

# HSE National Framework for developing PPPGs (2016)

## Part 2 Finding and Appraising the Evidence for PPPGs

July 2019

# hello  
my name is...

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Dr. Steevens' Hospital Dublin





## Part 2: Learning Outcomes

- ✓ Define Evidence-Based Practice
- ✓ Use EBP framework to compose a question for a literature search
- ✓ Use EBP framework to locate the evidence via electronic resources
- ✓ Use EBP framework to appraise the evidence



# Evidence-Based Practice

“Evidence-Based Practice requires that decisions about health care are based on the best available, current, valid and relevant evidence. These decisions should be made by those receiving care, informed by the tacit and explicit knowledge of those providing care, within the context of available resources. All health care professionals need to understand the principles of Evidence Based Practice (EBP), recognise it in action, implement evidence-based policies, and have a critical attitude to their own practice and to evidence. Without these skills professionals will find it difficult to provide best practice.” (*Sicily Statement on Evidence-Based Practice, 2005*)



# The 5 Steps of EBP:



Please see HSE's 'Evidence-Based Practice: A Practice Manual' (2014):  
<http://www.lenus.ie/hse/bitstream/10147/317326/1/EBPManual.pdf>

# The 5 Steps of EBP:

1. **ASK** patient-centred, focused question(s) - construct well-built clinical questions
2. **ACQUIRE** the best evidence relevant to your questions - select the appropriate resource(s), conduct search(es)
3. **APPRAISE** the evidence for validity (closeness to the truth) and applicability (usefulness in clinical practice)
4. **APPLY** the evidence through collaborative decision-making, integration with clinical expertise, patient preferences
5. **ASSESS** outcomes and make changes to practice as necessary

# Step 1: Ask a Focused Question

A focused, answerable question  
(usually) contains three parts,  
also known as **PICO**:

- **P**atient/Population/Problem
- **I**ntervention/Exposure
- **C**omparison (this part can be left out if no comparisons are being made)
- **O**utcome
- **T**ime (sometimes applicable)

# Scenario 1

A patient is going on a long-haul flight. They have a tendency to get swollen ankles and have heard that wearing elastic compression stockings can prevent the occurrence of Deep Vein Thrombosis



# Sample PICO 1

In passengers on long-haul flights,  
does wearing elastic compression stockings,  
compared to no stockings, prevent DVT?

- Passengers on long-haul flights (P)
- Elastic Compression Stockings (I)
- No Stockings (C)
- Deep Vein Thrombosis (DVT) (O)



## Scenario 2

A 64 year old post- menopausal woman with a mild history of heart disease wants advice about HRT, especially oestrogen replacement therapy, which she fears may affect her heart condition



## Sample PICO 2

What are the risks of exacerbating heart disease in a 64 year-old postmenopausal woman receiving oestrogen replacement therapy?

- Post-menopausal woman (P)
- Oestrogen-replacement therapy (I)
- None (C)
- Exacerbating Heart Disease (O)

# Scenario 3

As records manager in an acute hospital, you have been asked to investigate upgrading to a digital dictation system as a means of improving efficiency and turnaround time in the production of reports and letters



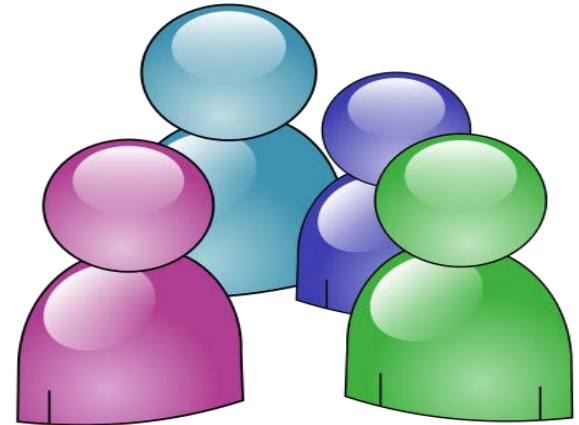
## Sample PICO 3

Does digital dictation, compared to traditional analogue tapes, lead to shorter turnaround time for the production of letters and reports in a medical records department?

- Medical Records Department (P)
- Digital dictation system (I)
- Analogue tapes (C)
- Faster turnaround time for letters and reports (O)

# Exercise

- Working in pairs, think of a work-related query or scenario that you recently experienced
- PICO your chosen scenario/query
- Feedback to larger group



# Scenario 4

The nursing home where you work is drawing up a new infection control policy. You have heard that simple hand-washing is effective for preventing the spread of Healthcare Associated Infections. You have been tasked with searching the literature for formulating the new policy



# Sample PICO 4

**P**

Synonym 1  
OR  
Synonym 2

**I**

Synonym 1  
OR  
Synonym 2

**C**

Synonym 1  
OR  
Synonym 2

**O**

Synonym 1  
OR  
Synonym 2

**AND**

**AND**

**AND**

# Sample PICO 4

**P**

Nursing  
homes  
OR  
Long-term  
Care  
Facilities

**I**

Handwashing  
OR  
Hand-washing  
OR  
Hand hygiene

**C**

No  
Comparison

**O**

Healthcare  
Associated  
Infections  
OR  
HCAIs  
OR  
Infection  
Control

**AND**

**AND**

**AND**



## Step 2: Locate the Evidence

Your choice of database or information resource will depend on:

- Time available
- What resources you have access to
- Type of information you require
- What you need the information for
- Your area of expertise



# Step 2: Some Health Information Resources

## Databases

- PubMed
- MEDLINE (sub-set of PubMed)
- Cochrane Library
- CINAHL
- Embase

## Controlled vocabularies

- MeSH (PubMed, MEDLINE)
- CINAHL Headings (CINAHL)
- EMTREE (Embase)
- MeSH can also be used within CINAHL, Cochrane Library and Embase

## Grey Literature

- Clinicaltrials.gov
- World Health Organization ICTRP Search Portal
- CDC Stacks (Centres for Disease Control)
- OAlster database
- OpenDOAR
- OpenGrey
- Research theses
- Conference proceedings

**NB: start creating user accounts in the databases you use (where possible) – options to save searches, save citations, save search history, share bibliographies, create alerts and Table of Contents (TOC) alerts**



# Search Strategies (1/6)

## Boolean operators (AND, OR, NOT)

- Using AND between terms will narrow a search - each term must appear in your search results
- Using OR between terms will broaden a search - either term must appear in your search results
- Using NOT between terms is a way of excluding a term (or terms) but this can be tricky. It is **not advisable** to use this operator unless you are sure it won't exclude potentially relevant, related or useful material

Examples:

*heart* **AND** *lung* finds items that contain **both** *heart* and *lung*

*heart* **OR** *lung* finds items that contain **either** *heart* **or** *lung*

*heart* **NOT** *lung* finds items that contain *heart* **but do not contain** *lung*

Phrase searching (using quotation marks “ ”) - when you want to search for an exact sentence or phrase rather than a set of keywords

Examples:

“multiple sclerosis” instead of ‘multiple’ AND ‘sclerosis’

“nursing homes” instead of ‘nursing’ AND ‘homes’



# Search Strategies (2/6)

**Truncation** is represented by an asterisk (\*) and used to search for variant endings of a term. To use truncation, enter the root or core letters (at least three letters required) of a search term and replace the ending with an \*

Example:

nurs\* = will retrieve nurse, nurses, nursing, nursed etc.

