

Background

Background We found inconsistencies and room for error in communication in the care of pediatric patients in diabetic ketoacidosis (DKA). This intrigued us to look into other hospitals' practices and into the evidence behind these practices.

Purpose The purpose of this project was to examine the effectiveness in a DKA protocol and, based off that evidence, to begin the process of enacting a DKA protocol on INOVA's Pediatric Intensive Care Unit (PICU).

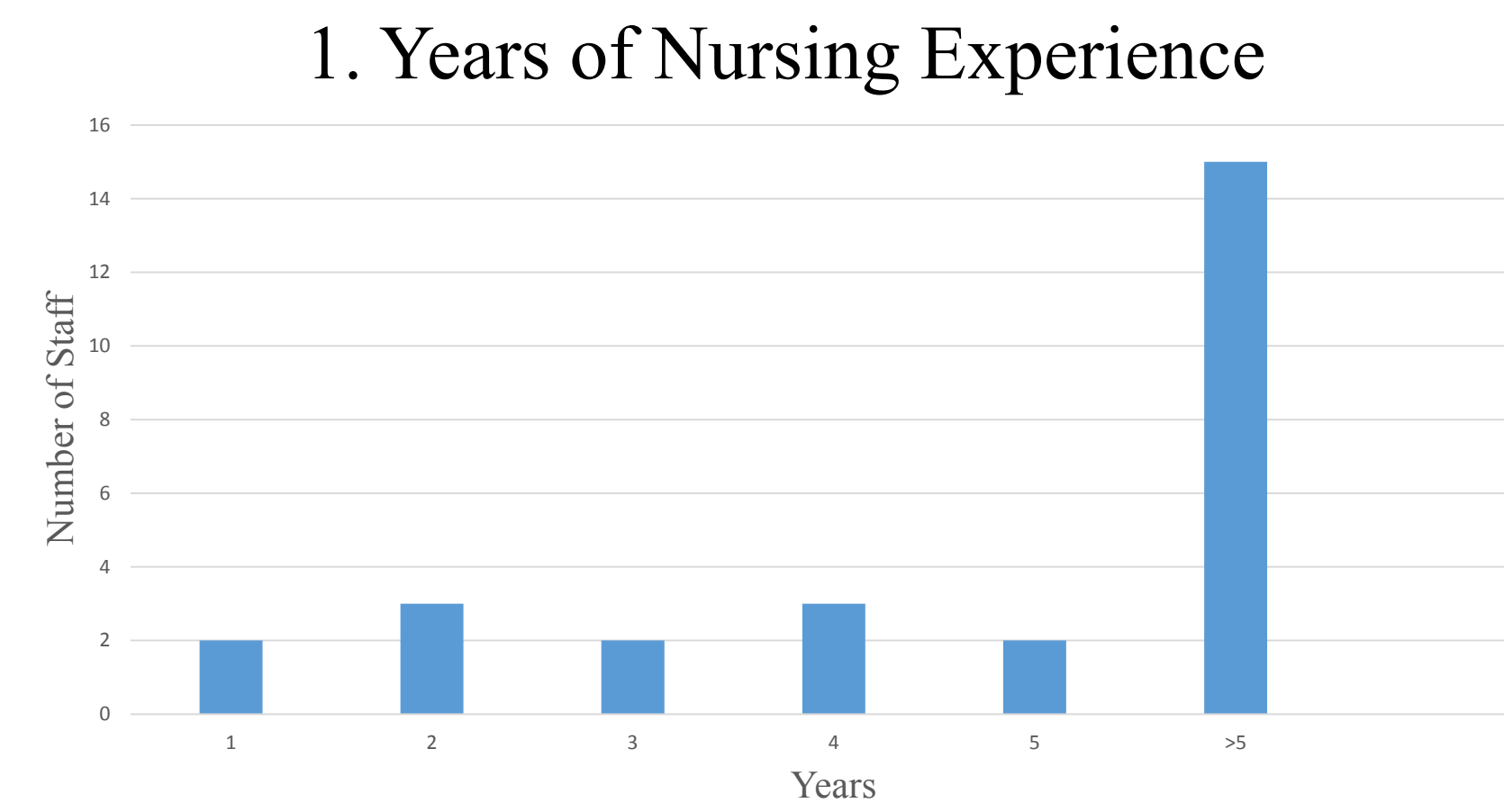
Methods

We informally surveyed nurses on our unit to get a sense of what issues are important to them, especially pertaining to safety. A common concern was lack of a consistent DKA protocol on the PICU, so we formalized our survey process to understand the matter further. We also gathered information from Safety Always incidents filed over the past two years, which indicated issues with our current approach that led to delays in patient care.

