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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



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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*

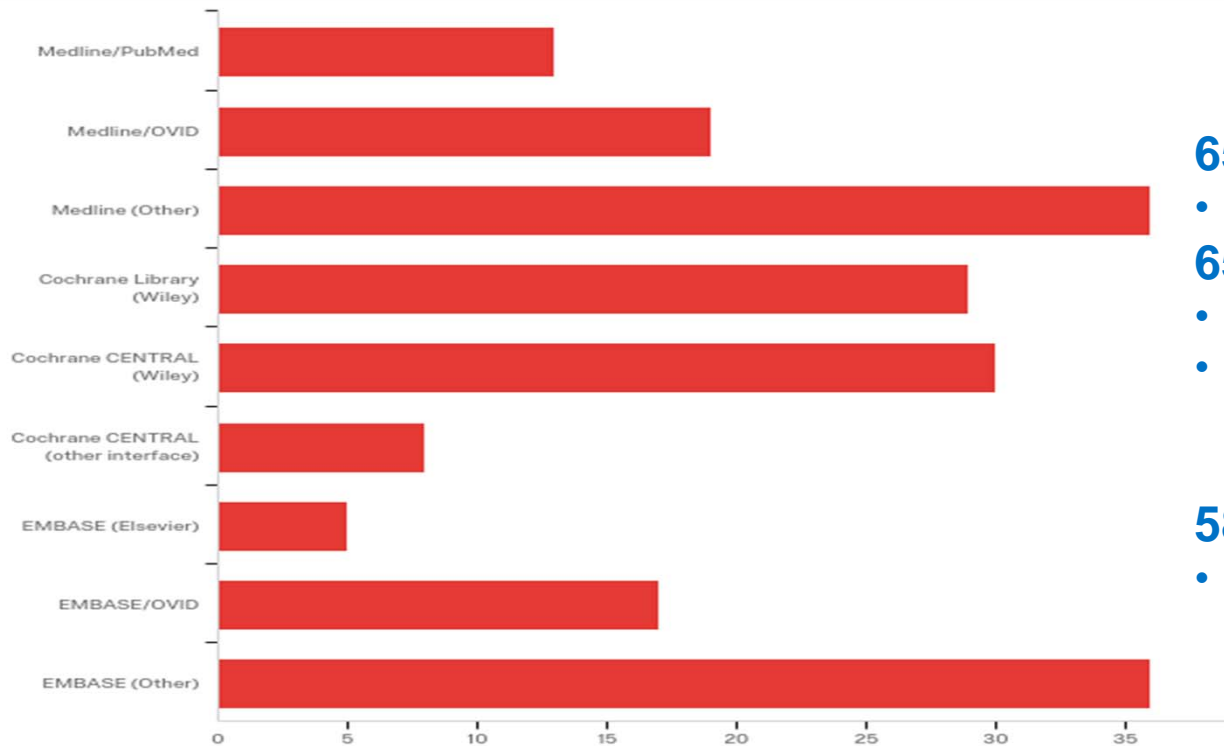
Results

- 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

