

# Care Bundles

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# A care bundle is .....

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- "A systematic method of measuring and improving clinical care processes based on groups of care elements for particular diagnoses and procedures"

NHS Modernisation Agency

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- ❑ developed in the U.S by Berenholz and Pronovost
  - ❑ to reduce the mortality and morbidity in ICU's in U.S
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## Qualitative Review of Intensive Care Unit Quality Indicators

Sean M. Berenholtz, Todd Dorman, Koni Ngo, and Peter J. Pronovost

- search for evidence of interventions which prevent avoidable mortality and morbidity
  - 3,014 citations identified
  - 66 studies met selection criteria on interventions that were associated with improved patient outcomes
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# 6 outcome measures

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- ICU mortality rate
  - ICU LOS greater than 7 days
  - average ICU LOS
  - average days on mechanical ventilation
  - suboptimal management of pain
  - patient/family satisfaction
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# 6 process measures

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- effective assessment of pain
  - appropriate use of blood transfusions
  - prevention of VAP
  - appropriate sedation
  - appropriate PU disease prophylaxis
  - appropriate DVT prophylaxis
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## 4 access measures

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- rate of delayed admissions
  - rate of delayed discharges
  - cancelled surgical cases
  - emergency department by-pass hours
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# 3 complication measures

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- rate of unplanned ICU readmission
  - rate of catheter-related blood stream infections
  - rate of resistant infections
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The logo for the 100k lives Campaign features a red top bar with the text "100k lives Campaign" in white and yellow. Below this is a black bar with the tagline "SOME IS NOT A NUMBER. SOON IS NOT A TIME." in white. The logo is framed by thin blue vertical lines on the left and right sides.

## 100k *lives* Campaign

SOME IS NOT A NUMBER. SOON IS NOT A TIME.

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- initiative by the Institute for Healthcare Improvement (IHI) in U.S.
  - through the implementation of the six interventions the 100K campaign aims to avoid 100,000 deaths by June 2006, and every year thereafter.
  - Safer Systems – Saving Lives project in Australia
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# 100K Lives Campaign

## Six changes that save lives

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1. Rapid response teams
  2. Reliable care for acute myocardial infarctions
  3. Reliable use of ventilator-associated pneumonia bundles
  4. Reliable use of central venous line bundles
  5. Surgical site infection prophylaxis
  6. Prevention of adverse drug events with reconciliation
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# What is a Bundle?

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- ❑ A set of individual components which when combined make a set of quality indicators for a specific system, procedure or treatment
  - ❑ e.g. ventilator care bundle, central venous line bundle, sepsis bundle
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# Characteristics of a Bundle

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- ❑ collection of practices or processes
  - ❑ with approximate time and space characteristics
  - ❑ best practices based on existing level 1 or 2 research evidence – “standard of care”
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# Characteristics of a Bundle

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- ❑ individual component improves care, but when applied together result in even greater improvement
  - ❑ bundle components are dichotomous: yes/no answers
  - ❑ bundle compliance measured as “all or none”
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# Characteristics of a Bundle

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- ❑ emphasis initially on process rather than outcome
  - ❑ eventual endpoint is outcome improvement
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# Exclusions to Care Bundle

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- interventions, cares or treatments that are contraindicated to the wellbeing of the patient
  - NO OTHER REASON is to be accepted
  - if presence of exclusion for component, consider compliance
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# Component vs. Composite

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- ❑ **COMPONENT: 63.1%** receive first dose of antibiotics within 4 hours of hospital arrival
  - ❑ **COMPONENT: 67.9%** receive an antibiotic choice consistent with current guidelines
  - ❑ **COMPONENT: 81%** have blood cultures collected before treatment
  
  - ❑ **COMPOSITE: 26%** receive all three
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# Outcome vs. Process

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**Outcome** e.g.  
mortality, LOS

- long cycle
- feedback difficult
- important to patients

**Process** e.g.  
bundle compliance

- short cycle
- feedback meaningful
- important to providers

# Guidelines vs. Bundles

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- ❑ Guidelines tend to be long, all-inclusive and confusing
  - ❑ Many potential interventions are supported by some evidence
  - ❑ Guidelines are difficult to translate into action and often are ignored by clinicians
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# Goals of care bundle

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□ To ensure **ALL** patients receive the best care or treatment, based on evidence, 100% of the time

□ **Error of omission vs. Error of commission**

Failure to provide a proven therapy is a medical error

Lancet series, March-April 2004

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# Goals of care bundle

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- ❑ Improve delivery of clinical care to achieve better outcomes  
e.g. prevent avoidable morbidity,  
reduce length of stay
  - ❑ Reduce unwarranted clinical variation
  - ❑ Transparent delivery of best practice
  - ❑ Provide equity of care
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# How can care bundle improve quality?

