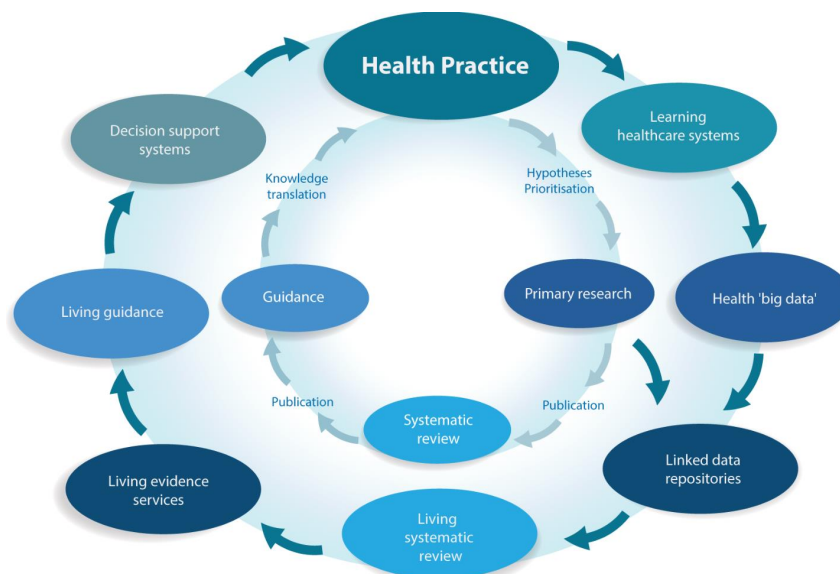


Cochrane Canada: Bringing 'Living Systematic Reviews' To Life Workshop, May 2017

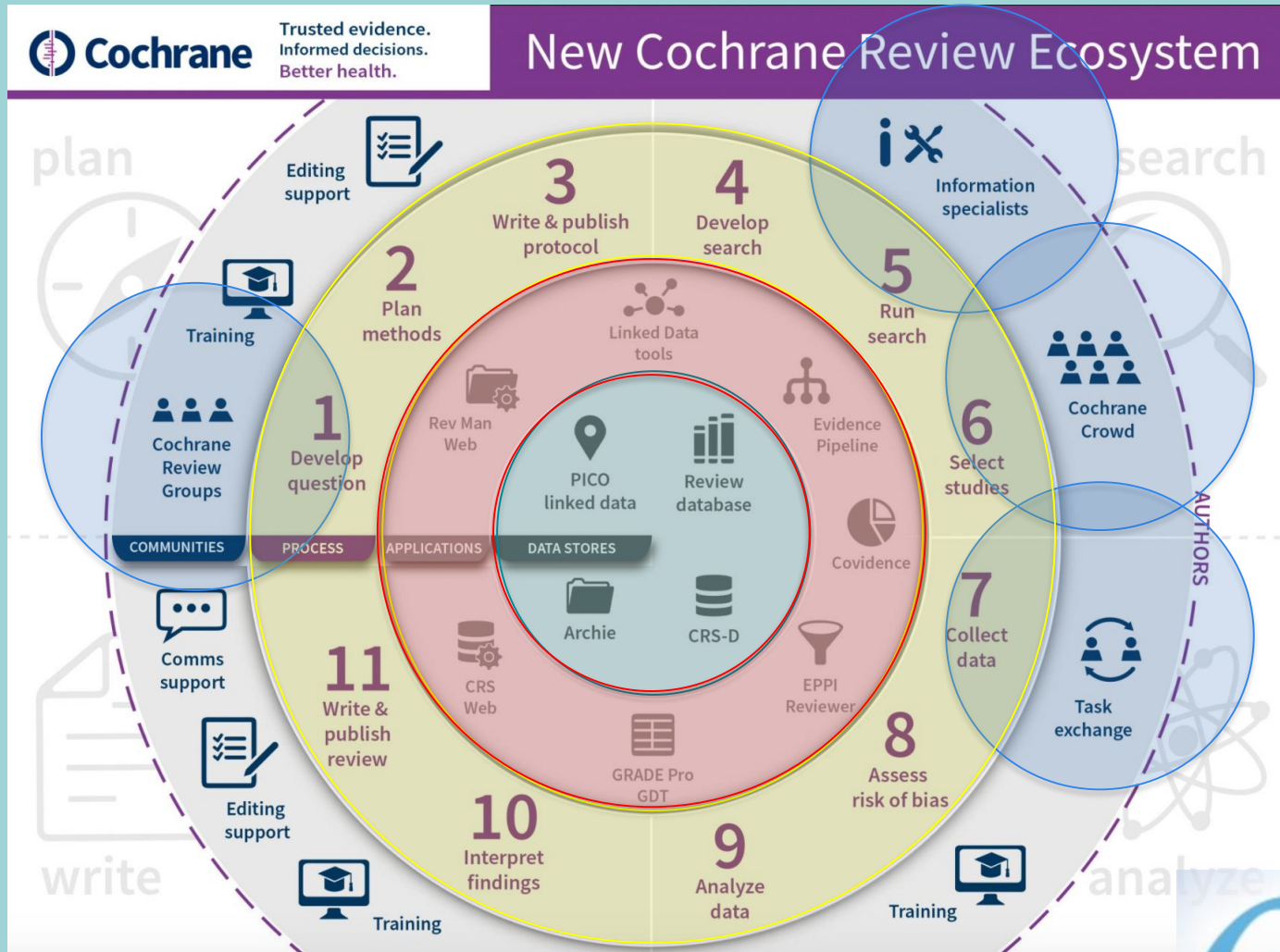
Enabling technologies for Living Systematic Reviews

