QUALITY IN MOTION

Keeping Pace with Change and Improvement

Evelyn Taverna  RN, MS, CNS
Eileen Pummer RN, MSN, CPHQ, AACC
Quality Managers at  Stanford Hospital and Clinics
4th Annual ACC CCA Conference
San Francisco, CA.
July 16, 2011
Objectives

- Define quality in healthcare today
- Describe a clinical effectiveness model to be used as a strategic imperative for quality
- Illustrate challenges with advancing change to ensure quality
- Give examples of clinical effectiveness projects that demonstrate a strategic imperative for quality
“The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.” （IOM,2004）

QUALITY IN HEALTHCARE

Quality, like beauty, is in the eye of the beholder.
AIM: Doing the right thing in the right way for the right patient at the right time.

- Safe
- Timely
- Effective
- Efficient
- Equitable
- Patient-centered

Crossing the Quality Chasm
National Quality Imperatives

- Public Reporting Performance
- Comparative Effectiveness
- Appropriate use Criteria
- Value-based purchasing
- Meaningful use Criteria
QUALITY, PATIENT SAFETY, & EFFECTIVENESS

Clinical Effectiveness

Clinical Appropriateness (Evidence)
Patient Centeredness (Service)
Outcomes Optimization (Quality)
Value Analysis (Cost)
A Model for Improvement

- Appreciation of a system
- Theory of Knowledge
- Understanding variation
- Psychology
Clinical Effectiveness Structure

Clinical Effectiveness Leadership Team

Key members from the medical center who set parameters on clinical performance improvements that consider cost and benefit compared to organizational goals and objectives.

Clinical Effectiveness Council

Multidisciplinary group of clinicians and department directors that implement action plans to achieve desired goals and to monitor progress.

Micro-system Teams

Unit/department based teams and task forces that blend analysis, change, measurement, and redesign into the regular patterns and the daily habits of frontline clinicians and staff.
Setting Aims

Establishing Measures

Selecting Changes

source: IHI. com
Testing Changes

The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change in the real work setting —

This is the scientific method used for action oriented learning.

source: IHI. com
Adoption of Best Practice Protocols

Changing Behavior  Understanding variation

“No one is making you do anything you don’t want. I’m just saying we’re all headed for Dodge City and we think you should come along.”
Improving Compliance with Standardized Treatment Protocols

- **MD Audit/Feedback**
- **Unit/Service Reports**
- **Campaigns**
- **Incentives**
- **Competition**
- **Best Practice Alerts As Force Functions**
- **Pocket Cards**
- **Ongoing Professional Practice Evaluation (OPPE)**
- **Incident Follow Up**
- **Opinion Leaders/Champions**
Clinical Effectiveness Projects

- Endovascular Aortic Repair (EVAR)
- Anticoagulation
- Discharge Project/Heart Failure
- Cath Angio Radiation Safety
Clinical Effectiveness: (EVAR)
Endovascular Aortic Repair

- Literature Review
  - Best Practice
- Benchmarking
- Scoping
- Team, Charter & Timeline
- Current & Proposed state
- Pilot
- Measurement
- Steady State
**Problem:**
Elective EVAR ICU utilization was at 93% compared to peers at 40%

**Project Goal:**
To develop Clinical Guidelines for admission to ICU, Intermediate ICU for EVAR patients.

**Project Benefits:**
- Increase ICU bed availability by decreasing the number of EVAR patients going to the ICU post-procedure by 40%.
- Reduce cost of care through the following:
  - Decrease ICU admission of post EVAR patients
  - CT scan post-discharge

**Potential Barriers:**
- Impact to Cath/Angio post-procedure unit & PACU with additional patient volume.
- Telemetry beds availability post-recovery
- Expert staff
- Availability and scheduling of CT scans day after discharge
## EVAR Benchmarking

<table>
<thead>
<tr>
<th></th>
<th>Stanford Hospital 93% to ICU</th>
<th>Hospital A 16% to ICU</th>
<th>Hospital B 39% ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EVAR location</strong></td>
<td>Cath/Angio &amp; OR</td>
<td>OR</td>
<td>OR</td>
</tr>
<tr>
<td><strong>PACU</strong></td>
<td>2 to 3 hours – only 7% of patients</td>
<td>2 to 3 hours</td>
<td>2 to 3 hours</td>
</tr>
<tr>
<td><strong>Post-op unit/Staffing ratio</strong></td>
<td>ICU 1:2</td>
<td>Telemetry 1:4</td>
<td>Telemetry 1:3 or 1:4</td>
</tr>
<tr>
<td><strong>Vital Signs &amp; pulses</strong></td>
<td>Per ICU q 1-2 hours</td>
<td>every 15 min. x 4</td>
<td>every 15 min. x 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>every 30 min x 2</td>
<td>every 30 min x 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>every one hour x 4,</td>
<td>every one hour x 4,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pulse check q 2 hours</td>
<td></td>
</tr>
<tr>
<td><strong>LOS</strong></td>
<td>2 to 3 days</td>
<td>2 days</td>
<td>2 days</td>
</tr>
<tr>
<td><strong>CT scans</strong></td>
<td>Inpatient</td>
<td>Outpatient</td>
<td>Outpatient</td>
</tr>
</tbody>
</table>
EVAR Best Practice

