Quality Improvement in Behavioral Health Care: Concepts and Tools

In preparation for the New Jersey Statewide Behavioral Health Quality Improvement Fair

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Training Objectives

- Review quality improvement (QI) principles
- Describe the quality improvement process
- Examine QI tools and how & when to use them
- Review principles and requirements for presentation of a QI project at the Annual QI Fair
Quality improvement is...

A systematic approach to analyzing (current) performance in an organization AND designing, testing and monitoring interventions that bridge the gap.
A FEW IMPORTANT PRINCIPLES

• Continuous improvement must be high priority for all

• Quality improvement is a team effort

• Focus of improvement is on process, not individuals

• Quality improvement must be data-driven

• The QI Process is best when based on an established, accepted model.

• The QI Process information must be communicable… (documentation is essential).
Why do this (performance GAP!)? What are the objectives? Does it fit overall mission, values, plans? Who needs to participate? What are the expected results? What exactly will we do? For how long will we engage in this activity? How will we measure baseline performance? How will we measure outcome? How will we communicate our results?
Why do this? What are the objectives? Does it fit overall mission, values, plans? Who needs to participate? What are the expected results? What exactly will we do? For how long will we engage in this activity? How will we measure success? (baseline/outcome performance) How will we communicate our results?
PLAN

Why do this (performance GAP!)? What are the objectives? Does it fit overall mission, values, plans? Who needs to participate? What are the expected results? What exactly will we do? For how long will we engage in this activity? How will we measure baseline performance? How will we measure outcome? How will we communicate our results?

DESIGN

MEASURE

Implement your interventions, Collect relevant baseline and outcome data, analyze, compare with past performance and with external resources.
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Plan

Design

Measure

Assess

Evaluate the results, interpret, discuss, is the new process/strategy/improvement useful? practical? cost-effective?

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A GENERAL MODEL FOR QUALITY IMPROVEMENT

**PLAN**

- Why do this (performance GAP)? What are the objectives? Does it fit overall mission, values, plans? Who needs to participate? What are the expected results? What exactly will we do? For how long will we engage in this activity?

- How will we measure baseline performance?
- How will we measure outcome?
- How will we communicate our results?

**DESIGN**

**MEASURE**

- Implement your interventions, Collect relevant baseline and outcome data, analyze, compare with past performance and with external resources.

**ASSESS**

- Evaluate the results, interpret, discuss, is the new process/strategy/improvement useful? practical? cost-effective?

**IMPROVE**

- If it works, implement, disseminate, publicize, do training and in-service, and maintain gains.
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A FEW IMPORTANT PRINCIPLES

A reminder….

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Data Collection

“Collecting data is much like collecting garbage……..

You must know in advance what you are gonna do with the stuff.”

Mark Twain
Collecting Data

Consider:

- What really needs to be measured?
- What’s the best way to measure it?
- How much data needs to be collected, for how long, and how often?
- How will the data be used?
  - If you cannot answer this question, don’t collect this information.
Collecting Data

Practical suggestions:

• Use (if possible) currently collected data, it will
  - help pinpoint your problem and the purpose of your QI team
  - provide ready-made baseline and outcome measures

• If you have to use other measures, choose a tested and proven instrument

• If you can’t find what you need, develop your own measure (very carefully)

• Look for simple, concrete counts of things and events
Examples of simple measures

**Treatment/process measures**

- Number of restraints per period (week, month, quarter, year)
- Percent restraints per active clients (by program and period)
- Number of clients with two or more antipsychotic medications of same class
- Number of client falls per program and period (or any other type of unusual incident)
- Number of phone contacts per staff and period (for ICMS)
- Number and percent of no-shows (per program and period)
Integrating physical health into behavioral health

Examples of simple measures

- Number and percent of clients with PCP documented in the chart
- Number and percent of clients with BMI documented in the chart
- Percent of clients with BMI at or above 30 (the obesity threshold)
- Number and percent of clients with blood pressure documented in the chart
- Number and percent of clients at or above BP of 140/90
Examples of simple measures

Outcomes and Satisfaction

- Number and percent of clients very satisfied with care (e.g., MHCA scale)

- Number and percent of clients improving (pre to post-test) by a certain threshold (e.g., by 50%, by 0.5 standard deviation) on a symptom scale (e.g., BASIS-24; BPRS, Hamilton)
QI Tools
Overview of useful QI tools

What they are. When and How to do them.

