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# The medical digital library landscape

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# **The Medical Digital Library Landscape**

**Kathleen Ismond and Ali Shiri**

School of Library and Information Studies, University of Alberta

## **Introduction**

### **Growth of scholarly information**

- Scholarly publishing opportunities
- Involvement of the global community
- Web is “easy to use”

### **Management solutions**

- Search engines
- Web portals
- Databases
- Digital libraries

# Digital Libraries...

"... are organizations that provide the resources, including the specialized staff to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities" **Waters, 1998**

## Previously...

Peden, Margaret Sayers

Allende, Isabel.  
[Retrato en sepia. English]  
Portrait in sepia : a novel / by Isabel Allende ; translated from the Spanish by Margaret Sayers Peden. 1st ed. New York : HarperCollinsPublishers, c2001.  
304 p. : geneal. tables ; 25 cm.  
ISBN 0-06-621161-1

1.Secrets--Fiction. 2.Amnesia--Fiction. 3.Man-woman relationships--Fiction. I.Peden, Margaret Sayers. II.Title.

PQ8098.1.L54R4813 200  
1

863'.64  
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LC-MARC

## Now...

- Sophisticated technology
- Worldwide audience
- Enhanced metadata
- Many novel opportunities

## Digital Libraries Today

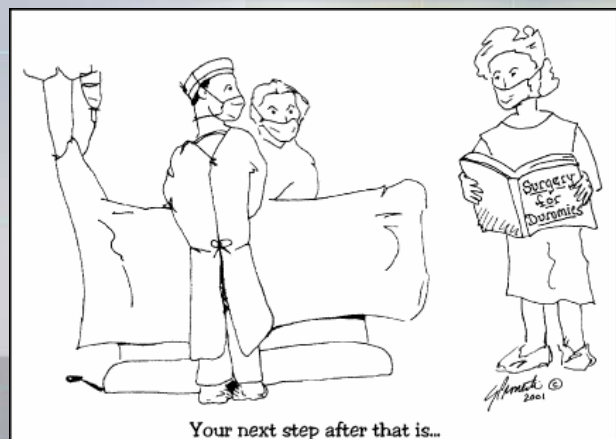
How effective or successful are they?

What are their limitations?

What constitutes a “good” digital library?

The evaluation of digital libraries, in general, has not received much attention in spite of their number and global audience (Saracevic 2004).

# Healthcare Professionals?



# Information Seeking Behaviours of Healthcare Professionals

Masters (2006) identified several barriers to information retrieval:

- Cost
- Time
- Quality assessment
- Searching skills

Hersh, William R. (2006), Information Retrieval. A Health and Biomedical Perspective, Springer, New York.

## Our Study

Selected 6 libraries from 3 countries for evaluation:

1. Administrative overview and site architecture
2. Knowledge organization (searching, browsing functions)
3. Management of results
4. Interaction with the collection
5. Additional information services
6. Usability
7. Personalization

(based upon: Saracevic 2006; Shiri and Molberg 2005)



## Selected Medical Digital Libraries

### Canada:

- CMA Infobase (<http://mdm.ca/cpgsnew/cpgs/index.asp>)
- Health-Evidence.ca (<http://health-evidence.ca/home.aspx>)

### United States:

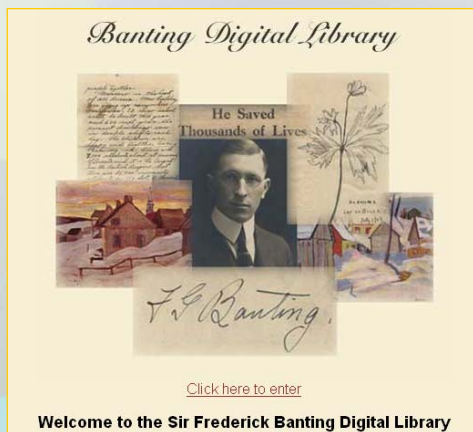
- ClinicalTrials.gov (<http://clinicaltrials.gov/ct>)
- SandBar Qualitative Metasynthesis Digital Library Project (<http://sonweb.unc.edu/sandbar/index.cfm>)

