Quality Improvement
Toolbook

A practical approach to improving the quality of health care - your goal and ours.

HEALTH
QUALITY
COUNCIL

About the QI Nexus Toolbook

Each section of this toolbook is based on sessions/topics presented by guest speakers from England's National Primary Care Development Team (NPDT) at the Health Quality Council QI Nexus Learning Symposium in October, 2004.

The Health Quality Council (HQC) had a designated person keeping notes of the sessions. Her notes, combined with some of the power point slides accompanying the presentations, formed the first draft of our toolbook. Knowledge Exchange Consultants (Mary Smillie, Catherine Delaney, and Katherine Stevenson) reviewed each section and identified 'Try it on' exercises to help readers complete their learning by working with examples to apply the theories and tools presented.

Communication Consultants (Greg Basky and Sheila Ragush) ensured the pieces of our toolbook came together to create a user friendly, easy-to-follow resource book for practitioners seeking to use Improvement Science methods. The graphics are courtesy of the National Primary Care Development Team.Thanks to the Regional Health Authority (RHA) Quality Improvement Network designates for reviewing and providing valuable feedback to this document.

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Table of Contents

Introduction

The Health Quality Council Mandate

The Health Quality Council is an independent agency in Saskatchewan that measures and reports on quality of care, promotes improvement, and engages its partners in building a better health system. Two main functions of the Health Quality Council are measurement and reporting on performance and working with health system partners to bridge the gap between actual and optimal care.

In October 2004, more than 150 health care managers and decision makers from around Saskatchewan gathered in Saskatoon for a learning event called QI Nexus. Participants were introduced to quality improvement science methods from England's National Primary Care Development Team (NPDT). The NPDT is credited with leading the largest health improvement program in the world. They have nurtured a number of bold initiatives to improve primary care throughout England:

- Waiting times to see a general practitioner reduced by 72%
- Mortality of patients with coronary heart disease reduced by 400%, saving 800 lives in participating practices
- Improvements in diabetic care expected to save more than 12,500 lives nationally in the next decade

England's initiative has been recognized at home and abroad as a practical model for fast and effective change in the provision of primary health care. In 2003, the leader of the initiative, Dr. John Oldman, was knighted for his good work.

This booklet is designed to be a practical, hands-on guide for achieving similar results in Saskatchewan's health care system. It summarizes and expands upon information presented by the NPDT at the symposium and includes exercises to ensure that you fully understand and can apply the different change strategies.

Our thanks to NPDT team representatives Ruth Kennedy (Chief Executive), Dr. John Bibby (Clinical Chair) and David Latham (Assistant Collaborative Director) for sharing their expertise at the Symposium and for allowing us to now share this with you through this publication. The QI Nexus Symposium was coordinated by the Health Quality Council.

England's Success Story

Incorporating the National Primary Care Development Team (NPDT) into England's National Health Services
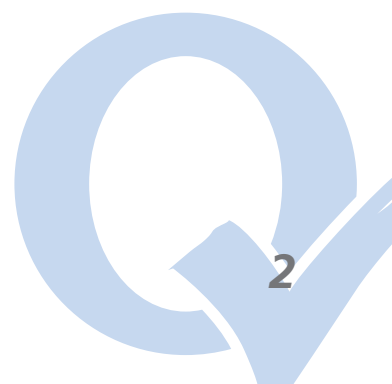
Key Messages
- Quality Improvement can be quick and effective.
- Quality Improvement must focus on the patient's needs.
- Quality Improvement saves lives.

The National Health Service (NHS) is the largest employer in Europe and is recognized as one of the best health services in the world. At the turn of the 21st century, however, major changes and improvements were needed to meet expanding health expectations.

Modernization of the NHS was undertaken with one primary aim - to design a health service that puts patients first, offering them greater convenience and choice. The main feature of the modernization was the creation of Primary Care Trusts (PCTs), which are responsible for delivering health care in a local area. Approximately 300 PCTs provide health services in England; together they receive 75% of the national health budget.

PCTs consist of physicians, nurses, managers, support staff, receptionists, and others. Just as no two patients have the same needs, no two PCTs are structured exactly the same. It quickly became evident that some practices were more successful than others in the delivery of various health services. The question arose: How can those successes be communicated - and adapted - by other PCTs?

In 2000 the National Primary Care Development Team (NPDT) was established to kick-start a process for large scale spread of quality improvement in primary care.
By employing the Collaborative Approach and the models of Quality Improvement, similar impressive results are achievable in Saskatchewan.

What is Quality?

Key Messages
- Quality is ultimately determined by the patient.
- Quality is multi-dimensional.
- Quality Improvement is not quality assurance.

The Oxford dictionary defines quality as:
- Essential or distinguishing characteristic
- Good moral, mental or aesthetic characteristic
- Virtue
- Degree of goodness or value

Many theorists have provided their definitions of quality. Some define it in terms of customer satisfaction. In that sense, patients are our customers. To determine quality, we must not only ask what we want, but what do our customers/patients want?

Using various criteria of quality, we can create a matrix of factors. In the chart below, the quality matrix is applied to a patient with reduced sight. The matrix can be applied to other categories of patients, such as the elderly or aboriginal mothers.

What is Quality?

	Structure	*Process*	*Outcome*
Access	All the signs are interpretable -large print, Braille	There are enough booking slots to meet the demands for appointments	Patients feel that they get allocated a slot / appointment which is appropriate to their needs
Equity	Appointments at times and in places which the partially sighted feel are suitable	Clinics are not held at the same times as the Day Centre Rehabilitation sessions	All patients who require to be seen are given appropriate appointment slots
Appropriate	Not shut at weekends and evenings when part-time carers could accompany patients	All refreshment facilities are usable by all attendees (large buttons on drinks dispensers)	All state that they are satisfied
Acceptable	Not in a busy part of town, which is dangerous for the partially sighted to traverse	Patients can be seen in surroundings which offer them the privacy they feel they need	Patients feel respected and not disadvantaged
Efficiency	No unacceptable queues or bottlenecks occur	Patients are seen within a reasonable proximity to their anticipated appointment time	No one perceives that they have waited an inappropriately long time
Effectiveness	Enough facilities are made available for all patients waiting to be seated	No carers complain. No patients complain or appear stressed by their attendance	Patients appear to thrive, and feel they are being given their due recognition / consultation
Safety	Facilities are appropriate for the blind	Assistance provided when needed	No injuries as result of attendance

Quality can also be defined in terms of value for price. "Quality" is the measure of how well a service or product meets a defined need. "Value" is the relative worth or importance. "Price" is the cost to the organization.

You can add value by improving the quality, reducing the price, or increasing the level of satisfaction.

Quality Improvement Happens in More Than One Dimension

Kano analysis is a quality measurement tool used to prioritize customer requirements based on their impact on customer satisfaction. Dr. Noriaki Kano integrated quality along two dimensions: 1) The degree to which a product or service performs, and 2) The degree to which the user is satisfied. By plotting performance and user satisfaction on a two-axis graph, you have the ability to define quality in a more sophisticated manner. The correlation of quality on two axes led Dr. Kano to three unique definitions of quality: Basic Quality, Performance Quality and Excitement Quality.

In the Kano Model for Quality[1], some factors for customer satisfaction are defined as "essential" (such as competent staff), while other factors are "attractive" (chocolates on the pillow). Attractive factors have the power to delight us and make us feel good, for example, when we get more than expected or when someone goes the extra mile.

In this diagram, basic needs are met as the customer/patient moves from completely dissatisfied to "Need fulfilled" (curved arrow in lower-right quadrant). For the customer/patient to feel "Completely satisfied", some attractive features of customer service/patient care have to be added (the waiter who calls you by name when you enter the restaurant, the health care worker who spends extra time with the patient listening to his/her concerns, etc.). This is illustrated by the curved arrow in the upper-right quadrant.

Quality and Need

Kano Model of Quality
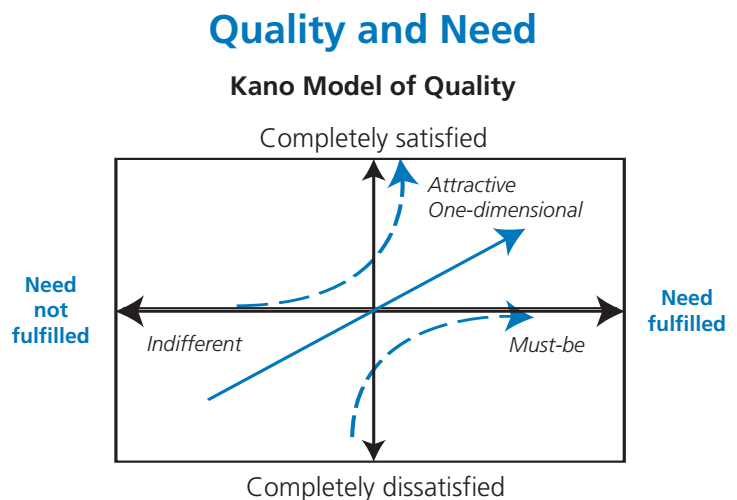
What does this mean for health care? Health services must meet the standards of quality based on patient needs. But services can also produce higher levels of satisfaction through extra care and attention to detail.

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[1] Kano, N. "Attractive Quality Creation," Convergence Conference. Dearborn, MI, 1994.

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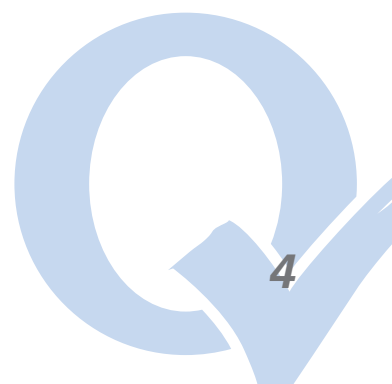
Quality Improvement and Quality Assurance are often thought to be one in the same. Quality Assurance is a process for getting rid of that which is not up to standard (e.g., a company that fires the bottom five per cent of sales staff every month). Quality Assurance can engender a culture of fear. Quality Improvement, on the other hand, is a cooperative process for raising standards across the board, narrowing the range between better and worse, as shown in this graph:

Traditional Quality Assurance
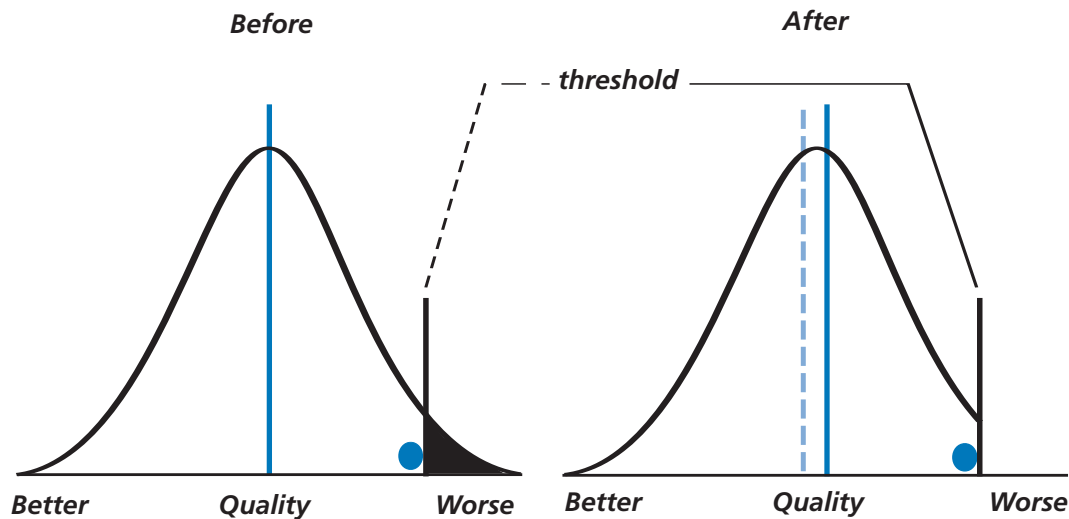
Quality Improvement
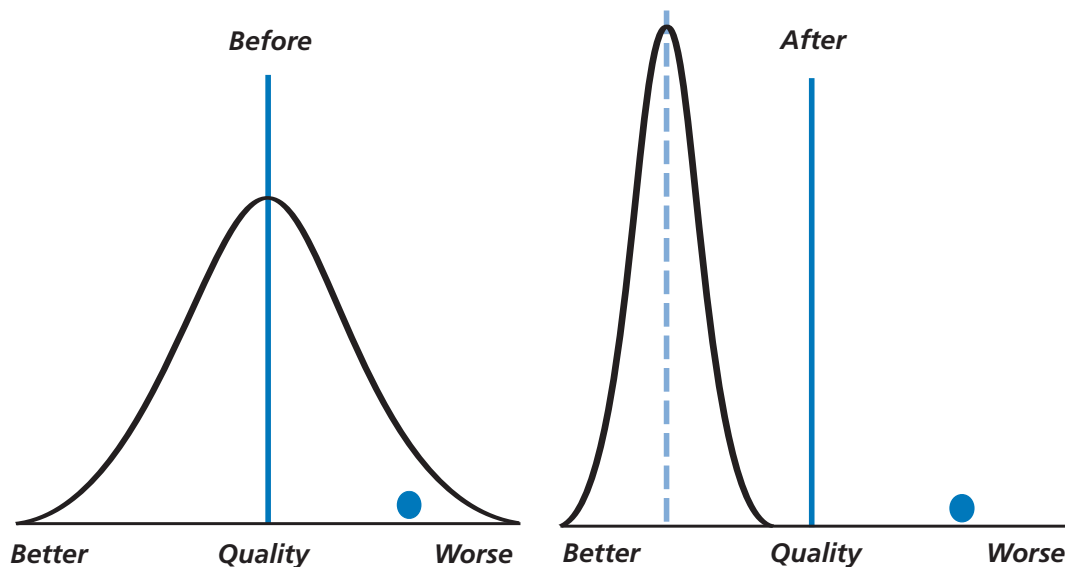
HQC Quality Improvement (QI) Case Study: The Health Quality Council (HQC) measures quality of care in Saskatchewan in order to identify the need for change and to determine if there is room for improvement. The HQC has studied indicators of post heart attack care and in 2004 released a report identifying strengths in care and areas that could be improved.

