



# Cochrane PICO: Using linked data technologies for evidence curation

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**UCL, July 2017**

Trusted evidence.  
Informed decisions.  
Better health.



# This talk is about

how ...

- finding evidence
  - synthesising evidence
  - disseminating evidence
- ... are changing

**and what it means for you.**

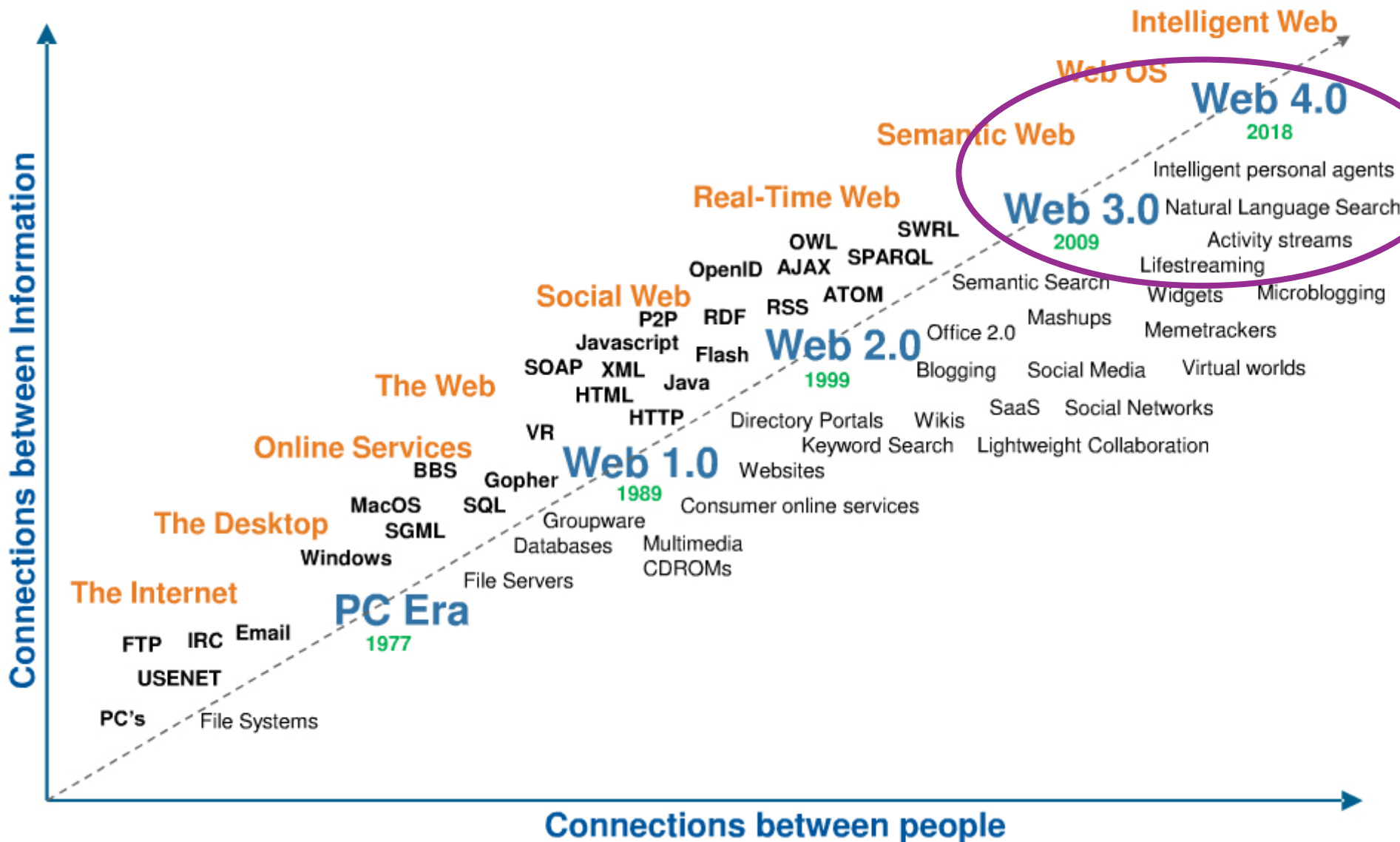
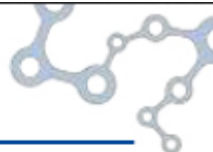


## Some key concepts

- Metadata curation
- Linked Data
- Data re-use and provenance
- Role of machine learning and crowdsourcing
- Living systematic reviews
- Beyond the PDF and publications



# The Intelligence is in the Connections



## The present situation

- Current evidence processes very manual
- Machines and machine/human not optimally utilised
- Organising human effort not optimised
- Tools not yet fit for purpose and connected
- Data not "smart"
- Outputs not optimised for use (by humans and machines) and impact
- Solving "today's problems"
- Preparing for tomorrow's challenges

## Direction of travel

- Less manual work, more focus on data curation, synthesis, and “reflection”
- Structured, “PICO-fied”/computable data
- Audit trails, provenance, re-useable data
- Machine/crowd assistance
- New models of participation
- Tools fit for purpose and integrated
- More evidence synthesized; Outputs have greater impact

# The emerging "ecosystem"

People + Process + Technology  
optimized for the task



# New Cochrane Review Ecosystem

plan

search

write

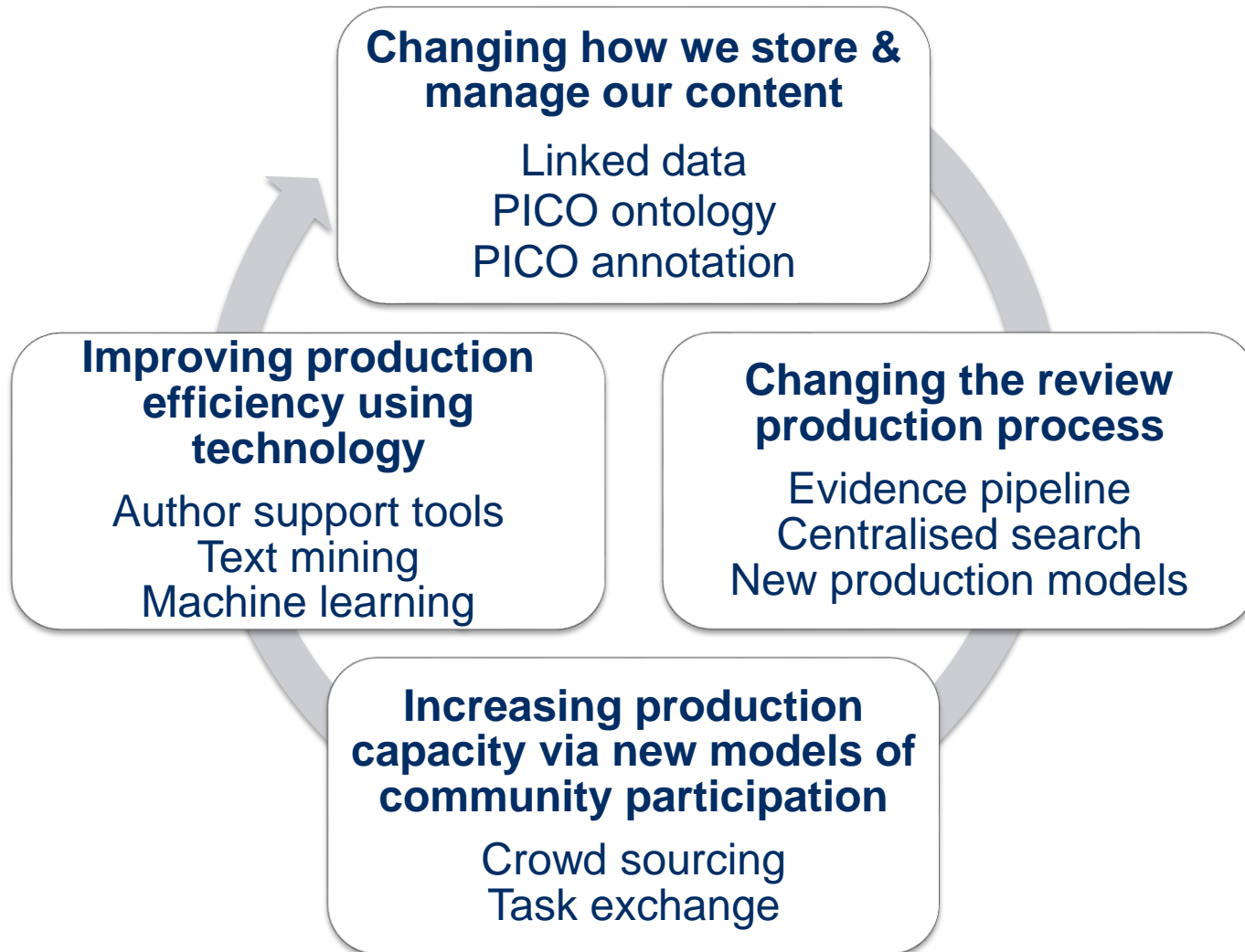
analyze







## Cochrane operational projects



## Objectives

Improve usability & utility of Cochrane data

Production efficiency



Quality & standardisation

Revenue protection & generation

Improve contributor engagement & experience

# Getting outside the review/article “container”



# Cochrane Reviews

- Have always been electronic
- Summary of a research project, not really an article (actually a database of results)
- PICO framework (but not consistently structured)
- Follow standard process
- Many of the key components buried in the document: Forest plots, Risk of Bias assessments, etc.
- Continuously updated when new studies are reported

**What authors  
DO**

Identify the issue and determine the question

← PICO

Write a plan for the review  
(protocol)

Search for studies

Sift and select studies

Extract data from  
the studies

Assess the quality  
of the studies

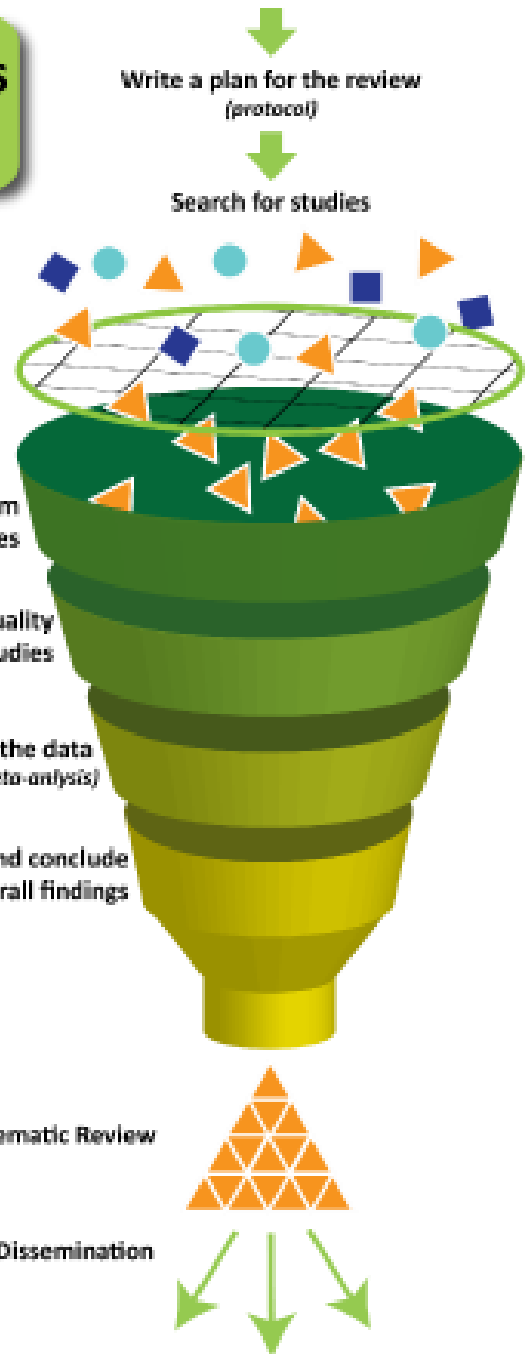
Combine the data  
(synthesis or meta-analysis)

Discuss and conclude  
overall findings

Systematic Review

Dissemination

- Population
- Intervention
- Comparison
- Outcome



# What is in a systematic review

**TITLE**

**ABSTRACT**

**PLAIN LANGUAGE SUMMARY**

**BACKGROUND**

**OBJECTIVES**

**METHODS**

- Selection criteria (types of studies, participants, interventions, outcomes)
- Search strategy
- Data collection and analysis
- Quality, risk of bias

**RESULTS**

- Description of studies
- Risk of bias
- Effects of interventions

**DISCUSSION**

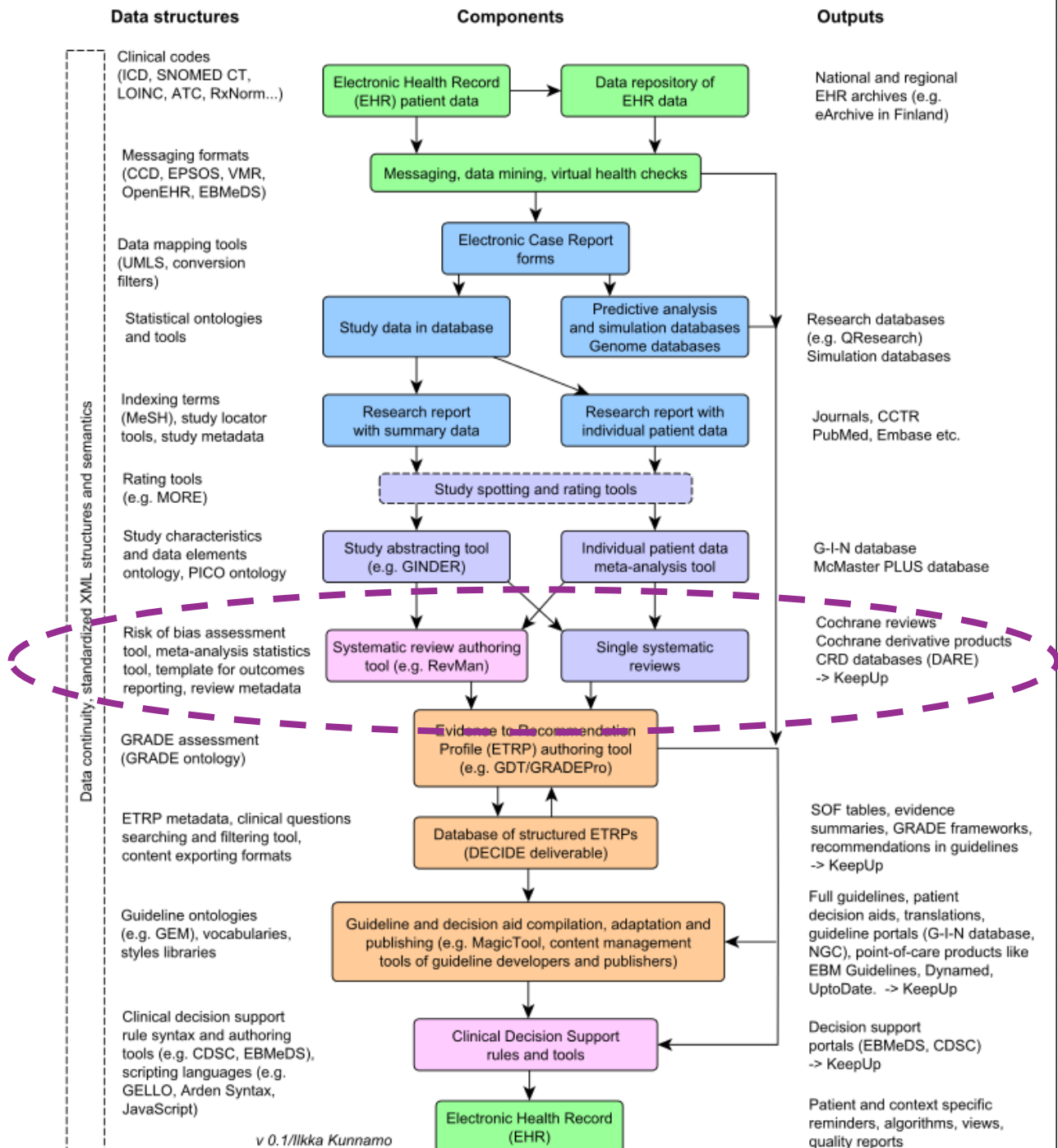
- Summary of main results
- Quality of evidence
- Potential biases in the review