**Wildcards** are represented by a question mark (?) or the hashtag symbol (#)

? – if you are unsure of the exact spelling of a term, you can use the question mark to search for *one* unknown letter. This is also useful for U.S. vs. British spelling variations (e.g. s/z)

Examples:

ne?t = will retrieve results containing neat, nest or next etc.

paraly?e = will retrieve results containing paralyse and paralyze

# - you can use the hashtag symbol to search for terms where an alternate spelling *may* contain an extra character and you wish to retrieve results containing both variations

Example:

tumo#r = will retrieve results containing tumor *and* tumour

**NB: wildcards and truncation cannot be combined for a term in a search - a search for p#ediatric\* would be the same as a search for p\*. When using the # wildcard, plurals and possessives of that term are not searched - a search for colo#r will not retrieve "colors" or "colours"**

# Search Strategies (3/6)

## Proximity Operators

Depending on the database, you can use a *proximity search* to search for two or more words that occur within a specified number of words (or fewer) of each other in e.g. the title, abstract, title & abstract. Usually, the proximity operators are composed of a letter (**N** or **W**) and a **number** (to specify the number of words). The proximity operator is placed between the words that are to be searched, and depending on the database, may be as follows:

**Near Operator (N) or W/n (within)** – where the words in the query must be within a specified number of words, regardless of the order in which they appear.

For example:

**health N5 reform** will find results that would match '*health reform*' as well as '*reform of health*'

**PRE/n** - where the first term in the query must precede the second by a specified number of terms. E.g. '**behavioural PRE/3 disturbances**' would find articles in which '*behavioural*' precedes '*disturbances*' by three or fewer words

**NEAR, NEXT, ADJ** – depending on the database, these are other terms for proximity operators

# Search Strategies (4/6)

## Parentheses

Parentheses (brackets) allow you to execute a search in a logical, structured manner. They are particularly useful when you are using synonyms and the Boolean 'OR' operator. Most databases will allow you to use brackets and the 'OR' operator to search for references containing either word. For example: using the nursing home and hand hygiene scenario, where synonyms have been chosen etc., the search strategy may look as follows:

nursing homes OR long-term care facilities AND handwashing OR hand-washing OR hand hygiene AND healthcare associated infections OR HCAs OR infection control

Using brackets will make the search more logical/structured, as follows:

(nursing homes OR long-term care facilities) AND (handwashing OR hand-washing OR hand hygiene) AND (healthcare associated infections OR HCAs OR infection control)

# Search Strategies (5/6)

## Search filters/refining your search results

Once you have your search results, you may refine these by applying such filters as (where available) e.g. material type, date range/publication years, language, gender, age, geography – there are many to choose from in the various databases. How far back do you want to search? What language would you prefer the articles to be in? What type of articles would you like to retrieve? (e.g. Clinical Trial, Practice Guideline, Randomized Controlled Trial, Controlled Clinical Trial, Meta-analysis, EBM review, Systematic Review, Research...)

To note:

- Full-text – this may seem like a good option, however, by selecting this filter/limit, you won't retrieve (what may be hundreds of) excellent, relevant evidence-based citations. The material may be available as full-text via another database – check!
- English language – as there is some foreign language material in CINAHL and Medline, this filter can be a useful one. However, this can be interpreted as being compromised as there could be excellent evidence available in a foreign language
- Human/Animal/Gender/Age – use these limits where appropriate. Depending on the topic at hand, you may only be interested in studies of humans of a particular gender or age

# Search Strategies (6/6)

## Saving/managing your search results

- You will usually be able print, email or save references/citations, and/or add them to folders that you create in your personal account within a database
- To note: PubMed's version of folders is called 'Collections'. With PubMed, you also have the option to share folders/bibliographies with colleagues, so long as they too have PubMed accounts
- Check with each database you use how to a) save searches, b) view your search history (where available), c) save citations, d) save full-text articles (where these are available)
- You may also wish to set up alerts for particular keywords, authors or phrases and/or Table of Contents (TOC) alerts – alerts may be set daily, weekly, monthly etc. and will help keep you up-to-date with recently published material

Always have a look at the 'Help' or 'Tutorials' pages within each database and don't forget to contact your local information specialist for assistance with any of these strategies or for further information and guidance



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- PubMed has been available since 1996. Its >28 million references include the MEDLINE database and the following types of citations:
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  - Citations to author manuscripts of articles published by NIH-funded researchers
- MEDLINE is the National Library of Medicine (NLM) journal citation database. Started in the 1960s, it now provides more than 24 million references to biomedical and life sciences journal articles back to 1946. MEDLINE includes citations from more than 5,200 scholarly journals published around the world
- The MEDLINE database is directly searchable from NLM as a subset of the PubMed database as well as through other numerous search services that obtain the data from NLM's Data Distribution program. In addition to the comprehensive journal selection process, what sets MEDLINE apart from the rest of PubMed is the added value of using the NLM controlled vocabulary, Medical Subject Headings (MeSH), to index citations



# MeSH (Medical Subject Headings)

- MeSH is the NLM's controlled vocabulary thesaurus and used to describe the subject of each journal article in MEDLINE. It contains approximately 28,000 terms and is updated annually to reflect changes in medicine and medical terminology. The terms are arranged hierarchically (and alphabetically) by subject categories with more specific terms arranged beneath broader terms. PubMed allows you to view this hierarchy and select terms for searching in the MeSH Database. At the most general level of the hierarchical structure are very broad headings e.g. “Anatomy”. More specific headings are found at narrower levels of the thirteen-level hierarchy, such as “Ankle”
- Entry terms – over 90,000 relating to the 28,000 terms. They assist you in finding the most appropriate MeSH heading(s). For example, ‘Vitamin C’ is an **entry term** to “Ascorbic Acid” (MeSH heading)



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[Smiles as signals of lower status in football players and fashion models: evidence that smiles are associated with lower dominance and lower prestige.](#)  
Evol Psychol. 2012.

