

## Background

- Optimal management of diabetes benefits from access to a 24-hour support line
- Repeated interruptions to sleep can lead to physician fatigue and burn out
- Typical call volume in our center is 5-6 calls/ night
- There have been limitations in the pediatric endocrinology workforce in recent years
- After-hours nurse triage improves consistency of triage decisions, access and quality of care and decreases burden on physicians on-call.<sup>1</sup>

## Aim Statement

After-hours service was established to decrease the call burden on the on-call endocrinology physician from 100% at baseline to 70 % over 12 months.

## Interventions

- Nurse Line was implemented in our center in 9/2019
- We partnered with a group of 40 triage nurses.
- Barton Schmitt telephone triage protocol were modified to include pediatric and institution specific diabetes management protocols.<sup>2</sup>
- The protocols were available to the nurses via a decision support tool embedded in EPIC, our electronic medical record
- Nurses used specialized questions that guided them through a sequence of questions and answers which prompted a recommended triage disposition.
- Documentation was completed by nurse and routed to physician
- Disposition options included (a) go to emergency room (b) call specialist now (c) home care and (d) nonurgent MD calls
- All the calls were recorded for quality improvement. All calls were reviewed by lead physician for appropriate management and documentation.
- Feedback was shared with the triage nurses.
- Annual refresher is done for the triage nurse team yearly

## Analysis

- Data on call utilization were collected from October 2019 to September 2025
- After-hours call volume, reasons for call and call disposition data was obtained
- System analysis program analytics was used to interrogate a clarity database derived from our institutional EPIC clinical data repository.
- We examined clinical presentations to the emergency room including initial glucose and pH and analyzed the likelihood of discharge from the emergency room versus hospital admission, based on utilization of the after-hours services.
- We collected demographic data on all patients with at least one clinic visit during the study period and data on hemoglobin A1C and technology use.
- Call handle time and protocol adherence was evaluated.
- Statistical analysis was conducted using SAS 9.4. The contribution of explanatory factors to the odds of utilizing the call line was evaluated by multivariate logistic regression. The contribution of explanatory factors to pH and glucose at arrival in the emergency room was assessed with generalized linear models. Other associations were assessed with chi-square tests.

## Results and conclusions

- The after-hours call service handled 70% of calls without physician involvement from 10/2019 to 9/2025
- From 10/2022 to 9/2025, 45% of the calls were handled without physician involvement likely due increase in complexity of calls due to increasing use of automated insulin delivery pumps.
- Patients who called the after-hours nurse line prior to coming to the emergency room were less sick and could be discharged from the emergency room.
- Only ~10% of the patients called After-Hours nurse team prior to coming to the emergency room
- Spanish-speaking parents utilized the service less than English speakers.
- There were no disparities in utilization based on insurance status or race.
- In conclusion, after-hours service was utilized well by our patients of all races and insurance statuses. Language was a barrier in utilization.

## References

1. Belman S, Chandramouli V, Schmitt BD, Poole SR, Hegarty T, Kempe A. An assessment of pediatric after-hours telephone care: a 1-year experience. *Arch Pediatr Adolesc Med.* 2005;159(2):145-9.
2. Schmidt BD. Pediatric Telephone Protocols: Office Version. 17 ed: American Academy of Pediatrics; 2021. 520 p.

## Call volumes MD vs Nurse Line

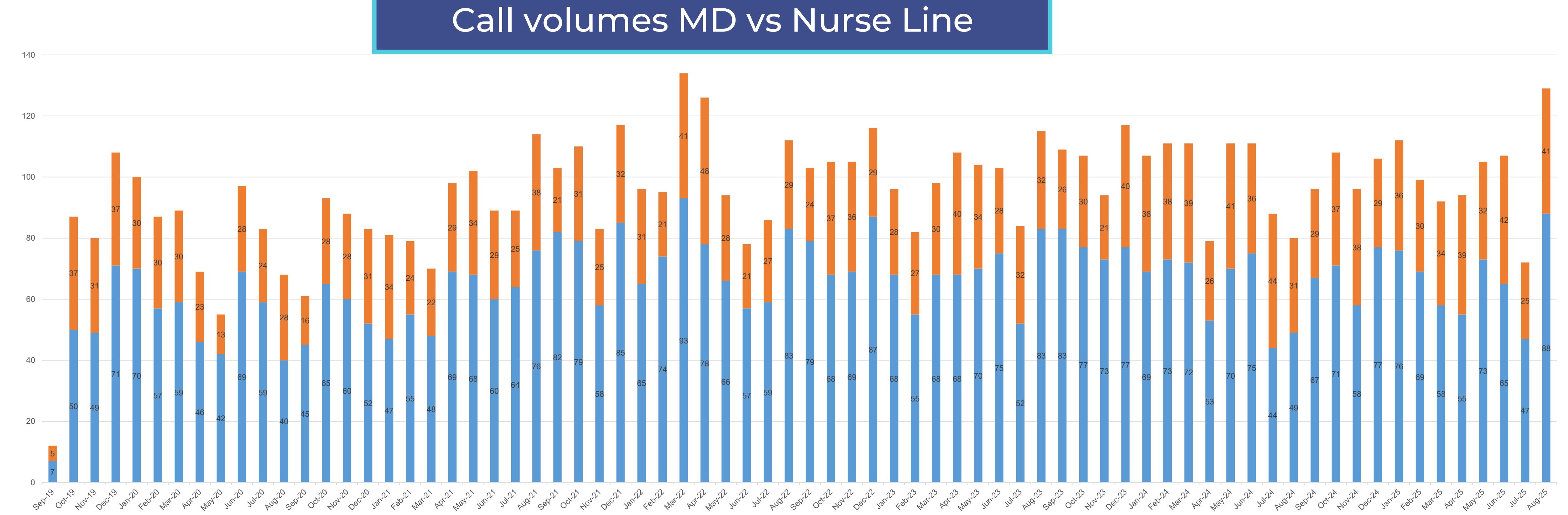


Figure: Call volume is on the y- axis and each bar represents one month. The blue portion indicates the calls handled by afterhours nurse line without involvement of the physician