**AUTHORS' CONCLUSIONS**

- Implications for practice
- Implications for research

**FIGURES**

**TABLES**





# Document view

# XML

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>  
<COCHRANE_REVIEW DESCRIPTION="For publication"  
DOI="10.1002/14651858.CD008440" GROUP_ID="HIV"  
ID="589309120202025823" MERGED_FROM=""  
MODIFIED="2011-05-06 12:29:46 +0100"  
MODIFIED_BY="Rachel Marshall" REVIEW_NO=""  
REVMAN_SUB_VERSION="5.1.1" REVMAN_VERSION="5"  
SPLIT_FROM="" STAGE="R" STATUS="A"  
TYPE="INTERVENTION" VERSION_NO="2.0">.....
```

The screenshot shows a web browser displaying the Cochrane Library website. The page title is "THE COCHRANE LIBRARY" and the subtitle is "Independent high-quality evidence for health care decision". The main content area shows a review titled "Vitamin D supplementation" under the category "Evidence Based Medicine > Evidence-Based Medicine". The authors listed are Goran Bjelakovic, Lise Lotte Dimitrinka Nikolova, Kate Whitfr Wetterslev, Rosa G Simonetti, Bjelakovic, and Christian Gluud. The review was published online on 6 JUL 2011 and assessed as up-to-date on 30 JAN. The DOI is 10.1002/14651858.CD0074. The page also includes a sidebar with navigation options like "PUBLICATIONS", "BROWSE BY SUBJECT", "RESOURCES", and "ABOUT".

Overlaid on the right side of the browser window is an Adobe Acrobat Pro window displaying the PDF document. The document title is "Personalised risk communication for informed decision making about taking screening tests (Review)". The authors are Edwards AGK, Naik A, Ahmed H, Elwyn CJ, Pickles T, Hood K, Playle R. The Cochrane Collaboration logo is prominently displayed in the center of the page. At the bottom, the Wiley logo is visible with the text "WILEY Publishers Since 1807".



# Linked data



# The “age of pointing at things“

- h/t Tom Coates, 2005:

[http://www.plasticbag.org/archives/2005/04/the\\_age\\_of\\_pointatthings/](http://www.plasticbag.org/archives/2005/04/the_age_of_pointatthings/)

*The realization [behind creation of the **[Internet]** was, "It isn't the cables, it is the computers which are interesting".*

***[World Wide Web]** the realization was "It isn't the computers, but the documents which are interesting". Now you could browse around a sea of documents without having to worry about which computer they were stored on.*

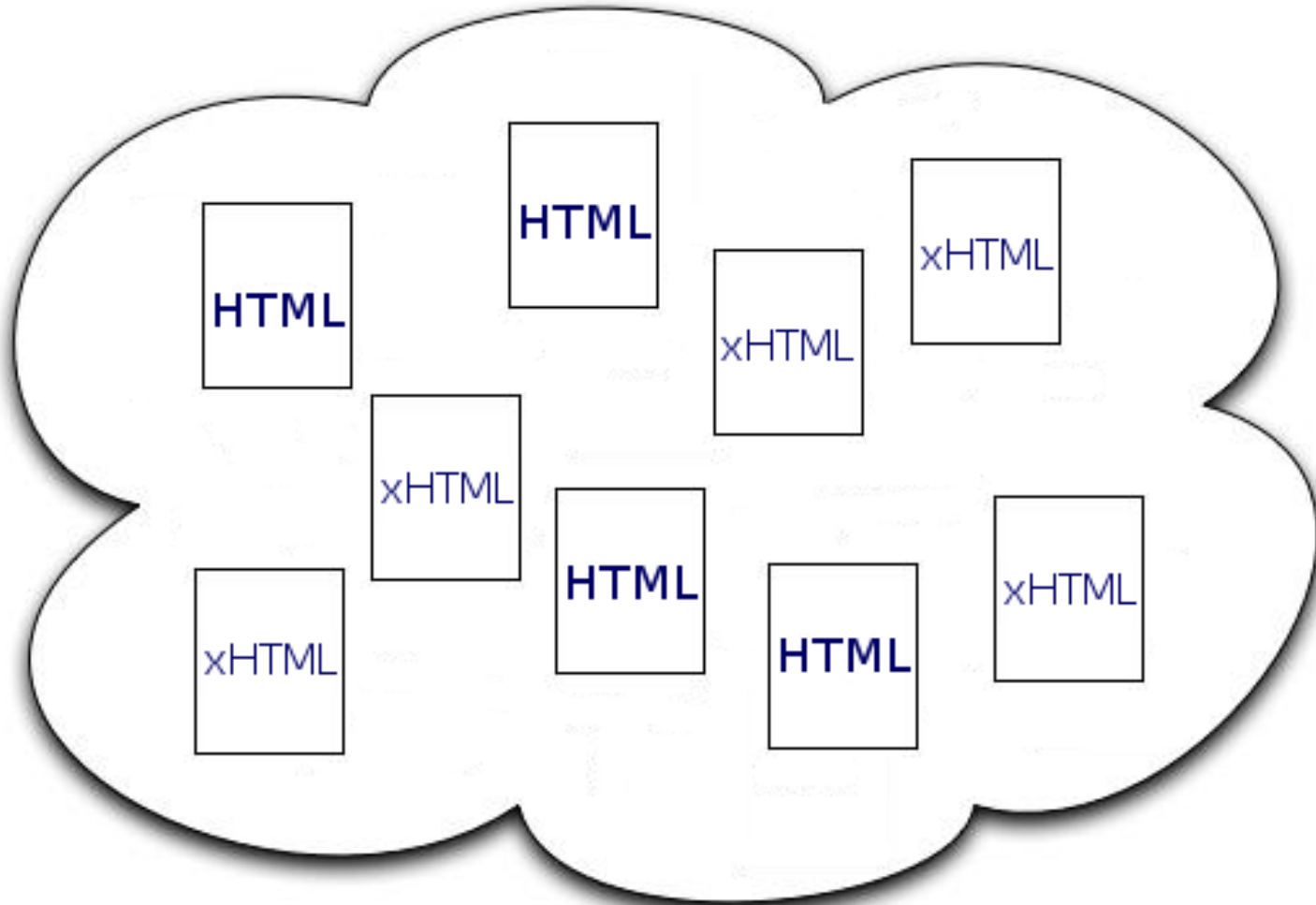
*Now, people are making another mental move. There is realization now, "It's not the documents, it is the **things** they are about which are important".*

***-Tim Berners-Lee, inventor of the World Wide Web***

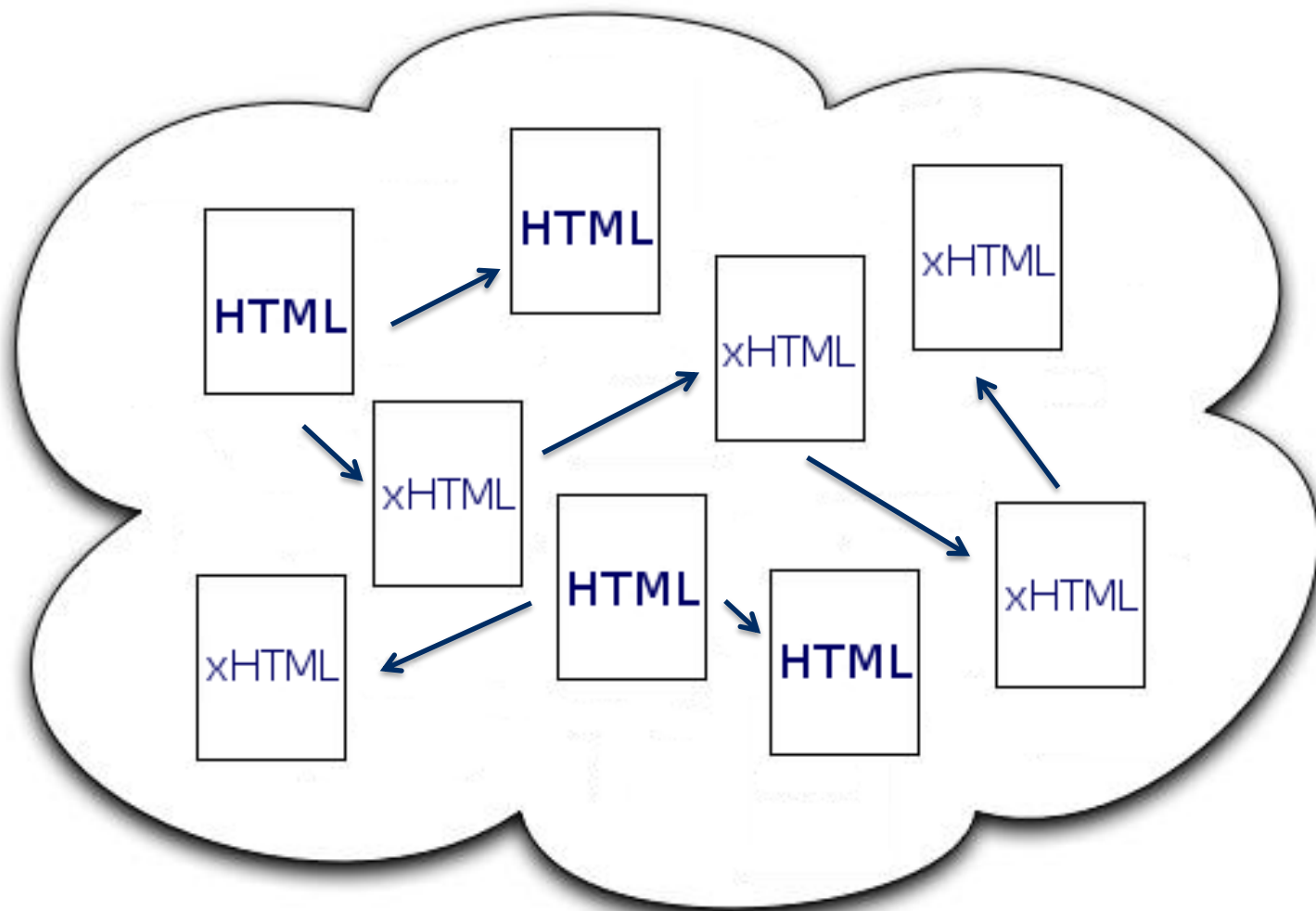
**“The problem is not information  
overload. It’s filter failure.”**

**- Clay Shirky**

# Current web = Web of documents



# Docs are linked not data (things) in docs

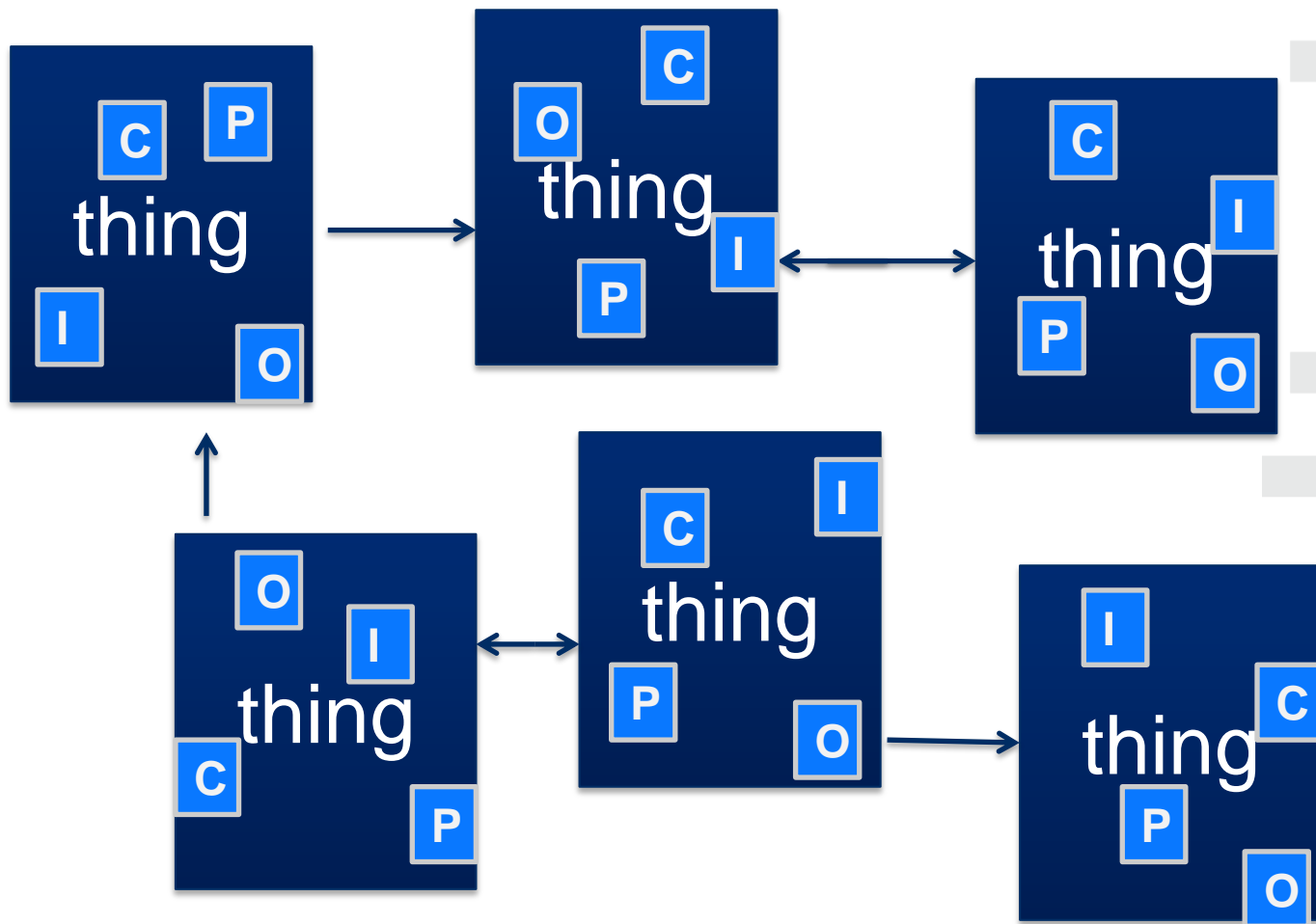


## Machines aren't good at reading web pages and documents

- Data on the web is meant for human consumption
- Machines need the data to be structured
- Then, information can be more easily shared within and across datasets and web pages
- Interfaces and APIs can be built to allow better (and programmatic) access
- The article could evolve into an interface onto a “web of data“

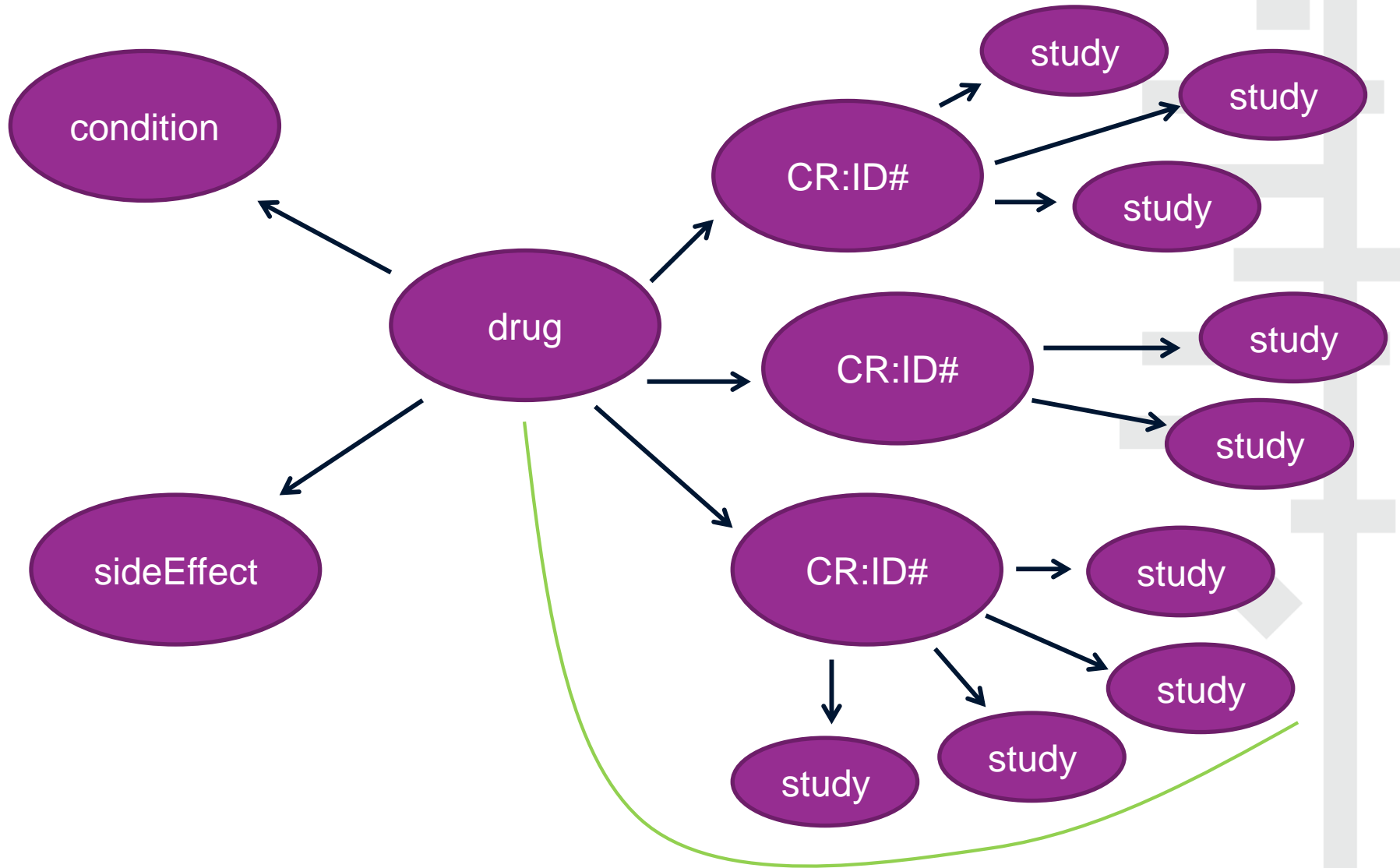


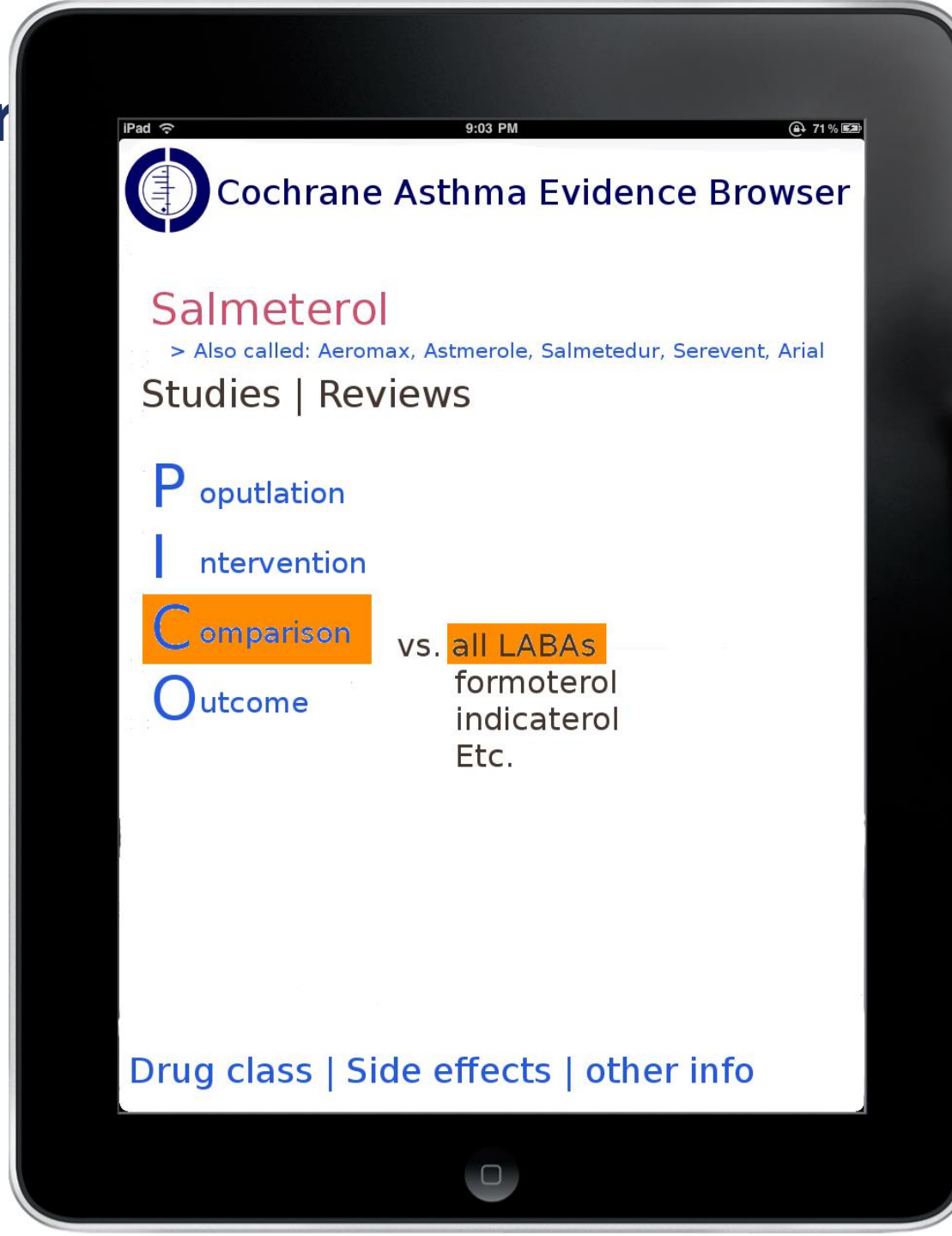
 **Cochrane**  
Reviews, studies, references,  
analyses





# Start anywhere, go anywhere





iPad 9:03 PM 71%



## Cochrane Asthma Evidence Browser

### Salmeterol

> Also called: Aeromax, Astmerole, Salmetedur, Serevent, Arial

#### Studies | Reviews

P opulation

I ntervention

C omparison

O utcome

vs. all LABAs  
formoterol  
indicaterol  
Etc.

[Drug class](#) | [Side effects](#) | [other info](#)

## Salmeterol

> Comparing to: all LABAs

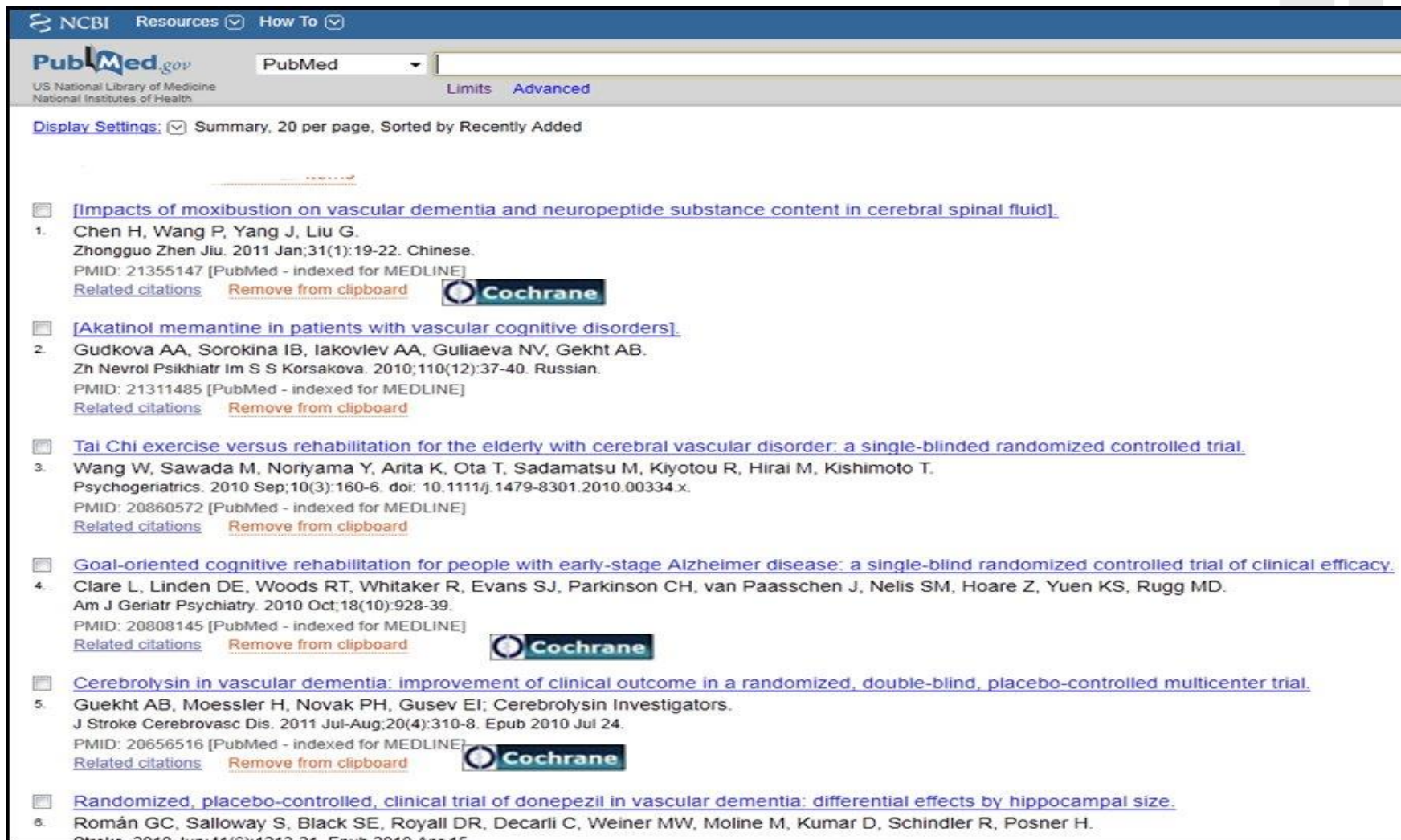
Outcome	No treatment	Inhaled steroids alone	Fluticasone/Salmeterol	Budesonide/Formoterol
Exacerbations (requiring admission to hospital) Follow-up: mean 6 months	13 pr. 1000	9 ⊕⊕⊕○	8 ⊕⊕⊕○	7 ⊕⊕⊕○
Exacerbations (requiring oral steroid treatment) Follow-up: mean 6 months	234 pr. 1000	192 ⊕⊕○○	95 ⊕⊕⊕○	106 ⊕⊕⊕○
Withdrawals (adverse events) Follow-up: mean 6 months	- pr. 1000	25 ⊕⊕○○	15 ⊕⊕⊕○	16 ⊕⊕⊕○
Asthma-related serious adverse event Follow-up: mean 6 months	- pr. 1000	38 ⊕⊕○○	10 ⊕⊕⊕○	7 ⊕⊕⊕○
Burden of treatment	-	Inhalation twice daily	Inhalation twice daily	Inhalation twice daily
Resource use	-	- No cost-benefit analysis - Irrelevant cost for patient	- Cost effective - Irrelevant cost for patient	- Cost effective - Irrelevant cost for patient

See studies awaiting assessment:

>> New! 4 studies match this PICO

<<Some smart navigation here>>

# Access points




NCBI Resources How To

PubMed.gov PubMed

US National Library of Medicine  
National Institutes of Health

Limits Advanced

Display Settings: Summary, 20 per page, Sorted by Recently Added

- [\[Impacts of moxibustion on vascular dementia and neuropeptide substance content in cerebral spinal fluid\]](#)  
1. Chen H, Wang P, Yang J, Liu G.  
Zhongguo Zhen Jiu. 2011 Jan;31(1):19-22. Chinese.  
PMID: 21355147 [PubMed - indexed for MEDLINE]  
[Related citations](#) [Remove from clipboard](#) 
- [\[Akatinol memantine in patients with vascular cognitive disorders\]](#)  
2. Gudkova AA, Sorokina IB, Iakovlev AA, Gulliaeva NV, Gekht AB.  
Zh Nevrol Psikhiatr Im S S Korsakova. 2010;110(12):37-40. Russian.  
PMID: 21311485 [PubMed - indexed for MEDLINE]  
[Related citations](#) [Remove from clipboard](#)
- [\[Tai Chi exercise versus rehabilitation for the elderly with cerebral vascular disorder: a single-blinded randomized controlled trial\]](#)  
3. Wang W, Sawada M, Noriyama Y, Arita K, Ota T, Sadamatsu M, Kiyotou R, Hirai M, Kishimoto T.  
Psychogeriatrics. 2010 Sep;10(3):160-6. doi: 10.1111/j.1479-8301.2010.00334.x.  
PMID: 20860572 [PubMed - indexed for MEDLINE]  
[Related citations](#) [Remove from clipboard](#)
- [\[Goal-oriented cognitive rehabilitation for people with early-stage Alzheimer disease: a single-blind randomized controlled trial of clinical efficacy\]](#)  
4. Clare L, Linden DE, Woods RT, Whitaker R, Evans SJ, Parkinson CH, van Paasschen J, Nelis SM, Hoare Z, Yuen KS, Rugg MD.  
Am J Geriatr Psychiatry. 2010 Oct;18(10):928-39.  
PMID: 20808145 [PubMed - indexed for MEDLINE]  
[Related citations](#) [Remove from clipboard](#) 
- [\[Cerebrolysin in vascular dementia: improvement of clinical outcome in a randomized, double-blind, placebo-controlled multicenter trial\]](#)  
5. Guekht AB, Moessler H, Novak PH, Gusev EI; Cerebrolysin Investigators.  
J Stroke Cerebrovasc Dis. 2011 Jul-Aug;20(4):310-8. Epub 2010 Jul 24.  
PMID: 20656516 [PubMed - indexed for MEDLINE]  
[Related citations](#) [Remove from clipboard](#) 
- [\[Randomized, placebo-controlled, clinical trial of donepezil in vascular dementia: differential effects by hippocampal size\]](#)  
6. Román GC, Salloway S, Black SE, Royall DR, Decarli C, Weiner MW, Moline M, Kumar D, Schindler R, Posner H.  
Stroke. 2010 Jun;41(6):1212-21. Epub 2010 Apr 15.

# Access points

NCBI Resources ▾ How To ▾

PubMed.gov

US National Library of Medicine  
National Institutes of Health [Limits](#) [Advanced](#)

[Display Settings:](#) ▾ Abstract

[Send to:](#) ▾

[J Pediatr](#). 2008 May;152(5):685-9. Epub 2008 Feb 20.

## Double-blind placebo-controlled trial of amitriptyline for the treatment of irritable bowel syndrome in adolescents.

[Bahar RJ](#), [Collins BS](#), [Steinmetz B](#), [Ament ME](#).

Department of Pediatrics, Division of Gastroenterology, Hepatology, and Nutrition, UCLA Geffen School of Medicine, Los Angeles, CA 91316, USA. [bahar@bizla.rr.com](mailto:bahar@bizla.rr.com)

### Abstract

**OBJECTIVES:** To determine the efficacy of amitriptyline (AMI) in treating irritable bowel syndrome (IBS) in adolescents.

**STUDY DESIGN:** Adolescents 12 to 18 years with newly diagnosed IBS were surveyed with a symptom checklist, pain rating scale, visual analog scale, and IBS quality of life (QOL) questionnaire. Subjects were randomized in a double-blinded fashion to receive AMI or placebo, and again completed surveys at 2, 6, 10, and 13 weeks.

**RESULTS:** Thirty-three patients (24 female) were enrolled. Patients receiving AMI were more likely to experience improvement from baseline in overall QOL at 6, 10, and 13 weeks ( $P = .019$ ,  $.004$ , and  $.013$ ). Patients receiving AMI were also more likely to experience a reduction in IBS-associated diarrhea at 6 and 10 weeks ( $P = .029$  for both), a reduction in periumbilical pain at 10 weeks ( $P = .018$ ), and a reduction in right lower quadrant pain at 6, 10, and 13 weeks ( $P = .014$ ,  $.039$ , and  $.004$ ).

**CONCLUSION:** AMI significantly improves overall QOL in adolescents with IBS and should be a therapeutic option for adolescents with this disorder.

### Comment in


[J Pediatr](#). 2008 Dec;153(6):872; author reply 872-4.

PMID: 18410774 [PubMed - indexed for MEDLINE]

[+](#) [Publication Types, MeSH Terms, Substances](#)

[+](#) [LinkOut - more resources](#)

### Study quality



**Cochrane Risk of bias assessment for this study**

<p>Random sequence generation (selection bias)</p> <p>Allocation concealment (selection bias)</p> <p>Blinding (performance bias and detection bias)</p> <p>Incomplete outcome data (attrition bias)</p> <p>Selective reporting (reporting bias)</p> <p>Other bias</p>	<table border="1" style="margin: auto;"> <tr> <td style="width: 20px; height: 20px; background-color: yellow; text-align: center;">?</td> <td style="width: 20px; height: 20px; background-color: yellow; text-align: center;">?</td> <td style="width: 20px; height: 20px; background-color: yellow; text-align: center;">?</td> <td style="width: 20px; height: 20px; background-color: green; text-align: center;">+</td> <td style="width: 20px; height: 20px; background-color: yellow; text-align: center;">?</td> <td style="width: 20px; height: 20px; background-color: red; text-align: center;">-</td> </tr> </table>	?	?	?	+	?	-
?	?	?	+	?	-		

Bahar 2008

Link to Cochrane Review





...breathe...



# Linked Data Project

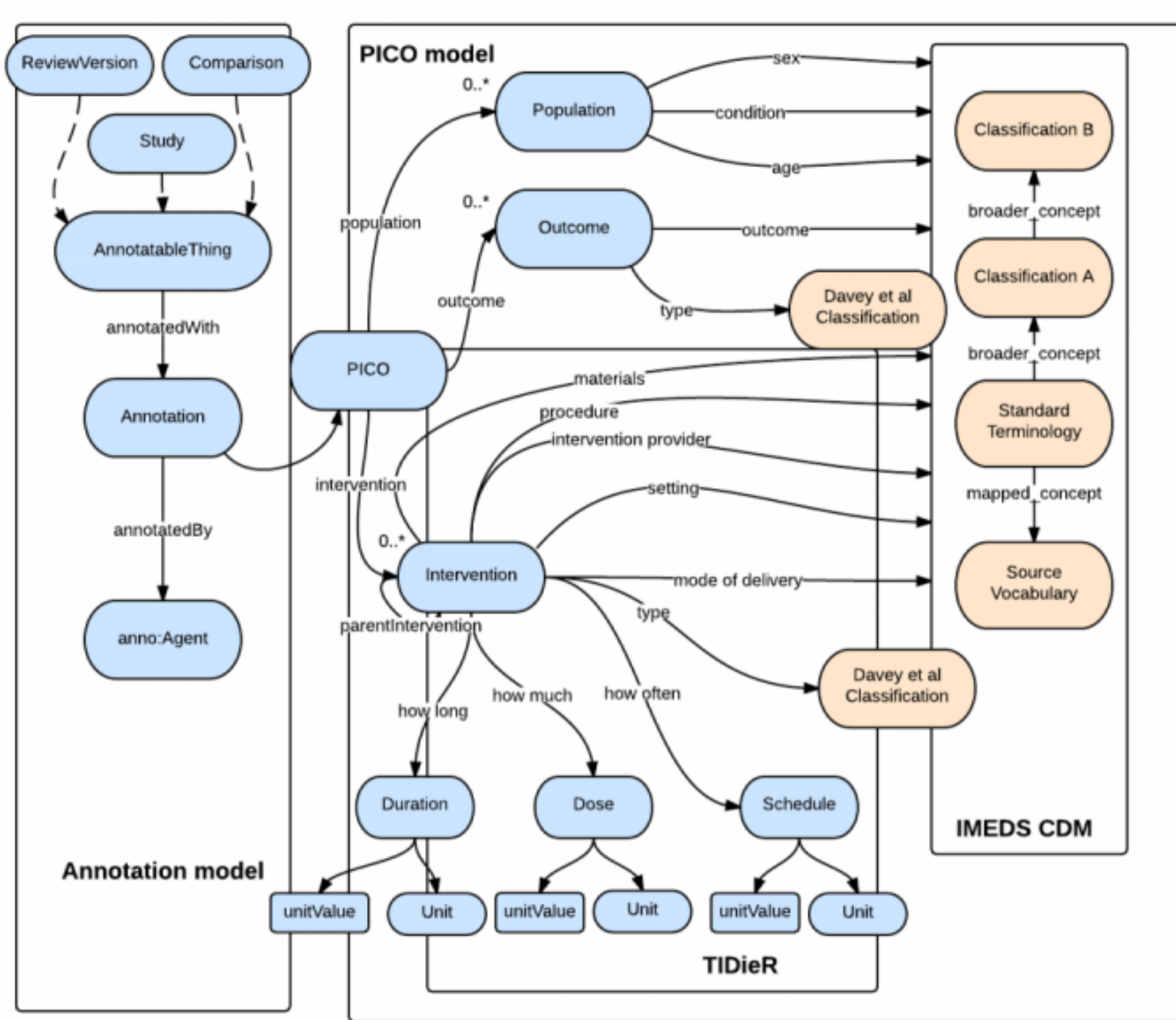
PICO Annotation and PICOfinder

<http://linkeddata.cochrane.org>



## Linked Data: Overarching goals

- Enrich our content and data with metadata using controlled vocabularies (SNOMED CT, etc.)
- Construct knowledge models and structures (ontologies) that will allow re-use of this metadata (annotations) for both downstream (dissemination) and upstream (production) use
- Become more interoperable with other projects, products, datasets, and systems
- Improve production (“smarter data”) and dissemination of evidence (“unlocking the evidence”)
- <http://linkeddata.cochrane.org>





# Controlled terminology sets (vocabularies)



**ihtsdo** Leading healthcare terminology worldwide

Home IHTSI


## SNOMED CT

The Global Language of Healthcare

SNOMED CT is the most comprehensive and precise clinical health terminology product in the world. It is the product of the International Health Terminology Standards Development Organisation (IHTSDO).