ICU CRITERIA
1) Unstable hemodynamics, arterial line & vasoactive drips
2) Unstable Respiratory Status
3) Unstable CAD
4) Dialysis – CRRT
5) Pain Management

Pt. admits Same day Admission Unit

OR

Pt. admits Ambulatory Surgery Unit

CATH/ANGIO

Intermediate ICU CRITERIA
1) Stable hemodynamics, & respiratory status
2) No arterial line
3) Stable NTG, Dopamine or Lido drips

Intermediate ICU

TRANSFER TO Intermediate ICU (D3)

40% ICU

Cath Angio Post Recovery

Intermediate ICU 60%

Vital Signs & Pulses
*every 15 min. X 4
*every 30 min. X 2
*every hour X 4

Anticipated Discharge Day 3 with Outpatient CT SCAN Scheduled
• Stanford ICU Utilization in elective EVAR dropped
• LOS decreased
• ICU bounce-backs from IICU – 0%
• Mortality- 0%
ICU Utilization
Savings from non-ICU usage

Total Savings to Date = $116,783

Source: Midas & TSI
EVAR Project Highlights

- Team work
  - Surgeons and Nursing vested in project
  - Multiple departments working together
- Patient satisfier
- Increased ICU bed availability
Anticoagulation: The Future is HERE!!

- The Joint Commission: National Patient Safety Goal since 2008

- “Meaningful Use” for the EMR
  - Venous Thromboembolism
Meaningful Use: Hospital Quality Measures

- There are 15 total measures in 3 categories
- Hospitals must report on all 15

- ED: 2 measures
- Stroke: 7 measures
- VTE: 6 measures
Meaningful Use of the EMR

- VTE Measures
  - VTE prophylaxis within 24 hours of arrival
  - ICU VTE prophylaxis
  - Anticoagulation Overlap Therapy
  - Platelet Monitoring on IV Heparin
  - Venous Thromboembolism Discharge Instructions
- Incidence of Potentially Preventable Venous Thromboembolism
Anticoagulation protocols:

- Warfarin by pharmacy protocol
- Multiple heparin anticoagulation protocols
Outcome Study

- 955 hospitals, 717,396 Medicare patients

- Hospitals WITHOUT pharmacist-provided warfarin management
  - 6% higher death rates
  - 6% longer length of stay
  - 8% higher bleeding complications
  - 22% higher transfusion rates for bleeding complications
  - 2% higher Medicare costs

Bond, CA. Pharmacotherapy 2004;24:953-63
Adoption of Best Practice Protocols
Stanford Warfarin by Pharmacy Protocol
Jan – April 2010

Protocol Group Had Greater Number of INRs Within Goal (p<0.017)

SOURCE: Dana Radman, PharmD, BCPS, Mgr. Pharmacy Clinical Effectiveness
EPIC Example: Order Set

Order set

Protocol order is the default in all order sets

IP ICU DVT PULMONARY EMBOLISM

Knowledge resources

- Pulmonary Embolism
  Learn more about PULMONARY EMBOLISM at the LaneConnex Critical Care portal

Ordering instructions:

- Warfarin (Coumadin) tablet
  2.5 mg, Oral, DAILY
- Warfarin (Coumadin) tablet
  5 mg, Oral, DAILY

- WARFARIN BY PHARMACY HELP ORDER 1 Each
  PHARMACY IS MONITORING AND ORDERING WARFARIN DOSES. PLEASE NOTE IT IS THE RESPONSIBILITY OF THE ORDERING PHYSICIAN TO DISCONTINUE THE PROTOCOL AT ANY TIME

Medications

Thrombolytic agents
- alteplase (Activase) 100 mg IV injection over 2 hours per protocol
  100 mg, Intravenous, ONCE

Factor XA inhibitors
- fondaparinux (ARIIXTRA) 5 mg/0.4 mL syringe
  5 mg, SUBCUTANEOUS, DAILY
- fondaparinux (ARIIXTRA) 7.5 mg/0.6 mL syringe
  7.5 mg, SUBCUTANEOUS, DAILY
- fondaparinux (ARIIXTRA) 10 mg/0.8 mL syringe
  10 mg, SUBCUTANEOUS, DAILY