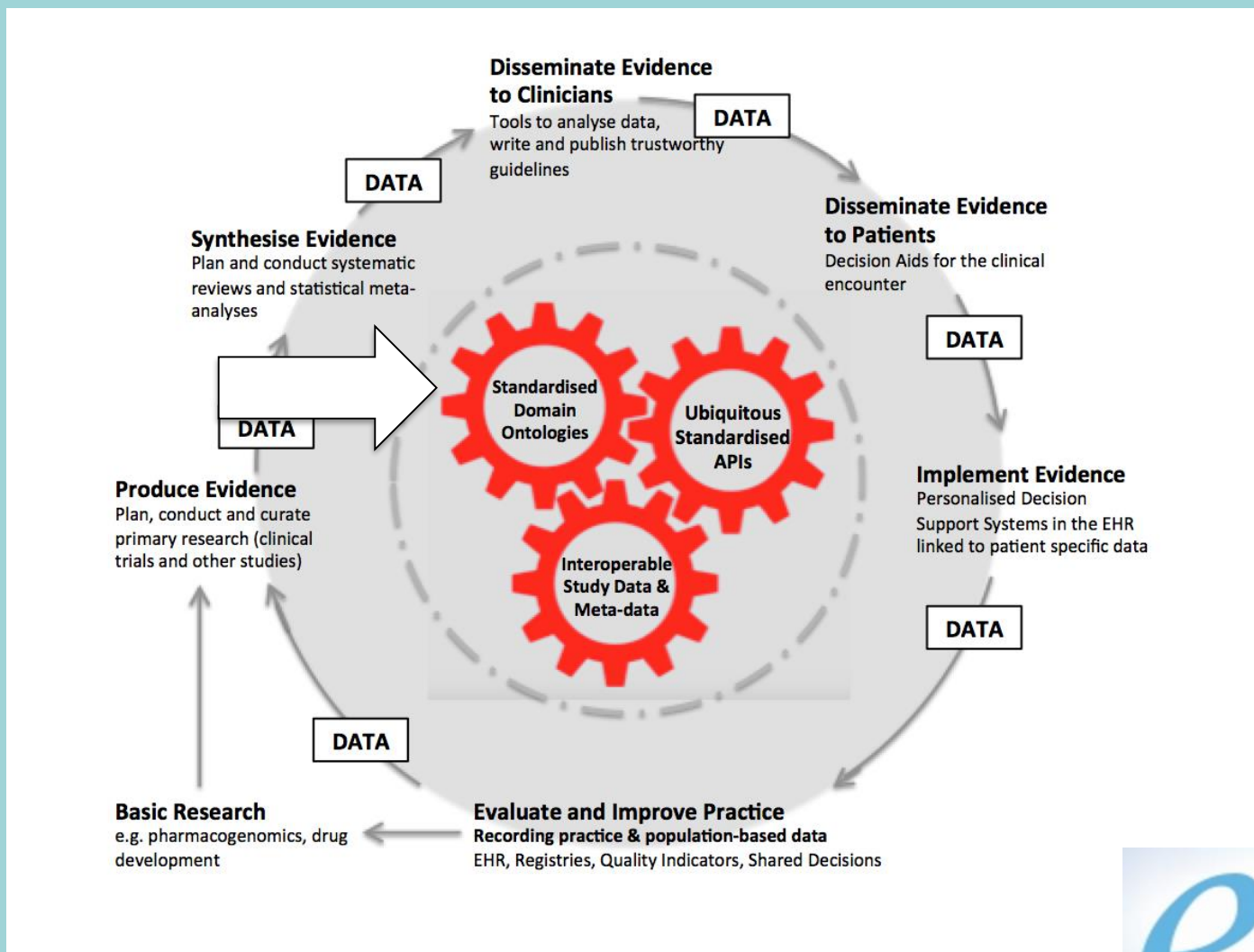
State of the Science

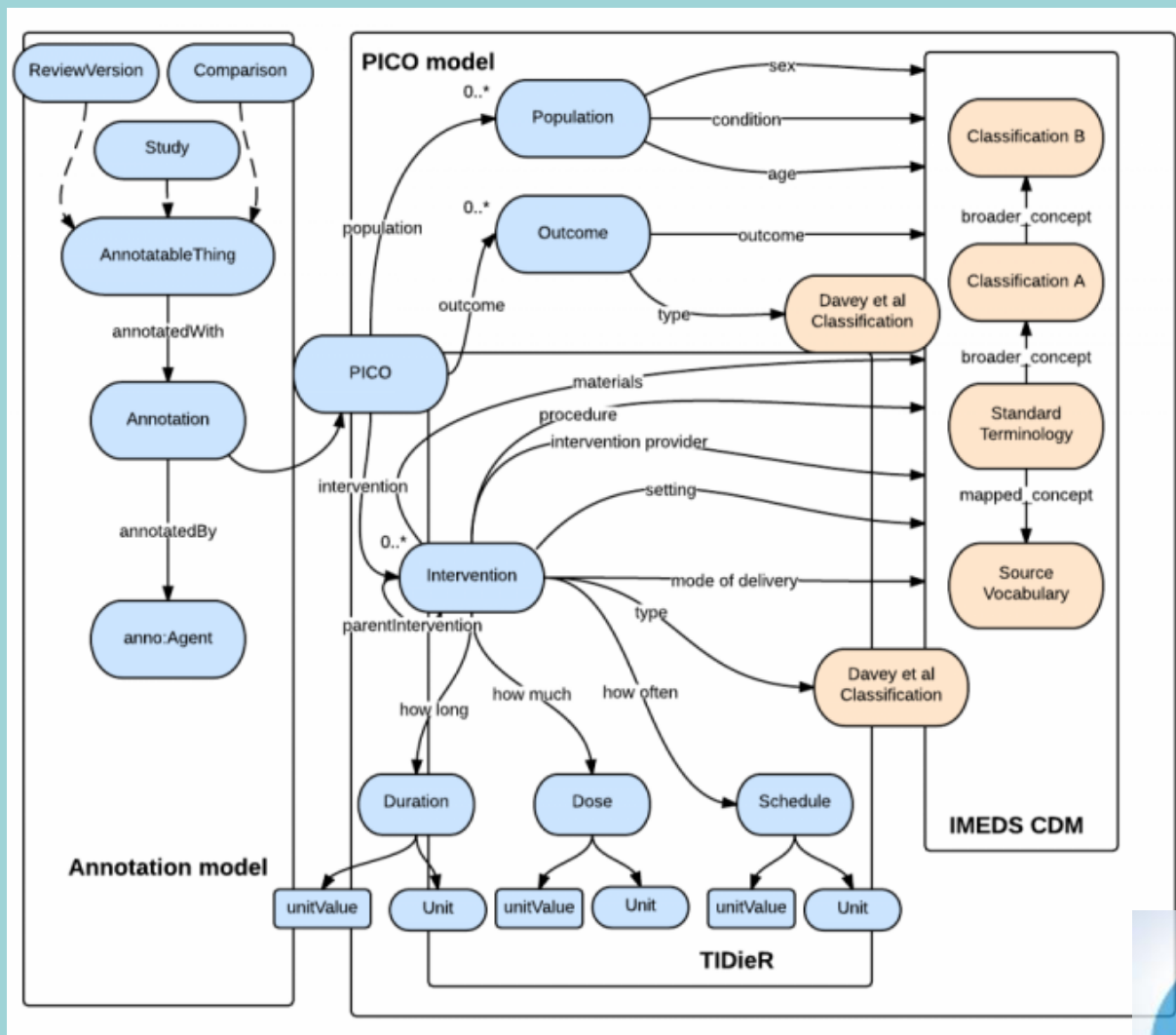
Ian Shemilt, EPPI-Centre, University College London, UK













Through a combination of human and machine effort the aim is to identify and classify ALL trials using this system.

Identifying studies for LSRs* will then be a simple process of specifying the relevant PICO alert

* For RCTs

crowd.cochrane.org/index.html

Cochrane Crowd Trusted evidence. Informed decisions. Better health.

