Simulation Training in Nurse Anesthesia Programs

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Project Aims

- Assess how simulation is utilized in CRNA programs nationwide to identify variability and trends.
- Evaluate gaps in simulation training and propose areas for growth to enhance student education.
- Provide insights for students, faculty, residency preceptors, and prospective students to improve training transparency and preparedness.
- Examine correlations between simulation practices and variables such as program size, resources, geographic location, and equipment use.

Background

- Simulation is a key component of CRNA education, providing hands-on clinical training in a controlled setting.
- There is significant variation in how CRNA programs implement and measure simulation education outcomes.
- The Council on Accreditation (COA) acknowledges the value of simulation but does not require standardized training.
- Financial barriers limit access to advanced simulation tools, with high-fidelity equipment costing up to $250,000.
- Some programs have fewer resources, leading to disparities in equipment, faculty involvement, and training quality.
- Standardized patients, task trainers, and manikins are used to varying degrees across programs.

Methods

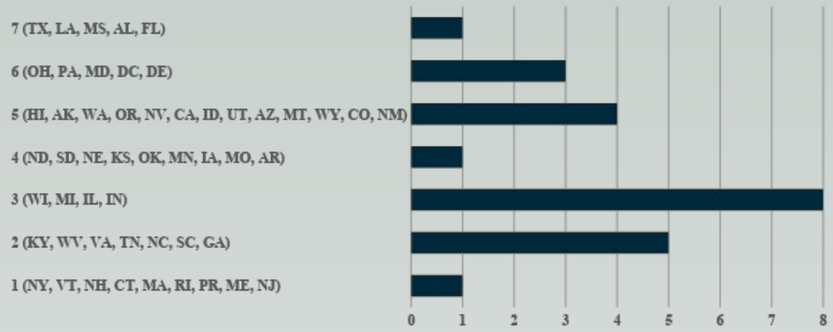
- IRB Exempt status obtained
- Survey
  - All program directors of CRNA programs across the United States and Puerto Rico invited via email
  - Survey questions included program characteristics (size, accreditation status), simulation resources (technology, manikins), hours dedicated to training, and skills practiced.
- Data Collection
  - Surveys were distributed via email, with a reminder sent two weeks before the four-week collection period ended.
  - Responses based on regions to maintain anonymity.
- Analytical Approach
  - Data analyzed using descriptive statistics (percentages, means, ranges).
  - Quantity of simulation resources evaluated based on program size, faculty numbers, and hands-on trainers.

Results

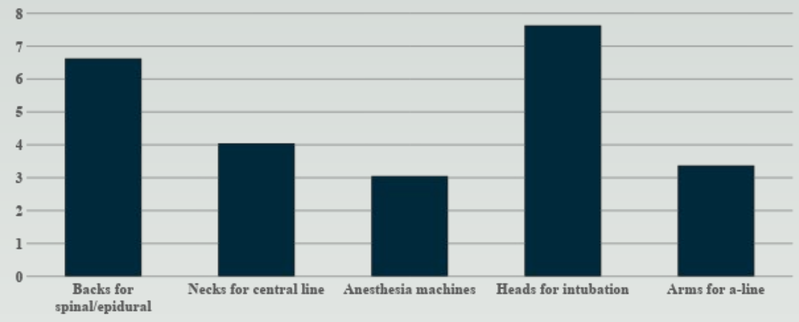
Frequency of Simulation

	# of Program Responses	Range	Sample Mean
Number of Students in Each Cohort	23	14-70	30.73
Frontloaded Program* (N = 12) Final Sim checkout/ OSCE prior to clinical residency	10		
Simulation days **prior to** clinical residency (#)	10	3-50	15.10
Simulation days **after** clinical residency has begun	10	0-24	8
Integrated Program (N=11)			
Simulation days **prior to** clinical residency (#)	9	1-30	10.33
Simulation days **after** clinical residency has begun (#)	9	2-30	11

Regions of Respondents



Average Number of Task Trainers per Program



Findings

- A total of 24 responses were collected (17.6% response rate), with 23 usable surveys.
- Programs with the largest average cohort size were in Region 7 (70 students), Region 2 (60 students), and Region 3 (50 students).
- 32% of surveyed programs do not use standardized patients (SPs), limiting student exposure to anesthesia assessments in controlled settings.
- Use of an OSCE prior to clinical training is not widely used (43%).
- Only 5% of surveyed programs reported having fully certified simulation instructors, while 63% had partial certification.
- 58% of programs reported having dedicated simulation tech support.
- Intubation heads were the most available task trainer, with an average of 7.63 per program
- Functioning anesthesia machines were the least available, averaging 3 per program.
- Manikins were used primarily for immersive scenarios (95%), check-offs/testing (74%), and teaching/training (65%).
- One program (70 students) having only six intubation heads, while another (24 students) had 20.

Discussion

- National benchmarks and standardized patients should be implemented to ensure consistent assessment and enhance training in CRNA programs.
- Equitable access to simulation resources is needed, with cost-effective solutions like shared resource agreements explored.
- Further research and collaboration among programs can improve training quality and advance simulation education.
- Findings can guide organizations like the COA in developing standardized simulation guidelines.
- CRNA programs can use this study to evaluate and refine their simulation resources, faculty involvement, and overall training structure.

References