Clinical Focus in the eRecord

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The Setting

- Health Sciences Library System (HSLS)
  - Large academic library serving University of Pittsburgh's six health sciences schools, and the University of Pittsburgh Medical Center (UPMC)

- UPMC: "An Integrated Global Health Enterprise"
  - 20 tertiary, specialty, and community hospitals, with 4,200+ licensed beds
  - 400 outpatient sites and doctors' offices
  - 5,000 affiliated physicians (2,700 directly employed) / 55,000 employees
  - 1,400 residents

- HSLS receives support from UPMC to provide system-wide access to licensed online resources.
  - One-view of HSLS Website from anywhere in the system

UPMC eRecord

- Design and implementation began >10 years ago
- Applications rolled out in multiple phases at various hospitals
- 29,000 active users, including 5,000 physicians
- 3.6 million unique patient records
- Used by 261 UPMC physician practices

UPMC eRecord cont..

- 200 clinical applications from 120+ vendors, including EPIC & Cerner

- Interoperability Project (joint development w/ commercial company)
  - Creating a single unified patient record based on data from different information systems, formats, and sites
  - Referring providers & other clinicians can exchange information, while protecting patient privacy and security

How We Started

- 2004: Library Director invited onto the eRecord Physicians Advisory Committee

- 2006 – key physician supporter identified (Medical Director of Ambulatory eRecord)

  - Can the eRecord include not only patient-specific information, but also context-specific knowledge-based information

  - **"Why can't the information I need about my patient at that moment just pop up on the screen?"**

Library Development Team

- 5 librarians (2 reference, 2 computer services, 1 director) plus key physician

- Goal: develop a clinical information tool to embed into the eRecord

- Step 1: Articulate user needs

- Step 2: Develop evolutionary approach
  - Move forward in small steps
  - No additional funding

Step 3: The Vision

- Take advantage of library's wide array of e-books, and point-of-care information tools

- Minimize dependence on any one resource
  - Mix and match resources with easy substitution

- Minimize redundancy to avoid overwhelming users with too much information

- Use the fewest number of resources needed to answer the question

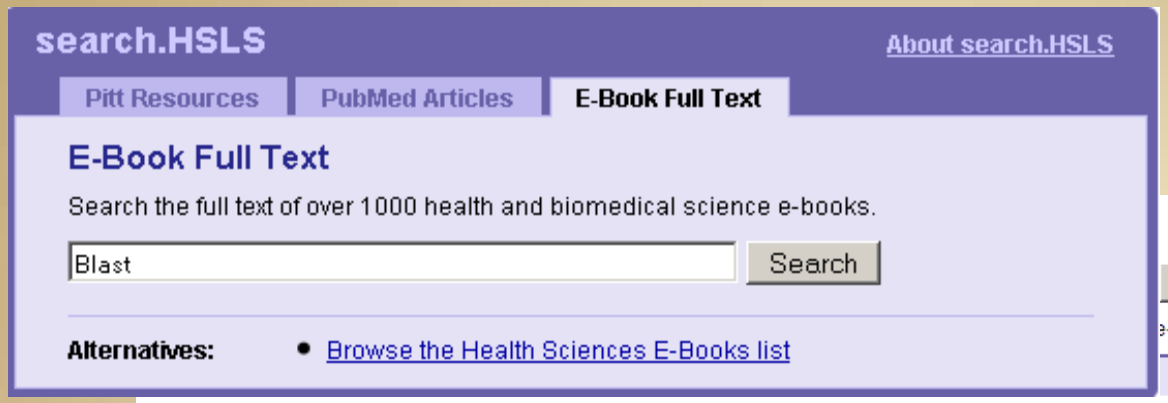
Step 4: Technology = Vivísimo

- A meta-search engine that combines results from multiple sources into a single results list allowing users to search several resources at once

- A search engine that clusters common terms from the results and creates "on the fly" groups to help narrow searches

- Simple "Google-like" search box

- Built on previous HSLS Vivisimo work



Search E-Books

e-books.

Top **413** results retrieved for the query **blast**

Narrow your search:

By Topic By Source

- blast (413)
- Cell (58)
- Leukemia (41)
- Sequence (58)
- Gene (45)
- Databases (28)
- Appendix (17)
- Human (20)
- Injuries (11)
- Lymphocytes (11)
- Engineering, Control (9)
- More

1. Differential Diagnosis in Internal Medicine [preview]
   432 Table 14.7 FAB classification of myelodysplastic syndrome (MDS) MDS subtype Percentage of peripheral blasts Percentage of bone marrow blasts AML transformation Median survival (months) Refractory anemia (RA) ? 1 ...
   Source: Thieme ElectronicBook Library

2. Diagnosis [preview]
   Book: Medical Oncology > Chapter e2. The Myelodysplastic Syndromes
   Source: AccessMedicine

3. **Blast** [preview]
   Book: ICD-9-CM - VOLUMES 1, 2 & 3 (2009)
   Source: STAT!Ref

