Riverside Methodist Hospital
OhioHealth
Columbus, Ohio

Bad, Ugly and Good: Implementation of an Electronic Medical Record in Ambulatory Care

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Riverside Methodist Hospital

- Largest and oldest hospital of OhioHealth
- A faith-based, not-for-profit family of leading healthcare providers
- 800 Active Beds
- More than 2000 Registered Nurses
- ~1300 Attending Physicians
- Teaching facility for future healthcare providers
- More than 45,000 inpatient admissions FY10
- Magnet Recognition Program® Second Designation (2010)

About Community Medicine

- Patients
  - Diversity of cultures and languages
    - i.e. Spanish, Somalian, Arabic, Chinese (Mandarin), French, Bengali
  - Primarily uninsured or Medicaid adults
- Physicians – Medical Education (n = 39)
  - Primary Care - Internal Medicine, Preliminary Medicine and Transitional Year
  - Specialized Services - General Surgery, Ortho, Oncology, Rheum, Endo, Renal, GI, Derm and ID
- 11,206 annual visits
- 39 clinic employees
  - 1 Nurse Manager, 6 RNs, 1 LPN
  - Interdisciplinary Team (dietitian, social worker, pharmacist and financial aid counselors
  - Access to Language Services for Interpreters

Safety and Quality – Drivers for Change

- National trends
  - Electronic Medical Record (EMR)
  - Health information sharing
- Institutional Commitment
  - ACGME Requirement to educate resident physicians use of EMR
  - Availability for clinical notes, orders and lab reporting
- Reimbursement (Medicare/Medicaid)
  - Cost containment
  - Billing

Impact of an Electronic Medical Record

Results for NDNQI RN Satisfaction Survey

	2008	2009	2010*
Task	Moderate	Moderate	**High – above 50th percentile**
RN-RN Relationships	High	High	**High – above 50th percentile**
RN-MD Relationships	High	High	**High – above 90th percentile**
Decision-Making	Moderate	High	**High – above 90th percentile**
Autonomy	High	High	**High – above 75th percentile**
Perceived Quality of Care	3.67	3.82	**3.86 – at the 50th percentile**

***Benchmark/Comparison with Ambulatory Care – Teaching Hospitals)**

Bad

Challenges to Readiness

- Communication
- Pre-loading patient data
- Redesign of clinic layout
  - Renovation and construction
- Training
- Technology Readiness
  - Wireless communication

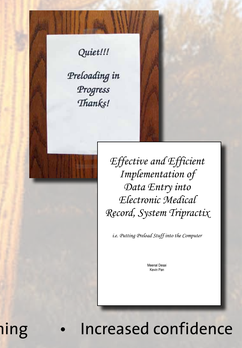
Time Line Challenges

- May – Super User Training
- June – Staff Training
- July – Go Live Schedule delayed
- August - Training forgotten
- September – Refreshers
- October – Go Live

Training Issues

- Learner relevance
  - Clinical and Non-Clinical in same sessions
  - Concerns and anxiety of staff not recognized
- Computer training room readiness
  - Down time while system loads
  - Lack of PCs
  - Overall room comfort (TOO COLD!)
- Content
  - Delivery of content varied
  - Scripted
- Misconceptions about vendor trainees
- Clinicians concern for 'work yet to be done'
- Inadequate training for resident physicians

Strategies that Helped



- Dedicated Space for Pre-Load & Education
- Nurses / attending physicians provided on the spot training for residents
- Resources for Pre-Loading
  - Med Students developed pre-loading tool
  - Hospital staff on 'work relief'
  - Colleagues from Family Practice Center (previous implementation of EMR)
- Educated staff to pre-load patient data
- Actual use of EMR
  - Decreased anxiety
  - Reinforced learning
  - Increased confidence

Ugly

Customers

- Patient Visits
  - Planned decrease in schedule by 50% for 3 months
  - Visit times increased from 1 hour to at least 2 hours
  - Routine appointments deferred
- Patient Environment
  - Eye Contact decreased
  - Clinician focus on laptop
  - Patient felt left out
- Call-backs to patients delayed
  - Clinician response to notes in EMR

Technology

- Disconnect with end-users
  - too many choices
- System Down-time
- Laptop placement
  - Stylus or Button or Mouse
- Interface Issues
  - Inconsistent population of test results

Staff

- Telephone triage calls increased
- Staff frustration with inability to provide usual level of responsive care
- Need to refer to other providers and resources
- Staff discomforts
  - Neck and back pain
  - Eyestrain
  - Hand discomfort

Strategies that Helped

- Company support for go-live
  - Extended from 3 days to 2 weeks!
- Nursing Shared Governance Council
  - Developed resources
    - Down-time packets
    - Process cards for consistency
  - Collaborated with medical preceptors for orientation booklets
- On the spot training of residents by nurses and scheduling coordinator
- Weekly progress meetings to celebrate and problem solve

Good

Actual Benefits

- Legible records for patient and staff
  - Increased safety (treatment orders and meds)
- Patient picture in EMR
  - Name/face recognition
  - Risks for safety and potential fraud
- Simultaneous viewing of chart
- System effective for TJC guidelines
  - Medication reconciliation
  - Non-existent verbal orders (<1.5% verbal)
  - Alerts (flags) replace post-it notes for communication
- New clinical information has date – e.g. allergy updates or reactions
- Assured ACGME accreditation (5 years)
- Customer service improvements
  - Immediate chart access for patient phone call inquiries
  - Improved response time for interdisciplinary communications, including test results
  - Enhanced continuity with *End-of-visit Patient Letter* (recap of medications, scheduled tests and instructions for follow-up)
- Staff job satisfaction improvements
  - Registration personnel enjoy expanded responsibilities and contributions to clinic operations
  - Nurse focus on direct patient care with decreased clerical duties
- Enhanced team involvement (front desk and clinical staff)
- Former vendor representative employed on-site by OhioHealth
- Continuity of care enhanced with Physician/Resident chart access if outpatient clinic patient admitted to hospital
- Pop-up "flags" communicate needs for immunization and preventative care

Potential Benefits

- Customize patient education documentation
- Process improvement and research
  - Data collection and analysis
  - Trending and outcomes

Individual Comments from Users of Our Electronic Medical Record

"I feel that our clinic is more friendly and safer, because we have photos of patients and get to know them better."

"It's great to be able to look up patient information immediately when answering patient phone questions."

"The EMR does not replace the value of face-to-face communication when immediate clarification is needed."

"Having almost immediate access to ask questions of the physician, social worker or nurse, is a huge benefit."

Acknowledgments

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