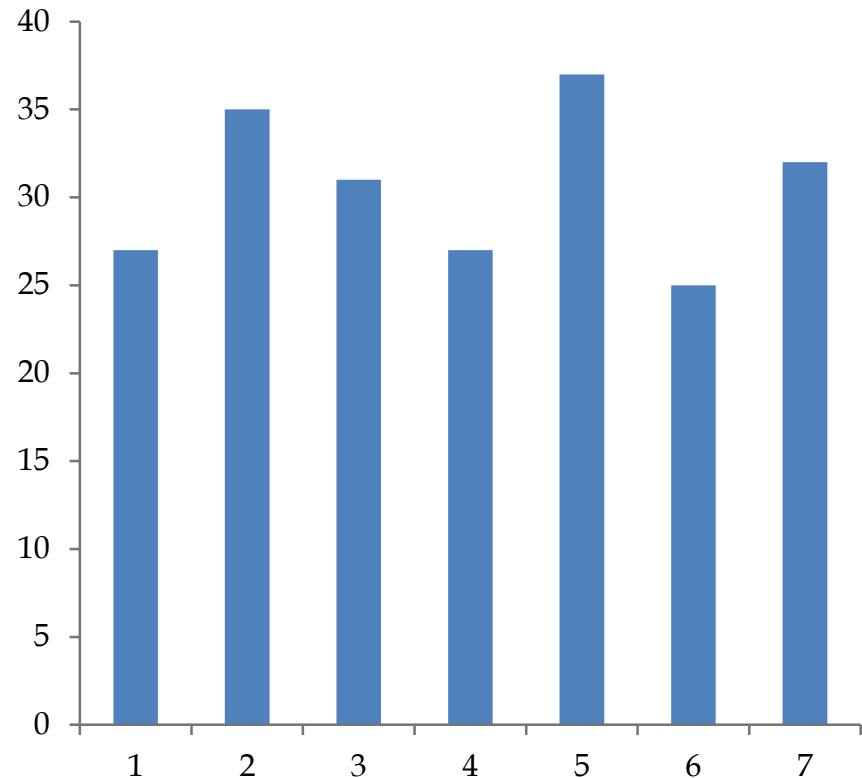
31% (113/361)  
of the 2011  
reviews with  
studies in them  
had a Summary  
of Findings table



# Summary of Findings



57% (216/375)  
of the 2013  
reviews with  
studies in them  
had a Summary  
of Findings  
table. 1 had 8  
outcomes and 1  
had 9 outcomes



# 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
  - To help identify the current use of COS by CRGs
  - To 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 Cochrane Reviews, across and sometimes within CRGs
- There appears to have little use COS in Cochrane Reviews
  - No review in 2007, 2011 or 2013, explicitly stated that it used a COS
- Outcome reporting, is increasing over time, but a reason for not reporting the specified outcome is not provided for a large proportion of outcomes
  - Outcome reporting bias might be a problem for some reviews

# Final thoughts



- Consider the number of outcomes when deciding which ones to include in Cochrane reviews
- Provide reasons if specified outcomes are not reported
- Consider how CRGs might get involved in COS development
- Continue to increase the use of Summary of Findings tables

# Acknowledgement



- VS and FW were employed as research fellows under the EU 7<sup>th</sup> Framework Programme ([FP7/2007-2013] [FP7/2007-2011]) grant agreement n°305081 award, to conduct work (including the survey presented here) for The COMET Initiative.
- Although authors are members of Cochrane, the views expressed in this presentation are not necessarily those of Cochrane or the Groups with which we are associated.