

Insulin Pump DKA Prevention

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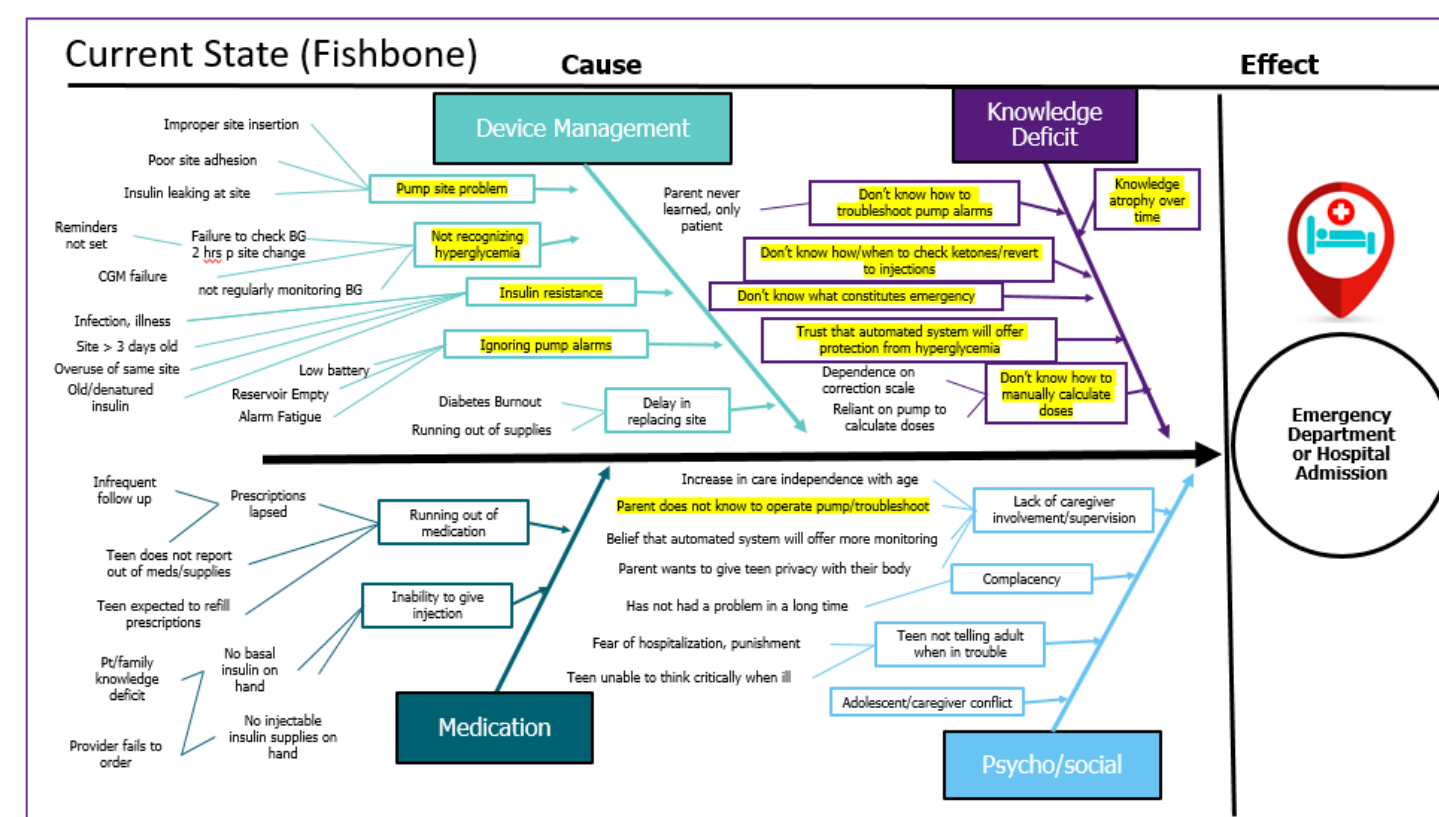
Project Initiation & Current State Analysis

Problem Statement
Insulin pump use among people with diabetes is increasing. Device failure can quickly lead to Diabetic Ketoacidosis which is potentially life threatening and requires hospitalization. The vast majority of admissions due to insulin pump failure can be prevented with proper device management and monitoring at home.

SMART Aim Statement
Decrease the average monthly number of emergency department and hospital admissions among patients on insulin pump by 20% within one year of introduction of a printed patient teaching tool.