[Fasting Activates Fatty Acid Oxidation to Enhance Intestinal Stem Cell Function during Homeostasis and Aging.](#)  
Cell Stem Cell. 2018.

[The first horse herders and the impact of early Bronze Age steppe expansions into Asia.](#)

Have a look at the Quick Start Guide, Tutorials and MeSH database in addition to Clinical Queries





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- [Assessing a National Collaborative Program To Prevent Catheter-Associated Urinary Tract Infection in a Veterans Health Administration Nursing Home Cohort.](#)  
 Krein SL, Greene MT, King B, Welsh D, Fowler KE, Trautner BW, Ratz D, Saint S, Roselle G, Clifton M, Kralovic SM, Martin T, Mody L.  
 Infect Control Hosp Epidemiol. 2018 May 10:1-6. doi: 10.1017/ice.2018.99. [Epub ahead of print]  
 PMID: 29745358 [Similar articles](#)
- [Risk factors of fecal colonization with extended-spectrum  \$\beta\$ -lactamase-producing \*Enterobacteriaceae\* in special nursing homes in Japan.](#)  
 Yokoyama K, Uehara Y, Sasaki T, Hiramatsu K.  
 J Gen Fam Med. 2018 Mar 23;19(3):90-96. doi: 10.1002/jgf2.161. eCollection 2018 May.  
 PMID: 29744262 [Free PMC Article](#) [Similar articles](#)
- [High Prevalence and Frequent Acquisition of Clostridium difficile Ribotype 002 Among Nursing Home Residents in Hong Kong.](#)  
 Luk S, Ho AYM, Chan EHY, Tsang IHL, Ng TK, To WK, Choi KW, Wong ATY.  
 Infect Control Hosp Epidemiol. 2018 May 7:1-6. doi: 10.1017/ice.2018.92. [Epub ahead of print]  
 PMID: 29733004 [Similar articles](#)
- [Nasal colonization with methicillin-resistant Staphylococcus aureus among elderly living in nursing homes in Brazil: risk factors and molecular epidemiology.](#)  
 da Silveira M, da Cunha MLRS, de Souza CSM, Correa AAF, Fortaleza CMCB.  
 Ann Clin Microbiol Antimicrob. 2018 May 4;17(1):18. doi: 10.1186/s12941-018-0271-z.  
 PMID: 29728115 [Free PMC Article](#)

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# Pubmed Search Details:

- 6. [Transfer Status: A Significant Risk Factor for Mortality in Emergency General Surgery Patients Requiring Colon Resection.](#)  
DeWane MP, Davis KA, Schuster KM, Erwin SP, Maung AA, Becher RD.  
J Trauma Acute Care Surg. 2018 Apr 16. doi: 10.1097/TA.0000000000001939. [Epub ahead of print]  
PMID: 29664889  
[Similar articles](#)
- 7. [Long-term care facility National Healthcare Safety Network enrollment challenges, 2016.](#)  
Sutherland S, Meyer R.  
Am J Infect Control. 2018 Apr 13. pii: S0196-6553(18)30103-2. doi: 10.1016/j.ajic.2018.02.008. [Epub ahead of print]  
PMID: 29661624  
[Similar articles](#)
- 8. [The efficacy of a nested PCR in detecting cytochrome c oxidase subunit 1 gene of Sarcoptes scabiei var. Hominis for diagnosing scabies.](#)  
Hahm JE, Kim CW, Kim SS.  
Br J Dermatol. 2018 Apr 6. doi: 10.1111/bjd.16657. [Epub ahead of print]  
PMID: 29624634  
[Similar articles](#)

**Find related data**

Database:

**Search details**

```
("nursing homes"[MeSH Terms] OR  
("nursing"[All Fields] AND "homes"  
[All Fields]) OR "nursing homes"[All  
Fields]) AND ("infection control"  
[MeSH Terms] OR ("infection"[All
```

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("nursing homes"[MeSH Terms] OR ("nursing"[All Fields] AND "homes"[All Fields]) OR "nursing homes"[All Fields]) AND ("infection control"[MeSH Terms] OR ("infection"[All Fields] AND "control"[All Fields]) OR "infection control"[All Fields])

# Sample PICO 4

**P**

Nursing  
homes  
OR  
Long-term  
Care  
Facilities

**AND**

**I**

Handwashing  
OR  
Hand-washing  
OR  
Hand hygiene

**AND**

**C**

No  
Comparison

**AND**

**O**

Healthcare  
Associated  
Infections  
OR  
HCAIs  
OR  
Infection  
Control





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(nursing homes OR long-term care facilities) AND (handwashing OR hand-washing OR hand hygiene) AND (healthcare associated infections OR

Search

### Clinical Study Categories

Category:

Scope:

### Systematic Reviews

### Medical Genetics

Topic:

#### Results: 5 of 52

Impact of a multicomponent hand hygiene-related intervention on the infectious risk in nursing homes: A cluster randomized trial.  
Temime L, Cohen N, Ait-Bouziad K, Denormandie P, Dab W, Hocine MN. Am J Infect Control. 2018 Feb; 46(2):173-179. Epub 2017 Oct 5.

Interventions to improve hand hygiene compliance in patient care.  
Gould DJ, Moralejo D, Drey N, Chudleigh JH, Taljaard M. Cochrane Database Syst Rev. 2017 Sep 1; 9:CD005186. Epub 2017 Sep 1.

Behavioral Interventions to Reduce Infections in Pediatric Long-term Care Facilities: The Keep It Clean for Kids Trial.  
Larson EL, Murray MT, Cohen B, Simpson E, Pavia M, Jackson O, Jia H, Hutcheon RG, Mosiello L, Neu N, et al. Behav Med. 2018 Apr-Jun; 44(2):141-150. Epub 2017 Mar 3.

Effect of antibiotic stewardship on the incidence of infection and colonisation with antibiotic-resistant bacteria and Clostridium difficile infection: a systematic review and meta-analysis.  
Baur D, Gladstone BP, Burkert F, Carrara E, Foschi F, Döbele S, Tacconelli E. Lancet Infect Dis. 2017 Sep; 17(9):990-1001. Epub 2017 Jun 16.

#### Results: 5 of 15

A systematic review of transmission dynamic studies of methicillin-resistant Staphylococcus aureus in non-hospital residential facilities.  
Kwok KO, Read JM, Tang A, Chen H, Riley S, Kam KM. BMC Infect Dis. 2018 Apr 18; 18(1):188. Epub 2018 Apr 18.

Interventions to improve hand hygiene compliance in patient care.  
Gould DJ, Moralejo D, Drey N, Chudleigh JH, Taljaard M. Cochrane Database Syst Rev. 2017 Sep 1; 9:CD005186. Epub 2017 Sep 1.

