other study, by Kandil and colleagues, showed a UE decrease by using a standardized tape for ET tube securement when moving patients within a level IV NICU/PICU. This facility emphasized promoting a culture of safety and developed a steering committee that specialized in UE. In over 1 year, the UE rate decreased by 75% (from 1.2 UE/100 intubated days to 0.3 UE/100).

**Nursing implications for practice change**

Assessment, communication, and training are key to reducing UE risk. Patients should be regularly assessed for appropriate sedation to reduce agitation. Nurses can use the Ramsay sedation scale or Richmond Agitation Sedation Scale to assess sedation and the Self-Extubation Risk Assessment Tool (SERAT) to identify patients as high risk for self-extubation. All at-risk patients should be closely monitored.

Open communication with all members of the patient care team, including nurses, the provider, and the respiratory therapist, can help reduce UE risk. For example, if restraints are ordered for a patient, the nurse can speak with the provider about the link between restraints and UE. Nurses also can advocate for including UE risk factor, prevention, and intervention training for all new nurses to the unit and speak with charge nurses about pairing more experienced nurses with patients who have a high SERAT score. Because the frequency of self-extubations increases during shift changes, handoff reports should be performed in the patient’s room or close enough outside the room to observe the patient. (See *Addressing UE risk factors*.)

### Addressing UE risk factors

These recommendations can help nurses address risk factors for unplanned extubation (UE).

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrate sedation protocols.</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Incorporate nurse presence as alternative to restraints.</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Implement quality improvement programs for data tracking and staff education.</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Develop standardized procedures.</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Implement bedside report.</td>
<td>✓</td>
</tr>
<tr>
<td>Offer continuing education.</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Provide two licensed professionals for any procedure with an intubated patient.</td>
<td>✓</td>
</tr>
<tr>
<td>Implement appropriate nurse-to-patient ratio (1:2).</td>
<td>✓</td>
</tr>
<tr>
<td>Integrate regular endotracheal tube suctioning.</td>
<td>✓</td>
</tr>
<tr>
<td>Increase the number of nurses and amount of surveillance during night shift.</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Perform early and frequent screening for delirium in adults.</td>
<td>✓</td>
</tr>
<tr>
<td>Perform daily evaluations to determine readiness for weaning/extubation.</td>
<td>✓ ✓</td>
</tr>
</tbody>
</table>

### Recommendations

- Integrate sedation protocols.
  - Physical restraints
  - Decreased level of sedation
  - Absence of IV sedation
- Incorporate nurse presence as alternative to restraints.
- Implement quality improvement programs for data tracking and staff education.
- Develop standardized procedures.
- Implement bedside report.
- Offer continuing education.
- Provide two licensed professionals for any procedure with an intubated patient.
- Implement appropriate nurse-to-patient ratio (1:2).
- Integrate regular endotracheal tube suctioning.
- Increase the number of nurses and amount of surveillance during night shift.
- Perform early and frequent screening for delirium in adults.
- Perform daily evaluations to determine readiness for weaning/extubation.
- Physical restraints
- Decreased level of sedation
- Absence of IV sedation
- Duration of intubation
- Nurses with <4 years of experience
- Inappropriate nurse-to-patient ratio
- UE event frequency increasing at night
- agitation
- Fluids and secretion accumulation

---

---