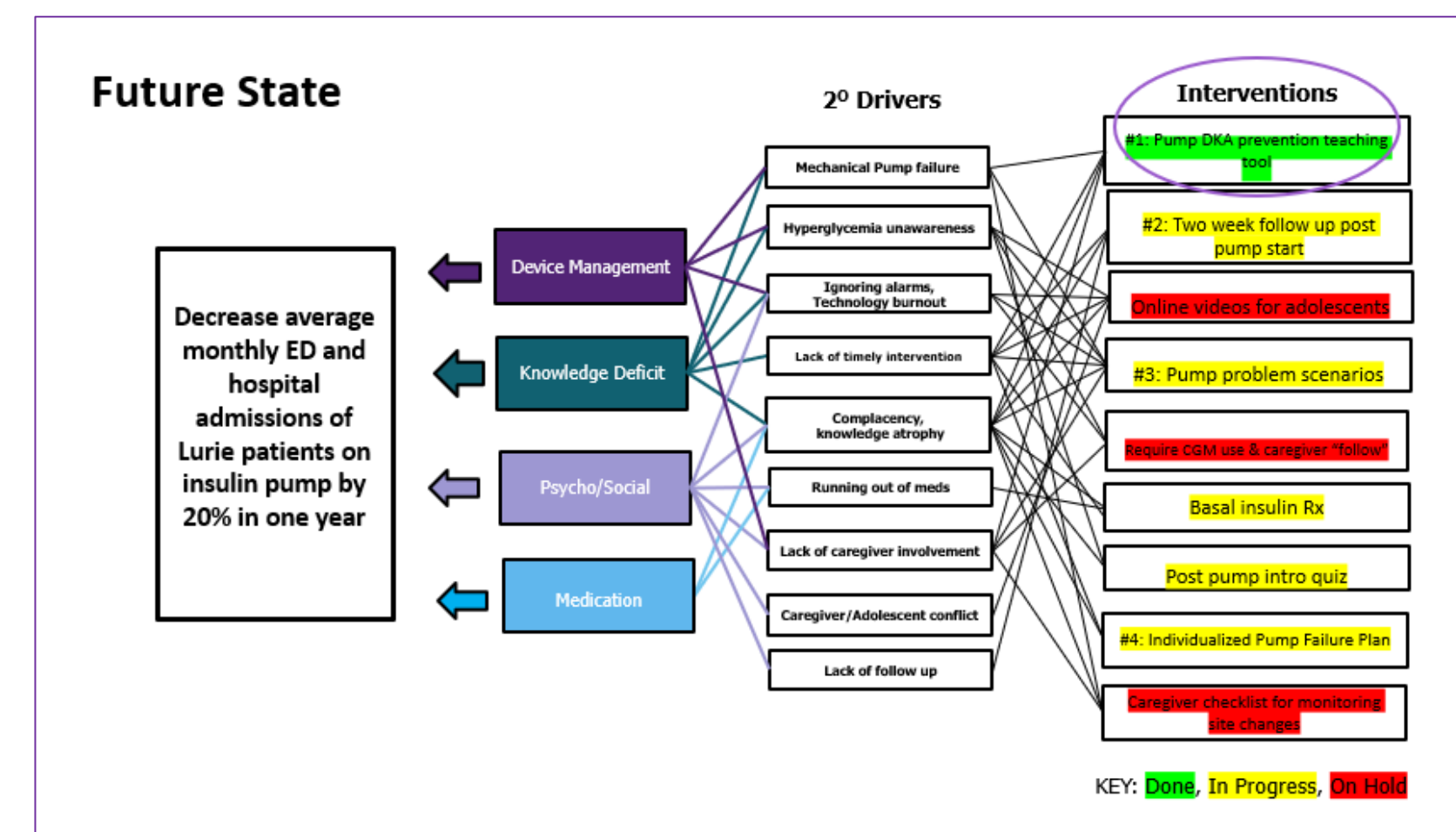
Project Scope
Lurie diabetes clinic patients on insulin pump admitted to Lurie ED or hospital.

Current State Analysis
Collaborated with Lurie diabetes clinicians on potential root causes of pump failure and subsequent admissions. Knowledge deficit was a recurrent theme.



