HOSPITAL IN CONFLICT:

HOW CAN BIG, SMALL AND ACTIONABLE DATA HELP CHANGE OCCUR WITHIN A SYSTEM OF COMPETING NEEDS?

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Disclosure
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Objectives

• Discuss the clinical and financial impact the clinician can have on the hospital system
• Review the challenges of silos in a hospital
• Explain how design science and change management strategy can be a solution to a silo system
• Discuss the necessary components for lasting clinical change
• Discuss specific examples of clinical change
3 cups of drinks + 2 burgers = 30
3 cups of drinks + 2 burgers = 20
2 burgers + 3 fries = 9
1 burger + 1 fries × 2 = ?
The situation today
Hospitals under external pressure
An ideal opportunity
Aligned clinical and financial goals

1. PROVIDE LIFE SUPPORT
2. PREVENT PATIENT HARM
3. MINIMIZE TIME ON VENT

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A story of clinical conflict: Ventilator-Associated Event (VAE) Reporting
VAE costs

VAE/VAPs are associated with:

• Increased days on ventilator
• Increased days to discharge
• Increased mortality

1 Klompas, M., Kleinman, K., Murphy, M. Descriptive epidemiology and attributable morbidity of ventilator-associated events. Infection Control. 2014; 35:502-510.
VAE costs (cont.)

- Complicates the course of 8 – 28% of patients receiving mechanical ventilation
- Can add up to 6 days in the Intensive Care Unit
- Adds an estimated cost of $40,000 per admission
- Can be difficult to diagnose

1 Klompas, M., Kleinman, K., Murphy, M. Descriptive epidemiology and attributable morbidity of ventilator-associated events. *Infection Control*, 2014; 35:502-510.
Caregivers just want to take care of patients…

But..................

The system is always getting the way
Do we really have the ability to make lasting changes?
+ + = 30
+ + = 20
+ + = 9
+ × = ?
“That’s the way we have always done it”
Sphere of influence:
Cost of mechanical ventilation

It’s costing you a lot – but not because of the equipment¹

¹ Survey: Seven hospitals with an average of 400 beds and 40 ventilators. CareFusion, Summer 2012.
Focus on mechanical ventilation

Mechanically ventilated patients in US acute care hospitals
- 3% of patients
- 7% of days
- 12% of cost

Mechanically ventilated patients in US intensive care units
- 36% of patients
- 58% of days
- 72% of cost

Medicare DRG 207 patients
- Per patient average revenue: $31,405
- Average cost of care: $37,585
- Loss per patient: $(6,180)

($6,180) x 200 patients = $(1.2 million)

Internal pressure & resistance to change
Design science

Herb Simon
Nobel Prize in Economics 1978
Carnegie-Mellon University
City of Champions, Pittsburgh, PA
Designing a system for healthcare

• How can we design a system that allows for on-going positive growth and change to serve the patient, provider and hospital?
Co-design

• Service recovery
  – Retrospective VOC of failures

• Advisory councils
  – Customer into the process

• Experience based company
  – Collaboration of all participants
Experienced based design

• Redesigning the system around the patient or end user

• Co-designing services with the patient or end user

• Bate and Robert developed a design system around patient experience.\(^1\)
  – This can translate to “end user” experience
  – With the caregiver as the consumer within the process

\(^1\) Bate, P., Robert, G. Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *Qual Saf Health Care.* 2006;15:307-310.
Disruptive process into organizational implementation

- Lean Six Sigma Healthcare
- Change management strategy

Why do something?
Why now?
Why Respiratory Therapy?
What is the Current State?
What is the Ideal State?
Successful change

The 8-step process for leading change

Eight Steps To Successful Change
- John Kotter

1. Establish a sense of urgency
2. Create a guiding coalition
3. Communicate the vision
4. Empower people to act on the vision
5. Create short term wins
6. Consolidate & build on the gains
7. Institutionalise the change

1http://www.kotterinternational.com/the-8-step-process-for-leading-change/
Do we really have the ability to make lasting changes?
+ + + = 30
+ + + = 20
+ + + = 9
+ × = ?
Guiding coalition

• It only takes 20% of caregivers to become part of a process to drive change

BUT

• Those caregivers must be “evangelists” and part of a Value Team
Analytics (Big Data)

- How do we measure progress once we begin a change process?

