

CPQCC/CCS

Healthcare Associated Infection (HAI) Collaborative Charter



Introduction

One of the most significant changes children's hospitals can make to reduce errors and save lives is:

Reduce catheter-associated bloodstream infections (CABSIs)
by implementing a series of evidence-based practices system-wide.

To move you further faster, California Perinatal Quality Care Collaborative (CPQCC) in partnership with California Children's Services (CCS) has already adapted the scientific evidence to make it neonatal-specific and hand-selected a panel of the nation's leading improvement experts to guide the *CPQCC/CCS Healthcare Associated Infection (HAI)* collaborative.

Catheter-associated bloodstream infections (CABSIs) are a serious threat to our patients' safety. **Our aim is to reduce the occurrence of catheter-associated blood stream infections (CABSI) to almost zero system-wide.** This collaborative provides an opportunity for your NICU to aggressively pursue an improved care system for newborns requiring treatment involving central catheters.

The enclosed Charter outlines the collaborative process in detail. We expect you to make a commitment to implement change and report back on your progress so that all 126 CPQCC Member Hospitals can benefit. Please retain this Charter for reference as the collaborative proceeds.

If you have any questions about the information presented here, or if you would like to learn more, email Courtney Nisbet, Program Manager at: courtney@cpqcc.org

Thank You!

Paul Sharek, MD, MPH

Director of Quality, CPQCC

**Healthcare Associated Infection
(HAI) Collaborative Charter**



The Charter

The information that follows explains the objectives of this safety collaborative, the methods to support it, the expectations of both CPQCC and participants, and the collaborative timeline. Use this information to communicate this opportunity throughout your organization.

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Project Overview

Problem Statement

The Agency for Healthcare Research and Quality (AHRQ) and the Centers for Disease Control and Prevention (CDC) have acknowledged that central catheters are critical components of medical care for many patients, but their use can lead to catheter-associated blood stream infections. These infections are both costly and dangerous. The mean cost of a bloodstream infection has been estimated at \$46,133 in the Pediatric Intensive Care Unit (PICU) due to the longer length of stay and additional ancillary utilization (Slonim et al), making it the most expensive of all nosocomial infections. Bloodstream infections account for 30% of all health care associated infections in pediatrics according to the CDC's National Healthcare Safety Network (NHSN), formerly known as the National Nosocomial Infection Surveillance System (NNIS). Although the association between bloodstream infections and death is somewhat controversial, AHRQ concluded that findings in the literature are consistent with a 10-20% increase in mortality. The CDC in 2006 reported a pooled mean of 3.1 (>2500 grams birthweight) to 6.4 (< 750 grams birthweight) infections per 1000 catheter-days. Both the AHRQ and CDC have recommended several key practices to reduce the chances of a central catheter infection.

In addition, beginning January 2008 your infection surveillance and prevention process measures will become increasingly transparent, as California Senate Bill 739 requires hospitals "to prepare a written report that examines the hospitals existing resources and evaluates the quality and effectiveness of the hospitals infection surveillance and prevention program including specified information". The bill "will require each general acute care hospital that uses central venous catheters to implement policies and procedures to prevent the occurrence of Healthcare Associated Infections (HAIs), as recommended by specific guidelines and other evidence".

Collaborative Mission

The mission of this collaborative is to achieve breakthrough improvements in reducing infections associated with central catheters. We intend to close the gap between what is known and what is practiced to establish new neonatal systems that will produce: better clinical outcomes, lower costs, and better coordination of care. This will be achieved through the consistent application of the best available scientific knowledge using central catheter protocols, which have proven to significantly improve outcomes and reduce costs. CPQCC will help collaborative participants meet the collaborative goals by sharing the best available scientific knowledge, by teaching and applying methods for organizational change, and by involving experienced external and CPQCC hospital experts.

Collaborative Leadership

CPQCC organized a multidisciplinary Expert Panel to develop and endorse all the resources being used in this collaborative. Participants will have access to these individuals throughout the collaborative. There are four expert categories that make up the Expert Panel, as described below.

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Content Experts: *CPQCC/CCS Reducing Healthcare Associated Infections (HAI) Collaborative*

The Content Experts are credible and experienced professionals who are affiliated with CPQCC. They will provide new perspectives that strengthen our collaborative improvement efforts, and share our burdens of implementing change. They will also teach and coach teams prior to, between, and during Learning Sessions.