4. Iron Production [preview]
   Authors: C. L. Nassaralla
   Book: Encyclopedia of Materials: Science and Technology
   Source: Elsevier ScienceDirect

5. APPENDIX 1A Molecular Biology References [preview]
   Book: Current Protocols in Neuroscience
   Source: Wiley InterScience: Current Protocols

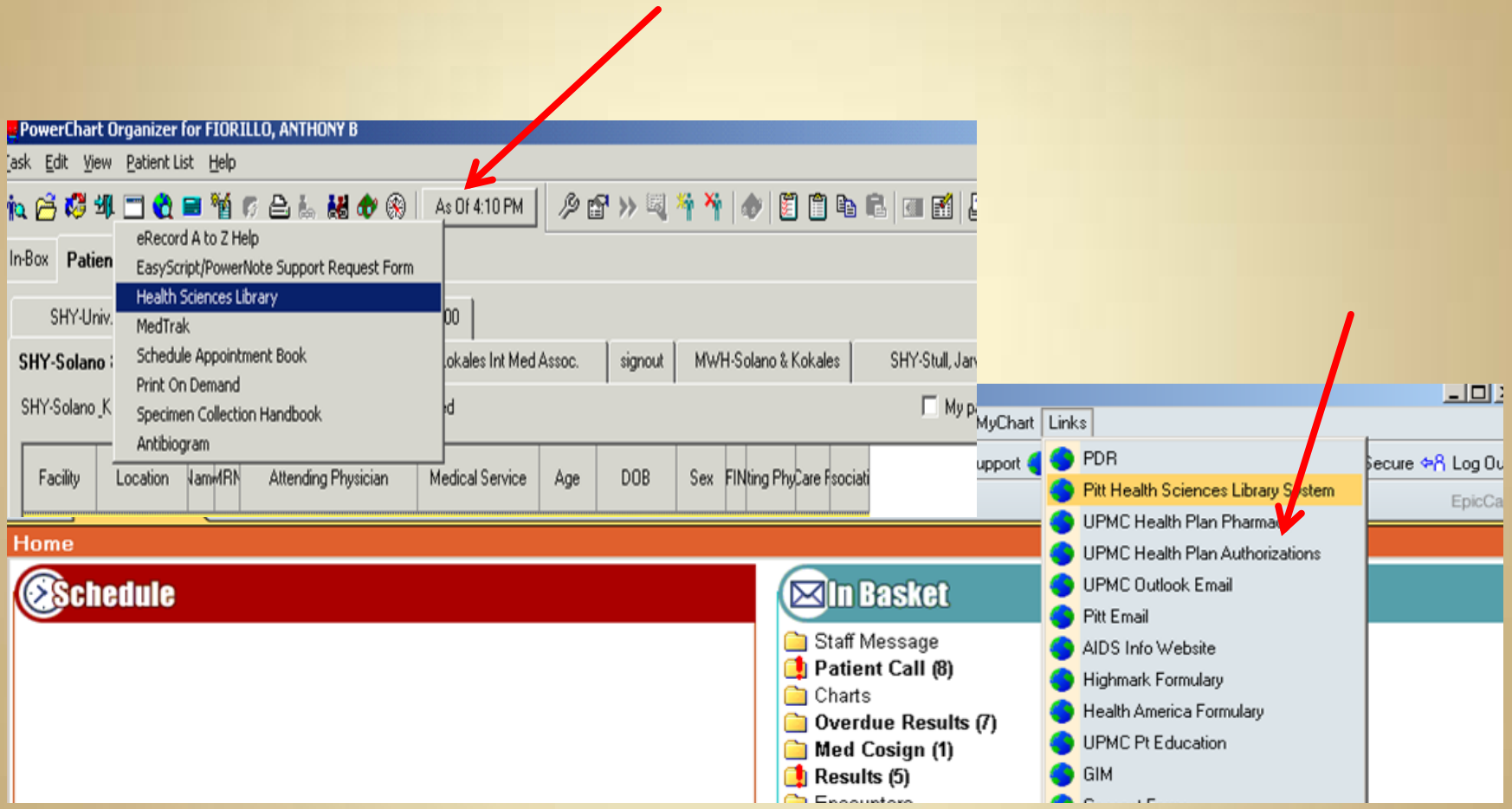
6. Potential Exposures In the Manufacturing Industry—Their Recognition and Control [preview]
   Authors: William A. Burgess
   Book: Patty's Industrial Hygiene
   Source: Wiley InterScience: Reference Works

7. Chapter: [preview]
   Source: Books@Ovid

8. Bioinformatics [preview]
   Authors: Christopher A. Cullis
   Book: Plant Genomics and Proteomics

search.HSLS.Clinical-e

Introduced into eRecord in October 2008



Challenges

- Development
  - Scope of UPMC project dwarfs ours
    - Difficult to find the right people
    - We are a very small part of a very large project
  - Shoestring funding & operations
    - Both good and bad
  - Working across 2 organizations
    - No direct access to eRecord
- Usability
  - Access was not uniform & buried
  - Users mostly searched the first tab
  - Limited marketing & promotion