SNOMED CT has been widely accepted and is now the standard for clinical health terminology in many countries.

Patients and health professionals benefit from the use of SNOMED CT.



Home Publications Countries Programmes Governance About WHO

## Classifications

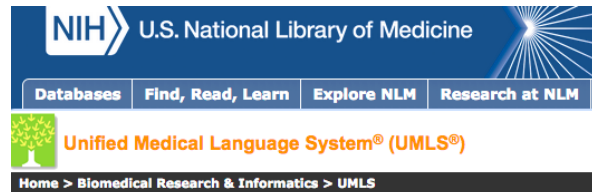
### The Anatomical Therapeutic Chemical Classification System with Defined Daily Doses (ATC/DDD)

#### Purpose/Definition

The ATC/DDD system classifies therapeutic drugs. The purpose of the ATC/DDD system is to serve as a tool for drug utilization research in order to improve quality of drug use.

#### Classification structure

In the ATC classification system, the drugs are divided into different groups according to the organ or system on which they act and their chemical, pharmacological and therapeutic properties. Drugs are classified into five different levels. Drug consumption statistics (international and other levels) can be presented for each of these five levels.



**NIH** U.S. National Library of Medicine

Databases Find, Read, Learn Explore NLM Research at NLM

## Unified Medical Language System® (UMLS®)

Home > Biomedical Research & Informatics > UMLS

### RxNorm

RxNorm provides normalized names for clinical drugs and links its names to many other vocabularies, including those of First Databank, Micromedex, MediSpan, Gold Standard Drug, and others. It provides a mechanism for linking between systems not using the same software and vocabulary.

RxNorm now includes the National Drug File - Reference Terminology (NDF-RT), which includes the mechanism of action, physiologic effect, and therapeutic category.



**MedDRA** Medical Dictionary for Regulatory Activities

Home About MedDRA How to Use Training Subscription

## Welcome to MedDRA

In the late 1990s, the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) developed MedDRA, a rich and highly specific standardised medical terminology for medical products used by humans... (more)

Multilingual Access [中文](#) [Čeština](#) [Nederlands](#) [English](#) [Français](#) [Deutsch](#) [Magyar](#)

## Discover MedDRA

## Existing Cochrane databases

**Archie**

**CRS**



## A new Cochrane *PICO* database

**Archie**

*Linked data*

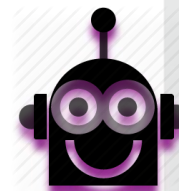
*Store*

**CRS**

*User  
Interfaces...*

PICO annotations:


- Reviews (question, studies, analyses)
- CRS/CENTRAL
- Data sets (Covidence, EPPI-R)








# PICO Annotator: Annotation of PICO's

Each review and included study receives its own PICO












CD002252

[Home](#)

<p><b>Argentina 1985</b></p> <p><i>Allocation concealment: not stated. Authors said '...randomly divided into two groups...'</i></p>	<p>60 women with SBP <math>\geq</math> 160 mmHg and/or DBP <math>\geq</math> 100 mmHg x 2, 24 hr apart, with or without proteinuria at trial entry. Excluded: &gt; 1 drug to control BP, or contraindication for beta blockers.</p>	<p>Exp: atenolol 50-250 mg/day. Control: methyldopa 750-2000 mg/day.</p>	<p>Women: BP (mean). Babies: gestational age, birthweight, Apgar score, stillbirth, neonatal deaths.</p>	
<p><b>Argentina 1987</b></p> <p><i>Allocation concealment: not stated. Authors said 'open randomised study'.</i></p>	<p>20 women with SBP &gt; 159 mmHg and/or DBP &gt; 99 mmHg x 2, 24 hr apart, +/- proteinuria. Excluded: &gt; 1 drug to control BP, or hypertensive emergency.</p>	<p>Exp: ketanserin 20-80 mg/day. Control: methyldopa 500-2000 mg/day.</p>	<p>Women: none reported. Babies: stillbirth, neonatal death, birthweight (mean), gestation at delivery (mean).</p>	
<p><b>Argentina 1988</b></p> <p><i>Allocation concealment: not stated. Authors said 'randomised' 'divided into 2 equal groups'.</i></p>	<p>36 women &gt; 14 weeks' gestation with BP <math>\geq</math> 140/90 mmHg and <math>\leq</math> 170/110 mmHg.</p>	<p>Exp: mepindolol, increasing weekly doses, from 5-10 mg/day. Control: methyldopa, increasing weekly doses from 500-2000 mg/day.</p>	<p>Women: additional antihypertensive, caesarean section, side-effects, maternal complications. Babies: stillbirth, SGA (undefined).</p>	
<p><b>Australia 1983</b></p> <p><i>Allocation concealment: not stated. Authors said 'randomly allocated'.</i></p>	<p>28 women in antenatal clinics with mild-moderate PIH (BP <math>\geq</math> 140/90 mmHg x 2 at least 24 hr apart). Excluded: impaired renal function.</p>	<p>Exp: propranolol 30-160 mg/day. Control: methyldopa 500-1000 mg/day.</p>	<p>Women: severe hypertension, proteinuria (undefined), additional antihypertensive, changed drugs due to side-effects, caesarean section. Babies: perinatal death, preterm delivery, jaundice, bradycardia, hypoglycaemia, birthweight (mean).</p>	
<p><b>Australia 1985</b></p> <p><i>Allocation concealment: not stated. Authors said 'allocated by series of random numbers'.</i></p>	<p>183 women with singleton pregnancy and mild hypertension (DBP <math>\geq</math> 90 mmHg x 2, 24 hr apart, or DBP <math>\geq</math> 95 mmHg x 2, 12 hr apart, or DBP <math>\geq</math> 100 mmHg x 2, 8 hr apart).</p>	<p>Exp: oxprenolol 40-320 mg x 2/day. Control: methyldopa 250 mg x 2/day-1000 mg x 3/day.  If blood pressure not controlled, hydralazine in both groups.</p>	<p>Women: severe hypertension, proteinuria ('heavy and increasing requiring delivery'), additional antihypertensive, induction of labour, caesarean section, Babies: stillbirth, neonatal death, admission to SCBU, days in SCBU, RDS, birthweight. (mean), Apgar (mean).</p>	
<p><b>Australia 2001</b></p> <p><i>Allocation concealment: central telephone randomisation Although authors stated it was a placebo-controlled trial, data provided by authors suggest that they may have used a patch for the control, but not a matching placebo.</i></p>	<p>16 women with gestational hypertension, defined as "de novo" hypertension after 20 weeks' gestation of &gt; 140 and/or 90 mmHg on 2 readings, 6 hr apart, or a rise in systolic pressure of &gt; 25 mmHg or a diastolic of 15 mmHg from a BP pre-pregnancy or in the first trimester.</p>	<p>Exp: transdermal glyceryl trinitrate patches 10 mg. Control: patch for the control, but not a matching placebo.</p>	<p>Women: pre-eclampsia, side-effects. Babies: not reported.</p>	
<p><b>Brazil 1985</b></p> <p><i>Allocation concealment: not stated. Authors said '...patients were randomly divided into two groups...'</i></p>	<p>100 women with chronic hypertension diagnosed before 20th week, BP <math>\geq</math> 140/90 mmHg x 2, 5 min apart. With no proteinuria and no contraindication to beta blockers.</p>	<p>Exp: pindolol 10-30 mg/day. Control: no treatment.</p>	<p>Women: MAP, severe pre-eclampsia, side-effects. Babies: abortions, fetal deaths, neonatal deaths, gestational age, birthweight, IUGR, Apgar score, congenital malformations, hypoglycaemia.</p>	

PICO Annotator ✕

P I C O ← →

**Step 1: Participants**

Female ⌵

age range...

- All ages
- Infant
- Child
  - Child, Preschool 2-5 years
  - Child 6-12 years
- Adolescent 13-18 years
- Adult
  - Young Adult 19-24 years
  - Adult 19-44 years
  - Middle Aged 45-64 years
- Aged

Proteinuria + and

Pregnancy Induced Hypertension +

Pregnancy +

OR


Female ⌵

age range...

- All ages
- Infant
- Child
  - Child, Preschool 2-5 years


# QA Dashboard: Ensuring High Quality PICO Data

Ensuring annotated PICO Data is fit for purpose and correct



**Trusted evidence.  
Informed decisions.  
Better health.**

All Table Notes



Show 25 rows
CSV
Print

Previous
1
2
3
4
5
...
182
Next

Annotated	Type	Review	By	State
24 Jan 2017 07:27	IncludedStudy	CD009885 STD-Maberry-1991	msannalast@gmail.com	In Progress
24 Jan 2017 05:40	IncludedStudy	CD009885 STD-Fabiano-2007	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:35	IncludedStudy	CD009885 STD-Epstein-2011	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:33	IncludedStudy	CD009885 STD-D_x00f6_pfner-2004	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:28	IncludedStudy	CD009885 STD-Duric-2012	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:26	IncludedStudy	CD009885 STD-DuPaul-1996	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:21	IncludedStudy	CD009885 STD-Douglas-1995	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:16	IncludedStudy	CD009885 STD-Douglas-1986	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:07	IncludedStudy	CD009885 STD-Cox-2006	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 05:00	IncludedStudy	CD009885 STD-Corkum-2008	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 04:50	IncludedStudy	CD009885 STD-Cook-1993	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 04:48	IncludedStudy	CD009885 STD-Connor-2000	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 04:40	IncludedStudy	CD009885 STD-Coghill-2013	annabrit@ualberta.ca	Ready For QA
24 Jan 2017 04:34	IncludedStudy	CD009885 STD-Coghill-2007	annabrit@ualberta.ca	Ready For QA

**IncludedStudy Annotation**

http://data.cochrane.org/annotations/1112krxb90q2

Save annotation

State: In Progress

**Notes**

**New Note**

**Population**

**Inclusion criteria:** women with diagnosis of intra-amniotic infection and gestational age greater than 24 weeks were included. Diagnosis of intra-amniotic infection was made on the basis of a temperature of 38°C or higher in the presence of labor and ruptured membranes. In addition, 1 or more of the following were present: maternal tachycardia, fetal tachycardia, uterine tenderness, or foul-smelling amniotic fluid.

**Exclusion criteria:** other sources of fever excluded before the diagnosis was made.

Female, Adolescent 13-18 years and Young Adult 19-24 years and Adult 19-44 years and Middle Aged 45-64 years: Amniotic Cavity Infection and Pregnancy;

Amniotic Cavity Infection
Pregnancy
Ages 13 to 64 years
Female

**Interventions**

Ampicillin and gentamicin (dual therapy; n = 69) or ampicillin, gentamicin, and clindamycin (triple-agent therapy; n = 64).

1.) [Pharmacological] Ampicillin: Dose not reported Schedule not reported for Duration not reported AND [Pharmacological] Gentamicin: Dose not reported Schedule not reported for Duration not reported ;

2.) [Pharmacological] Ampicillin: Dose not reported Schedule not reported for Duration not reported AND [Pharmacological] Gentamicin: Dose not reported Schedule not reported for

# Linked Data Editor

## Curating the Cochrane vocabularies



Trusted evidence.  
Informed decisions.  
Better health.

Search Cochrane linker



### Concept - Pregnancy

<http://data.cochrane.org/concepts/r4hp3qjbqnb>

#### Preferred Label

Pregnancy

#### Long Label

#### Short Label

#### Type

Condition

#### Descriptor

#### Synonyms

Add synonym +

#### External Identifiers

MeSH D011247



MedDRA 10036556 Pregnancy



#### Broader concepts

Add concept

#### Finding Related To Pregnancy



Condition

SNOMED 118185001

#### Narrower concepts [1-10 of 33]

Next >

#### Finding Of Measures Of Uterine Contractions

Condition

SNOMED 289737006

#### Finding Of Uterine Contractions

Condition

SNOMED 289699001

#### Uterine Contractions Normal

Condition

SNOMED 289738001

#### Pregnant

Condition

MedDRA 10036586

