

**CDC Coffee Break:  
Evaluating Quality Improvement  
Initiatives**

An Example of a High Blood Pressure  
Clinical QI Intervention

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Hello everyone, welcome to today's Coffee Break presented by the Evaluation and Program Effectiveness Team, and the Division for Heart Disease and Stroke Prevention at the Center for Disease Control and Prevention. We are fortunate to have Joanna Elmi as today's presenter. Joanna is a health scientist on the Evaluation and Program Effectiveness Team. My name is Martha Bose and I am today's moderator. I am an Evaluation fellow here at the CDC and joined the Evaluation team a few months ago. Today Joanna will be presenting on Evaluating Quality Improvement Initiatives: An Example of a High Blood Pressure Quality Improvement Intervention.

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## Overview

- Define quality improvement (QI)
- Potential evaluation questions
- Outcomes of interest & example indicators
- Ensuring use
- Resources

Building better systems to  
give all people what they  
need to reach their full  
potential for health.  
*- Assistant Secretary for Health*

We heard the request from programs for TA on this topic. This is a broad subject to cover in a short coffee break and I know that it will fall short of meeting everyone's TA needs. But we hope by exploring a high blood pressure clinical QI example, we will address some of the initial questions of the National Heart Disease grantees. The evaluation team intends to follow this presentation with more in-depth trainings and learning forums to delve deeper into this area. We see this coffee break serving as a kick off or starting point and at the conclusion of this session we'll pose some poll questions to get your feedback on follow up topics and formats.

During today's coffee break I'll provide a definition for quality improvement as an intervention or strategy, and using an example of a high blood pressure clinical QI intervention I'll walk through some potential process and outcome evaluation questions, and pose some outcomes of interest and example indicators. I'll wrap up with some final points on ensuring use and resources that may be helpful to you in your work in this area.

## Quality Improvement (QI) Definitions

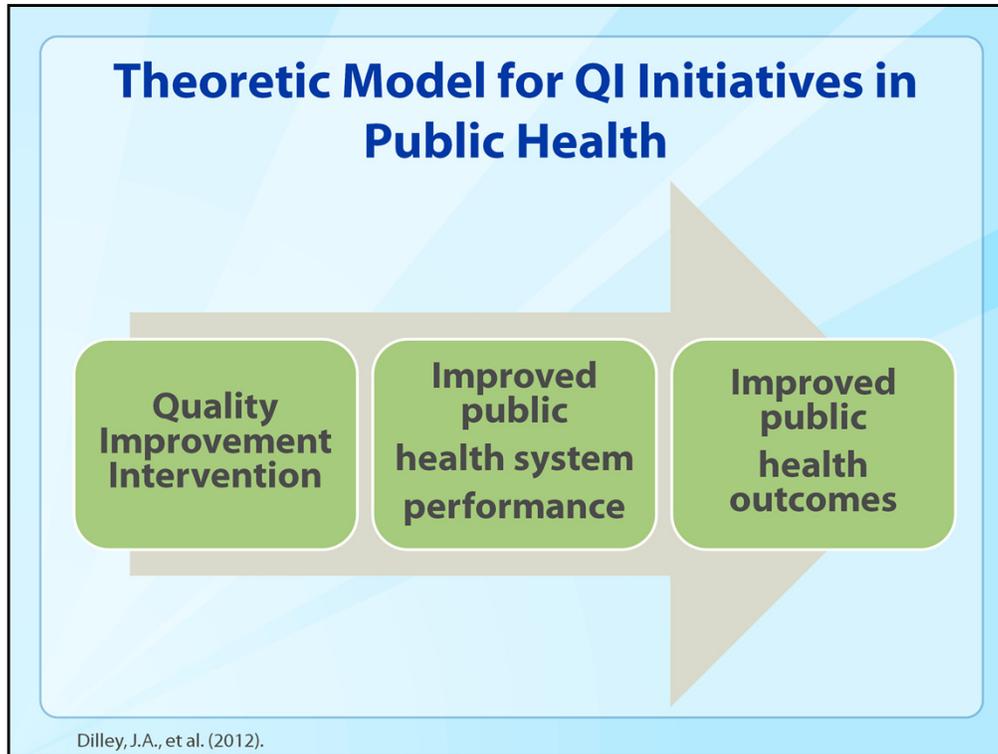
**QI:** A multidisciplinary, systems-focused, data-driven method of understanding and improving the efficiency, effectiveness, and reliability of health processes and outcomes of care.

**QI Intervention:** Any strategy aimed at reducing the **quality gap** (difference between health care processes or outcomes observed in practice and those potentially obtainable based on current evidence-based knowledge) for a group of patients....

