

# Polyglot Search Translator upgrades, or how have I spent HLAs money

Thanks to HLA, Medical Director and Anne Harrison Committee

## Justin Clark

Senior Research Information Specialist, Institute for Evidence-Based Healthcare  
Cochrane Information Specialist, Cochrane Acute Respiratory Infections Group  
Member Cochrane Information Specialists Executive Group  
Co-lead Search Group Living Evidence Network

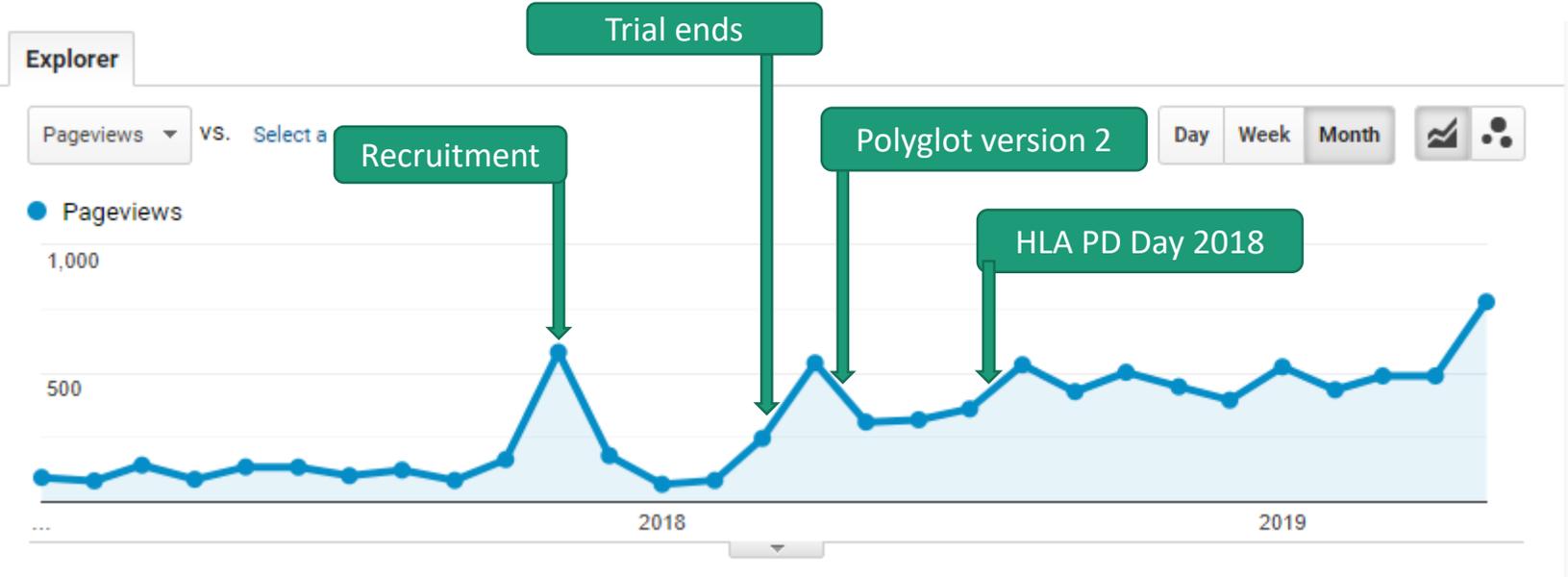
## Partners

Matt Carter  
Connor Forbes



INSTITUTE FOR  
Evidence-Based Healthcare

# Polyglot – usage growth



Polyglot version 3 (in beta testing)

Hopeful rollout September 2019

First released in early 2017, version 1 not much used. Version 2 saw substantial increase, hopefully version 3 will see the same.

# Polyglot – making its mark internationally

In 2018 presented at the 25<sup>th</sup> Cochrane Colloquium in Edinburgh, Scotland

In 2019 part of a workshop at HTAi in Cologne, Germany\*

Be in a workshop at the 26<sup>th</sup> Cochrane Colloquium in Santiago, Chile 2019.

Has been integrated into the search visualisation tool, 2dSearch  
<https://www.2dsearch.com/>



\* Collaboration with Maria-Inti Metzendorf (Cochrane Information Specialist for the Cochrane Metabolic and Endocrine Disorders Group and member of the Cochrane Council).

