

# Preventing Ventilator-Associated Pneumonia

## The Problem

Ventilator-associated pneumonia is common, lethal, expensive, and preventable. Comprising the most common fatal nosocomial infection in intensive care units worldwide, it is a prime target for improvement efforts. Since it is estimated to occur in 10-20% of patients ventilated for more than a day, to double patients' risk of death, and to cost an extra \$20 - \$40,000 per case, it represents both an important public health and financial target.

## The Approach

At the Beth Israel Deaconess Medical Center, we focused on the measures laid out in the Institute of Healthcare Improvements **Ventilator Bundle**: elevation of the head of the bed, daily assessment of readiness to extubate, daily lightening of sedation, stress ulcer disease prophylaxis, and measures to prevent deep venous thrombosis. In addition, we worked on improving **oral care**, since the literature documents that this may reduce ventilator associated pneumonia by 50% or more.

We incorporated local ICU informal leaders into our improvement campaign. Called "Unit Champions," these nurses and respiratory therapists helped gather performance data and spread change. This group was led by two part-time clinical nurse specialists.

We used two-week feedback cycles to the ICUs, along with unit-level analysis to allow rapid improvements in performance.

## The Team

- Critical Care Nursing
- Respiratory Therapy
- Intensivists

## The Results

Ventilator Bundle compliance improved to 99-100%, from our baseline of approximately 75-80%. Oral care performance improved from a baseline of about 50% to over 90%. Our rate of ventilator-associated pneumonia fell, and we saw simultaneous improvements in ICU throughput.

