

Sugammadex Vial-splitting: A Program Evaluation to Improve Patient Outcomes

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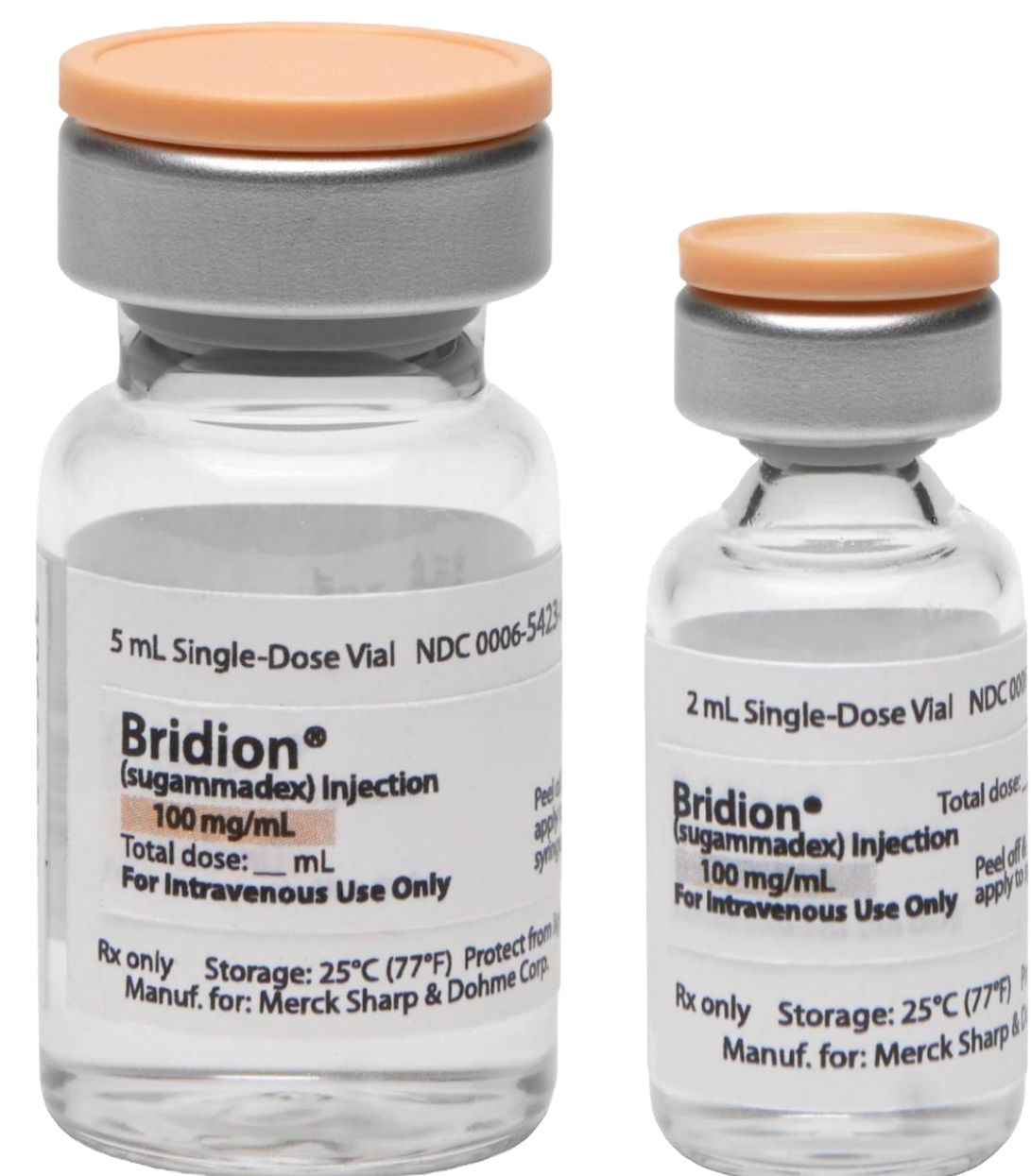
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Background

- Neuromuscular blockade (NMB) is essential for many surgical procedures, and NMB reversing drugs allow restoration of motor function postoperatively.
- Sugammadex is the only drug that guarantees complete NMB reversal regardless of paralysis depth.**
 - Despite being the superior drug, its high cost inhibits widespread use.

Sugammadex **vial-splitting** efficiently boosts drug availability, enhancing patient outcomes and saving hospitals money.