Low molecular weight heparin
- enoxaparin (LOVENOX) 100 mg/mL syringe
  1 mg/kg, SUBCUTANEOUS, EVERY 12 HOURS

Vitamin K antagonists
- warfarin (COUMADIN) tablet
  2.5 mg, Oral, DAILY
- warfarin (COUMADIN) tablet
  5 mg, Oral, DAILY

Heparin infusion protocols

Low or Full Heparin Infusion Protocol: Found in a separate order set.
BPA Alert

Alternative Selection

WARFARIN 1 MG PO TABS

SHC best practice is for warfarin to be managed through the Pharmacist-managed Warfarin Protocol (see link on right).

Click Accept Alternative below to order the warfarin protocol.

If you choose to continue with your original warfarin non-protocol order, you acknowledge that you are not following SHC best practice. Your non-protocol order is subject to review and monitoring and you may be contacted by medical staff leadership for follow-up.
Reduction in ADRs

Reduction in Heparin ADRs
Standardized Protocols

Reduction in Coumadin ADRs
Pharmacist Managed Protocols
Heparin Protocols

- Cardiology
  - Acute Coronary Syndrome
  - Atrial Fibrillation
  - Cardiac Electrophysiology
  - Mechanical Heart Valve
- DVT/PE
  - General
  - Post-procedure
  - Mechanical Heart Valve
- IR/Neurology
  - Cerebral Sinus thrombosis
  - Post IR Procedure
  - Post Stroke
- High Bleeding Risk

- MD to Specify Bolus & Infusion Parameters (Off Protocol)
Action Plan: Anticoagulation

- Education of reluctant adopters
- EPIC – Nesting Heparin Protocols
- Quick links for troubleshooting guidelines
- Reinforcement with evidence & data

"I was afraid of this — the evolution protocols are just confusing them."
CE Projects 2011-2012

- Discharge Projects
  - Readmissions

- Cath/Angio Radiation Safety
  - Pre, Intra and Post-Procedure
Focus:
To design a standardized, patient-centered discharge process which improves communication with our outpatient providers, delivers the highest quality of care to our patients and ultimately aims to reduce hospital readmissions.

Our Multidisciplinary Team includes:

Key stakeholders: from Process Excellence, Business Development Heart Failure & Anticoagulation Task Forces
Discharge Project
What have we done?

• Assessed current state
  • Borrowing from QI PDSA methodology, LEAN, Six Sigma

• Learning from Evidence-Based Programs (Project RED/BOOST)

• Review of volume data, LOS, readmissions

• Using tools/techniques including:
   Process Mapping
   Interviews
   Literature review
   Surveys of Patients, PCPs, Residents
   Medication Reconciliation Pilot

• Built a multi-disciplinary/cross-continuum team

• Identified key intervention opportunities
Proposed Interventions

Transition of Care to PCP
- Notify all PCPs of patient hospitalizations
- Standardized discharge summary communicated to PCP & automate

Medication Reconciliation
- ED Pharmacist driven medication reconciliation
- Automatic pharmacy consults for high risk medications

Outpatient Follow-Up
- Standardized process for setting up f/u appts BEFORE pt leaves hospital.
- Close the loop (pending tests, labs, radiology)

Patient-Centeredness
- Teaching on new diagnoses
- Who to call post-discharge
Goal/Aim:
Team provides recommendations for Radiation Safety for:

Pre-procedure, Intra-procedure & Post-procedure Cath Angio Procedures

High Risk Procedures include:
- Radio frequency cardiac catheter ablation
- Vascular Embolization
- Transjugular interhepatic portosystemic shunt
- Percutaneous endovascular reconstruction
## Radiation Safety

<table>
<thead>
<tr>
<th>Pre-Procedure</th>
<th>Intra-Procedure</th>
<th>Post-Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consent to include high risk procedure radiation risk</td>
<td>• Monitor and record exposure at intra-procedure and end of procedure</td>
<td>• Documentation of DAP in EMR</td>
</tr>
<tr>
<td>• Patient/Family brochure on radiation safety</td>
<td>• Tech alerts operator at 30 min. of flowro</td>
<td>• Patient informed of excessive radiation dosing</td>
</tr>
<tr>
<td>• Investigate ability to track cumulative doses of radiation</td>
<td>• Inform operator of current DAP</td>
<td>• Follow-up in one month for skin burns or hair loss</td>
</tr>
</tbody>
</table>
Quality in Motion

- Dynamic
- Patient Centered
- Transparent
- Collaborative
- Evidence based
- Outcomes focused
QUESTIONS?
References


