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NHS Trust

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WELCOME TO THIS SIGN UP TO SAFETY WEBINAR

Getting started with Measurement for Improvement by Andrew Barraclough

All participants lines are muted to reduce background noise

We are here for you

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LISTEN LEARN ACT

"How we are supporting whole hospital transformation with measurement and data at Nottingham University Hospitals"

Andrew Barraclough,

Head of Analysis and Intelligence,
Better for you, Nottingham University Hospitals

We are here for you

September measurement webinar series
"How we are supporting whole hospital transformation with measurement and data at Nottingham University Hospitals"

TODAY
Webinar 1: Getting started with Measurement for Improvement
- Measurement for improvement – the what and why
- Driver diagrams – refresh, examples and usage
- Quality Measurement Journey – the what and why

UPCOMING: 30 September, 1000-1100
Webinar 2: Learn to love your data!

'Measurement is only a handmaiden to improvement, but improvement cannot act without it.'

Dr Don Berwick, A Primer on Leading the Improvement of Systems, BMJ, 1996, vol 312, p620

Better for you

Better for You is our established and ambitious whole-hospital continuous improvement programme. Our approach continues to evolve and grow in response to the ever changing needs of Nottingham University Hospitals NHS Trust (NUH) and the feedback we receive from our patients, their loved ones and carers, our partners and our staff.

Bfy Fundamental Course

Bfy Fundamental Course - Variants

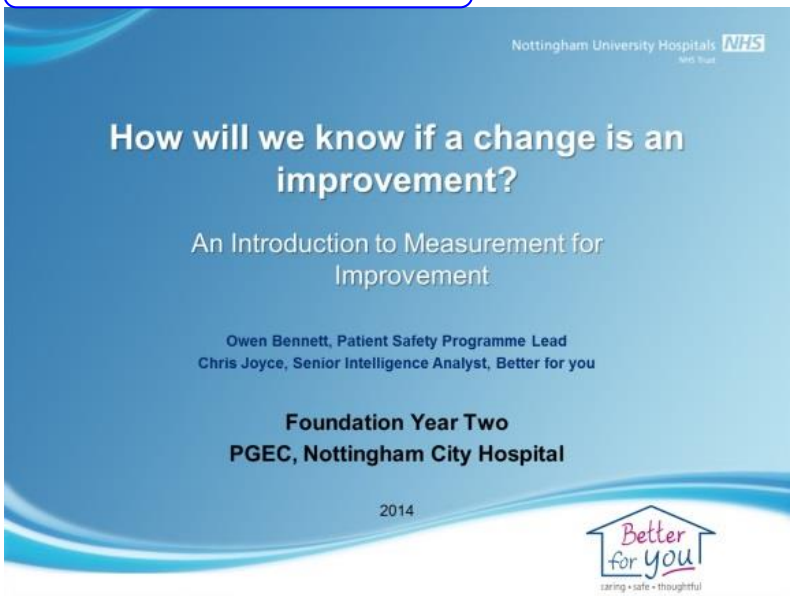
Introduction to Measurement for Improvement

Andrew Barraclough, Head of Analysis and Intelligence, Better for you

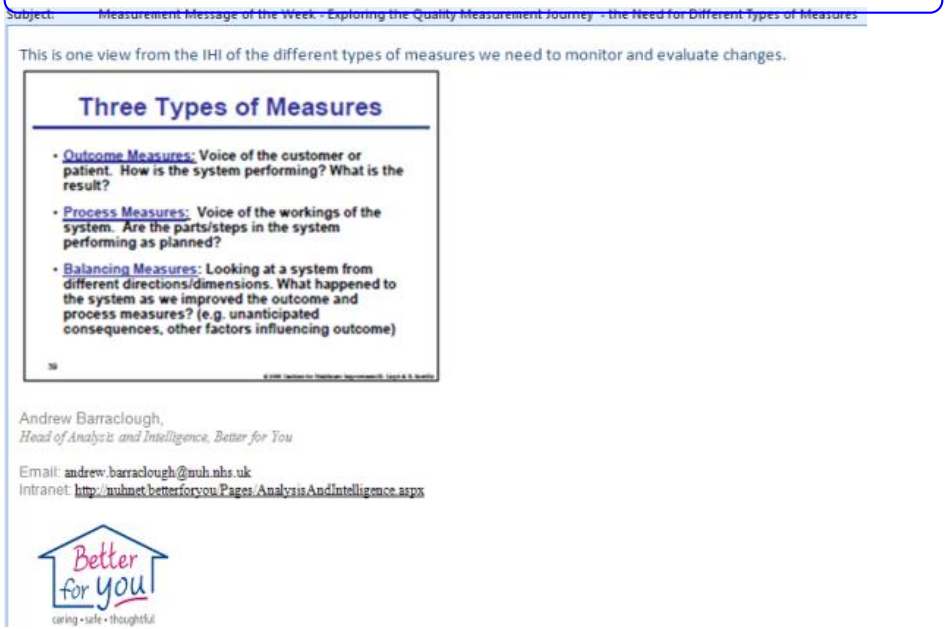
An Introduction to Measurement for Improvement
Patient Safety Programme – May 2014