#### Uterus Relaxed

Condition

MedDRA 10046844 SNOMED 289742003

#### Cervix Dilated

Condition

SNOMED 289762006

#### Cervix Fully Dilated

Condition

SNOMED 62472004

#### O/e - Fundal Size = Dates

Condition

SNOMED 163510007

#### Uterine Contractions Problem

# Data Discovery

Understanding what a term means and where it's used



Trusted evidence.  
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Search Cochrane linked data..

## Condition - Pregnancy

<http://data.cochrane.org/concepts/r4hp3qjbjqnb>

RDF Type: <http://data.cochrane.org/ontologies/pico/Condition>

MedDRA: 10036556

### ↑ Broader Terms

- none -

### ↓ Narrower Terms [1-10 of 33]

Next >

#### Cervix Fully Dilated

<http://data.cochrane.org/concepts/r4hp39v89jj> SNOMED: 62472004

#### Good Uterine Contractions

<http://data.cochrane.org/concepts/r4hp3944j34f> SNOMED: 289718002

#### Finding Of Pain Of Uterine Contraction

<http://data.cochrane.org/concepts/r4hp3944j34k> SNOMED: 289730008

#### Cervix Dilated

<http://data.cochrane.org/concepts/r4hp398tvdtn> SNOMED: 289762006

#### Intermittent Uterine Contractions

<http://data.cochrane.org/concepts/r4hp398tvd7> SNOMED: 289705005

#### Rim Of Cervix Palpable

<http://data.cochrane.org/concepts/r4hp398tvdtn> SNOMED: 289763001

#### Reversal Of Uterine Contraction Wave

<http://data.cochrane.org/concepts/r4hp38bd86x> SNOMED: 249151001

#### Variable Strength Uterine Contractions

<http://data.cochrane.org/concepts/r4hp3944j34g> SNOMED: 289721000

#### Pregnancy Nos

<http://data.cochrane.org/concepts/r4hp3qj7i0dy> MedDRA: 10036556

## Systematic Reviews [1-10 of 475]

Next >

CD000352	Planned hospital birth versus planned home birth <a href="#">Pregnancy</a>
CD000105	High protein supplementation in pregnancy <a href="#">Pregnancy</a> <a href="#">Protein Supplements</a>
CD002856	Giving women their own case notes to carry during pregnancy <a href="#">Pregnancy</a>
CD000199	Caregiver support for women during childbirth <a href="#">Pregnancy</a> <a href="#">Caregiver Support</a> <a href="#">Providing Care According To Standard</a>
CD007901	Supplementation with long chain polyunsaturated fatty acids (LCPUFA) to breastfeeding mothers for improving child growth and development <a href="#">Breast Feeding</a> <a href="#">Pregnancy</a> <a href="#">Placebos</a>
CD006843	Fetal fibronectin testing for reducing the risk of preterm birth <a href="#">Pregnancy</a> <a href="#">Fetal Fibronectin Increased</a>
CD000118	Isocaloric balanced protein supplementation in pregnancy <a href="#">Pregnancy</a> <a href="#">Protein Supplements</a> <a href="#">Low-energy Diets</a>
CD000149	Nutritional advice in pregnancy <a href="#">Pregnancy</a> <a href="#">Nutrition Education</a>
CD000108	Biochemical tests of placental function for assessment in pregnancy <a href="#">Pregnancy</a>
CD000062	Continuity of caregivers for care during pregnancy and childbirth <a href="#">Pregnancy</a> <a href="#">Continuity Of Care Management</a> <a href="#">Providing Care According To Standard</a>

## Studies [1-10 of 1052]

Next >

Grobman 2004 CD006843	Does fetal fibronectin use in the diagnosis of preterm labor affect physician behavior and health care costs? A randomized trial <a href="#">Pregnancy</a>
Trondheim 1984 CD001451	Randomised controlled trial of ultrasonographic screening in pregnancy <a href="#">Pregnancy</a> <a href="#">Non Routine Obstetric Scan For Fetal Obser...</a> <a href="#">Providing Care According To Standard</a>
Melnikow 1997 CD009916	Effect of a transportation incentive on compliance with the first prenatal appointment: a randomized trial

# Exploring PICO

Flexible search for combinations of Population, Intervention, Outcome

Secure | <https://data.cochrane.org/pico-finder/#>

**Cochrane PICOfinder** Trusted evidence. Informed decisions. Better health.

Search..

Low Birth Weight Infant ✕ Weight Gain ✕

### Population

condition

- Low Birth Weight Infant (7)
  - SNOMED 276610007
  - Preterm Infant (Less than 37 weeks) (5)
    - SNOMED 12312009
    - MedDRA 10036590
  - Very Low Birth Weight Infant (1)
    - SNOMED 276611006
  - Infant Formula (1)
    - SNOMED 91555003
  - Enteral Nutrition (1)
    - MedDRA 10052591
  - Intensive Care (1)
    - MedDRA 10022519
  - Extremely Preterm Infant (<28 weeks) (1)
  - Very Preterm Infant (28-31 weeks) (1)
- age
- sex

### Intervention / Comparator

- classification
- procedure
- materials

### Reviews (8) | Studies (11) | Analyses (0)

Prev Next

**CD003959 (v5.1)** Higher versus lower protein intake in formula-fed low birth weight infants

Infant Formula | Low Birth Weight Infant | Infants, birth to 1 months | Male and Female | Physical | Growth parameters, including weight gain (g/... | Normal Growth | Physiological or clinical

Weight Gain | Physiological or clinical | Height / Growth Finding | Physiological or clinical | Head Circumference | Nitrogen utilization as reflected by blood ure... | Blood Urea Nitrogen

Nitrogen accretion, expressed in absolute ter... | Nitrogen Retention | Intelligence quotient (IQ) scores and Bayley s... | Iq - Intelligence Quotient Normal | Abnormal phenylalanine levels

Phenylalanine Screen Positive

**CD000390 (v7)** Massage for promoting growth and development of preterm and/or low birth-weight infants

Preterm infant (Less than 37 weeks) | Low Birth Weight Infant | Infants, birth to 1 months | Male and Female | Infant Massage | Stimulation | Physiological or clinical | Weight Gain

length of stay | Hospitalisation | behaviour | Newborn Behavior Alteration | development | Developmental Delay

**CD002971 (v7)** Formula versus donor breast milk for feeding preterm or low birth weight infants

Preterm Infant (Less than 37 weeks) | Low Birth Weight Infant | Infants, birth to 1 months | Male and Female | Enteral Feeding | Infant Formulas | Growth: Time to regain birth weight and subs...

Normal Growth | Physiological or clinical | Weight Gain | Physiological or clinical | Height / Growth Finding | Physiological or clinical | Head Circumference | Mortality | Death

severe neurodevelopmental disability define... | Neurodevelopmental Delay

**CD010333 (v2)** Sound reduction management in the neonatal intensive care unit for preterm or very low birth weight infants

Intensive Care | Extremely Preterm Infant (<28 weeks) | Very Preterm Infant (28-31 weeks) | Very Low Birth Weight Infant | Intensive Care | Infants, birth to 1 months | Male and Female

Sound | Acoustic Earmuffs | Ear Plug | Growth (g/kg/day or g/day or mean weight ga... | Normal Growth | Physiological or clinical | Weight Gain | Long-term outcomes: growth (weight (kg), he...

Normal Growth | Physiological or clinical | Height / Growth Finding | Physiological or clinical | Body Mass Index | Physiological or clinical | Neurodevelopmental Delay | Physiological or clinical

Visual Impairment | Physiological or clinical | Hearing impaired

**CD000343 (v6)** Multi-nutrient fortification of human milk for preterm infants

Comparison 1. Fortified breast milk versus unfortified breast milk				
Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1. Weight gain (g/kg/d) *	10		Mean Difference (95% CI)	Subtotals only
1.1.1 All trials	10	635	Mean Difference (95% CI)	1.81 [1.23, 2.40]
1.1.2 Trials recruiting only very preterm or VLBW infants	5	269	Mean Difference (95% CI)	2.82 [1.83, 3.80]
1.1.3 Trials conducted in low- or middle-income countries	2	214	Mean Difference (95% CI)	1.86 [0.70, 3.01]
1.2. Length gain (cm/d) *	6		Mean Difference (95% CI)	Subtotals only

# PICO Annotator

Annotating Cochrane Review content



## Methods

### Criteria for considering studies for this review

#### Types of studies

Randomised controlled trials (RCTs) evaluating and comparing antibiotics to a placebo, or different classes of antibiotics for acute sinusitis, and reported in full-text.

We included trials having a sample size of at least 30 participants with acute maxillary sinusitis. This is to guarantee that data in individual studies are as unbiased as possible. Also in very small samples many estimators are known to be sensitive to variation.

We excluded studies reported only as abstracts because there is evidence that there are discrepancies between data reported in the abstract and the final published full report and that information on trial quality indicators is often lacking (Chokkalingam 1998; Hopewell 2006). Thus we required full-text reports to ensure reliable data extraction and assessment of risk of bias. To diminish the risk of publication bias, we attempted to contact authors of potential abstracts to obtain information as to whether a full-text report of the study (unpublished or published) was available.

#### Types of participants

We included trials with adults or trials that separately reported data on subgroups of adults. We accepted adolescents (at least 12 years old) if less than 20% of participants were under 18 years of age.

Acute maxillary sinusitis was defined by:

1. a history of URTI lasting seven to 30 days, with at least two clinical signs or symptoms (sinus pain at palpation, postnasal drip, purulent nasal discharge, nasal obstruction, unilateral facial pain, maxillary toothache, impaired sense of smell); or
2. radiography, ultrasound or other imaging; or
3. bacterial culture from a sinus secretion obtained by puncture or endoscopy and irrigation or aspiration.

In studies where the clinical diagnosis was not clearly described, diagnosis of acute maxillary sinusitis should be confirmed in at least of 80% of participants by imaging or culture.

We included trials with a mixed population of acute (symptoms less than 30 days) and non-acute sinusitis or acute exacerbations of chronic sinusitis if they separately reported data on the subgroup with acute sinusitis, or if at least 80% of participants had acute sinusitis.

We excluded trials that focused on patients with complicated sinusitis such as pansinusitis or frontal sinusitis (or solely ethmoidal or sphenoidal sinusitis), or infections

PICO Annotator

P I C O

### Step 1: Participants

sex

age range...

asthma and

+ OR

- Asthmatic**  
parent term: **Asthma**  
[source: MedDRA; ID: 10003565]
- Asthma**  
parent terms: **Lesion Of Bronchus ...**  
[source: SNOMED; ID: 195967001]
- Asthma**  
parent terms: **Allergic Conditions Nec ...**  
[source: MedDRA; ID: 10003553]
- Asthma Without Status Asthmaticus**  
parent terms: **Asthma ...**  
[source: SNOMED; ID: 55570000]
- Asthma With Status Asthmaticus**  
parent terms: **Acute Asthma ...**

PICO Annotator

P I C O

Step 1: Participants

sex

age range...

- Child
- Child, Preschool 2-5 years
- Adolescent 13-18 years
- Child 6-12 years
- Adult
- Aged
- Infant

asthma

- + OR **Asthmatic**  
parent term: *Asthma*  
[source: MedDRA; ID: 10003565]
- Asthma**  
parent terms: *Allergic Conditions Nec*  
...  
[source: MedDRA; ID: 10003553]
- Asthma**  
parent terms: *Lesion Of Bronchus ...*  
[source: SNOMED; ID: 195967001]
- Asthma Without Status**

P I C O

Step 2: Interventions

classification and

corticosteroids

dose

duration

