

# Quality Improvement and Infection Prevention

## Dr. Sally Roberts, Auckland Hospital, New Zealand

### A Webber Training Teleclass

## Quality Improvement and Infection Prevention

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Hosted by Jane Barnett  
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## What is Quality in Healthcare?

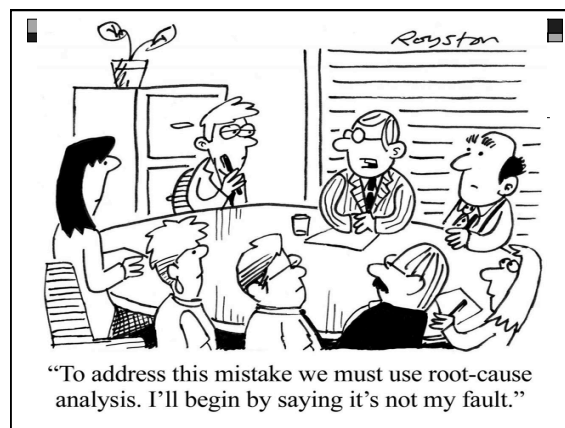
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- Many differing definitions but some common themes
  - Safe care
  - Effective care
  - Patient-centred
  - Timely access
  - Equitable access
  - Value for money

## Quality Improvement

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- System change to improve outcome
- Culture of safety
  - Patient safety at the centre
  - When error is made a “no name, no blame, no shame” culture encourages a focus on the improvement of the processes
- Transparency of reporting
- Quality Tool Kit
  - Tools for data collection and analysis, evaluation and decision making, idea creation analysis and project implementation



“Do the right thing, the right way, the first time, every time”

## Quality Improvement

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- There is a gap between what we know and what we do
- Improvement requires system change/s
- Developing changes that are new requires a creative effort
- Working with people
- Clinical leadership

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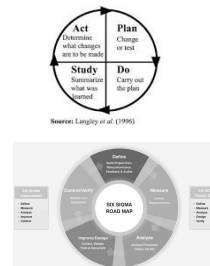
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#### The Quality Improvement Process

- Identify the issue, plan and prioritize
- Collect and analyze data to further the understanding of the problem; hypothesize what changes will solve the problem and develop a solution strategy
- Test and deploy: test the hypothesis with a small sample that becomes progressively larger
- Report and adjust: compare results with internal and external benchmarks and make adjustment to the process to move closer to the desired goal

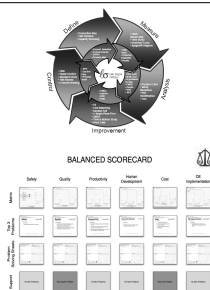
#### Quality Improvement Strategies

- **Model for Improvement**
  - Shewhart/Deming “plan-do-study-act” cycle
- **Six Sigma**
  - Developed By Motorola and GE to improve processes and eliminate defects in performance
  - Aim is to reduce variation and to achieve stable and predictable process results



#### Quality Improvement Strategies

- **Lean Process**
  - Pioneered by Toyota
  - Change operational processes to become faster and more flexible and to reduce waste.
- **Balanced Scorecard**
  - Planning and management tool used to align an organization's activities to it's vision and business strategy to improve internal and external communication



#### Quality Improvement and IPC

- SENIC Study
  - The incidence rate of nosocomial infections decreased and remained lower in hospitals that conducted surveillance for nosocomial infections and that used EB infection prevention patient care activities
- HAI are an important measure of quality
  - Ministry of Health Quality Accounts
  - DHB KPI
- Evidence-based standards are available to reduce infection risk
  - Compliance with best practice is variable

#### Infection Prevention

- What are we trying to achieve?
  - Reducing healthcare-associated infection rates
- How will we know that a change is an improvement?
  - Measuring change – process measure
- What changes can we make that will result in improvement
  - Measuring outcome measure

#### Prevention of HAI

- Tend to focus on procedure or device-related infections
  - Interventions associated with reduced infection rates
  - Evidence for effectiveness of these interventions variable
    - RCT, observational studies, pre and post-interventional studies and expert opinion.
  - Interventions put together as “bundles”
- To implement the “bundles” needs team work
- Need to measure change

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**Performance Measures**

- Monitoring of performance is critical for assessing the effectiveness of quality improvement interventions
- Performance can be measured by process measures and outcome measures
- Quality indicators = process measures and outcome measures