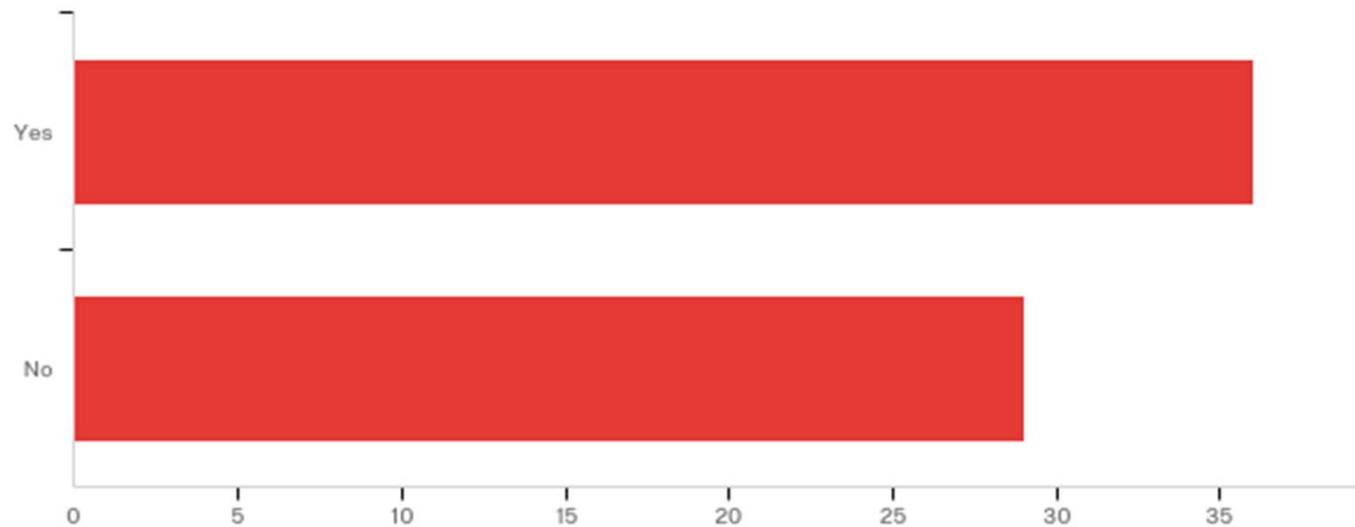
65 searched Cochrane

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

58 searched Embase

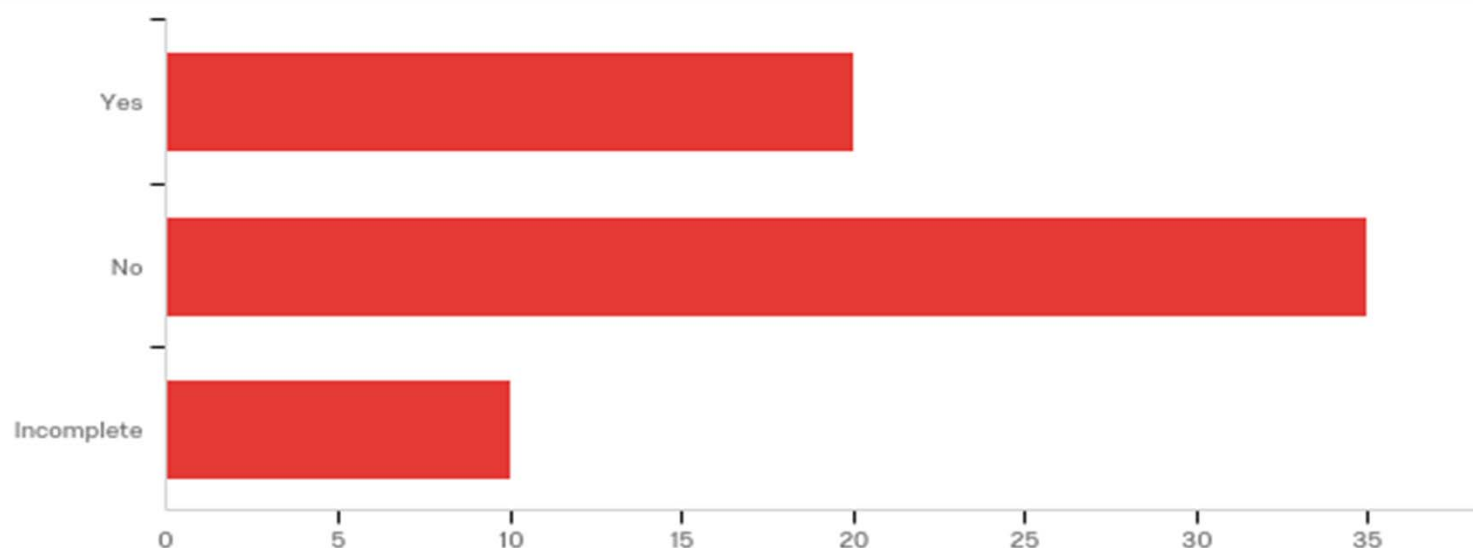
- 36 interface unspecified

Clinical Trial Registries



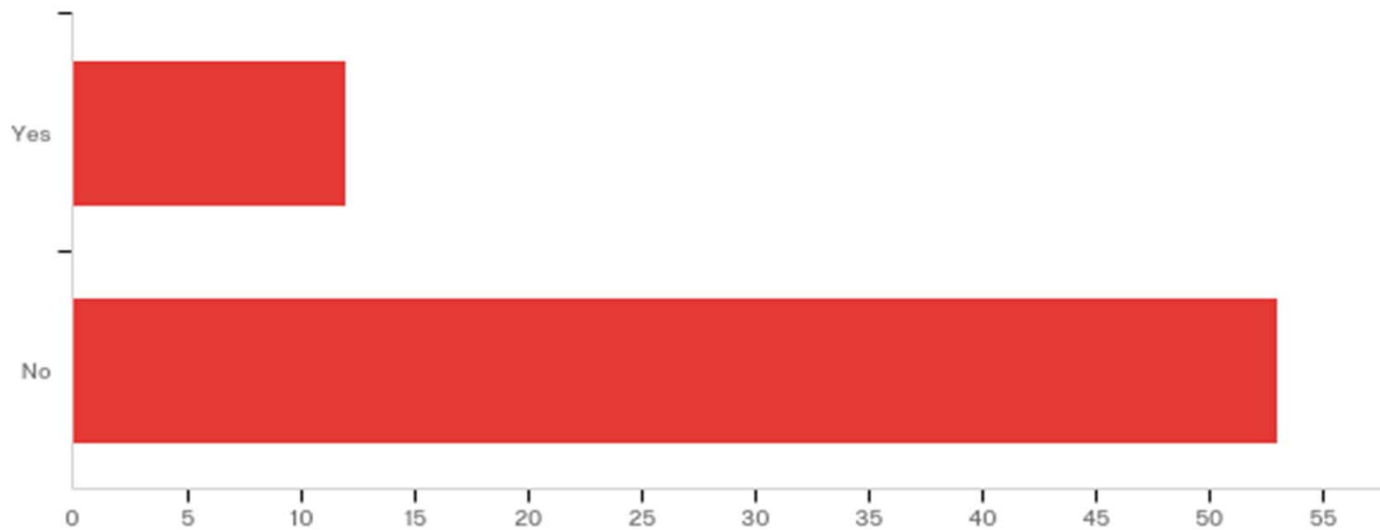
- 36 studies reported searching CTRs - 55.38%