The HQC assessed two dimensions of the quality of care among Saskatchewan acute myocardial infarction (AMI) patients: the extent to which patients receive care that has been shown to improve their health (process of care indicators), and the extent to which patients' health has been influenced by that care (outcome indicators).

The HQC examined the following process of care indicators:
- proportion of AMI patients surviving their initial hospital stay who were on beta-blockers at three, 90, and 365 days after discharge from hospital
- proportion of patients on ACE inhibitors at three, 90, and 365 days post-discharge
- proportion on statins at three, 90, and 365 days post-discharge.

Study findings:
- Saskatchewan dispensing rates improved over the study period, but were still below recommended benchmarks in 2001-02
- Statin rates showed the largest improvement. However, there was still a major gap between actual and recommended benchmarks for use of this drug
- The longer patients were out of hospital, the less likely they were to be on beta-blockers and ACE inhibitors

QI Initiative: The HQC has produced a quality improvement guide, "Improving the Quality of Heart Attack Care in Saskatchewan: Outcomes and Secondary Prevention." It contains: Descriptions of strategies and approaches - some aimed at providers, others, at patients - shown to be effective in improving quality of heart attack care; short "success stories" from Canada and abroad that illustrate real world applications of these QI tools; and, a quick-reference menu of tools for improving drug treatment of heart attack patients and measuring that improvement.

For more information on the Post AMI Care Study, and to see the Quality Improvement Guide, visit: *www.hqc.sk.ca*

Try*It*On

At Work: Take a client you/your unit serves and complete either a row or a column (or whole matrix) in the quality matrix (see page 3). Examples of client groups: frail elderly; mental health clients; persons with diabetes; or, new moms.

At Home: Contemplate the purchase of a new vehicle. Think about three essential factors and three attractive factors. For example, three essential factors you want in a new vehicle are: Good mileage; four doors; and cruise control. Three attractive factors may be: Blue in color; leather seats; and CD player.

Using the Kano Model of Quality, plot your current vehicle relative to these factors:

Completely Satisfied

Need not fulfilled   Need fulfilled

Completely dissatisfied
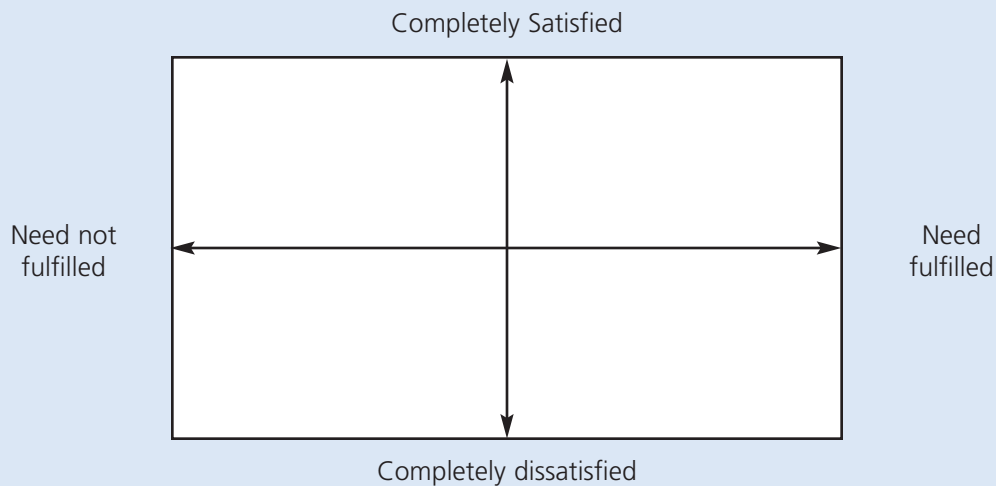
Model for Improvement

Key Messages
- Change is less risky if you follow tried-and-true methods.
- Plan, Do, Study, Act (PDSA) cycles are rarely too small.
- Sustainable change is possible by using the Model for Improvement.

Planning for Change

Our environment is always changing. Sometimes, those changes are imposed on us and we must manage the impact. At other times, we initiate the change in order to improve a situation. Change can be time-consuming and risky, but we can mitigate the time and risk by using the Model for Improvement.

Before imposing a change, begin by asking three key questions:

1) What are we trying to accomplish? Define the end result you want to achieve. Your aims must be clear.

2) How will we know that a change is an improvement? Measurement is crucial, so define the benchmarks that will indicate a positive change.

3) What changes can we make that will result in an improvement? Define the changes you believe will achieve your goal. Change can be new and creative, or it can be adapted from other success stories. Gather as many credible ideas for change as you can.

Plan, Do, Study, Act Cycles (PDSAs)

Sometimes, your idea for change may be a hunch. You think it might work, but won't know until you try it. Because our health system is complex, and because change is not always welcome, it is helpful to have a framework to test whether your hunch actually leads to an improvement in the process or outcome of interest. Plan, Do, Study, Act cycles have proven to be a very good framework to do this. Here's how it works:

PLAN - Define your objective, make a prediction, develop a plan to carry out the cycle (who, what where, when), and decide how you will collect the data. Who will do what by when and what will tell you there is an improvement?
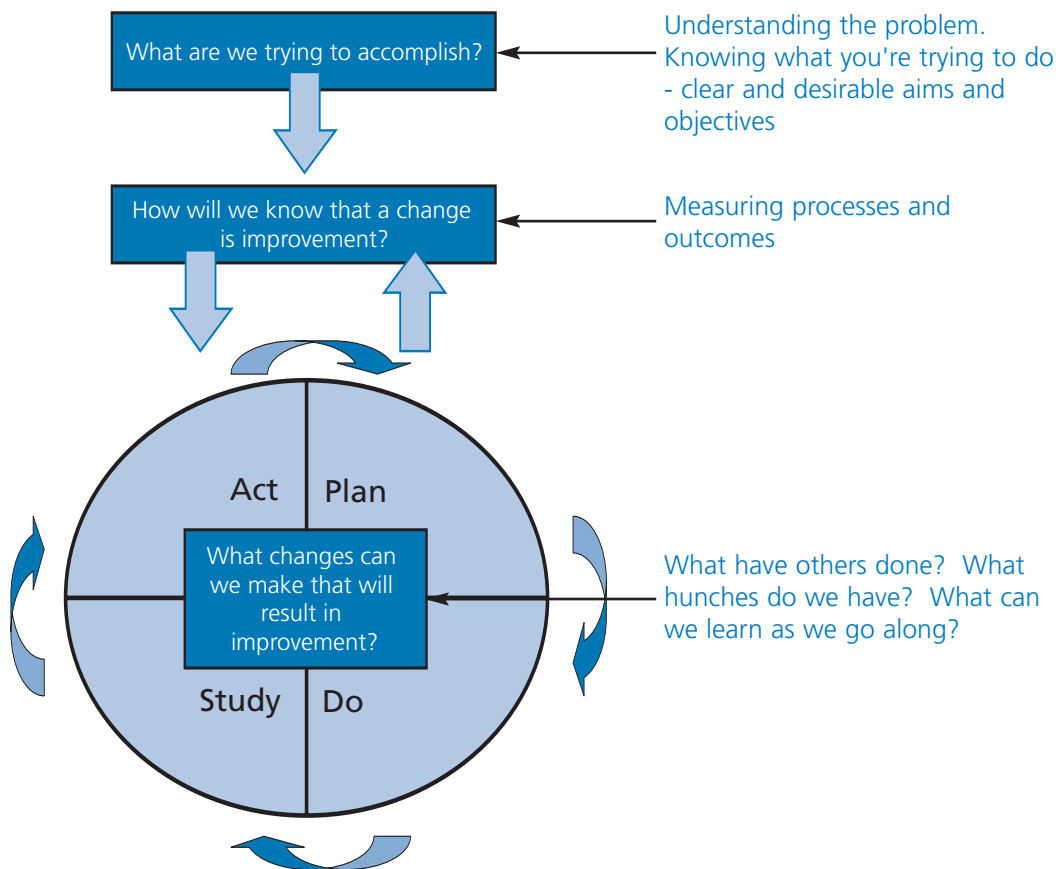
DO - Carry out the plan. In other words, just do it!

STUDY - Based on your measurements, did you achieve the objective of the plan? What worked? What didn't?

ACT - If the test is successful, plan another cycle to test it on a larger scale or under different conditions. If the test is unsuccessful, test a different hunch, devise a new plan and run through the PDSA cycle again.

Plan, Do, Study, Act Cycle

What are we trying to accomplish? → Understanding the problem. Knowing what you're trying to do - clear and desirable aims and objectives

How will we know that a change is improvement? → Measuring processes and outcomes

Act | Plan

What changes can we make that will result in improvement? → What have others done? What hunches do we have? What can we learn as we go along?

Study | Do

You can run several PDSA cycles at the same time, to test multiple hunches or theories for change. Each PDSA cycle should spark another, creating momentum for continual improvement. The Model for Improvement with multiple PDSA cycles is the template and fuel for quality improvement in complex systems.

Developing Practice Improvement – in the Real World!

Failure!
Idea did not work — PDSA

Looks Promising!
PDSA PDSA PDSA

Success!
PDSA
Quick Win!
PDSA
PDSA
PDSA
PDSA
PDSA
PDSA
PDSA
PDSA
PDSA

Sustained Improvement

Problem Identified

Bright Idea
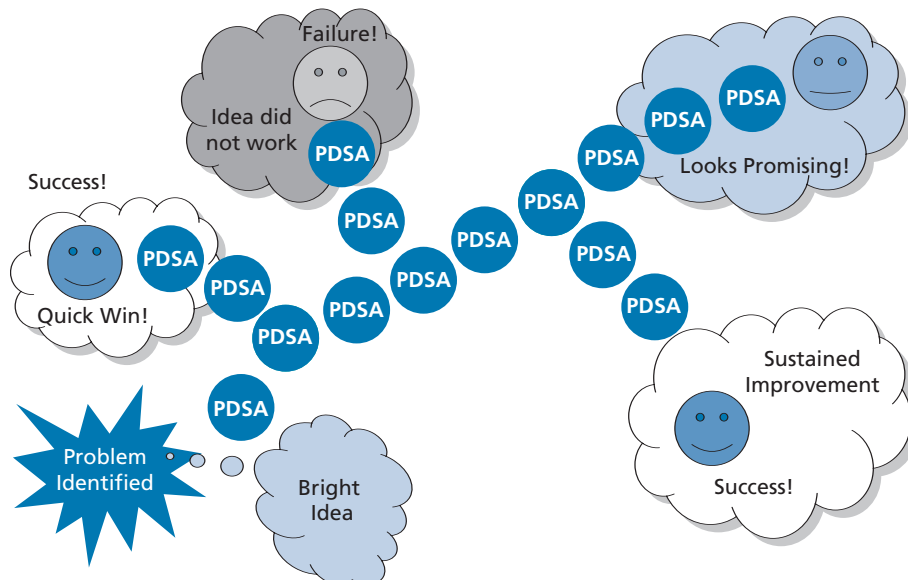
Success!

