Adverse Drug Events

Steven Tremain, MD, FACPE
Cynosure Health
April 4, 2014
The next 75 Minutes...

• Review of Rapid Cycle PDSA
• Workshop: Using your homework, plan small tests of change
• Clarify ADE measures
• Workshop: Design small tests of change to find the data
• Hospital peer to peer learning
The Model for Improvement

Rapid Cycle PDSA
Small Tests of Change
“Every system is perfectly designed to achieve the results that it gets”

Paul Batalden, Dartmouth
While all changes do not lead to improvement, all improvement requires change.

» Thomas Nolan, The Improvement Guide
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Model For Improvement

Act Plan

Study Do

AIM

MEASURE

Selecting Change

Small Tests of Change
One day Alice came to a fork in the road and saw a Cheshire Cat. “Which road do I take?” she asked. His response was a question: “Where do you want to go?” “I don’t know,” Alice answered. “Then,” said the cat, “it doesn’t matter.”
WHAT?

WHERE?

HOW MUCH?

BY WHEN?
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Model For Improvement

Act

Plan

Study

Do

AIM

MEASURE

Selecting Change

Small Tests of Change
Why Measure?

• How else will you know that the change(s) you made resulted in improvement?

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Used for learning</td>
<td>• Used to judge</td>
</tr>
</tbody>
</table>
Our Question?

- ADAPT
- ADOPT
- ABANDON
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?
Find out what’s working

Brainstorm

Rank

Construct Plan to Test

Test SMALL
The PDSA Cycle

**Plan**
- Objective
- Questions & predictions
- Plan to carry out: Who? When? How? Where?

**Do**
- Carry out plan
- Document problems
- Begin data analysis

**Study**
- Complete data analysis
- Compare to predictions
- Summarize

**Act**
- Ready to implement?
- Try something else?
- Next cycle

“Let’s try it!”
“Did it work?”
“What’s next?”
“What will happen if we try something different?”
Guidelines For Testing Change

• Fail early, fail often
• What can we do by next Tuesday?
• Pick willing volunteers
• AIM big, but test small
• Steal shamelessly
Guidelines For Testing Change

• Do not try to get buy-in, consensus
• Be innovative to make test feasible
• Collect useful data during each test
• Test over a wide range of conditions
The Value of “Failed” Tests

“I did not fail one thousand times; I found one thousand ways how not to make a light bulb.”

Thomas Edison
Common Traps

• Plan Do, Plan Do
• Do Act, Do Act
• No testing, only data collection
• No ramps of tests, random PDSAs
• Undisciplined PDSAs, no documentation
• No prediction – what are we going to learn?
• Beware of Cycles longer than 30 days
Applying Lessons Learned
References


Your Turn

Rapid Cycle PDSA
Small Tests of Change
Clarifying ADE Measures
What’s New?

- Alignment of measures
Outcomes Measures for 2014

Anticoagulation:

• Excessive Anticoagulation with Warfarin
  – Numerator: All inpatients experiencing excessive* anticoagulation with warfarin
    (*organization-defined)
  – Denominator: Inpatients receiving warfarin anticoagulation
Hypoglycemia:

- Hypoglycemia in Inpatients Receiving Insulin
  - Numerator: Hypoglycemia (plasma glucose <50 mg/dl) in inpatients receiving insulin or other hypoglycemic agents*
  - Denominator: Inpatients receiving insulin or other hypoglycemic agents
Outcomes Measures for 2014

Opioids:

• Oversedation

  – Numerator: Number of inpatients and patients in hospital outpatient departments treated with opioids who received naloxone during the review period.

  – Denominator: Number of inpatients and patients in hospital outpatient departments who received an opioid agent during the review period.

  – Exclusion: ED patients; opioid use for nausea or pruritus
Suggested Process Measures for 2014

Anticoagulation:

• Percentage of patients on warfarin managed by pharmacy driven protocols
  – Numerator: Number of patients on warfarin managed by pharmacy driven protocols
  – Denominator: Number of patients on warfarin
Process Measures for 2014

Hypoglycemia:

• Percentage of inpatients on insulin whose blood sugars registered <70 mg/dl at least once
  
  – Numerator: Number of inpatients on insulin whose blood sugars registered <70 mg/dl at least once
  
  – Denominator: Total number of inpatients on Insulin
Reference for Hypoglycemia Process Measure

http://care.diabetesjournals.org/content/36/Supplement_1/S11.full.pdf+html%20%5bpage%20S47%5d.

Pages S46-47
Suggested Process Measures for 2014

**Opioids:**
• Percentage of patients receiving opioids who receive an opioid risk assessment prior to first opioid dose

  – *Numerator*: Number of patients on opioids who received an opioid risk assessment prior to first opioid dose

  – *Denominator*: Total number of patients on Opioids
Suggested Process Measures for 2014

Opioids:

- Percentage of patients receiving opioids who regularly receive a formal assessment (e.g. POSS or RASS) during therapy
  - **Numerator**: Number of patients receiving opioids who regularly receive a formal assessment (e.g. POSS or RASS) during therapy
  - **Denominator**: Total number of patients on Opioids
Reference for Opioid Process Measures


Therapeutic Strategy #7
Measures Controversies

• Warfarin: Grace period?? Do we only have to count high INRs 24 or 48 hours post admission?
• Warfarin: Target INR ? Is it 5, or 6?
• Insulin: what about oral hypoglycemics ? Do the numerator and denominator just include patients on insulin, or those on all hypoglycemics?
Questions?
Resources

• HRET Data Team hendatasupport@aha.org
• Improvement Advisor Steve Tremain stremain@cynosurehealth.org
• State Hospital Association
• Change Packages (www.hret-hen.org)
• Listserv
Your Turn

Find the Data:
Design Small Tests of Change
Hospital Stories

Peer to Peer Learning