Effect of antibiotic stewardship on the incidence of infection and colonisation with antibiotic-resistant bacteria and Clostridium difficile infection: a systematic review and meta-analysis.  
Baur D, Gladstone BP, Burkert F, Carrara E, Foschi F, Döbele S, Tacconelli E. Lancet Infect Dis. 2017 Sep; 17(9):990-1001. Epub 2017 Jun 16.

Systematic Review of Interventions to Reduce Urinary Tract Infection in Nursing Home Residents.  
Meddings J, Saint S, Krein SL, Gaies E, Reichert H, Hickner A, McNamara S, Mann JD, Mody L. J Hosp Med. 2017 May; 12(5):356-368.

#### Results: 5 of 6

Outbreak of multidrug-resistant Acinetobacter baumannii in an intensive care unit.  
Dettori M, Piana A, Deriu MG, Lo Curto P, Cossu A, Musumeci R, Cocuzza C, Astone V, Contu MA, Solgiu G. New Microbiol. 2014 Apr; 37(2):185-91. Epub 2014 Apr 1.

Extended-spectrum  $\beta$ -lactamase-producing Enterobacteriaceae in French nursing homes: an association between high carriage rate among residents, environmental contamination, poor conformity with good hygiene practice, and putative resident-to-resident transmission.  
Cochar H, Aubier B, Quentin R, van der Mee-Marquet N, Réseau des Hygiénistes du Centre. Infect Control Hosp Epidemiol. 2014 Apr; 35(4):384-9.

Acute hepatitis B outbreaks in 2 skilled nursing facilities and possible sources of transmission: North Carolina, 2009-2010.  
Sefia AC, Moorman A, Njord L, Williams RE, Colborn J, Khudyakov Y, Drobenuc J, Xia GL, Wood H, Moore Z. Infect Control Hosp Epidemiol. 2013 Jul; 34(7):709-16. Epub 2013 May 16.

Norovirus outbreaks on three college campuses - California, Michigan, and Wisconsin, 2008.  
Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep. 2009 Oct 9; 58(39):1095-100.





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Cochrane Database Syst Rev. 2017 Sep 1;9:CD005186. doi: 10.1002/14651858.CD005186.pub4.

## Interventions to improve hand hygiene compliance in patient care.

Gould DJ<sup>1</sup>, Moralejo D, Drey N, Chudleigh JH, Taljaard M.

### Author information

#### Abstract

**BACKGROUND:** Health care-associated infection is a major cause of morbidity and mortality. Hand hygiene is regarded as an effective preventive measure. This is an update of a previously published review.

**OBJECTIVES:** To assess the short- and long-term success of strategies to improve compliance to recommendations for hand hygiene, and to determine whether an increase in hand hygiene compliance can reduce rates of health care-associated infection.

**SEARCH METHODS:** We conducted electronic searches of the Cochrane Register of Controlled Trials, PubMed, Embase, and CINAHL. We conducted the searches from November 2009 to October 2016.

**SELECTION CRITERIA:** We included randomised trials, non-randomised trials, controlled before-after studies, and interrupted time series analyses (ITS) that evaluated any intervention to improve compliance with hand hygiene using soap and water or alcohol-based hand rub (ABHR), or both.

**DATA COLLECTION AND ANALYSIS:** Two review authors independently screened citations for inclusion, extracted data, and assessed risks of bias for each included study. Meta-analysis was not possible, as there was substantial heterogeneity across studies. We assessed the certainty of evidence using the GRADE approach and present the results narratively in a 'Summary of findings' table.

**MAIN RESULTS:** This review includes 26 studies: 14 randomised trials, two non-randomised trials and 10 ITS studies. Most studies were conducted in hospitals or long-term care facilities in different countries, and collected data from a variety of healthcare workers. Fourteen studies assessed the success of different combinations of strategies recommended by the World Health Organization (WHO) to improve hand hygiene compliance. Strategies consisted of the following: increasing the availability of ABHR, different types of education for staff, reminders (written and verbal), different types of performance feedback, administrative support, and staff involvement. Six studies assessed different types of performance feedback, two studies evaluated education, three studies evaluated cues such as signs or scent, and one study assessed placement of ABHR. Observed hand hygiene compliance was measured in all but three studies which reported product usage. Eight studies also reported either infection or colonisation rates. All studies had two or more sources of high or unclear risks of bias, most often associated with blinding or independence of the intervention. Multimodal interventions that include some but not all strategies recommended in the WHO guidelines may slightly improve hand hygiene compliance (five studies; 56 centres) and may slightly reduce

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Online Publication Date: November 2013

**Oral health educational interventions for nursing home staff and residents**  
Martina Albrecht , Ramona Kupfer , Daniel R Reissmann , Ingrid Mühlhauser and Sascha Köpke  
Online Publication Date: September 2016

**Home -based care for reducing morbidity and mortality in people infected with HIV/AIDS**  
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Martina Albrecht , Ramona Kupfer , Daniel R Reissmann , Ingrid Mülhhauser and Sascha Kopke  
Online Publication Date: September 2016

Review



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## Infection control strategies for preventing the transmission of meticillin-resistant *Staphylococcus aureus* (MRSA) in nursing homes for older people

New search | Review | Intervention

Carmel Hughes, Michael Tunney, Marie C Bradley

First published: 19 November 2013

Editorial Group: Cochrane Wounds Group

DOI: 10.1002/14651858.CD006354.pub4 [View/save citation](#)

Cited by (CrossRef): 7 articles [Check for updates](#) [Citation tools](#)

Am score 23



- Abstract
- Background
- Objectives
- Methods
- Results
- Discussion
- Authors' conclusions
- Acknowledgements
- Data and analyses
- Appendices
- What's new
- History
- Contributions of authors
- Declarations of interest
- Sources of support

### Abstract

English | French | Spanish; Castilian

### Background

Nursing homes for older people provide an environment likely to promote the acquisition and spread of meticillin-resistant *Staphylococcus aureus* (MRSA), putting residents at increased risk of colonisation and infection. It is recognised that infection prevention and control strategies are



# Plain Language Summary-example



PDF



Info



References



Figures



Tables

and control strategies in nursing homes. Rigorous studies should be conducted in nursing homes, involving residents and staff to test interventions that have been specifically designed for this unique environment.

## Plain language summary English | [French](#) | [Croatian](#) | [Spanish; Castilian](#) | [Russian](#)

### Infection control strategies for preventing the spread of methicillin-resistant *Staphylococcus aureus* (MRSA) in nursing homes for older people

MRSA is a bacterium that can cause infection in people, particularly those who are in hospital. MRSA is now becoming a problem for older people (residents) who live in nursing homes. Nursing homes are ideal places for MRSA to spread: the residents live close to each other, many have a number of medical conditions and may receive several prescriptions for antibiotics, and some may have pressure sores and medical devices such as catheters. All of these factors increase the risk of residents getting MRSA, and so increase their risk of dying.