Andrew Barraclough, Head of Analysis and Intelligence, Better for You

F2 Doctor Training



Measurement Message of the Week



Measurement Skills Needed

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Box A: Quality improvement and patient safety skills

This extensive, but not exhaustive, list of skills was gathered from scans of existing quality improvement/ safety curricula and programmes. Asterisks (*) indicate safety specific skills.

Measurement skills

Designing measures and evaluating data, change and outcomes.

- Measurement for improvement
- Setting baselines
- Excel, Pareto, Run, SPC, Win Charts
- Balanced scorecards
- Quality measurement
- Collecting data / audit
- Data sampling
- Analysing data
- Safety culture measures (eg safety culture interaction) *
- Measurement of reliability
- Mortality measures*
- Harm measures*
- Patient experience measures
- Evaluating improvement

The Health Foundation
Inspiring Improvement

Building capability to improve safety

Summary of a workshop discussion, 14 May 2014, and examples of approaches and activities for building safety improvement capability

Event report
August 2014

Three Types of Measurement

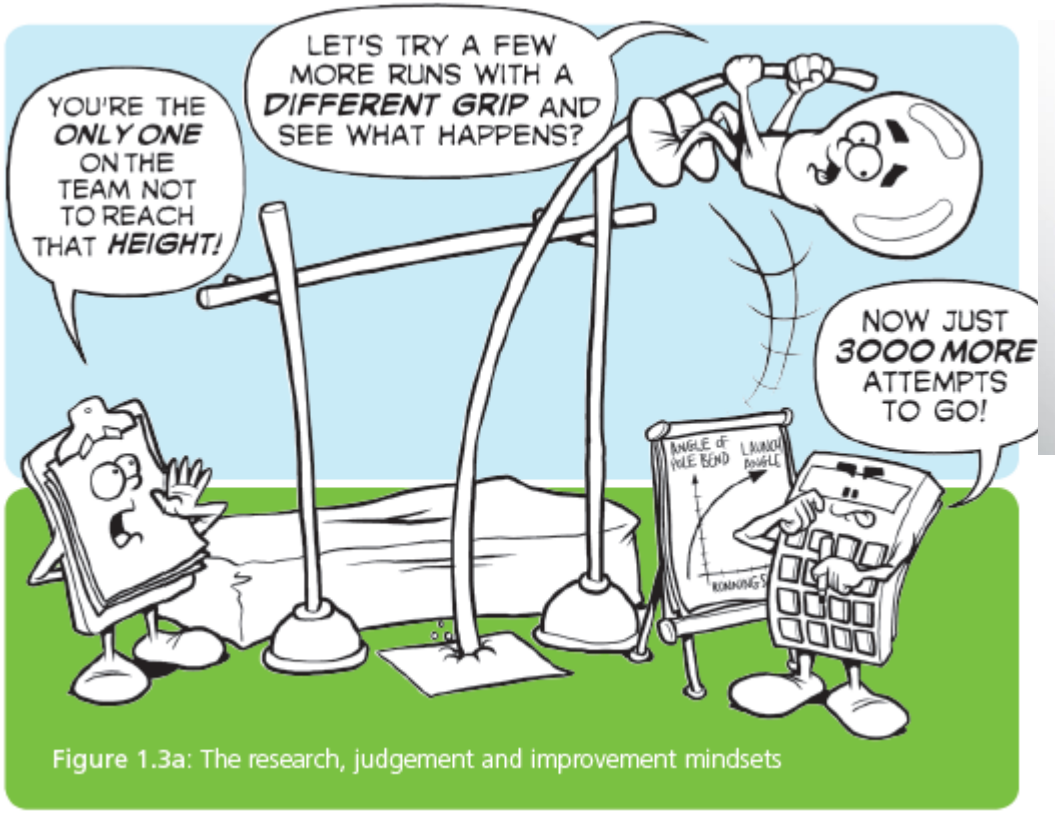


Figure 1.3a: The research, judgement and improvement mindsets

http://www.institute.nhs.uk/index.php?option=com_joomcart&main_page=document_product_info&products_id=763&cPath=94

