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# Evaluating the Consistency and Quality of Search Strategies and Methodology in Cochrane Urology Group Systematic Reviews

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# Evaluating the Consistency and Quality of Search Strategies and Methodology in Cochrane Urology Group Systematic Reviews

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# Outline

1. About Cochrane
2. Objective
3. Methods
4. Results
5. Limitations
6. Conclusions

# Cochrane Collaboration



‘A global independent network of researchers, professionals, patients, carers, and people interested in health’ from over 120 countries, mostly volunteer.

Recognized as the international gold standard for high quality, trusted information.

# Cochrane Urology Group

- Collaborative Review Group in Prostatic Diseases – 1996
- Incorporated urologic cancers & name changed to Cochrane Prostatic Diseases & Urologic Cancers Group (PDUC) in 1997
- Incorporated urology-related renal topics in 2014
- Name changed to Cochrane Urology on 22 April 2015.

# Cochrane Urology IS Team



GIG  
CYMRU  
NHS  
WALES

Ymddiriedolaeth  
GIG Felindre  
Velindre NHS Trust



Children's Mercy  
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# Objectives

- Quality Improvement Study for the Cochrane Urology Group
  - Make recommendations for consistency among multiple information specialists.
- Examine completeness of Cochrane Search Strategy reporting and changes over time.

# Methods

- Identified 65 published Urology Group Cochrane Systematic Reviews (CSR) and Protocols (CSP)
  - 41 CSRs and 24 CSPs downloaded from the Cochrane Library on September 15, 2016
- Self-created & pre-tested evaluative assessment form in Qualtrics for data collection
- Data Collected by 4 Librarians:
  - 3 Health Sciences Librarians & 1 Science Librarian
  - 2 of 4 are Cochrane Urology Group Assistant Information Specialists



# Data Collection Instrument

## Sections in the Assessment Form:

1. Database and resource selection
2. Search methodology reporting
3. Expanded PRESS (Peer-Review of Electronic Search Strategies) elements
4. Consistency between search strategies for each database searched\*