AHRQ (2004).

There are two definitions that I'd like to present. First, what is quality improvement? This term is used a lot, from its origins in the manufacturing and health care industries, to efforts to bring accreditation standards to the public health field. The definition here applies to clinical settings and I'd like to point out that there is a focus on systems or systems change, and it is a process driven by data and evidence that leads to improved efficiency, effectiveness, and delivery of care.

This definition is going off our slides but to define QI intervention, QI intervention is a strategy that attempts to reduce the disparity between everyday clinical treatment practices and evidence-based best practices. Quality is achieved by analyzing and measuring performance by compliance to a standard quality measure. Back in 2003, the IOM report entitled "Priority Areas for National Action: Transforming Health Care Quality" identified 20 priority areas for QI. Hypertension diagnosis and treatment was identified as one of these priority areas.



The figure before you simply shows the flow and expected change theory of any public health Quality Improvement intervention. We expect the intervention to contribute to a better performing public health system, which can be measured by evidence-based standards, and this will lead to improved health outcomes.

There are a number of theories that may lend themselves to understanding how the different components and factors of a QI intervention interplay and lead to the intended outcomes. For example, the diffusion of innovation theory speaks to the innovation-decision process of providers, and the preceed-proceed model explores enabling factors that bring about change. Other behavioral change and organizational change theories may also be applicable.

## **Examples of NHDSP QI Interventions**

- **Use of health information technology for physician/patient reminders**
- **Establishment and use of provider/systems-level standardized quality measures for monitoring**
- **Physician/patient education**
- **Offer payment incentives to practices for quality improvement**

The most recently QI of clinical care for the control of blood pressure has been promoted as a health systems intervention activity in the new National Center for Chronic Disease Prevention and Health Promotion framework. The Division for Heart Disease and Stroke Prevention supports the implementation and evaluation of QI interventions to address hypertension, as well as acute stroke care in hospitals with our cover note program. This slide lists some of the systems-level change strategies implemented by funded states to improve clinical care practices that lead to improved high blood pressure control.

We have the use of health information technology for physician or patient reminders; the establishment and use of provider/systems-level standardized quality measures for monitoring; physician and/or patient education; and offering payment incentives to practices for quality improvement for hypertension and cholesterol.

For the next few slides, I'll use a fictional case study of a Health department evaluation for three of these strategies. The use of health information technology for provider reminders, the use of standard measures, and education that are implemented as part of the Patient centered medical home model. The health department supports quality improvement through its partnerships and is responsible for QI trainings and resources; promoting the use of evidence based guidelines and supporting data collection and reporting.

## Potential Evaluation Questions

### Process Evaluation Questions

What QI activities have been implemented?

To what extent has the QI support (trainings, tools) been useful?

How are data being used to inform QI?

To what extent is the QI process working? How can it be improved?

What types of QI activities have been found to be most successful?

Based on this example, some key process evaluation questions that we might want to ask are: What has actually been done or implemented? How does it compare to what was planned/originally intended? We may want to measure the usefulness of the support provided by the HD for program improvement purposes. We might assess whether QI and decisions are data-driven. Or we may assess the effectiveness of the QI process and what seems to be working.

## Potential Evaluation Questions

### Outcome Evaluation Questions

How have implemented QI efforts improved the efficiency or effectiveness of practices/program?

What has been the impact of QI efforts on provider adherence to evidence based guidelines?

To what extent have QI efforts influenced knowledge and behavior in individuals?

To what extent have patient health outcomes improved as a result of implemented QI efforts?