Solberg, Mosser and McDonald described **Three Faces of Performance Measurement** that represent very different perspectives on the role of measurement. These are described on the next page.

Reference: L Solberg, G Mosser and S McDonald (1997) The Three Faces of Performance Measurement: Improvement, Accountability and Research, Journal on Quality Improvement, 23 (3): 135 - 147.

Three Types of Measurement: Differences

Aspect	Improvement	Accountability	Research
AIM	Improvement of care	Comparison, choice, reassurance, spur for change	New knowledge
METHOD			
Test Observability	Tests are observable	No test; merely evaluate current performance	Test blinded or controlled tests
Bias	Accept consistent bias	Measure and adjust to reduce bias	Design to eliminate bias
Sample Size	"Just enough" data, small sequential samples	Obtain 100% of available, relevant data	"Just in case" data
Flexibility of Hypothesis	Hypothesis flexible, changes as learning takes place	No hypothesis	Fixed hypothesis
Testing Strategy	Sequential tests	No tests	One large test
Determining if a Change is an Improvement	Run charts or Shewhart control charts	No change focus	Hypothesis, statistical tests (t-test, F-test, chi square), p-values
Confidentiality of the Data	Data used only by those involved with improvement	Data available for public consumption and review	Research subjects' identities protected

Measurement for safety improvement does not have to be complicated. Tracking a few measures over time and presenting the information well is fundamental to developing a change that works well and can be spread.

Measurement can show us a number of important pieces of information:

- how well our current process is performing
- whether we have reached an aim
- how much variation is in our data/process
- small test of change
- whether the changes have resulted in an improvement
- whether a change has been sustained.

Measurement for improvement does not seek to prove or disprove whether clinical interventions work – it seeks to answer the question "how do we make it work here?"

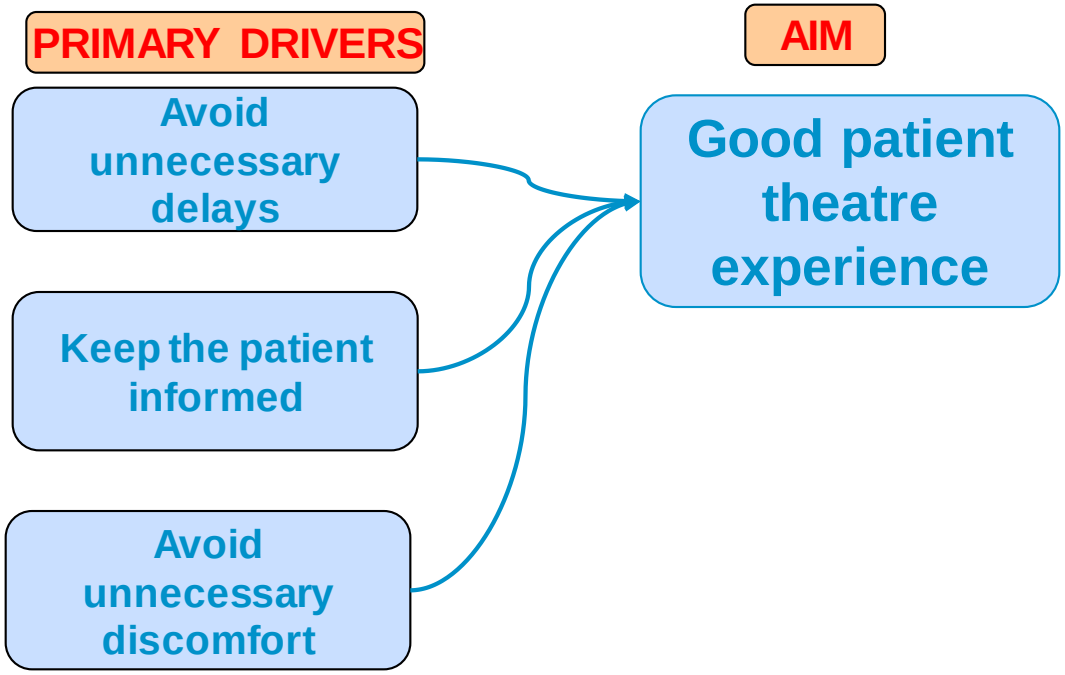

ANY
QUESTIONS
?