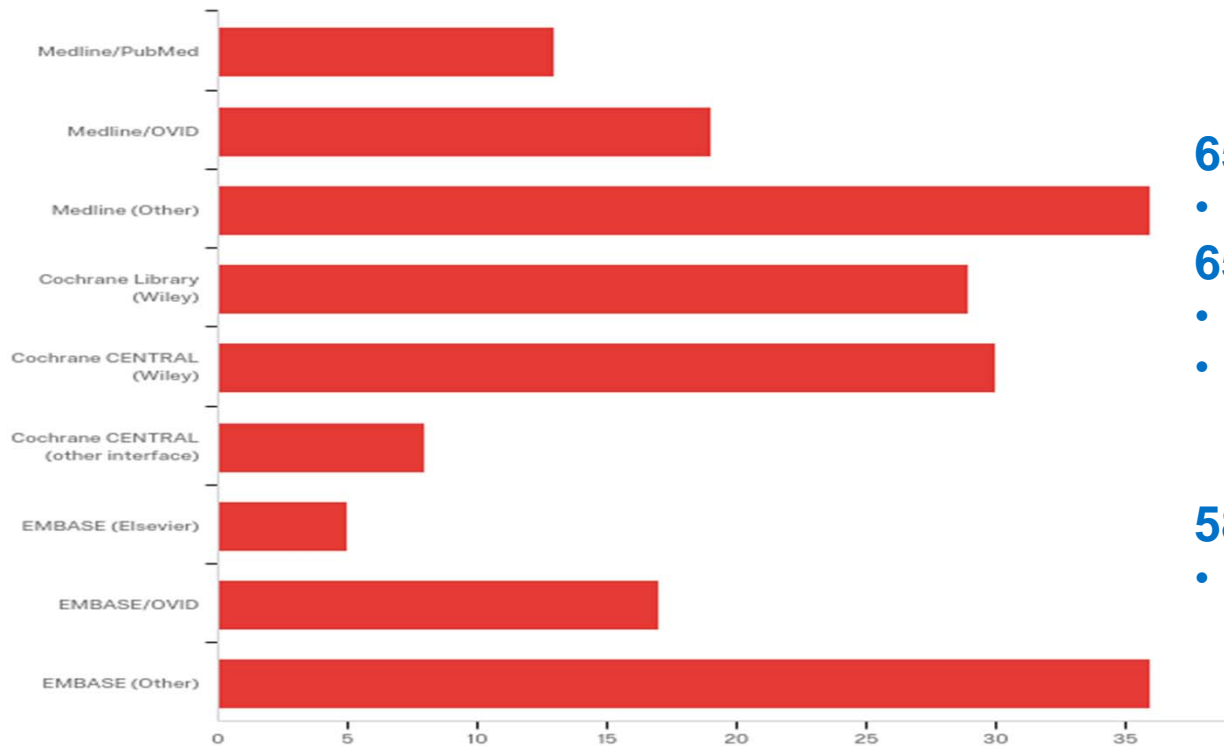
# Results

- Variation Between Investigators
- Databases & Interfaces
- Clinical Trial Registries
- Reporting Full Search Strategies (Appendices)
- Consulting Information Specialist
- Consistency
- Search Strategy Rating
- Error Types

# Investigator Variability

- 15 CSR/Ps were reviewed separately by two investigators
- Conflicts were counted & resolved by the pairs
- # of conflicts per CS/P ranged from 3-12
  - mean 6, median 6
- Most variation due to difficulty with incomplete or missing searches

# Database & Interfaces



## 65 searched Medline

- 36 interface unspecified

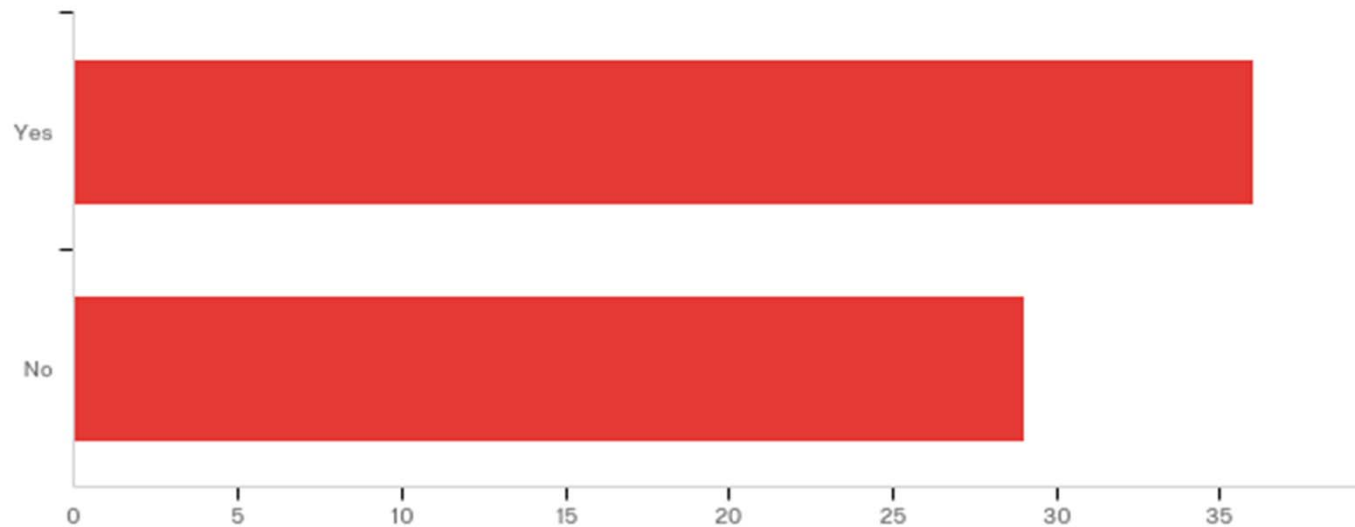
## 65 searched Cochrane

- 8 interface unspecified
- Some identified by name (Library vs. Central)

