

# IMPLEMENTATION OF THE EVIDENCE BASED PRACTICE (EBP) MODEL THROUGH A MULTIDISCIPLINARY NICU JOURNAL CLUB

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## Introduction

The NICU team at Exempla Saint Joseph Hospital has always sought to improve the survival rate of the babies in their care. In the field of Neonatology much of current practice is not evidence based. Often there is very little science to support a particular NICU practice. An analysis by Cairns (McMaster University, SPR 1998) revealed that 34% of primary interventions were based on evidence from RCT; 62% were based on convincing non-experimental evidence.

In an effort to track down the evidence and discover cost-effective "best practices" that promote positive outcomes for NICU patients a multidisciplinary NICU journal club was formed. The NICU team invited medical librarians to join them to assist with research and the development of guidelines and educational materials.



## Aims

To apply the Evidence Based Practice (EBP) Model to investigate the evidence for current practice and reduce the rate of dangerous infections in the NICU. The goal was to reduce nosocomial infections by 25% in infants <1500 grams. This objective was nicknamed the "Bug Off" project.

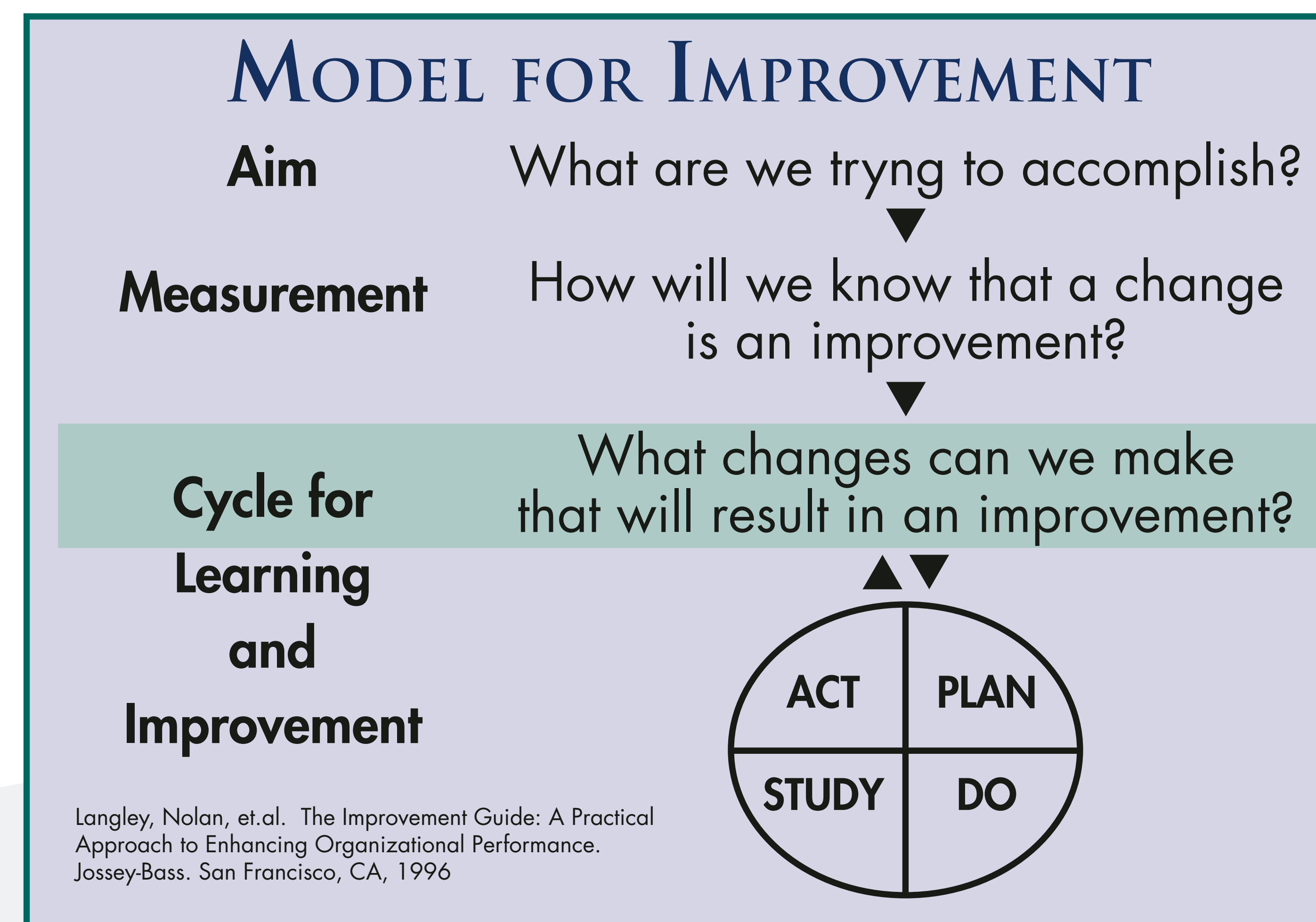
## The Protocol

1. Identify an EBP question
2. Conduct search for evidence
3. Members of multi-disciplinary journal club (neonatologists, nurses, nurse practitioners, pharmacists, respiratory therapists, medical librarian) review studies and critique the evidence guided by 3 factors: quality, quantity and consistency.\*
4. Summarize and rate the strength of evidence
5. Develop recommendations for change in processes of care or systems on the basis of strength of evidence
6. Determine appropriateness and feasibility of translating recommendations into the specific setting of the NICU

\* Quality refers to extent studies minimize bias. Quantity refers to numbers of studies, sample size, and magnitude of effect. Consistency refers to whether findings are similar under different study conditions or study designs.

## Methods

To create an infrastructure for evidence and research translation within the NICU care setting and enable the pursuit of potentially better practices the "Bug Off" team adopted a PDSA (Plan, Do, Study, Act) Cycle as their model for improvement to monitor and evaluate the use of the evidence in practice.