### United Kingdom:

- Skin Disorders Specialist Library (<http://www.library.nhs.uk/skin/>)
- Intute: Health and Life Sciences (<http://www.intute.ac.uk/healthandlifesciences/>)

## Medical Digital Libraries

1. Historical
2. Image-oriented
3. Textual



<http://www.ntpl.ca/banting/>



<http://www.healcentral.org/>



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## Welcome

This is a web site designed to provide quality research evidence to public health decision makers, saving you time by searching, screening, and rating the systematic review evidence to compile it in a free, searchable online registry: health-evidence.ca. Findings of a research project funded by the Canadian Institutes of Health Research demonstrated a need for a reliable source of review evidence that decision makers in public health could access and use easily. You can read more about studies and ongoing research elsewhere on the site, and you can also read more about the process each review must pass before being posted to health-evidence.ca.

Through this site, you can locate references to review literature in the form of systematic reviews and meta-analyses, gathered through a comprehensive search of electronic databases, journal tables of contents, and reference lists. All reviews in this online registry have been screened for relevance to public health, and appraised for quality. Users can see whether reviews are weak, moderate, or strong. We are also working to provide summary statements for each of the reviews in the registry. A summary statement is a short (2 page) synopsis of the review's content, highlighting key evidence points and implications for practice and policy. Not all reviews in the registry have summary statements at present, but we are working to find funding (and authors!) to fill in the gaps. Full reviews have been located and are linked wherever access is possible through the public domain. Selected reviews are available only to study participants where noted. We are currently working to provide

## CMA INFOBASE


### clinical practice guidelines

These guidelines are produced or endorsed in Canada by a national, provincial/territorial or regional medical or health organization, professional society, government agency or expert panel.

**September 2007** - The Canadian Medical Association (CMA) published its new Handbook on Clinical Practice Guidelines to promote systematic development and effective implementation of clinical practice guidelines. This document provides updated guidance on how to use clinical practice guidelines to achieve optimal outcomes of patient care. Among its key audience are health care practitioners, administrators, policy-maker, groups, organizations and societies involved in guideline development, adaptation and/or implementation.

[Canadian Medical Association Handbook on Clinical Practice Guidelines](#) 

#### Keyword Search

 Enter keyword or phrase  
(searches title and abstract)

**Note:** Searches will not work unless you allow  
"cookies". ([help](#))

For more options:



Help

[En français](#)

#### Browse

- [By developer](#)
- [Recent additions](#)

[News](#)

## SANDBAR DIGITAL LIBRARY PROJECT

A gateway to qualitative research findings on motherhood and stigma in HIV-positive women

[Introduction](#) [Browse Findings](#) [Search Citations](#) [About the Project](#) [Contact Us](#)

The integrations of research findings contained in this library were produced in the course of a methodological project entitled "Analytic techniques for qualitative metasynthesis," funded by the National Institute of Nursing Research (2000-2005, NR04907, NR04907S). The purpose of this project was to develop methods for conducting systematic integrations of the findings in qualitative studies, using qualitative studies of women with HIV infection. All qualitative studies of women of any race, ethnicity, nationality, or class, living with HIV infection in the United States were eligible for inclusion.

A digital library, according to Marchionini (2003), is a logical extension and augmentation of a physical library in the electronic information society. Digital libraries may take many forms, and do not necessarily need to include the original full text of a book or journal. They should, however, help transform data into information and knowledge.

This digital library is the product of a vision to provide internet access to syntheses of qualitative research findings for health care providers through user-friendly Web-based tools. The intent is to create a way of disseminating research that health care providers will find easy to use and will want to use.