## 58 searched Embase

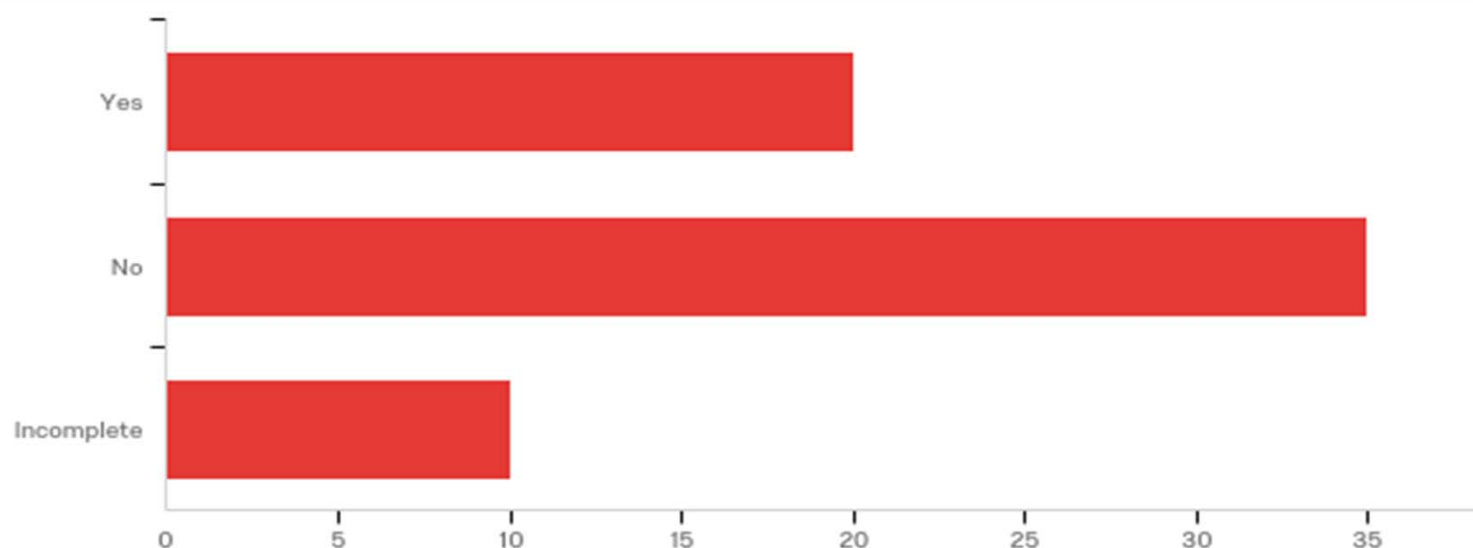
- 36 interface unspecified

# Clinical Trial Registries



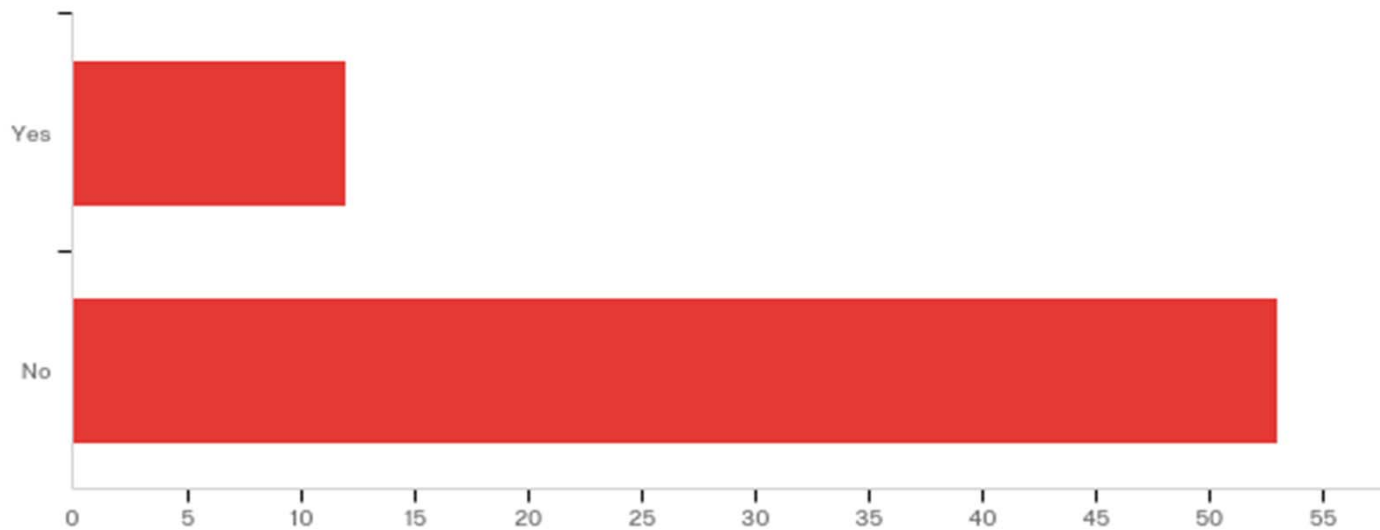
- 36 studies reported searching CTRs - 55.38%
- 29 studies didn't report searching CTRs - 44.62%

# Reporting Search Strategies



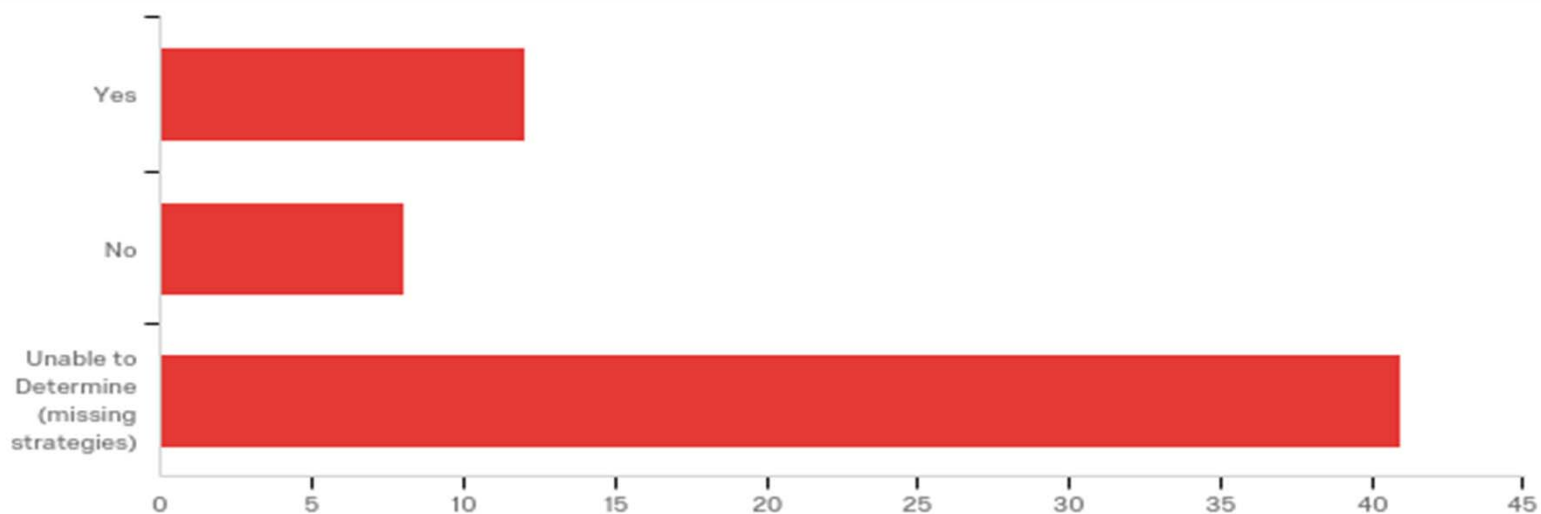
- 20 (30.77%) of reviews provided full search strategies
- 35 (53.85%) of reviews didn't provide search strategies
- 10 (15.38%) of reviews provided partial strategies

# Consult Information Specialist



12 (18.46%) of reviews acknowledged a Cochrane information specialist.