To apply the Model of Improvement to the EBP protocol, the Bug Off team had to learn how to search for the evidence. The medical librarian taught the team how to use evidence based practice tools to find the evidence and participated in the Journal Club by helping to clarify the questions, performing expert searches, choosing appropriate studies for further evaluation and evaluating studies. Both class and individual tutorial sessions were offered as well as web-based tutorials on finding the best evidence and systematic reviews.

## Role of Librarian to Help Team Learn Evidence Based Tools

- Use of PICO to clarify the question
- Introduction to EBM appraised resources
- How to search for evidence in MEDLINE
- How to find systematic reviews
- How to find evidence on Web EBP sites (NGC, Bandolier, TRIP)
- Created web based tutorials on finding best evidence and Systematic Reviews
- Participation in journal club

## Results

EBP Question	Outcomes of Evidence Search
Do artificial nails increase the incidence of infection in the NICU?	Evidence supports policy change to prohibit artificial nails in clinical areas to decrease incidence of infection
Does strict adherence to hand washing guidelines decrease infections in clinical areas?	Proper hand washing technique is important to decrease infection rate
Does duration of central lines influence infection rate in the NICU?	Remove central lines when 80% of GI intake is achieved
What is the effect of intralipid exposure on infection rate in preterm infants?	Stop intralipid infusion when 50% of oral intake is achieved
What is the best policy for dressing changes to reduce the incidence of infection?	Change when soiled or when dressing is non-occlusive or odiferous following aseptic technique
What is the effect of an early feeding protocol for preterm infants?	An early feeding protocol achieves full feedings faster, decreases the duration of central lines and decreases the incidence of nosocomial infections.
What are the best hub care practices to reduce the incidence of infection in infants?	Follow meticulous antiseptic technique in maintenance of the point of attachment of the central line with the IV tubing
<b>Result of Adopting "Bug Off" Team research:</b> Reduction in number of infections contracted by very low birth weight infants from 30% to 6% in two years. This is an 80% reduction in the incidence of infection. These measures prevented 24 infections, saving over \$600,000 in the cost of care in the NICU. Most importantly, the staff could <b>observe babies going home without experiencing infections.</b>	

