About respiratory compromise

In respiratory compromise, there is a high likelihood of decompensation into respiratory failure or death, but continuous monitoring and early intervention might prevent or mitigate decompensation.\(^1\)

The number of respiratory compromise cases is on the rise and can occur anywhere in the hospital.\(^2,3\)

Patients receiving opioids may be at increased risk of experiencing respiratory compromise.\(^4\)

Respiratory compromise is common, costly, and deadly — but preventable:
- **Common** — a leading patient safety issue\(^5\)
- **Costly** — top-five condition leading to increasing hospital costs; fifth-most rapidly increasing hospital inpatient cost in the United States\(^6\)
- **Deadly** — general care floor patients with respiratory compromise are 14.4 times more likely to die\(^7\)
- **Preventable** — in many cases, respiratory arrests are potentially avoidable\(^8\)

About the PRODIGY study

PRODIGY, a global, Medtronic-sponsored, 16-site prospective study, is the largest of its kind and fills significant knowledge gaps in the prevention of opioid-induced respiratory depression (OIRD), a form of respiratory compromise.

Its primary objective was to develop an easy-to-use OIRD Risk Prediction Tool. This tool provides a PRODIGY Risk Score, which serves as a guide to identifying patients who would benefit most from continuous monitoring including capnography and oximetry on the general care floor.

The study found that:

- **46 percent of patients experienced respiratory depression episodes (RDEs).**\(^9\)
- Patients experiencing RDEs show evidence of poorer outcomes.\(^9\)
- Patients with ≥ 1 respiratory depression episode were more likely to experience an adverse event that required action.\(^9\)
- Patients experiencing RDEs also show increased costs and increased lengths of stay (LOS).\(^9\) In patients with ≥ 1 RD episode, mean hospital length of stay was three days longer.\(^9\)
The PRODIGY Risk Prediction Tool can help identify patients at increased risk — and guide the use of continuous monitoring, including capnography and oximetry.

### PRODIGY Risk Prediction Tool

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Scoring Criteria</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Age (years)</td>
<td>Age &lt; 60</td>
<td>= 0 pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age 60–69</td>
<td>= 8 pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age 70–79</td>
<td>= 12 pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age ≥ 80</td>
<td>= 16 pts</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>= 8 pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>= 0 pts</td>
<td></td>
</tr>
<tr>
<td>Previous Opioid Use</td>
<td>Opioid naïve</td>
<td>= 3 pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Previous opioid use</td>
<td>= 0 pts</td>
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</tr>
<tr>
<td>Sleep Disordered Breathing (SDB)</td>
<td>Known SDB or high STOP-BANG score</td>
<td>= 5 pts</td>
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</tr>
<tr>
<td></td>
<td>No SDB or normal STOP-BANG score</td>
<td>= 0 pts</td>
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<tr>
<td>Chronic Heart Failure (CHF)</td>
<td>Coexisting CHF</td>
<td>= 7 pts</td>
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<tr>
<td></td>
<td>No known CHF</td>
<td>= 0 pts</td>
<td></td>
</tr>
</tbody>
</table>

**Total PRODIGY Risk Score**

**PRODIGY Risk Level**

- ☐ Low risk of respiratory depression episodes for less than 8 pts
- ☐ Intermediate risk of respiratory depression episodes for 8–14 pts
- ☐ High risk of respiratory depression episodes for 15 pts or higher

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