**Quality Indicators**

- Clearly defined numerators and denominators
- Variables are easy to identify and collect
- Use a data collection method that is sensitive enough to capture the data and can be standardised across a number of healthcare settings
- Select outcome measures that occur frequently enough to provide an adequate sample size
- Compare populations with similar intrinsic risks or provide a means of risk adjustment

**Process measure**

- Can aim for 100% adherence to the recommended practice
- Do not require adjustment for the patient's underlying risk of infection or severity of disease

**Outcome measure**

- At least one outcome measure is essential
- Determines how the "system" is working
- Measure of harm
  - SSI rate
  - SAB-BSI

Health Quality and Safety  
Commission's Infection  
Prevention and Control  
Projects



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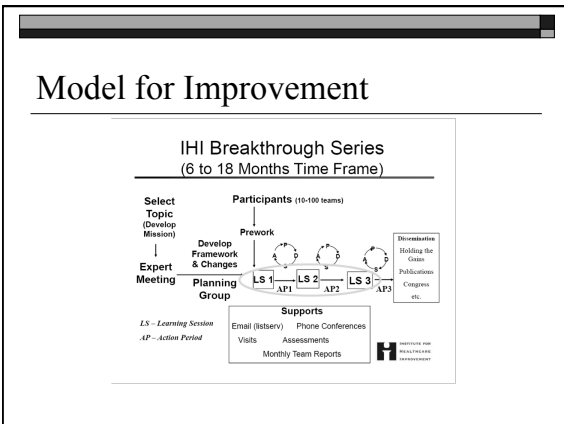
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### Target CLAB ZERO

- National Collaborative to reduce central line-associated bacteraemia
- Collaboration between HQ&SC, Counties Manukau DHB and Ko Awatea
- Using the IHI Model for Improvement approach

### Model for Improvement

- Three fundamental questions
  - What are we trying to accomplish?
    - Aim
  - How will we know that a change is an improvement?
    - Measures
  - What changes can we make that will result in an improvement
    - Changes



### Measures

- Process measures
  - Compliance with insertion bundle
  - Compliance with maintenance bundle
- Outcome measure
  - Rate of central line-associated blood stream infections per 1000 catheter line days

### PDSA

- Insertion pack
  - “making the right thing to do the easiest thing to do”
- Insertion and Maintenance Forms
- Best practice for blood culture collection
- How to apply the CLAB definition

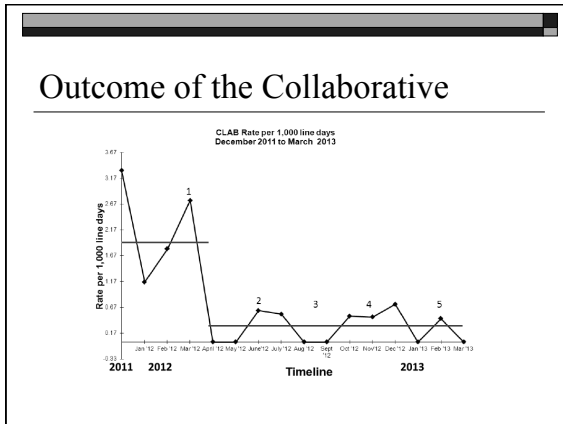
### Improvement in measures

- Process measures
  - Compliance with insertion bundle
  - Compliance with maintenance bundle

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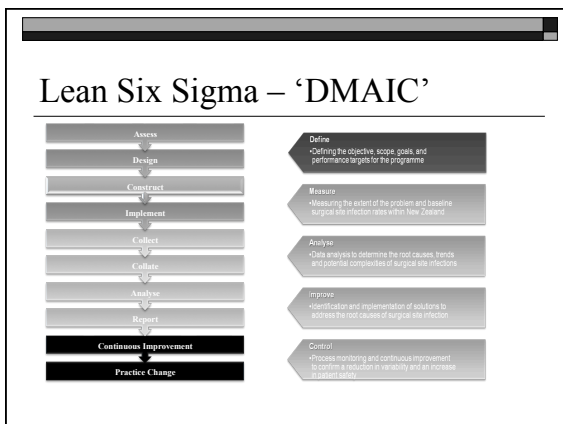
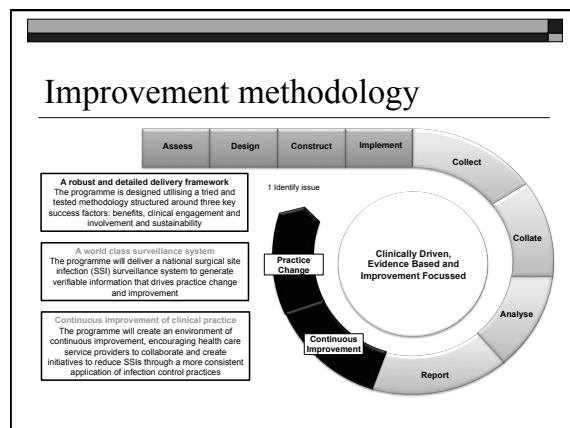


