

**BACKGROUND**

- Human Rabies Immune Globulin (HRIG) is indicated for post-exposure prophylaxis in individuals exposed to a potentially rabid animal.
- Historically, HRIG conservation strategies were not recommended; however, dose rounding protocols have been reported in the adult population, with more conservative approaches reported in children.
- The St. Louis Children’s Hospital (SLCH) Emergency Department (ED) implemented a dose rounding protocol for HRIG in the Electronic Medical Record (EMR) at the end of August 2024.

**OBJECTIVES**

The primary objective was to compare the cost of HRIG net waste pre- and post- implementation. Secondary objectives included assessing dispensing compliance with the dose rounding protocol and describing patient’s clinical course pre- and post-implementation.

**METHODS**

The Institutional Review Board at Washington University in St. Louis and Southern Illinois University Edwardsville approved this retrospective study.

- Retrospective chart review of all adult and pediatric patients who received HRIG in the SLCH ED between August 27, 2023, and August 28, 2025.
- Patient demographics were collected during the ED encounter that HRIG was administered.
- Animal exposure and timeframe prior to HRIG administration, vaccination completion rates, and confirmed rabies cases were collected to describe patient clinical courses pre- and post-implementation.
- Net HRIG mL waste was compared before and after the cost savings initiative. Dispensing compliance with the dose rounding strategy was assessed post-implementation. The dose rounding protocol implemented in the EMR is provided in Table 1.

**Table 1. SLCH HRIG Dose Rounding Protocol\***

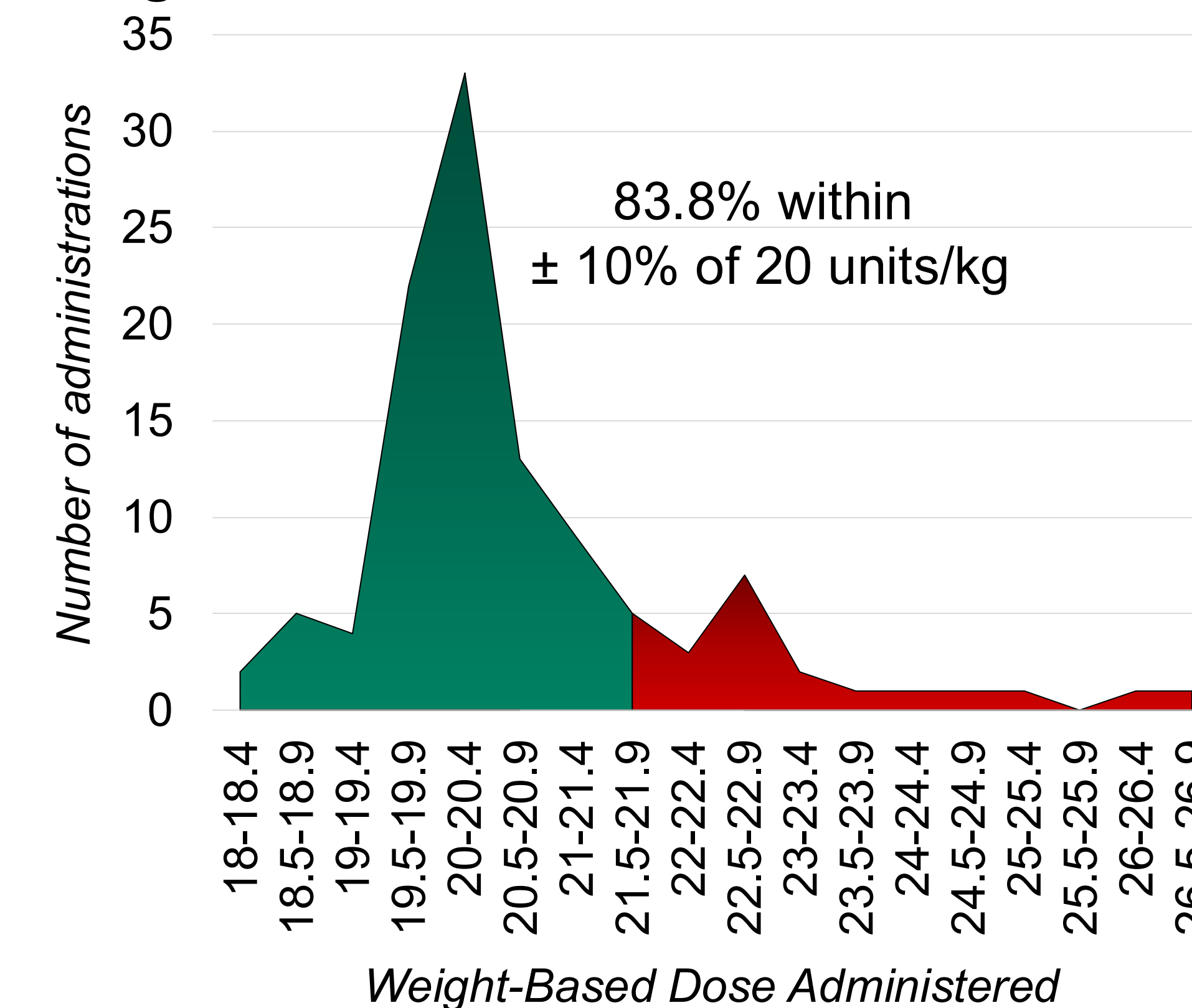
Calculated Dose	Rounded Dose	Calculated Dose	Rounded Dose
≤500 units	20 units/kg	2501-2800 units	2700 units
501-666 units	600 units	2801-3100 units	3000 units
667-1000 units	900 units	3101-3400 units	3300 units
1001-1300 units	1200 units	3401-3700 units	3600 units
1301-1600 units	1500 units	3701-4000 units	3900 units
1601-1900 units	1800 units	4001-4300units	4200 units
1901-2200 units	2100 units	4301-4600 units	4500 units
2201-2500 units	2400 units	≥ 4601 units	Manually round to nearest 300 units

