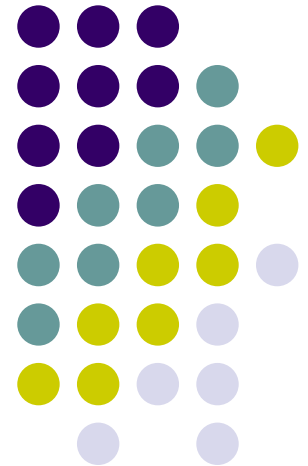


One hospital, two EMRs, many questions

Kate Cheromcha, MLIS
Windham Hospital
Willimantic, CT



BY THE NUMBERS

Top vendors of acute-care EHR systems

Based on total number of installations at U.S. hospitals from January 2008 to January 2009

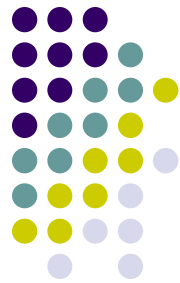
| Vendor | Location | Total installations | Percentage of installations | Web site |
|--------------------------------|------------------|---------------------|-----------------------------|---------------------|
| Meditech | Westwood, Mass. | 1,185 | 26.6% | meditech.com |
| McKesson Provider Technologies | Alpharetta, Ga. | 630 | 14.1 | mckesson.com |
| Cerner Corp. | Kansas City, Mo. | 560 | 12.6 | cerner.com |
| Siemens Medical Solutions | Malvern, Pa. | 425 | 9.5 | medical.siemens.com |
| Self-developed | — | 357 | 8.0 | — |
| CPSI | Mobile, Ala. | 353 | 7.9 | cpsinet.com |
| Epic Systems Corp. | Madison, Wis. | 265 | 6.0 | epicsystems.com |
| Eclipsys Corp. | Boca Raton, Fla. | 243 | 5.5 | eclipsys.com |
| Healthcare Management Systems | Nashville | 237 | 5.3 | hmstr.com |
| Healthland | Glenwood, Minn. | 198 | 3.8 | healthland.com |

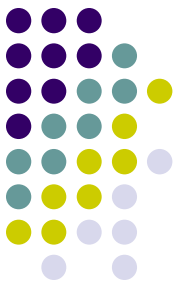
Note: Installation counts based on status being live and operational, contracted/not yet installed or installation in process at 4,454 U.S. hospitals. Percentages rounded.

Source: HIMSS Analytics Database

For more information about this list please contact, HIMSS Analytics, 230 East Ohio St., Suite 600, Chicago, Ill. 60611; 312-638-9400; himssanalytics.org

For more information on By The Numbers, contact Special Projects/Research Editor Rebecca Mielcarski at 312-397-5511 or rmielcarski@modernhealthcare.com. For more lists, rankings and surveys, visit the Databank/Surveys section of modernhealthcare.com/section/lists.





Windham Hospital 2008

- Small (100 staffed beds), rural community hospital
- New affiliation w/ Hartford Healthcare
- EMR vendor – Siemens; EMR system – MedSeries4 Clinical Suite

http://tiny-url.org/Siemens_MedSeries4

- Solo librarian (32 hours/week - required for CME provider accreditation)



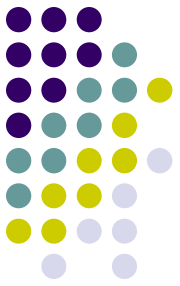
Windham Hospital 2008

- First EMR phase – Nursing Documentation
 - 60% self-built; 40% Siemens product
- Purchased Elsevier's ***Mosby's Nursing Skills, Nursing Consult, & Index*** to provide:
 - “Clinical decision support”
 - “Point-of-care evidence-based information resources”
 - And more.....

Elsevier Clinical Decision Support

<http://www.clinicaldecisionsupport.com/>

Windham Hospital 2008



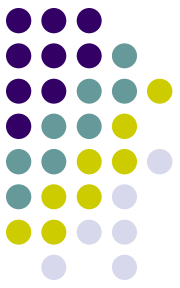
Planned that our **EMR** would include a nursing **POC** resource to support **EBP** in clinical care via **CDS** and **CIS** systems communicated through **HL7** messaging standard.