Many different ways of preventing the spread of MRSA have been studied, particularly in hospitals; however, we found only one study that looked at whether an infection control education and training programme influenced the spread of MRSA in nursing homes for older people. This study showed there was no difference between the group that was involved in the programme and the comparison group which continued with their normal practice.

Although there is some evidence for techniques that work well to prevent the spread of MRSA in hospital, it is not clear if these approaches will work in nursing homes for older people. Further research is needed to establish what will work in nursing homes.

## Background

Methicillin- (the International Non-proprietary Name, and British Approved Name) or methicillin- (the United States Approved Name) resistant *Staphylococcus aureus* (MRSA) has been recognised since the



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[References to studies excluded from this review](#)





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1. **Building planning and infection control: hand hygiene dispensers and individual bathrooms in residential and long-term care centres**

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2. **The role of hand hygiene in controlling norovirus spread in nursing homes.**

BMC Infectious Diseases 2016

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3. **Role of Hand Hygiene Ambassador and Implementation of Directly Observed Hand Hygiene Among Residents in Residential Care Homes for the Elderly in Hong Kong.**

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Ongoing clinical trials	100
Open	32

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- AB Abstract
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- MH Exact Subject Heading
- MJ Word in Major Subject Heading
- MM Exact Major Subject Heading
- SU Subject
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- AF Author Affiliation
- AG Age Group
- AN Accession Number
- CA Corporate Author
- CH Cochrane AN

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# CINAHL Complete

## (Cumulative Index of Nursing and Allied Health Literature)

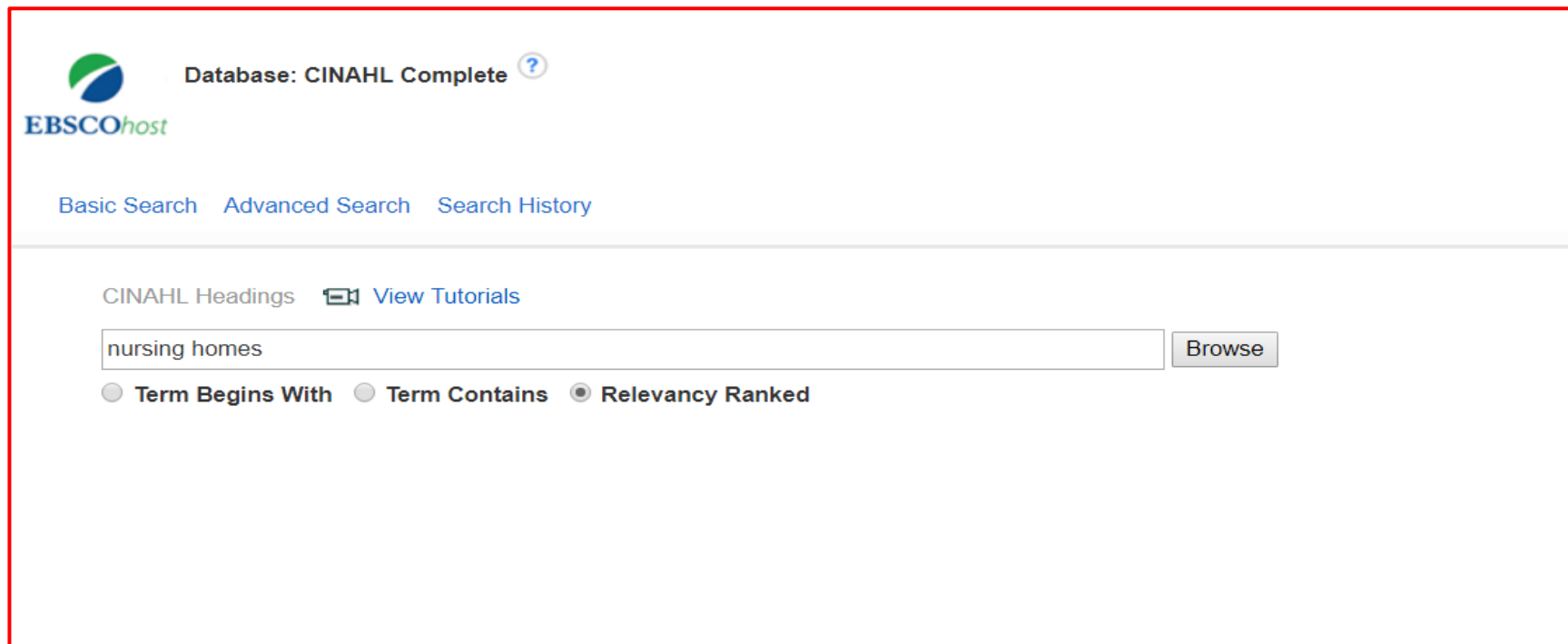
- CINAHL is a collection of nursing & allied health journals. It is a core research tool for all areas of nursing and allied health literature and also covers biomedicine, health sciences librarianship, alternative/complementary medicine, consumer health and many allied health disciplines
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- The CINAHL Subject Headings authority file is a controlled vocabulary thesaurus that assists in more effectively searching the database. Each bibliographic reference in the database is associated with a set of subject terms that are assigned to describe the content of an article
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- Based on the MeSH headings, with additional specific nursing and allied health headings added as appropriate. Each year, the headings are updated and revised relative to terminology needed in these fields. In addition, new terms from MeSH may be added. Total number of headings (May 2018) - 15,297


# CINAHL Headings



The screenshot shows the EBSCOhost search interface for the CINAHL Complete database. At the top left is the EBSCOhost logo. To its right, the text 'Database: CINAHL Complete' is displayed with a help icon. Below this are three navigation links: 'Basic Search', 'Advanced Search', and 'Search History'. A horizontal line separates this header from the main search area. In the main area, 'CINAHL Headings' is followed by a 'View Tutorials' link with a document icon. Below this is a search input field containing the text 'nursing homes' and a 'Browse' button. At the bottom of the search area, there are three radio button options: 'Term Begins With', 'Term Contains', and 'Relevancy Ranked', with the last option being selected.

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CINAHL Headings  View Tutorials







nursing homes

Term Begins With  Term Contains  Relevancy Ranked

# CINAHL Headings

**Results For: nursing homes**

Check box to view subheadings. | Click linked term for tree view.

