

What is Improvement Science?

Overview of the Model for Improvement

Aims of session

- Be introduced to ‘Improvement Science’
- Gain an understanding of the theory upon which the Model of Improvement was developed
- Understand the purpose and structure of the Model for Improvement

What is Improvement Science?

- Traditionally used within Health Services
- Utilises knowledge drawn from a wide range of disciplines and sectors applied in a pragmatic manner
- Requires collaboration between academics, decision makers and frontline staff

Origin of the Model for Improvement

- The Model for Improvement was developed from the theories of Dr W. Edwards Deming
- Deming's 'System of Profound Knowledge' is the culmination of his lifelong work

Making sense of complex systems

[Making sense of complex systems](#)

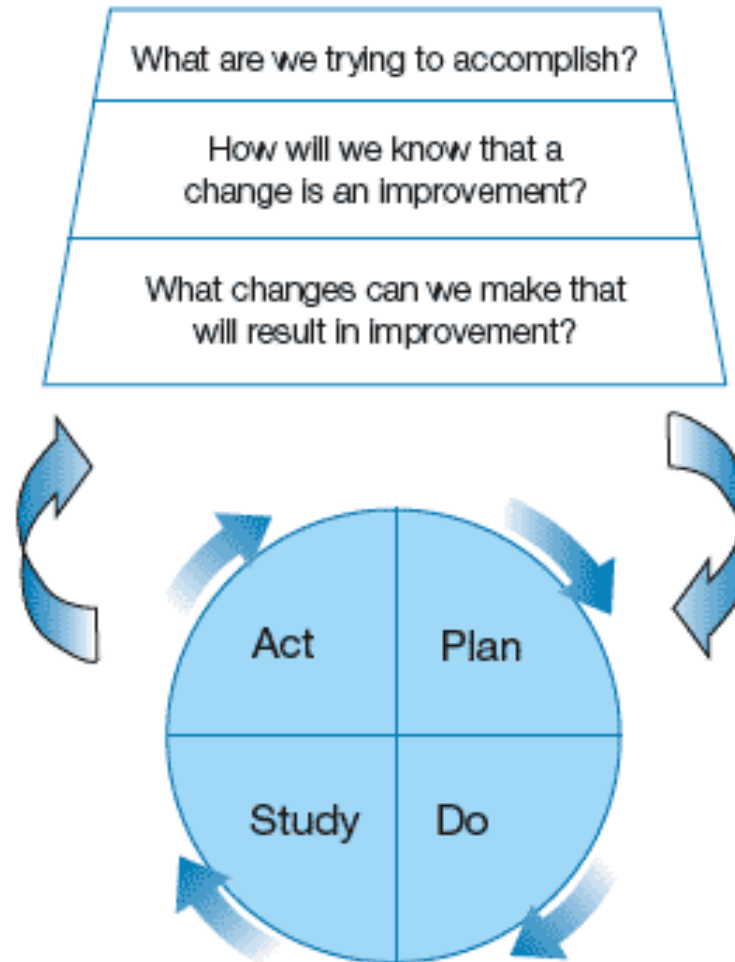
Deming's System of Profound Knowledge

- **Appreciation for a system** – interdependence of components like departments, people, equipment, facilities and functions
- **Understanding variation** – common & special cause
- **Theory of knowledge** – systematic, rigorous learning based on pragmatic scientific method
- **Psychology of change** – change in a social system, working with others, leveraging intrinsic motivation