So, here is the digital library, featuring qualitative studies conducted with HIV-positive women with findings in two major topical areas: stigma and motherhood. Thank you, and enjoy!

**Margarete Sandelowski, PhD, RN, FAAN**  
Principal Investigator

The University of North Carolina at Chapel Hill, School of Nursing

**Julie Barroso, PhD, ANP, CS**  
Co-Principal Investigator  
Duke University School of Nursing

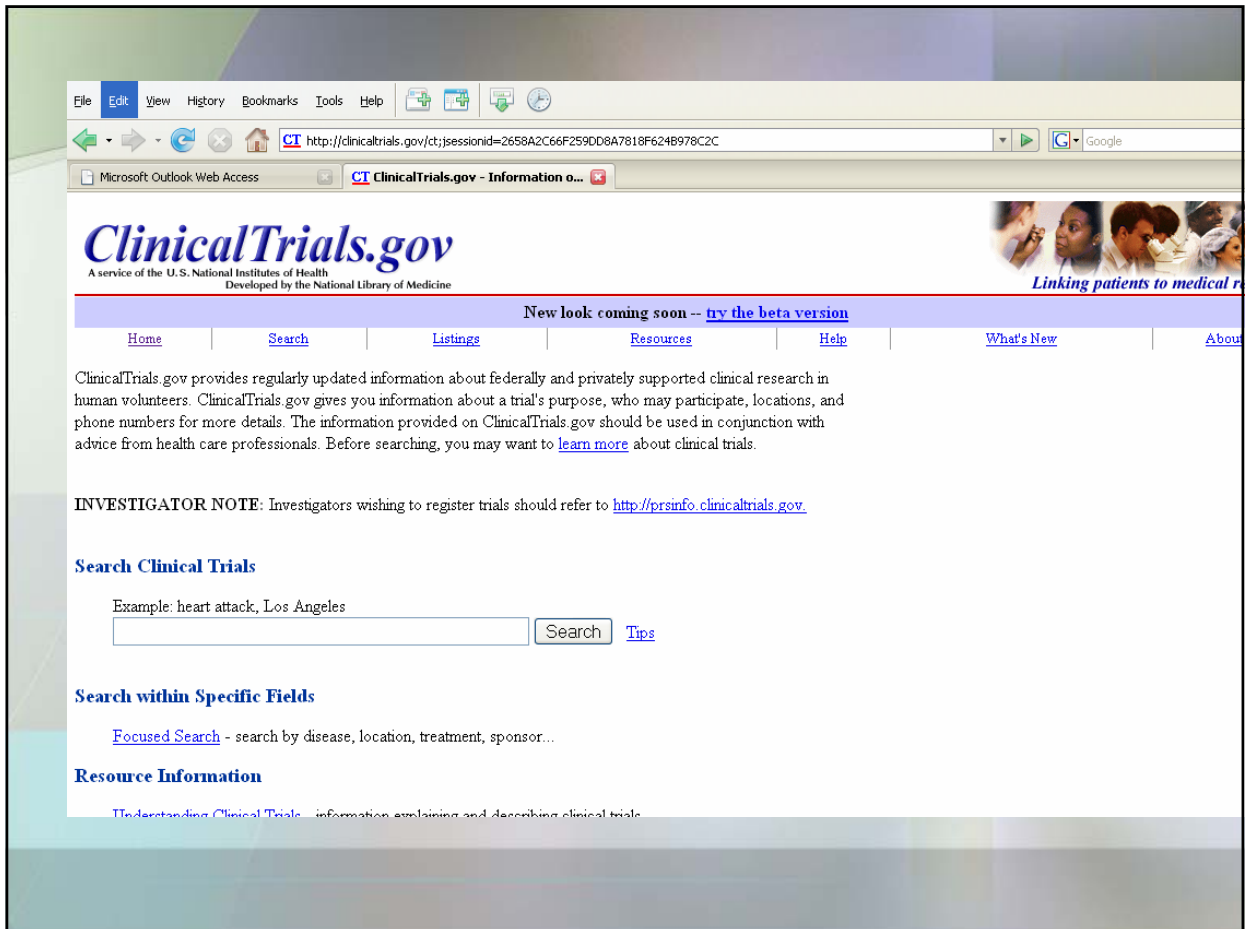
Welcome to the  
SandBar Qualitative  
Metasynthesis  
Digital Library Project!