Cause and effect driver diagram 1

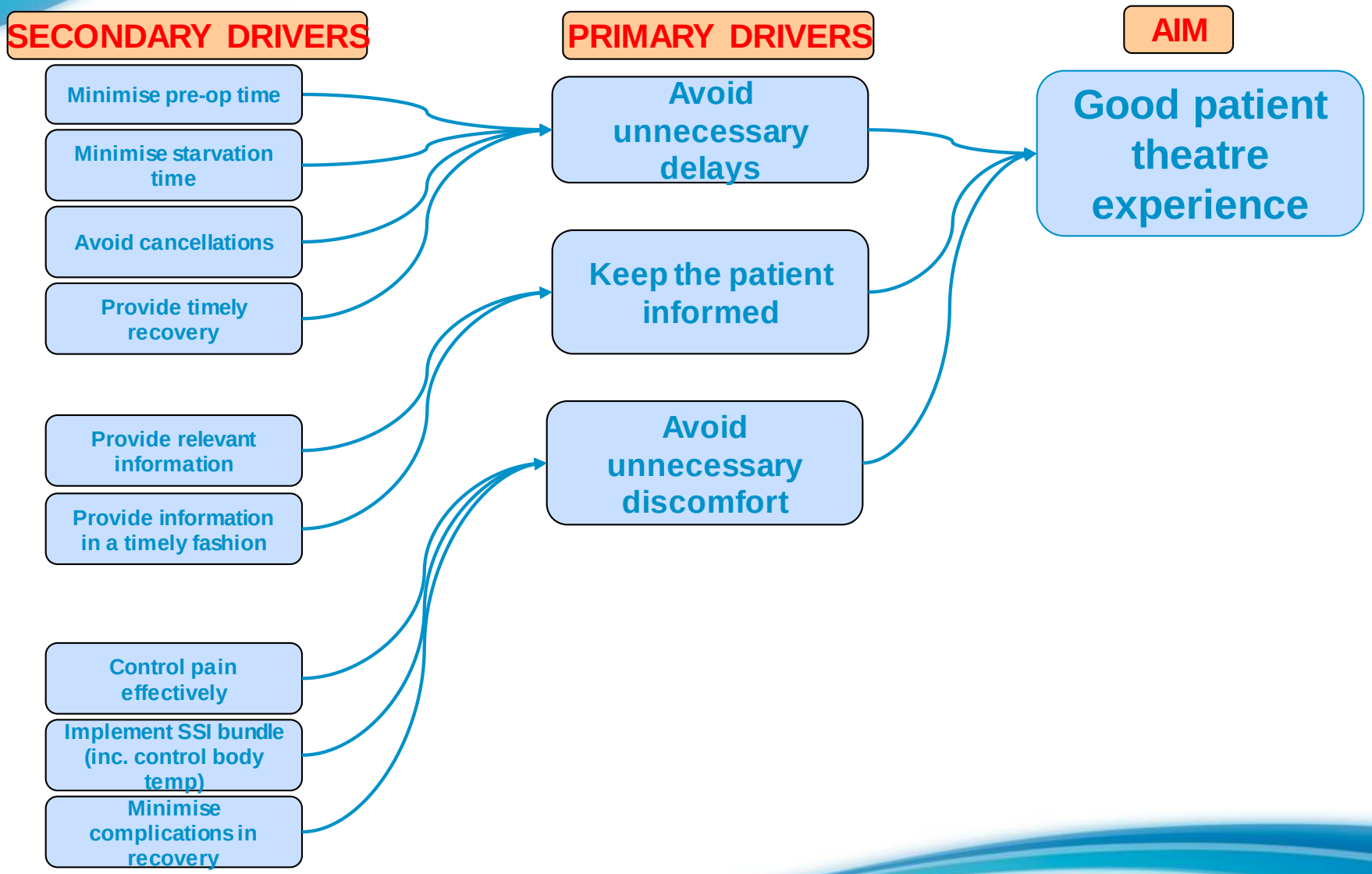
AIM

Good patient theatre experience

Cause and effect driver diagram 2



Cause and effect driver diagram 3



Cause and effect driver diagram 4

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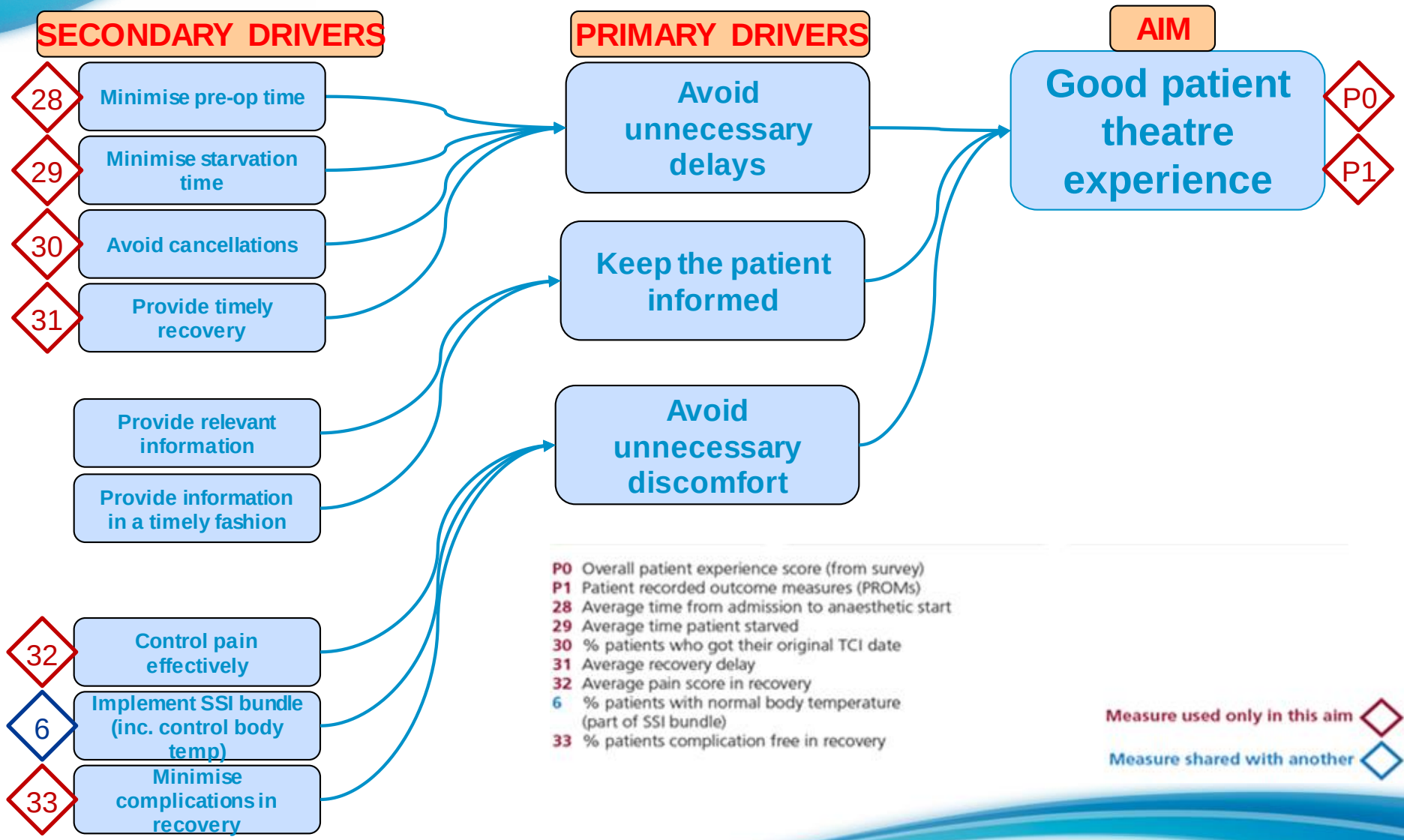

P0 Overall patient experience score (from survey)
P1 Patient recorded outcome measures (PROMs)
28 Average time from admission to anaesthetic start
29 Average time patient starved
30 % patients who got their original TCI date
31 Average recovery delay
32 Average pain score in recovery
6 % patients with normal body temperature (part of SSI bundle)
33 % patients complication free in recovery