The Quality Improvement Content Experts are:

Paul Sharek, MD, MPH

Assistant Professor of Pediatrics, Stanford University School of Medicine
Medical Director of Quality Management, Lucile Packard Children's Hospital
Director of Quality, California Perinatal Quality of Care Collaborative (CPQCC)

Paul Kurtin, MD

Vice President-Clinical Innovations
Director-Center for Children Health Outcomes
Rady Children's Hospital – San Diego

The Neonatal Infection Content Experts are:

Lilly Guardia-LaBar, RN, CIC

Director, Patient Safety/Infection Control/Clinical Risk
Children's Hospital & Research Center at Oakland

Janet Pettit, RN, MSN, NNP

Perinatal Services - Doctors Medical Center
Perinatal Quality Improvement Panel (PQIP) Member

Richard J. Powers, MD

Medical Director, NICU
Good Samaritan Hospital
Perinatal Quality Improvement Panel (PQIP) Member

David Wirtschafter, MD

Perinatal Quality Improvement Panel (PQIP) Member

California Children's Services Liaison:

Kathy Chance, MD

California Children's Services Liaison

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Collaborative Director

This CPQCC staff member, in conjunction with Paul Sharek, MD, MPH (Director) and Paul Kurtin, MD (Co-Director), provides content oversight and process management for the collaborative. The Collaborative Director coordinates the Expert Panel members and collaborative preparation, organizes all activities of the collaborative timeline, and is responsible for communicating progress and deliverables to the stakeholders of CPQCC. The Collaborative Director along with other members of the Expert Panel may also teach and coach teams on the Model for Improvement. This is your point person and key contact for the project.

The Collaborative Director for the *CPQCC/CCS Reducing Healthcare Associated Infections* Collaborative is:

Courtney Nisbet, RN MS
Quality Improvement Program Manager
CPQCC
Courtney@cpqcc.org

AIM Statement:

“The AIM of the CPQCC Healthcare Acquired Infections (HAI) collaborative is to

- Decrease CABSIs
- By 25-50%
- In all patients in participating Community-level NICUs with central catheters in place
- Between the timeframe of baseline (to be determined: we are presently considering 3/1/08-5/31/08) and intervention (to be determined: we are presently considering 6/1/08 thru 12/31/08)

Diagnosis specifically EXCLUDED (after much discussion amongst the Expert Panel members)

1. Clinical Sepsis
2. VAPs
3. Surgical Site Infections
4. UTIs
5. NEC

Methods

Each Member Hospital is expected to adopt the AIM statement (or a similar site-specific AIM statement) that includes the specific goals set forth above by the Expert Panel. It is our hope that after completion of this NICU-focused collaborative that participating hospitals will work toward an ultimate goal of spreading the improvements to other parts of their hospital, including other intensive care units (where applicable).

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Using the Institute for Healthcare Improvement (www.ihl.org) collaborative quality improvement model and leveraging the knowledge and best practices in the CPQCC Healthcare Associated Infection Toolkit (called *Nosocomial Infection Prevention: Neonatal Perspectives, Practices and Priorities*) at www.cpqcc.org, the NICU participants in this learning collaborative will focus on improving practices relative to baseline, as opposed to comparing practices across participating sites. Each NICU will examine its practices and share its observations on relevant activities including,

- 1). Administrative involvement and priority setting,
- 2). Identifying and implementing evidence-based “best care practices,” and
- 3). Determining how best its personnel could implement these practices.

At the NICU level, project teams will assess their individual needs, whether related to medical/nursing practices, organizational support or operational effectiveness and then establish priorities and work to achieve their own individual goals. There will be substantial guidance and support of basic quality improvement methods for your hospital provided by nationally known quality improvement experts that are members of our Expert Panel. Improving practices collaboratively is likely to be more effective than attempting to improve individually at the unit level.

Collaborative hospitals will learn improvement strategies that include breakthrough goals and a method to develop, test, and implement changes to their systems. Quantitative and qualitative data will be collected by sites and submitted to CPQCC monthly. In turn, CPQCC will provide support in key areas, specifically monthly feedback regarding site progress toward the goals and guidance in testing and implementing best practices.