Tips for successful PDSAs:

DO reflect regularly on what you aim to accomplish and how you will know a change is indeed an improvement.

DO keep it small. Small PDSAs are easier to implement and results are quickly evident. Small PDSAs are not as daunting as whole system change, yet their fast results are good for morale and encourage a positive attitude toward change.

DO use a team approach. Have your team clearly define who is doing what, where, and when.

DO follow each PDSA cycle with another, creating a continuous improvement process. Learn as you go.

DO keep written accounts of all PDSAs.

Do spread good results. Give credit where it is due and encourage others to make the change.

DO create PDSA cycles that can be completed in seven days.

DO encourage staff to conduct their own PDSAs without requiring approval from higher up.

DON'T manage PDSAs from the top down. Top-down management inhibits rather than facilitates creativity in PDSAs.

DO use a worksheet to plan your PDSAs. (Download a copy at www.hqc.sk.ca.)

Example of a 7-day PDSA

Dr. Bibby was in the habit of visiting new mothers at home to see that everything was going well and to answer any questions. In fact, this is routine procedure in England. But, he was frustrated because the visits were time consuming and often the mothers were either not home when he dropped by, or if they were, it was an inconvenient time for a visit. Dr. Bibby wondered if there was a better way to follow up with new moms.

PLAN: Dr. Bibby will phone each mother and ask if she wants a home visit. If yes, he will schedule an appointment.

DO: Dr. Bibby called three mothers who had recently given birth and would be expecting his visit.

STUDY: Two mothers indicated that everything was going well and that they didn't require a visit. One mother requested a visit and they made an appointment for a convenient time.

ACT: Dr. Bibby adopted these phone calls into his practice, and explained the success to his physician colleagues.

> *"By testing changes on a small scale, it's okay to have*
> *failure because you haven't risked much on it.*
> *It becomes a learning exercise rather than an overall loss"*
>
> *- Dr. John Bibby*
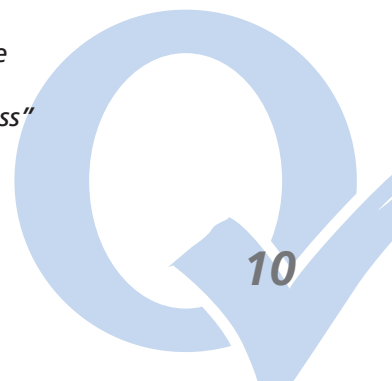
HQC Quality Improvement (QI) Case Study: Seven Saskatchewan hospitals are working together to improve the quality of care in Adult Intensive Care Units. Using Collaborative methodology, the ICUs will address two quality of care issues: sedation of critically ill patients, and prevention of venous thromboembolism.

Each unit will establish a multi-disciplinary quality improvement (QI) team. The teams will meet four times over 12 months for face-to-face learning sessions. In between meetings, QI teams enter the Action Period when they implement Plan, Do, Study, Act cycles. They will make small changes, measure the results to track progress, and report back to the group at Learning Workshops.

By sharing successes and barriers, the group learns from each other and improvement spreads rapidly.

For more information on the ICU Collaborative, visit the Health Quality Council web site: *www.hqc.sk.ca*

Try *It* On

At Work: Fill in the blanks in the improvement model below for a seven-day plan to improve handwashing in your unit.

At Home: Food in your fridge is often not eaten prior to the "Best Before" date and has to be thrown out. Try implementing a change using a PDSA cycle to reduce the cost of this waste.

Using PDSA for Quality Improvement in Health Services

Three Improvement Questions:

1. What are we trying to accomplish? ....

....

2. How will we know the change in an improvement? ....

....

3. What changes can we make that will result in improvement? ....

....

PDSA cycles test out single ideas

Plan:
- Assemble the people affected
- Make predictions
- Develop plan to carry out cycle (who, what, where, when)

....

....

....

Do:
- Carry out the test
- 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

....

....

....

Act:
- What changes are to be made?
- What will be the next cycle?

....

....

....

Defining the Problem

Key Messages
- Define the problem before attempting to fix it.
- Include all stakeholder groups in defining the problem.
- 20% of the effort leads to 80% of the result.

One of the keys to successful application of the Model for Improvement is starting at the beginning, by defining the problem. After you have determined what you want to change, you must define the problem in as much detail as possible. Too often, we try to jump straight to solutions. However, we will pay a price in the long run if we do not define and analyze the problem before we begin. Success comes from adequate preparation.

Five models have proven useful in defining a problem. They are:
- The Five Whys
- Ishikawa (Fishbone) Diagrams
- Brainstorming
- Pareto Analysis
- Process Mapping

The Five Whys

Think of a child always asking Why? Why? Why?
Analyze a process by asking the question "Why?" up to five times. You may find yourself moving from what you think the problem is, to what it really is.

In this simple example, a co-worker describes a problem at the medical clinic where you both work:

Co-worker: "Patients picking up prescriptions at our pharmacy at noon hour have to wait too long."

You: "Why?"

Co-worker: "It is a busy time of the day in the pharmacy and the second pharmacist is on a lunch break"

You: "Why?"

Co-worker: "Because that is how we have always scheduled lunch breaks in the pharmacy"

You: "Why?"

Co-worker: "Maybe we should reschedule lunch breaks so that both pharmacists are working during the busy lunch hour."

Ishikawa (Fishbone) Diagrams

Draw a spine across the page: this will be the main problem. From the spine, draw a rib for each cause associated with that problem. From each rib, draw little fish bones to help to explain each cause. This tool will help you organize your thoughts and ensure that you do not forget anything.
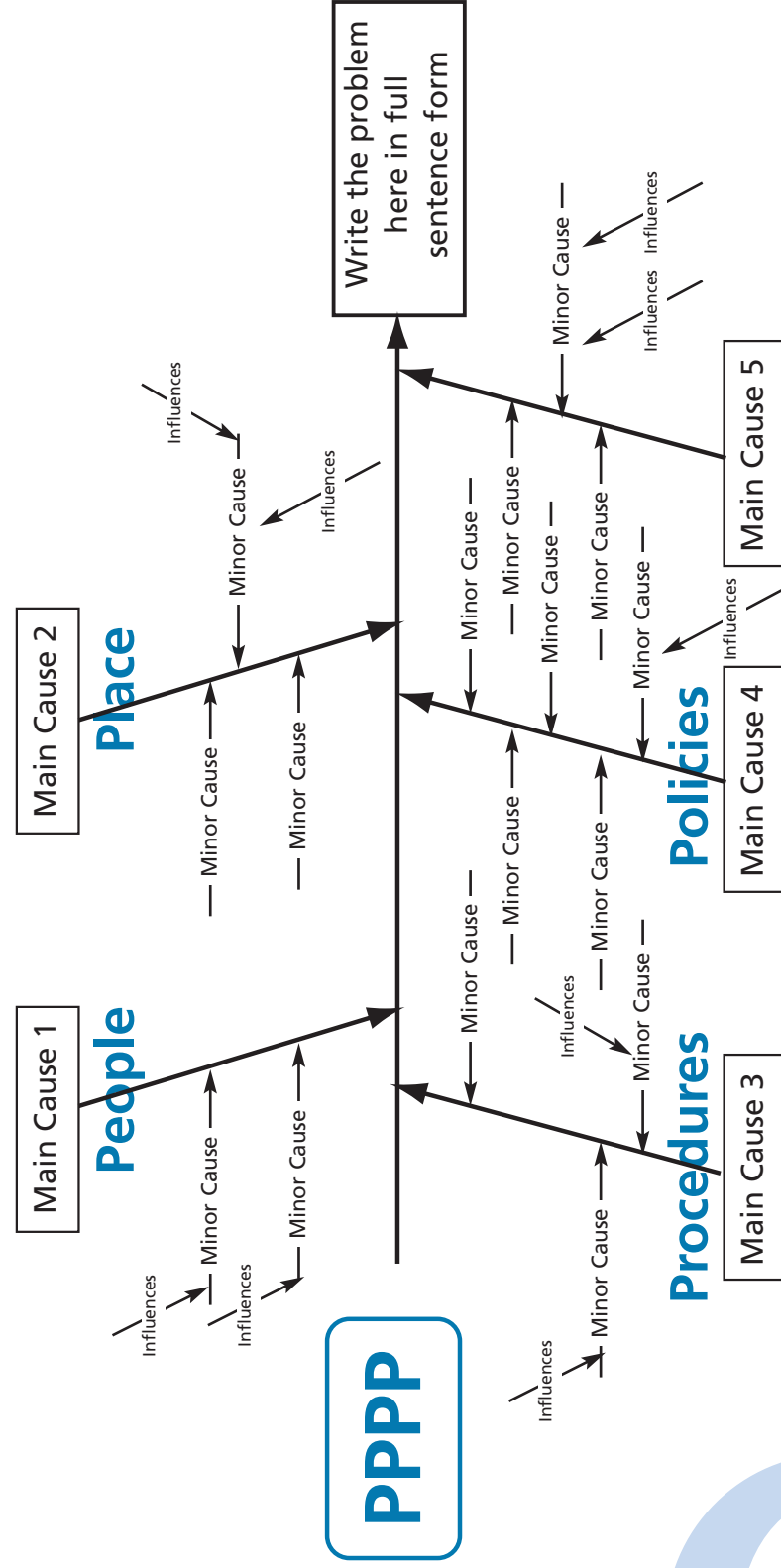
Brainstorming

Gather everyone together with a facilitator and come up with as many factors that may impact on the problem as possible. Do not judge or analyze the factors at this point. Quantity trumps quality. Write down the factors on a white board or on sticky notes.

After you have listed all the possible factors that may contribute to the problem, group them under headings that define the problem. Effective brainstorming requires preparation, ground rules, and analysis of the results.

Pareto Analysis[2]

The Pareto Principle states that only a "vital few" factors are responsible for producing most of the problems. This principle can be applied to quality improvement to the extent that a great majority of problems (80%) are produced by a few key causes (20%). If we correct these few key causes, we will have a greater probability of success. The Pareto Principle states that a problem can be solved by focusing on solving the most frequently occurring causes. Usually, there are four to six causes that lead to 80% of the problems. These are called the "vital few" causes. Begin by gathering data on the frequency of the causes after the causes of a problem have been analyzed and selected. Rank the causes from the most to the least important, and calculate the percentage each cause contributes to the problem:

Causes	Percentage of Total	Computation	Cumulative Percent
A	20%	0+20%= 20%	20%
B	18%	20%+18%=38%	38%
C	15%	38%+15%=53%	53%
D	11%	53%+11%=64%	64%

Create a bar graph with causes from most important to least important on the horizontal axis and percentage on the vertical axis. Superimpose on the bar graph, a line graph illustrating cumulative percentages. Draw a line from 80% on the vertical axis to the line graph, and then drop the line down to the horizontal axis. This line separates the important causes from the trivial ones:

[2] The Guide to Managing for Quality. Management Sciences for Health and United Nation's Children's Fund. http://erc.msh.org/quality/pstools/pspareto.cfm.

Cause for Delay of Care
Azoques Health Centre, 1994
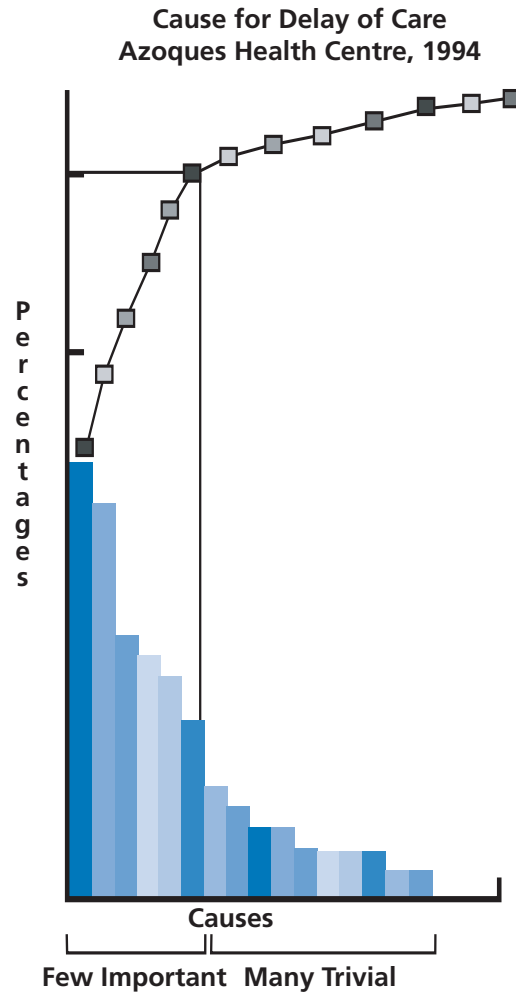
(See further explanation of the Diffusion of Improvement/Innovation in Clinical Leadership section).