Login Sign up

You can make a difference

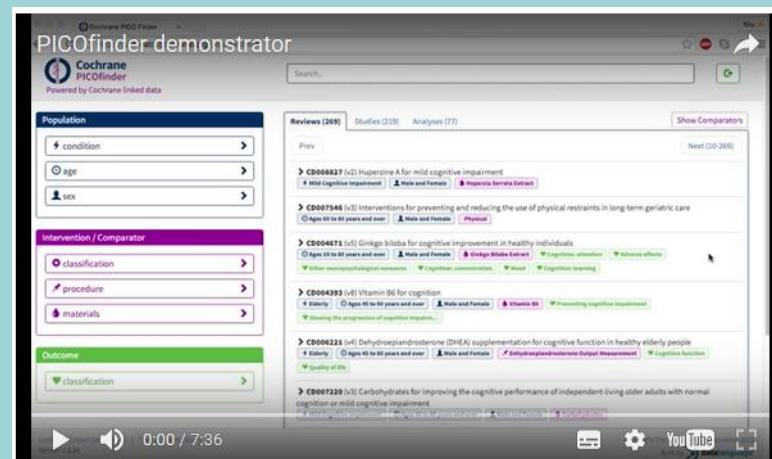
Become a Cochrane citizen scientist. Anyone can join our collaborative volunteer effort to help categorise and summarise healthcare evidence so that we can make better healthcare decisions.

Give it a try

2480 Contributors 31 Countries 796040 Classifications

ePPI CENTRE

Demo – PICOFinder



<https://uat-data.cochrane.org/pico-finder>

Automation tools for LSR workflows

Study Identification


- Electronic search development
- Selecting studies (title-abstract & full-text screening)
 - Active learning (prospective)
 - ML classifiers (e.g. RCT classifier)
- Mapping research activity

Data Extraction

- Risk of bias assessment
- Other study characteristics (e.g. PICO)
- Statistical outcome data

Synthesis and Sense-making

- Automated text generation (e.g. RevMAN HAL)
- Automated meta-analysis?
- Dynamic updating of iSoF tables?

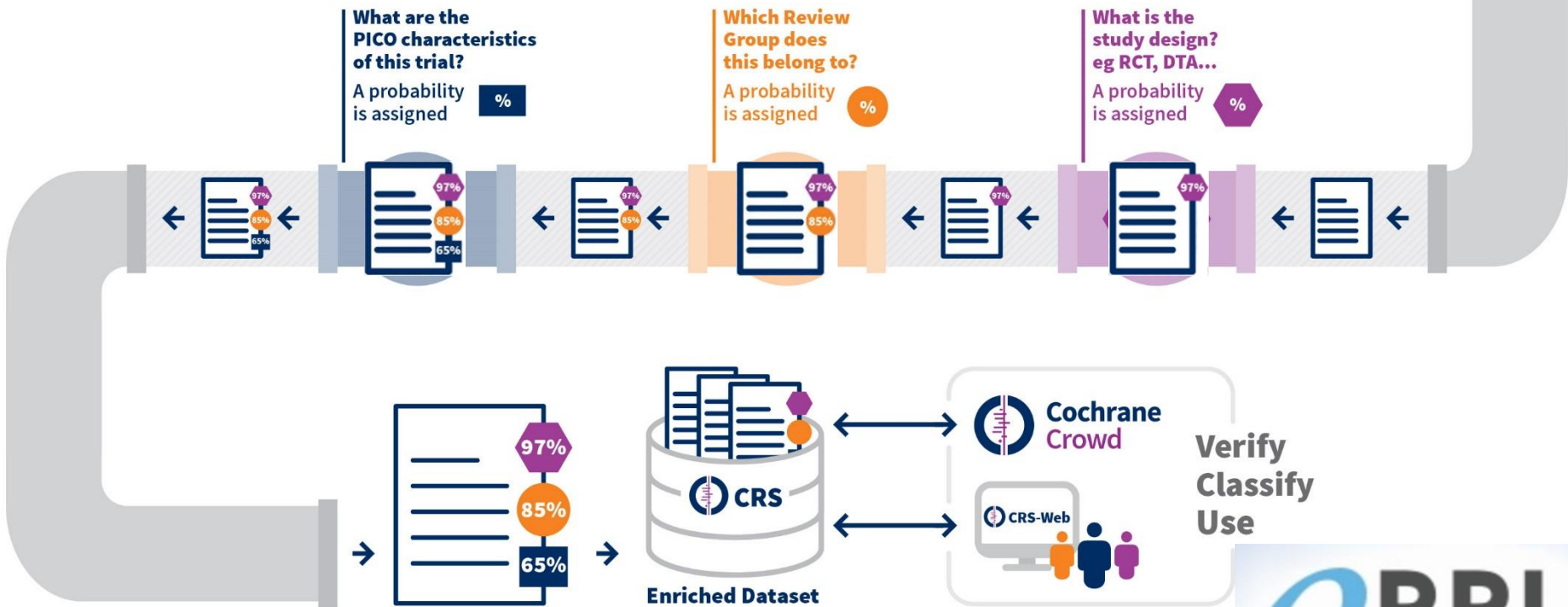
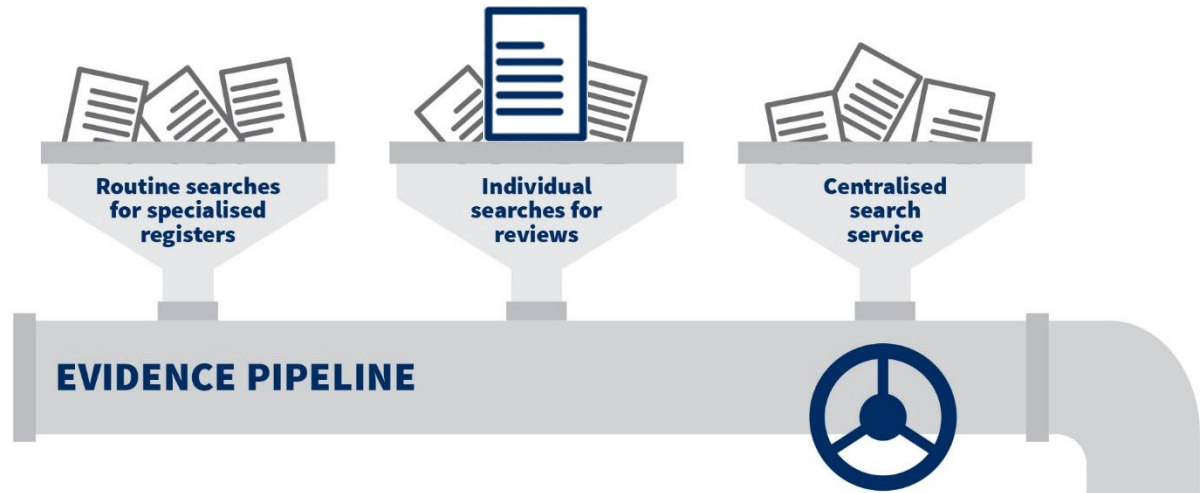
A large, dark blue arrow pointing upwards, positioned on the right side of the slide. It is outlined in a lighter blue color. Inside the arrow, the text 'Increasing interest and evaluation activity' is written in white.

