Use of a Validated Tool to Improve Compassionate Extubation

Erin Colozzi Hare, MSN, RN-BC, CCRN
Karin Cooney-Newton, MSN, RN, CCRN

Compassionate Extubation

- Performed to alleviate suffering by termination of mechanical ventilation & withdrawal of the breathing or endotracheal tube (ETT) at end of life
  - Withdrawal of life-sustaining interventions
  - To avoid the prolongation of death
  - Decision made by patient &/or patient’s family
  - Process involving multiple members of the interdisciplinary team

“You're going to be there when a lot of people are born & when a lot of people die. Such moments are regarded as sacred and private...What an honor it is to be a nurse.”
- Thom Dick
Background

- No standardized process in the Medical Intensive Care Unit (MICU) for compassionate extubation (CE)
  - Uncertainty about best practice
  - Lack of evidence-based interventions while personalizing care for each patient’s symptoms at end of life (EOL)

Background

- Need for improvement identified via survey of nurses & respiratory therapists
  - Inconsistency
  - Lack of objective tool
  - Lack of communication
  - Increased staff distress regarding patient & family experience
Background

- Unit-based Palliative Committee performed an extensive literature review
- A validated, objective tool was identified to improve a common complication at EOL, respiratory distress in patients
  - Respiratory Distress Observation Scale (RDOS) developed by Dr. Margaret Campbell, PhD, RN
- Interdisciplinary team formed
- Goals developed
- Pilot created

Action Plan

CE Project Timeline

- Pre Survey 2/17-5/17
- Pre Intervention CE Data 12/17-1/18
- Post Intervention CE Data (CE Pilot Live in MICU) 2/18-4/18
- MICU Interdisciplinary Team formed September 2017
- RDOS & CE Education 1/18-2/18
- Post Survey 5/18
Pre-Intervention Data

**Pre-Survey Questions to Respiratory Therapists and MICU Nurses**

*Pre Time Period: 2/22/2017 to 5/6/2017*

<table>
<thead>
<tr>
<th>Response</th>
<th>Vent Wean</th>
<th>Unexpected Distress</th>
<th>Staff Overall Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>11.1%</td>
<td>16.0%</td>
<td>46.8%</td>
</tr>
<tr>
<td>Never/Aim Almost Never</td>
<td>1.1%</td>
<td>16.0%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>40.8%</td>
<td>51.1%</td>
<td>70.2%</td>
</tr>
<tr>
<td>Almost Every Time/Every Time</td>
<td>36.2%</td>
<td>7.4%</td>
<td>51.1%</td>
</tr>
</tbody>
</table>

**Pre-Intervention Data (cont.)**

**Question Key:**

**Vent Wean:** How often is a ventilator wean performed before terminally extubating your patient?

**Unexpected Distress:** After terminal extubation, how often has your patient experienced unexpected distress?

**Staff Overall Satisfaction:** How often do you feel satisfied overall regarding your patient’s terminal wean experience?

---

**Goals**

- Increase utilization of ventilator weaning prior to CE
- Improve patient comfort while decreasing unexpected respiratory distress during CE
- Increase staff satisfaction with CE process
- Effective use of the Respiratory Distress Observation Scale (RDOS)
  - Reduce the RDOS median score for patients
The Christiana Care Way Awards
PDCA Template 2016

Development of CE Pilot

- A process & flow diagram for CE & EOL care was designed, including the Respiratory Distress Observation Scale (RDOS) tool
  - Education was provided on correct use of RDOS in conjunction with the CE flow diagram
    - Email
    - Posters
    - PowerPoint presentation including return demonstration utilizing case studies

RDOS Tool

<table>
<thead>
<tr>
<th>Variable</th>
<th>0 points</th>
<th>1 point</th>
<th>2 points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart rate per minute</td>
<td>&lt;60 beats</td>
<td>60-100 beats</td>
<td>&gt;110 beats</td>
<td></td>
</tr>
<tr>
<td>Respiratory rate per minute</td>
<td>≤10 breaths</td>
<td>15-30 breaths</td>
<td>&gt;30 breaths</td>
<td></td>
</tr>
<tr>
<td>Restlessness: non-purposeful movements</td>
<td>None</td>
<td>Occasional, slight movements</td>
<td>Frequent movements</td>
<td></td>
</tr>
<tr>
<td>Variation of breathing pattern: abdominal movements in inspiration</td>
<td>None</td>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory muscle use: rise in clavicle during inspiration</td>
<td>None</td>
<td>Slight rise</td>
<td>Pronounced rise</td>
<td></td>
</tr>
<tr>
<td>Grunting at end-expiration: gurral sound</td>
<td>None</td>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal flaring: movement of nares</td>
<td>None</td>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look of fear</td>
<td>None</td>
<td>Even eyes open, facial muscles tense, brow furrowed, mouth open, teeth together</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The RDOS is measured prior to extubation, immediately after extubation, and post extubation with medication titrated for an RDOS goal of < 4.
A standardized and evidenced-based process for end-of-life care was facilitated by this compassionate extubation diagram.

**Interdisciplinary Approach**

**Flow Diagram for Compassionate Extubation**

**Checklist for Decision Making**
- Clear diagnosis and prognosis
- Identified surrogate decision maker
- Family meeting
- Decision for removal of life sustaining treatment
  - Describe process
  - Likely outcomes/Disposition
  - Consider hospice
  - Spiritual/Religious/Social Work
  - Adjust code status/goals of care screen
  - GRI of Life

**Interdisciplinary Huddle**
- SBT result
  - Monitoring Considerations
    - CO2
    - Blood pressure
    - Respiratory rate
    - Oxygen saturation
    - Heart rate
    - Consider feeding status
    - Pain
    - Sedation and Pain
    - Additional Medications
      - Sedatives
      - Analgesics
    - Agitation
    - Antipsychotics
    - Antidepressants
    - Expected survival
    - O2 & IV

**Ventilator Wean and Extubation**
- Reduce vent settings in a stepwise manner over a period of 3-5 days to PEEP 5 and 15% PHD
- Use titrate medications for ROSS ≤ 4
- Suction PHD
- Extubate when patient appears comfortable
- May consider extubation when ABG demonstrates expected outcomes and patient/family goals

**Results**

- **Vent Wean**: How often is a ventilator wean performed before terminal extubating your patient?
  - Statistically significant difference between pre & post responses (p=0.00): 36.2% ➔ 83.3%

- **Unexpected Distress**: After terminal extubation, how often has your patient experienced unexpected distress?
  - Improvement from pre to post 7.8% ➔ 4.4%

- **Staff Overall Satisfaction**: How often do you feel satisfied overall regarding your patient’s terminal wean experience?
  - Statistically significant increase between pre & post responses (p=0.03): 70.2% ➔ 83.3%
Results

- Qualitative Feedback:
  - “I like the new protocol.”
  - “…the current RDOS system is very reassuring as a new nurse learning to care for patients who are getting compassionately extubated. I believe that it has helped improve outcomes and make the patients more comfortable.”
  - “The order set will be very beneficial when it gets approved; it will make the process easier.”
  - “The RDOS education was needed and has been helpful. I appreciate having a more objective tool for morphine titration.”

Implementation Systemwide

- New electronic documentation created to replace pilot paper documentation tool
- Modification & creation of comfort care order sets
- Implementation of care management guideline incorporating RDOS for EOL symptom management
- System-wide education for nurses, providers, and respiratory therapists
Questions?

- References available