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<input type="checkbox"/> <a href="#">Nursing Home Design and Construction</a>	<input type="checkbox"/>	<input type="checkbox"/>	
Nursing Homes Design and Construction <b>Use:</b> <a href="#">Nursing Home Design and Construction</a>			
Nursing Homes Design <b>Use:</b> <a href="#">Nursing Home Design and Construction</a>			
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<input type="checkbox"/> <a href="#">Nursing Home Personnel</a>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> <a href="#">Nursing Home Patients</a>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> <a href="#">Home Nursing, Professional</a>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> <a href="#">Home Nursing</a>	<input type="checkbox"/>	<input type="checkbox"/>	

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Check a box to select a subject heading to begin building your search strategy.

# CINAHL Headings

Results For: nursing homes
Subheadings for: Nursing Homes
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☐ Check box to view subheadings. | Click linked term for tree view.

	Explode (+) ?	Major Concept	Scope
<input checked="" type="checkbox"/> <a href="#">Nursing Homes</a>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> <a href="#">Nursing Home Design and Construction</a>	<input type="checkbox"/>	<input type="checkbox"/>	
Nursing Homes Design and Construction <b>Use:</b> <a href="#">Nursing Home Design and Construction</a>			
Nursing Homes Design <b>Use:</b> <a href="#">Nursing Home Design and Construction</a>			
Design and Construction Nursing Homes <b>Use:</b> <a href="#">Nursing Home Design and Construction</a>			
<input type="checkbox"/> <a href="#">Nursing Home Personnel</a>	<input type="checkbox"/>	<input type="checkbox"/>	

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Search Term | Explode (+) | Major Concept

[Nursing Homes](#)

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## 1. Patient-centered mobility outcome preferences according to individuals with stroke and caregivers: a qualitative analysis.



Academic  
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(includes abstract) Krishnan, Shilpa; Pappadis, Monique R.; Weller, Susan C.; Fisher, Steve R.; Hay, Catherine C.; Reistetter, Timothy A.; Disability & Rehabilitation, Jun2018; 40(12): 1401-1409. 9p. (Article - research, tables/charts) ISSN: 0963-8288

**Subjects:** Patient Centered Care; Physical Mobility; Stroke Rehabilitation; Stroke Patients; Caregivers; Family; Occupational Therapy; Physical Therapy; Adult: 19-44 years; Middle Aged: 45-64 years; Aged: 65+ years; Aged, 80 & over; Male; Female





# Major & Minor Headings

- Titles, abstracts and the full article are reviewed by indexers to determine what the article is about. Once the topic(s) are determined (either about a disease, procedure, concept, issue, etc.) a further determination is made as to what specific area of the topic is covered (specific type of therapy, diagnosis, etc.). The indexer will then decide which specific headings to use to cover the topic(s) and further qualify those headings with subheadings such as nursing, therapy, manpower, etc., to outline the specific area of the topic being discussed – these are described as "major" headings
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- In research studies, all research methodology terms indicating the type of research undertaken (e.g. qualitative study, cohort study, clinical trial, odds ratio etc.) are assigned as minor headings, as is the population, age group and geographic area (unless they are part of main topic(s)/discussion, in which case they will be assigned as major headings)

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## 1. Patient-centered mobility outcome preferences according to individuals with stroke and caregivers: a qualitative analysis.



Academic Journal

(includes abstract) Krishnan, Shilpa; Pappadis, Monique R.; Weller, Susan C.; Fisher, Steve R.; Hay, Catherine C.; Reistetter, Timothy A.; Disability & Rehabilitation, Jun2018; 40(12): 1401-1409. 9p. (Article - research, tables/charts) ISSN: 0963-8288

**Subjects:** Patient Centered Care; Physical Mobility; Stroke Rehabilitation; Stroke Patients; Caregivers; Family; Occupational Therapy; Physical Therapy; Adult: 19-44 years; Middle Aged: 45-64 years; Aged: 65+ years; Aged, 80 & over; Male; Female

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# 'Explode' a Term

## Explode

- When you 'Explode' a term, you create a search query that 'explodes' the subject heading. The headings are exploded to retrieve all references indexed to that term as well as all references indexed to **any** narrower (more specific) subject terms. In a database with a tree structure (e.g. MeSH or CINAHL), exploding retrieves all documents containing any of the subject terms below (narrower than) the term you selected. In other databases, exploding retrieves all documents containing the selected term, as well as any of its **first level** of narrower terms. If a plus sign (+) appears next to a narrower or related term, there are narrower terms below it

## Combining Explode and Major Concept

- If you select both 'Explode' and 'Major Concept', you retrieve all references indexed to your term (and its narrower terms) and all articles for which the subject heading is a major point of the article

# Sample PICO 4

We are interested in the effect of handwashing on the prevention of healthcare associated infection in nursing homes

- P (Nursing home)
- I (Handwashing)
- C (No comparison)
- O (Prevention of healthcare associated infection)

For every search that you do, first think of all the alternative words, phrases and spellings that describe your different search terms. Make a note of them and then open up Medline or CINAHL Advanced Search screens. For the purposes of this search, we will perform a search for articles containing the following search terms:

**nursing homes, long-term care facilities, handwashing, handwashing, hand hygiene, healthcare associated infection, HCAI, infection control**



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- 1) In the first search box, type in 'nursing homes or long-term care facilities'
- 2) In the next search box, type in the words 'handwashing or hand-washing or hand hygiene'
- 3) In the last search box, type in 'healthcare associated infections OR HCAs OR infection control'



Searching: **CINAHL Complete** | [Choose Databases](#)

Suggest Subject Terms

	nursing homes or long-term care facilities	TX All Text ▾	<input type="button" value="Search"/> <input type="button" value="Clear"/> <span>?</span> <input type="button" value="+"/> <input type="button" value="-"/>
AND ▾	handwashing or hand-washing or hand hygiene	TX All Text ▾	
AND ▾	healthcare associated infections OR HCAs OR infec	TX All Text ▾	

[Basic Search](#) [Advanced Search](#) [Search History](#) ▶

### Refine Results

#### Current Search

##### Boolean/Phrase:

TX ( nursing homes or long-term care facilities ) AND TX ( handwa...

#### Limit To

- Full Text
- References Available
- Abstract Available

Search Results: 1 - 50 of 905

Date Newest ▾

Page Options ▾

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### 1. Floor corners, bathroom floors, and ceiling vents are hottest spots for dangerous C. diff spores.



Periodical

Medical Environment Update, May2018; 28(5): 5-7. 3p. (Article) ISSN: 1520-8222

**Subjects:** **Infection Control**; Clostridium Difficile; Health **Facility** Environment; Environmental Microbiology; Sterilization and Disinfection Education



[PDF Full Text](#)

### 2. Gutting HAIs: Ambitious goals for 2020.



Refine Results

Current Search

Boolean/Phrase:

TX ( nursing homes or long-term care facilities ) AND TX ( handwa...