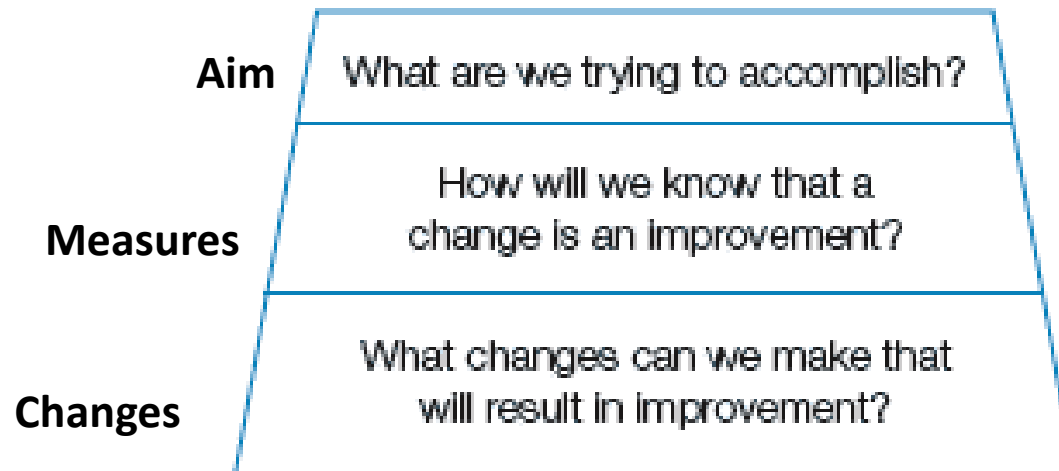
System of Profound Knowledge in Context

[Breaking down complexity - a working example](#)

The Model for Improvement



The Model for Improvement



What are we trying to accomplish?

The aim is:

- Not just a vague desire to do better
- A commitment to achieve measured improvement
- In a specific system, within a definite timeline and having numeric goals

What are we trying to accomplish?

- Reduce variability in the times “A” specimens are released to Histopathologists so 98% are consistently signed out before 1030 and no longer than 1200.
- In the pursuit of improvements in Perioperative Patient Safety, 80% Counties Manukau operating staff will be utilising briefings, de-briefings and a paperless checklist as BAU activity for elective surgery by July 2016 improving teamwork and communication within surgical teams
- To design and implement a reliable screening, referral and intervention pathway for 50 smokers, aged over 35, in the Manukau locality to enable the early diagnosis of breathing problems and the support of self management by June 2016

How do we know that a change is an improvement?

There are three different types of Measures:

- **Outcome:** Used to measure results can be used to set a baseline and then repeated to determine progress.
- **Process:** are the parts/steps performing as planned?
Are we on track to improve the system?
- **Balance:** are changes designed to improve one part of the system causing new problems in other parts?

How do we know that a change is an improvement?

Working examples of Outcome measures:

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Outcome Measure	<i>"A" specimens are processed by 1030 each weekday.</i>	<i>90% of specimens will be "signed out" by lab staff by 1030 and released to the Histopathologists for analysing.</i>	<i>August 3rd -28th Wide variation requires calculation</i>	<i>March 30th, 2016 90% processed by 1030.</i>	<i>Overall reduction of specimen processing.</i>

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Outcome Measure	<i>Surgical Culture Safety Survey Report</i>	<i>Comparison between August 2015 survey and survey results post implementation</i>	<i>August 2015 results held in Surgical safety folder</i>	<i>TBC (August – October 2016)</i>	<i>Increase in positive results across all 7 sections of questionnaire</i>

How do we know that a change is an improvement?

Working examples of **Process** measures:

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Process Measure	<i>"A" Specimens</i>	<i>% of "A" specimens released each day to Histopathologists by 1030.</i>	<i>August 3rd -28th % processed</i>	<i>March 30th, 2016 90% processed by 1030</i>	<i>90% of specimens are processed within 5 days.</i>

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Process Measure	<i>Briefing completion rate</i>	<i>Pre-list briefings/no observations x 100</i>	<i>Not applicable</i>	<i>80% completion rate by July 2016</i>	<i>Exceed target</i>

How do we know that a change is an improvement?

Working examples of Balance measures:

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Balance Measure	<i>All specimens are released with 100% accuracy for reviewing by Histopathologists</i>	<i>% of specimens released to Histopathologists with errors</i>	TBC	100% by 30 th March 2016	<i>100% of specimens are able to be read by Histopathologists without rework</i>

	Description	Measure	Date and Current Actual	Date and Target	Expected Impact
Balance Measure	<i>Staff time to complete call backs and administrative tasks required in undertaking follow up surveys</i>	<i>Total minutes taken per physio therapist (weekly total) to contact participants and undertake administrative tasks</i>	TBC	TBC	<i>Total weekly minutes taken to gradually reduce</i>

