Overview of Quality Improvement Science
July 2, 2013

Ruth S. Gubernick, MPH
Quality Improvement Advisor
Housekeeping

- To minimize unwanted noise of shuffling papers, crunching carrots, etc., we will mute all participants until the Q and A session at the end.
- We welcome your questions. Please type them into the chat box and send them to Janet Gingold.
- CME: Attendance at live session is accredited for one hour of category 1 CME. Attendance at two of first three webinars is required for PI CME package.
- Taking Attendance:
  - Please type attendees’ full names into the chat box and send them to Janet Gingold.
  - Download the Attendance Tracker spread sheet from QITS in the Cloud to record your attendance and send to Liz Rice-Conboy after each session.
Today’s presenters . . .

- **Ruth S. Gubernick, MPH**
  - Ms Gubernick is a Public Health Consultant, working with the CIzQIDS Project as the Quality Improvement Advisor. Her role is to help introduce QI science to the selected practices via selected learning sessions, advise the CIzQIDS QI coach and assess the project in debriefing sessions.
  - Ruth is a Consultant with the American Academy of Pediatrics, NJ Chapter/Pediatric Council on Research and Education (PCORE), engaged as a Program Specialist on the NJ Medical Home/Integrated Systems Initiative and on their Immunization Initiative.
Today’s presenters . . .

• **Janet Gingold, MD, MPH**
  - Dr. Gingold is the QI coach for the CIzQIDS project. She earned an MD at the University of Michigan Medical School and completed a pediatric residency at the University of Rochester in Rochester, New York. She is certified by the American Board of Pediatrics and holds a MPH in Epidemiology from the University of Maryland, College Park.
  - In addition to providing primary pediatric care in Prince George’s County, Maryland for 20 years, Janet also has taught introductory biology to community college students and has authored three novels for children.
Comparison of Immunization Quality Improvement Dissemination Strategies (ClzQIDS)

CME Disclosure

I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity.

I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.
Learning Objectives

- After completing this course, you will be able to:
  - Develop a strategy for improving delivery of early childhood immunizations in a primary care setting
  - Apply the Model for Improvement to test changes, using the CIzQIDS Toolkit’s examples of immunization-focused PDSA cycles, tools and resources
  - Implement a measurement strategy to monitor changes made
# Research vs. Quality Improvement

<table>
<thead>
<tr>
<th></th>
<th>Measurement for Research</th>
<th>Measurement for Learning and Process Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>To discover new knowledge</td>
<td>To bring new knowledge into daily practice</td>
</tr>
<tr>
<td><strong>Tests</strong></td>
<td>One large &quot;blind&quot; test</td>
<td>Many sequential, observable tests</td>
</tr>
<tr>
<td><strong>Biases</strong></td>
<td>Control for as many biases as possible</td>
<td>Stabilize the biases from test to test</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Gather as much data as possible, &quot;just in case&quot;</td>
<td>Gather &quot;just enough&quot; data to learn and complete another cycle</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Can take long periods of time to obtain results</td>
<td>&quot;Small tests of significant changes&quot; accelerates the rate of improvement</td>
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Fundamental Questions for Improvement

• What are we trying to accomplish?

• How will we know that a change is an improvement?

• What changes can we make that will result in an improvement?
Model for Improvement

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?

AIM
MEASURES
IDEAS

Act
Plan
Study
Do
What Are We Trying to Accomplish?

Aim: A written statement of the accomplishments expected from this improvement effort

Key components:
- A general description of aim – should answer, “what are we trying to accomplish?”
- Some guidance for carrying out the work and rationale
- Specific target population and time period
- Measurable goals
Example (Poor)

- Our practice team will improve communication with families who are vaccine hesitant.
By June 30, 2014, our practice team will improve immunization processes in our practice for infants and children so that:

- 95% of our patients seen for any type of visit will have their immunization status assessed.
- 95% of our patients will receive all vaccines for which they are eligible (based on ACIP recommendations) at a visit.
- 90% of our patients will have their current immunization information sent to the IIS (electronically or manually entered) within 7 days of vaccine administration.
- 95% of parents/guardians will receive a current immunization record for their infant/child each time vaccines are administered & as needed.
- 90% of our patients will receive appropriate immunizations reminders or recall notices.
- 90% of our 3 to 18 month old patients will be UTD with all ACIP recommended immunizations.
SMAART Aim

- **Specific**: Understandable, unambiguous
- **Measurable**: Numeric goals
- **Actionable**: Who, what, where, when
- **Achievable** (but a stretch)
- **Relevant** to stakeholders and organization
- **Timely**: with a specific timeframe
AIM Worksheet

The (name of your team) intend to accomplish

By (date)

For (population)

because

Our goals include:

Special guidance that will help us stay on track:
Model for Improvement

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AIM

MEASURES

IDEAS

Act

Plan

Study

Do
How will we know a change is an improvement?