**Process tools:**
- Brainstorming
- Multi-voting
- Pareto Charts
- Cause & Effect Diagrams (“Fishbone”)
- Flow Charts

**Data display tools:**
- Run Charts and Control Charts
- Work Plans and project tracking
Process Tools
WHAT: A formalized way to generate ideas efficiently and creatively and get all team members involved in the process.

UTILITY/PURPOSE:
Used to identify topic/problem for improvement at the planning stage, generate ideas about possible/probable causes of problems, or ideas for interventions.

WHEN:
When embarking on a new project, and no one knows where to go and what to do.
When the team is “stuck” in the same old way of doing things and you want an influx of new, creative ideas.
When you want to have all members involved, and avoid having the group dominated by a few vocal members.
HOW:

**Structured:** Each team member gives an idea in turn.
   A variant: Members write ideas on cards.

**Unstructured:** Team members give ideas as they come to mind.

Use flipchart/large paper, write all ideas.

Do not discuss. Do not agree/disagree.

Do not criticize (only allow clarification questions).

When new ideas are exhausted, stop.
Multi-Voting: Prioritizing Ideas

**WHAT:** A way to build team consensus by incorporating individual preferences/ratings into the overall team decision.

**WHEN:** When you need to reach consensus, but team members seem torn between competing options. Can be done to finalize priority issues after brainstorming (topics/problems, causes, interventions, etc.)
Multi-Voting: Prioritizing Ideas

HOW:

- List all the options on a flipchart.
- Eliminate duplicates, or group similar items, clarify meanings where/if necessary.
- Give each statement an identifier (a, b, c, etc.).
- Decide how many votes each member would have (3-5 is usual).
- Each team member (independently) places his/her votes on an index card.
- Cards are collected, votes tallied on flipchart/large paper.
Example

Probable causes for no-show to MH appointment:

a. No transportation
b. Have child care duties, no baby sitting
c. Have medical doctor appointment
d. Felt better, no need for MH services
e. Forgot about the appointment

Two team member’s votes

b. e. e. c. a.

Consensus:

a. 4
e. 4
b. 1
c. 1
Pareto Chart: Displaying Priorities

**WHAT:** A way to display the magnitude/importance of some problems/issues or to prioritize potential causes of identified problems, or the importance/perceived relevance of different interventions.

**WHEN:** When you wish to:

- focus efforts on tasks that have the greatest potential impact
- shift focus away from someone’s “pet peeve” to the real issues
- provide a simple picture, easy to understand and communicate, regarding the relative importance of specific issues/solutions
- display the results of multi-voting (on your poster…)
Pareto Chart (cont.)

**HOW:**

- Determine the categories related to your issue (e.g., different QI topics, probable causes, interventions)
- Determine your unit of measurement (e.g., number of votes or percent of votes.)
- Collect the data (or use the results of existing multi-voting)
- Count the units of measurement per category, and plot the highest one first, the second highest second, etc.
ON YOUR OWN.....

Use the Three Process Tools to Identify Probable Causes of Your Problem

• Brainstorm a problem you want to address and/or the probable causes of the problem you identified

• Prioritize the causes using multi-voting

• Display your results in a Pareto chart
Cause & Effect Analysis: “Fishbone” Diagram

**WHAT:** A formalized way to describe and prioritize potential causes to an identified problem or event that:

-- focuses on the specific problem/event to be fixed
-- creates a snapshot of collective knowledge around a problem/event
-- focuses on potential causes, not symptoms
-- helps direct attention to possible interventions

**WHEN:** When you need:

-- a simple, graphical way to explore and communicate possible causes for an identified problem/event
-- to facilitate focusing on the main issues that need corrective action
Cause & Effect Analysis: “Fishbone” Diagram

Work as a team

Use a skeleton of a fishbone diagram (see next slide)

HOW:

Place the identified problem or event in the box on the right

Decide on the major cause categories, and place them at the top of the main

“bones” (don’t plan on more than six)