In other words, our nursing staff would have “everything” —

- Patient information
- Pharmacy information & medication reconciliation
- Diagnostic test results
- Consult reports
- Alerts
- Referrals
- Orders
- Scheduling information
- Nursing notes
- Problem lists
- Care plans
- Institutional policies, procedures and practice guidelines
- Evidence-based information resources and guidelines
- Discharge information
- Patient education resources
- and more

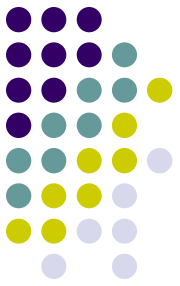
at their fingertips!



Becoming involved-

- No economy of scale in EMR implementation projects - staff support needed
- Familiar with web-based course management system; offered to assume responsibility for Mosby's Nursing Suite
- Conducted searches on EMR systems, implementation, etc. – expressed interest
- Previous career as Medical Records Administrator (1980s) for HMOs

Learning curve

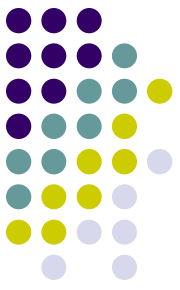


“Clinical decision support (CDS) systems provide clinicians, staff, patients, and other individuals with **knowledge** and person-specific information, intelligently filtered and presented at appropriate times, to enhance health and health care.”

Berner ES. Clinical decision support systems: State of the Art.

AHRQ Publication No. 09-0069-EF.

Rockville, Maryland: Agency for Healthcare Research and Quality. June 2009.

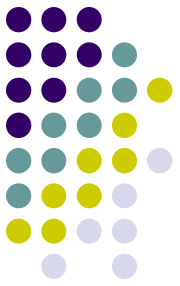


“Clinical information systems (CIS) consist of information technology that is applied at the point of clinical care. They include electronic medical records, clinical data repositories, decision support programs (such as **clinical guidelines** and drug interaction checking), handheld devices for collecting data and viewing **reference material**, imaging modalities and **communication tools such as electronic messaging systems.**”

Informatics Institute, University of Medicine & Dentistry of New Jersey

http://informatics.umdnj.edu/clinical/information_systems.htm

HL7 Messaging standard



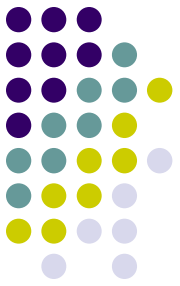
HL7 (Health Level 7) ANSI-accredited standards for electronically defining clinical and administrative data in the healthcare industry from Health Level Seven International (www.hl7.org). HL7 provides standards for messaging, electronic records, decision support queries, medicine labels and the visual integration of data from different applications.

PC Magazine

http://www.pcmag.com/encyclopedia_term/0,2542,t=HL7&i=44294,00.asp

- The technology behind “*Infobuttons*”

Infobuttons



“*Infobuttons*” are context-specific links from one information system (usually a clinical information systems such as an electronic health record) to some other resource that provides information that might be relevant to the initial context. *Infobuttons* are used to anticipate users’ information needs and provide them with easy ways to obtain answers to resolve those needs.

Cimino, J. The *Infobutton* Manager, Columbia University.

<http://infobutton.org/>



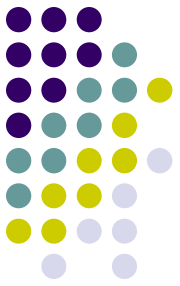
Recommended viewing-

Infobuttons: Anticipatory Passive Decision Support –

http://tiny-url.org/Infobuttons_Anticipatory_Passive_Decision_Support_Cimino

Includes description of HL7 messaging standard; Infobuttons; Infobutton Manager (developed by presenter at Columbia University); screenshots of EMR w/ Infobuttons deployed and results displayed; and implementation codes and information about LITE (Librarians Infobutton Tailoring Environment) project.