- Requires **measurement**
- Build measurement into daily work routine
  - Data should be easy to obtain and timely
  - Small samples over time
- Use qualitative & quantitative data
  - Qualitative data is highly informative
  - Qualitative data is easy to obtain
One practice’s measurements...
Model for Improvement

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?

AIM

MEASURES

IDEAS

Act

Plan

Study

Do
What Changes Can We Make That Will Result in Improvement?

**Tests of Change** need 2 components:

1. Change concepts (ideas): ready for use or ready to adapt to your unique environment (**Use results from pre-work assessment to inform what you need to change**)

2. PDSA test method
The PDSA Cycle for Learning and Improvement

Act
• What changes are to be made?
• Next cycle?

Plan
• Objective
• Questions and predictions (why)
• Plan to carry out the cycle (who, what, where, when)
• Plan for data collection

Study
• Complete the analysis of the data
• Compare data to predictions
• Summarize what was learned

Do
• Carry out the plan
• Document problems and unexpected observations
• Begin analysis of the data

“Let’s try it!”

“Did it work?”

“What’s next?”

“What will happen if we try something different?”
PDSA: Break it Down/Simplify...

**Plan** - Figure out the questions you want to answer, plan a way to answer the questions, and predict results

**Do** - “Just do it” (i.e. do the plan)

**Study** - What did you learn?
   Did your prediction hold?
   What assumptions need revision?

**Act** - What will you do with the knowledge you learned?
   Adapt? Adopt? Abandon?

*What do you want to do next?*
A PDSA Cycle

**Act**
- What changes are to be made? Next cycle?

**Plan**
- Objective
- Questions and predictions (why)
- Plan to carry out the cycle (who, what, where, when)

**Do**
- Carry out the plan
- Document problems and unexpected observations
- Begin analysis of the data

**Study**
- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

**P: Ask one doctor to immunize at sick visit for 1 patient**

**A: Will try one week**

**S: Was some resistance as predicted with mother.**

**D: Dr. M immunized 2 patients, 1 with fever. Caught child up**
Use of the PDSA Cycles

Multiple cycles

Evidence

Best Practice

Testable Ideas

Very Small Scale Test

Follow-up Tests

Wide-Scale Tests of Change

Implementation of Change

Changes that Result in Improvement

Data

A

P

S

D

A

P

S

D

A

P

S

D

A

P

S

D
What are Tests?

Putting a change into effect on a temporary basis and on a small scale and learning about the potential impact
Task or Test?

- Task
  - To do’s
  - Meetings
  - Posters
  - Policy
  - Committees

- Test
  - Question
  - Prediction
  - Data
  - Usually involves patient
Why Test?

- **Increase** your belief that the change will result in improvement
- **Opportunity** for learning from “failures” without impacting performance
- **Document** how much improvement can be expected from the change
- **Learn** how to adapt the change to conditions in the local environment
- **Evaluate** costs and side-effects of the change
- **Minimize** resistance upon implementation
Decrease the Time Frame for a PDSA Test Cycle

- Years
- Quarters
- Months
- Weeks
- Days
- Hours
- Minutes

Drop down next “two levels” to plan Test Cycle!
What Can We Do Now!

By Next Week,
By Tuesday,
By Tomorrow

That won’t harm a hair on the head of a patient?
Sequential Building of Knowledge
Include a Wide Range of Conditions in the Sequence of Tests

Test on a small scale
Test a wider group
Test new conditions
Implement
Spread
Breakthrough Results

Evidence & Data
Learning and improvement

Theories, hunches, & best practices
Overall Aim: Improving Immunization Coverage Rates (and Preventing Disease!)

- Administer all eligible vaccines
- Elicit patient/family concerns
- Assess immunization status at every visit
- Administer all eligible vaccines
- Conduct Reminders/Recalls
Fundamental Questions for Improvement

- What are we trying to accomplish?
  - Team Aim Statement
- How will we know that a change is an improvement?
  - Measures
- What changes can we make that will result in an improvement?
  - CIzQIDS Toolkit (Best Practice Strategies)
Form for planning a PDSA cycle supports prediction and keeping one step ahead.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Prediction</th>
<th>Change/Collection</th>
<th>DO</th>
<th>Study</th>
<th>Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>Predictions</td>
<td>Plan for change or test: Who, what, when, where</td>
<td>Carry out the change or test; collect data and begin analysis.</td>
<td>Complete analysis of data; summarize what was learned.</td>
<td>Are we ready to make a change? Plan for the next cycle.</td>
</tr>
</tbody>
</table>
Plan a Test of Change

Objective for this PDSA Cycle (Aim):
By March 1, our practice will provide all necessary current Vaccine Information Statements (VIS) for review by patient/family prior to immunizing at least 85% of our patients.