\*300 units/mL and 1500 units/5 mL are on formulary at SLCH

**Table 2. Patient Demographics**

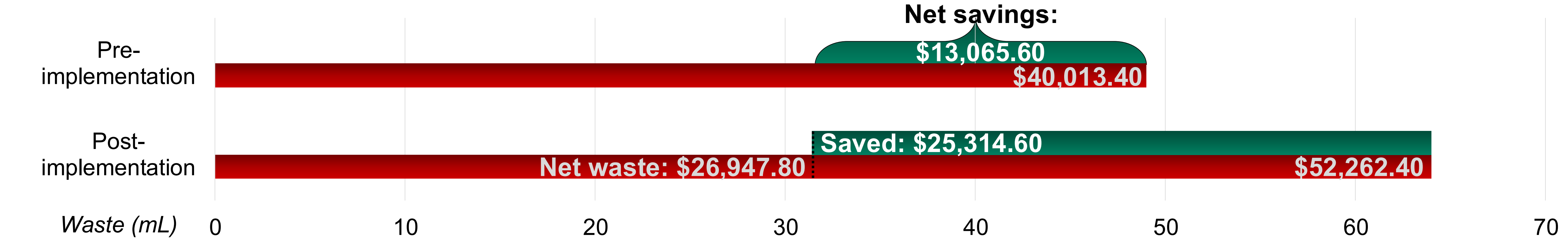
Characteristic	N = 217
Median age, years (range)	8 (0.17-55)
Sex, n (%)	
Male	122 (56.2)
Female	95 (43.7)
Race, n (%)	
White	145 (66.8)
Black	53 (24.4)
Asian	6 (2.8)
Other	2 (0.9)
Multiple	6 (2.8)
Unknown	5 (2.3)
Ethnicity, n (%)	
Non-Hispanic	205 (94.5)
Hispanic	5 (2.3)
Unknown	7 (3.2)
Median weight, kg (range)	32.7 (4.9-129.6)