CPQCC will also provide the following resources, endorsed by the Expert Panel, to assist sites in achieving sustainable results:

1. Collaborative Charter (i.e. this document): This resource clarifies the problem to be addressed, explains the business case for the improvement, communicates the specific goals, and manages expectations.
2. Change Package: The Change Package establishes recommended interventions, proven to bring about desired results. When implemented collectively, breakthrough improvement is most likely to be achieved. Participants will be expected to implement as much of the Change Package as possible given their unique local environment
3. Measurement Strategy (“Measurement Grid”): This resource establishes and explains the measures to be considered by the participant sites for collection during the collaborative. A handful of measures will be proposed in each of the following categories: outcome measures, process measures, and balancing measures. The outcome measures document

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clinical improvements; process measures reveal if the parts of the system are performing as planned; and balancing measures monitor system-level impact.

Collaborative Expectations / Roles

The following outlines the expectations of both the Expert Panel and participating Sites.

The Expert Panel will:

- Provide participants with information on subject matter and application of that subject matter via medical experts
- Provide training on the methods for process improvement
- Offer guidance and feedback to participating hospitals on executing improvement strategies

CPQCC will:

- Coordinate experts and other resources to support the improvement process
- Provide content oversight and process management for the collaborative
- Facilitate all activities of the collaborative timeline
- Provide a mechanism for sites to report project data as annotated time series and narrative progress reports
- Provide analytic support to determine overall improvement across all participating hospitals
- Provide communication strategies to keep participants connected (i.e., at least monthly conference calls and 3 Learning Sessions)
- Communicate progress and deliverables to the stakeholders of CPQCC
- Coach teams, along with the Quality Improvement Experts on the Expert Panel, on the Model for Improvement

Participating Collaborative Hospitals are expected to:

- Connect the goals of the collaborative to a strategic initiative in their hospital
- Appoint a senior leader to serve as sponsor for the team
- Provide the resources to support their team, including time to devote to this effort and active senior leadership involvement as appropriate.
- Share information with the collaborative: Submit information to CPQCC, and share both experiences and data with fellow participants on conference calls and at Learning Sessions
- Perform tests of change leading to process improvements in the organization
- Spread successes across the entire hospital system where suitable

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Collaborative Timeline

Tasks	Target Date
Letters of Invitation	January 7, 2008
Welcome Conference Call/Webcast Lead by the Expert Panel, to discuss/clarify objective, measures, and interventions	February 12, 2008 12:00-1:00
Learning Session #1 (collaborative core team members)	February 29, 2008 Coronado Island Marriot Resort Coronado, CA
Webcasts/conference calls (either monthly or 2x per month)	Beginning mid-March (dates/times tbd)
First data submission (to occur monthly) <ul style="list-style-type: none"> Monthly reports due to CPQCC by the 15th of each month 	April 15, 2008
Learning Session #2 (collaborative core team members)	June 2008 (Location, date, time tbd)
Learning Session #3 (collaborative core team members)	December or January 2009 (Location, date, time tbd)

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Improvement by Collaboration

This section of the Collaborative Charter gives you important information about the collaborative experience.

The Model

It's all about improvement! CPQCC's Quality Improvement structure is dedicated to improving patient safety and quality outcomes across all CPQCC Hospitals and sustaining those efforts over time utilizing a proven model. Improvement comes from the application of knowledge. CPQCC utilizes evidence-based practices when developing or compiling interventions for a project, such as the *Decreasing HAI collaborative*. Any approach to improvement must be based on building and applying knowledge (Langley et al). To that end, the model endorsed by the Institute for Healthcare Improvement (IHI) provides the framework for building and applying knowledge by asking three important questions:

1. What are we trying to accomplish?
2. How will we know that a change is an improvement?
3. What changes can we make that will result in improvement?

and incorporates them with Deming's Plan-Do-Study-Act (PDSA) for a reiterative cycle focused on effecting change for improvement.

Change for improvement requires a unique approach. "More of the same" is a common response to a problem, but this response seldom succeeds. CPQCC wants to help systems work smarter, rather than work harder. Therefore, CPQCC's Quality Improvement infrastructure utilizes a systematic approach to change, one that involves collecting data from processes in the existing system, determining what changes are likely to result in improvement, testing the results of implemented changes, and noting the results. This cycle should be repeated a number of times in order to gather sufficient data to indicate signs of improvement. It provides the opportunity to reliably test on a small scale (important for systems where failure is risky) and gather data from a wide range of conditions.