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- ❑ a systematic method of measuring and improving clinical care processes
  - ❑ based on existing published evidence
  - ❑ also are quality indicators
  - ❑ provide a "forcing function" for teamwork
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# How can care bundle benefit the unit?

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- ❑ is a simple, quick and effective audit tool
  - ❑ gives weight to the importance of adherence to protocols and guidelines
  - ❑ provides evidence to clinical teams about weak areas / deficiencies
  - ❑ facilitates the targeting of education and training more effectively
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# Development of Care Bundle

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- ❑ Need organisational structure :  
Leadership, leadership, leadership  
- managerial and clinical  
e.g. senior leader, clinical champion,  
day to day leader
  - ❑ Common vision and goals  
- local agreement on guidelines,  
measurements
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# Development of Care Bundle

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- ❑ Select a small number of elements of care based on the available evidence (usually 3 - 5)
  - ❑ Use simple methods to measure
    - avoid complexity
  - ❑ Create independent redundancy for key processes
  - ❑ Give timely feedback
  - ❑ Encourage creative discussion
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# Development of Care Bundle

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- ❑ Education and training
    - “All Teach-All Learn”
  - ❑ Set deadlines
  - ❑ Measuring and monitoring compliance
  - ❑ Project sustainability
    - recognition and visibility
    - the best incentives are intrinsic ones
    - celebrate success
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# Culture change

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- Think 'bundles' culture
  - Create culture of quality
  - Culture that supports team work
  - Ensure senior leader involvement
  - Identify clinical champion
  - Culture change takes time
  - Cultural change is incremental
  - Improved performance lags cultural change
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# Definitions of Components

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<b>COMPONENT</b>	<b>DEFINITION</b>
<b>Head of bed</b>	<b>% of patients nursed with the head of bed at least 30 degrees</b>
<b>DVT prophylaxis</b>	<b>% of patients receiving prophylaxis within 24hrs of admission</b>
<b>PU prophylaxis</b>	<b>%of patients receiving PU prophylaxis within 24hrs of admission</b>
<b>Sedation holds</b>	<b>%of patients who have had their sedation held within the last 24hrs</b>

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# How to audit compliance?

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	Yes	No	Local Exclusion
DVT Prophylaxis	√		
GU Prophylaxis	√		
Head Elevation - 30°	√		
Sedation Hold	√		

Bundle compliance **YES**

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# How to audit compliance?

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	Yes	No	Local Exclusion
DVT Prophylaxis	✓		
GU Prophylaxis		✓	
Head Elevation - 30°	✓	✓	✓
Sedation Hold	✓		

Bundle compliance **NO**

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# How to audit compliance?

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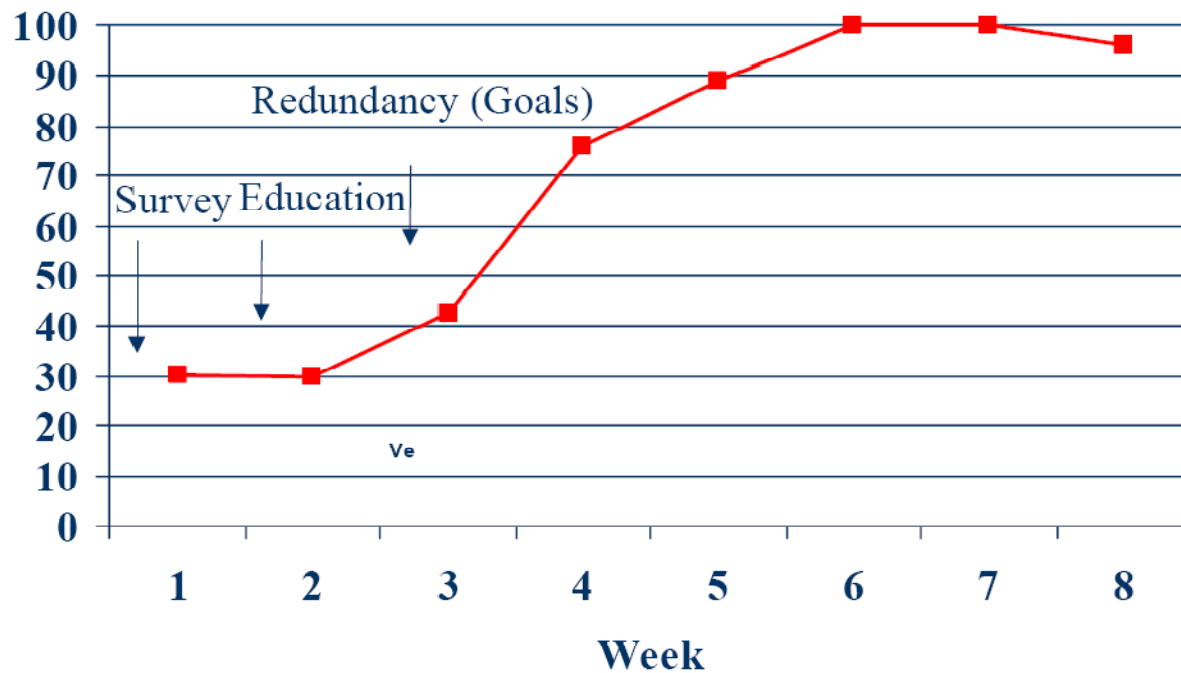
	Yes	No	Local Exclusion
DVT Prophylaxis	√		
GU Prophylaxis	√		
Head Elevation - 30°	√	√	√
Sedation Hold	√		

