

## KU Center for Healthcare Informatics

Presentation to the Advisory Board  
February 23, 2005

## Progress

- Hired Application Analyst
- Hired Director of Medical Informatics
- Received funding to hire a Coordinator for Public Health Informatics
- Created a new MS track and certificate program in **healthcare Informatics**
- Integrated the CIS into the SOM and NP Curriculum

- Consulted with a variety of Schools regarding the curriculum project
- Initiated Grand Rounds
- Appointed member of the NCHVS  
Judy Warren RN, PhD, FAAN, FACMI
- Represented on the TIGER Team
- OAT/DON Expert team

- Printed Brochures
- Launched the Center website
- National Presentation
- Publications
- Planning a Video
- Beginning to network with key people in the community to explore the role for the Center in establish RHIO
- Created Strategic Goals

## Center for Healthcare Informatics —School of Medicine Update

February 23, 2005

Timothy McNamara, MD, MPH  
Director of Medical Informatics

## School of Medicine Update

- Background
- Application Acquisition/Adaptation
- Curriculum Development/IT Integration
  - ICS
    - Cell Tissue Biology
    - Curriculum Redesign
- Nurse Practitioner Program
- Faculty Development and Support
- Health of the Public —Student Research
- Next Steps

## Curriculum Development Goal

- Leverage the success of the SON in the deployment and use of contemporary IT within the curricula of health professional programs, resulting in:
  - workforce trained for practice in the 21<sup>st</sup> century;
  - culture of academic curiosity, with tools for satisfying that inquisitiveness;
  - innovation that is "portable" to other academic institutions (through partnerships and technology transfer).

## Motivation

Institute of Medicine

- 2001 report calls for the application and use of IT throughout the education and training of the healthcare workforce
- Goal is for the healthcare industry to deliver care that is:

Safe, effective, patient-centered, timely,  
efficient, equitable

Crossing the Quality Chasm, IOM  
NAS Press, 2001

## IOM: Workforce Preparation--New or Enhanced Skills<sup>5</sup>

- Use a variety of approaches to deliver care, including the provision of care without face-to-face visits (e.g., using electronic communications to provide follow-up care and routine monitoring)
- Synthesize the evidence base and communicate it to patients
- Combine the evidence base, knowledge about population outcomes, and patient preferences to tailor care for an individual patient
- Communicate with patients in a shared and fully open manner to support their decision making and self management (to the extent they so desire), including the potential for unfettered access to the information contained in their medical records
- Use decision support systems and other tools to aid clinical decision making in order to minimize problems of overuse and underuse and reduce waste
- Identify errors and hazards in care; understand and implement basic safety design principles, such as standardization and simplification
- Understand the course of illness and a patient's experience outside of the hospital (where most training is not conducted)
- Continually measure quality of care in terms of both process and outcomes; develop and implement best practices
- Work collaboratively in teams with shared responsibility
- Design processes of care and measure their effectiveness, even when the members of the team that cares for a patient are not in the same physical locale
- Understand how to find new knowledge as it continually expands, evaluate its significance and claims of effectiveness, and decide how to incorporate it into practice
- Understand determinants of health, the link between medical care and healthy populations, and professional responsibilities



Supported by IT

## A National Priority

**“By computerizing health records we can avoid dangerous medical mistakes, reduce costs and improve care.”**

– George W. Bush  
State of the Union Address, January 20, 2004

## KUMC: Health Professional Education (SEEDS Project)

- Began in 2000 in School of Nursing with “PowerChart” in-patient application
- Negotiated access to PCO (“PowerChart Office” out-patient application) throughout fall 2004...contract signed in December, 2004
  - Tool to automate office practice
  - Includes “view” into in-patient environment (PowerChart)
  - Provides tools for:
    - Structured Clinical Documentation
    - Prescription Writing
    - E&M Coding/Automated Note Review
    - Lab, Rad, PT, OT, Nursing Services, etc...
    - Links to Outside Resources

## Example: SCD

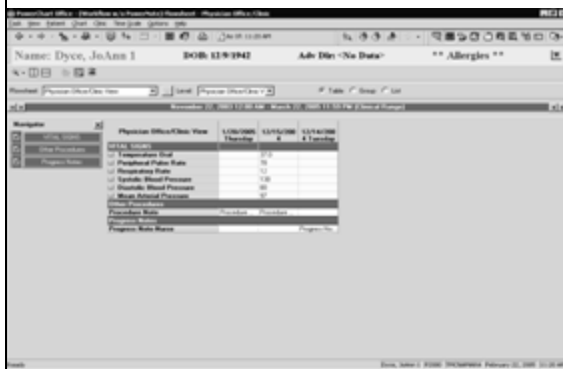
## EMR Roll Out

- Introduction to Clinical Skills
  - Overview of EMR/HIT
  - First "full H&P" documented with EMR
- Skills Lab
  - Dermatology Examination
- Nurse Practitioner Program
  - Overview of EMR/HIT
  - 2 Practical H&P documentation experience, more planned
- Cell and Tissue Biology Course
  - Clinical Correlation—Pancreatic CA (where case history was presented through the EMR) with 5 faculty members participating