- Corticosteroids**  
parent term: *Ophthalmological And Otolological Preparations*  
[source: WHO; ID: S03B]
- + OR **Corticosteroids**  
parent term: *Otologicals*  
[source: WHO; ID: S02B]
- Corticosteroids**  
parent term: *Corticosteroids*  
[source: WHO; ID: S02BA]
- Corticosteroids**  
parent term: *Decongestants And Other Nasal Preparations For Topical Use*  
[source: WHO; ID: R01AD]
- + OR **Corticosteroids**  
parent term: *Agents For Treatment Of Hemorrhoids And Anal Fissures For Topical Use*  
[source: WHO; ID: C05AA]
- Corticosteroids**  
parent term: *Corticosteroids*  
[source: WHO; ID: S03BA]
- Corticosteroid Derivatives**  
parent term: *Antimigraine Preparations*  
[source: WHO; ID: N02CB]

PICO Annotator

P I C O

Step 2: Interventions

classification and

materials/procedure

dose (units) sched (units)

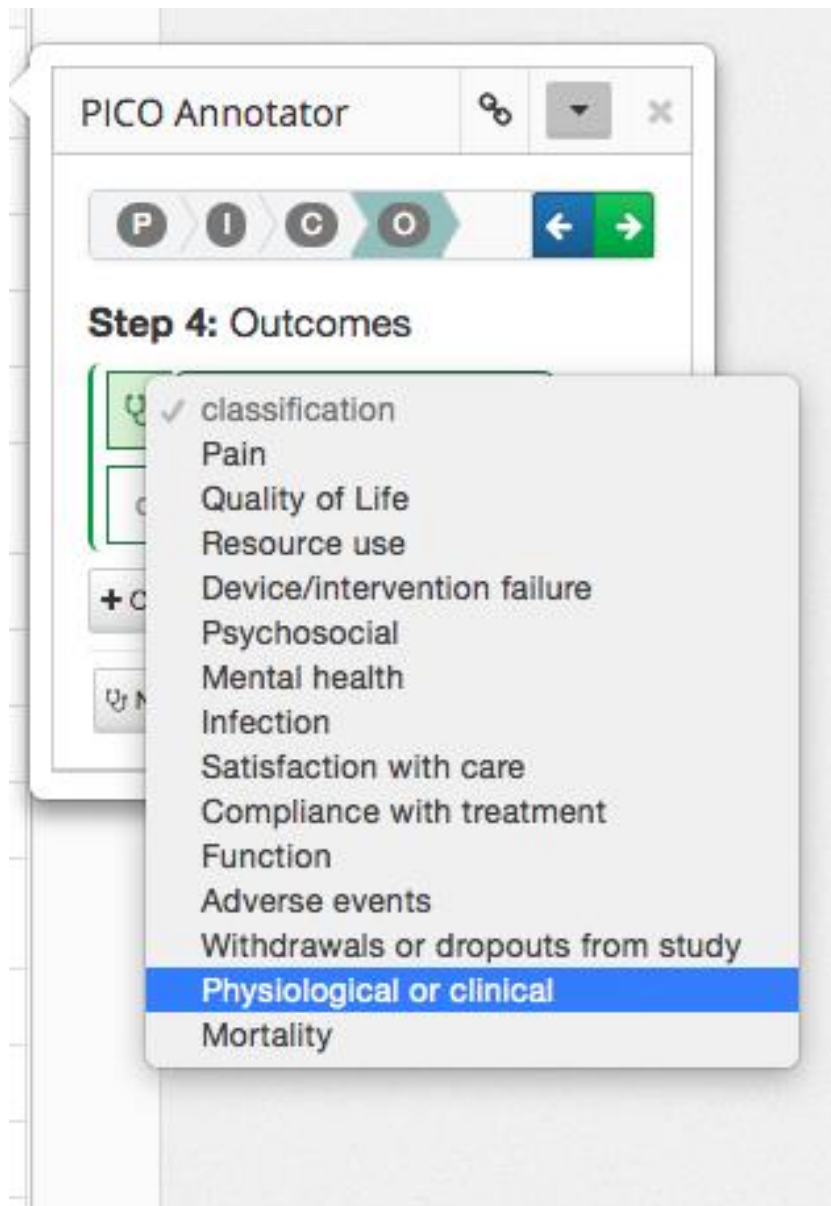
duration (units)

+ OR

New Group/Arm







PICO Annotator

P I C O ← →

### Step 4: Outcomes

- classification
- Pain
- Quality of Life
- Resource use
- Device/intervention failure
- Psychosocial
- Mental health
- Infection
- Satisfaction with care
- Compliance with treatment
- Function
- Adverse events
- Withdrawals or dropouts from study
- Physiological or clinical**
- Mortality

## Outcome

### ♥ outcome type ✓

Physiological or clinical	235
Resource use	147
Adverse events	139
Quality of Life	106
Mental health	65
Mortality	45
Function	39
Withdrawals or dropouts from study	25
Compliance with treatment	19
Satisfaction with care	13

#### CORRESPONDENCE

Characteristics of meta-analyses and their component studies in the *Cochrane Database of Systematic Reviews*: a cross-sectional, descriptive analysis

Jonathan Davey, Rebecca M Turner, Mike J Clarke and Julian PT Higgins

*BMC Medical Research Methodology* 2011, 11:160 | DOI: 10.1186/1471-2288-11-160 | © BioMed Central Ltd 2011



**Core Outcome Measures in Effectiveness Trials**

[www.comet-initiative.org](http://www.comet-initiative.org)

## Methods

### Criteria for considering studies for this review

#### Types of studies

We included randomised controlled trials (RCTs) with a parallel-group design, of at least 12 weeks' duration. We did not exclude studies on the basis of blinding. We excluded cross-over trials, as we were looking at long-term effects including adverse events.

#### Types of participants

We included RCTs that recruited participants with a clinical diagnosis of COPD based on the following (GOLD 2013).

1. Forced expiratory volume after one second (FEV<sub>1</sub>)/forced vital capacity (FVC) ratio < 0.7, which confirms the presence of persistent airflow limitation;
2. Several of the following key indicators:
  1. Progressive and/or persistent dyspnoea (breathlessness);
  2. Chronic cough;
  3. Chronic sputum production; and
  4. History of exposure to risk factors (tobacco smoke, smoke from home cooking and heating fuels, occupational dusts and chemicals).

We excluded RCTs in which participants had to have asthma as well as COPD to be included.

#### Types of interventions

We included studies in which participants were randomly assigned to receive the following.

1. Salmeterol 50 µg or placebo twice daily.
2. Formoterol 12 µg or placebo twice daily.
3. Formoterol 24 µg or placebo twice daily.

We included studies that allowed concomitant short-acting bronchodilators, provided they were not part of the trial treatment under study. We did not include studies in which most participants were receiving other COPD treatments.

#### Types of outcome measures

##### Primary Outcomes



### PICO Annotator



#### Population:

Male and Female, Young Adult 19-24 years and Adult 19-44 years and Middle Aged 45-64 years: Chronic Obstruct Airways Disease;

#### Interventions:

- 1.) [Pharmacological] Salmeterol ;
- 2.) [Pharmacological] Formoterol ;

#### Comparators:

[No active treatment] Placebos ;

#### Outcomes:

- 1.) Quality of Life - Quality of life;
- 2.) Physiological or clinical - Severe COPD exacerbations;
- 3.) Physiological or clinical - Moderate COPD exacerbations;
- 4.) Mortality - Mortality; all-cause;
- 5.) Adverse events - Non-fatal serious adverse events; all-cause;
- 6.) Physiological or clinical - lung function;
- 7.) Withdrawals or dropouts from study - Withdrawals from study treatment;

# PICOfinder demo interface

Exploring, filtering, and visualizing  
Cochrane evidence using PICO



## PICOfinder demo user interface

- Allow exploration of Cochrane content (Reviews, studies, forest plots, etc) using PICO
- Allow display of selected portions of Cochrane content in a flexible manner
- Allow linkage to relevant content produced by others
- Foundation for future Cochrane Library interface and derivative products



# https://data.cochrane.org/pico-finder

**Population**

⚡ condition >

🕒 age >

👤 sex >

**Intervention / Comparator**

⚙️ classification >

💧 materials / procedures >

**Outcome**

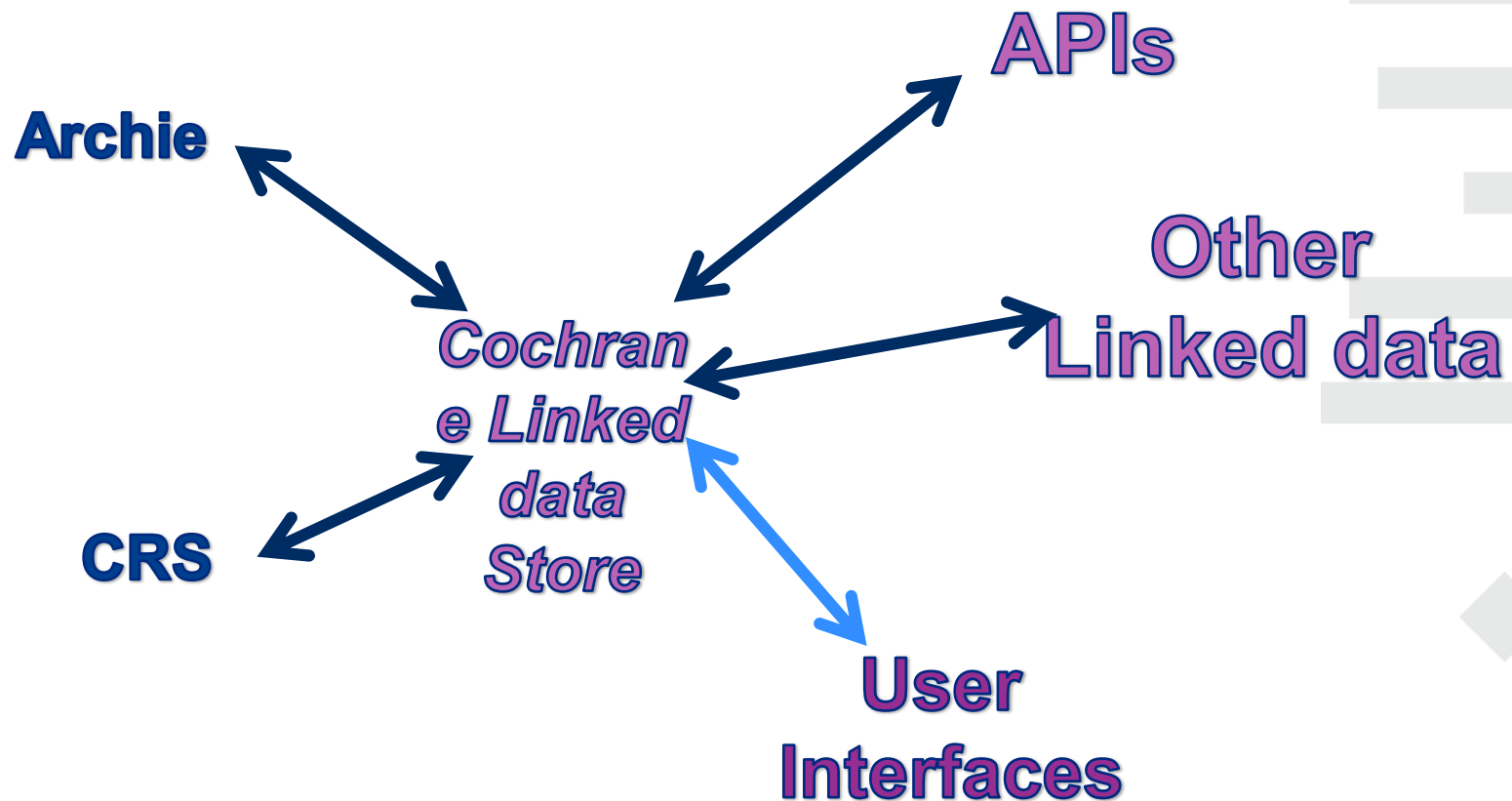
♥️ classification >

Search.. 

**Reviews (272)** Studies (209) Analyses (60) [Show Comparators](#)

- Prev Next (10-272)
- > **CD008800** (v3) Acetaminophen (paracetamol) for the common cold in adults
  - > **CD008827** (v2) Huperzine A for mild cognitive impairment  
⚡ Mild Cognitive Impairment 👤 Male and Female 💧 Huperzia Serrata Extract
  - > **CD008900** (v2) Cerebrolysin for vascular dementia  
⚡ Vascular Dementia 🕒 Ages 19 to 80 years and over 👤 Male and Female 💧 Other Psychostimulants And Nootropics
  - > **CD002955** (v7) Naftidrofuryl for dementia  
⚡ Dementia 👤 Male and Female 💧 Naftidrofuryl
  - > **CD007546** (v3) Interventions for preventing and reducing the use of physical restraints in long-term geriatric care  
🕒 Ages 65 to 80 years and over 👤 Male and Female 💧 Physical
  - > **CD007769** (v2) Ginseng for cognition  
⚡ Dementia 👤 Male and Female 💧 Ginseng Preparation
  - > **CD005380** (v9) Metal protein attenuating compounds for the treatment of Alzheimer's dementia  
⚡ Dementia Due To Alzheimer's Disease 👤 Male and Female 💧 Pharmacological
  - > **CD006929** (v4) Functional analysis-based interventions for challenging behaviour in dementia  
⚡ Dementia ⚡ Behavioural And Psychiatric Symptoms Of... 👤 Male and Female 💧 Complex
  - > **CD002854** (v6) Vitamin E for Alzheimer's dementia and mild cognitive impairment  
⚡ Dementia Due To Alzheimer's Disease ⚡ Mild Cognitive Impairment 👤 Male and Female 💧 Pharmacological ♥️ "outcome measures had to derive from va..."
  - > **CD000012** (v10) Alternative versus conventional institutional settings for birth  
🕒 Infants, birth to 23 months 👤 Male and Female 💧 Testosterone ♥️ test

# Linking to other resources



# Adverse effects of drugs – from LAERTES

**OHDSI** Observational Health Data Sciences and Informatics

Trace: • kb-wg

projects:workgroups

## Knowledgebase (LAERTES) Workgroup

**Objective:** The objective of this workgroup (WG) is to establish an open-source standardized knowledge base for the effects of medical products and an efficient procedure for maintaining and expanding it. For a complete overview, please see the paper [Bridging islands of information to establish an integrated knowledge base of drugs and health outcomes of interest](#). The WG's first contribution to OHDSI will be LAERTES (Largescale Adverse Effects Related to Treatment Evidence Standardization) – a system that integrates numerous sources of evidence useful for investigating the association of drugs and health into a single system. The system will extend the OHDSI Standard Vocabulary and provide for summary and drill down evidence review use cases. The first release of LAERTES is schedule for April 2015

**Project Lead:** [Richard D. Boyce, PhD](#)

**Project Co-Lead:** [Patrick Ryan, PhD](#)

**Members:**

See [Members List](#)

**Start Date:** 6/10/2014

**Repository:** <https://github.com/OHDSI/KnowledgeBase>

**WG Minutes:** [Knowledge Base WG Minutes](#)

**WG Agendas:** [Knowledge Base WG Agendas](#)

**Other Resources:**

- Community Forums
- Data Network
- Funding Opportunities
- Call for Papers
- Conferences
- OHDSI Library
- Mailing Lists
- Realtime Chat (IRC)
- Community Publications

[+Add New Page](#)

University of Pittsburgh

15

**OHDSI**  
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS



# Adverse effects of drugs – from LAERTES

## Lisinopril - Overview

HOI	# clinical trials	# case reports	# SPLs
Angioedema	1	43	103
Pancreatitis		11	129
Disorder of intestine		8	
Acute renal failure syndrome		8	85
Disease of mouth		6	
C/O - cough	8	6	
Disorder of tongue		5	
Respiratory obstruction		3	
Abdominal pain		3	100
Hyperkalemia	2	2	123
Disorder of lip		2	
Disorder of duodenum		2	
Bradycardia		2	109
Hypertensive disorder		2	37
Aplastic anemia		2	84
Erythroderma		2	14
Disorder of taste		1	
Hematoma		1	



**Intervention**

⚙ intervention type

- Pharmacological 179
- No active treatment 162
- Other 30
- Physical 17
- Complementary 13
- Educational 12
- Behavioral 10
- Psychological 10
- Complex 6
- Medical Devices 5

📌 procedure

💧 materials

- Placebos 149  
RxNorm 8375
- Corticosteroids 26
- Providing Care According To Standard 21  
SNOMED 372921003
- Selective Beta-2-adrenoreceptor Agonists 15
- Anticholinesterases 7
- Education 7  
SNOMED 409073007
- Formoterol 6
- Budesonide 6
- Beclomethasone 5  
RxNorm 1347
- Anticholinergics 5

Lisinopril RxNorm #####

# Linking to adverse effects

Lisinopril RxNorm ID#....

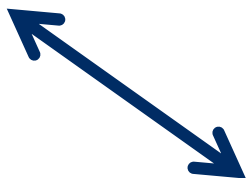
Laertes data set on AEs

**Lisinopril - Overview**

MOI	# clinical trials	# case reports	# SPLs
Angioedema	11	53	103
Pancreatitis	1	11	129
Disorder of intestine	1	8	8
Acute renal failure syndrome	1	8	85
Disease of mouth	1	6	6
C/D - cough	1	6	6
Disorder of tongue	1	5	5
Respiratory obstruction	1	3	3
Abdominal pain	1	3	100
Hypertatemia	2	2	113
Disorder of lip	2	2	2
Disorder of duodenum	2	2	109
Bradycardia	2	2	37
Hypertensive disorder	2	2	84
Aplastic anemia	2	2	14
Erythroderma	2	2	1
Disorder of taste	1	1	1
Hematomia	1	1	1

# Integrating with external Apps

**Cochrane  
PICOfinder**



**API**

**MAGIC App:  
Guideline  
authoring tool**



Improving patient care through guidelines, evidence summaries  
and decision aids that we can all trust, use and share

A non-profit authoring and publication platform helping you put best current evidence into practice

## Recently published public guidelines

[View all](#) Wiki  
Recs

**Adjunctive corticosteroid therapy for adults hospitalized with community-acquired pneumonia**

Reed Siemiemiuk - WikiRecs Group



**Retningslinjer for antitrombotisk behandling og profylakse**

Per Olav Vandvik - Norsk Selskap for Trombose og Hemostase



**Behandlingsretningslinjer for håndleddsbrudd hos voksne**

Hebe Désirée Kvernmo. Medforfattere: Leiv Magne Hove, Adalsteinn Odinsonn, Katrine Bjørnebek Frønsdal, Ingrid Harboe, Yngvar Krukhaug - Norsk Ortopedisk forening

## Add PICO

*i* Short names are used for the table and mobile to keep layout less cluttered

*i* Codes are used for user search, finding Systematic reviews and for decision support