Bundle compliance **YES**

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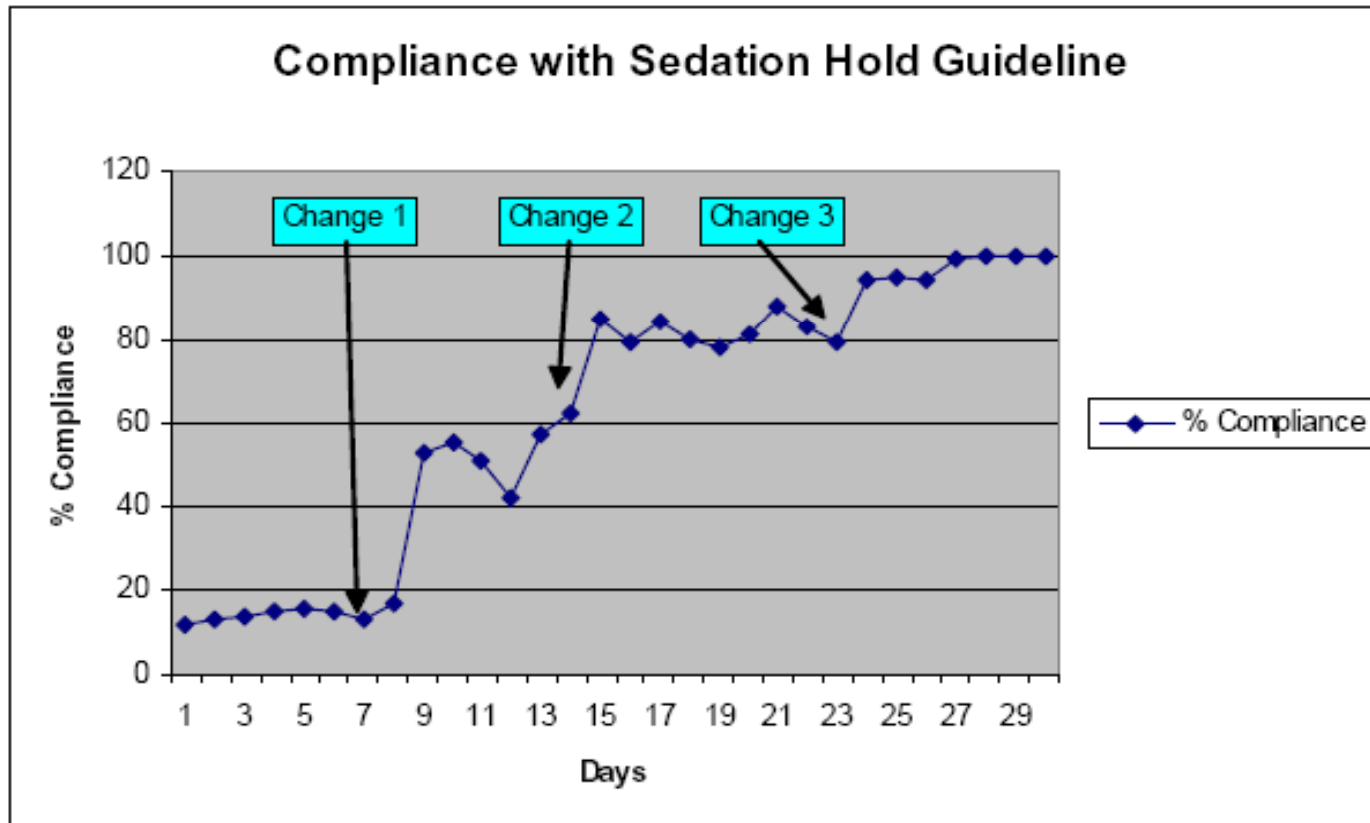
# Displaying Measurement

## Compliance with Ventilator Bundle



# Displaying Measurement

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# Barriers to success

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- ❑ Fear of admitting the problem
  - ❑ Doctors resist “cookbook medicine”
  - ❑ Lack of standardisation
  - ❑ Data collection
    - measurement is impossible
    - does not submit the data
  - ❑ Too many competing demands
    - prioritisation of work and issues
  - ❑ Too little cooperation
  - ❑ Transforming the culture
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# Ingredients

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- Get goals
  - Get bold
  - Get together
  - Get the facts
  - Get to the field
  - Get a clock
  - Get the numbers
  - Get the stories
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