In general, effecting change involves creative thinking. Specific activities include:

- Evaluate the purpose
- Visualize the ideal
- Remove "the current way of doing things" as an option
- Challenge the boundaries
- Embed improvements (making it easier to make the right choice for patients)
- Influence the culture
- Look for ways to smooth the flow of activities

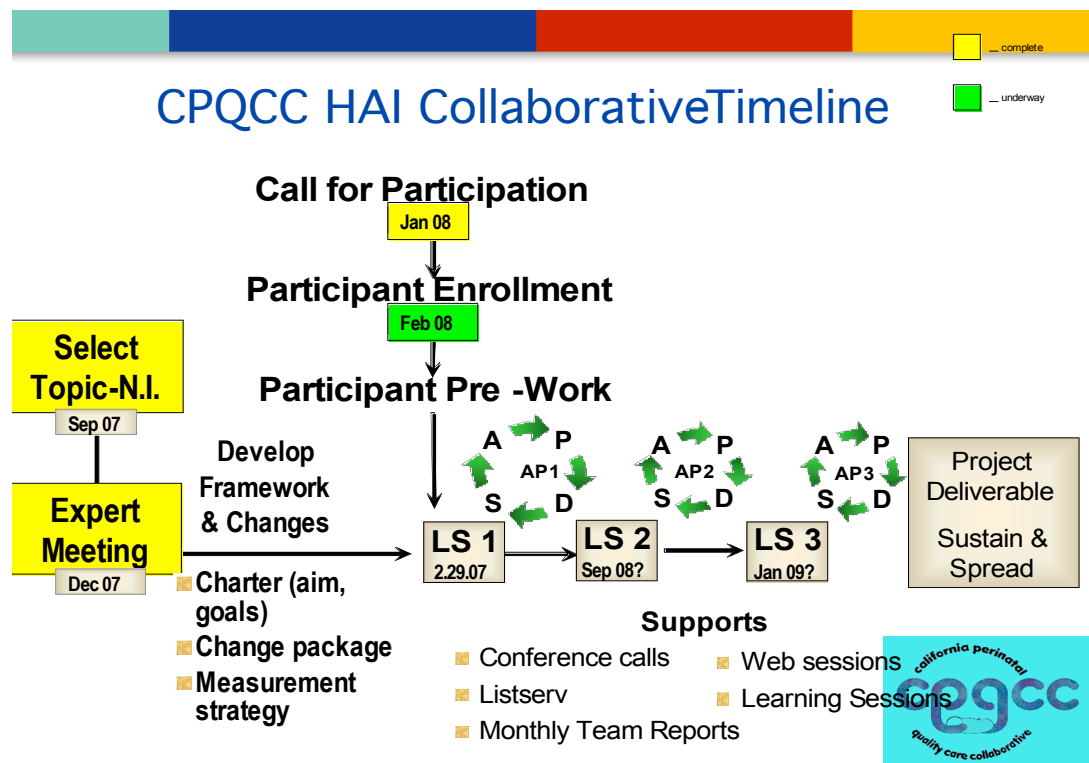
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CPQCC will support collaborative improvement activities by building a solid foundation from which participants can effect change in their NICUs, and hopefully spread this foundation throughout your entire hospital.

CPQCC HAI Collaborative

CPQCC improvement collaboratives are specifically designed to create system-level impact aimed at improving care for patients. However, participating hospitals that only need to enhance their present effective systems and hospitals that prefer incremental change will also benefit from this collaborative. Participating Hospitals work together to test comprehensive system changes in each organization and will also collectively share their learning. The following model shows how the collaborative process is executed and supported:



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Pre-work

Pre-work is the period between commitment to participate and the collaboratives first Learning Session (face to face meeting) or LS #1. During this time, we request that the following questions be answered by each participating site:

1. Do you presently collect Catheter Associated Blood Stream Infection (CABSI) data?
 - If not, do you expect to be able to?
2. Do you stratify these CASBI data by Birth Weight?
3. Can you bring your last 6 months of CABSI rates to the LS #1
4. Does your site have an IRB (Institutional Review Board, or Human Subjects Review)?