Thirteen articles were reviewed and appraised. The overwhelming consensus in these articles pointed to the efficacy of a protocol.

- Koves IH, Leu MG, Spencer S, et al, found that a DKA protocol in a PICU significantly decreased length of stay, cerebral edema risk, risk of hypokalemia incidence, and lag time of insulin initiation by almost half pre vs post protocol
- We reached out to contacts at hospitals around the country to learn about their pediatric DKA management processes and were able to collect six protocols.
- Our group evaluated each protocol.
- We presented our findings at the monthly PICU Collaborative Meeting, attended by our unit medical director, attending doctors, nursing management, and several other staff members, with the goal of achieving buy-in from the physician team to move ahead with creation and implementation of a protocol.

Unit Survey Results



We received responses from 27 PICU nurses.

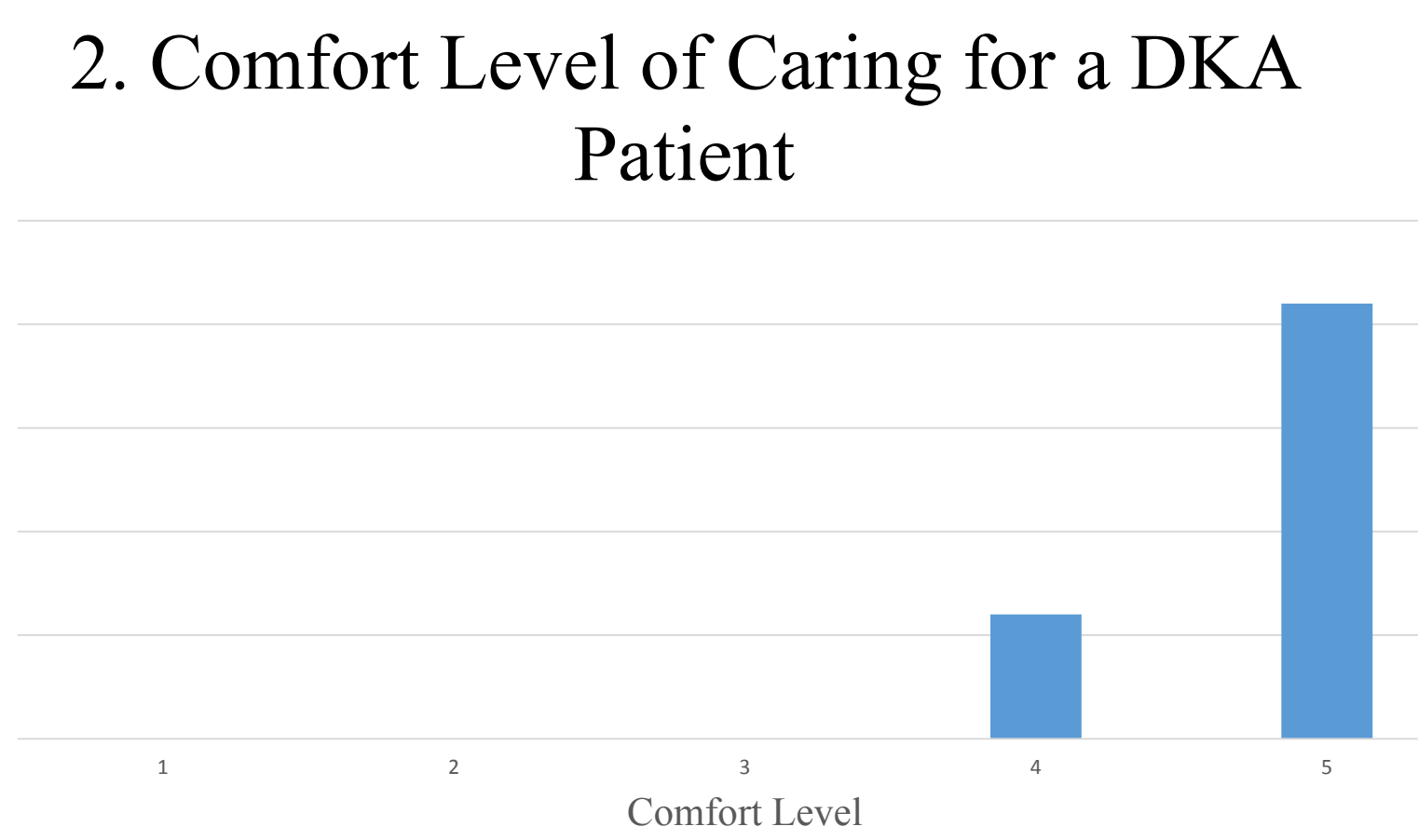
Scalable Questions

1. How many years of nursing experience do you have?
2. On a scale from 1 (least comfortable) to 5 (most comfortable), how comfortable do you feel managing a patient with DKA?
3. On a scale from 1 (very inconsistent) to 5 (very consistent), how consistent do you feel our current DKA approach is?