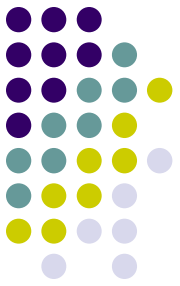
What happened at Windham?



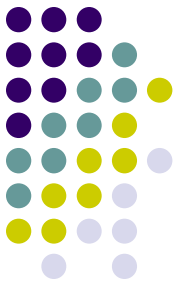
“When commercial vendors and other EMR (developers) create proprietary, closed, systems, with custom database architectures, they often worsen the problem and make it harder to populate the database (ie, the EMR) with useful information, inexpensively and easily.”

Electronic Medical Records: An Introductory Tutorial
William Tierney, MD Atif Zafar, MD AHRQ PBRN Resource Center
http://tiny-url.org/slideshare_Franklin_EMRTutorial

What happened at Windham?

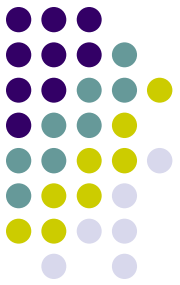


- Siemens' MedSeries4 ClinicalSuite did not include or permit adding the HL7 messaging standard within the clinical documentation module.
- *Infobutton* not possible; offered "Reference Links" instead.
- Later release permitted adding tab to permit link to information resources collection; users required to initiate & conduct own searches.



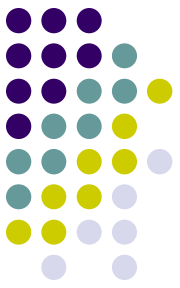
Types of Reference Links That Can Be Defined

- URL links to files on the facilities intranet
 - file://Folder location
- URL links that take you directly to a specific web page
 - <http://www.cdc.gov/vaccines/pubs/vis/downloads/vis-multi.pdf>
- Links to web sites that require a password
- Once on the linked site the user has complete access to the browsers features and functions.
 - Clinical Suite provides a pass through to the URL
 - ✓ Facility defined Web site restrictions are retained
 - ✓ Facility defined Folder restrictions are retained



- Hartford Healthcare announced new model: all partners to use one EMR system - Allscripts' Sunrise Clinical Manager (from Eclipsys)
- New EMR; similar challenges

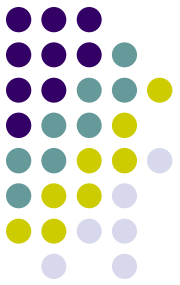
Includes pre-selected Clinical Information System



Allscripts' Sunrise Clinical Manager (Eclipsys)

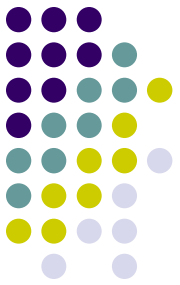
- Offers “Strategic partnerships with industry-leading healthcare content providers capture the latest findings and thinking for hospitals and present it in a way that helps hospitals arrive at the best possible clinical outcomes.”
- Uses Elsevier’s “Clinical Practice Model Resource Center”, Lexi-Comp & Wolters-Kluwer’s Clin-eGuide

<http://www.allscripts.com/en/solutions/acute-solutions/content-solutions/show/overview.html>



Our goal was – and still is – an EMR system that can pull needed information from other electronic databases and make it available at the time of service. Not just an electronic version of our paper-based record or a transaction record with “bolted-on parts”, but a “thinking-enabling” system for patient care.

Sources



- Electronic Medical Records: An Introductory Tutorial William Tierney, MD Atif Zafar, MD AHRQ PBRN Resource Center. Retrieved March 8, 2011.
http://tiny-url.org/slideshare_Franklin_EMRTutorial
- Berner ES. Clinical decision support systems: State of the Art. AHRQ Publication No. 09-0069-EF. Rockville, Maryland: Agency for Healthcare Research and Quality. June 2009. Retrieved March 8, 2011.
http://healthit.ahrq.gov/images/jun09cdsreview/09_0069_ef.html
- Haynes, C. (2007). Linking to Knowledge-Based Systems from the Electronic Health Record: The Librarian's Role. *Journal of Hospital Librarianship*, 7(4), 121-129.