# Line expansions

Understands, and automatically expands search lines (both user entered and internal)

Your query  

```
1 vaccine
2
3 safety
4
5 children
6
7 1 AND 3 AND 5
```

➤ PubMed

```
vaccine
safety
children
(vaccine) AND (safety) AND (children)
```

Your query  

```
1 1 vaccine
2
3 2 safety
4
5 3 children
6
7 4 1-3/and
```

➤ PubMed

```
vaccine
safety
children
(vaccine) AND (safety) AND (children)
```

# Pop-up tooltips

Points out translations' users should check

> Ovid Medline / Ovid Embase

exp Thyroid Diseases/ OR Thyroid diseases OR Thyroid disease OR Thyroid disorder OR Thyroid disorders OR Goiter OR Goitre OR Hypothyroidism OR Hypothyrroidism OR Thyroiditis OR Graves disease OR Hyperthyroxinemia OR Thyrotoxicosis OR Thyroid dysgenesis OR Thyroid cancer OR Thyroid neoplasm OR Thyroid neoplasms OR Thyroid nodule OR Thyroid nodules OR Thyroid tumor OR Thyroid tumours OR Thyroid cyst OR Thyroid cysts OR Cancer of the thyroid

AND

exp Prevalence/ OR exp Epidemiology/ OR Prevalence OR Prevalences OR Epidemiology OR Epidemiological

AND

exp Australia/ OR Australia OR Australian OR Australasian OR Australasia OR Queensland OR Victoria OR New South Wales OR Northern Territory

Polyglot does not translate subject terms (e.g MeSH to Emtree), this needs to be done manually

Your query

1 Lung Diseases.ab.

> PubMed

PubMed cannot search abstract field term independently

"Lung Diseases"[tiab]

# Bracket expansion

Inserts field codes inside brackets, where bracket grouping is not supported

```
Your query    
1 (respiratory syncytial virus or rsv).tw.
```

➤ PubMed

```
("respiratory syncytial virus"[tiab] OR rsv[tiab])
```

# Search syntax colouring

Colour codes search syntax for easy understanding of search strings

```
Your query ✎ 🔍  
1 "Primary Health Care"[Mesh] OR Primary care[tiab] OR Primary healthcare OR Family practice OR General practice  
2  
3 AND  
4  
5 "Treatment Failure"[Mesh] OR Treatment failure OR Treatment failures  
6  
7 AND  
8  
9 "Bacterial Infections"[Mesh] OR Bacteria[ti] OR Bacterial  
10  
11 AND  
12  
13 "Anti-Bacterial Agents"[Mesh] OR Antibacterial Agents[sh] OR Antibacterial Agent OR Antibiotics OR Antibiotics|
```

- PubMed
- Ovid Medline / Ovid Embase

```
exp Primary Health Care/ OR Primary care.ti.ab. OR Primary healthcare OR Family practice OR General practice  
  
AND  
  
exp Treatment Failure/ OR Treatment failure OR Treatment failures  
  
AND  
  
exp Bacterial Infections/ OR Bacteria.ti. OR Bacterial  
  
AND  
  
exp Anti-Bacterial Agents/ OR Antibacterial Agents.fs. OR Antibacterial Agent OR Antibiotics OR Antibiotics
```

Version 3 in beta testing, but is usable

Available for people to use:

<https://crebp.github.io/sra-polyglot/>

# Looks pretty, but does it work?

## Fredericks 2017 - MEDLINE Ovid

1 Health Education/	14 cardiopulmonary bypass/ or heart bypass, left/	27 randomized controlled trial.pt.
2 Telemedicine/	15 ((cardiac or heart or thoracic or cardiovascular or coronary or myocardial or pericardial or vascular or aorta or aortic or valve or ventricular) adj5 surgery).tw.	28 controlled clinical trial.pt.
3 (patient\$ adj5 (educat\$ or communicat\$ or interact\$ or advi\$)).tw.	16 ((heart or aortocoronary or cardiopulmonary) adj3 (bypass or by pass)).tw.	29 randomized.ab.
4 (educat\$ adj5 (intervention\$ or rehabilitation\$ or program\$)).tw.	17 ((valve\$ or arter\$) adj3 (implant\$ or graft\$ or replac\$ or correct\$)).tw.	30 placebo.ab.
5 (education adj5 (service\$ or group\$ or program\$ or session\$)).tw.	18 (myocardial adj3 (revasculari\$ or cavopulmonary)).tw.	31 drug therapy.fs.
6 (education adj5 prevent\$).tw.	19 ((angioplast\$ or coronary) adj3 (balloon\$ or cardiomyoplast\$)).tw.	32 randomly.ab.
7 ((rehabilitati\$ or educat\$) adj5 (literature or audiovisual or av or audio-visual or internet or web\$ or telecare or telemedicine or telephone\$ or phone\$ teleconference\$ or telehealth or transtelephonic\$ or podcast\$ or email\$ or mp3)).tw.	20 (mitral valve adj (repair or replacement\$)).tw.	33 trial.ab.
8 ((educat\$ or intervent\$) adj5 (communit\$ or famil\$ or spouse\$ or nurs\$)).tw.	21 aortic valve repair\$.tw.	34 groups.ab.
9 Patient Education as Topic/	22 (maze surgery or arrhythmia surgery).tw.	35 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
10 or/1-9	23 (carotid endarterectom\$ or heart transplant\$).tw.	36 exp animals/ not humans.sh.
11 Thoracic Surgery/	24 (ventricular adj3 (surg\$ or restor\$ or reconstruct\$)).tw.	37 35 not 36
12 exp Cardiovascular Surgical Procedures/	25 or/11-24	38 26 and 37
13 thoracic surgical procedures/ or cardiac surgical procedures/	26 10 and 25	