Limiters

Published Date: 20080101-20181231

Source Types

Academic Journals

Language

english

Geography

uk & ireland

Limit To

Source Types

All Results

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1. A systematic review of transmission dynamic studies of methicillin-resistant Staphylococcus aureus in non-hospital residential facilities.



Academic Journal

(includes abstract) Kwok, Kin On; Read, Jonathan M.; Tang, Arthur; Chen, Hong; Riley, Steven; Kam, Kai Man; BMC Infectious Diseases, 4/18/2018; 18(1): N.PAG-N.PAG. 1p. (journal article) ISSN: 1471-2334 PMID: 29669512

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2. Effect of antibiotic stewardship on the incidence of infection and colonisation with antibiotic-resistant bacteria and Clostridium difficile infection: a systematic review and meta-analysis.



Academic Journal

(includes abstract) Baur, David; Gladstone, Beryl Primrose; Burkert, Francesco; Carrara, Elena; Foschi, Federico; Döbele, Stefanie; Tacconelli, Evelina; Lancet Infectious Diseases, Sep2017; 17(9): 990-1001. 12p. (journal article) ISSN: 1473-3099 PMID: 28629876



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#### Related Information

Find Similar Results  
using SmartText Searching.

[◀ Result List](#) [Refine Search](#) [◀ 1 of 116 ▶](#)

# A systematic review of transmission dynamic studies of methicillin-resistant *Staphylococcus aureus* in non-hospital residential facilities.

**Authors:** [Kwok, Kin On](#); [Read, Jonathan M.](#); [Tang, Arthur](#); [Chen, Hong](#); [Riley, Steven](#); [Kam, Kai Man](#)


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Department of Software Sungkyunkwan University Seoul South Korea  
Centre for Health Protection Hong Kong Hong Kong, Special Administrative Region of China  
MRC Centre for Outbreak Analysis and Modelling, Department for Infectious Disease Epidemiology Imperial College London London UK

**Source:** [BMC Infectious Diseases](#) (BMC INFECT DIS), 4/18/2018; 18(1): N.PAG-N.PAG. (1p)



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<input type="checkbox"/> Select / deselect all <a href="#">Search with AND</a> <a href="#">Search with OR</a> <a href="#">Delete Searches</a> <span style="float: right;"><a href="#">Refresh Search Results</a></span>			
Search ID#	Search Terms	Search Options	Actions
<input type="checkbox"/> S4	 TX ( nursing homes or long-term care facilities ) AND TX ( handwashing or hand-washing or hand hygiene ) AND TX ( healthcare associated infections OR HCAs OR infection control )	<b>Limiters</b> - Published Date: 20080101-20181231 <b>Narrow by SubjectGeographic:</b> - uk & ireland <b>Narrow by Language:</b> - english <b>Search modes</b> - Boolean/Phrase	<a href="#">View Results</a> (116) <a href="#">View Details</a> <a href="#">Edit</a>
<input type="checkbox"/> S3	 TX ( nursing homes or long-term care facilities ) AND TX ( handwashing or hand-washing or hand hygiene ) AND TX ( healthcare associated infections OR HCAs OR infection control )	<b>Limiters</b> - Published Date: 20080101-20181231 <b>Narrow by Language:</b> - english <b>Search modes</b> - Boolean/Phrase	<a href="#">View Results</a> (318) <a href="#">View Details</a> <a href="#">Edit</a>
<input type="checkbox"/> S2	 TX ( nursing homes or long-term care facilities ) AND TX ( handwashing or hand-washing or hand hygiene ) AND TX ( healthcare associated infections OR HCAs OR infection control )	<b>Limiters</b> - Published Date: 20080101-20181231 <b>Search modes</b> - Boolean/Phrase	<a href="#">View Results</a> (630) <a href="#">View Details</a> <a href="#">Edit</a>
<input type="checkbox"/> S1	 TX ( nursing homes or long-term care facilities ) AND TX ( handwashing or hand-washing or hand hygiene ) AND TX ( healthcare associated infections OR HCAs OR infection control )	<b>Search modes</b> - Boolean/Phrase	<a href="#">View Results</a> (905) <a href="#">View Details</a> <a href="#">Edit</a>

# CINAHL EB Care Sheets



Database: CINAHL Complete -- Evidence-Based Care Sheets

## Subjects

Browsing: CINAHL Complete -- Evidence-Based Care Sheets

Alphabetical  Relevancy Ranked

Page: [Previous](#) [Next](#) ▶

Select one or more items and click

- Alopecia In Children And Adolescents
- Asthma: Management In Older Adults
- Avian Influenza
- Avian Influenza (H5N1) In Children
- Bites: Head Lice
- Botulism, Foodborne
- Breast Cancer In Older Women







# CINAHL Comparison

Differences between versions of  
CINAHL® on EBSCOhost®

	CINAHL*	CINAHL* Plus	CINAHL* with Full Text	CINAHL* Plus with Full Text	CINAHL* Complete	Nursing Reference Center™	Nursing Reference Center™ Plus
Journals Indexed	3,172	5,092	3,174	5,092	5,497	N/A	N/A
Begin Date of Indexing	1980	1937	1980	1937	1937	N/A	N/A
Comes with PreCINAHL	Yes	Yes	Yes	Yes	Yes	N/A	N/A
Journals with Searchable Cited References	1,320	1,440	1,325	1,445	1,529	N/A	N/A
Begin Date of Searchable Cited References	1993	1985	1993	1985	1985	N/A	N/A
Full-Text Journals	70	78	629	775	1,381	N/A	N/A
Begin Date of Full Text	1992	1991	1981	1937	1937	N/A	N/A
Full-Text Books/Monographs	N/A	N/A	N/A	11	11	11	11
Continuing Education Modules	N/A	170	N/A	170	170	1,601	2,664
Research Instruments Records	106	254	106	254	254	254	254
Full-Text Evidence-Based Care Sheets	N/A	133	N/A	133	133	1,037	1,612
Full-Text Quick Lessons	N/A	169	N/A	169	169	2,584	2,730
Full-Text Drug Guide Information	N/A	N/A	N/A	N/A	N/A	2,730	2,746
Full-Text Patient Education Handouts	N/A	N/A	N/A	N/A	N/A	3,358	8,062
Full-Text Legal Cases	N/A	N/A	N/A	N/A	N/A	791	791
Full-Text Nursing Skills & Procedures	N/A	N/A	N/A	N/A	N/A	1,203	1,478
Full-Text Care Plans	N/A	N/A	N/A	N/A	N/A	N/A	50
Images	N/A	N/A	N/A	N/A	N/A	357	1,501
Videos	N/A	N/A	N/A	N/A	N/A	N/A	685



# LENUS

## The Irish Health Repository



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### Welcome to Lenus

Lenus, the Irish health repository is Ireland's leading source of health-related research and grey literature. Journal articles, dissertations, HSE publications and the collected output of more than 130 health organisations past and present are all freely accessible.