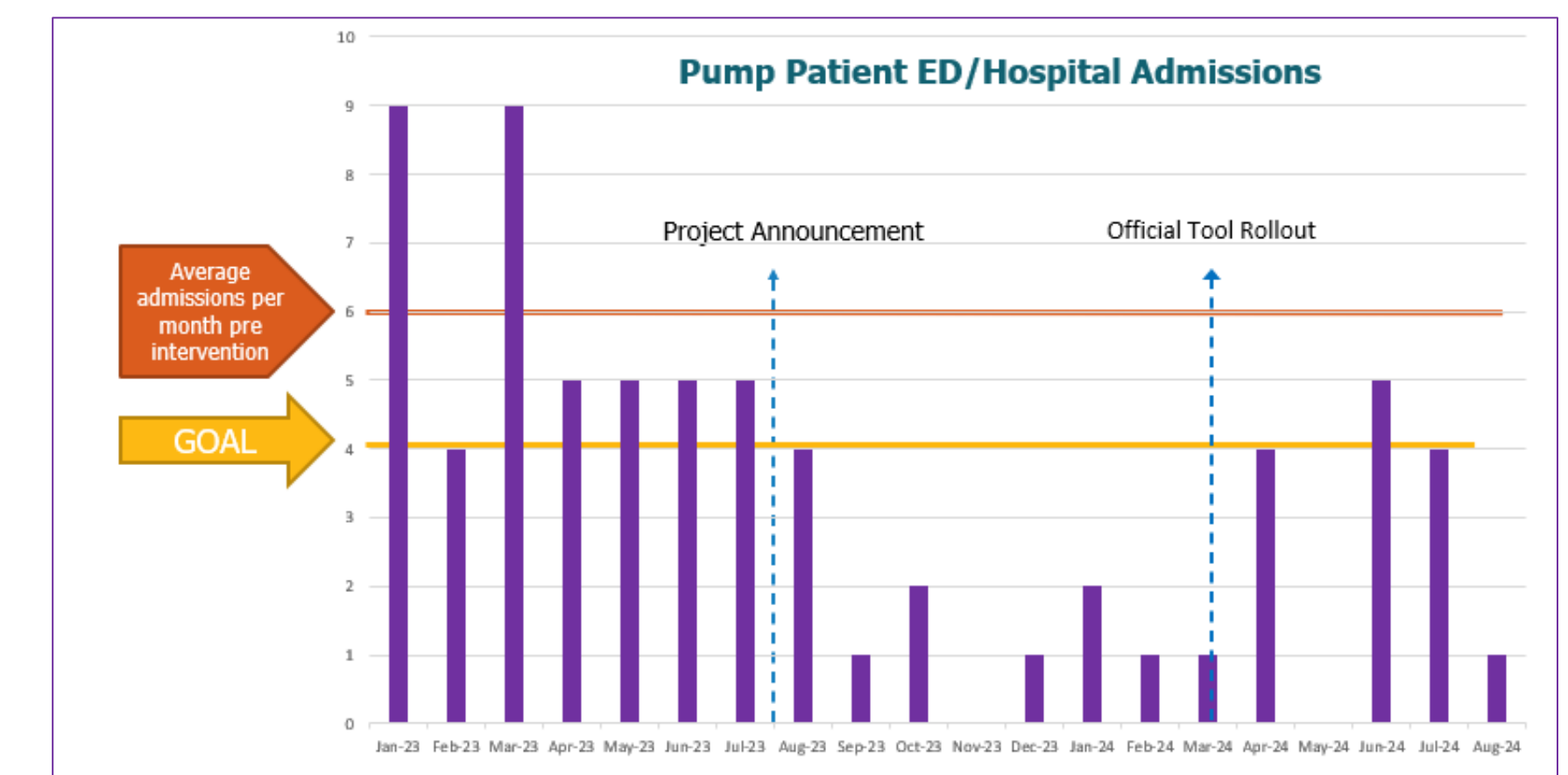
Future State Design

Team members collaborated on the most common causes or "drivers" of pump failure admissions and recommended several interventions. We ultimately chose to pursue FOUR INTERVENTIONS that were the most feasible to implement as well as addressed the most secondary drivers.