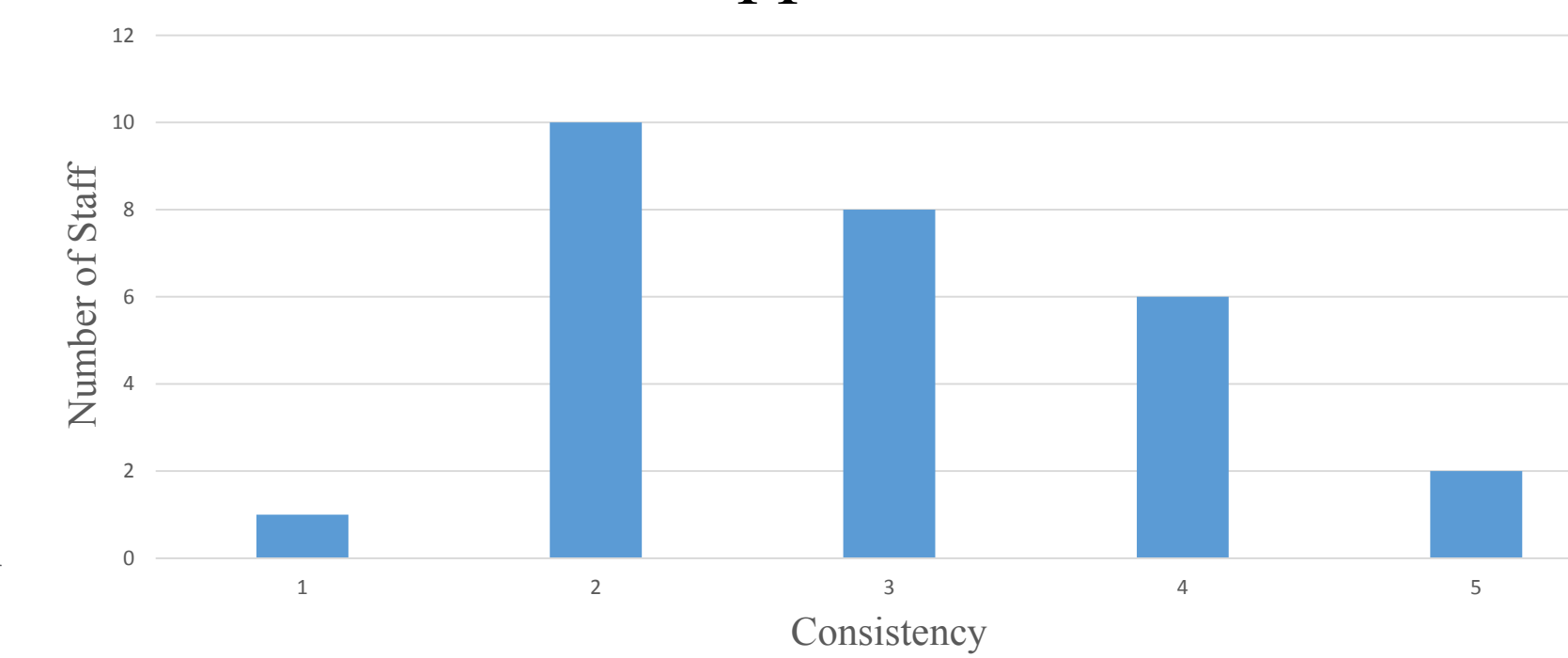
Open-ended Comment Questions

4. What aspects do you think work best with our current DKA approach?
5. How do you think our current DKA approach could be improved?