Increasing
interest and
evaluation
activity

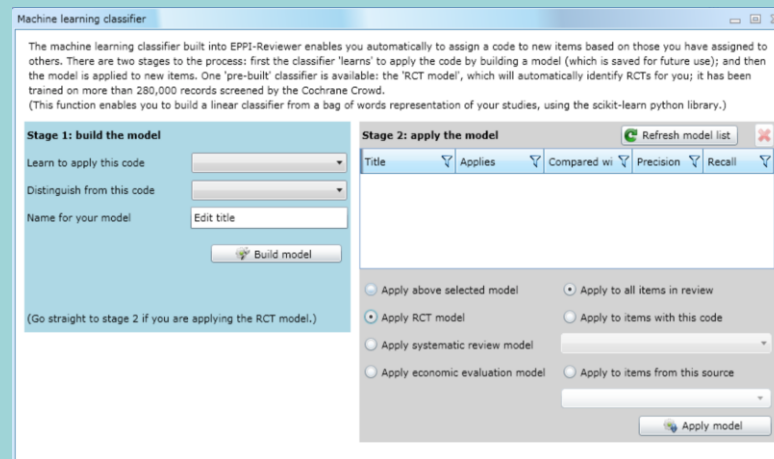


Evidence Pipeline

Finding and classifying relevant research



Demo – RCT Classifier EPPI Reviewer



<https://eppi.ioe.ac.uk/cms/er4/>

Automation tools in LSR workflows

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Increasing
interest and
evaluation
activity



Data extraction

- RobotReviewer can identify phrases relating to study PICO characteristics and risk of bias
- ExaCT extracts trial characteristics (e.g. eligibility criteria)
- Systematic review found that no unified framework yet exists
- More evaluative work is needed on larger datasets
- Further challenges include extraction of data from tables and graphs

The screenshot shows the RobotReviewer interface with a search result for a clinical trial. The trial title is "Physical activity for smoking cessation in pregnancy: randomised controlled trial". The abstract text is visible, including the objective, design, setting, participants, and conclusion. On the right side, there is a sidebar with various filters and options like "Allocation Concealment", "Blinding Of Participants And Personnel", etc.

http://www.biomedcentral.com/1472-6947/10/50

TECHNICAL ADVANCE **Open Access**

ExaCT: automatic extraction of clinical trial characteristics from journal publications

Svetlana Kiritchenko^{1*}, Berry de Bruijn¹, Simona Carini², Joel Martin¹, Ida Sim²

BMC
Medical Informatics & Decision Making

Abstract

Background: ... and the design publications - v synthesis studi with locating a outcomes) fro

Methods: ExaCT fragments that reviewers to as those sentence stage applies s approach is us

Results: We ev able to recover being relevant and 91%, resp solutions in 99 answers.