Other areas of interest that would be helpful for each site to investigate prior to Learning Session #1 include (see “measurement grid” for more information):

- Hand Hygiene compliance
 - Does your site audit hand hygiene compliance?
- Central catheter insertion best practices (including hand hygiene, total body sterile barrier precautions, etc)
- Central catheter maintenance best practices (including hand hygiene, scrub the hub, sterile technique, etc)

There will be more communication to you about pre-work prior to LS #1 on 2/29/08

Learning Sessions

The major integrative events of the collaborative are the three scheduled Learning Sessions. Participants should plan to attend all 3 Learning Sessions. Through plenary presentations, small group discussions, and team meetings, scheduled over the course of one day, attendees will have the opportunity to:

- Gather new information on the subject matter and on process improvement from experts and other participants;
- Share information with other members of the collaborative; and
- Develop detailed improvement plans for their NICU

Action Periods

The time between Learning Sessions is called an Action Period (“AP” in the collaborative schematic above see page 10). During Action Periods, collaborative teams work within their individual hospitals towards major, breakthrough improvement. Although each participant focuses on his/her own organization, each remains in continuous contact with other collaborative participants and the Expert Panel.

This communication takes the form of monthly (or possibly 2x per month) conference calls or web casts, as well as emails, list serves, and sharing of information on an Internet site. Each organization also submits monthly team data on its improvement efforts in order to share results internally with its appointed senior leader (via a report generated by CPQCC), as well as

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externally with other participating teams. Email and the Internet are important means of communication among collaborative participants.

Measuring Improvement: Defining the Measures

The “Why”, “What”, and “How Much” of Measurement

CPQCC improvement collaboratives are about making hospital systems safer for patients, not about measurement per se. However measurement plays an important role. Measurement will help you evaluate the impact of changes made to improve quality and safety. Always remember that measurement should be designed to *accelerate* improvement, not slow it down. Your team needs just enough data to be convinced that the changes you are making are leading to improvement. The IHI developed the following table to demonstrate the difference between measuring for research and measuring for change.

	Measurement for Research	Measurement for Learning and Process Improvement
Purpose	To discover new knowledge	To bring new knowledge into daily practice
Tests	One large "blind" test	Many sequential, observable tests
Biases	Control for as many biases as possible	Stabilize the biases from test to test
Data	Gather as much data as possible, "just in case"	Gather "just enough" data to learn and complete another cycle
Duration	Can take long periods of time to obtain results	"Small tests of significant changes" accelerates the rate of improvement

CPQCC utilizes a monthly reporting of data, qualitative data reporting (i.e., barriers to implementation, lessons learned, etc.), senior leader reporting and assessment scales. Senior leader reporting enhances frequent communication between those working daily to implement improvement and those at the administrative level. The senior leader reports will be more thoroughly explained in future communications.

The assessment scale is a numerical scale used to assess the progress of participating teams toward reaching their aim. A score of “One” = non-starter/forming; and a score of “Five” = outstanding, sustainable improvement. In each collaborative, teams are assessed periodically, usually monthly, and the expected level of attainment at the conclusion of the collaborative is at

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least a score of “Four” (significant progress). Teams are asked to assess their own progress using this indicator as well. More detailed information about assessment scoring will be provided in the future.

Some measurement concepts to help keep the use of data simple and effective during the collaborative:

1) Plot data over time

Improvement in care of patients will require testing and implementing throughout the collaborative. Most of the information about performance of your system and how it has improved can be learned by observing trends and patterns in simple time series charts of key measures directly related to the AIM. CPQCC will provide a mechanism for the reporting of data once a month.

2) Focus on measures directly related to the AIM

The collaborative has a set of standard measures which all teams will select from and use to assess and report progress. Your team may collect additional measures as you would like, however, these will not necessarily need to be reported to CPQCC. CPQCC does encourage all participants to learn from the collaborative experience as much as possible, but also warns against being overzealous in data collection due to its ability to hinder improvement progress and delay success.

The preliminary list of measures for the collaborative can be found in the Measures Grid, which will be distributed to all sites.

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Collaborative Glossary

Action Period: The period of time between Learning Sessions when teams work on improvement in their home organizations. They are supported by CPQCC and they are connected to other collaborative team members.

Aim: A written, measurable, and time sensitive statement of the expected results of an improvement process.

Annotated Time Series: A line chart showing results of improvement efforts plotted over time. The changes made are also noted (“annotated”) on the line chart at the time they occur. This allows the viewer to connect changes made with specific results.

Assessment Scale: A numerical scale used to assess the progress of participating teams toward reaching their aim. One = non-starter/forming; and Five = outstanding, sustainable improvement. In each collaborative, teams are assessed periodically, and the expected level of attainment at the end of the collaborative is at least a Four (significant progress). Teams are asked to assess their own progress using this indicator as well.