The leading 20% of People, Natural Forces, Economic Inputs, or any other causes we can measure typically contribute to about 80% of Results, Outputs, or Effects

"Make sure you've first got the right basket, then put ALL your eggs into it."

- Dr. John Bibby

Try *It* On

At Work: Lead a brainstorming session with your colleagues using the Ishikawa (fishbone) diagram tool. Use the four P's (people, place, policy and procedures) to identify a problem, the main causes of the problem, and then branch off to determine factors contributing to the main causes. For example, sub-optimal drug management in a particular target group could be the problem.

At Home: A Pareto Analysis Exercise: The 20/80 rule could be helpful in understanding the main factors that contribute to you getting to work on time. Some of the factors may be:
- snowstorm
- overuse of snooze button
- car trouble
- last minute requests for help with homework from children
- construction delays

Identify which of the above factors you are most likely to have the most success in changing. Try implementing one or two changes (i.e., getting out of bed earlier in the morning, or ensuring homework is always finished the night before) and see if your arrival times at work improve.

Understanding Systems

Key Messages
- No one person understands the entire system.
- Processes have a defined beginning and end.
- One cannot change one part of a system without influencing other parts in some ways.

We don't intentionally design systems that are flawed, but a well-designed system can become unsatisfactory over time. In health care, the pace of change is so great that if you don't change, you will actually go backwards.

Anyone who has not kept up with the changes in telephones, for example, knows that a rotary dial telephone limits easy access to services within many organizations.

All improvement involves change, but not all change will lead to improvement. If you always do what you've always done, you will always get what you've always got.

What is a System?

Systems exist all around us: The cardiovascular system; the London underground subway system. Systems are defined as a collection of parts and processes organized around a purpose.

All systems have three components:
- Structures: Things you can touch and see, such as equipment, facilities, committees, roles.
- Processes: Steps or actions to achieve the outcome, such as patient pathways.
- Patterns: Repetitive features, often cultural, such as behaviours, conversations, and waiting times.

Every process has a start and an end. In order to map a process, it is essential to clearly define each of these points. Processes can be simple and short, or complex and long. Processes are usually governed by rules, and they are usually linked to other processes.

For example, a process might begin with the symptom and end with resumption of good health. Similarly, a process might begin with the request for an x-ray and end with the results.

When examining a process, it is important to detail every point in the chain of action. It is important to include everyone involved in that process, so that no point of action is missed. Often, no one person knows the entire process. By including everyone in the discussion, we may find that what we think is going on may not, in fact, be what is actually happening!

Process Mapping

It is essential to clearly define a process in order to implement successful change: Where does the process start, where does it end, and what are the steps in the middle? By analyzing the process from start to finish, we identify all the opportunities to make improvements. We also avoid the pitfall of focusing on just one perspective.

When mapping a care process, it is important to consider the views of all stakeholders, including patients and caregivers:

> *The only one who knows the whole process is the patient.*
>
> *Up to 50 per cent of process steps involve a handoff,*
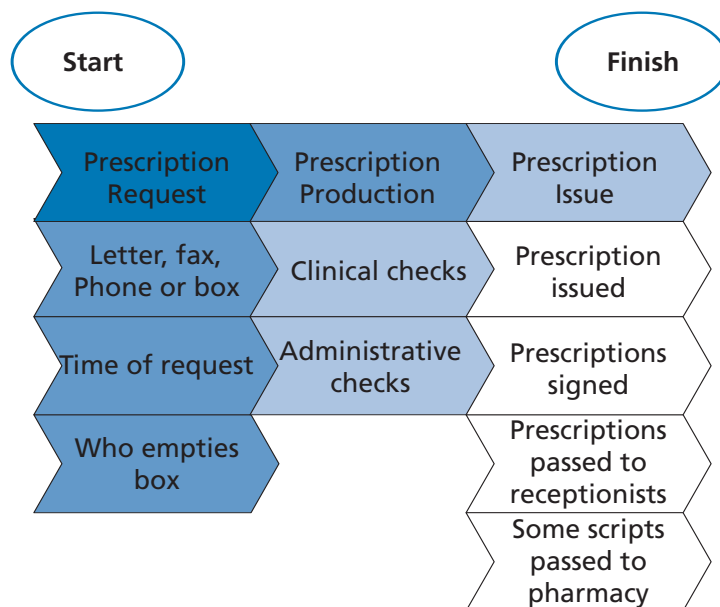> *leading to the possibility of error, duplication, or delay.*
>
> *30 per cent to 70 per cent of what we normally*
> *do does not add value for the patient.*
>
> *- Dr. John Bibby*

Start by gathering together representatives of all the stakeholders, i.e., everyone who takes part in the process from start to finish. Using a white board or sticky notes, write down each step in the process. Do not leave out a single step. For each step, write down the task and the name of the person who carries out that task.

Arrange the steps in order, but feel free to add new steps and move steps around at any point. Watch the patterns emerge that may indicate the root of a problem. You may be surprised!

Process Mapping – The Steps

Start		Finish
Prescription Request	Prescription Production	Prescription Issue
Letter, fax, Phone or box	Clinical checks	Prescription issued
Time of request	Administrative checks	Prescriptions signed
Who empties box		Prescriptions passed to receptionists
		Some scripts passed to pharmacy

Tips for successful Process Mapping

DO analyze the current process and not your ideal process.

DO focus on what happens to most of the patients most of
the time. Omit the one-off cases that aren't normal. As
facilitator you will need to pull people away from drilling
down into too much detail.

DO include every stakeholder in the process, including patients
and caregivers.

DO respect all contributions.

DO raise issues and questions. Debate is good.

DON'T assign blame.

Analyzing the Process Map

Once the process is mapped, analyze it. For each step, answer these questions:

- *Can it be eliminated?*
- *Can it be done in some other way?*
- *Can it be done in a different order?*
- *Can it be done somewhere else?*
- *Can it be done in parallel?*
- *Can any "bottlenecks" be removed?*
- *Is it being done by the most appropriate person?*

After you have mapped and analyzed the process, it is time to turn to the Model for
Improvement and devise a project that will test an idea for positive change. It's best to try a
small change in one step of the process and see if it leads to an improvement. Several small
PDSAs can be run concurrently, and each one should spark a hunch for a new PDSA.

HQC QI Case Study: Providing timely diagnosis and treatment of cancer is challenging in a complex health system with many types of providers, transfers of service and information exchange. Optimizing the flow of breast and prostate cancer patients as they move through the health care system is the goal of a project jointly managed by the Health Quality Council and the Saskatchewan Cancer Agency.

This ambitious project begins with stakeholder consultations to develop a patient flow map. The key to success will be to ensure that the personnel who are familiar with each step in the process are involved in the mapping exercise. Involving patients who have first hand experience with the whole journey is critical to the success of the exercise. The final product will identify any bottlenecks, places where tasks may be done simultaneously, tasks that may be eliminated all together. Stakeholders will identify strengths and opportunities for quality improvement, and articulate a vision for change.

For more information on the Health Quality Council Cancer Care project, visit:
www.hqc.sk.ca

Try*It*On

At Work: Map out a process of care for one part of your work. Include colleagues who have a part to play in the process. Inviting a patient/client will be even more enlightening. The starting point may be when patient/client first enters your care and the end point when they are discharged/transferred.

At Home: Map out a simple process using an example from your personal life. For example, identify every step involved in making muffins, shopping for groceries, or getting your car fixed.

Measurement

Key Messages
- Measurement is essential for Quality Improvement to know where you are at and where you are going.
- Run Charts are effective because they are quick to create and easy to read.
- Data collection is a powerful tool for change.

Measurement is essential for quality improvement. Only through measurement can we determine whether a change actually made things better.

Collect measurement data in a simple, easy-to-access manner. Graphs are easier to read than tables, and they look more dramatic. See the example below:

Tables vs Graphs

Example of poor presentation of data - number of days between GP referral and appointment with specialist

Date	Cycle Time (days)	Date	Cycle Time (days)
	85		39
Jan	76	Jul	19
	83		31
Feb	58	Aug	22
	62		25
Mar	80	Sep	51
	53		40
Apr	71	Oct	11
	64		31
May	82	Nov	54
	55		28
June	78	Dec	16

Change Implemented in June
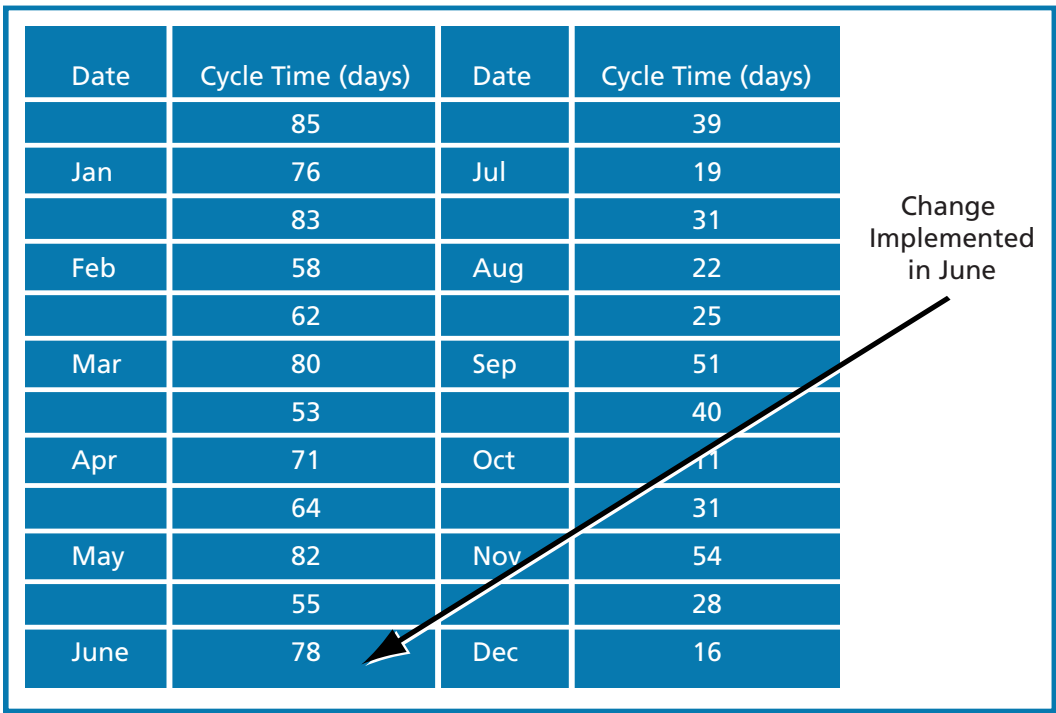
Same data presented as a run chart - number of days between GP referral and appointment with specialist
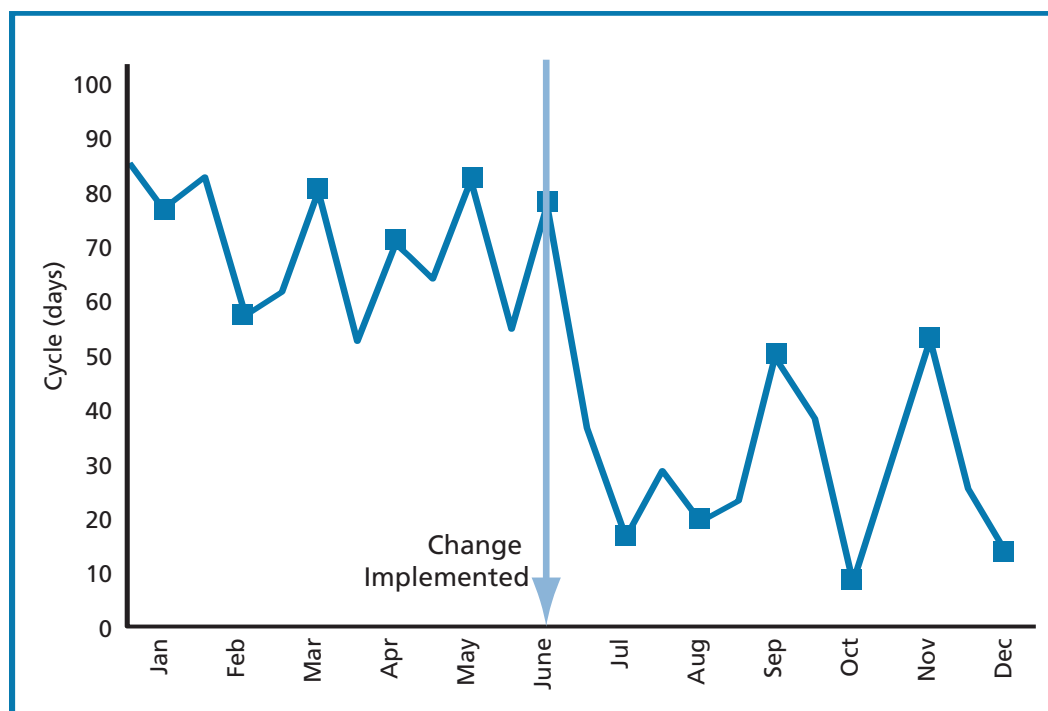
Creating a Run Chart

A run chart is simply a method to track an indicator of interest over time.