Begin by  
browsing  
findings



**UNC**  
SCHOOL OF NURSING

The University of North Carolina at Chapel Hill



## Skin Disorders Specialist Library



National Library for Health

NLH Home > Specialist Libraries > Skin Disorders Home

Search

Skin Disorders

GO

Help About us Contact us Site

NEWS EVENTS

- Disorders
- Epidemiology & quality of life
- Diagnosis & investigation
- Treatment & management
- Service delivery
- Research & education
  - Current awareness resources
  - Image databases
- Organisations
- Professions & specialties

### Welcome to the Skin Disorders Specialist Library

The Skin Disorders Specialist Library (formerly the Skin Conditions Specialist Library) is being developed as a "one-stop" resource bringing together high quality, evidence-based information on all of aspects of skin disorders, including their treatment and management and the impact they have on patients. The Skin Disorders Specialist Library is funded by the NHS to meet the information needs of health care staff such as dermatologists, dermatology nurses, GPs, practice nurses, community nurses and NHS managers.

Patients, carers and the general public are welcome to use this site, but may wish to visit [NHS Direct Online](#) first. **We regret that we are unable to respond to personal medical queries. For such matters we would advise you to contact NHS Direct or your usual doctor.**

To find out more about the Skin Disorders Specialist Library, please see this [article](#) in *BMC Dermatology*. You can also view the Library's [inclusion and quality criteria](#). If you are a first time user, do take a look at our [Help](#) page and try our [Robodemo](#), an animated demonstration of the main features of the Library.

#### National Knowledge Week on Atopic Eczema

**Monday 17th September to Friday 21st September, 2007 was the Skin Disorders Specialist Library's National Knowledge Week on Atopic Eczema.**

The National Knowledge Week pages highlight sources of information on atopic eczema and its treatment, and include our first Annual Evidence Update, with the results of a search for systematic reviews on atopic eczema. There are also commentaries from a range of invited experts.

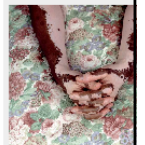
- [Click here to go to the National Knowledge Week home page](#)

#### Guest Editorial

- ["Dermatology General Practitioners with a Special Interest \(GPwSIs\): the new quality commissioning and accreditation frameworks"](#) by Dr Julia Schofield

Previous Guest Editorials:

- ["The updated Cochrane Review on Interventions for basal cell carcinoma of the skin"](#) by Dr Graham Colver



#### Vitiligo

Copyright photograph courtesy of Maxine Wright and Alexa Wright

#### Previous National Knowledge Weeks

[Acne vulgaris, 5th-8th March 2007](#)

#### Monthly e-mail updates

The Skin Disorders Specialist Library produces monthly e-mail updates for new content and major developments in dermatology. [Click here to find out more and sign up.](#)

#### Quick Links



●● Science and Technology



●● Arts and Humanities



●● Social Sciences



●● Health and Life Sciences

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#### Internet training

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- [Seminars and events](#)

Intute is a free online service providing you with access to the very best Web resources for education and research. The service is created by a network of UK universities and partners. Subject specialists select and evaluate the websites in our database and write high quality descriptions of the resources. The database contains 119396 records.



#### Search our database

Search

Subject area(s)

- ☒ All subjects
- ☐ Arts and Humanities
- ☐ Health and Life Sciences
- ☐ Science Engineering and Technology
- ☐ Social Sciences

[Advanced search](#) [Subject A-Z](#) [New resources](#) [Help](#)

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- [Service Announcement](#)
- [World Guide - GIS Application \(2007 World Country Data\) updated](#)
- [Intute market research and business model study](#)
- [Service Announcement](#)

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#### Behind the Headlines

##### [Bogus Holiday Clubs](#)

The Office of Fair Trading is warning holidaymakers of the dangers of joining holiday club schemes.