Conclusions: O that combining

Jonnalagadda et al. *Systematic Reviews* (2015) 4:78
DOI 10.1186/s13643-015-0066-7

RESEARCH **Open Access**

Automating data extraction in systematic reviews: a systematic review

Siddhartha R. Jonnalagadda^{1*}, Pawan Goyal² and Mark D. Huffman³

Abstract

Background: Automation of the parts of systematic review process, specifically the data extraction step, may be an important strategy to reduce the time necessary to complete a systematic review. However, the use of automated methods of automatically extracting data elements from full texts has not been well described. This paper describes a systematic review of published and unpublished methods to automate data extraction for systematic reviews.

Methods: We systematically searched PubMed, IEEEExplore, and ACM Digital Library to identify potentially relevant



Demo – RobotReviewer



<https://robot-reviewer.vortext.systems/>

Automation tools in LSR workflows

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Increasing
interest and
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activity

Cochrane Canada: Bringing 'Living Systematic Reviews' To Life Workshop, May 2017

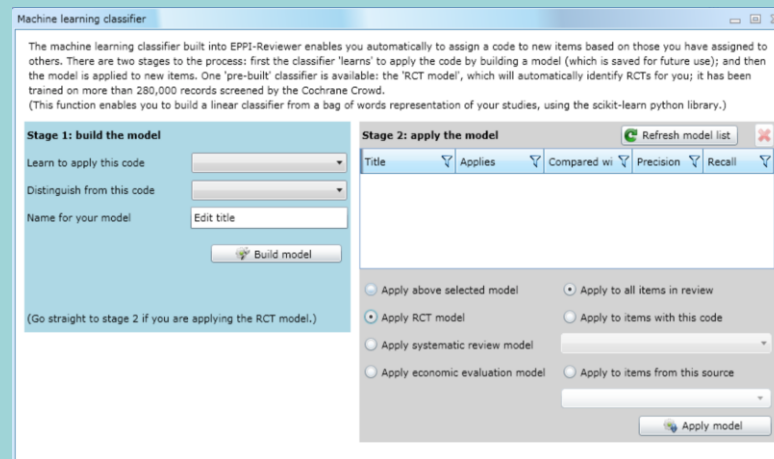
Enabling technologies for Living Systematic Reviews

State of the Science

Ian Shemilt, EPPI-Centre, University College London, UK



Demo – RCT Classifier EPPI Reviewer



<https://eppi.ioe.ac.uk/cms/er4/>

▼ Search History (19)

<input type="checkbox"/>	# ▲	Searches	Results
<input type="checkbox"/>	1	statin.ti,ab.	27765
<input type="checkbox"/>	2	'crossover procedure'.de.	50347
<input type="checkbox"/>	3	'double-blind procedure'.de.	133958
<input type="checkbox"/>	4	'randomized controlled trial'.de.	439304
<input type="checkbox"/>	5	'single-blind procedure'.de.	26234
<input type="checkbox"/>	6	random*.de,ab,ti.	1336088
<input type="checkbox"/>	7	factorial*.de,ab,ti.	56920
<input type="checkbox"/>	8	crossover*.de,ab,ti.	80010
<input type="checkbox"/>	9	(cross adj1 over*).de,ab,ti.	26114
<input type="checkbox"/>	10	placebo*.de,ab,ti.	375736
<input type="checkbox"/>	11	(doubl* adj1 blind*).de,ab,ti.	169392
<input type="checkbox"/>	12	(singl* adj1 blind*).de,ab,ti.	19729
<input type="checkbox"/>	13	assign*.de,ab,ti.	301872
<input type="checkbox"/>	14	allocat*.de,ab,ti.	111271
<input type="checkbox"/>	15	volunteer*.de,ab,ti.	217571
<input type="checkbox"/>	16	or/2-5	494578
<input type="checkbox"/>	17	or/6-16	1995817
<input type="checkbox"/>	18	16 or 17	1995817
<input type="checkbox"/>	19	1 and 18	8379