> An indicator provides evidence that a certain condition exists or certain results have or have not been achieved. Indicators enable us to measure progress towards intended outputs, outcomes, goals, and objectives. [3]

Begin by measuring the indicator as it is now. This measurement will be used to calculate a baseline. A minimum of 10 measures is required to establish a baseline. After this step is done, you can begin the PDSA cycle you expect to yield a change for the better.

As you begin plotting the test data, watch for trends. Look for readings that run in a row above or below the baseline, and for readings that run up or down diagonally. There are three significant numbers to observe:
1) 10 points are needed to establish a baseline.
2) Eight points on one side of the baseline indicate a change.
3) Five diagonal points up or down across the baseline indicate a change.

These rules may be used with a run chart to identify non-random patterns (e.g., statistical evidence of change).

[3] Horsch, Karen. (2005) Indicators: Definition and Use in a Results-Based Accountability System. Harvard Family Research Project. Cambridge MA.

Data collection can be perceived as a threat if it is handled poorly. There are two types of measurement data: Data to Improve and Data to Judge. Data to Judge is based on the question Who? Data to Improve is based on the questions Why? How? and What? Quality Improvement methodology uses Data to Improve, not Data to Judge. If people feel measurement will be used against them, they may not participate fully or they may present false data.

Example of Data Collection for Quality Improvement

Dr. Bibby wanted to reduce the amount of time it took to answer the phones in his office. He plotted the current data and found a baseline of about one minute. That is how long it took, on average, for the receptionist to answer the phone.

He devised a PDSA to test a change at the reception desk. Once the PDSA was in progress, the data showed eight readings below the baseline. This indicated a change for the better. Whatever he did worked!

The Run Chart

Eight one side
= 1/28
= 1/256
= <0.5%
= p <0.005

Eight one side

Average based on first 10 days

Seconds to answer phone

DO

Day

1   4   7   10   13   16   19

90
80
70
60
50
40
30
20
10
1

Five down (or up)
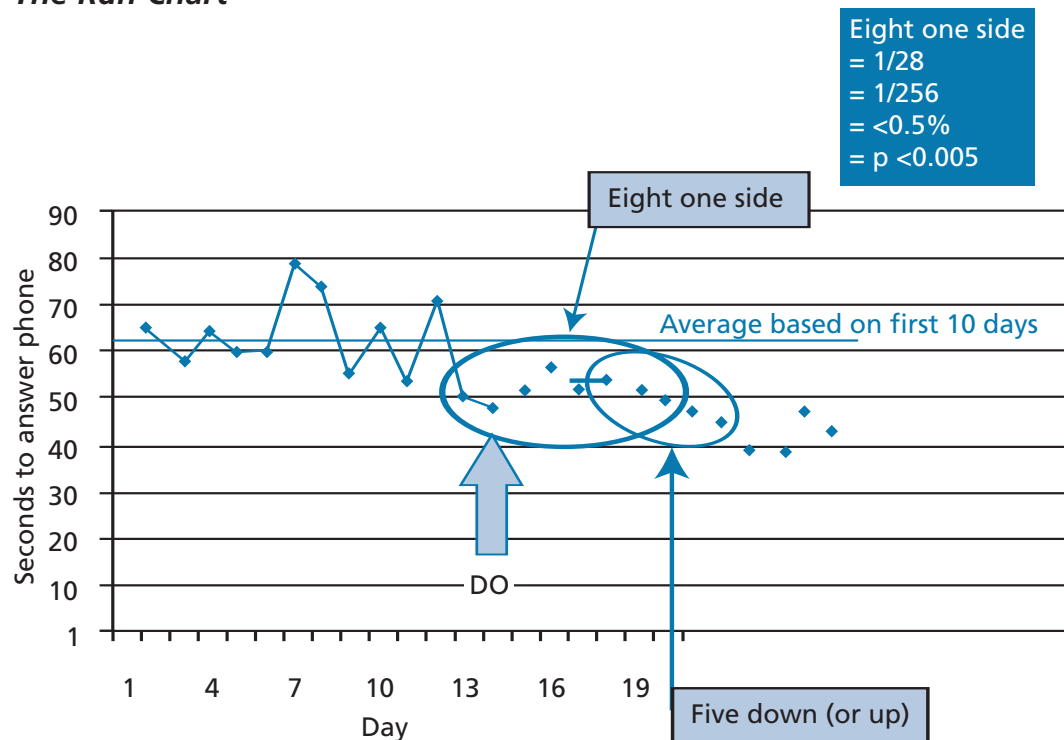
Caution: Data collection does not take the human factor into account. For instance, did receptionists lower the time it took to answer the phone by being brusque with patients? Are patients angry for being cut off? Are receptionists angry for being pressured? Often you need to identify balancing measures to ensure an improvement in one area hasn't resulted in a problem in another.

Dr. Bibby can now run additional PDSA cycles to determine if the shorter response time has resulted in other issues.

Tips for successful data collection:

DO define the data so you know exactly what to collect.

DO make data collection a routine part of the job.

DO ask people to collect data on themselves, and to present it themselves to the group.

DO decide on the level of accuracy required.

DON'T make data collection so complicated it robs staff time, or becomes inaccurate.

DO ask: What is the significance of this change?

HQC QI Case Study: The Health Quality Council has been working with the Saskatoon Community Clinic as they implement an Advanced Access system. Advanced Access is a method for improving patient flow and care in clinical office practices that was pioneered by Dr. Mark Murray, former Assistant Chief of Medicine for the Kaiser Permanente medical group in the U.S. The method is now used in many medical practices in the United States and throughout Great Britain.

In working to achieve an Advanced Access system, the Community Clinic has administered both patient and staff satisfaction surveys, worked off their backlog (waitlist) over a period of three months, and implemented a new scheduling system. They report a reduction in wait times, as well as improved satisfaction from both patients and staff.

To learn more about Advanced Access, see the Summer, 2004 issue of QReview, the Health Quality Council newsletter, on our web site: *www.hqc.sk.ca*

Try *It* On

At Work: Timely access to health care is becoming more and more of an issue for the public and in the media. Identify a wait time pertinent to your workplace. For example, in acute care it could be the time from referral to diagnostic test. In primary care, it could be time from appointment request to third available appointment with practitioner. In long-term care, it could be time from determination of eligibility to placement in long-term care. Plot this data on a simple run chart. Chart historical data if available and look to see if there are any significant trends in your data.

At Home: Many e-mail software programs are now providing spam filters. Are they working? Look back at your deleted e-mails and count the number of unsolicited (spam) e-mails you received each day for 10 days and plot these on a run chart. Load a new spam filter on your computer and track the number of unsolicited emails you receive every day for the next two weeks. Did the new filter lead to an improvement? Did the new spam filter result in blocking wanted e-mails?

Variation

Key Messages
- Variation is present in every system.
- Understanding variations in delivery of care or outcomes is integral to QI.
- 95% of all variation is due to system processes.

How long does it take you to get to work? Write down the range of times from the slowest to the fastest. No doubt, your calculation takes into account some of the normal day-to-day variations that alter the travel time. We live by this common variation. It is normal to react and adjust our actions accordingly. Sometimes we even take actions because we perceive variations might exist. For instance, we leave early (or late) in order to avoid rush hour.

Occasionally, we encounter abnormal variations that greatly affect the time it takes to get to work. For instance, we may take significantly longer to get to work during a snowstorm. These special cause variations represent a small percentage of travel times, and are not significant when calculating the range of normal activity.

In Quality Improvement, it is important to focus on the normal range of activity, common cause variation. A system that has only common cause variation affecting the outcomes is called a stable system or one where the variation is predictable within established limits. A system where outcomes are affected by both common and special cause is called an unstable system. This means the magnitude of the variation from one time period to another is unpredictable.

Recognizing Patterns in the System

It is important to chart information so we can recognize the patterns within the system. The patterns make Quality Improvement easier to implement. By observing patterns, we will know if the change is making a difference and when we need to act on the data.
To help us determine if the variation observed is due to common cause or special cause we create a Control Chart.

Control Charts

Definition:
A statistical tool to determine if a process is in control.
Control charts are used to determine whether a process will produce a product or service with consistent measurable properties.

Graphing Control Charts Using Microsoft Excel

Graphing Control ChartsCommon Cause Variation

(common/routine variation)
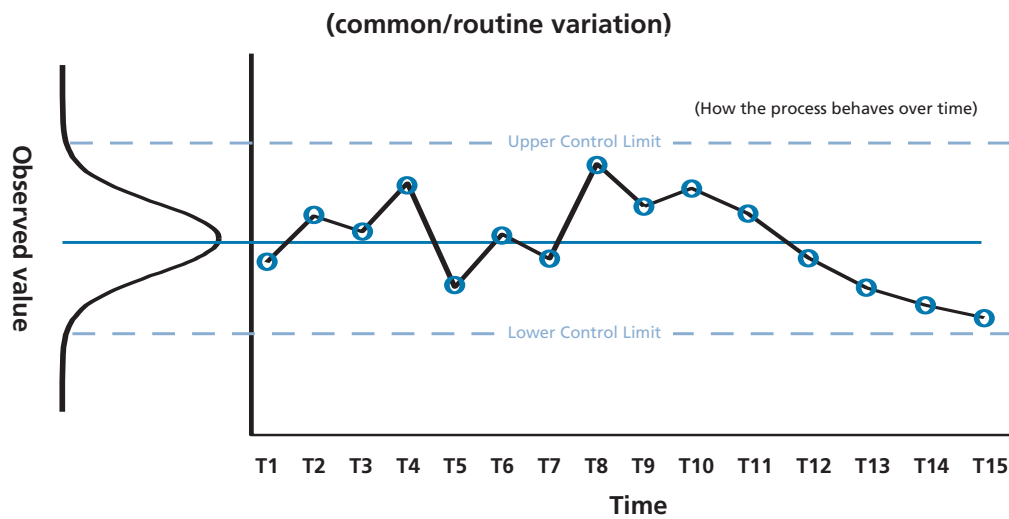

Special Cause Variation
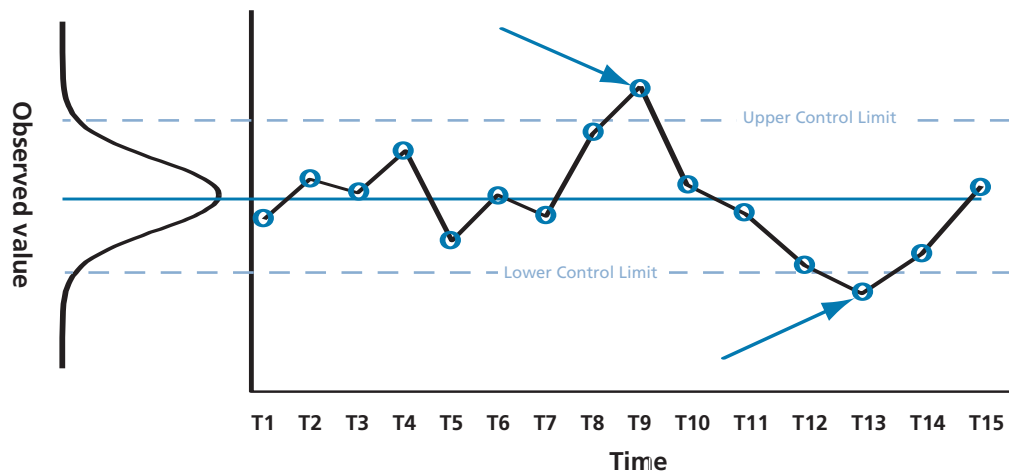
If variation occurs between the Upper and Lower Control Limits, it is considered a normal variation. If the variation exceeds the control limits, you must look more closely for any special cause.

Because normal variation is wider than we think, we often waste time rewarding and criticizing staff for what looks good or bad, but which, in reality, falls within the range of normal. To act in response to a variation that falls within the normal range is needless tampering.