Change Concept: A general idea for changing a process. Change concepts are usually at a high level of abstraction, but evoke multiple ideas for specific processes. “Simplify,” “reduce handoffs,” “consider all parties as part of the same system,” are all examples of change concepts.

Change Package: A set of change concepts and suggested tests of change that guide teams in their improvement efforts. A mature team will complete work in all areas of the change package and implement most of the suggested change concepts and related tests of change.

Collaborative: A time-limited effort (usually 9 to 12 months) of multiple organizations that come together to learn about and to create improved processes in a specific topic area. The expectation is that the teams share expertise and data with each other, thus, “everyone learns, everyone teaches.”

Collaborative Team: Involves all participants in the improvement effort from clinics and/or health plan teams.

Cycle or PDSA Cycle: A structured trial of a process change. Drawn from the Shewhart cycle, this effort includes:

- Plan - a specific planning phase;
- Do - a time to try the change and observe what happens;
- Study - an analysis of the results of the trial; and
- Act - devising next steps based on the analysis.

This PDSA cycle will naturally lead to the Plan component of a subsequent cycle.

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Early Adopter: In the improvement process, the opinion leader within the organization who brings in new ideas from the outside, tries them, and uses experiences with positive results to persuade others in the organization to adopt the successful changes. (Everett Rogers, Diffusion of Innovation, 1995).

Early Majority/Late Majority: The individuals in the organization who will adopt a change only after it is tested by an early adopter (early majority) or after the majority of the organization is already using the change (late majority). (Everett Rogers, Diffusion of Innovation, 1995).

Implementation: Taking a change and making it a permanent part of the system. A change may be tested first and then implemented throughout the organization.

Innovator: In the improvement process, the person(s) who goes outside the organization to find new ideas. This person may not be well connected to others in the social system. (Everett Rogers, Diffusion of Innovation, 1995)

Key Changes: The list of essential process changes that will help lead to breakthrough improvement, usually created by the Faculty and Chair based on literature and their experiences.

Learning Session: A one or two day (in CPQCC these are 1-day meetings) meeting during which participating organization teams meet with experts and collaborate to learn key changes in the topic area including how to implement changes, an approach for accelerating improvement, and a method for overcoming obstacles to change. Teams leave these meetings with new knowledge, skills, and materials that prepare them to make immediate changes.

Measure: An indicator of change. Key measures should be focused, clarify your team's aim, and be reportable. A measure is used to track the delivery of proven interventions to patients, and to monitor progress over time.

Model for Improvement: An approach to process improvement, developed by Associates in Process Improvement and the IHI, which helps teams accelerate the adoption of proven and effective changes.

Monthly Team Progress Report: The standard reporting format for monthly progress updates in a collaborative. This report includes the AIM statement, a list of the changes made, and the results displayed graphically on annotated run charts. The report is prepared by each team with help from CPQCC and shared with the collaborative.

PDSA: Another name for a cycle (structured trial) of a change, which includes four phases: Plan, Do, Study, and Act. See the definition of "Cycle" above. Sometimes known as Plan, Do, Check, Act (PDCA).

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Pilot Site: The clinic location for initial focused changes. After implementation and refinement, the process will be spread to additional locations.

Process Change: A specific change in a process in the organization. More focused and detailed than a change concept, a process change describes what specific changes should occur. “Institute a pain management protocol for patients with moderate to severe pain” is an example of a process change.

Run Chart: A graphic representation of data over time, also known as a “time series graph” or “line graph.” This type of data display is particularly effective for process improvement activities.

Sampling Plan: A specific description of the data to be collected, the interval of data collection, and the subjects from whom the data will be collected. It emphasizes the importance of gathering samples of data and to obtain “just enough” information.

Spread: The intentional and methodical expansion of the number and type of people, units, or organizations using the improvements. The theory and application comes from the literature on Diffusion of Innovation (Everett Rogers, 1995).

Team: The group of individuals, usually from multiple disciplines, that drives and participates in the improvement process. A core team of at least three individuals attends the Learning Sessions, but a larger team of at least six to eight people participates in the improvement process in the organization.

Test: A small-scale trial of a new approach or a new process. A test is designed to learn if the change results in improvement, and to fine-tune the change to fit the organization and patients. Tests are carried out using one or more PDSA cycles.



RELEVANT REFERENCES

VASCULAR ACCESS DEVICES

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