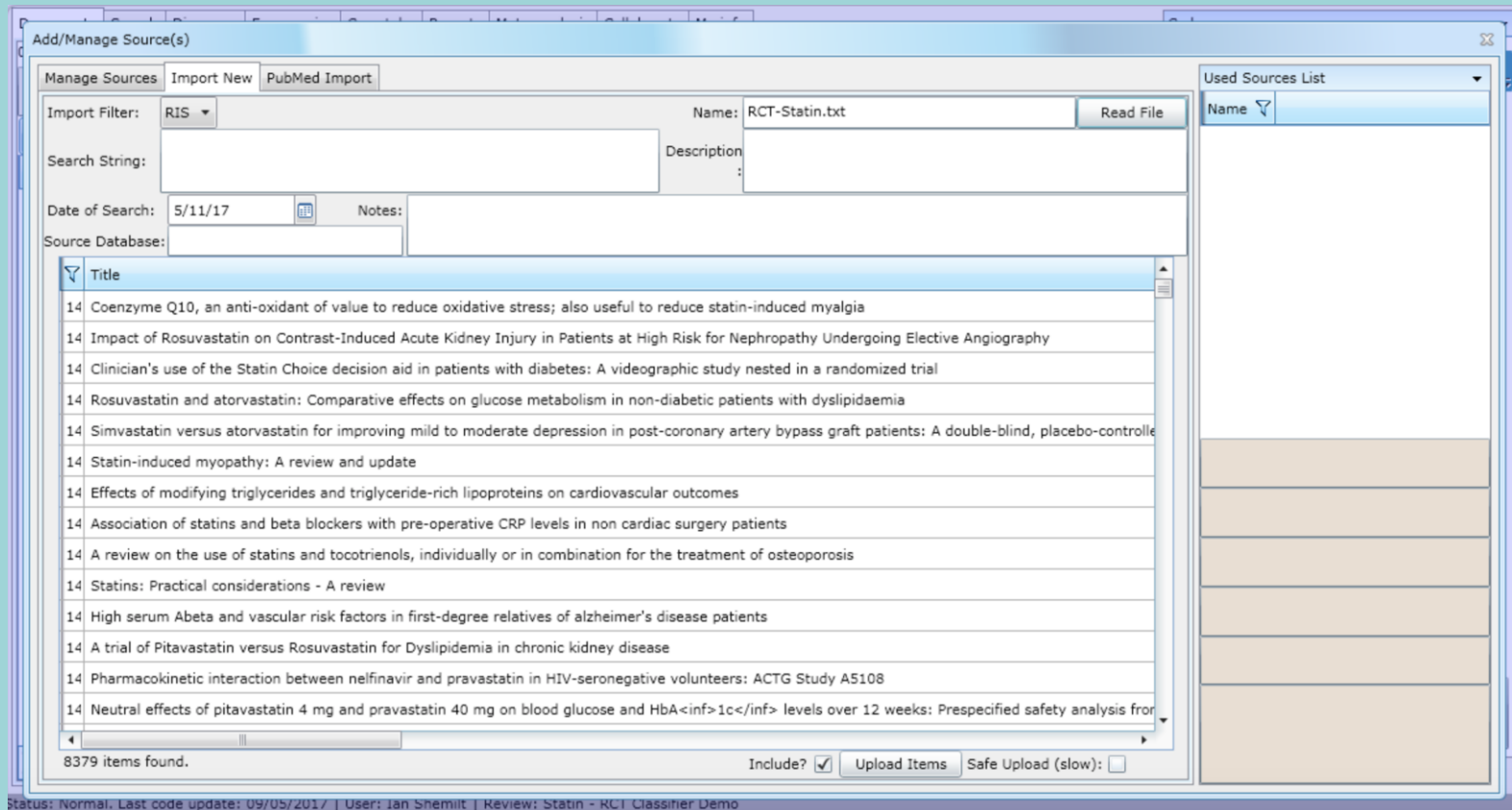
‘Statin’ and ‘RCT’ [filter]

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RCT-Statin.txt
TY - JOUR
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AU - Aalbers, J.
DA - April
DB - Embase
DP - Ovid Technologies
M1 - 3
PY - 2012
SP - 170
ST - Coenzyme Q10, an anti-oxidant of value to reduce oxidative stress; also useful to reduce statin-induced myalgia
T2 - Cardiovascular Journal of Africa
TI - Coenzyme Q10, an anti-oxidant of value to reduce oxidative stress; also useful to reduce statin-induced myalgia
UR - http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed14&AN=364701077
http://sfx.ucl.ac.uk/sfx_local?sid=OVID:embase&id=pmid:2255643&id=doi:&issn=1995-1892&isbn=&volume=23&issue=3&page=170&pages=170&date=2012&title=Cardiovascular+Journal+of+Africa&atitle=Coenzyme+Q10%2C+an+anti-oxidant+of+value+to+reduce+oxidative+stress%3B+also+useful+to+reduce+statin-induced+myalgia&aualst=Aalbers
VL - 23
ID - 3582
ER -

