

'Sieving' your search: semi- automated citation screening for search strategy refinement

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Partnership

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“Gold Standard” Validation

Validation Set



Searches checked against large set of pre-determined articles

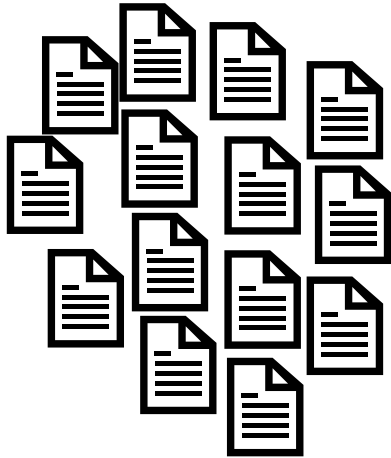
“Sensitivity” and “specificity” calculated by comparing what is retrieved *in total* to what is retrieved (and what isn’t) **from validation set**

Gives robust results, but is *very* resource intensive

We don’t usually start with a set of “gold standard” articles to test against

“Bronze medal” Validation

Validation Set



Generate a *random* set of citations from an initial search

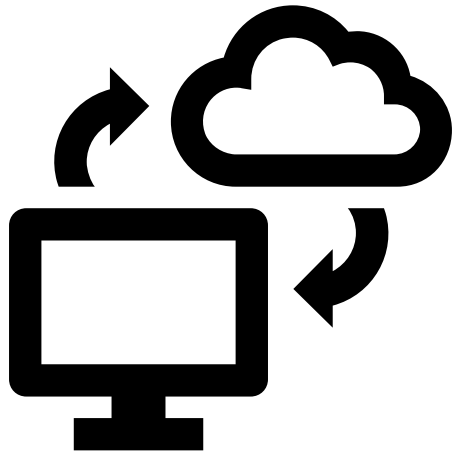
Manually evaluate those results and sort into “good” and “bad” piles

Use that ersatz validation set to *quantify* how well your initial search performs

Can use that same small validation set to **test successive variants** of your search

Variants that perform better against the validation set should perform better in the entire database (?)

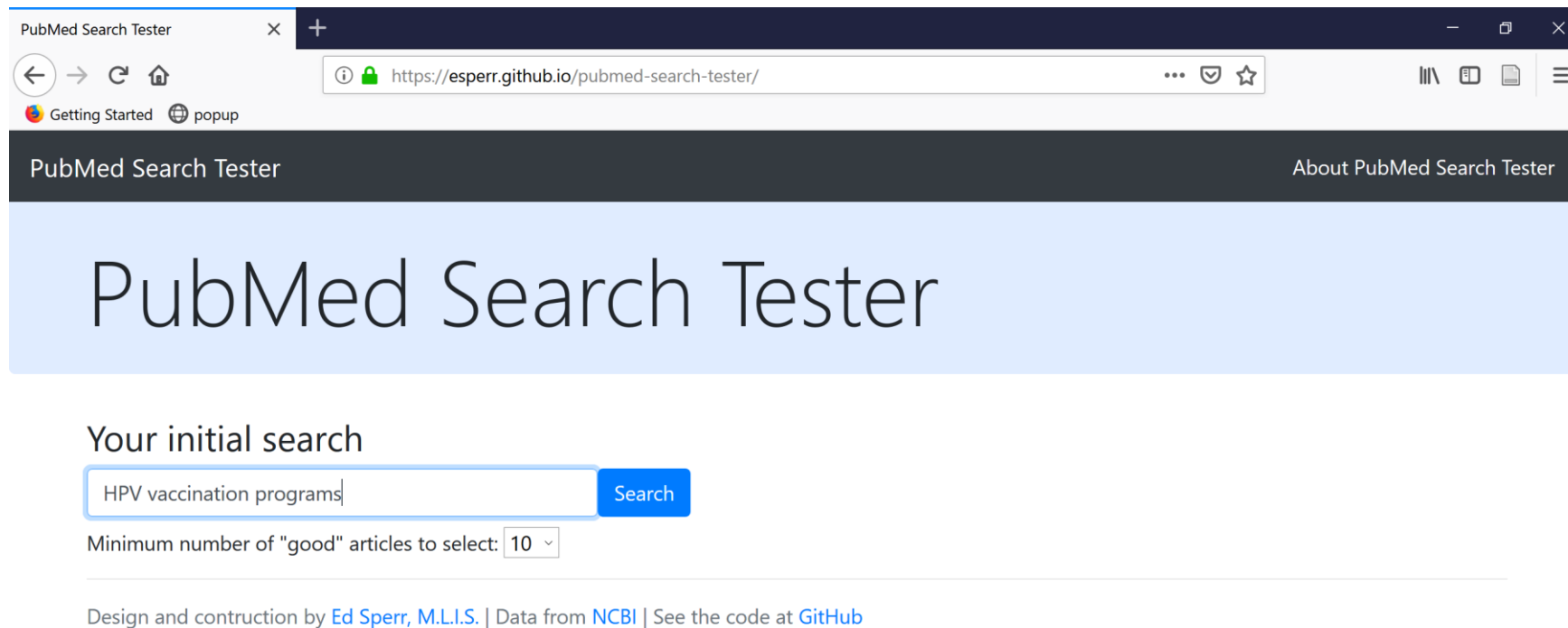
Methods



Lots of browser-based
jQuery/JavaScript

E-Utilities API used to run initial
and successive searches

<https://dataguide.nlm.nih.gov>



PubMed Search Tester

Current status: Unsorted

The epidemiology of anal cancer.