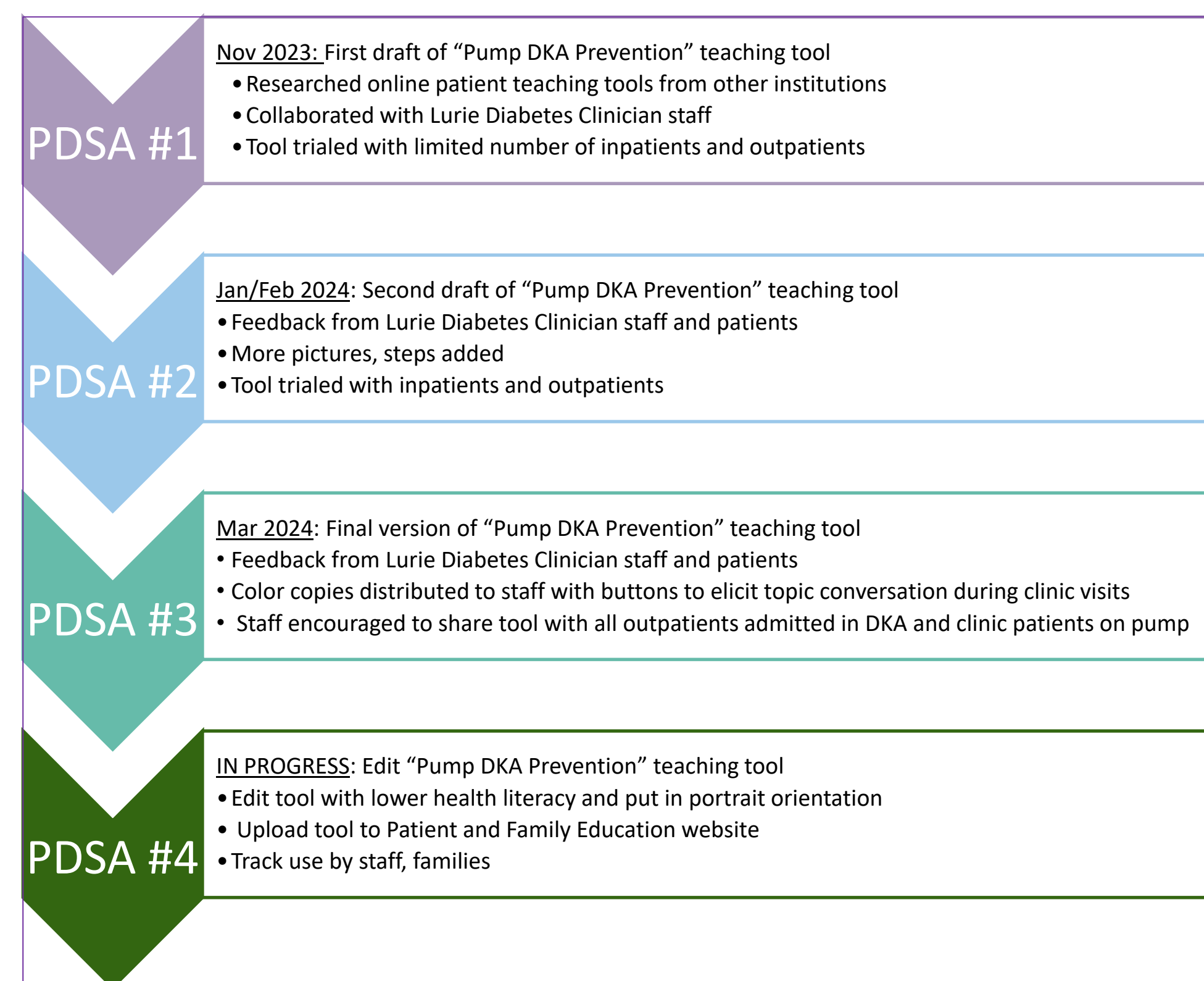
Results

Monthly Average of Pump Patient Admissions
Baseline = 6 per month
Goal <= 4 per month
Since project announcement = 2 per month
Since official tool rollout = 2.5 per month



Testing and Implementation

Development of a Pump Patient Teaching Tool
The primary intervention was the development of a "PUMP DKA PREVENTION TEACHING TOOL". This intervention was chosen due to the feasibility to implement quickly and addresses knowledge deficit which was a recurrent root cause of device failure.



Measurement

Type	Measure	Baseline	Target	Frequency	Source
Outcome	Average number of pump patient admissions per month for DKA or hyperglycemia due to pump failure	6/mo	<=4/mo	Monthly	EPIC, Power BI
Process	1. Number of patients educated with new teaching tool 2. Percent of staff using new tool	0	80%	In progress - Working to electronically hardwire tool to track use	
Balancing	1. RN assessment of patient/family knowledge 2. Patient/family troubleshooting confidence	1. Neutral 2. Confident	1. Very confident 2. Very confident	Annually	Survey, Likert Scale

Next Steps

Things Learned
Simply announcing/discussing the project to the clinical team may have had the biggest impact in reducing admissions. We found that the tool can be equally helpful for providers as well as patients. The same pump brand noted on 66% of admissions.

Next Steps
Finish tool edit and upload to patient and family education website. Remind staff of tool existence at regular intervals. Evaluate admission data and balancing metrics March 2025.

References

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