
A Pilot Study in Performance Improvement CME: Using an Electronic Health Record for Guided Self Assessment and Learning

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Nothing to disclose

Timely Administration of Pre Op Antibiotics

- Evidence Based
- Pay for Performance Measure
- Easy to Identify Variances

Background

- Anesthesia EHR installed in OR Nov 2005
- Directly records physiologic data to the record
- Manual input of drugs (Time & Dose)
- Creates standardized print out - easy to review

Purpose

- To improve compliance rate of antibiotic administration within academic clinical anesthesiology practice
- To gain experience with the PI-CME process
- To gain experience using EHR for self assessment for the PI-CME process

Methods

- EHR queried by systems administrator (Jan to July 2006) – departmental compliance rate: 88.25%
- All department members received blinded department overall performance and their own data
- Volunteers for pilot recruited via announcements made at departmental meetings
- Volunteers received copies of Anesthesia records of their “missed cases”

Study Volunteers

Anesthesiology Dept Faculty 12/50 (24%)

- Yrs in practice

| | |
|---------|-----|
| — <5 | 17% |
| — 11-15 | 8% |
| — >15 | 75% |

- Academic rank

| | |
|---------------------|-----|
| — Instructor: | 17% |
| — Assist Professor: | 17% |
| — Assoc Professor: | 33% |
| — Professor: | 33% |

- All board certified

EHR Pilot Study CME Process

Infrastructure developed to comply with AMA

- Oversight
 - CME committee + planning committee
- Clear instructions to physicians
 - Detailed cover info developed for each stage
- Validate depth of physician participation
 - Documentation encourages reflection and validates participation
- Provide adequate background information on PI
 - Anesthesiology grand rounds and department meetings discussed PI, EHR and Abx issues

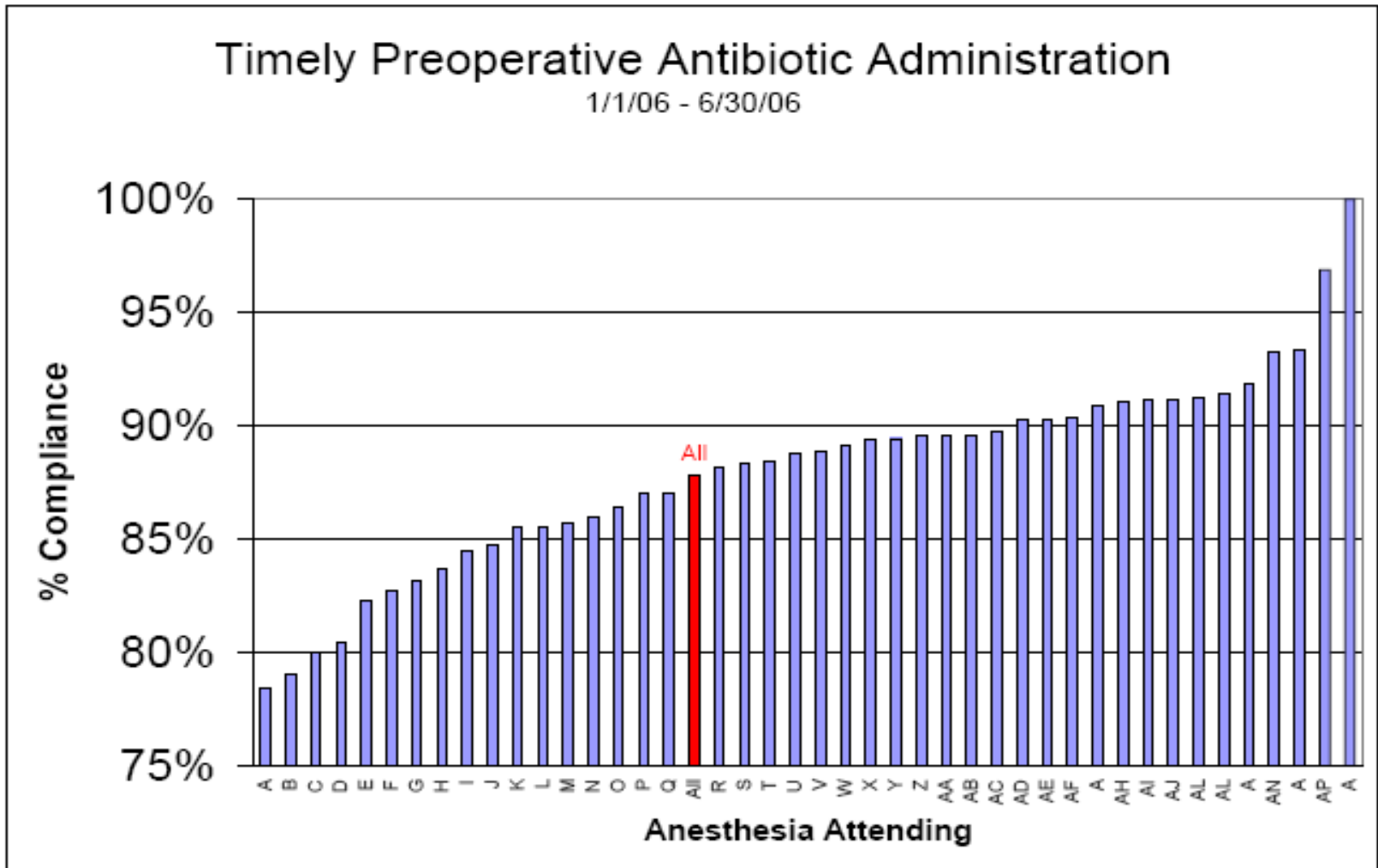
Follow AMA PI-CME 3 Stage Model

Assess, Intervention, Reassess

Stage A: Assess current practice

- Initial query indicated departmental compliance at 88.25%
 - Dept set goal of 95% compliance
- EHR records of 12 volunteers queried
 - 116 cases identified as out of compliance
 - Either too early or too late
 - Initial compliance range: 80-92%