### Population [↗](#)

People with dementia

Short name

Dementia

Code	Term	Code	
ICD-10	Dementia in Alzheimer's disease	F00	<i>i</i> ✕
SNOMED-CT	Dementia	52448006	<i>i</i> ✕
MeSH	Dementia	D003704	<i>i</i> ✕

### Intervention [↗](#)

Memantin

Short name

Memantin

Code	Term	Code	
MeSH	Memantine	D008559	<i>i</i> ✕
ATC	Memantin	N06D X01	<i>i</i> ✕

### Comparator [↗](#)

No extra treatment, usual care except memantin

Short name

Usual care

Code	Term	Code	
MeSH	Placebos	D010919	<i>i</i> ✕

**Save** Cancel

**Under development** Cognition (MMSE) Mortality Independent living

1.2



▼ Import/Export

POPULATION

People with dementia

COMPARATOR

No extra treatment, usual care except Memantine

INTERVENTION

Memantine

OUTCOMES

**Under development** Cognition (MMSE) Mortality Independent living

Help ?

Literature search

Evidence profile

Summary

References

PICO codes

Evidence Matrix

Evidence feed

A proper literature search should be systematic and thorough. However, sometimes somebody else have done that job for you, in a recently published systematic review or guideline that answer the same questions as yours. Here are some search services to help you start your literature search. Below you find an initial search based on your free text PICO and added PICO codes. Adjust, or go directly to resouces to improve it.

Find Studies and Systematic Reviews

**PICOfinder**  
powered by Cochrane linked data

► CD003154 (v14) Memantine for dementia Last search 24.10.13 Published 25.04.15

Add to references

Dementia + Memantin + Usual care

Search

Autofill search data

Population	ICD-10	Dementia in Alzheimer's disease	F00	✘
	SNOMED-CT	Dementia	52448006	✘
	MeSH	Dementia	D003704	✘
Intervention	MeSH	Memantine	D008559	✘
	ATC	Memantin	N06D X01	✘
Comparator	MeSH	Placebos	D010919	✘

## Population

⚡ condition

🕒 age

👤 sex

## Intervention / Comparator

⚙️ classification

💧 materials / procedures

## Outcome

♥️ classification

meman

**Memantine** ATC N06DX01 Drug

Mepolizumab ATC L04AC06 Drug

Melatonin RxNorm 6711 Drug

Metrifonate ATC P02BB01 Drug

Methotrexate ATC L04AX03 Drug

Methylprednisolone ATC H02AB04 Drug

Otitis Media SNOMED 65363002 Condition

Medical Procedure SNOMED 50731006 Procedure

Mediastinum Repair SNOMED 120166004 Procedure

Medical Gases ATC V03AN Drug

Medical Devices InterventionClassification

Mental health OutcomeClassification

Meninges Operation SNOMED 273993002 Procedure

Medical Therapy SNOMED 243121000 Procedure

Medical Air ATC V03AN05 Drug

➔ Dementia Male and Female Ginseng Preparation

➔ **CD005380** (v9) Metal protein attenuating compounds for the treatment of Alzheimer's dementia

⚡ Dementia Due To Alzheimer's Disease Male and Female Pharmacological

Show Comparators

Next (10-264)

pairment

uperzia Serrata Extract

cia

Male and Female

Other Psychostimulants And Nootropics

reducing the use of physical restraints in long-term geriatric care

Physical

**Population**


- condition
- age
- sex

**Intervention / Comparator**

- classification
- materials / procedures

**Outcome**

- classification

Search.. 

Memantine X

Reviews (1) Studies (17) **Analyses (58)** Show Comparators

Prev Next (10-58)

**CD003154 Comparison:** Memantine vs placebo for dementia (cause not specified) (4-6 weeks)  
 Outcome: Number of dropouts  
 Dementia Ages 65 to 80 years and over Male and Female Memantine Memantine Number of drop-outs

**CD003154 Comparison:** Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.  
 Outcome: Clinical Global: CIBIC+ (24-28 weeks)  
 Dementia Due To Alzheimer's Disease Ages 65 to 80 years and over Male and Female Memantine Clinical Global: CIBIC+ (24-28 weeks)

**CD003154 Comparison:** Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.  
 Outcome: Number suffering agitation as an adverse event

**Comparison 1. Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.**

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.7. Number suffering agitation as an adverse event	3	1005	Odds Ratio (MH, 95% CI)	0.60 [0.42, 0.86]

Dementia Due To Alzheimer's Disease Ages 65 to 80 years and over Male and Female Memantine  
 Number suffering agitation as an adverse event

**CD003154 Comparison:** Memantine vs placebo for mild-to-moderate Alzheimer's disease. Published, 6 month studies. ITT-LOCF data  
 Outcome: Clinical global: CIBIC+ (at 24 weeks)  
 Dementia Due To Alzheimer's Disease Ages 65 to 80 years and over Male and Female Memantine Clinical global: CIBIC+ (at 24 weeks)



1.2

✎ 📄 Import/Export

POPULATION

People with dementia

COMPARATOR

No extra treatment, usual care except Memantine

INTERVENTION

Memantine

OUTCOMES

**Under development** Cognition (MMSE) Mortality Independent living

Help ?

Literature search Evidence profile Summary References PICO codes Evidence Matrix Evidence feed

A proper literature search should be systematic and thorough. However, sometimes somebody else have done that job for you, in a recently published systematic review or guideline that answer the same questions as yours. Here are some search services to help you start your literature search. We have made an initial automatic search for you based on your free text PICO and your PICO codes.

**PICOfinder**  
powered by Cochrane linked data

⚡ condition

- Dementia  
SNOMED 52448006
- Dementia Due To Alzheimer's Disease  
SNOMED 342811000119304
- Mild Cognitive Impairment  
SNOMED 888271000000301
- Dementia Due To Parkinson's Disease

intervention

Outcome

Search..



⚡ Dementia ✕ ⚙ Pharmacological ✕ 💧 Memantine ✕

Reviews (1) Studies (17) **Analyses (58)** Show Comparators







Prev Next (10-58)

- **CD003154 Comparison:** Memantine vs placebo for dementia (cause not specified) (4-6 weeks)  
 Outcome: Number of dropouts  
 ⚡ Dementia ⌚ Ages 65 to 80 years and over 👤 Male and Female 💧 Memantine 💧 Memantine ❤ Number of drop-outs
- **CD003154 Comparison:** Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.  
 Outcome: Clinical Global: CIBIC+ (24-28 weeks)  
 ⚡ Dementia Due To Alzheimer's Disease ⌚ Ages 65 to 80 years and over 👤 Male and Female 💧 Memantine ❤ Clinical Global: CIBIC+ (24-28 weeks)
- **CD003154 Comparison:** Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.  
 Outcome: Number suffering agitation as an adverse event

**Comparison 1. Memantine vs placebo for moderate-to-severe Alzheimer's disease. 6 month studies. ITT-LOCF data.**

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.7. Number suffering agitation as an adverse event	3	1005	Odds Ratio (MH, 95% CI)	0.60 [0.42, 0.86]

## “Enabling” technology

- New interfaces and products for Cochrane evidence such as:
  - Dynamically-generated topic portals and interfaces 
  - Improved discoverability 
  - Comparator tools 
  - APIs for third-party systems and data feeds
- Facilitating:
  - Data re-use and repurposing 
  - Review production efficiency and intelligence 
  - Living sys reviews into living guidelines 
  - Creation of standards (PICO) for interoperability



## Annotate with anyone, anywhere

Our mission is to bring a new layer to the web. Use Hypothesis to discuss, collaborate, organize your research, or take personal notes.

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...refresh...



# Project Transform

People + Process + Technology converge



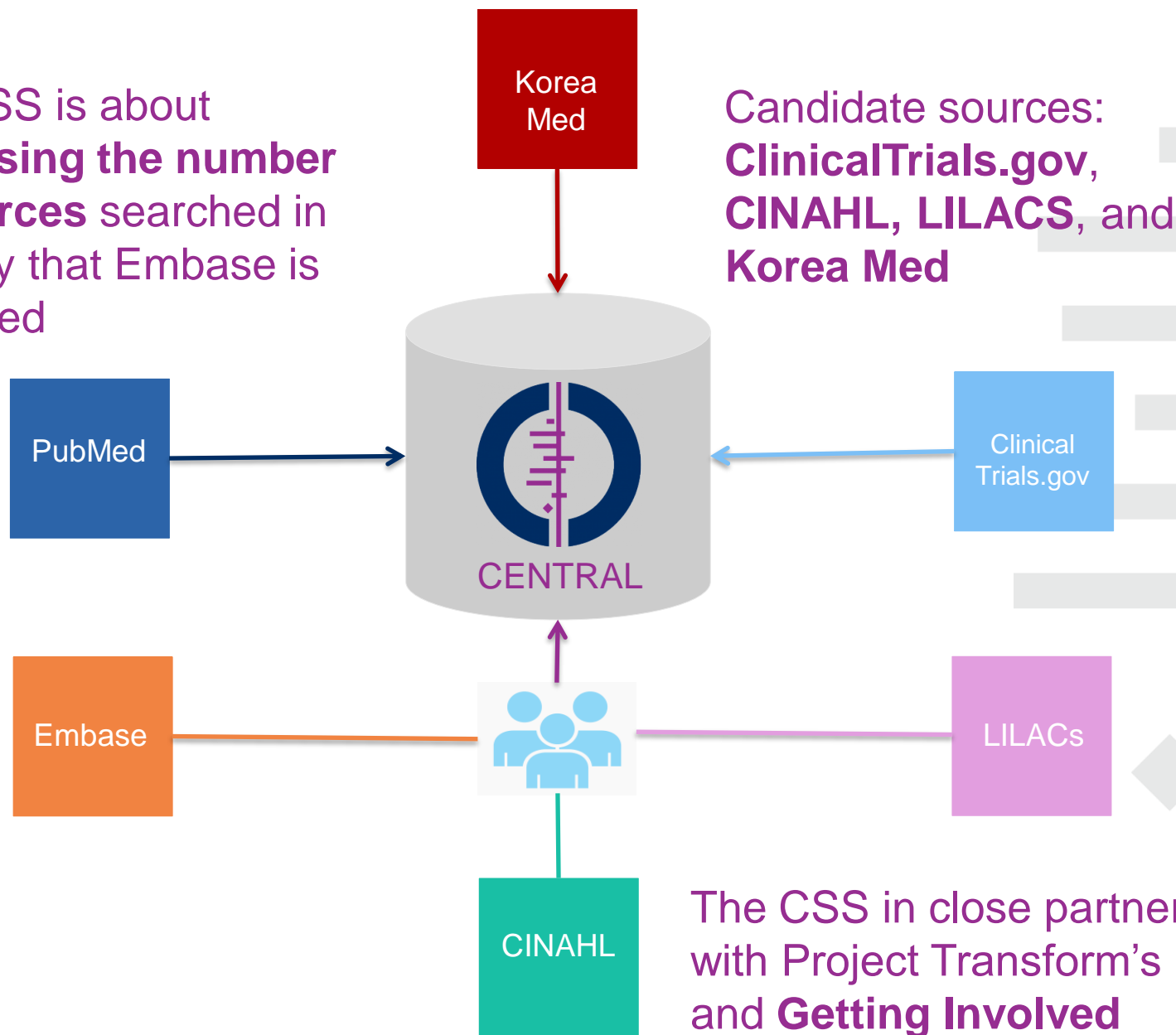
# Project Transform

4 components:

- **Evidence Pipeline:** uses machine learning and text mining to make study identification more efficient and semi-automated – **including Centralized Search Service**
- **Getting Involved:** uses crowdsourcing to get more people involved in tasks (**URL coming soon!**)
- **Task Exchange:** Platform for brokering tasks (**[taskexchange.cochrane.org](http://taskexchange.cochrane.org)**)
- **Production Models:** New models of organising human effort in review production
- More info at **[cochrane.org/transform](http://cochrane.org/transform)**

# Cochrane (CSS)

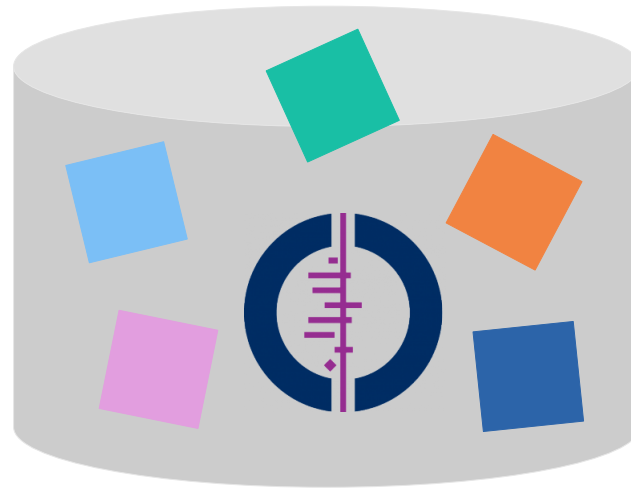
The CSS is about **increasing the number of sources** searched in the way that Embase is searched



Candidate sources: **ClinicalTrials.gov, CINAHL, LILACS, and Korea Med**

The CSS in close partnership with Project Transform's **Pipeline and Getting Involved**

## Why?



Endgame: Just search CENTRAL

Time **saved** searching  
Time **saved** screening  
**Reduction** in duplication of effort

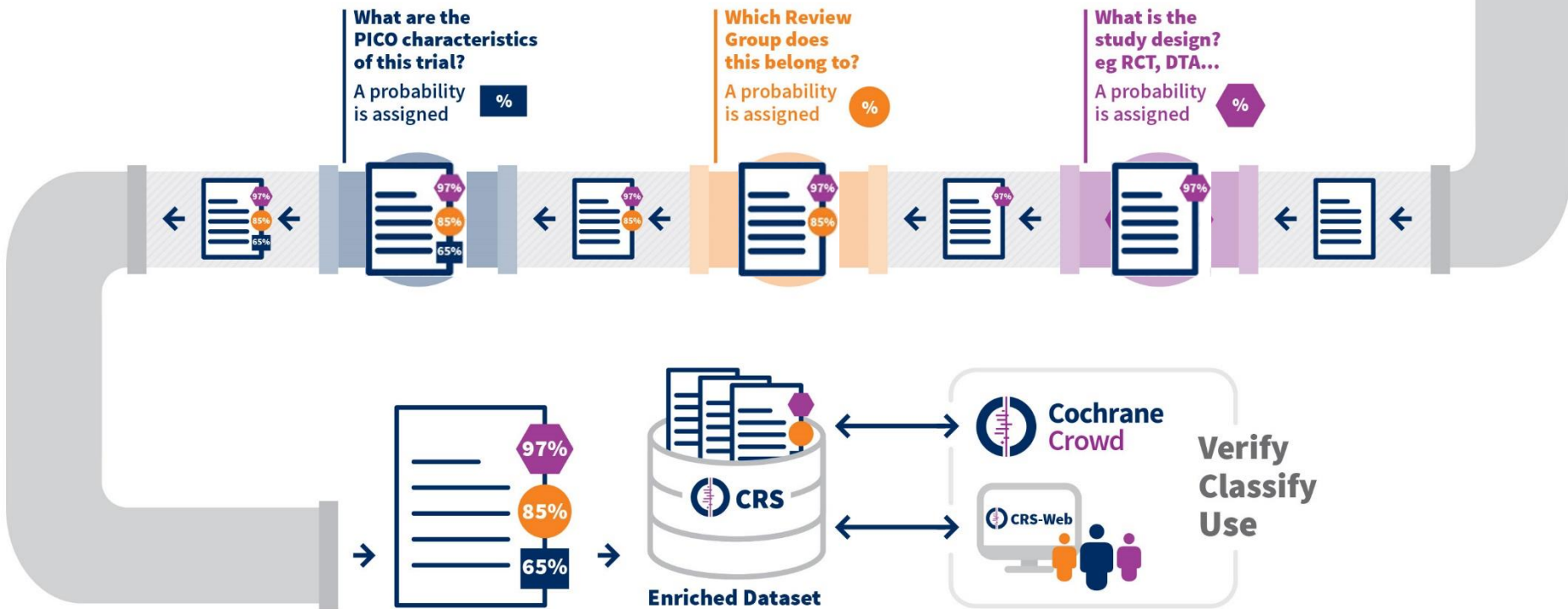
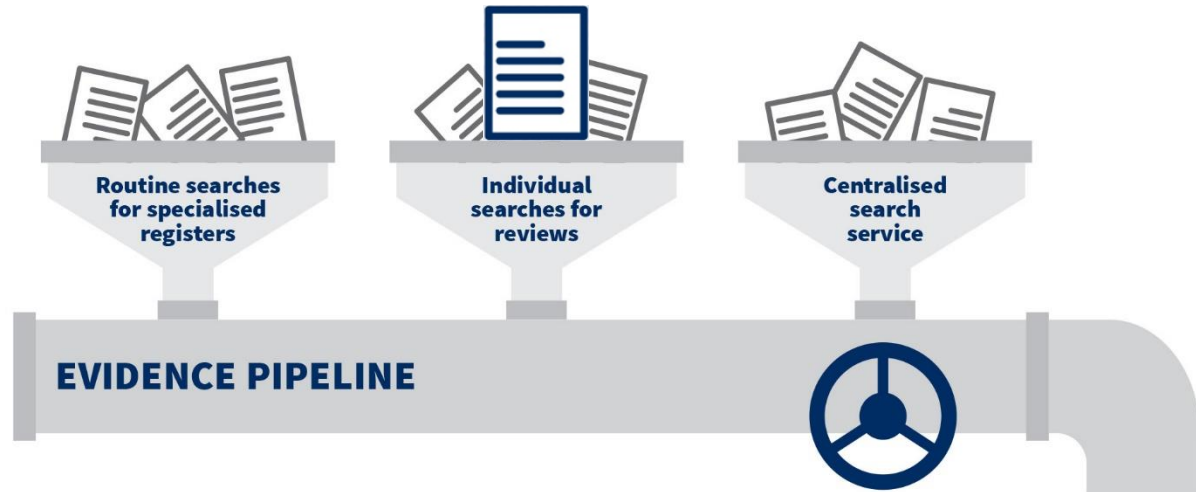






## Evidence Pipeline

Finding and classifying relevant research



# 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

6046

Contributors

118

Countries

1314816

Classifications

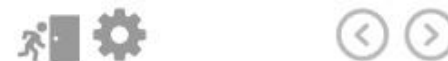
Just 60 seconds a day can make a difference

# CROWD-Based Annotation

Using crowdsourcing to perform complex annotations as a series of micro-tasks

Early inhaled steroid use in extremely low birthweight infants: A randomised controlled trial. [201631]

**Objective** We hypothesised that a prophylactic inhaled steroid would prevent the progression of bronchopulmonary dysplasia (BPD) in extremely low birthweight infants (ELBWIs). **Design** This study was a multicentre, randomised, double-blinded, placebo-controlled trial. **Setting** This investigation was conducted in 12 level III neonatal intensive care units (NICUs). **Patients** A total of 211 ELBWIs requiring ventilator support were enrolled. **Intervention** Starting within 24 h of birth and continuing until 6 weeks of age or extubation, two doses of 50 mug fluticasone propionate (FP) or placebo were administered every 24 h. **Main outcome measurement** The primary outcome measure used to indicate the morbidity of severe BPD incidence was death or oxygen dependence at discharge from the NICU. The secondary measures were neurodevelopmental impairments (NDIs) at 18 months of postmenstrual age and 3 years of age. **We performed subgroup analyses based on gestational week (GW) and the presence of chorioamnionitis (CAM).** **Results** Infants were randomised into the FP (n=107) or placebo (n=104) groups. No significant differences were detected between the FP and placebo groups with respect to either the frequency of death or the oxygen dependence at discharge or NDIs. In subgroup analyses, the frequencies of death and oxygen dependence at discharge were significantly decreased in the FP group for infants born at 24-26 GWs and for infants with CAM, regardless of the GW at birth. **Conclusions** Inhaled steroids have no effect on the prevention of severe BPD or long-term NDI but might decrease the severity of BPD for ELBWIs with a risk factor. **Trial registration number** UMIN-CTR C000000405. Copyright © 2016 BMJ Publishing Group Ltd & Royal College of Paediatrics and Child Health.



What type of outcome is measured in this study?

Please select a value



Physiological or clinical



*progression of bronchopulmonary dysplasia (BPD)*

- Not answered
- Not reported
- No available term
- Answered above

Back

Done

Add a note

# Machine Curation

Using machine learning to identify and filter evidence prospectively

