

Pump It Up: A clinic's journey to increasing insulin pump use

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Introduction

- The Diabetes Clinic at Le Bonheur Children's Hospital has made it a priority to focus on increasing use of insulin pumps. We chose this focus because of the known benefits of diabetes technology for improving patient outcomes, and the increasing availability of Hybrid Closed Loop (HCL) pumps.
- To address the low pump use in November of 2020, we implemented a multi-pronged approach utilizing multiple disciplines. It required our team to examine our clinic culture when it comes to embracing diabetes technology.

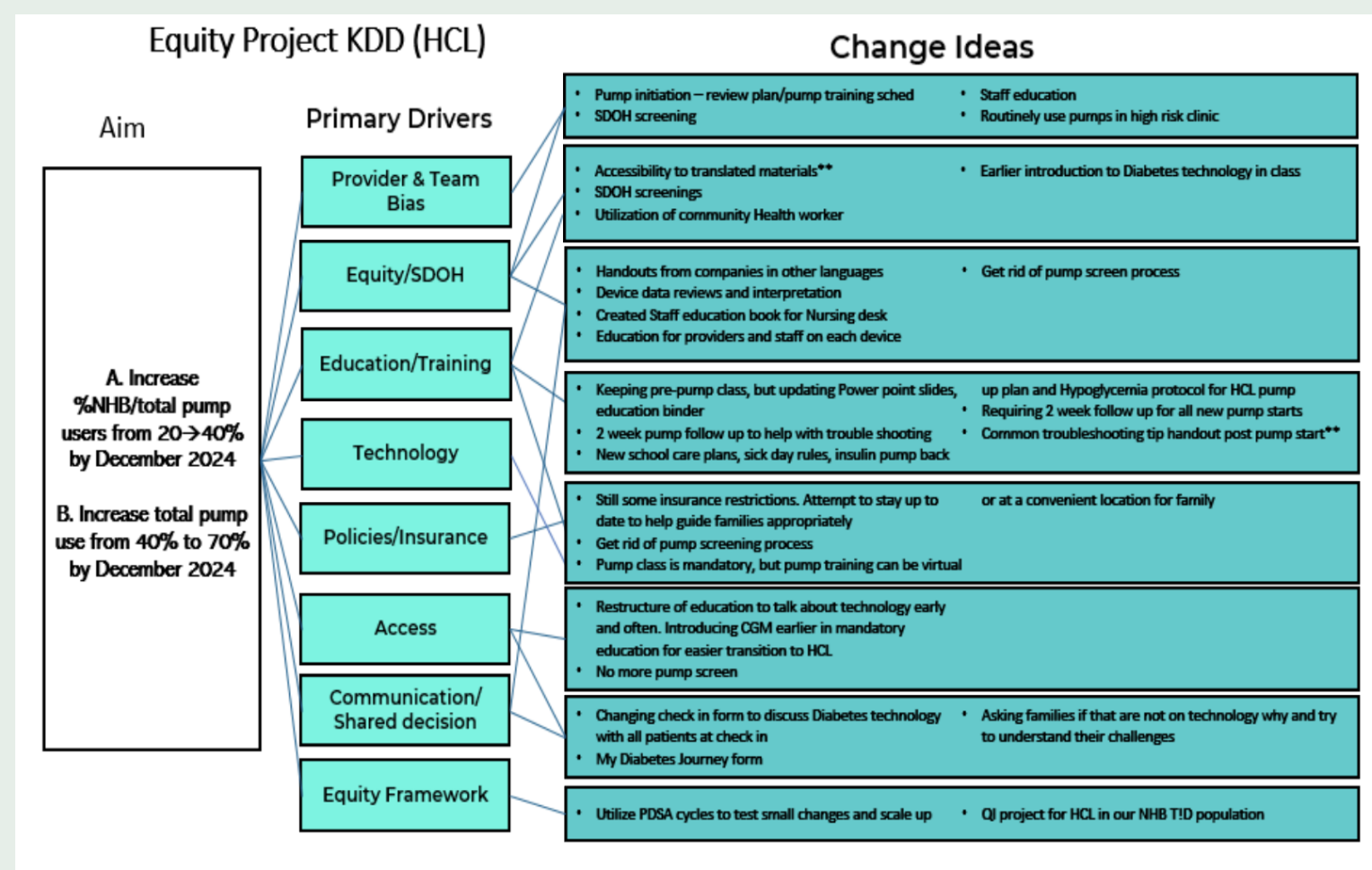
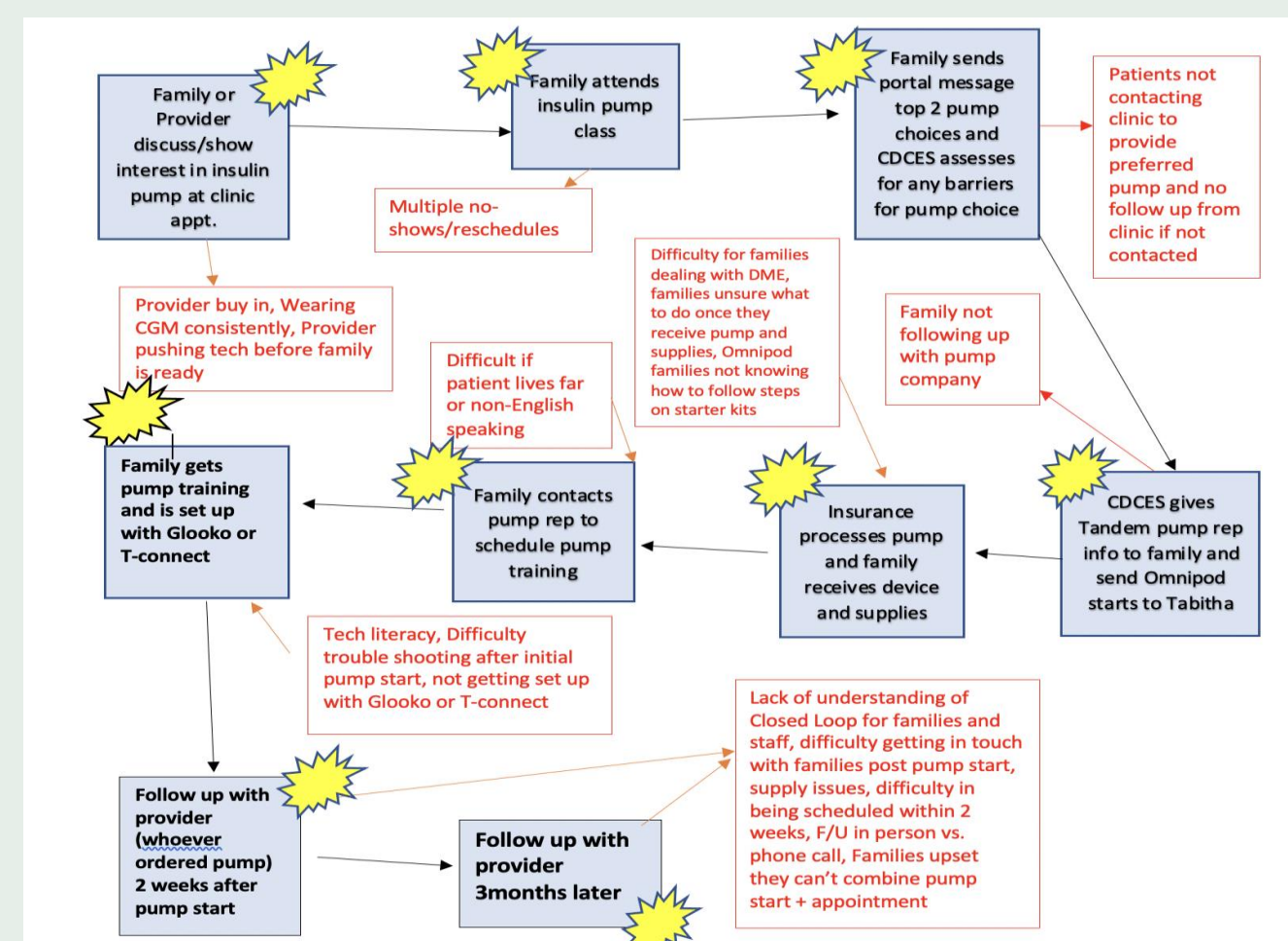
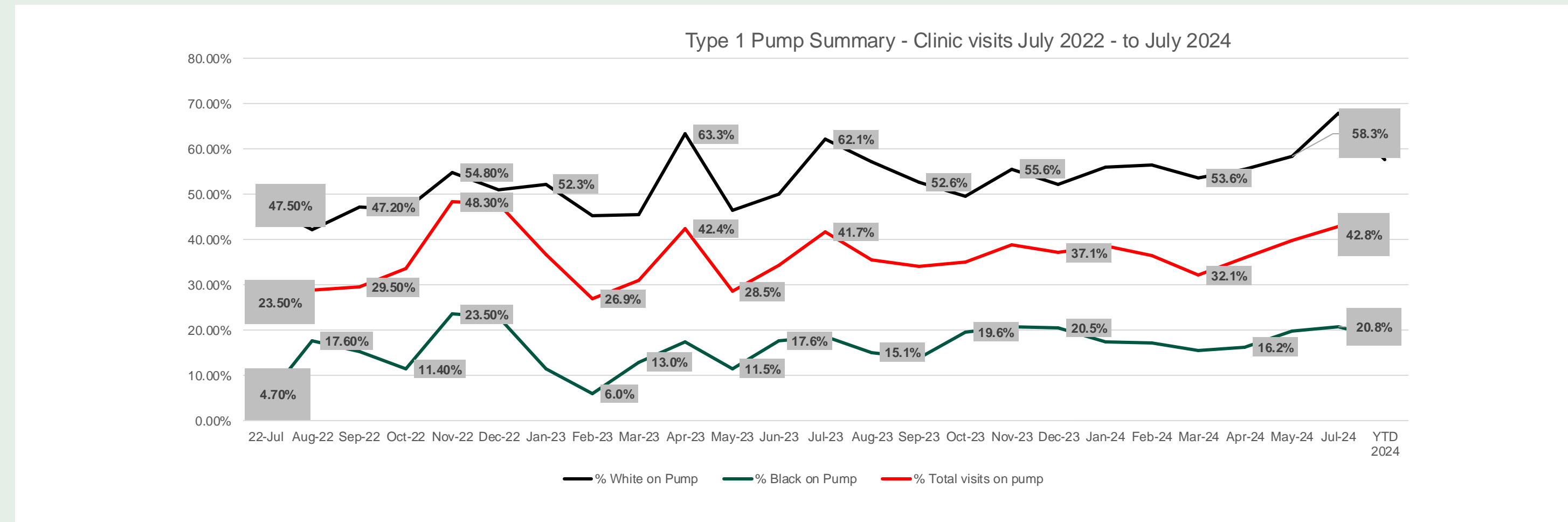
Results