Value = **Outcomes**
        **Cost**

Examples of outcomes:
  - VLOS
  - Alarm recognition and response
  - SAT/SBT timing
  - LPS tracking
  - VAE reporting and response
An ideal opportunity
Aligned clinical and financial goals

CLINICAL GOALS

1. PROVIDE LIFE SUPPORT
2. PREVENT PATIENT HARM
3. MINIMIZE TIME ON VENT

FINANCIAL GOALS
Clinical examples of change

- **SBT**
  - Reduction in ventilator length of stay via SBT timing optimization

- **ALARMS**
  - Increase in ventilator alarms compliance
Why SBTs?

Task force formed to address the following five issues:

1. The pathophysiology of ventilator dependence;
2. The criteria for identifying patients who are capable of ventilator discontinuation;
3. Ventilator management strategies to maximize the discontinuation potential;
4. The role of tracheotomy; and
5. The role of long-term facilities.

Review/writing teams were formed for each of these issues.

1 MacIntyre, N. Evidence-Based Guidelines for Weaning and Discontinuation of Ventilatory Support: A Collective Task Force Facilitated by the American College of Chest Physicians; the American Association for Respiratory Care; and the American College of Critical Care Medicine. Chest. 2001;120(6_suppl):375S-396S
Why SBTs? (cont.)

• Recommendations:

  – Understand *all* reasons for mechanical ventilation & optimize
  – Improve *assessment* techniques for identifying patients capable of discontinuance and removing ventilation asap
  – Implement *strategies* for stable/recovering patients not ready for extubation
  – Be *prepared*: Extended management plans for long term vent dependent patients

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1 MacIntyre, N. Evidence-Based Guidelines for Weaning and Discontinuation of Ventilatory Support: A Collective Task Force Facilitated by the American College of Chest Physicians; the American Association for Respiratory Care; and the American College of Critical Care Medicine. *Chest.* 2001;120(6_suppl):S375-S3965
Why SBTs? (cont.)

• Patients failing initial SBT should be **re-evaluated** and retried Q24 hours (or less- Joe’s idea)
  – Unless ventilator dependence and weaning appears to be deemed a long term process

• Safety – Cohort of > 1,000 patients – only 1 adverse effect due to SBT

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1 MacIntyre, N. Evidence-Based Guidelines for Weaning and Discontinuation of Ventilatory Support: A Collective Task Force Facilitated by the American College of Chest Physicians; the American Association for Respiratory Care; and the American College of Critical Care Medicine. Chest. 2001;120(6_suppl):375S-396S
SBTs optimization
Why alarms?

• The Joint Commission announces:
  – 2014 National Patient Safety Goal **NPSG.06.01.01** on clinical alarm safety for hospitals and critical access hospitals¹

  – Phase I (beginning 1/2014)
    • Hospitals will be required to establish alarms as an organization priority and identify the most important alarms to manage based on their own internal situations

  – Phase II (beginning 1/2016)
    • Hospitals will be expected to develop and implement specific components of policies and procedures, as well as provide staff education

¹ [http://www.jointcommission.org/assets/1/18/jcp0713_announce_new_nspg.pdf](http://www.jointcommission.org/assets/1/18/jcp0713_announce_new_nspg.pdf)
Alarms Compliance
National Patient Safety Goal

49% Increase in alarm compliance
Culture change

• Clinicians’ care experience as a team breaks silos
• Align clinical and financial performance
• Develop evangelists and sense of urgency
• Tools (analytics) for measurement and action
  – Big Data- (What) VLOS, VAE, LPS
  – Small Data- (Why) DRG, protocols, patient mix
  – Actionable Data- (When) requires a response
Do we really have the ability to make lasting changes?
Thank you