>> [Archive](#)



# Overview

Digital library	Parent org. or affiliations	Scope
Health-Evidence.ca	Funded by the Canadian Institutes of Health Research (CIHR), city of Hamilton, Public Health and Community Services Department, Public Health Research, Education & Development (PHRED), Institut national de santé publique du Québec (INSPQ), and Public Health Agency of Canada	Published review articles that evaluate the effectiveness of either public health or health promotion interventions since 1985
CMA Infobase	Canadian Medical Association	Canadian clinical practice guidelines
SandBar (United States)	University of North Carolina at Chapel Hill; funded by the National Institute of Nursing Research	Qualitative studies of HIV+ women living in the States focused on stigma of disease and motherhood
ClinicalTrials.gov	U.S. National Institutes of Health developed by the National Library of Medicine in collaboration with the Food and Drug Administration (FDA)	Clinical trials for a range of severe diseases and conditions involving new drugs or treatments
Intute	Consortium of 7 UK universities working with a host of partners. Evolved out of the BIOME project.	Provides selected web resources for Medicine, Nursing, Midwifery and Allied Health, Agriculture, Food and Forestry, Veterinary Medicine, Bioresearch, and Natural history
Skin Disorders	National Library for Health (NHS)	High quality, dermatological-oriented online resources in a variety of media formats including text; UK audience

## Overview

Digital library	Collection size	Update frequency	Metadata elements	Time lag	HONcode?
Health-Evidence.ca	566	Unknown	2	Months to a year	No
CMA Infobase	1,411	As needed	2	Months	No
SandBar	114	Static content (1991 - 2002)	1	N/A	No
ClinicalTrials.gov	~ 35,400	Daily	5	Months	Yes
Intute	~15,000	Daily	8	Months to years	No
Skin Disorders	3,930	Unknown	11	Unknown	No

# Knowledge Organization

Digital library	Search modes	No. of search types	Search tools	No. of searchable fields	Browsing options
Health-Evidence.ca	Basic	5	Boolean operators	3	5
CMA Infobase	Basic Advanced	4 <b>11</b>	Exact match Include abstract Boolean operators Truncation (*) Limiters	9	3
Sandbar	Basic	3	No Boolean	4	2
Clinical Trials.gov	Basic Advanced	4 8	Boolean operators Advanced field specifiers Synonyms, spell checker/suggestion	8	<b>7</b>
Intute	Basic Advanced	3 3	Boolean operators Truncation (*) Limiters	4	4 (KOS tree)
Skin Disorders	Basic	3	Boolean operators Truncation (*)	6	1 (KOS tree)

# CMA Infobase

Title/ID#	Subject	Publication Info	More Options
<b>i Title :</b>	Enter keyword or phrase. Separate terms with OR.		
	<input type="text"/>		
<b>i Record ID :</b>	<input type="text"/>		
	<input type="checkbox"/> Exact Match (EM) <input checked="" type="checkbox"/> Include Abstract		
<input type="button" value="Search"/> <input type="button" value="Clear"/>			

Title/ID#	Subject	Publication Info	More Options
<b>i Category:</b>	Anesthesia Cardiac surgery Cardiology Clinical immunology and allergy Clinical pharmacology		
<b>i MeSH:</b>	Enter MeSH or use Lookup		
	<input type="text"/>		
	<input type="button" value="Lookup"/> <input type="checkbox"/> Exact Match (EM)		
<input type="button" value="Search"/> <input type="button" value="Clear"/>			