- 29 studies didn't report searching CTRs - 44.62%

Reporting Search Strategies



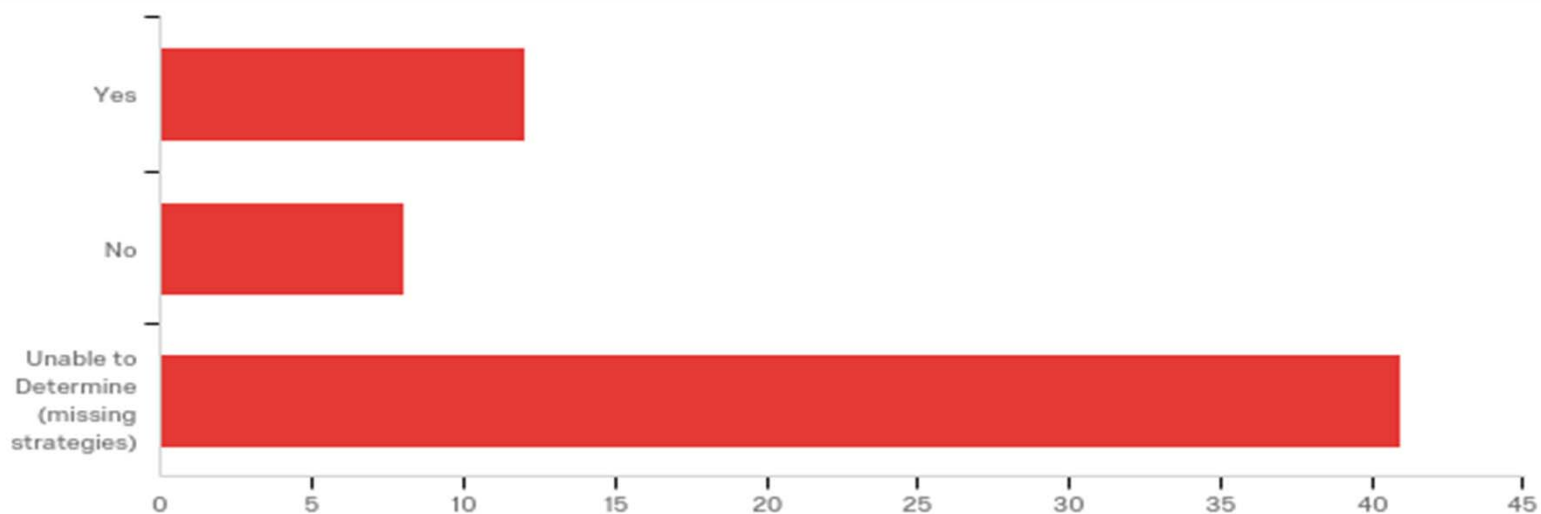
- 20 (30.77%) of reviews provided full search strategies
- 35 (53.85%) of reviews didn't provide search strategies
- 10 (15.38%) of reviews provided partial strategies