TY - JOUR
AB - Although statins have been shown to prevent contrast-induced acute kidney injury in patients with acute coronary syndromes, the benefit of statins is not known for patients at high risk for nephropathy who undergo elective coronary angiography. Two hundred twenty consecutive statin-naïve patients with chronic kidney disease (estimated glomerular filtration rate <60 ml/min/1.73 m<sup>2</sup>) who underwent elective coronary or peripheral angiography were randomly assigned to receive rosuvastatin (40 mg on admission, followed by 20 mg/day; n = 110) or no statin treatment (control group, n = 110). Contrast-induced acute kidney injury was defined by an absolute increase in serum creatinine of >0.5 mg/dl or a relative increase of >25% measured 48 or 72 hours after the procedure. Contrast-induced acute kidney injury occurred in 15 patients (7.2%), 9 (8.5%) in the control group and 6 (5.8%) in the rosuvastatin group (p = 0.44). The incidences of adverse cardiovascular and renal events (death, dialysis, myocardial infarction, stroke, or persistent renal damage) were similar between the two groups at follow-up. In conclusion, rosuvastatin did not reduce the risk for contrast-induced acute kidney injury or other clinically relevant outcomes in at-risk patients who underwent coronary and peripheral vascular angiography. Copyright © 2015 Elsevier Inc.
AD - (Abaci, Arat Ozkan, Kocas, Cetinkal, Sukru Karaca, Baydar, Gurmen) Department of Cardiology, Istanbul University Cardiology Institute, Istanbul, Turkey (Kaya) Department of Biochemistry, Istanbul University Cardiology Institute, Istanbul, Turkey
AN - 602076036
AU - Abaci, O.
AU - Arat Ozkan, A.
AU - Kocas, C.
AU - Cetinkal, G.
AU - Sukru Karaca, O.
AU - Baydar, O.
AU - Kaya, A.
AU - Gurmen, T.
DA - 01 Apr
DB - Embase
DP - Ovid Technologies
    
```

- > Import to EndNote
- > RefMan (RIS) Export (.txt)



The screenshot shows a software window titled "Add/Manage Source(s)" with a tabbed interface. The "Import New" tab is active, showing a search filter set to "RIS" and a file named "RCT-Statin.txt". The search results list includes titles such as "Coenzyme Q10, an anti-oxidant of value to reduce oxidative stress; also useful to reduce statin-induced myalgia" and "Impact of Rosuvastatin on Contrast-Induced Acute Kidney Injury in Patients at High Risk for Nephropathy Undergoing Elective Angiography". At the bottom, it indicates "8379 items found" and provides options to "Include?" (checked), "Upload Items", and "Safe Upload (slow):" (unchecked).

> Import to EPPI Reviewer

Documents Search Diagrams Frequencies Crosstabs Reports Meta-analysis Collaborate My info

4000 documents loaded (out of 8379 in this list in total).

Showing: Ovid Medline Search

	Authors	Title	Year
Go	I Rapsomaniki E ;	A framework for quantifying net benefits of alternative prognostic models	
Go	I Aalbers J ;	Coenzyme Q10, an anti-oxidant of value to reduce oxidative stress; also useful to reduce statin-induced myalgia	2012
Go	I Abaci O ; Arat O ;	Impact of Rosuvastatin on Contrast-Induced Acute Kidney Injury in Patients at High Risk for Nephropathy Under	2015
Go	I Abadie R ; Weyn	Clinician's use of the Statin Choice decision aid in patients with diabetes: A videographic study nested in a rand	2009
Go	I Abbas A ; Milles	Rosuvastatin and atorvastatin: Comparative effects on glucose metabolism in non-diabetic patients with dyslipide	2012
Go	I Abbasi S H ; Moh	Simvastatin versus atorvastatin for improving mild to moderate depression in post-coronary artery bypass graft	2015
Go	I Abd T T ; Jacobs	Statin-induced myopathy: A review and update	2011
Go	I Abdel-Maksoud F	Effects of modifying triglycerides and triglyceride-rich lipoproteins on cardiovascular outcomes	2008
Go	I Abdelmalak J B ;	Association of statins and beta blockers with pre-operative CRP levels in non cardiac surgery patients	2010
Go	I Abdullah L ; Luis	High serum Abeta and vascular risk factors in first-degree relatives of alzheimer's disease patients	2009
Go	I Abdullah K ; Roh	Statins: Practical considerations - A review	2014
Go	I Abdul-Majeed S	A review on the use of statins and tocotrienols, individually or in combination for the treatment of osteoporosis	2013
Go	I Abe M ; Maruyar	A trial of Pitavastatin versus Rosuvastatin for Dyslipidemia in chronic kidney disease	2015
Go	I Aberg J A ; Roser	Pharmacokinetic interaction between nelfinavir and pravastatin in HIV-seronegative volunteers: ACTG Study A51	2006
Go	I Aberg J A ; Spon	Neutral effects of pitavastatin 4 mg and pravastatin 40 mg on blood glucose and HbA<inf>1c</inf> levels over 1	2013
Go	I Aberg J A ; Spon	Pitavastatin versus pravastatin in adults with HIV-1 infection and dyslipidaemia (INTREPID): 12 week and 52 we	2017
Go	I Abernethy A P ; F	A strategy to advance the evidence base in palliative medicine: Formation of a palliative care research cooperativ	2010
Go	I Abernethy A P ; F	Managing comorbidities in oncology: A multisite randomized controlled trial of continuing versus discontinuing sti	2014

Page 1 of 3

Status: Normal. Last code update: 09/05/2017 | User: Ian Shemilt | Review: Statin - RCT Classifier Demo

Codes

Search results

Ovid Medline Search

Codes Sources Review statistics

> Create code > Assign items to code