Measure used only in this aim
Measure shared with another

Driver Diagrams – additional ideas

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Card	Outline of contents
5 Card 5.1	**How to define the improvement drivers and measures – an introduction to driver diagrams** The key tool of 'driver diagrams' and how they are constructed and used
Card 5.2	**How to create a driver diagram** A step-by-step process to create a driver diagram as a group
Card 5.3	**Additional driver diagram concepts** A range of additional concepts that help to describe how driver diagrams are used in practice
Card 5.4	**Using driver diagrams for tasks rather than goals** What to do when an improvement team starts off with a pre-defined solution (eg to implement a particular service model) rather than a well-defined improvement opportunity
Card 5.5	**Working with multiple overall improvement goals** An example of how it is possible to work with multiple overall improvement goals and driver diagrams
6 Card 6.1	**How to create the programme of improvement projects** Introduces three NHS Institute guides which can be used to support this step: Thinking Differently, Prioritise Commissioning Opportunities and Project Delivery for Commissioners

Driver Diagrams – further guides

http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/driver_diagrams.html

Audio and Video

SHARE

How Do You Use a Driver Diagram?

Don Goldmann, MD, Chief Medical and Scientific Officer, Institute for Healthcare Improvement

Learning Objectives: At the end of this activity, you will be able to:

- Define the phrase "causal pathway."
- Explain the relationship between a driver diagram and a PDSA cycle.
- Discuss why driver diagrams are useful to quality improvement work.
- Differentiate between primary and secondary drivers.

Description: If you're embarking on an improvement project, it's common to want to start testing changes right away. You have an aim, and you want to achieve it! But how do you know the change you are making will help you achieve your aim?

Enter the driver diagram. A driver diagram, explains Don Goldmann, MD, IHI's Chief Medical and Scientific officer, is a "simple, visual, somewhat intuitive display to help you understand where you're going with your work." Goldmann's latest Open School Short explains the purpose and value of a driver diagram — a tool that can help you with anything from losing weight to protecting your patients from infection.

http://www.ihi.org/education/ihiopenschool/resources/Pages/Activities/GoldmannDriver.aspx

http://www.apiweb.org/QP_whats-your-theory_201507.pdf


ANY
QUESTIONS
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A concept that can help us deliver on measurement for improvement

AIM

Concept

Measure

Operational Definition

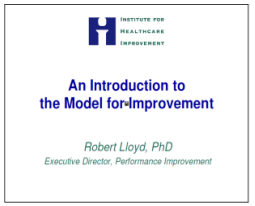
Data Collection Plan

Data Collection

Analysis

ACTION

Source: IHI then NHS Institute



The Quality Measurement Journey

AIM – freedom from harm

Concept – reduce patient falls

Measure – IP falls rate (falls per 1000 patient days)

Operational Definitions - # falls/inpatient days

Data Collection Plan – monthly; no sampling; all IP units

Data Collection – unit submits data to RM; RM assembles and send to QM for analysis

Analysis – control chart

Tests of Change

INSTITUTE FOR HEALTHCARE IMPROVEMENT

25

Section B – Critical Care

Measure name:	**C01 % compliance with ventilator care bundle**
Measure type:	Process
Related driver:	Reduce harm from mechanical ventilation
Description:	The percentage of patients compliant with a ventilator care bundle. The ventilator care bundle includes 4 elements. Where all 4 elements have been met this demonstrates compliance with the ventilator care bundle.
Rationale:	Adopting the 4 components of the ventilator bundle should reduce mortality and harm from mechanical ventilation.
Numerator:	The number of ventilated patients in the sample receiving all 4 components of the ventilator bundle during the month.
Data Source:	Local audit
Denominator:	The total number of patients reviewed in the sample during the month.
Data Source:	Local audit
Method of calculation:	Calculate the percent compliance with the ventilator bundle by dividing the numerator by the denominator and multiplying the result by 100.
Collection guidance:	Select ALL ventilated patients in the unit(s) on a randomly selected day each week. Rotate days of the week and shifts Use daily goal sheet or consultant order sheet as the primary data source or direct observation. Remember this is a YES/NO outcome - only patients receiving all 4 components of the bundle are recorded as compliant. Report data monthly - Report the 4 figures for the month as an aggregated numerator and denominator each month.