Brainstorm possible causes and place them all on the draft

•

•
A Fishbone Diagram

The problem

Example: High no-show rates
Pt attempted suicide while at APS

- Staff/Training
  - Misinterpretation of clinical condition
  - 1:1 was not applied
  - Single nurse at APS needs coverage 1:1 was not applied (ANM should get meds)
  - No staff assigned to other pts.
  - No holding room available at pt arrival
  - Single nurse at APS needs coverage (ANM should get meds)

- Work Process
  - ANM did not bring chart upon pt arrival.
  - Pt use of phone
  - 1:1 was not applied
  - No staff assigned to other pts.
  - No role definition for med team
  - Misinterpretation of clinical condition
  - Control over pt whereabouts/monitor in bathroom
  - Shoelaces not removed with belt
  - Pt was not searched

- Communication
  - Pt arrived wo clin info/no chart
  - Pt use of phone
  - APS staff (+shift info)
  - Pt transp. by police, not ambulance
  - No follow-up/ debriefing after pt left
  - No role definition for med team

The problem:

Some items appear in several categories
**Flow Chart**

**WHAT:** A formalized way to describe a process or an event

**WHEN:** When you need to:
- understand what happened
- streamline a process
- design an intervention (in the right place)
- show change from past to the present
- share understanding about a specific event or process

**HOW:** learn a few symbols ...can do by hand (but do not have to...)
- have input from all stakeholders
- do several drafts
- get consensus from all involved
Flow Chart Symbols

- **Start/End**
- **Activity**
- **Report**
- **Direction of flow**
- **Decision point**
- **Computer file**
- **Alert: possible breakpoint**
Start: you want to cook special dinner

Look for recipe book

Is it on the shelf?

No → Scream in frustration

Yes → Have all ingredients?

No → Scream in frustration

Yes → Is it on the shelf?

No → Find the book!

Yes → Have all ingredients?

No → Scream in frustration

Yes → Are stores open?

No → Scream in frustration

Yes → Get your spouse to buy what you need

Did he get all?

No → Scream in frustration

Yes → Cook dinner

Did he get all?

Yes → Smile, The End

No → Cry, The End

Cry, The End
Flow Chart: Guidelines

• Don’t be concerned about defining the process/event completely in the first draft

• Involve people who are familiar with the process/event

• Review the flow chart for accuracy and completeness (several times)

• It is useful to create the “as is” before you attempt to do the “as it should be”
Improvement Planning Milestones

Before implementing the intervention, the team should have:

- Clarified/specifed the problem in need of improvement
- Established a baseline measurement
- Identified at least one probable significant cause
- Considered several possible interventions that address the identified cause
- Selected a small set of interventions to start with
Implementing Improvement

- *Your interventions do not have to address ALL problems everywhere to be effective*

  Implement in small doses

- Monitor, measure and share even small performance improvements with peers, build acceptance and alliances

*Sustainable improvement takes time*
Data Display Tools
WHAT: Charting a specific measure over time.

For example, number of no-shows or restraints by quarter, number of patient falls by month, number of phone calls per day, number of BMI (BP) documented by month.

WHEN: When you want to:

- monitor performance to detect trends or shifts, over time
- compare a measure before and after an intervention
- focus attention on changes in the process under scrutiny
Displaying Outcomes: Run Chart

HOW:

- Select a performance measure
- Gather enough data points (at least 20-30)
- Create a graph with timeline on the horizontal axis (x axis) and the measure on the vertical (y axis)
- Plot the data points and connect them with a line (or use PowerPoint to do it for you)
- Calculate the mean for the measure and draw the line in your graph
Run Chart Example

SECLUSION RATES IN ADOLESCENT INPATIENT SETTING

Run Chart Example

SECLUSION RATES IN ADOLESCENT INPATIENT SETTING
Control Chart

**WHAT:** A way to look at run charts and facilitate recognition of meaningful variation.

**WHEN:** When you monitor ongoing performance measures and need to have a quick way to recognize trends or shifts that are meaningful or significant.