PLAN:

QUESTIONS
Do we have access to all of the currently necessary VIS forms and in the appropriate languages? Can we provide all of the appropriate VIS forms for each patient/family to review prior to receiving immunizations?

PREDICTIONS
We will find that we do not have the most current version of VIS form for at least 1 vaccine type (Note: This task can be completed by MA prior to conducting this planned test of change by accessing the VIS website included in our Toolkit). We will find that we have provided all of the currently necessary VIS forms in appropriate languages for at least 85% of our patients prior to receiving immunizations.

PLAN FOR CHANGE OR TEST: WHO, WHAT, WHEN, WHERE
Prior to Wednesday morning, Alison (MA) will put copies of current VIS forms in folders (1 for each vaccine type, in English and Spanish) in drawers of 1 of the exam rooms used by Deb (NP) – Exam Rm. #3. On Wednesday morning, Deb will give each patient/family seen in Rm.3 who is being immunized all necessary VIS forms to review prior to Alison administering the needed immunizations. She will note “VIS given” as part of vaccine order. Allison will continue to record the date of each VIS form in the patient’s record when she records the vaccine administration information.

PLAN FOR COLLECTION OF DATA: WHO, WHAT, WHEN, WHERE
By the end of the day (Wednesday), Allison will review the records of patients seen by Deb that morning in Rm #3 who received immunizations. She will record total # of patients immunized, count the number of those records with “VIS given” noted by Deb # with “VIS given” noted/total # of records of patients immunized = % receiving VIS to review prior to receiving immunizations.

DO: CARRY OUT THE CHANGE OR TEST; COLLECT DATA AND BEGIN ANALYSIS.
REPORT THE RESULTS OF YOUR TEST HERE. Describe observations, problems encountered, and special circumstances.
Deb reported that it was not easy to remember to go in the drawer and take time to remove a VIS from each folder. It threw off her visit plan. She did note that giving the VIS forms herself (rather than the MA doing it as currently done in our practice) did prompt one parent to express some concerns about her child’s vaccination choices which led to a positive interaction/discussion. One parent asked why she has to get all these forms every time her baby gets shots. Allison gave VIS forms when she found that patient/family had not yet received them from Deb. Needed to download VIS forms in Russian. There is no space on our current immunization encounter form to record the VIS date for HPV.

STUDY: COMPLETE ANALYSIS OF DATA; SUMMARIZE WHAT WAS LEARNED.
60% (5/10) of the patients seen that morning by Deb who needed immunizations had received their VIS forms prior to Alison coming in to administer immunizations. VIS folders in the drawer are not easily accessible. Parents used VIS forms to ask Deb additional questions. Need easy access to VIS forms in other languages. Additional task to do: Immunization form in record needs to be modified to include space to record VIS form date for HPV.

ACT: ARE WE READY TO MAKE A CHANGE? Modifications or refinements to the test?
PLAN FOR THE NEXT CYCLE.
Not ready to make change yet. Modifications for cycle #2 – VIS forms will be put in easy access clear pocket folder on counter in Rm. 3. Thursday morning, when rooming patient, Allison will confirm primary language of patient/family and download appropriate VIS forms, if needed. Deb and Allison will retest the planned cycle and collect data.
How teams get results

- Engage leaders
- Form team
- Assign responsibility for key tasks
- Meet
- Small tests of change
- Use of the IIS
- Use of best practices, tools and resources
The Care Model for Child Health in a Medical Home
From Charles Darwin:

“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”
Questions/Comments?
Your First Assignment: Plan a change

- Look at the big picture: What do you need to improve?
  - Use materials from the tool kit
  - Ask staff about barriers they come up against
  - Brainstorm with your team

- Limit your focus to a single change that is
  - Achievable within a few weeks with available resources
  - Measurable
MODEL FOR IMPROVEMENT

<table>
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<tr>
<th>Team Name: _______________</th>
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Plan a Test of Change Cycle #:_____ Start Date: _____ End Date: ______

Objective for this PDSA Cycle (Aim):

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Get very specific

- What exactly will you do differently?
- Who will do it?
- When will they do it?
- Where will they do it?
- What resources or training will they need?
- What do you expect will happen with this change?
- What problems might occur?
How will you measure that?

What data will you collect?
- Process measures
- Outcome measures
- Balancing measures

WHO?  WHEN?  WHERE?  HOW MANY?  HOW?
Submitting your plan

- **What:** Complete the Plan section of one of the templates in the tool kit
- **Who:** Project leader
- **How:** Email to Janet Gingold at jgingold@cnmc.org
- **When:** No later than July 15
- **Why:** So you can get feedback during the Monthly Conference Call on July 30 or July 31
Immunization Schedule
Tricks and Tips
Tuesday, July 16
12 noon Eastern Time

Submit PLAN by July 15

Conference call to discuss plans
July 30 OR July 31
12 noon Eastern Time
Questions
Thank you!