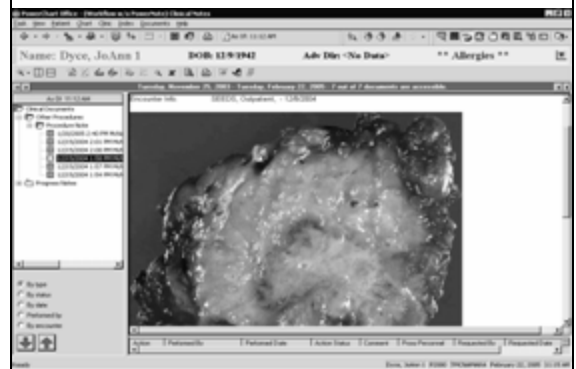
## Example: Cell and Tissue Biology



## Example: Cell and Tissue Biology



## Example: Cell and Tissue Biology



## Example: Cell and Tissue Biology



## Virtual Medical Center

- Creating a virtual hospital and clinic where students (of nursing, medicine, pharmacy, and allied health) can interact with simulated patients and one another
- Provide a foundation for delivery of educational experiences and content
- FIPSE grant submitted for academic year 2005 (VMC to be part of new curriculum regardless of FIPSE funding)
- Working to create regional centers for collaboration and content development, with:
  - University of Missouri—Kansas City
  - University of Missouri--Columbia
  - University of Iowa
  - Univ. of Oklahoma
  - University of Texas--Arlington
  - Wayne State
  - University of Massachusetts--Amherst
  - University of Nottingham
  - Others...

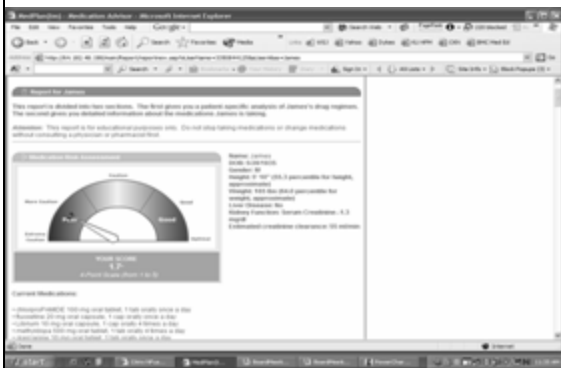
## Faculty Development and Support

- Major educational challenge
- Basic science faculty are not familiar with “paper charts” (much less EMR)
- “Variable” interest on the part of the clinical faculty in using EMR/IT in their courses
- Certain portions of the curriculum are not amenable to EMR
- Large Didactic Lectures
  - Some experience
  - Hands on student experience
  - “Night - before” requirement
- Small Group Case Presentations and Discussion
  - Challenging because large numbers of faculty facilitators involved
  - New curriculum to emphasize this approach
- Clinical Skills and Lab

## Foster Student Research

- Health of the Public 4<sup>th</sup> Class
- Implementation of the Beers Criteria for Identification of Potential Prescribing Errors in the Elderly
  - Educational Objectives
    - Exposure to and Critical Analysis of Controlled Medical Terminology (Cimino Desiderata)
      - ICD-9-CM/SNOMED/NDC
    - Introduction to Medical Error and Mitigation Strategies
      - Journal Club/Structure Reading
    - Practical Clinical Knowledge
      - Beers Criteria
      - Clinical Rules Development and Challenges
        - ASP, HTML
      - Population Analytics with Real World Data
        - Hands-on Clinical Data Analysis (SQL, MS Access, MySQL)

## Example: 4<sup>th</sup> Year Research Project



## Example: 4<sup>th</sup> Year Research Project

The screenshot shows a table with the following columns: MEDICATION CLASS, RISK, ADVERSE EFFECTS, SYMPTOMS, and EXPLANATION. The table contains two rows of data:

MEDICATION CLASS	RISK	ADVERSE EFFECTS	SYMPTOMS	EXPLANATION
Weight-bearing activities	Weight between 50 and 110 lbs combined for age and gender	No	Yes	See what you can do to reduce the risk of falling. Use the list of symptoms to help you identify if you are at risk of falling.
Weight-bearing activities	Weight between 110 and 200 lbs combined for age and gender	No	Yes	See what you can do to reduce the risk of falling. Use the list of symptoms to help you identify if you are at risk of falling.

## Next Steps: Development/Research

- Chronologically-Complex Cases
- Formal Informatics Elective
- Outsourced “Hosting Service” for Cerner AES (Academic Educational Solution)
  - Including implementation consultation
- Deployment of wireless PDAs, patient simulator-technology, and telehealth technology in educational setting
- Collaboration with local and regional efforts in the creation of RHIO (Regional Health Information Organization)
- Continuing Innovation
- Expansion into the field of public health informatics with state-wide capabilities assessment with KHI and KHf

## Schools of Nursing and Allied Health Activities

Judith J. Warren, PhD, RN, BC, FAAN, FACMI

### SON Undergraduate Students

- SEEDS is implemented 3 of 4 semesters
  - Exploring use in other courses
  - Evaluation
    - Continue present approach
    - Two dissertations
    - One Honors student project
- One Honors student project in standardized terminology

### School of Allied health

- Preliminary discussions
  - Lou Loescher-Junge, Assistant Dean for Administration
- Physical Therapy & Rehabilitation Sciences
  - Lisa A Stehno-Bittel
- Health Information Management
  - Karl Koob
  - Don Kellogg

### SON Graduate Students

- Eight students admitted to MS in Healthcare Informatics
  - First graduate in May 2005
  - Practicum opportunities: SEEDS, KUMed, Cerner, HealthLink
- Two students enrolled Healthcare Informatics Postmasters Certificate Program
  - HP&M, MPH
- One doctoral student with Healthcare Informatics cognate

### Discussion Questions?

- How do we get faculty more involved?
- Faculty development?
- How do we involve year 3 and 4 medical Students? Nursing students in last semester?
- Should we be doing something about the variable interest in IT on the part of the students?
- Interdisciplinary MS Healthcare Informatics?
- Research opportunities?
- Suggestions for Coordinator of PHI?
- Input on Strategic Goals?