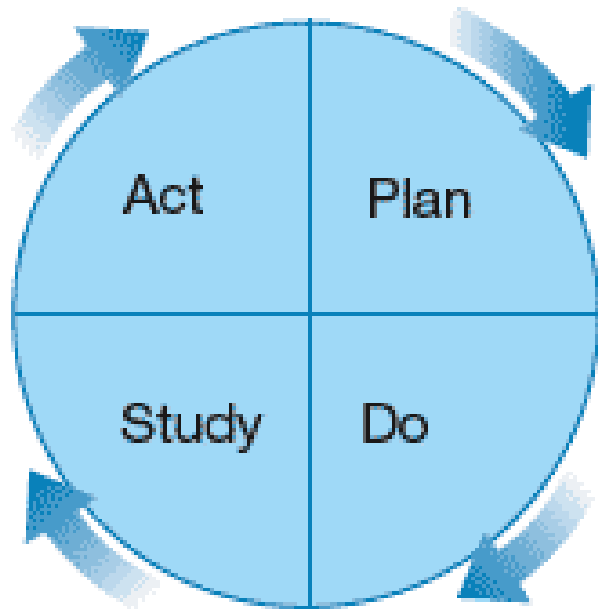
What change can we make that will result in improvement?

- A change concept is a general notion or approach to change that has to been found to be useful in developing specific ideas for improvement.

What change can we make that will result in improvement?

- After generating ideas run Plan-Do-Study-Act (PDSA) cycles to test a change or group of changes on a small scale to see if they result in improvement.

Plan-Do-Study-Act (PDSA Cycle)



- **Plan:** Plan the test, including a plan for collecting data.
- **Do:** Try out the test on a small scale, document problems and unexpected observations
- **Study:** Set aside time to analyse the data and study the results.
- **Act:** Refine the change, based on what was learned from the test

Prepare a plan for the next test

What change can we make that will result in improvement?

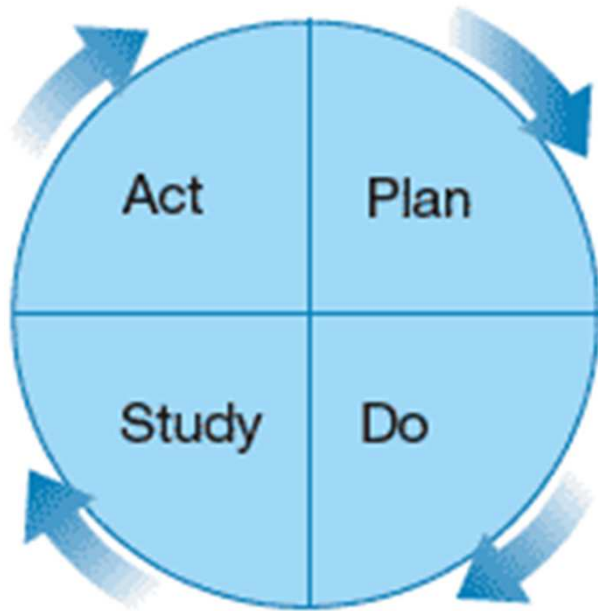
- Expand Customer Expectations to increase attendance:
- Delight Customers
 - Hot meals Monday to Friday
 - Cultural & Special Events Calendar

What change can we make that will result in improvement?



- **Plan:** Lasagne as a hot meal choice
- **Do:** Offer Lasagne on Monday
- **Study:** Attendance down on Monday because Children don't like lasagne 😞
- **Act:** Change to Baked beans on toast

What change can we make that will result in improvement?



- **Plan:** Replace Lasagne with baked beans on toast as a hot meal choice
- **Do:** Offer Baked Beans on toast the next Monday
- **Study:** Attendance up on Monday because Children love Baked Beans on Toast 😊
- **Act:** Baked Beans on Toast now regular item on Mondays.

What change can we make that will result in improvement?

- Eliminate Quality problem:
- Meet customer expectations
 - Settling in process
 - Simplify enrolment

What change can we make that will result in improvement?



- Plan: On-line enrolment form
- Do: Introduce on-line enrolment for parents
- Study: Enrolment increases at Centre
- Act: Keep and improve enrolment form from parents suggestions

Working example of the Model for Improvement

Case study

Questions