Sexual health 2012 Dec; 9 (6): 504-8

Grulich AE, Poynten IM, Machalek DA, Jin F, Templeton DJ, Hillman RJ

Anal cancer comprises malignancies of the anal canal principally of two morphologic variants: squamous cell carcinoma (SCC) and adenocarcinoma. In most settings, SCC comprises more than 70% of cases. In the general population, anal cancer is uncommon, with age-standardised incidence rates mostly between 1 and 2 per 100000 per year. However, incidence of anal SCC is increasing by 1-3% per year in developed country settings. High-risk human papillomavirus (HPV) types can be detected in 80-90% of all anal SCC cases, making it second only to cervical cancer in the closeness of its association with this virus. HPV-16 can be detected in ~90% of HPV-positive cases of anal SCC. Case-control studies have demonstrated that sexual risk factors (homosexuality in men and multiple sexual partners in women) are strongly associated with anal cancer risk. Other risk factors include immune deficiency and tobacco exposure. Anal cancer rates are highest in homosexual men, particularly in those who are HIV-positive, in whom anal cancer is among the most common of all cancers. Vaccination against HPV holds great promise for anal cancer prevention for those not already HPV-infected. For the current generation of adult high-risk populations, screening programs to allow early detection and treatment are under investigation.

PMID: [22958581](#)

← Bad 1 Skip → Good

documents: 0

PubMed Search Tester

https://esperr.github.io/pubmed-search-tester/

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Unsorted documents: 17 Show all	"Good" documents: 10 Show all	"Bad" documents: 13 Show all	Skipped documents: 0 Show all
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Design and contruction by [Ed Sperr, M.L.I.S.](#) | Data from [NCBI](#) | See the code at [GitHub](#)

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Unsorted documents: 17
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"Good" documents: 10
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- Country recommendations on the inclusion of HPV vaccines in national immunization programmes among high-income countries, June 2006-January 2008.
- Multilevel correlates for human papillomavirus vaccination of adolescent girls attending safety net clinics.
- Upgrading public health programs for human papillomavirus prevention and control is possible in low- and

"Bad" documents: 13
[Show all](#)

- Human papillomavirus vaccination: the policy debate over the prevention of cervical cancer--a commentary.
- Human papillomavirus infection and cervical cancer prevention in Japan and Korea.
- An overview on the implementation of HPV vaccination in Europe.
- Preparing for the next public debate: universal vaccination against hepatitis B.

Skipped documents: 0
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Start testing Try

Unsorted documents: 17

Show all

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documents: 0

Current status: **Good**

Multilevel correlates for human papillomavirus vaccination of adolescent girls attending safety net clinics.

Vaccine 2012 Mar 16; 30 (13): 2368-75

Tiro JA, Pruitt SL, Bruce CM, Persaud D, Lau M, Vernon SW, Morrow J, Skinner CS

Adolescent HPV vaccination in minority and low income populations with high cervical cancer incidence and mortality could reduce disparities. Safety-net primary care clinics are a key delivery site for improving vaccination rates in these populations. To examine prevalence of HPV initiation (≥ 1 dose), completion (receipt of dose 3 within 12 months of initiation), and receipt of 3 doses in four safety-net clinics as well as individual-, household-, and clinic-level correlates of initiation. We used multilevel modeling to investigate HPV initiation among 700 adolescent females who sought primary care in four safety-net clinics in Dallas, Texas from March 2007 to December 2009. Data were abstracted from patients' paper and electronic medical records. HPV vaccine uptake varied significantly by clinic. Across clinics, initiation was 36.6% and completion was 39.7% among those who initiated. In the total study population, only 15.7% received all three doses. In multivariate, two-level logistic regression analyses, initiation was associated with receipt of other adolescent vaccines, influenza vaccination in the year prior to data abstraction, being sexually active, and having more chart documentation (presence of health maintenance questionnaire and/or immunization record). There was no association between initiation and age, race/ethnicity, or insurance status. In four urban safety-net clinics, HPV initiation rates paralleled 2008 national rates. The correlation of HPV initiation with other adolescent vaccines underscores the importance of reviewing vaccination status at every health care visit. HPV vaccine uptake in safety-net clinics should continue to be monitored to understand impact on cervical cancer disparities.

PubMed Search Tester

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Refine your search

[Test this version](#)

Initial Search	Total found	Number screened	Good cites (Ratio)	Bad cites (Ratio)
HPV vaccination programs	1254	23	10 (0.435)	13 (0.565)

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PubMed Search Tester

Missed opportunities for catch

https://esperr.github.io/pubmed-search-tester/

Getting Started popup

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Refine your search

Papillomavirus Vaccines[mesh] [Test this version](#)

Initial Search	Total found	Number screened	Good cites (Ratio)	Bad cites (Ratio)
HPV vaccination programs	1254	23	10 (0.435)	13 (0.565)

Search variant	Total found	Found from screened set	Good cites found(Ratio)	Bad cites found(Ratio)
HPV vaccine program	1315	6	3 (0.5)	3 (0.5)
HPV vaccine public	2690	11	7 (0.636)	4 (0.364)
Papillomavirus Vaccines[mesh]	7035	16	9 (0.563)	7 (0.438)

Give it a try!

<https://esperr.github.io/pubmed-search-tester/>

Source at:

<https://github.com/esperr/pubmed-search-tester>

Want to collaborate?

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