On the other hand, if behaviour falls outside the normal range, it must be investigated. It could indicate a serious consequence. If you do not act, a crisis may result. As the situation changes through the implementation of Quality Improvement, the range of

normal will also change. There will be less variation over time. Redraw the Control Chart (based on an average of the first 10 improved readings); the distance between the Upper Control Limit and the Lower Control Limit will shrink.
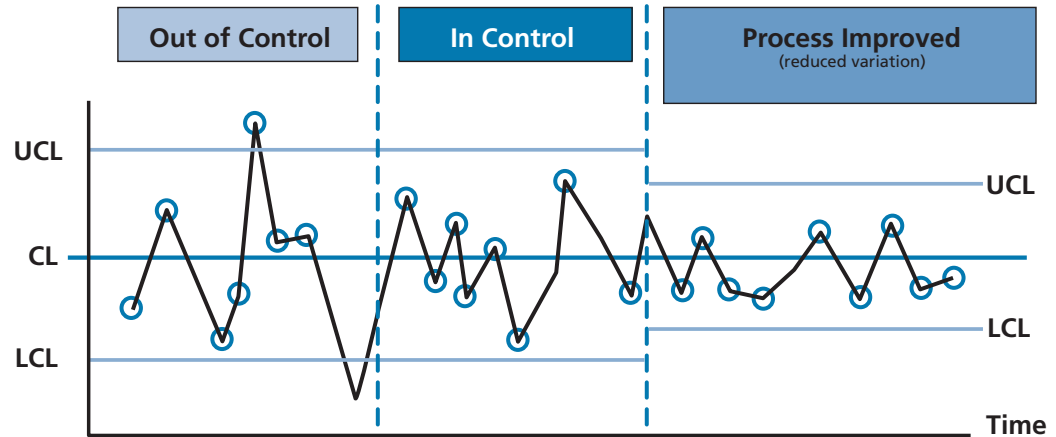
Who's at fault?

When something goes wrong in health care, we often wrongly blame the individual when the system is at fault. Most problems in health care are created by faulty systems. For instance, if a patient is given the wrong medication because two drugs are similarly labeled, this is a system failure not a human failure.

Try*It*On

At Work: Select a variable of interest in your workplace. For example, the number of residents on an antidepressant, number of infants with initial immunizations, or Hb A1C levels (an indicator of blood glucose level stability) for diabetic patients in Dr X's care. You will need a minimum of ten points to establish a baseline. Plot the data on a simple run chart. Determine mean, Upper Control Limit (UCL) and Lower Control Limit (LCL) for your data. Do the data points fall within the control limits? Any points outside the UCL or LCL? Is the range of data acceptable or is improvement possible?

At Home: From your personal experience, track your grocery costs every week for ten weeks. Determine the mean (average cost/week for ten-week period). Calculate UCL and LCL and note whether grocer costs for your household are stable over time. If you wanted to reduce your average and variation in grocery expenses, what changes could you or your family test to see if they do, in fact, lead to a reduction?

Managing Change

Key Messages
- Change must become more important than maintaining the status quo.
- The greatest change comes from reducing or removing barriers/resistance.
- We all have different learning/teaching styles.

How do you get people to support change?

Change Management

There are three layers of change: you, others, and the system you work within. You can model them as concentric circles, with self in the centre, circled by others, all within the system. To lead the change process, we must understand each layer:

WE ALL SUPPORT IMPROVEMENT, IT'S CHANGE WE DON'T LIKE!

Layers of Change
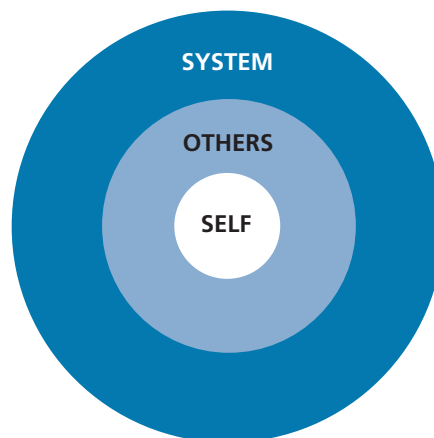
When contemplating a change in your workplace, for example, you may want to ask yourself the following questions:

Self
- What is your leadership style?
- How do you communicate with others?
- How do you feel about the proposed change?

Others
- Who is involved in the change?
- How do they feel about the change?
- Which potential target groups are open to change and new ideas?

System
- To what extent is the proposed change consistent with the values, attitudes and beliefs of the practice environment?
- To what degree does the culture support change and value evidence?
- Are the necessary human, physical and financial resources available to support implementation?
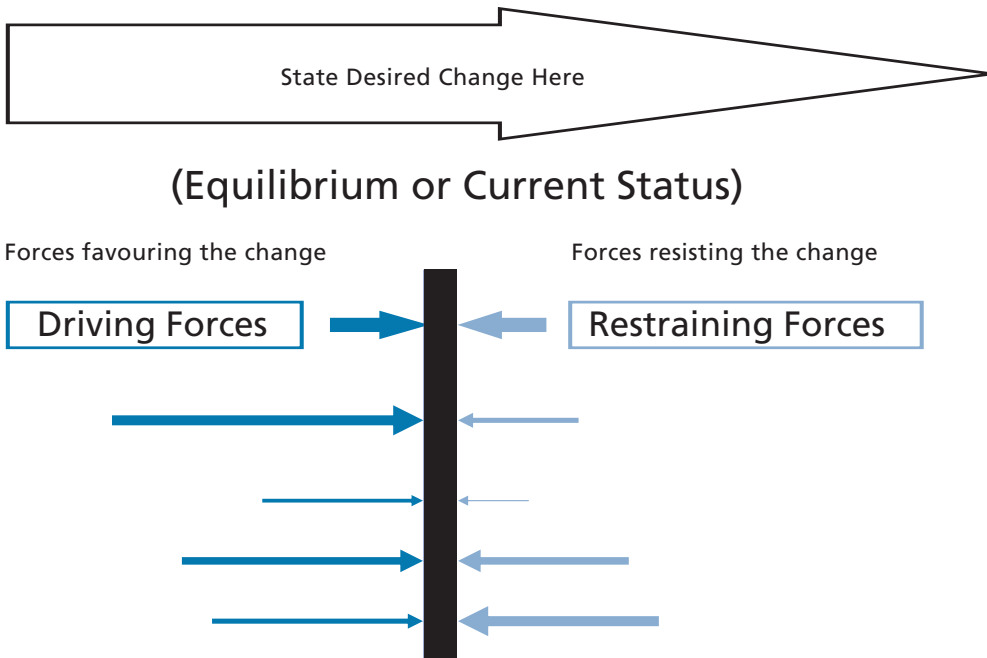
To successfully bring about improvement, the change must become more important than preserving the status quo. Consider a round ice cube. We can thaw the ice cube, pour the water into a square mold, and refreeze it. We have changed the ice cube from round to square. This is the process we must ignite in order to achieve change in the workplace. We must thaw the current situation, change it, and refreeze it.

How do we thaw the current situation and make change possible? As with the ice cube, we must raise the temperature. A crisis can raise the temperature quickly. The temperature also rises as a result of factors such as a staffing change, internal dissatisfaction, or government pressure to change.

Gauging the Mood for Change

We can gauge the mood for change by using Force Field Analysis. It views change as a struggle between driving forces, which propel change, and restraining forces, which slow or prevent change.

Force Field Analysis

State Desired Change Here

(Equilibrium or Current Status)

Forces favouring the change   Forces resisting the change

Driving Forces   Restraining Forces

The main vertical line represents the current situation. To the left, driving forces are pushing on the line. To the right, restraining forces are pushing back. To move the main line, we must increase the driving forces, decrease the restraining forces, or both. If you can only change one factor, it is more effective to decrease the restraining forces than increase the driving forces. It is human nature to say, "Let's push harder". But it is also human nature to react to pressure by digging in our heels. We make the greatest change by reducing resistance. There is a well-known model used in the treatment of addictive behaviour that is useful to consider when implementing any type of change. It is called the 'Stages of Change Model' (or the Transtheoretical Model of Change[4]). It recognizes that people move through five stages in making a change in habit or behavior: pre-contemplation, contemplation, preparation, action, maintenance, relapse, (and perhaps a return to pre-contemplation). There is little point in providing change-related information to people who are still in the pre-contemplation stage: they won't be listening.

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[4] Prochaska, J.O. (1984) The transtheoretical approach: Crossing traditional boundaries of therapy. Dow Jones-Irwin

Readiness for Change

"Cognitive Dissonance"
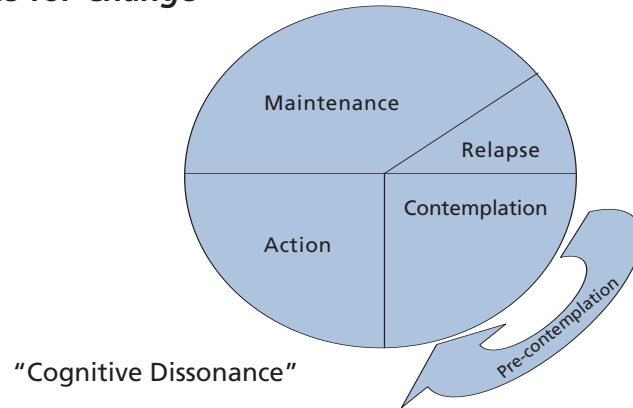
It is useful to create dissonance within people because it makes them uncomfortable and open to change. A certain amount of cognitive dissonance encourages people to move their position. For example, a smoker may have no desire to quit, but she may feel that smoking is dirty. This dissonance between her desire to smoke and her desire to be clean opens the door to change.

Commitment Mapping will help us plot strategies for making change within a group of people. Using a chart like the one below, list all the people involved in the system and mark their commitment to the change you envision. An X indicates where you think they are now. A happy face symbol indicates where you want them to be in the future. Once you create the map, you can plot strategies for changing opinions.

Commitment Mapping

People	Oppose It	Let It Happen	Help It Happen	Make It Happen
PCT Board		✖ ☺		
Chief Exec		✖---------	-----------☺	
Clincal Gov Lead				✖ ☺
Nurse Lead				✖ ☺
Quality Facilitator				✖ ☺
Dr A	✖---------	-----------☺		
Dr B	✖----------	-----------☺		
Dr C			✖ ☺	
Dr D			✖ ☺	
Dr E		✖ ☺		
Dr F		✖----------	-----------☺	
Sr A		✖----------	-----------☺	
Dr G		✖ ☺		
Dr H			✖----------	-----------☺
Dr I	✖----------	-----------☺		
Dr J		✖ ☺		

Strategies for Change

• Concentrate on those individuals with the most influence.
• Concentrate on those individuals with the greatest distance to move.
• Don't waste time on one or two individuals who are completely against change; you could spend a lot of effort with little chance of a positive result.
(Remember Pareto's 20/80 rule.)
• This works best in small groups of individuals that you know well.
• The Commitment Map is for your eyes only; don't share it with others.
• You may move people to change by offering incentives or removing potential barriers.

Driving Forces and Restraining Forces[5]

When planning complex changes in practice, potential barriers and incentives at various levels need to be addressed. Planning needs to take into account the nature of the proposed innovation, characteristics of the professionals and patients involved, and the social, organizational, economic and political context.

Level	Driving/ Restraining Forces
Innovation	Advantages in practice, feasibility, credibility, accessibility, attractiveness
Individual professional	Awareness, knowledge, attitude, motivation to change, behavioural routines
Patient	Knowledge, skills, attitude, compliance
Social context	Opinion of colleagues, culture of the network, collaboration, leadership
Organizational context	Organization of care processes, staff, capacities, resources, structures
Economic and political context	Financial arrangements, regulations, policies

[5] Adapted from: Grol, R., & Wensing, M. (2004). What drives change? Barriers to and incentives for achieving evidence-based practice. Medical Journal of Australia, 180 (6 suppl), S57-S60.

HQC QI Case Study: The Health Quality Council (HQC) is supporting the implementation and evaluation of a quality improvement initiative to improve drug management in long-term care. In designing and planning this initiative, we have had to consider some of the key driving forces and restraining forces that will impact the project. Driving forces include the support of key stakeholders, including care providers, and the demonstrated need for improvement (based on the results of our November 2004 study). Restraining forces include the complexity of moving to a team-based approach to care where one hasn't existed before.

Try *It* On

At Work: Consider a change that you are planning to implement in your workplace. Create a Commitment Map identifying a list of all of the people involved in the system you are trying to change and mark their commitment to the change you envision. An X indicates where you think they are now. A happy face symbol indicates where you want them to be in the future. Once you create the map, identify three key strategies for changing opinions.

At Home: Using the same method in "At Work" above, think of a change you would like to implement in a voluntary organization in which you are involved.

