Empowering Educators: Training Teachers to Navigate Chronic Medical Conditions and Emergencies in the Classroom

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Acknowledgements

- I would like to express my gratitude to Dr. Vejnovich and the faculty of Nebraska Methodist College for their guidance and encouragement throughout this project. I extend sincere thanks to the administration, educators, and support staff of the participating rural school district, whose engagement were essential to the success of this initiative. Finally, I am deeply thankful to my family and friends for their unwavering support, patience, and motivation throughout my doctoral journey.

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Problem

- Rural educators are frequently first responders to student health emergencies but often lack formal hands-on medical training.
- Chronic conditions like asthma, diabetes, seizures, and severe allergies are increasingly common in schools and can lead to serious classroom emergencies.
- Limited access to full-time school nurses in rural areas places the burden of care on untrained staff.
- Teachers report low confidence in managing medical crises, leading to delayed or inappropriate responses.
- Gaps in emergency preparedness increase student health risks and create inequitable learning environments

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PURPOSE

- To increase educator confidence and knowledge in managing student medical emergencies.
- To implement a hands-on, nurse-led training intervention tailored to chronic conditions and acute emergencies.
- To assess the effectiveness of training using pre-, post-, and follow-up survey data.
- To address emergency preparedness gaps in rural school with no full-time nurse.
- To promote student safety and equity through improved classroom response.

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Available Knowledge

- Educator Confidence Gaps:
  - Teachers report lacking training and confidence to manage student health needs (Hill & Hollis, 2012) (Elizalde et al., 2024).
- Lack of Access to School Nurses:
  - Many rural schools have no full-time nurse or share one across districts (Lineberry et al., 2017) (Edwards et al., 2014).
- Barriers to Preparedness:
  - Budget cuts, low nurse wages, poor understanding of nursing roles (Lineberry et al., 2017 & (Willgerodt & Griffith, 2024).
- Impact on Student Outcomes:
  - Inadequate school health support leads to increased absenteeism and risk (Edwards et al., 2014) (Selekman, 2017).
- Hands on Training Improves Confidence:
  - Simulation-based and nurse-led education shown to improve preparedness (Elizalde et al., 2024) (Zonta et al., 2019).

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Rationale

- Guided by the National School Nursing Framework
  - Framework for the 21st century school nursing practice (NASN, 2024) supported project design and implementation.
- Centers on student-centered, evidence-based care
  - Places student at the core, surrounded by family, educators, and the school community.
- Supports training in rural schools
  - Framework aligned with project goals to equip PreK-12 staff with confidence and skills in the absence of a school nurse.
- Promotes collaboration and communication
  - Encourages interdisciplinary planning with school boards, teachers, and parents for sustainable change.
- Framework enables policy and practice development
  - Used to develop training priorities and build future school nurse guidelines.

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Methods

Context	Intervention	Study of Intervention
• Setting: Rural PreK-12 public school in Midwest • 323 students; 43% economically disadvantaged • No full-time nurse, closest medical facility is 18 miles away • Population: All 36 teachers and support staff participated • School buildings include preschool and K-12 facilities. • Emergency infrastructure: Volunteer EMS with limited daytime availability.	• Training delivery: 4-hour in-service held during spring semester • Covered topics: Asthma, diabetes, seizures, anaphylaxis, bleeding • Training Components: Lecture and Visual aids • Demonstration of medical tools (EpiPen, inhalers, tourniquets, glucagon) • Hands-on simulation using expired medical supplies and practice supplies • Teach-back demonstration by participants	• Design: Repeated-measures design: Pre, Post, 3-week follow-up • Tools Used: 12-item confidence scale (Zonta et al., 2019), 19-item knowledge quiz. • Delivery: Surveys via QR code using SurveyMonkey • 3-week follow-up sent by superintendent with reminders • Analysis: Descriptive Stats, paired t-tests, repeated-measures ANOVA • PINS used to match participant responses anonymously.

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Data Analysis

Measures

Confidence Assessment:

- 12-item Visual Analog Scale (VAS) from Zonta et al. (2019).
- 4-point Likert Scale (1=not confident to 4 = very confident)

Knowledge Assessment:

- 19-item multiple-choice quiz.
- Developed by the project investigator.
- Aligned with each confidence item.

Demographics:

- One question on years of experience.

Data Analysis

Response Matching:

- Participants created a unique 4-digit PIN for response tracking

Statistical Methods:

- Descriptive statistics for means and standard deviations.
- Paired t-tests to assess pre-, and post-intervention changes.
- Repeated-measures ANOVA to evaluate trends over three time points.
- Analysis completed using Microsoft Excel

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Results

- Participants:
  - 36 staff completed pre- and post-training surveys
  - 9 staff completed 3-week follow-up survey
- Confidence Scores:
  - Increased from 29.11 (SD = 4.83) to 39.11 (SD = 4.40).
  - Sustained at 3-week follow-up. 39.22 (SD = 5.74)
  - P < .001 (statistically significant improvement
- Knowledge Scores:
  - Increased from 12.00 (SD = 3.97) to 15.56 (SD = 2.40).
  - Sustained at follow-up. 16.11 (SD = 1.76)
  - P = .035 (statistically significant)
- Repeated Measures ANOVA
  - Confidence F (2, 21) = 7.66, p = .003
  - Knowledge: F (2, 21) = 6.03, p = .009

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Discussion

- Training improved educator confidence and knowledge
- Hands-on simulation supports adult learning
  - Practical, engaging, and skill-focused.
- Results sustained at 3-week follow-up
- Findings align with prior research
  - Zonta et al, 2019 and Elizalde et al., 2024
- Low-cost, scalable model for rural schools

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Conclusions

- Educators need emergency training to protect student.
- Hands-on in-service improves knowledge, skills, and confidence.
- Sustained benefits support long-term preparedness.
- All schools, especially rural, should have annual training plans.
- Policy change is needed to embed emergency readiness into teacher certification and school accountability standards.

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