The VAP Initiative @ Bellevue Hospital Center

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Medical Director of Critical Care
Bellevue Hospital Center
Great things are not done by impulse but by a series of small things brought together
Bundle Theory

- Evidence based proven strategies done everyday on every patient
- All or nothing
- Treatments bundled together yield a profoundly better effect than any single intervention
- We can get ventilator infections to zero.
- Then we can measure time to infections
- Constantly Fight Fatigue
- Continually Changing the Culture
Ventilator Associated Pneumonia (VAP) Bundle

- Elevation of the Head of the Bed 30-45 degrees
- Daily "Sedation Vacations" and Assessment of Readiness to Extubate
- Peptic Ulcer Disease Prophylaxis
- Deep Venous Thrombosis Prophylaxis
Bellevue Hospital Center

- Team Members
  - David Chong (ICU Director), Mel Dechavez (Nursing), Ron Simon (SICU), Norma Keller (CCU), Laura Evans (MICU), Max Koslow (NICU) Susan Marcione and Keith Krasinski (Infection control) Kelli Hurdle (Medicine), Shamelle Watkins, Lin Lombardi and Eric Manheimer (Administration)

- 40 ICU Beds
  - MICU 12, SICU: 10, CCU 12, NSICU 6

- Average daily census
  - SICU: 11 (107%)
  - MICU:12 (100%)
  - NSICU: 5 (83%)
  - CCU: 11 (83%)
Aim Statement to changes our processes of care

- To achieve Vent Bundle compliance of 100% in all the ICU’s with the use of the Daily Goals Sheet/Daily Plan of Care in all the ICU’s with resulting decrease in infections
- Improve communication between the MD’s and RN’s by using daily goal sheet/daily plan of care
- Improve compliance with hand hygiene in the SICU and MICU as well as the entire ICU floor to 100%
- Measuring what we do and how well we do it
Most Important Changes

- Daily Goals Sheets pilot program in MICU as of 2/2006 and in all the units as of 1/2007
  - (average 90 seconds)
  - Multidisciplinary plan of care pilot program in Pediatrics from 7/07 to 2/08
  - Done in all units and now called the Daily Plan of Care 3/2008
- Weekly audit and education rounds started 2/2006
  - ICU Director and Nursing Director
  - All or nothing
  - Intranet posting of compliance and infection rates
- Hand Hygiene program instituted 3/2006
  - In-service for RN’s and MD’s monthly
  - Self performed weekly audits (unit and unit leadership based)
  - More alcohol dispensers
  - Hand washing tickets for non-compliant individuals
- Development of the ICU SCORECARD as of 7/2006
- HHC Transparency Initiative
  - VAP rates for 2 years in all 11 HHC hospital ICU’s released to the media May 2008
New processes for care

- Daily Goals Sheet/Plan of Care
- Improve communication on rounds
- SW, RT, Nutrition, Palliative Care, and Pharmacy on rounds
- Weekly audits and real-time feedback
- Continuous Education to staff and house staff
- Monthly feedback at ICU Committee Meeting
- Bi-monthly scorecard
- Transparency
  - HHC press releases
  - Intranet and Internet posting of rates
# Daily Goals

Room Number: 

Date: 

---Initial as goals are reviewed-----

<table>
<thead>
<tr>
<th></th>
<th>0700-1500</th>
<th>1500-2300</th>
<th>2300-0700</th>
</tr>
</thead>
<tbody>
<tr>
<td>What needs to be done for the patient to be discharged from the ICU?</td>
<td></td>
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<tr>
<td>What is this patient's greatest safety risk?</td>
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<tr>
<td>Pain Mgt/Sedation</td>
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<tr>
<td>Cardiac/Volume status</td>
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<tr>
<td>Pulmonary/Ventilator (PIP, elevate HOB)</td>
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<tr>
<td>Mobilization</td>
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<tr>
<td>ID, Cultures</td>
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<tr>
<td>Drug levels</td>
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<td>GI/Nutrition</td>
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<tr>
<td>Medication changes (Can any be discontinued?)</td>
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<tr>
<td>Tests/Procedures</td>
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<tr>
<td>Review scheduled labs; morning labs and CXR</td>
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<tr>
<td>Consultations</td>
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<td>Communication with primary service</td>
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<td>Family communication</td>
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<td>Can catheters/tubes be removed?</td>
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<tr>
<td>Is this patient receiving DVT/PUD prophylaxis?</td>
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</table>