Departmental Compliance



Stage A: Participant Self Assessment

- Individual analyzed personal performance vs department
- Completed chart audit
- Compliance worksheet
 - Reasons for non-compliance
 - Pre-coded and open ended option

Stage A: Participant Self Assessment

- Completed CME Worksheet/Documentation
 - Performance Prediction
 - Demographics
 - Categorize reasons for variance
 - Performance relation to core competencies
 - Attitude towards need to change

Stage A: Documentation

- Process evaluation
 - Time/effort
 - Value as a PI process
 - Open ended comments

Stage A: Results

Why Noncompliant?

- Error on record 22.4%
- Neglected to give in time 19.8%
- Underestimated time to incision 17.2%
- Surgeon requested none be given 11.2%
- Pt receiving antibiotics in hospital 9.5%

Stage A: Self Assessment Ratings*

| | |
|---|------|
| Predicted performance vs peers: | 3.36 |
| Rating of performance after data review: | 3.92 |
| Rating of accuracy of performance prediction: | 4.17 |

**Self rating on 1 (low) to 5 (very high) scale*

Stage A: Evaluations

Performance relation to core competencies *

- 75% Systems
- 33% Communications
- 25% Patient Care

**Total >100% due to multiple answers*

Stage B: Intervention

Participant required to...

Review, Reflect, Respond

- Evidence based educational packet provided
- Evaluation
 - Guided response form
 - Process evaluation

Stage B: Documentation

Questions asked of participants

- Need and commitment for improvement
- Value of education packet as PI
- Performance improvement areas related to competencies
- Additional educational actions taken
- Attitude towards change
- CME documentation
- Value of Stage B as CME
- Required Open Ended Questions: “What I’ve learned”; “What I’ll change” “What else can I look at using EHR”

Stage B: Results

- **Performance improvement areas related to core competencies**

83% Systems

17% Communications

17% Patient Care

Stage B: Results

Additional Educational Actions Taken by 83% (10/12) of participants

Including.....

| | |
|----------------------------------|-----|
| Literature review | 33% |
| Review EHR documentation process | 25% |
| Discuss w/ peers | 17% |

Stage B: What I've learned....

“Reinforced our current practice...”

“Importance of pre-op antibiotics. Barriers to compliance predominantly systems based”

“Evidence is compelling that antibiotic admin w/in 2 hrs prior to incision reduces incidence of surgical wound infection”

Stage B: What I'll change...

“More aware of need to communicate with residents and nurses about timely admin...”

“Will specifically plan the timing of abx admin in cases that require long preparation time... verify time stamps before closing case...”

“Be sure to confirm appropriate admin...”

“Prepare antibiotic solution early... make sure dose/time properly documented...”

“I will risk changes to my practice... because it has been shown to be best for patient care...”

Stage B: Comments/Suggestions...

“Excellent project, this type of activity brings awareness about practical yet extremely important issues”

“Enjoyed the process. Focused learning about important topic”

Stage C: Reassess

- To be completed Spring 2007
- Plan to reproduce individual reports
- Participants will analyze improvement
 - Factors leading to improvement
 - Factors preventing improvement

Participant Suggestions for Additional Studies Using EHR

“Post op antibiotic administration”

“Adequate maintenance of patient temperature”

*“Blood management such as PRBC’s transfusion
FFP”*

*“Duration of anesthesia in correlation with incidence
of hypoxia...”*

*“Change in blood pressure with induction of
anesthesia”*

“Time to orientation after anesthesia”

Lessons Learned to Date - CME

- More than just PI - collaboration needed to add CME
- CME development may be difficult for individuals
- Templating of forms useful, but customization will be needed for each project
- Stage B is the hardest to develop, do case by case
- There are costs incurred both for development and for each project

Lessons Learned to Date- Self Assessment

- Reports from EHR can provide data to guide physician self assessment
 - Reports will only be as good as what's recorded
- May be difficult for individuals to query their EHR for customized reports
- Better suited to group practices?

EHR Self Assessment

- Routine reports could be built into EHR
- Reports should be evidence based measures
- A rich array of standard reports will be necessary to meet all individuals' practice patterns

Future Plans

- Each faculty practice has a PI project under JUP Clinical Care Committee
 - Collaboration to develop as PI-CME projects
- Hospital project: Compliance “Dashboard”
 - Real-time individualized data
 - Tied to education/CME credit



Questions/comments?

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- Additional informational slides

Development Costs -

- MD time
 - In planning committee
 - Generating individual data reports and case packets for Stage A
 - Utilized existing technology to generate reports from EHR

Development Costs - CME

- Overall Policy/Procedure Development*
- Project planning
- Documentation planning and creation of forms**
- CME accreditation compliance
- Materials duplication/distribution
- Data Collection and entry
- Data Analysis
- Participant records

**one time cost*

***template forms customized for each project*