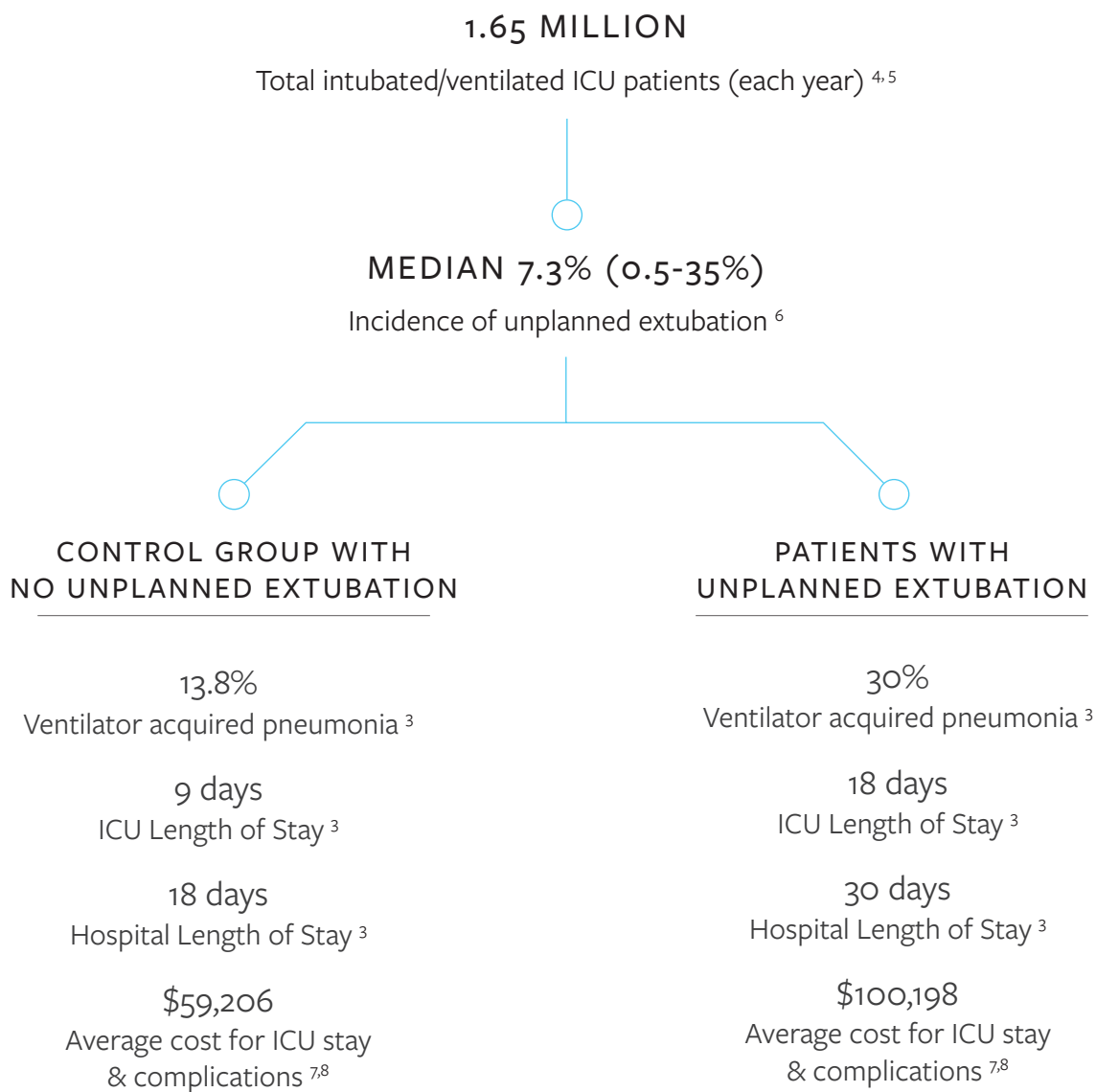


INTRODUCTION Unplanned extubation (UE) is a frequent, costly, and preventable adverse event that is infrequently measured and has serious, sometimes fatal consequences¹. Every year, unplanned extubation impacts more than **121,000 patients**, causes over **36,000 cases of ventilator-associated pneumonia**, leads to more than **33,000 preventable deaths**, and adds more than **\$4.9 billion in wasteful healthcare costs**^{3,6,7,8}. Unplanned extubation is defined as a premature removal of the endotracheal tube by action of the patient (known as self-extubation) or premature removal during nursing care and/or manipulation of the patient (referred to as accidental extubation).² Self-extubation is most common, occurring in 63% of all unplanned extubations.³ This fact sheet provides additional data about unplanned extubation.

INCIDENCE AND COMPLICATIONS IN THE ICU SETTING³⁻⁸



ANNUAL IMPACT

1.65M
intubated ICU patients

121K
unplanned extubation events

36K
additional ICU VAPs

2X
ICU Length of Stay

\$41K
additional cost per unplanned extubation

Average costs are based on all unplanned extubations regardless of whether they required reintubation.

RISK FACTORS

Unplanned extubation can only occur when an endotracheal tube is inadequately secured.⁹ When an endotracheal tube is inadequately secured the risk of UE increases with the following factors:

- Patient restlessness/agitation⁶
- Inadequate sedation^{10,11}
- Use of physical restraints¹¹
- Absence of clear policies and procedures related to weaning¹¹
- Factors related to nursing staffing such as night shift, inexperienced ICU nurses, or unit characteristics that prevent adequate nursing observation⁶

ELEMENTS OF A SUCCESSFUL SOLUTION

The primary cause of unplanned extubation is inadequate securement.⁹ Optimal endotracheal tube stabilizers should at a minimum prevent clinically significant movement (>3.5 cm) that could result in an unplanned extubation. Optimally it should prevent any movement of the endotracheal tube relative to the stabilizer.¹² In addition to improved securement, research has demonstrated successful reduction in UE rates in systems that utilize a multidisciplinary improvement approach that includes these elements:¹³

- Process standardization and compliance (sedation, restraint)
- Staff education on airway care, monitoring, and recognition of UE
- Identification of every UE incidence with careful root cause analysis and improvement. Ongoing tracking of rates
- Continuous sedation of intubated/ventilated patients with daily sedation break for assessment
- Careful and appropriate restraint

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