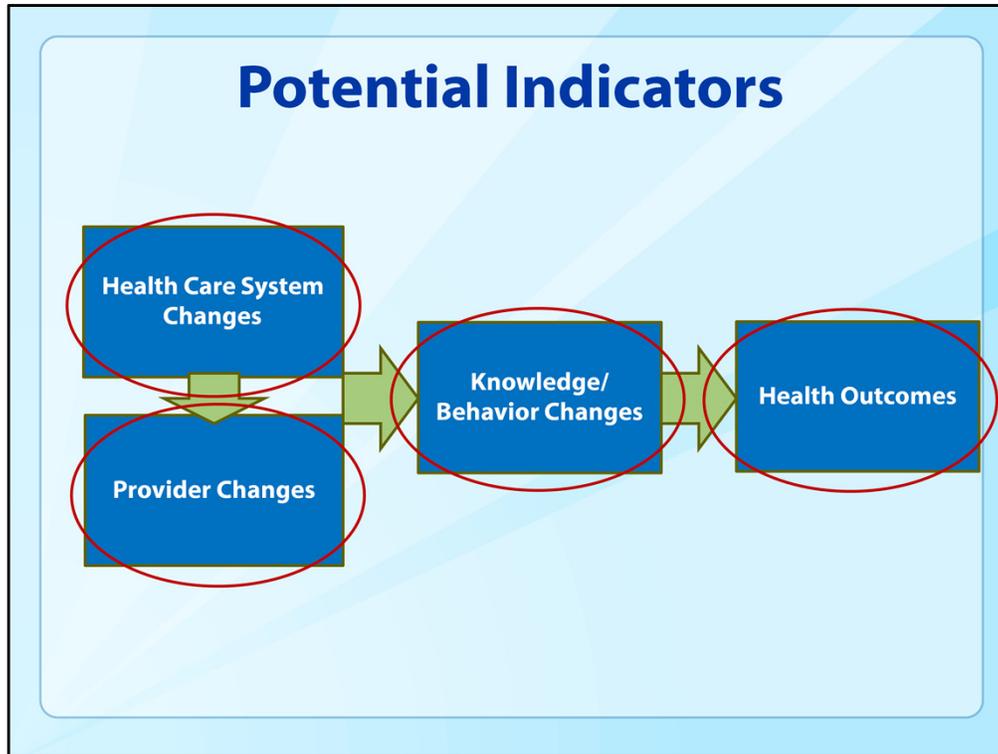
Some key questions to get at outcomes may include: Assessing whether, or to what extent, the QI strategies have led to improved efficiencies or effectiveness. So for example, are there less administrative burden or costs to the clinical or provider delivery system? Are the customers more satisfied with their care? What is the impact on providers' adherence to evidence-based guidelines or compliance to standardized quality measures? Is there evidence of knowledge or behavior change among providers and/or patients? And finally What changes in health outcomes are documented among patients? For example, is there an increase in blood pressure control rates?

## Outcomes of Interest

### Examples

- Increased data usage and sharing to drive decision making and system changes
- Increased #/% of health systems using empirical evidence to improve the quality of services and/or outcomes
- Improved quality of care in health systems through adherence to established guidelines and endorsed quality measures
- Increased efficiencies and effectiveness of care practices in health systems
- Increased #/% of adults with known high blood pressure who have achieved blood pressure control

In this slide, I've listed five potential outcomes of interest. Increased data usage and sharing to drive decision making and system changes; the increased number or percent of health systems using empirical evidence; improved quality of care in health systems through adherence to established guidelines and endorsed quality measures; increased efficiencies and effectiveness of care practices in health systems; and finally increased number or percent of adults who have achieved blood pressure control.



We can pull from the DHDSP policy, systems outcome indicators to measure and monitor change at the organizational, provider and patient levels.

Indicators should be selected to monitor short term policy/systems changes related to blood pressure at the Health care system level, such as the proportion of health care systems with electronic health records appropriate for treating patients with high blood pressure; and proportion of health care systems with computer-based clinical decision support systems; and the number of QI initiatives to increase practitioner compliance with current evidence-based blood pressure guidelines. These are all outcome indicators in our controlling hypertension only indicator book.

Changes at the health care system level may lead to changes at the provider level. Here relevant indicators may include the proportion of providers who carry out blood pressure practices according to evidence-based guidelines, such as measuring and classifying blood pressure accurately, documenting risk factors, following current algorithms for pharmacological therapies, and providing lifestyle modification recommendations.

Logically we'd like to explore whether organizational and provider changes are leading to intermediate outcomes of knowledge and behavior change at the individual or patient level. Pertinent indicators here may include: the proportion of adults with a self management goal; or the proportion of adults who have visited a health care provider according to the current evidence-based guidelines for the treatment of high blood pressure; and the proportion of adults who are in compliance with hypertensive medication regimens; and the proportion of individuals satisfied with the healthcare services.

And finally, select indicators to measure the increased control of blood pressure and reduced disparities between populations to monitor the achievement of long term health outcomes. You may want to consider using other indicators than the ones that I mentioned that are applicable to your program and are of interest to your stakeholders.

## Ensure Use of Evaluation

- Engage stakeholders in selection of evaluation questions and selection of indicators
- Select and prioritize indicators that accurately reflect process and outcomes
- Share interim findings
- Highlight results in a brief report/presentation tailored to primary users
- Develop useful companion tools

I hope that the information provided will help guide you in your development of an evaluation of your QI intervention. To ensure that your efforts and evaluation findings make an impact, keep the following points in mind: Engage your stakeholders in the selection of evaluation questions and indicators; select and prioritize indicators that accurately reflect process and outcomes; share interim findings; and highlight results in a brief report or presentation that's tailored to your primary users; and develop any types of useful companion tools to go along with your final results.