# Consistency



41 (67.21%) of the reviews did not provide enough information to determine if search strategies were consistent between the different databases reported in methodology.

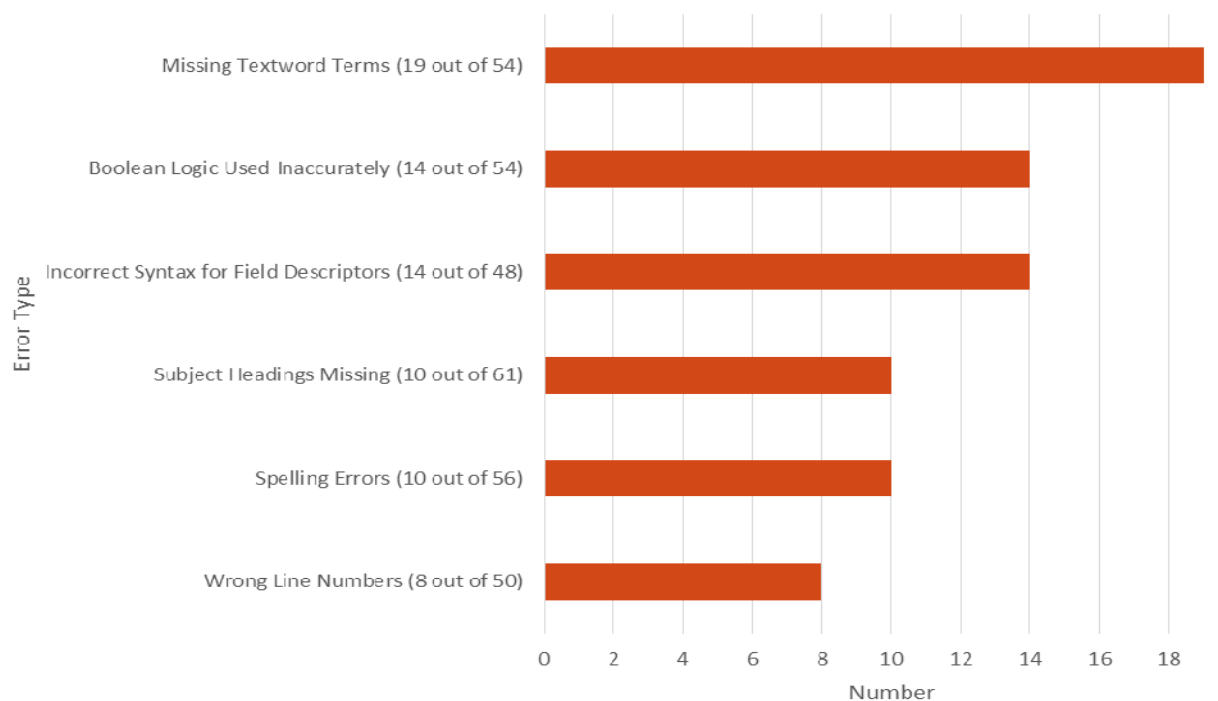


# Search Strategy Rating

#	Field	Good	Needs Work	Poor	Search Strategy Absent	Total
1	Medline/PubMed	38.46% 5	38.46% 5	7.69% 1	15.38% 2	13
2	Medline/OVID	36.84% 7	47.37% 9	10.53% 2	5.26% 1	19
3	Medline (Other)	5.56% 2	30.56% 11	27.78% 10	36.11% 13	36
18	Cochrane Library (Wiley)	14.29% 4	14.29% 4	7.14% 2	64.29% 18	28
4	Cochrane CENTRAL (Wiley)	16.67% 5	16.67% 5	0.00% 0	66.67% 20	30
5	Cochrane CENTRAL (other interface)	50.00% 4	12.50% 1	0.00% 0	37.50% 3	8
6	EMBASE (Elsevier)	40.00% 2	20.00% 1	20.00% 1	20.00% 1	5
7	EMBASE/OVID	31.25% 5	25.00% 4	0.00% 0	43.75% 7	16
8	EMBASE (Other)	8.57% 3	11.43% 4	8.57% 3	71.43% 25	35

Showing Rows: 1 - 9 Of 9

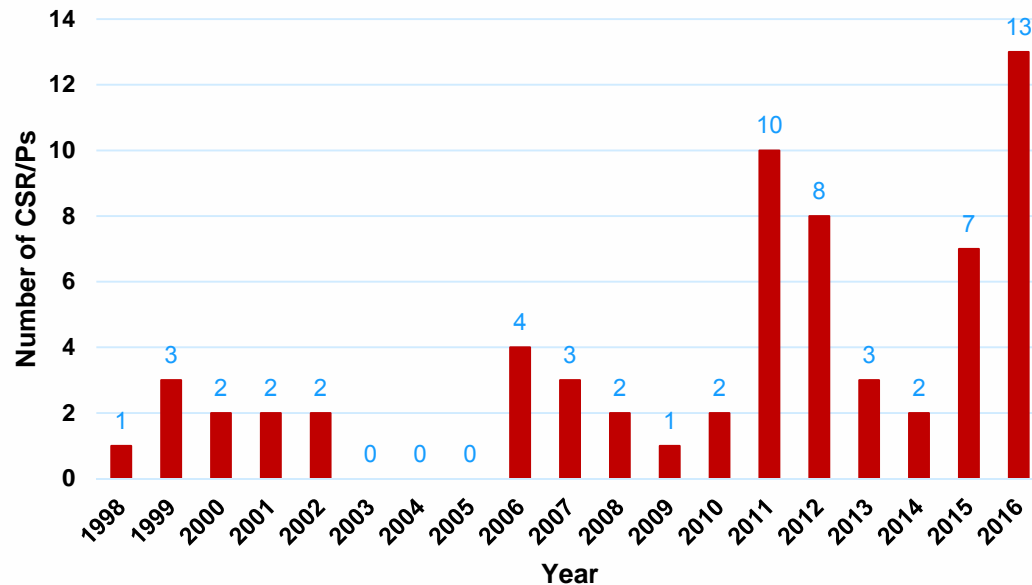
# Common Error Types



- 35% missing textwords
- 25% inaccurate Boolean logic
- 29% incorrect field descriptor syntax
- 16% missing subject headings
- 17% spelling errors
- 16% wrong line numbers

# Time Factors

*Still under analysis!*



**Cochrane Handbook –**  
Version 3.0.0 was 1996;  
present (2011) version  
is 5.1.0; new edition in  
progress

**MECIR** (Methodological  
Expectations of  
Cochrane Intervention  
Reviews) introduced to  
Urology in 2015; 2016  
version now available.

# Limitations

- Qualtrics data collection form had ambiguity issues due to underestimation of amount of missing data.
- Subjectivity of search strategy evaluation
- Inter-evaluator reliability only tested on 15 of 65
- Reviewed only Cochrane Urology group
- Time-dependent analysis incomplete
  - Cochrane & Urology Group records difficult to locate, likely due to administrative changes

# Conclusions

- Identified multiple error types and significant missing information in Cochrane Urology Reviews & Protocols
  - Hypothesize that reporting completeness improved over time (full analysis pending)
- Data will assist Cochrane Urology Information Specialists to:
  - improve & standardize their practice
  - formalize peer-review
  - ensure more consistent & accurate search strategies and methodology reporting
- Allows researchers to be more confident in the value they place on results of Cochrane Urology systematic reviews.



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