1 PATIENT SAFETY FIRST

Making the Safety of patients everyone's highest priority

Campaign

Measures Definitions

Documenting the QMJ 2

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Appendix 1: Measures template

Measures checklist

Measure setup

Measure name:	
Measure definition	What data item comprises the Numerator?
	What data item comprises the Denominator? *(Some measures do not require one)*
	What is the calculation?
	Which patient groups are to be covered?
Goal setting	What is the numeric goal you are setting yourselves?
	Who is responsible for setting this?
	When will it be achieved by?

Measurement process

Collect	Is the data available? *Currently available / Available with minor changes / Prospective collection needed*
	Who is responsible for data collection?
	What is the process of collection?
Analyse *Calculate measure and present results*	What is the process for presenting results? *Eg enter data in Extranet, create run chart in Excel*
	Who is responsible for the analysis?
	How often is the analysis completed?
Review	Where will decisions be made based on results?
	Who is responsible for taking action?

1 PATIENT SAFETY FIRST
Making the safety of patients everyone's highest priority

The How-to Guide for
Measurement for Improvement


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Measurement as a Social Process

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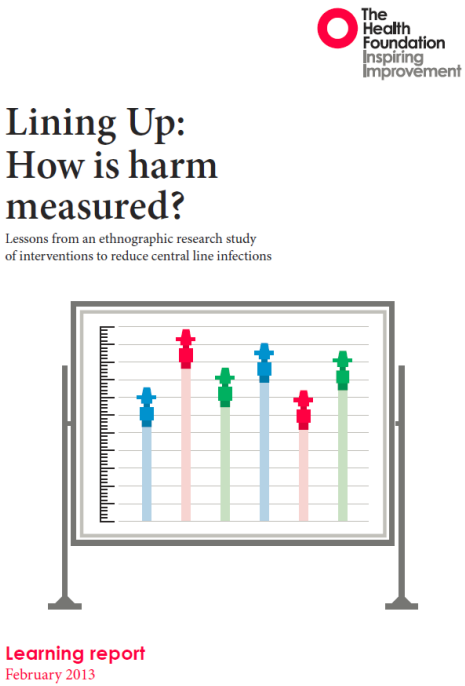
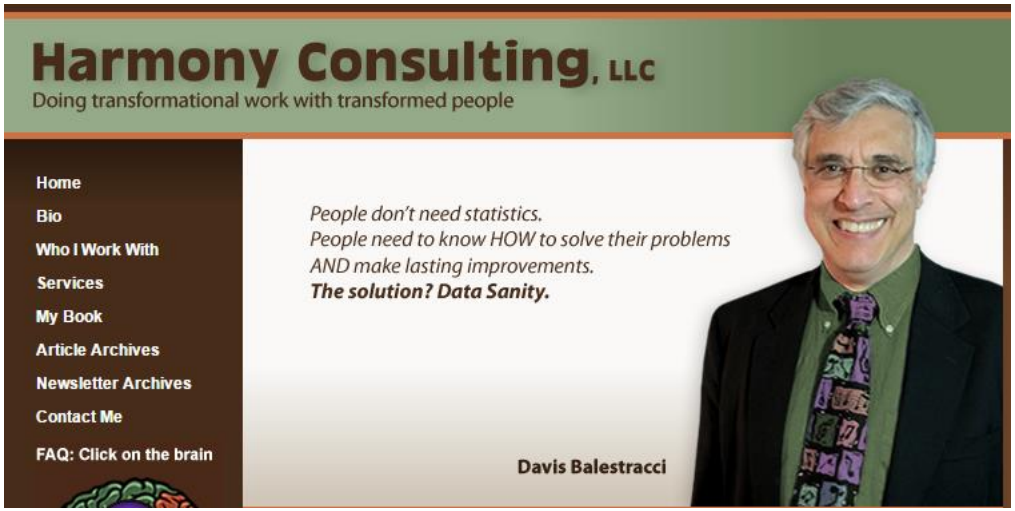


"Measurement is not a mathematical, natural science process. It's a social process. People do the measuring: it's not just about putting something into a machine that churns out a number."