Leading and Managing Complex Change

There are five factors necessary for big system change. If any of these factors is missing, we will be frustrated in our desire for change. See chart below:

Managing Complex Change

Vision	+	Skills	+	Incentives +	Resources +	Action Plan	= Change
	+	Skills	+	Incentives +	Resources +	Action Plan	= Confusion
Vision	+		+	Incentives +	Resources +	Action Plan	= Anxiety
Vision	+	Skills	+	+	Resources +	Action Plan	= Gradual Change
Vision	+	Skills	+	Incentives +	+	Action Plan	= Frustration
Vision	+	Skills	+	Incentives +	Resources +		= False Starts

Learning Models

We have talked about gauging the capacity for change in others and strategies to move them along. Now, it's time to be introspective and analyze our own ability to lead change. What is your learning/teaching style? How do others see you?

Experts in this field (Honey and Mumford) have identified four preferred learning styles: Activist, Reflector, Theorist, and Pragmatist. Most of us fit comfortably into one of those styles. Remember that no one style is better or inherently more successful than the others.

Preferred Style and the Learning Cycle

Honey & Mumford, 1992
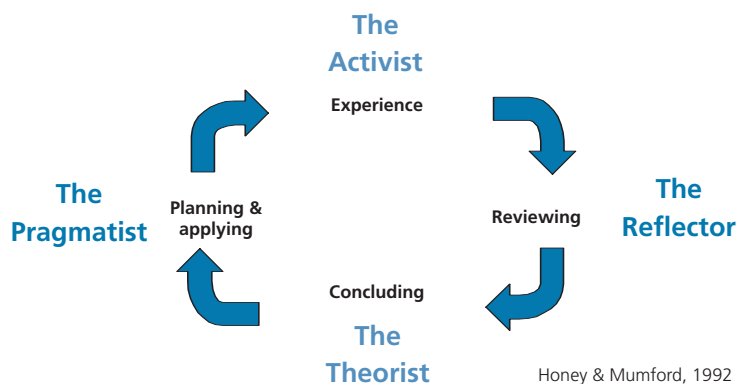
Which is your preferred learning style? Imagine you have purchased a bookshelf that must be assembled at home. If you are an Activist, you will jump right into the task without

reading the instructions. You like to learn by seeing and doing. If you are a Reflector, you will read the instructions and sleep on it before tackling the job tomorrow. You need time to reflect on what you've learned before you are ready to apply it. As a Theorist, you will read the instructions but you won't do the job without first asking others about their experience assembling similar shelves. You like to test theories and new ideas.

If you are a Pragmatist you will read the instructions and methodically assemble the shelves. You like to set goals and make decisions based on what you've learned.

Your preferred learning style also indicates your most comfortable teaching style. But remember, every learning group will probably include people of all four types. You cannot expect that one teaching method will suit everyone. Vary the learning opportunities so that everyone has a chance to absorb the lesson in his or her own way. For example, give the Activist a chance to interact with the new material (to try it). Give the Reflector a chance to think about what they've just seen or heard. Ask the Theorist "what can we learn from this experience," and ask the Pragmatist "how can we apply this?"

Communication is key to effective change. Communication must be geared to the learning styles of those receiving the message. Try to determine the learning styles of those people you want to move the most on your Commitment Map. You can determine someone's learning style through personal conversations and by applying what you already know about them to the learning models.
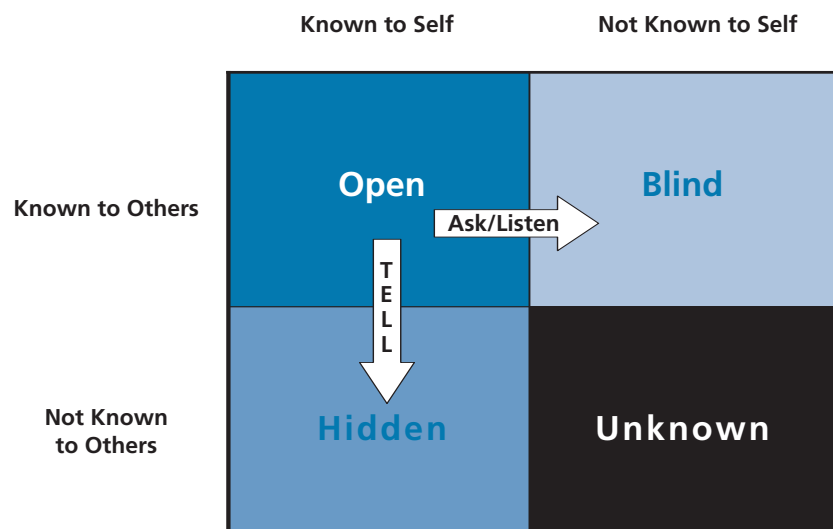
Two Models of Learning

VARK

VARK stands for Visual, Aural (hearing), Reading/Writing, and Kinaesthetic (active). Are you a visual person, preferring to learn by seeing it done? Are you an aural learner who grasps concepts best through lectures and verbal instruction? Do you prefer to read and write the information to be learned? Or are you the kinaesthetic type who learns best by doing?

Johari Window

Effective leaders are open to learning more about themselves and the impact they have on others. The Johari Window is a tool that leaders can use to enhance this type of learning. It consists of a box with four quadrants marked OPEN, BLIND, HIDDEN, and UNKNOWN.

	Known to Self	Not Known to Self
Known to Others	Open → Ask/Listen	Blind
Not Known to Others	TELL ↓ Hidden	Unknown

In order to effect change, a leader's OPEN window must be as big as possible. It follows then, that the UNKNOWN, HIDDEN, and BLIND windows must be as small as possible.

Expanding the OPEN window requires honesty and frankness on your part, both toward yourself and to others. Be as open, honest, frank, and informative as possible about the change. To do this, you need the trust and confidence of those around you.

Expanding the OPEN window also requires that you listen to others. You must be open to learning those things about yourself that others perceive, but that you may not be aware of. You must ask questions to solicit this information, and listen to the answers with sensitivity.

Principles of change within the Johari Window:
- Change in one quadrant will affect the other quadrants.
- It takes energy to hide, deny, or maintain the BLIND quadrant.
- Threat decreases awareness. Trust increases awareness.
- Forced awareness is undesirable.
- Interpersonal learning increases the OPEN area.
- The smaller the OPEN area, the poorer the communication.
- The UNKNOWN area is held in check by custom, social training, and fear.
- Sensitivity is needed in revealing the BLIND area.
- Revealing the HIDDEN area requires courage, but bestows trust.

Try *It* On

At Work: Think of something simple that you want to teach others. Use the learning cycle to design your lesson plan (e.g., starting an IV, using crutches, taking blood pressure, using a mechanical lift)

At Home: changing a tire
1) demonstrate (activist)
2) ask learners to consider what parts would be most difficult for them, or how they might do it differently (reflector)
3) ask learners to identify main steps needed to follow, do's and don'ts of changing a tire (theorist)
4) give them a chance to apply what they've learned: change a tire (pragmatist)

# Diffusion of Innovations

Key Messages
- It's not necessary to convince everyone of the change.
- Incentives can motivate change; money isn't always a motivator.
- For any given change, 20 per cent of the population will identify sufficient motivation or minimal impediments to adopting the change.

How can we engage clinicians in the change process?

It is not necessary to convince every clinician of the importance of Quality Improvement. Widespread acceptance is not necessary for change to take place. If we convince 20 per cent of the population to change, momentum will build and the change will follow. This is the "tipping point" and rests on the proven logic of the 20/80 rule: 20 per cent of the effort will yield 80 per cent of the result. Do not spend too much time on those individuals who won't change easily.

The graph below, called Diffusion of Innovations[6], illustrates the rate at which people accept change.

Diffusion of Innovations

| 2% Innovators | 13% Early Adopter | 35% Early Majority | 35% Late Majority | 15% Laggards |
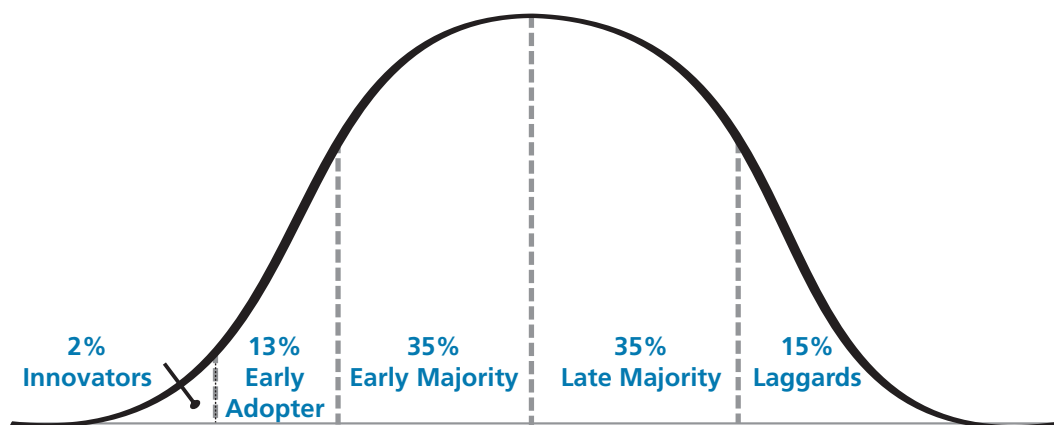
It shows that, in the beginning, a small number of Innovators will quickly see the value of a change and serve as early examples to others. Next, the change will be accepted by the Early Adopters who, based on the example of the Innovators, will see the benefit of trying something new.

The majority of people fall in the middle of the graph, adopting the change in a great wave as it gains momentum. By now, more people have accepted the change than have not. Only a small percentage of people are Traditionalists or Laggards who still won't, and may never, see the value in doing something new. All of us can identify times when we have been Innovators/Adopters of change and times when we have been laggards; our response varies according to the type of change being introduced.

Let's apply this graph to the adoption of cell phone technology. When cell phones were first introduced, a small percentage of the population purchased one because they were Innovators; it didn't matter how much the new technology cost. As cell phones came down

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[6] Rogers, E (1995). Diffusion of Innovations. New York: The Free Press.

in price, more people adopted the technology. The big bubble in the middle includes the majority of people who bought cell phones once they were quite common. Finally, the small group of laggards may still not have and never plan to get a cell phone.

This model was developed to chart changes we adopt for positive reasons. It may not fit exactly with changes against which there is strong resistance, such as getting the flu shot, or a system change. But the principle of the graph is considered relevant for any change pattern that, in the long run, yields a benefit.

So, how do you encourage that first 20 per cent of clinicians to adopt a change so that the other 80 per cent will take it up? There are three key factors that influence behaviour:
1) Learning Styles (which we discussed in the last section)
2) Motivation
3) Enabling Forces

Motivation

People are motivated to accept changes that meet their needs. Those needs might include financial gain, positive recognition, job satisfaction, and avoidance of pain or suffering.

Herzberg identifies two types of incentives: **Dissatisfiers** and **Motivators**.

Dissatisfiers are those factors that must be present for a change to succeed. Without them, we are dissatisfied. However, their presence in greater supply does not necessarily motivate. These factors may reach a saturation point beyond which an improvement does not translate into greater satisfaction or performance.

Motivators are those factors that create satisfaction and are therefore likely to lead to improved performance. We must improve the Dissatisfiers before we address the Motivators. In other words, Motivators will be less effective if Dissatisfiers are below an acceptable level.

Money is considered a Dissatisfier. Without adequate pay, workers will be dissatisfied and unmotivated. But a higher salary may not always be the incentive that motivates a change in behaviour. Increased opportunities for achievement and more responsibility can, under the right circumstances, be greater Motivators than money.

Herzberg's[7] Motivators and Dissatisfiers

Motivators	Dissatisfiers
Achievement	Organization's policies and administrative practices
Recognition	Salary and benefits
Growth	Supervision
Responsibility	Job security
Advancement	Working conditions
Self-improvement	Status
Job challenge	Fellow workers
	Personal life

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[7] Herzberg, F. (1966). Work and the Nature of Man. Cleveland: World Publishing Co.

Enabling Forces

Enabling forces make it easier to make a change. For example, within a culture of trust, participants will accept the change based on the leader's good word and proven record. Incentives can also motivate change. Appropriate incentives will meet the needs of those people we want to motivate. Be aware, though, that incentives that become "normal" will no longer be effective in the future. At that point, you will need to create new incentives. Fostering an "adult" relationship is a positive pathway for change. An adult relationship is based on providing individuals with enough "space" to move the change along on their own.

Try *It* On

At Work: Identify at least three of your own work-related motivators and dissatisfiers. Consider how these factors may have influenced your own responses to recent changes in your work place.