- Baseline data showed that 21% of our patients were on an insulin pump as of November 2020, and as of July 2024, 43% of our patients are on an insulin pump.
- Our current pump usage is estimated to be 75-95% Hybrid Closed Loop pumps. We continue to primarily utilize Hybrid Closed Loop systems in our new pump users.
- During this period, we have seen an overall decrease in HbA1c in our patients, which is consistent with known data regarding the use of Hybrid Closed Loop pumps

Methods

We started working on this 4 years ago with a small QI project focusing on placing pumps on patients with elevated A1Cs. Based on our results from this pilot, we were able to get rid of the pump committee, signaling the start of a culture change.

- Educated our staff about each individual pump and creating an insulin pump education binder for staff to refer to, when questions arise. To make sure the staff felt equipped to answer families' questions and troubleshoot pump issues.
- Updated the curriculum presented in the mandatory pre-pump education class taught by our CDCESs. The slides are more in depth about each individual pump and the benefits. It also focuses on the new Hybrid Closed Loop pumps.
- An insulin pump back up plan was created and passed out to each patient and family. The insulin pump back up plan details the basal and bolus insulin doses in the event the pump must be removed for any reason.
- School care plans were also updated to help school nurses utilize and understand the Hybrid Closed loop pump for their students while at school.
- We revised the clinic's hypoglycemia protocol for patients on Hybrid Closed Loop pumps, to accommodate for the algorithm and prevent rebound lows.
- Appointments are scheduled two weeks after pump start to troubleshoot any concerns and further educate when needed. The telephone or in-person appointment was added to help decrease adverse outcomes and overall adherence in new pump users.



Conclusion

The increase in insulin pump use also speaks to the overall clinic culture change when it comes to utilizing diabetes technology. We would not have been able to double our numbers had we not approached this project as team and been willing to change the culture from within.

- Overall, we have seen improvement in our percentage of patients utilizing an insulin pump. Our goal is to increase pump usage to 50% by the end of 2024.
- We continue to look at our clinic processes and utilize our T1D community by participating in the Hybrid Closed Loop pump working group.
- We plan on creating a post-pump start troubleshooting handout to send to all new pump users during their two-week post pump start.
- We also hope to update our ketone treatment guidelines to accommodate for the Hybrid Closed Loop pump and differing algorithms.