Title/ID#	Subject	Publication Info	More Options
<b>i Producer/Endorser :</b>	<input type="text"/>		
	<input type="button" value="Lookup"/>		
<b>i Author :</b>	Enter personal author as last name initial (e.g. Smith J.L). Enter corporate author in full (i.e. no acronyms).		
	<input type="text"/>		
	<input type="checkbox"/> Exact Match (EM)		
<b>i Journal :</b>	Am J Transplant Ann Intern Med		
	<a href="#">(Journal List)</a>		
<b>i Publication/Review Date :</b>	From <input type="text"/> To <input type="text"/>		
<input type="button" value="Search"/> <input type="button" value="Clear"/>			

Title/ID#	Subject	Publication Info	More Options
<b>i Focus :</b>	Condition Technology		
<b>i Domain :</b>	Preventive Diagnosis		
<b>i Gender :</b>	Male Female		
<b>i Population Groups :</b>	General Embryo		
<input type="button" value="Search"/> <input type="button" value="Clear"/>			

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Clinical Trials.gov	Basic Advanced	4 8	Boolean operators Advanced field specifiers Synonyms, spell checker/suggestion	8	<b>7</b>
Intute	Basic Advanced	3 3	Boolean operators Truncation (*) Limiters	4	4 (KOS tree)
Skin Disorders	Basic	3	Boolean operators Truncation (*)	6	1 (KOS tree)

# ClinicalTrials.gov

A service of the U.S. National Institutes of Health

[Home](#)

[Search](#)

[Listings](#)

## List Clinical Trials

☐ Include trials that are no longer recruiting patients.

### List by Condition

[Alphabetically](#)

[By Disease Heading](#)

### List by Sponsor

[National Institutes of Health](#)

[U.S. Federal Agency, excluding NIH](#)

[Government Agency, excluding U.S. Federal](#)

[Industry](#)

[Clinical Research Network](#)

[University/Organization](#)

### List by Status

[Not yet recruiting](#)

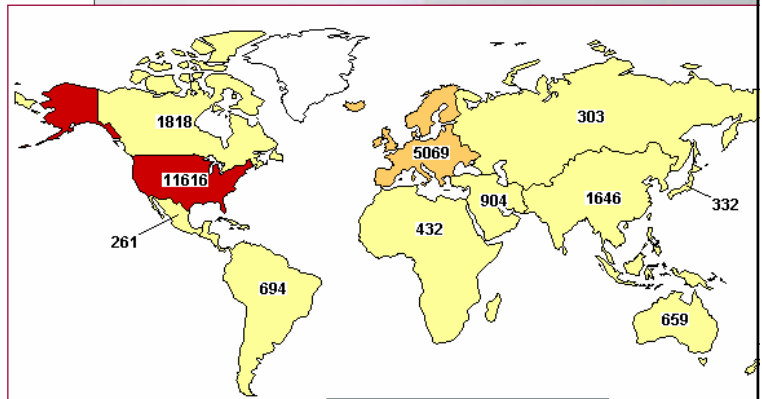
[Recruiting](#)

[No longer recruiting](#)

[Completed](#)

### List by Map

## List by Map



#### U.S. State Number of Studies

Alaska	71
Alabama	818
Arkansas	474
Arizona	833

# Results Management

Digital Library	No. of items displayed per record	Modifiable display?	Presentation of multiple records	Resorting records?	Refine search?
Health-Evidence.ca	3	Yes *	Unclear	No	Yes, 1 option
CMA Infobase	4	<b>Yes ***</b>	By date then by title	<b>7 options</b>	<b>No</b>
Sandbar	<b>1</b>	No	By year then by title	No	Yes, 1 option
Clinical Trials.gov	4	No	By numerical identifier	No	Yes, 1 option
Intute	5	No	By relevance	1	Yes, 1 option
Skin Disorders	<b>6</b>	No	By title	3	Yes, 1 option