Remember, clinical QI interventions aim to bring provider practice and health care delivery closer to evidence-based quality standards. Regardless of whether there is an observed improvement, decline or no change in quality, your evaluation can help explain the “what”, “why” and “how”.

## Summary Key Messages

- QI strategies aim to “close the quality gap” and decrease provision of suboptimal health care
- QI is a health system intervention strategy within the new NCCDPHP framework
- The specifics of the intervention and evaluation purpose will determine the scope of your evaluation questions
- DHDSP outcome indicators are a great place to start for selecting indicators- health system and provider changes, knowledge/behavior changes, and health outcomes
- QI will be an ongoing topic for evaluation TA in 2013!

In summary, QI strategies aim to “close the quality gap” and decrease the provision of suboptimal health care; and QI is a promoted strategy by the Division and the National Center for Chronic Disease prevention and health promotion. The specifics of the intervention and the evaluation purpose will determine the scope of your evaluation questions. And the DHDSP outcome indicators are a great place to start for selecting indicators.

Finally, this topic of evaluating QI is vast and so much can be said. Unfortunately we can only skim the basics in this presentation. Our hope was that by taking this particular angle of focusing on high blood pressure clinical QI that it would meet the need of a large number of grantees. Please take the time to thoughtfully answer some of our poll questions after this presentation so that we can get a better idea of future TA topics and formats that you’re interested in.

## References and Resources

Shojania KG, McDonald KM, Wachter RM, et al. (2004). Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies, Volume 1-Series Overview and Methodology. AHRQ Publication No. 04-0051-1. Rockville, MD: Agency for Healthcare Research and Quality. [www.ahrq.gov/clinic/tp/qgap1tp.htm](http://www.ahrq.gov/clinic/tp/qgap1tp.htm)

National Research Council. *Priority Areas for National Action: Transforming Health Care Quality*. Washington, DC: The National Academies Press, 2003.

Dilley, J.A., et al. (2012). Quality Improvement Interventions in Public Health Systems: A Systematic Review. *American Journal of Preventive Medicine*; 42(5S1):S58–S71

*Outcome Indicators for Policy and Systems Change: Controlling High Blood Pressure*. Atlanta, GA: Centers for Disease Control and Prevention National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention; In draft.

*Indicators Spotlight: Health Care Practice Redesign*. Atlanta, GA: Centers for Disease Control and Prevention National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention. [http://www.cdc.gov/DHDSP/docs/Health\\_Care\\_Practice\\_Indicators.pdf](http://www.cdc.gov/DHDSP/docs/Health_Care_Practice_Indicators.pdf)

NCCDPHP Domains document, NCCDPHP, distributed to DHDSP programs, 2012

This slide lists references used in the presentation and helpful resources. The AHRQ “Closing the Quality Gap” report is a great resource and Chapter 3 discusses the theoretic basis for QI interventions for those of you who may be interested in that. And I wanted to remind you of course of our useful division resources on indicators available to you such as the summary book on controlling high blood pressure and indicator spotlights.

## Questions and Answers



Email presenter at [JElmi@cdc.gov](mailto:JElmi@cdc.gov)

**Q1: Can you provide any recommendations for the best methods or approaches for evaluating QI initiatives?**

Great question. Of course the evaluation methods or design can vary based on the purpose of the evaluation and the type of intervention and the scope so it would be difficult to answer that questions right here at this time but it's definitely a great topic for a future presentation I think. But just one thing that comes to mind is that I was doing research on this topic, I came across some interesting methods articles in the quality improvement field that may have something to offer us in the public health field. For example, Harvey & Mensing have an article in the Journal for Quality & Safety in Health Care where they explore four methods for evaluating small scale QI projects so it might be worth us going a little bit out of our arena to find some helpful resources from others.

**Q2: You mentioned a number of policy, systems outcome indicators to use for evaluation. For my evaluation, do I have to monitor all of these indicators or can I just use a sub-set?**

Of course, only select the indicators that you know you have data sources for, and have the resources both human and financial to monitor. Also, there may be aspects of the program that are of keen interest to program leadership and stakeholders. It's good to be aware of all the measures that you might want to use at some point in the life of the program to show program impact and perhaps you can have a phased approach for adopting key indicators as capacity increases. But in this case, the healthcare system indicators are a really good place to start.

# Thank You

If you have any questions, comments, or  
topic ideas send an email to:

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