**Figure 1. Post-Implementation HRIG Weight-Based Dose Administered**

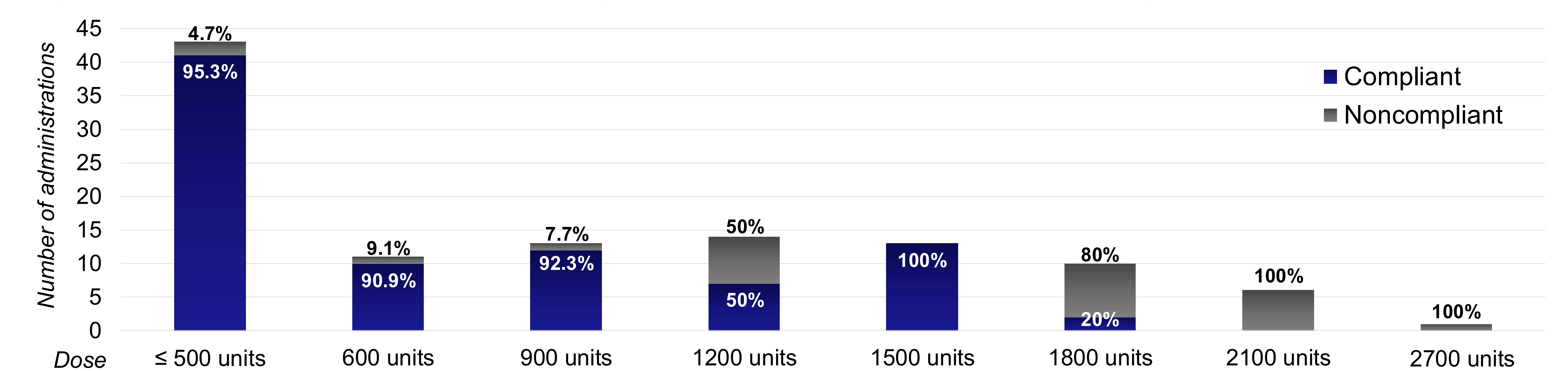


**RESULTS**

**Figure 2. HRIG Waste Cost Analysis\* Pre- versus Post-Implementation**



**Figure 3. Post-Implementation Dispensing Compliance with HRIG Dose Rounding Protocol**



**Table 3. Patient Clinical Course Pre- and Post-Implementation**

	Pre-implementation (n=106)	Post-implementation (n=111)
Median HRIG dose, unit/kg (range)	20 (16.1-21.8)	20.1 (18.1-26.9)
Type of exposure, n (%)		
Bat exposure	60 (56.7)	76 (68.5)
Dog bite and/or scratch	38 (35.8)	25 (22.5)
Cat bite and/or scratch	4 (3.8)	3 (2.7)
Other	3 (2.8)	6 (5.4)
Unknown	1 (0.9)	1 (0.9)
Median time between animal exposure and HRIG administration, days (range)	0 (0-14)	0 (0-20)
Completed 4-vaccine rabies series, n (%)	63 (59.4)	75 (67.6)
Confirmed rabies cases reported to the Missouri Department of Health, n (%)	0	0

**CONCLUSIONS**

- ❖ HRIG dose rounding protocols have potential cost reductions in the pediatric ED. Incorporating mixed-vial dispensing in the EMR may optimize cost savings by ensuring that the HRIG product dispensed aligns with the dose rounding protocol.
- ❖ Post-implementation, the majority of patients received HRIG doses that were within 10% of the recommended 20 units/kg. There were no cases of rabies in either timeframe; rounding HRIG to the nearest vial may have similar efficacy and decrease overall medication waste in the pediatric ED setting.

\*Rabies Immune Globulin (Human). Lexi-Drugs. UpToDate Lexidrug. UpToDate Inc. <https://online.lexi.com>.