# Polyglot translation – with no edits

## Fredericks 2017 - PubMed

((("Health Education"[Mesh:NoExp]) OR (Telemedicine[Mesh:NoExp]) OR ((patient\*[tiab] AND (educat\*[tiab] OR communicat\*[tiab] OR interact\*[tiab] OR advi\*[tiab]))) OR ((educat\*[tiab] AND (intervention\*[tiab] OR rehabilitation\*[tiab] OR program\*[tiab]))) OR ((education[tiab] AND (service\*[tiab] OR group\*[tiab] OR program\*[tiab] OR session\*[tiab]))) OR ((education[tiab] AND prevent\*[tiab])) OR (((rehabilitati\*[tiab] OR educat\*[tiab]) AND (literature[tiab] OR audiovisual[tiab] OR av[tiab] OR audio-visual[tiab] OR internet[tiab] OR web\*[tiab] OR telecare[tiab] OR telemedicine[tiab] OR telephone\*[tiab] OR "phone\* teleconference\*" [tiab] OR telehealth[tiab] OR transtelephonic\*[tiab] OR podcast\*[tiab] OR email\*[tiab] OR mp3[tiab]))) OR (((educat\*[tiab] OR intervent\*[tiab]) AND (communit\*[tiab] OR famil\*[tiab] OR spouse\*[tiab] OR nurs\*[tiab]))) OR ("Patient Education as Topic"[Mesh:NoExp]) AND (("Thoracic Surgery"[Mesh:NoExp]) OR ("Cardiovascular Surgical Procedures"[Mesh]) OR ("thoracic surgical procedures"[Mesh:NoExp] OR "cardiac surgical procedures"[Mesh:NoExp]) OR ("cardiopulmonary bypass"[Mesh:NoExp] OR "heart bypass, left"[Mesh:NoExp]) OR (((cardiac[tiab] OR heart[tiab] OR thoracic[tiab] OR cardiovascular[tiab] OR coronary[tiab] OR myocardial[tiab] OR pericardial[tiab] OR vascular[tiab] OR aorta[tiab] OR aortic[tiab] OR valve[tiab] OR ventricular[tiab]) AND surgery[tiab])) OR (((heart[tiab] OR aortocoronary[tiab] OR cardiopulmonary[tiab]) AND (bypass[tiab] OR "by pass"[tiab]))) OR (((valve\*[tiab] OR arter\*[tiab]) AND (implant\*[tiab] OR graft\*[tiab] OR replac\*[tiab] OR correct\*[tiab]))) OR ((myocardial[tiab] AND (revasculari\*[tiab] OR cavopulmonary[tiab]))) OR (((angioplast\*[tiab] OR coronary[tiab]) AND (balloon\*[tiab] OR cardiomyoplast\*[tiab]))) OR (("mitral valve adj"[tiab] (repair[tiab] OR replacement\*[tiab]))) OR ("aortic valve repair\*" [tiab]) OR ("maze surgery" [tiab] OR "arrhythmia surgery" [tiab])) OR (("carotid endarterectom\*" [tiab] OR "heart transplant\*" [tiab])) OR ((ventricular[tiab] AND (surg\*[tiab] OR restor\*[tiab] OR reconstruct\*[tiab]))) AND (((("randomized controlled trial"[pt]) OR ("controlled clinical trial"[pt]) OR (randomized[tiab]) OR (placebo[tiab]) OR ("drug therapy"[sh]) OR (randomly[tiab]) OR (trial[tiab]) OR (groups[tiab])) NOT (animals[Mesh] NOT humans[Mesh:NoExp]))