4. Aspects that Work Best



3. Consistency in DKA Current Approach

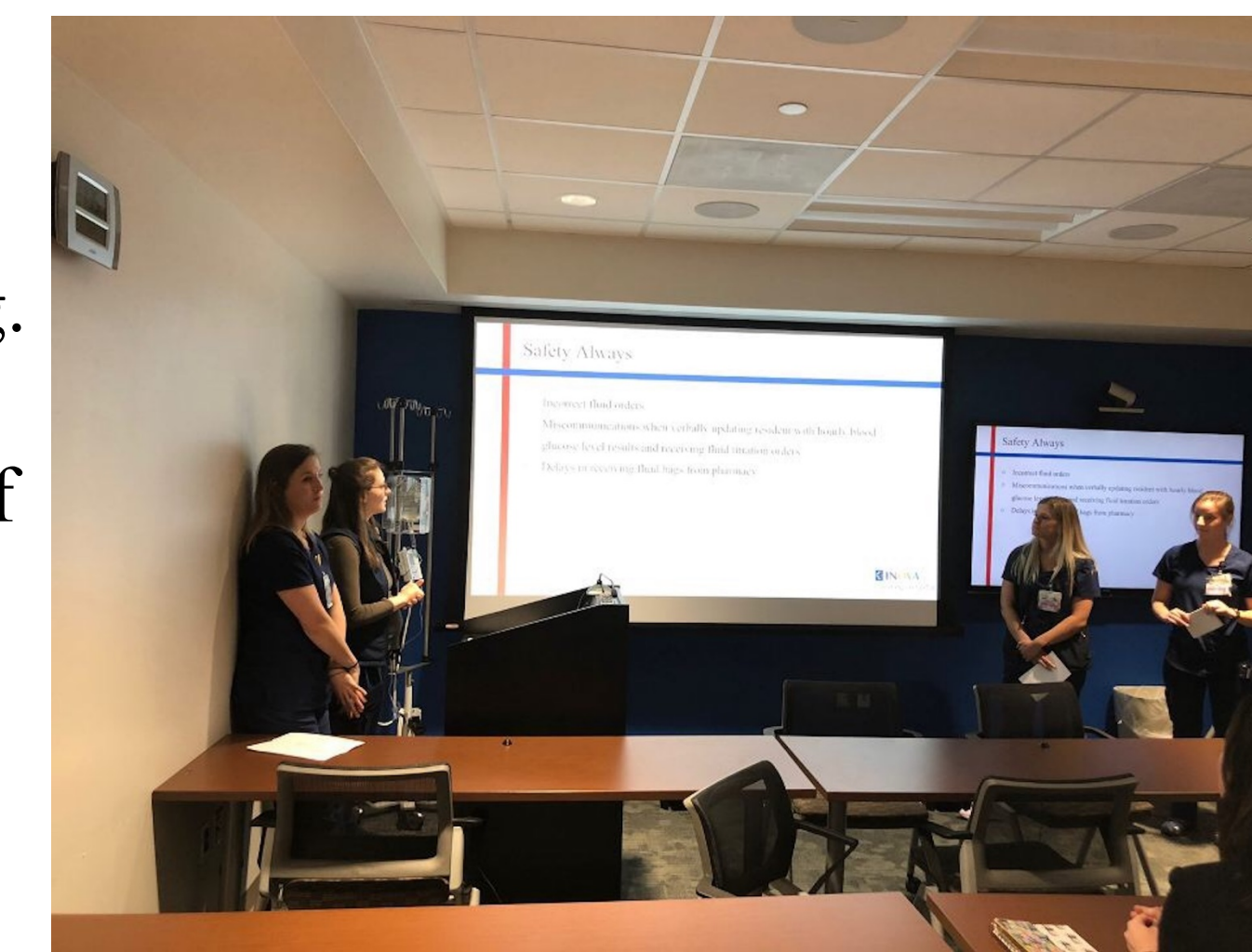
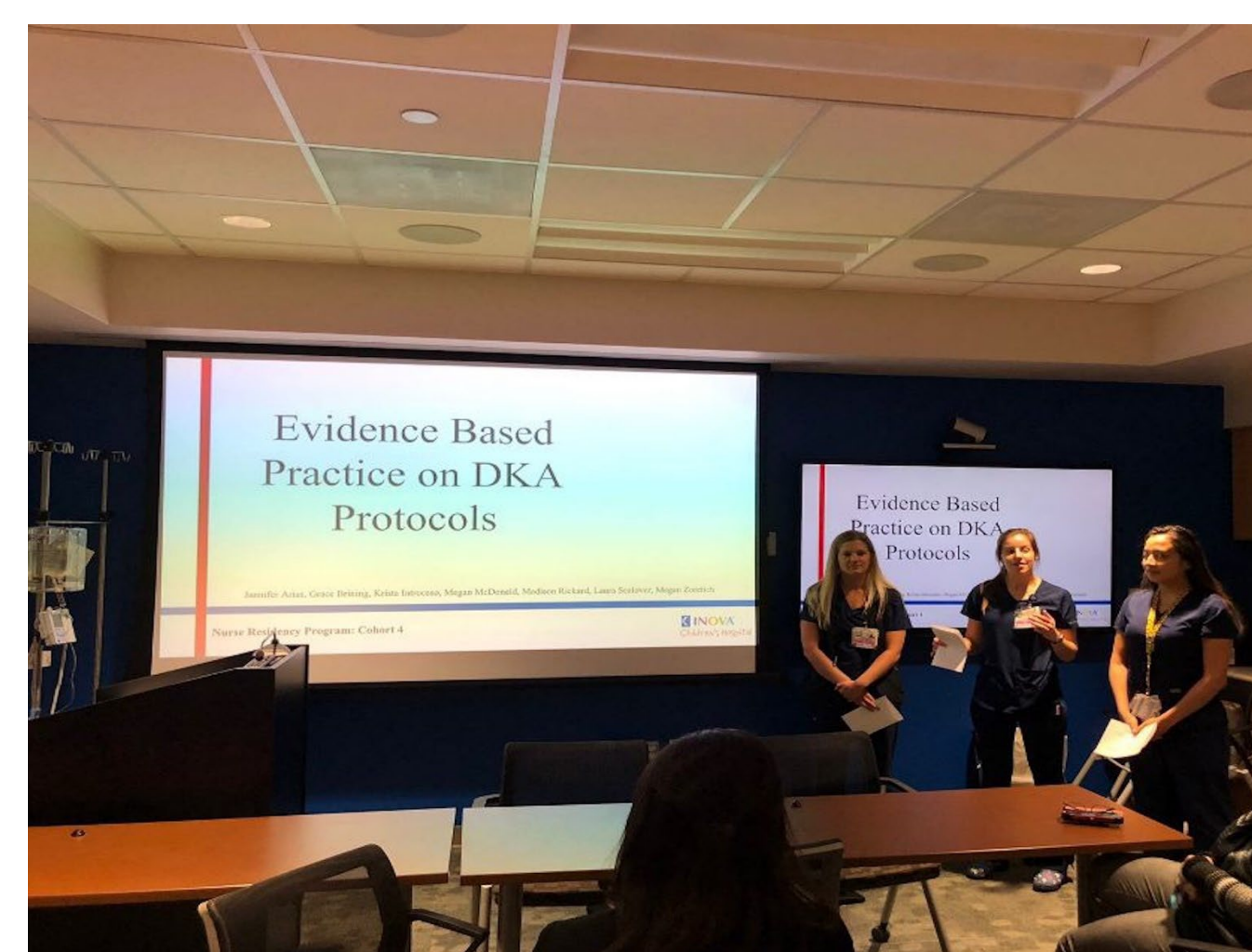