## Skin Disorders Specialist Library

Natio

NLH Home > Specialist Libraries > Skin Disorders > Search Results

Search eczema

Skin Disorders

GO

Help About

NEWS EVENTS

- Disorders
- Epidemiology & quality of life
- Diagnosis & investigation
- Treatment & management
- Service delivery
- Research & education
  - Current awareness resources
  - Image databases
- Organisations
- Professions & specialties

You searched for: "eczema"

Total records: 210

Guidance & Pathways (25)

Evidence (43)

Reference (92)

Education / CPD (3)

Patient Information (47)

page: 1 | 2 | 3 of 3

< Previous | Next >

### Dermatitis - contact

**Publisher:** [Clinical Knowledge Summaries](#)

**Publication Type:** Care Guideline

**Publication Date:** 01 Feb 2005

[View detail](#) [Link to Full text here](#)

### Eczema - atopic

**Publisher:** [Clinical Knowledge Summaries](#)

**Publication Type:** Care Guideline

**Publication Date:** 26 Nov 2004

[View detail](#) [Link to Full text here](#)



## Results Management

Digital Library	No. of items displayed per record	Modifiable display?	Presentation of multiple records	Resorting records?	Refine search?
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CMA Infobase	4	<b>Yes ***</b>	By date then by title	<b>7 options</b>	<b>No</b>
Sandbar	<b>1</b>	No	By year then by title	No	Yes, 1 option
Clinical Trials.gov	4	No	By numerical identifier	No	Yes, 1 option
Intute	5	No	By relevance	1	Yes, 1 option
Skin Disorders	<b>6</b>	No	By title	3	Yes, 1 option

## CMA INFOBASE

clinical practice guidelines

### Additional Display Options

- Select a display format and then click **New Format**

☒ **Default** (Date, Title, Producer)

☐ **Citation**

☐ **Citation + Subjects**

☐ **Citation + Subjects + Abstract**

☐ **All Fields**

☐ **Custom Format:** (Please select one or more fields)

<input type="checkbox"/> Citation	<input type="checkbox"/> Publication Info	<input type="checkbox"/> Developers
<input type="checkbox"/> Revisions	<input type="checkbox"/> Subjects	<input type="checkbox"/> Related Publications
<input type="checkbox"/> Notes	<input type="checkbox"/> Abstract	<input type="checkbox"/> Copyright
<input type="checkbox"/> Ordering Info	<input type="checkbox"/> Development, Dissemination and Implementation	

Sort By: All Records  Then by: Date

## Record Metadata and Enhancements

Digital library	No. of items displayed in detail	Enhancements	Links to resource types
Health-Evidence.ca	<b>12</b>	8	Free
CMA Infobase	7	26*	Free
Sandbar	Via browsing: 4  Via citation search: 1	6	No access to original research papers
Clinical Trials.gov	6	7	Free and fee-based
Intute	3	5	Free
Skin Disorders	5	8	Free and fee-based

\* Inconsistent



# Usability

Digital library	Breadcrumb trail	FAQ	Tutorial
Health-Evidence.ca	No	No	Yes – “How to use this site”
CMA Infobase	No	Yes	No
Sandbar	No	No	No
ClinicalTrials.gov	Not persistent	“About” page	No ... tutorial for creating an account from which to submit clinical trials information
Intute	Yes	No	“Help” section but no formal tutorial
Skin Disorders	Yes	No	Robodemo (main features)



[Contacts](#) [Help desk](#) [Policy](#) [Site map](#) [Survey](#)

Main links

 [Science and Technology](#)

 [Arts and Humanities](#)

 [Social Sciences](#)

 [Health and Life Sciences](#)

 [Intute](#) > [Search harvester](#) > Results

# Summary

## **Positives**

- Multiple access points
- Several enhancements
- No technical difficulties

## **Room for Improvement**

- No option for PDAs
- Only 2 libraries provided options for saving searches
- No data export options
- Significant lag time to incorporate new materials
- Resource intensive and interdisciplinary\*
- Better use of DC elements
- Promotion

## Concluding Remarks