Fellow/Attg Initials: 

Rev 01/17/2002
# ICU Interdisciplinary Plan of Care / Daily Goals

**Room Number** ______  
**Preferred Language** ________________  
**Diagnosis** ____________________________  
**Patient / Family Goals:** ____________________________________________________________

<table>
<thead>
<tr>
<th>DATE</th>
<th>Problems to be addressed today</th>
<th>What is the patient's greatest safety risk?</th>
<th>Discharge plan needs</th>
<th>Pain Management/ Sedation</th>
<th>Cardiac/Volume status</th>
<th>Pulmonary/Ventilation</th>
<th>Mobilization (Risk for falls?)</th>
<th>Medication changes (Can any be discontinued?)</th>
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<tr>
<td>DATE</td>
<td>Diet / Nutrition</td>
<td>Consultations today</td>
<td>Tests / Procedures</td>
<td>Nursing Bedside Treatments</td>
<td>Can catheters /tubes be removed?</td>
<td>Is this patient receiving DVT / PUD prophylaxis</td>
<td>Patient/Family Safety Concerns</td>
<td>Patient / Family Education</td>
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</tbody>
</table>
MICU VAP Bundle Compliance
SICU VAP Bundle Compliance

% pts on ventilator rcvd all components bundle

Month

Goal 90.0000  Data
MICU VAP

![Graph showing the number of infections per 1,000 ventilator days for different months. The graph indicates fluctuations in the number of infections with peaks in various months and a comparison between goal and data.](image_url)
SICU VAP
# ICU Scorecard

## Critical Care Balanced Scorecard (All ICUs)

### April 2008

#### Drivers and Indicators

<table>
<thead>
<tr>
<th>Quality / Patient Safety</th>
<th>Target FY '08</th>
<th>FY '08</th>
<th>Previous Month FY '08</th>
<th>YTD FY '08</th>
<th>YTD FY '08 AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. ICU Mortality Rate (All ICUs)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1. ICU Mortality Rate (MICU)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2. ICU Mortality Rate (NICU)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>3. ICU Mortality Rate (SICU)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>4. ICU Mortality Rate (CCU)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
</tr>
</tbody>
</table>

#### Operational Efficiency (Actual=Mar, YTD=Jul-Mar)

<table>
<thead>
<tr>
<th>Average (Mean) LOS:</th>
<th>MICU</th>
<th>NICU</th>
<th>SICU</th>
<th>CCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>3. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>4. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

#### Financial Performance (Actual=Mar, YTD=Jul-Mar)

<table>
<thead>
<tr>
<th>Total Admissions</th>
<th>MICU</th>
<th>NICU</th>
<th>SICU</th>
<th>CCU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
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<tr>
<td>3. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
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#### Average Census:

<table>
<thead>
<tr>
<th>Average (Mar, YTD=Jul-Mar):</th>
<th>MICU</th>
<th>NICU</th>
<th>SICU</th>
<th>CCU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>1. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>3. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

#### Occupancy Rate:

<table>
<thead>
<tr>
<th>Average (Mar, YTD=Jul-Mar):</th>
<th>MICU</th>
<th>NICU</th>
<th>SICU</th>
<th>CCU</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>0. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>1. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>3. ICU Mortality Rate</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>
ICU Scorecard

Average Census: April 2007 - March 2008

Average (Mean) Length of Stay: April 2007 - March 2008

Catheter-Related Blood Stream Infections:
April 2007 - March 2008

ICU Mortality Rates:
April 2007 - March 2008
HHC VAP Aggregate Data

- VAP/1000 vent-days
- Compliance

Graph showing VAP/1000 vent-days and Compliance from Jan-Mar 05 to Jul-Sep 07.
ICUs reporting zero cases of VAP
# Acquiring Infections in the Hospital

Infections contracted by patients on intravenous catheters or pulmonary ventilators in the intensive care units dropped in 2007 at many New York City Health and Hospital Corporation facilities.

