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Searching for existing evidence to support regulatory approval and other purposes

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Objectives

- Introduce searching
  for diagnostic test studies
  - Formulate a search strategy
  - Search for evidence reviews
  - Search PubMed

- Demonstration, group work
  & practical searching

Antibiotic resistance 'could end modern medicine': UK's chief doctor issues stark warning as study reveals most of us don't even know what term really means

Superbugs could kill 10 million people a YEAR if global governments do not raise £25 billion to pay for new antibiotics, expert warns

PM says growing resistance to antibiotics risks 'unbelievably bad' crisis amid claims minor ailments will soon carry 'risk of death'

GPs 'pressured' over antibiotics: Nearly half of doctors hand out medication 'just to get rid of pushy patients'

Role of point of care tests for respiratory tract infections in primary care before prescribing antibiotics?

Asking the right questions?

- What is the diagnostic accuracy of current point of care tests for respiratory tract infections?

- Is POCT for respiratory tract infections cost-effective?

- Does POCT for respiratory tract infections reduce the prescription of antibiotics in primary care?

- How do patients feel when they aren't prescribed antibiotics for respiratory symptoms following a negative POCT for bacterial infection?

- How has POCT for respiratory tract infections been integrated into the workflow of general practices?

Overarching question

- P = Patients attending primary care
- I = point of care test
- R = laboratory test
- T = respiratory tract infections

1ˢᵗ step: identify overviews

- Secondary sources
  - Evidence syntheses, horizon scanning reports, systematic reviews...
- Search terms
  - Point of care tests
  - Respiratory tract infections
- Run a quick search on the web-site listed in your envelope

Useful resources for overviews

- TRIP database www.tripdatabase.com

- NHS Evidence Search www.evidence.nhs.uk

- Epistemenikos http://www.epistemonikos.org/

- PubMed Clinical Queries http://www.ncbi.nlm.nih.gov/pubmed/clinical

- Google http://www.google.com

2nd step: identify DTA studies

- Develop search strategy
  - Identify synonyms
  - Combine with Boolean operators – AND/OR
  - Use advanced searching techniques - * ""

- Apply filter for diagnostic accuracy studies
- Run search on PubMed www.pubmed.gov

In small groups

- What is the **diagnostic accuracy** of **point of care tests** for **respiratory tract infections**?
- For your search, think of alternative terms/synonyms for:

  – Point of care tests
  – Respiratory tract infections
  – Diagnostic accuracy

- Fill out your PIRT sheet

Search tips

- AND – combine 2 different concepts to focus you search e.g. poct AND chlamydia
- OR – combine synonyms for the same concept to broaden your search e.g. "point of care" OR poct
- () – nesting to put a search together e.g. ("point of care" OR poct) AND chlamydia
- * - truncation to identify variant spellings e.g. test* for capturing test, tests, testing…
- "" – phrase searching, two or more words next to each other
- [field searching] – search for words in specific areas of a PubMed record e.g. [ti] restricts to title

Quick search strategy for PubMed Clinical Queries

("point of care" OR poc OR poct OR rapid test*) AND (respiratory tract infection* OR chest infection* OR pneumonia OR pharyngitis)

http://www.pubmed.gov

Advanced search strategy for PubMed

10   3 AND 6 AND 9

9   7 OR 8

8   Search (((sensitivity[Title/Abstract]) OR specificity[Title/Abstract]) OR "predictive value"[Title/Abstract]) OR diagnos*[Title]

7   Search ("Sensitivity and Specificity"[Mesh]) OR "Diagnosis"[Majr:NoExp]

6   4 OR 5

5   Search (((respiratory tract infection*[Title/Abstract]) OR chest infection*[Title/Abstract]) OR pneumonia[Title/Abstract]) OR pharyngitis[Title/Abstract]

4   Search "Respiratory Tract Infections"[Mesh]

3   1 OR 2

2   Search ((("point of care"[Title/Abstract]) OR poct[Title/Abstract]) OR poc[Title/Abstract]) OR rapid test*[Title/Abstract]

1   Search "Point-of-Care Systems"[Mesh]

http://www.pubmed.gov

- Run the search yourself on PubMed:

  – Clinical queries
  – Advanced search

- If you have your own question then search for that instead

www.pubmed.gov

3rd step: identify other studies

- Adapt your search strategy
  - Filter for cost studies
  - Filter for implementation studies
  - Filter for qualitative studies

- Design your own filter or use PubMed Topic-Specific Queries

More information on searching

- PubMed tutorials
  www.nlm.nih.gov/bsd/disted/pubmed.html

- Cochrane Handbook for DTA reviews
  http://srdta.cochrane.org/handbook-dta-reviews

- CRD's guidance for undertaking reviews in health care
  www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf

- Searching Skills Toolkit
  http://eu.wiley.com/WileyCDA/WileyTitle/productCd-EHEP003109.html