Consult Information Specialist



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

Consistency



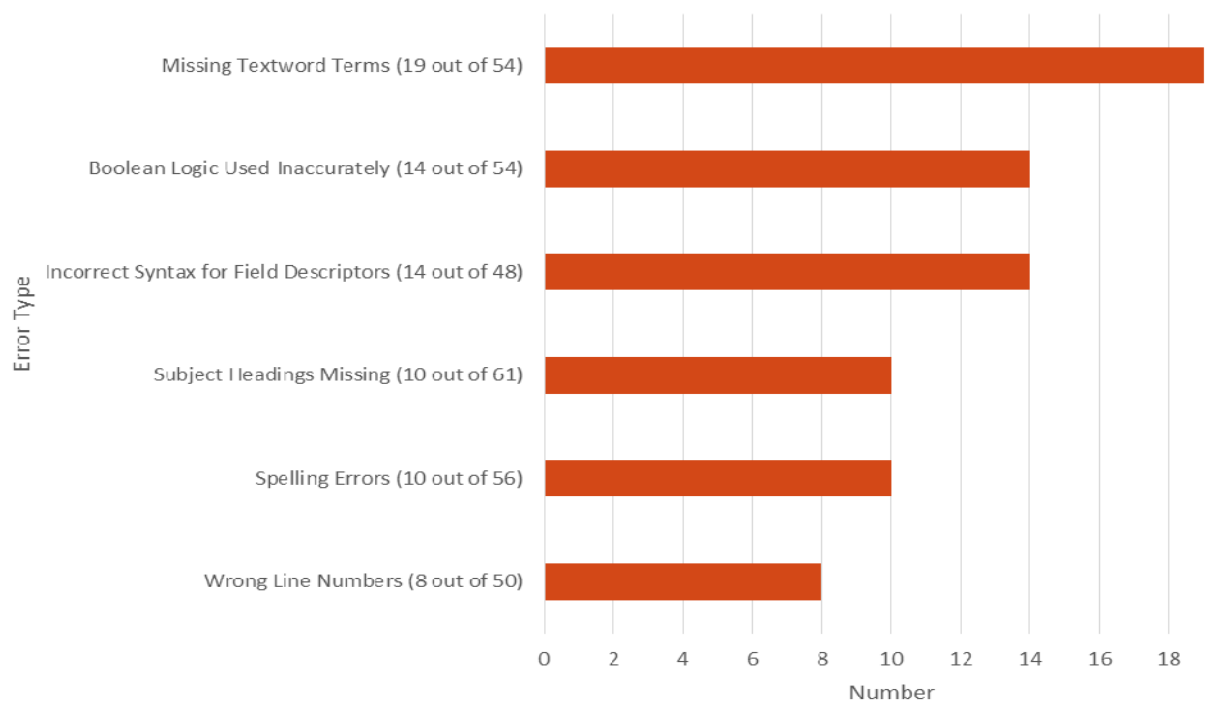
41 (67.21%) of the reviews did not provide enough information to determine if search strategies were consistent between the different databases reported in methodology.

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

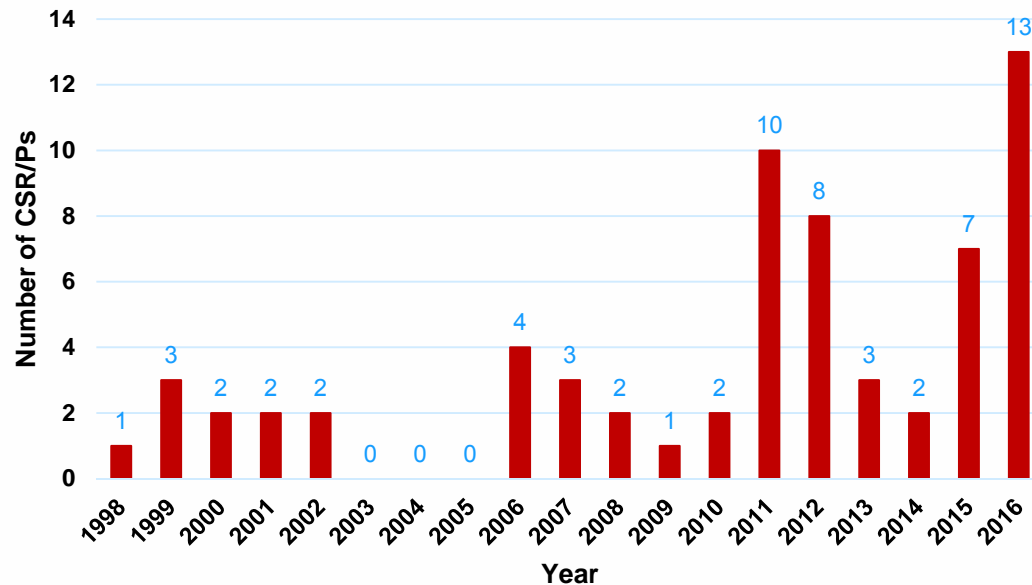
Common Error Types



- 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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