```
In [7]: r = requests.post("http://104.41.231.151:5000/annotate", json=json.dumps({'source': 'cochrane-review', 'task': 'pico', 'data': {'cdno': 'CD006064', 'characteristics': {'participants': ' All pregnant women attending antenatal care at least once. ', 'outcomes': ' The primary outcome measure is the rate of breastfeeding initiation in all pregnant women after birth (as defined by trial authors). Secondary outcomes include: \n', 'interventions': " Breast examination, for any purpose, conducted at least once during an antenatal care visit, compared with 'usual' care (that is, that which does not include antenatal breast examination). "}, 'annotator-id': 'unique annotator ID'}}))
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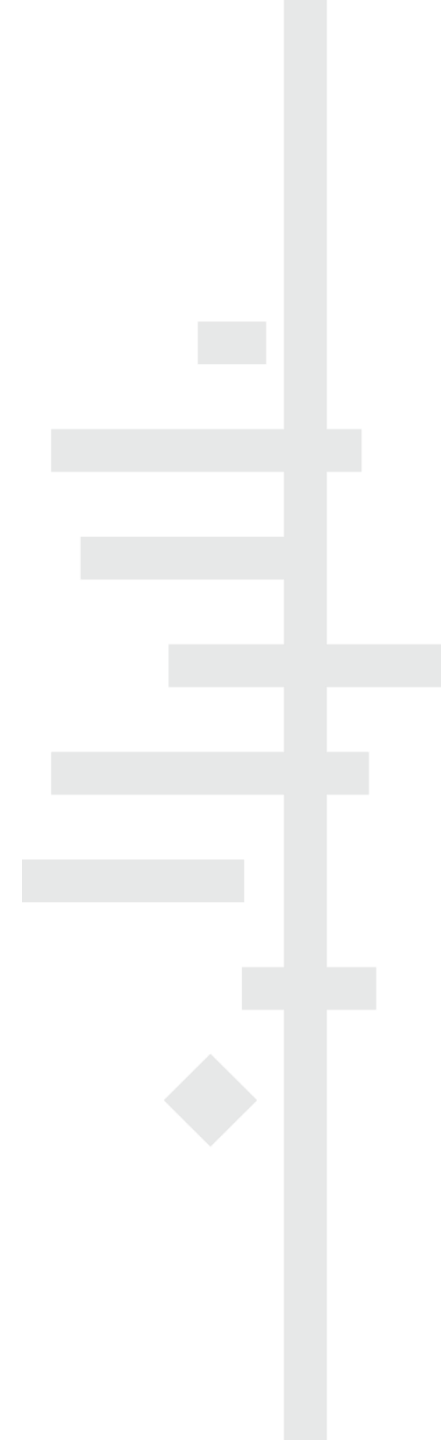
```
In [8]: r.text
```

```
Out[8]: u{"participants": [{"http://data.cochrane.org/concepts/r4hp3qdtjr4x", "Prenatal Care"}], "interventions": [{"http://data.cochrane.org/concepts/r4hp5z0zhmh1", "Examination Of Breast"}, {"http://data.cochrane.org/concepts/r4hp5z8lnrpd", "Prenatal Examination And Care Of Mother"}, {"http://data.cochrane.org/concepts/r4hp3qdtjr4x", "Prenatal Care"}, {"http://data.cochrane.org/concepts/r4hp39zj0grt", "Behavior Finding"}], "outcomes": [{"http://data.cochrane.org/concepts/r4hp5z5yxj6b", "Initiation Of Breastfeeding"}, {"http://data.cochrane.org/concepts/r4hp3p7h6l5y", "Metastasis"}, {"http://data.cochrane.org/concepts/r4hp39r5xxsx", "Birth"}]}
```

```
In [9]: █
```