Dr Elaine Maxwell, the Health Foundation's Assistant Director for Patient Safety

Introducing Davis Balestracci

http://davisdatasanity.com/



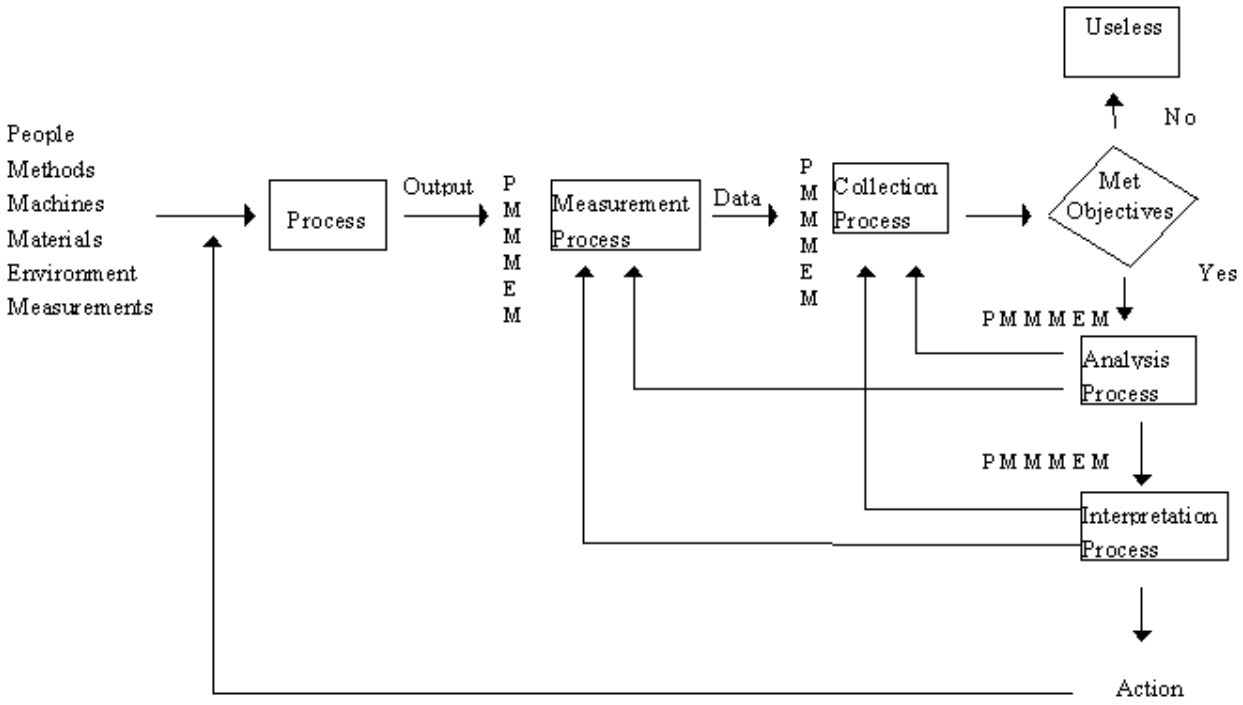
January, 2015

From Davis Balestracci -- Don't Just Do Something, Stand There!
Sent Monday, January 19, 2015
From Davis Balestracci -- Don't Just Do Something, Stand There!
www.davisdatasanity.com Executive bragging to W. Edwards Deming (in the 1980s): "We just bought a three-million dollar computer."Deming: "Too bad. What you needed was three-hundred thousand dollars' worth of brains."[~1300 words (a bit longer than usual, but designed as a breezy read: take 5 or 7 minutes to read over a break or lunch]http://aweber.com/t/7jeBp The Quality vs. Transformation [...]

http://davisdatasanity.com/newsletter-archives/

Use of Data as a Process

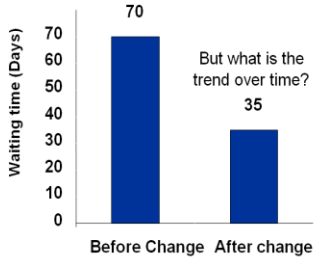
People, Methods, Machines, Materials, Environment and *Measurements* inputs can be a source of variation for any one of the ***measurement, collection, analysis*** or ***interpretation*** processes!



UPCOMING: 30 September, 1000-1100: Webinar 2: Learn to love your data!

- Why Two Point Comparisons Are Evil

Reduction in waiting times



- Born to Run-chart – measurement over time

- Before you go any further
- Plot the dots,…

- Why I Hate Pie Charts

- What Charts You Most Likely Should Be Using

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Thank you

andrew.barraclough@nuh.nhs.uk
@ AndrewBarraclo1

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