

The No-Bite V: Cost Analysis of Preventing an Intubation

1. Intubated ICU Patient Length of Stay

NJR Medical extracted data from 4 studies shown below in Table 1. These studies examined the average Ventilator Days for an ICU patient without significant complications.

Table 1. Length of Stay Data- No Complications

Control Group, no Unexpected Extubations (days)	Source Study
Average Vent Days	
5	Bouza, 2007 ¹
7.3	Krivopal, 2003 ²
6	DeLassence, 2002 ³
11	Epstein, 2000 ⁴
7.3	Average Number

2. Daily Cost of Hospitalization

Dasta⁵ and Candrilli⁶ determined the average daily cost of hospitalization as:

- **\$4000 per day**, ventilated in the ICU

These costs represent daily costs on or after day 3 in the ICU; the first two days of an ICU stay (ventilated) are more costly, as shown in **Table 2**.

Table 2: ICU with Ventilation Daily Cost Profile

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
\$10,794	\$4,796	\$3,968	\$3,968	\$3,968	\$3,968

Each additional day that a patient remains on mechanical ventilation costs the hospital approximately \$4000. Other sources suggest that the cost may be as high as \$5000 per day.⁶

3. Total Cost of Intubated ICU Patient

Combining the data from Table 1 and Table 2, the total average cost of stay for an intubated patient without complications is shown in **Table 3**.

Table 3: Average Cost per Stay without Complications

Setting	Cost per day	Average Days	Total Cost
ICU, Intubated	\$4,000	7.3	\$29,200

References:

1. Bouza, C., Garcia, E., Diaz, M., Segovia, E., & Rodriguez, I. (2007). Unplanned extubation in orally intubated medical patients in the ICU: a prospective cohort study. *Heart & Lung*, 36(4), 270-276.
2. Krivopal M., Shlobin O., & Schwartzstein R. (2003). Utility of daily routine portable chest radiographs in mechanically ventilated patients in the medical ICU. *Chest*, 123:1607-1614
3. De Lassence A., Alberti C., Azoulay E., et al. (2002). Impact of unplanned extubation and reintubation after weaning on nosocomial pneumonia risk in the intensive care unit. *Anesthesiology*, 97:148-156.
4. Epstein S, Nevins M, & Chung J. (2000). *American Journal of Respiratory and Critical Care Medicine*, 161:1912-1916.
5. Dasta J.F., McLaughlin T.P., Mody S.H., & Piech C.T. (2005). Daily cost of an intensive care unit day: the contribution of mechanical ventilation. *Critical Care Medicine*, Jun; 33(6):1266-1271.
6. Candrilli S. & Mauskopf J. (2006, May). How Much Does a Hospital Day Cost? Poster at 11th Annual International Meeting of the International Society for Pharmacoeconomics and Outcomes Research, Philadelphia, PA.