August 2009: New Approach

- New attention from physician leadership & UPMC administration due to budget pressures

- New mix of clinical information resources
  - Validated original emphasis on variety of vendors

- Evolve into a clinical portal, rather than an embedded search box

- New name and design
  - Vivisimo remains the search engine "behind-the-scenes"

MIX WELL, and Voila……

Clinical Focus

Clinical Focus

Medical Calculators

EBM Resources

Patient Education

PDA Information

Go

Enter: disease, symptom, drug, procedure or test

Ask A Librarian: Clinical Focus

Clinical Focus

reactive arthritis Search

Results **1-10** of about **104** | D

Topic Source

Top 105 Results remix

- + Infections (18)
- + Ankylosing Spondylitis (10)
- + Rheumatoid arthritis (11)
- · Diagnosis, Differential (9)
- + Acute (6)
- + Rheumatic Fever (6)
- + 20. Musculoskeletal & Immunologic Disorders (5)
- + Patient, Approach (5)
- · Septic Arthritis (3)
- · Psoriatic (3)

more | all

Search within clusters

Find

Vivísimo

Micromedex Results

MICROMEDEX Search Results

1. Sulfasalazine for ankylosing spondylitis new window
   Author: Junmin Chen, Chao Liu
   Year: 2005
   The Cochrane Library

2. General Considerations new window
   > Chapter 18. **Reactive Arthritis**
   Source: CURRENT Rheumatology Diagnosis & Treatment
   CURRENT Diagnosis & Treatment LANGE

3. Chapter 5. Acute Diarrheal Disorders - new window

Clinical Focus

reactive arthritis Search

Results **1-10** of about **116** | D

Topic **Source**

Top 117 Results

- BMJ Clinical Evidence (11)
- CURRENT Diagnosis & Treatment in Orthopedics (3)
- CURRENT Diagnosis & Treatment: Emergency Medicine (2)
- CURRENT Diagnosis & Treatment: Pediatrics (6)
- CURRENT Medical Dx & Tx (10)
- CURRENT Rheumatology Diagnosis & Treatment (20)
- First Consult's Medical Conditions (16)
- STAT!Ref (45)
- The Cochrane Database of Systematic Reviews (3)
- Other Topics (1)

Search within clusters

Micromedex Results

MICROMEDEX Search Results

1. Sulfasalazine for ankylosing spondylitis new window
   Author: Junmin Chen, Chao Liu
   Year: 2005
   The Cochrane Library

2. Chapter 5. Acute Diarrheal Disorders - new window
   Book: CURRENT DIAGNOSIS & TREATMENT GASTROENTEROLOGY, HEPATOLOGY, & ENDOSCOPY - 3rd Ed. (2009)
   Source: STAT!Ref
   CURRENT Diagnosis & Treatment LANGE

Clinical Focus

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Ask A Librarian: Clinical Focus

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Clinical Focus

Clinical Focus

Go

Enter: disease, symptom, drug, procedure or test

Medical Calculators

EBM Resources

Patient Education

arthroscopy Go

PDA Information

Ask A Librarian: Clinical Focus

Health Sciences Library System
Serving the University of Pittsburgh and UPMC

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HSLS Home > Guides > Clinical Focus >

Clinical Focus: Patient Education

arthroscopy Search

Results **1-10** of about **48** | Details

Topic Source

Top 35 Results remix

- Knee (6)
- + Arthritis (6)
- + Ligament, ACL (5)
- Rotator Cuff (3)
- Shoulder (3)
- Meniscal (2)
- Other Topics (11)

Search within clusters
Find

Vivisimo VELOCITY

UPMC Patient Education

Knee **Arthroscopy**
... Pittsburgh Medical Center Information for Patients K nee **Arthroscopy** abnormality. The doctor may also use **arthroscopy** to correct your knee

These sources have been queried:

- **MD Consult's Patient Education** - **48** results retrieved in **11.306** seconds.
- **MedlinePlus Drugs, Supplements and Herbal Information** - No results retrieved in **0.023** seconds.
- **UPMC Patient Education Materials** - **1** result retrieved in **0.039** seconds.

1. **Arthroscopy** new window
MD CONSULT

2. **Arthroscopy** new window
MD CONSULT

Next Steps

- Short term
  - Active support from physician and administrative leadership
  - Replaced Clinical-e in-patient and ambulatory systems
  - Linked from library home page
  - Develop marketing and instructional program
    - Presentations; newsletter articles; web-based introduction
- Intermediate term
  - Continue development and marketing
  - Formal evaluation to determine reliability and validity
- Long term
  - Work with eRecord interoperability group to pre-populate the search box with patient-specific information from the eRecord

Acknowledgements

- The Development Team
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  - **Mary Lou Klem**, HSLS Reference Librarian
  - **Barbara Epstein**, HSLS Director
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