**HOW:**
- Develop a run chart, ensure you have enough data points
- Calculate and plot the mean (central line)
- Calculate the standard deviation (SD)
- Add 1 SD to the mean to plot the upper control limit
- Subtract 1 SD from the mean to plot the lower control limit
- Add 2 SD to the mean to plot the high upper (2 SD) control limit
Control Chart Example

Seclusion rates in Adolescent Inpatient settings

-20 0 20 40 60 80 100 120 140 160
Percent

Lower control limit (-1SD)

Mean

Upper control limit (1SD)

High upper control limit (2SD)

SECLUSIONS  Mean  1SD  2SD  -1SD
Work Plans and Project Tracking
Document your QI Process

(if it was not documented, it was not done…)

• Have a clear and consensual definition of your purpose (write it down…)

• Develop a work plan, with specific tasks, responsibilities, and timeline (modify and revise as you go along)

• Have designated minutes-taker (you can rotate the honor…) and facilitator (should be two different people)
Document your QI team process (cont.)

• Circulate minutes to members within a day or two
  (keep it fresh…)

• Keep all drafts used in your deliberations
  (brainstorming lists, fishbone diagrams, flow charts, Pareto charts, multi-voting results, baseline data, etc.)
# WORK PLANS: Two Examples

<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>t1</th>
<th>t2</th>
<th>t3</th>
<th>t4</th>
<th>t5</th>
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<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>Start date</th>
<th>Due date</th>
<th>Status (as of)</th>
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<tbody>
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# PI Team Activity Form

**Your Agency Name**

## Goal:

**Success Indicator:**

<table>
<thead>
<tr>
<th>Team Leader:</th>
<th>Phone:</th>
<th>Date of Report:</th>
</tr>
</thead>
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<table>
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<tr>
<th>Team Members:</th>
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</table>

## Step 1: Plan/Design

<table>
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<tr>
<th>In process</th>
<th>On Hold</th>
<th>Completed</th>
<th>Comments</th>
</tr>
</thead>
</table>

1. Establish PI Team
2. Decide on PI topic: the problem you want to address
3. Identify probable causes to the problem
4. Identify potential interventions
5. Identify success indicators (the pre and post measures)
6. Develop a workplan

## Step 2: Measure

<table>
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<tr>
<th>In process</th>
<th>On Hold</th>
<th>Completed</th>
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1. Collect/review pre-data
2. Implement interventions
3. Collect post data

## Step 3: Assess

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<tr>
<th>In process</th>
<th>On Hold</th>
<th>Completed</th>
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1. Analyze data
2. Compare pre/post data, benchmark data

## Step 4: Improve

<table>
<thead>
<tr>
<th>In process</th>
<th>On Hold</th>
<th>Completed</th>
</tr>
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</table>

1. Report to management/ Educate staff
2. Implement new/revised process in other areas
3. Monitor to ensure gains are maintained
Guidelines for Your Poster Presentation...

• Use fewer words, more pictures; if you use words use **large** print.

• Make the presentation **colorful, vivid, interesting**… (but don’t go overboard...)

• Include enough detail to tell the story, but not too much (you will have a handout with details for those who are interested)

• Plan your space well
Include in your poster:

• The purpose of your project
• Team members and their affiliation
• Steps of the QI model you have used
• Methods used to select topic, and achieve consensus on causes and interventions
• A (short) description of your interventions
• Baseline and outcome data and benchmarking
• Conclusion/status/plans for the future
Guidelines for Your ORAL Presentation

• Do not read from your summary page (everyone knows how to read)

• Keep it short, and stick to the main points.

• Keep eye contact with the audience, don’t hesitate to express your enthusiasm.

• Consider your presentation an infomercial, a marketing tool to whet audience appetite for more.
PROJECT JUDGING CRITERIA

Listed below are the criteria we use to judge the QI projects:

- A clear presentation of the purpose
- A significant topic
- Improving a high impact process
- Appropriate team
- A consistent, comprehensive planning process
- Appropriate use of QI tools
- Sound/explicit intervention and data-collection design
- Evidence of commitment (future plans)
Required on One-Page-Summary

• The main purpose of your project (the problem or process in need of improvement)
• Your team members
• The methods used to arrive at prioritizing the problem, its probable causes, and the proposed interventions
• A short description of your interventions
• Baseline and outcome data (your success indicators) and benchmarking results, if available
• Conclusion/current status/plans for the future
• And it should not be longer then one page…
Submissions for the QI Fair

**Letter-of-intent** (You will get information about its due date)

If you have questions or need consultation regarding general QI issues or statistics, please e-mail sminsky@ubhc.rutgers.edu

Final project: Poster and one-page summary