## The wider context

Remaining relevant in an expanding marketplace of evidence





# "Next generation"

## Cochrane?

- Big data
- “Diverse” data
  - IPD (Individual Patient Data)
  - ~omics
  - Device, systems
  - Data from different study designs
- Activity to date:
  - Meetings
  - Various conversations happening but nothing definitive yet
  - Discussions mainly what role Cochrane should play
  - Ida Sim Cochrane lecture in Vienna



## "Next generation" Cochrane

- How can we move towards...
  - “living” systematic reviews
  - and dynamic curation of evidence in real-time...that can incorporate methods and data from "diverse" sources?
- Vivli.org
  - Project to build a clinical trial data sharing platform
  - Will include IPD, CSRs, and vision is eventually imaging data, -omics and other data sources
  - Analytical tools, mechanisms for de-identification, privacy
  - Launching next year
- OpenTrials

# IBM Watson Health Cloud

HIPAA compliant, standard based, massively scalable



## Insights

Cognitive & Advanced Analytics



## Data

Structured & unstructured



## Solutions

IBM & Ecosystem Solutions

Individuals

Researchers

Govt.



Payers

Providers

Pharma



## What's around the corner

Episode 2

# Prescription: **Watson**

How healthcare can benefit from Watson's unique capabilities



THE IDEA



APPLICATIONS



LABS



MORE STORIES

→ Read this article at [IBM Research](#)



# "The Yelp of medicine is here" :/



## Community People who've been there

More than 100,000 people sharing their medication experience and advice

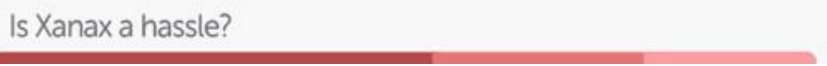
Share your experience

## Reviews Is it worth it?

People-powered ratings show you which medications work best and have the fewest side effects.

Share your experience

1059 people Rated Xanax



# "The Yelp of medicine is here" :/



## Compare Medications by letter



## Popular comparisons

Information from medical experts, and reviews from people like you.

Pain and inflammation

Ibuprofen vs. Tylenol vs. Naproxen

Different kinds of antidepressants

Cymbalta vs. Prozac vs. Wellbutrin

Heartburn and GERD

PriLOSEC vs. Nexium vs. Zantac

Statins for high cholesterol

Crestor vs. Lipitor vs. Zocor

Prescription vs. over-the-counter sleep meds

Ambien vs. Unisom

Anti-anxiety medications

Klonopin vs. Valium vs. Xanax

## Alternatives to popular medications

Zoloft alternatives >

Claritin alternatives >

Ambien alternatives >

Metformin alternatives >

F...

Metformin alternatives >

### Compare ratings and reviews

See how Imodium and Pepto Bismol stack up for an upset stomach

Imodium Loperamide	Pepto Bismol Bismuth subsalicylate
One day is too many days to have diarrhea. Having Imodium on hand to relieve your symptoms can be a life-saver.	Pepto Bismol does it all, from upset stomach to crampy diarrhea.
Capsule, Tablet, Chewable tablet, Oral solution	Chewable tablet, Oral solution

Ratings and reviews

Exercise Men Women 40 open 18-34 35-54 55+

Imodium	Pepto Bismol
89% of people say it's worth it	84% of people say it's worth it
63% say it works well	41% say it works well
10% say it's a tough pill to take	15% say it's a tough pill to take

### Compare side effects

See prescription sleep medications head to head >

Ambien Zolpidem	Lunesta Eszopiclone	Sonata Zaleplon
Dizziness 4%	Unpleasant taste 31%	Headache 7%
Drowsiness 3%	Headache 8%	Abdominal pain 3%
Allergy 3%	Drowsiness 7%	Amnesia 3%
Sinus inflammation 2%	Infection 7%	Muscle weakness 2%
Dry mouth 2%	Dry mouth 4%	Eye pain 2%



...nearly there...



HICKER PHOTO CO.

## Summary

- People + Process + Technology are converging in new and innovative ways to aid evidence synthesis
- Ramping up of the machines, platforms, and structured, linked data (tech)
- Change management: people will need to adapt (process)
- Helps Cochrane and other evidence producers to "scale"
- We can produce more high-quality evidence for health care decision making
- So systematic review efforts can remain competitive and relevant



# Demo: Cochrane linked data tools + Q & A