## National Surgical Site Infection Surveillance Programme

# SSIS

Surgical Site Infection Surveillance programme

- # SSIS
- Collaboration between the HS&QC and Auckland and Canterbury DHB
  - Approach
    - NHSH definitions
    - 30 day and 90 day follow up
    - No post discharge follow up
  - Orthopaedic procedures
    - THJR and TKJR



- ### Measures
- Work in progress...
  - Process measures
    - Antibiotic prophylaxis
    - Skin antisepsis
  - Outcome measure
    - In-hospital surgical site infection per 100 procedures

# Quality Improvement and Infection Prevention

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Hand Hygiene  
New Zealand



The logo for Hand Hygiene NZ features two hands, one above the other, with the text 'hand hygiene NZ' and 'tika hauhia, aotearoa' below them.

### HHNZ

- HHNZ is a collaboration between HQ&SC and Auckland DHB
- Re-engagement with the sector in June 2011
- Multimodal culture change programme delivered across the entire sector



The cover of the 'Hand Hygiene New Zealand Implementation Guidelines' features a diagram of a hospital room with numbered steps for hand hygiene. It includes the text 'A practical guide to implementing the hand hygiene New Zealand programme in United Kingdom health care organisations' and '100 1 MINUTE FOR HAND HYGIENE'. Logos for 'hand hygiene NZ', 'CLEAN HANDS SAVE LIVES', and 'AUCKLAND DISTRICT HEALTH BOARD' are at the bottom.

### Improvement Methodology


- Based on WHO Programme
  - Easily accessible product – ‘easy to do the right thing’
  - Audit and feedback
  - Education
  - Champions and Clinical Leadership

### Measures

- Process measures
  - Compliance with hand hygiene
- Outcome measure
  - Healthcare associated *S. aureus* bacteraemia rate per 1000 inpatient days

### Summary

- Uniform implementation of infection surveillance, control and prevention recommendations will lead to improvements in infection rates and patient safety programmes
- Quality improvement + infection prevention initiatives = improved patient safety



The logo for 'open FOR BETTER CARE' features the word 'open' in a large, lowercase font with three overlapping circles above it, and 'FOR BETTER CARE' in a smaller font below.

It's about providing the best care possible:

- asking patients what matters to them
- teamwork – and respect for each other
- learning and improving all the time
- doing it right first time.

[www.hqsc.govt.nz/open](http://www.hqsc.govt.nz/open)

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#### Conclusion

- Infection Control has a key role to play in patient safety
- Get involved
  - National Patient Safety Campaign
    - “Open for better care”
  - The APAC Forum on Quality Improvement in Health and Healthcare, Sept 2013

Coming Soon

- 20 June PATIENT'S EXPERIENCE OF MRSA SCREENING – WHAT CAN WE LEARN?  
Speaker: Dr. Carol Pellowe, King's College, London
- 10 July (FREE ... WHO Teleclass - Europe)  
RISK ASSESSMENT AND PRIORITY SETTING IN INFECTION CONTROL IN LOW- TO MIDDLE-INCOME COUNTRIES  
Speaker: Dr. Nizam Damani, Queen's University, Belfast, UK
- 11 July SEVERE SEPSIS: EARLY RECOGNITION AND MANAGEMENT SAVES LIVES  
Speaker: Kathleen Vollman, Advanced Nursing LLC, Michigan
- 25 July IMPROVING HAND HYGIENE BEHAVIOUR: THE EFFECTS OF SOCIAL INFLUENCE AND LEADERSHIP  
Dr. Anita Huis, Radboud University, The Netherlands
- 7 August (FREE ... WHO Teleclass – North America)  
DECONTAMINATION OF HIGH-TOUCH ENVIRONMENTAL SURFACES IN HEALTHCARE: A CRITICAL LOOK AT CURRENT PRACTICES AND NEWER APPROACHES

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