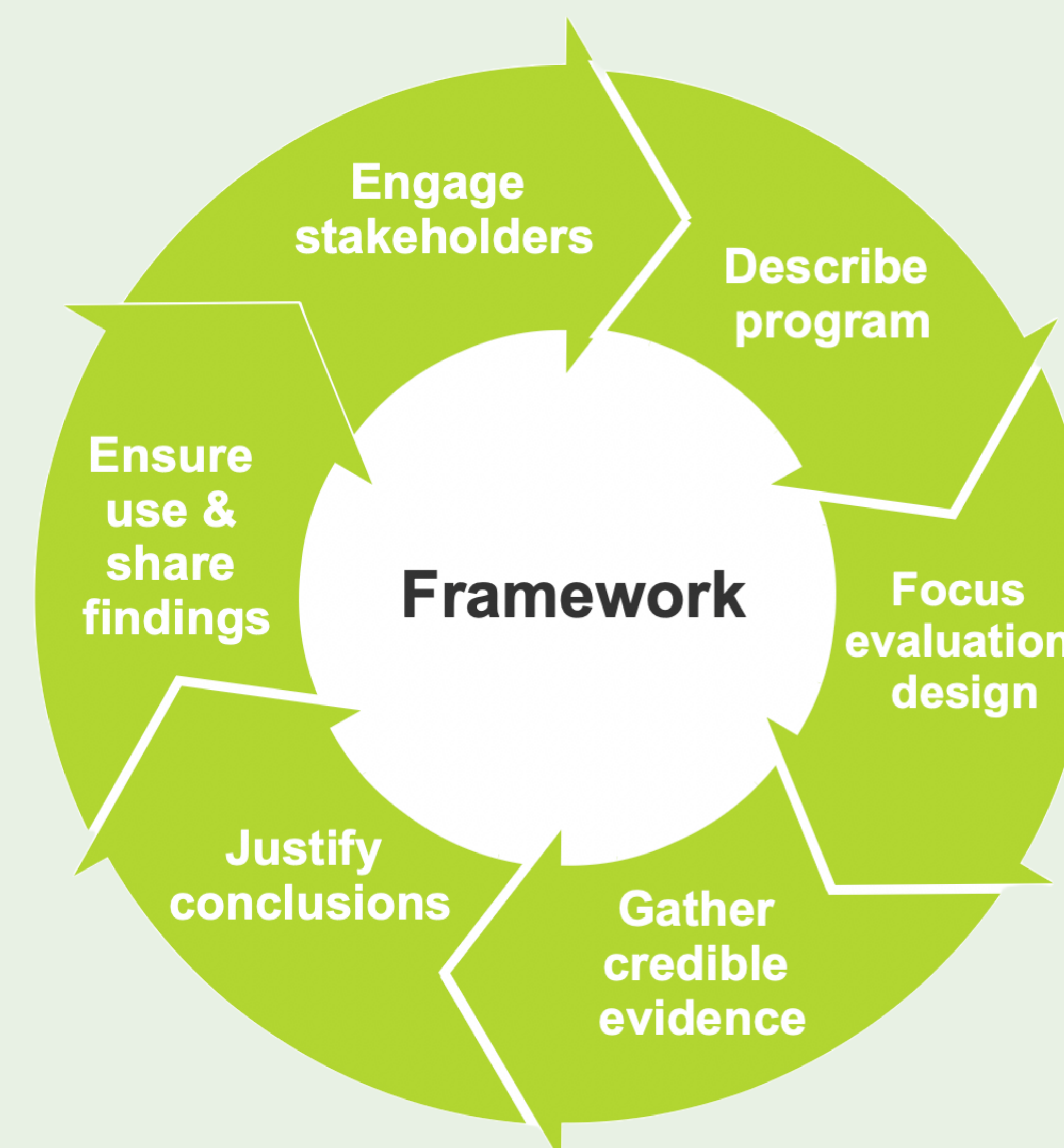
Sugammadex	Neostigmine
<ul style="list-style-type: none">Faster, more reliable reversal of paralysis12% lower rate of pulmonary complications40% less risk of harmful events compared to neostigmine	<ul style="list-style-type: none">16.8 times slower reversal of paralysisAssociated with adverse effects such as bradycardia, nausea, vomiting, and residual paralysis



A pharmaceutical robot splits 500 mg sugammadex vials into 200 mg syringes, extending shelf-life of the aliquots



Huntsville Hospital reports that the sugammadex vial-splitting program **saved over \$500,000** during the 2024 fiscal year.



Methods

Perform a **program evaluation** of Huntsville Hospital's sugammadex vial-splitting program.

Findings presented to anesthesia providers, followed by surveys for each department.

Inclusion criteria:

- ✓ Laparoscopic cholecystectomies
- ✓ ASA I-III
- ✓ 19-65 years old
- ✓ NMB reversal agent administered

Exclusion criteria:

- ✓ ASA status IV – VI
- ✓ Surgery type: trauma and/or emergency

Results

Quantitative:

- A complete change in sugammadex use – from 0% to 91% between pre- and post-intervention groups
- No significant changes were found with “procedure end to out-of-room times,” “extubation to PACU times,” and “PACU length of stay”
- The total dose of rocuronium was increased in the post-vial-splitting group.

Qualitative:

- 44% of present staff completed a post-dissemination survey, with 90% reporting they can freely give sugammadex without pushback.
- 84% report that out-of-room times have decreased despite statistical data suggesting otherwise.

Implications & Sustainability

Overall Goal:



What are the potential impacts?

- Increased sugammadex use and **improved patient outcomes**
- Decreased costs to hospitals and patients
- Financial investment back into health system**

How is it sustainable?

- Shorter OR and PACU stays, as well as decreased postoperative complications, leads to increased hospital savings
- Continued research to adapt program to other medications