<table>
<thead>
<tr>
<th>INTENSIVE CARE UNITS</th>
<th>2006</th>
<th>2007</th>
<th>CHANGE</th>
<th>2006</th>
<th>2007</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellevue medical I.C.U.</td>
<td>1.7</td>
<td>1.2</td>
<td>-0.5</td>
<td>0</td>
<td>0.3</td>
<td>+0.3</td>
</tr>
<tr>
<td>Bellevue surgical I.C.U.</td>
<td>7.1</td>
<td>5.6</td>
<td>-1.5</td>
<td>8.8</td>
<td>4.8</td>
<td>-4.0</td>
</tr>
<tr>
<td>Coney Island</td>
<td>5.3</td>
<td>4.5</td>
<td>-0.8</td>
<td>3.4</td>
<td>1.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Elmhurst</td>
<td>8.0</td>
<td>0.7</td>
<td>-7.3</td>
<td>5.4</td>
<td>1.4</td>
<td>-3.8</td>
</tr>
<tr>
<td>Harlem</td>
<td>1.9</td>
<td>7.9</td>
<td>+6.0</td>
<td>2.6</td>
<td>0.7</td>
<td>-1.9</td>
</tr>
<tr>
<td>Jacobi</td>
<td>7.6</td>
<td>4.5</td>
<td>-3.1</td>
<td>4.2</td>
<td>4.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Kings medical I.C.U.</td>
<td>11.0</td>
<td>0.5</td>
<td>-10.5</td>
<td>2.2</td>
<td>0.3</td>
<td>-1.9</td>
</tr>
<tr>
<td>Kings surgical I.C.U.</td>
<td>8.4</td>
<td>0.4</td>
<td>-8.0</td>
<td>6.5</td>
<td>0.7</td>
<td>-5.8</td>
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<tr>
<td>Lincoln medical I.C.U.</td>
<td>2.5</td>
<td>0</td>
<td>-2.5</td>
<td>1.9</td>
<td>0.5</td>
<td>-1.4</td>
</tr>
<tr>
<td>Lincoln surgical I.C.U.</td>
<td>6.0</td>
<td>2.0</td>
<td>-4.0</td>
<td>0</td>
<td>0.2</td>
<td>+2.6</td>
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<tr>
<td>Metropolitan</td>
<td>5.7</td>
<td>10.8</td>
<td>+5.1</td>
<td>5.7</td>
<td>10.3</td>
<td>+4.6</td>
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<tr>
<td>North Central Bronx</td>
<td>4.3</td>
<td>2.0</td>
<td>-2.3</td>
<td>7.4</td>
<td>1.5</td>
<td>-6.9</td>
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<tr>
<td>Queens</td>
<td>3.7</td>
<td>2.7</td>
<td>-1.0</td>
<td>2.3</td>
<td>2.5</td>
<td>+0.2</td>
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<tr>
<td>Woodhull</td>
<td>3.1</td>
<td>1.4</td>
<td>-1.7</td>
<td>0</td>
<td>0.1</td>
<td>+0.1</td>
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<tr>
<td><strong>HHC Average</strong></td>
<td>5.4</td>
<td>3.4</td>
<td>-2.0</td>
<td>3.7</td>
<td>2.3</td>
<td>-1.4</td>
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</table>

For the purpose of computing rates, one central-line day or ventilator day is defined as one patient on a ventilator or central-line catheter for one day.

*Source: New York City Health and Hospitals Corporation*
SUMMARY

- IT CAN BE DONE!
- IT MUST BE DONE!
  - In 2009 CMS WILL NO LONGER PAY FOR VAP’s
- IF WE CAN DO IT...
- YOU CAN DO IT!
- THANK YOU