5. Improvements



Presentation

We presented our findings at the PICU Collaborative Meeting. Both photos are used with the permission of the team members pictured.



Findings

Though nurses across the nursing experience gradient expressed comfort with caring for patients with DKA, our unit based survey revealed the need for a DKA protocol due to a reported lack of consistency in care for patients in DKA.

We also found overwhelming evidence supporting the use of a standardized protocol in decreasing length of stay along with decreasing secondary complications to diabetic ketoacidosis (DKA).

Implications for Practice

Our team presented our evidence at the PICU collaborative team meeting consisting of the PICU medical director, various PICU intensivists, PICU nursing director, and PICU nursing educator. The PICU medical director agreed with the need for a DKA protocol on the unit. We will be partnering with the PICU Medical Director to create a standardized protocol to be trialed in the INOVA PICU. Following a successful PICU implementation, the protocol will be shared with our Pediatric Emergency Department, as well as outside emergency departments who encounter such patients prior to their arrival in our PICU.

References

- Blunden, Christopher, and Maureen Walsh Koricke. "Creating a Standardized Order Set for DKA Admissions to the PICU." *American Journal of Medical Quality*, vol. 31, no. 1, Jan. 2016, pp. 93–93.
- Hara JS, Rahbar AJ, Jeffers MN, Izuora KE. Impact of a hyperglycemic crises protocol. *Endocr Pract*. 2013;19(6):953–962.
- Koves IH, Leu MG, Spencer S, et al. Improving care for pediatric diabetic ketoacidosis. *Pediatrics*. 2014;134(3):e848–56.

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