Why not add your research today?



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## FILTER RESULTS

Choose Collection

All of Lenus, The Irish Health Repository

What?

Add filters: Use filters to refine the search results.

Abstract

Contains

Add

## Authors:

Health Information and Quality Authority (HIQA) (1322)  
Social Services Inspectorate (SSI) (1261)  
Health Service Executive (HSE) (1030)  
Eastern Health Board (EHB) (756)  
Mental Health Commission (MHC) (608)

Lenus, The Irish Health Repository >

## Search

Sort by Relevance Descending Results/Page 25 List view Update

Results 1 to 25 of 28180 .

1 2 3 > >>

## Export

Issue Date	Title
15 JUL 2009	<b>A children's residential centre in the HSE Dublin Northern Area: final Health Information and Quality Authority (HIQA), Social Services Inspectorate (SSI)</b> Author
12 JUN 2009	<b>A children's residential centre in the HSE Dublin North East Area: final Health Information and Quality Authority (HIQA), Social Services Inspectorate (SSI)</b> Author



# Lenus Results

## Sorting results:

- You can sort your results by Relevance, Title, Issue Date, Submit Date

## Filtering results:

- You can filter your results by 'Collections' (All of Lenus, Health Care Professionals, Hospital Research, HSE, Library & Information Science, Other Irish Health Organisations, Research Articles, Special Collections)

# Overall Search Tips

- PICO your clinical question
- What are your key concepts?
- Are there any synonyms/alternative terms for your key concepts & keywords?
- Become familiar with more than one resource; decide which resource(s) to use
- Create/decide on search strategy, apply & search
- Save citations/articles and assess results/material

# Step 3: Appraise the Evidence

## What is Critical Appraisal?

“The process of carefully and systematically examining research to judge its **trustworthiness**, and its **value** and **relevance** in a particular context” (Burls, 2009)

# Critical Appraisal

- Critical appraisal is the process of weighing up the evidence to determine its usefulness, reliability and applicability. The critical appraisal process helps healthcare professionals cope with the problem of “information overload” by focusing on only the highest-quality studies that will guide their practice.

# Appraising the Evidence

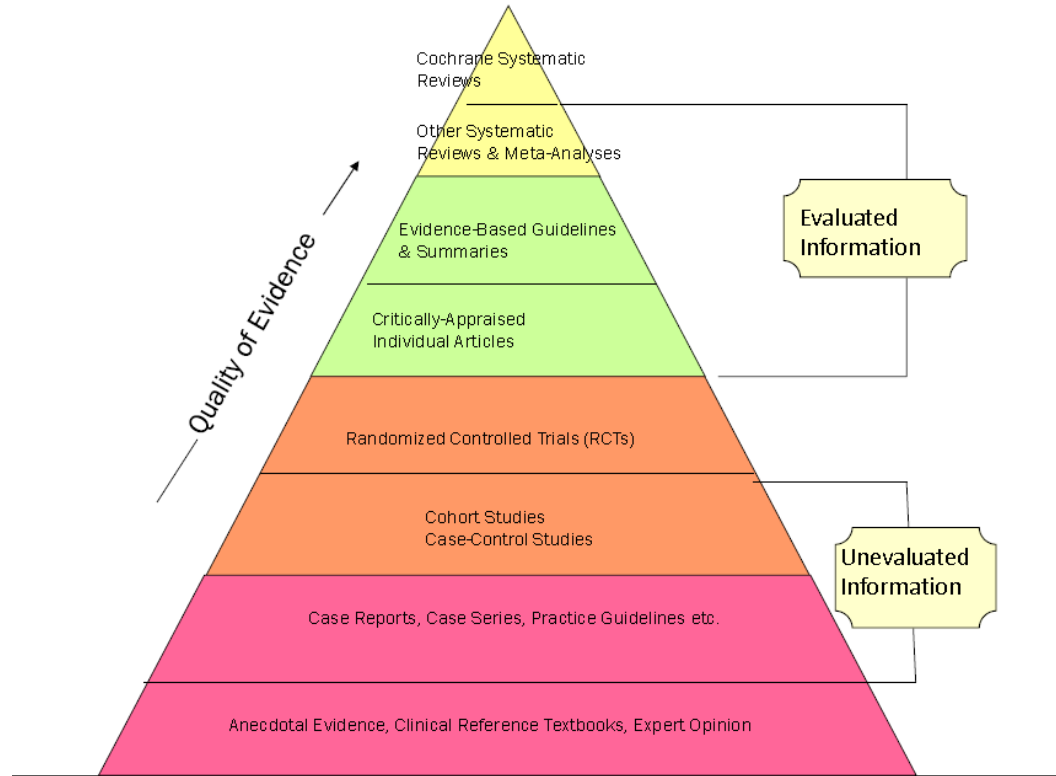
**Valid?**



**Not Valid?**



# Pyramid of Evidence



# Questions to ask

- What is the PICO of the study?
- Is it close to the PICO of your clinical question?
- Is the study methodology valid? Is the quality of the study good enough to produce results that can be used to inform clinical decisions?
- What are the results of the study? Do they make sense?
- Will the results help locally?

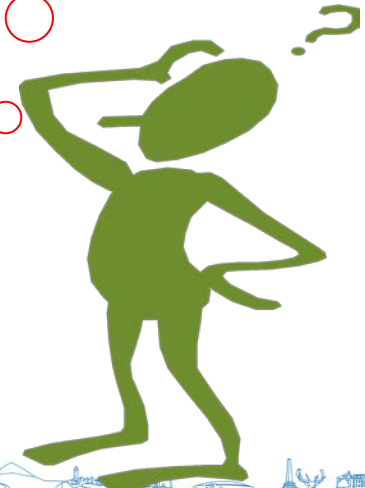


**Conflict of interest**  
**Bias**

**Sample  
Size  
Recruitment**

**Ethics**

**Results  
Replicable?**



# Group Exercise

- In groups or pairs, go through the assigned article and answer the questions on pg. 11 of the Critical Appraisal handout



# To Sum Up

- ❖ **ASK** - construct a well built clinical question(s); develop your search strategy, decide on filters & limits
- ❖ **ACQUIRE** - collect the best evidence relevant to your questions; select the appropriate resource(s) and conduct search(es), apply filters & limits
- ❖ **ASSESS** - the material you have retrieved and critically appraise it
- ❖ **Contact your local information specialist!**

# Thank you!





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