# Seems to work

NCBI Resources How To Sign in to NCBI

PubMed Home More Resources Help

## PubMed Advanced Search Builder

YouTube Tutorial

Use the builder below to create your search

[Edit](#) [Clear](#)

**Builder**

All Fields  [Show index list](#)

AND All Fields  [Show index list](#)

[Search](#) or [Add to history](#)

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**History** [Download history](#) [Clear history](#)

Search	Add to builder	Query	Items found	Time
#1	<a href="#">Add</a>	Search (((("Health Education"[Mesh:NoExp]) OR (Telemedicine[Mesh:NoExp]) OR ((patient*[tiab] AND (educat*[tiab] OR communicat*[tiab] OR interact*[tiab] OR advi*[tiab]))) OR ((educat*[tiab] AND (intervention*[tiab] OR rehabilitation*[tiab] OR program*[tiab]))) OR ((education[tiab] AND (service*[tiab] OR group*[tiab] OR program*[tiab] OR session*[tiab]))) OR ((education[tiab] AND prevent*[tiab]) OR (((rehabilitati*[tiab] OR educat*[tiab]) AND (literature[tiab] OR audiovisual[tiab] OR av[tiab] OR audio-visual[tiab] OR internet[tiab] OR web*[tiab] OR telecare[tiab] OR telemedicine[tiab] OR telephone*[tiab] OR "phone* teleconference*[tiab] OR telehealth[tiab] OR transtelephonic*[tiab] OR podcast*[tiab] OR email*[tiab] OR mp3[tiab]))) OR (((educat*[tiab] OR intervent*[tiab]) AND (communit*[tiab] OR famil*[tiab] OR spouse*[tiab] OR nurs*[tiab]))) OR ("Patient Education as Topic"[Mesh:NoExp]) AND (("Thoracic Surgery"[Mesh:NoExp]) OR ("Cardiovascular Surgical Procedures"[Mesh]) OR ("thoracic surgical procedures"[Mesh:NoExp] OR "cardiac surgical procedures"[Mesh:NoExp]) OR ("cardiopulmonary bypass"[Mesh:NoExp] OR "heart bypass, left"[Mesh:NoExp]) OR (((cardiac[tiab] OR heart[tiab] OR thoracic[tiab] OR cardiovascular[tiab] OR coronary[tiab] OR myocardial[tiab] OR pericardial[tiab] OR vascular[tiab] OR aorta[tiab] OR aortic[tiab] OR valve[tiab] OR ventricular[tiab]) AND surgery[tiab])) OR (((heart[tiab] OR aortocoronary[tiab] OR cardiopulmonary[tiab] AND (bypass[tiab] OR "by pass"[tiab]))) OR ((valve*[tiab] OR arter*[tiab]) AND (implant*[tiab] OR graft*[tiab] OR replac*[tiab] OR correct*[tiab]))) OR ((myocardial[tiab] AND (revasculari*[tiab] OR cavopulmonary[tiab]))) OR (((angioplast*[tiab] OR coronary[tiab]) AND (balloon*[tiab] OR cardiomyoplast*[tiab]))) OR ("mitral valve adj*[tiab] (repair[tiab] OR replacement*[tiab])) OR ("aortic valve repair*[tiab] OR ("maze surgery"[tiab] OR "arrhythmia surgery"[tiab]) OR ("carotid endarterectom*[tiab] OR "heart transplant*[tiab]) OR ((ventricular[tiab] AND (surg*[tiab] OR restor*[tiab] OR reconstruct*[tiab]))) AND (((("randomized controlled trial"[pt] OR ("controlled clinical trial"[pt] OR (randomized[tiab] OR (placebo[tiab] OR ("drug therapy"[sh] OR (randomly[tiab] OR (trial[tiab] OR (groups[tiab])) NOT (animals[Mesh] NOT humans[Mesh:NoExp]))	5193	17:42:17

## Future work – Polyglot upgrades

Popup warnings for when fields not in the Polyglot are used

Increased number of search fields supported

Automatic optimization of groups where possible e.g. **Infant.ti. OR baby.ti.** -> **(infant OR baby).ti.**

## Future work – (learn more about it tomorrow)

Integrate with other tools (in a more coherent workflow)

For example

1. Build search by identifying key search terms in the [Word Frequency Analyser](#)
2. Refine the search in the [Search Refiner](#) (also known as “that spider thing”)
3. Run search across databases using the [Polyglot Search Translator](#)
4. Remove duplicates using the [De-duplicator](#)

Thank you

Any questions?