At Home: Identify the learning styles of your partner and/or your children. What motivators and dissatisfiers would be effective for each person when trying to implement a change (e.g., children now expected to take turns at tidying the kitchen after supper) at home?

The Collaborative

Key Messages
- Collaboratives are an improvement method that rely on the spread and adaptation of *existing knowledge* to *multiple settings* to accomplish a *common aim*.
- Collaboratives are deliberately designed to reduce anxiety related to change.
- Collaboratives are based on use of the Model for Improvement and PDSAs.

A Collaborative brings people together to accomplish rapid improvement in a common topic. For example, heart disease or accidental falls. It is a highly structured and deliberate process that involves an Orientation session followed by a series of three Learning Workshops. In between the Learning Workshops, participants are engaged in Action Periods, which are three to four months of testing best practice ideas in their local setting.

A Collaborative IS NOT
- simply working collaboratively
- about personal agendas and power
- a lot of meetings with no action
- competition among stakeholders
- enforced from the top down
- a research project to gain new knowledge (though new knowledge may come from it)
- a fix-all solution
- a passive exercise or easy option

Collaborative Culture
- respect
- group learning
- rapid doing
- no blame
- flexibility with ideas and methods
- firm on results

The Collaborative process helps demystify and reduce anxiety to change. How?
- During the Orientation session, we are made aware of the possibility of change.
- During Learning Workshop (LW) 1, we hear from someone who has achieved success.
- By LW 2, participants in the Collaborative are starting to achieve results and begin to share with others so that we now know someone who has achieved success.
- Finally, by LW 3 (if not before) we see results in our own organizations.

Key Components of a Collaborative

Topic Selection
A common problem is identified for which there is evidence of a "best practice" that can improve the situation. It may be a "hot topic" on the health agenda, or a topic based on proven results. The topic must take into account most or all of the following:
- Views of patients and public
- Priorities for clinicians
- Political imperatives
- Common problem
- Gap between what is and what might be

- Evidence of a better system
- Dissatisfaction with the status quo
- Examples available

The Reference Panel
A group of local and external experts are brought together for one day to review examples of the implementation of best practices in a given topic (e.g., diabetes) and provide input on Change Concepts measurements that will guide the Collaborative. In order to accomplish this, the Reference Panel is asked two key questions:

What are the system features that make the difference?
What one or two key measures would be suitable for tracking improvement?

Ground rules are established for the discussion including the need to start and continue with the patient experience and patient outcomes, the need to focus on systems and processes (not structures and boundaries), and the absolute absence of the "Yes, but…" statement.

The Handbook
The support team for the Collaborative takes the ideas identified by the Reference Panel and develops a handbook that includes Change Concepts, some concrete ideas and practical examples of how to address each concept, templates and examples for measurement, and contact information for experts in each area.

Change Concepts - Change Concepts are the broad principles that have been identified by the Reference Panel as being the common elements of success for practices and organizations that are achieving positive results. Generally, they are very broad and there is much flexibility in the implementation of the concept. For example, in the area of Diabetes, one Change Concept might be, "Be systematic and proactive in managing the care of people with Diabetes." Change Concepts are bolstered by practical Change Ideas that others have used to accomplish this goal.

Change Ideas - From the example of the Change Concept above, a Change Idea might be to "Establish a multidisciplinary team to manage the delivery of care for people with Diabetes." The list of ideas will grow and be enriched by the experiences of Collaborative participants who have also achieved success so that the handbook for the next group of Collaborative participants will include local examples of the Change Concepts in action.

Learning Workshops and Action Periods

Learning Workshop Orientation (LWO)
The Collaborative begins with an orientation workshop involving all participants. At this session, the Collaborative process is explained, and the aims and expectations are clarified, so that participants have a full understanding of the work involved. They are introduced to the concepts of data measurement and the Improvement Model (PDSA). There is an opportunity for questions and participants receive the handbook.

Participants then return to their organizations for their pre-work. Here, groups have a chance to develop strategies around measurement and start to gather their baseline data.

Learning Workshops 1-3
After the LWO and the pre-work, participants will attend three learning workshops, each spaced about two months apart. These are one-day or two-day workshops that bring everyone together to discuss and learn. They include leading edge external examples

presented by the people who made them happen, and success stories from within the Collaborative. There are exercises for team building, networking, and peer learning. The first learning workshop establishes the credibility of the Collaborative model. Everyone is trained in conducting PDSAs and collecting data. This first session raises the energy level for change.

The second learning workshop addresses issues and questions arising since the first workshop. Participants present results and success stories of their own PDSA cycles. If necessary, the methodology is refined.

The third learning workshop presents more examples of success primarily generated from participants' efforts. Successes are celebrated, and participants discuss steps to spread the success stories to others.

Action Periods
Between workshops, participants go back to their organizations and practices and start testing out their ideas for implementation using the Model for Improvement and PDSA-methodology. As a first task, participants are usually presented with the 8-Day Challenge: conduct one PDSA in the first eight days of their return. This challenge gets participants focused right away on choosing small, testable changes rather than getting bogged down in planning for one big-change and gets the ball rolling on the next few months of successive PDSA cycles. Each PDSA is written up and submitted to the support team via their Regional Collaborative Facilitator. Over time, a database of PDSA ideas will be developed and available to all participants.

Collaborative Process
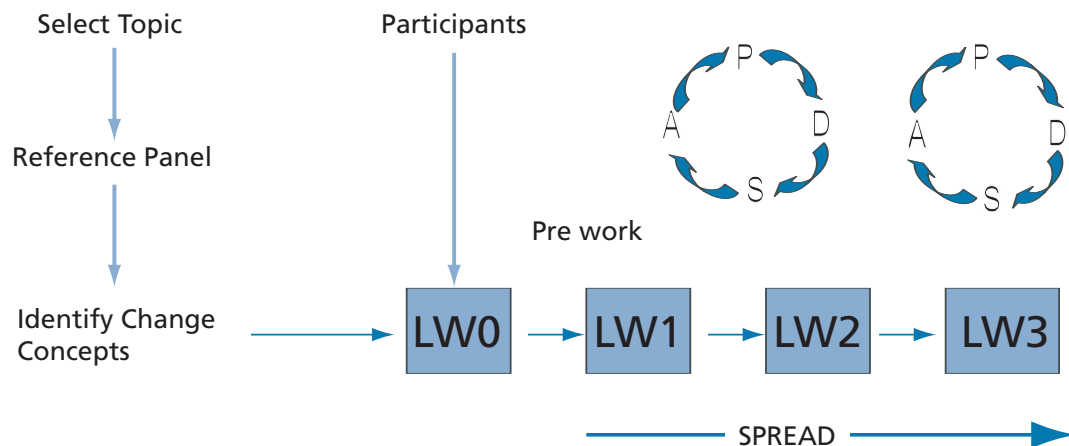
"We have improved access for millions of patients in the UK.
We have demonstrated that you can achieve huge change in
a relatively short period of time. We are changing habits of
a lifetime."

- Ruth Kennedy, Chief Executive

HQC QI Case Study: In January, 2005 eight intensive care units in Saskatchewan began working together as part of a year-long Collaborative to enhance care. The participating hospitals are addressing two topics for improvement: sedation of critically ill patients, and prevention of venous thromboembolism.

Each unit has established a multidisciplinary quality improvement (QI) team. The teams will meet four times in 12 months for face-to-face learning sessions. In between meetings, the QI teams enter the Action Period when they implement Plan-Do-Study-Act (PDSA) cycles. They are making small changes and measure the results to track progress. These results are reported back at the Learning Workshops. By sharing successes and barriers, the group members learn from each other and improvement spreads rapidly. Expert advisors are supporting the teams throughout this process.

Try***It***On

At Work and at Home: Line up a handful of people at the front of the room, give them each a piece of paper, and ask them to make a paper airplane. One by one, have them launch their paper airplanes. Based on audience applause, pick the person whose airplane flew the straightest and furthest.

That person becomes the instructor. Give everybody another piece of paper and ask them to fold it just like the winning airplane. Have everyone toss the new airplanes. There will be a great improvement in flights of all airplanes.

This is a quick and simple illustration of how a Collaborative works. Everyone has some understanding of the process, but some are achieving greater success than others. Those achieving success share their knowledge. The others adapt and implement the "best practice" in their own sphere and reap the benefits.

Leadership for Quality Improvement

Key Messages
- Quick and life¬saving change is possible.
- It is not necessary to convince everyone that a change will work.
- Success requires committed leaders at all levels.

*"I would encourage you in Saskatchewan to be bold
and brave in your improvement work, because the
people we serve deserve no less from all of us."*

- Ruth Kennedy, Chief Executive, NPDT

#1 Success Factor – Topic Selection

Change initiatives are more likely to succeed when they address a widely recognized problem. You should be able to envision the improvement you want to achieve. And you need examples of what has already been achieved by others.
In selecting a topic, ask:
- Is it a common problem?
- Is there a significant gap between what is and what could be?
- Does it resonate with participants?
- Is there evidence of a better system?
- What are some examples of success?
- Can you clearly define your aims?

#2 Success Factor – Use tried and tested methodology

A Collaborative is not about collaboration. It is not a research project, a conference, or a passive exercise. The Collaborative Approach is an improvement method that requires the spreading of existing knowledge, to multiple settings, to accomplish a common aim. It is a rigorous process of change and of spreading what you know works.

Elements of a Collaborative:
- Set a topic.
- Establish a planning group.
- Discuss existing good results. What made it work so well?
- Identify change principles that would allow others to achieve those same results.
- Bring people together to learn about that better system.
- Hold three learning workshops. People learn how to make changes by clearly defining aims, measures, and possible changes, and running PDSAs to test the results in their own environment.
- Focus on results during action periods. Data should be submitted monthly.

#3 Success Factor – Infrastructure

In England, there is a small team called the National Primary Care Development Team (NPDT) with 11 regional NPDT centres around the country. Within each regional NPDT centre is a cadre of local project managers who are leaders in primary care. The NPDT does the following:
- Transfers knowledge and skills to the front line, where people can actually make a difference in patients' lives.
- Takes a single-minded approach to the delivery of results.

- Focuses on the patient. Patients are participants in all improvement programs.
- Respects people's time and expertise.
- Focuses on quality improvement and not performance management. Achieving large-scale change requires a consistent approach that is rigorously managed and properly executed.
- Provides continuous support through its handbook, monthly feedback, site visits, on-line monthly data collection, comparative data, and the PDSA database.
- Trains local managers. Don't leave training to chance.
- Pays attention to detail.
- Spreads the word, using Collaboratives as the mechanism to get information out.
- Tunes into the "mood music," constantly making sure material is relevant, up to date, and useful.

#4 Success Factor – Choose the right people in the practice

- Choose the right people for the local Improvement Team in each workplace; include patients, clinicians, middle managers, and others who do the work.
- Team leaders are often not the senior GPs, but those people who will champion the cause, are committed, and can encourage and facilitate teamwork within their workplace.
- Senior practice staff must recognize the importance of the work, and provide support and resources (including protected time), but not interfere in the Quality Improvement work.

### #5 Success Factor – Create the environment for change

- Don't be afraid to take a managed risk.
- Engage clinicians.
- Support participants in their work.
- Provide resources when required: protected learning time, backfill, lunches, travelling expenses, etc.
- Remove barriers.
- Provide opportunities to spread learning; organize events where that can happen.
- Empower people to do this work on their own, allowing them to fail as well as succeed

#6 Success Factor – Leadership Skills

Good Collaborative Faciliitators:
- Are supportive coaches
- Coordinate the collection of data
- Promote improved methodology workplace
- Act as troubleshooters
- Function as the conduit for feedback to the national team

> *Speaking of the Collaborative approach to Quality Improvement, Dr. Donald Berwick, CEO, Institute of Healthcare Improvement in Boston, Massachusets says, "I personally know of no improvement in any industry that has achieved in such a short time such widespread and frankly, technically difficult set of changes with such stunning results, ever."*
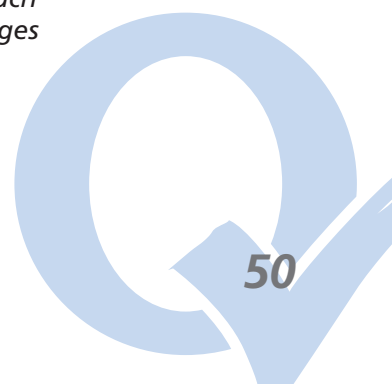
Quality Improvement Resources:

Health Quality Council: www.hqc.sk.ca

Institute for Healthcare Improvement: www.ihi.org

National Primary Care Development Team: www.npdt.org

HEALTH
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