Increasing Pump Therapy Adoption in Patients with Type 1 Diabetes

Allison Smego, MD[1], Fadi Asfour, MD[2]; Janet Sirstins, RN, BSN, CDCES[3], Corinne Loizos, MS, RD[3], Megan Counter, MSW, CSW[3], Billie Whitaker, CMA III[3], Stacey Bjerregaard, MHA[2], Tina Wadhwa[2], LeAnn Gubler MSN, RN[3], Vandana Raman, MD[1]

1Division of Endocrinology, University of Utah, Salt Lake City, UT, USA; 2Primary Children's Hospital; 3Primary Children's Hospital Pediatric Diabetes Program

Background

- Insulin pump therapy is rapidly evolving with advances in technology and automated insulin delivery
- Insulin pump therapy helps improve glycemic control, reduce risk of chronic complications and episodes of hypoglycemia, and improve quality of life in pediatric patients with type 1 diabetes (T1D)

Aim

- Increase pump therapy adoption from nearly 70% to 75% over one year

Methods

- Eligible patients included those with type 1 diabetes who were ≥1 year from diagnosis
- Historic data on insulin pump utilization collected
- Multidisciplinary team assembled including clinicians, educators, a social worker, a medical assistant, and a parent advocate

Process design

- Historically, A1c cut-off required to start insulin pump process
  - Followed by in-person class offered monthly prior to ordering insulin pump
  - A1c requirement removed summer 2022

- Quality improvement methodology followed:
  - Thorough baseline data assessment
  - Develop smart aim
  - Construct fishbone diagram
  - Identify key drivers for success
  - Perform interventions
  - Measure performance over time

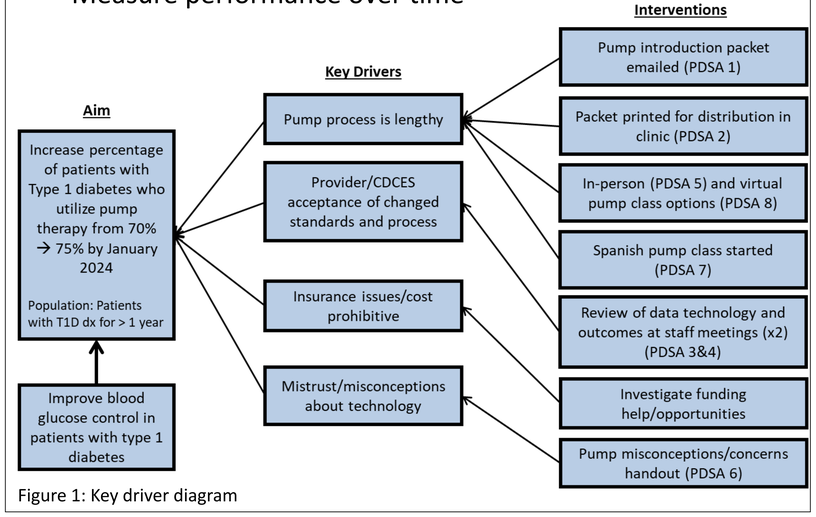

Figure 1: Key driver diagram

Results

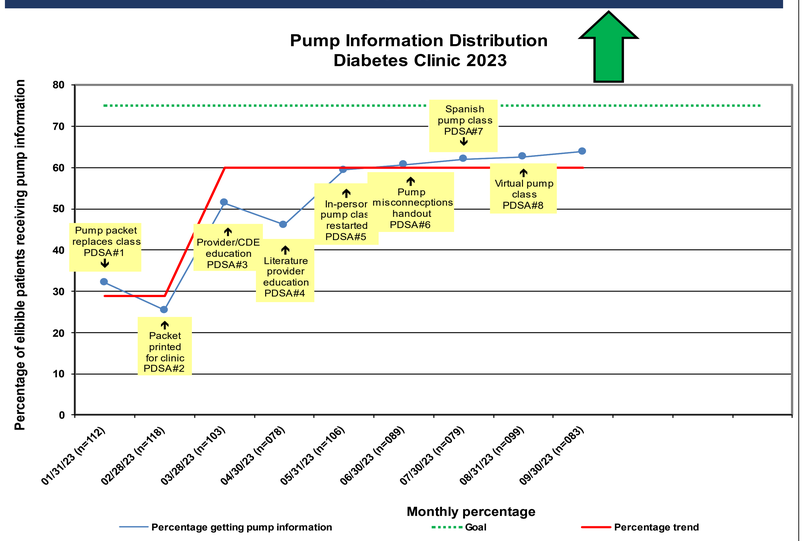

Figure 2: Run chart showing increasing percentage of patients receiving pump information

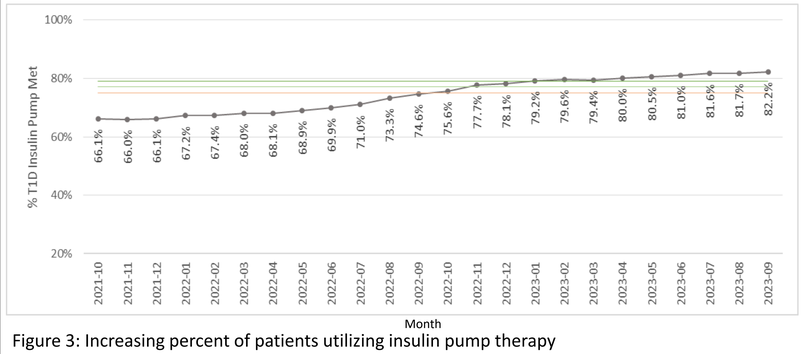

Figure 3: Increasing percent of patients utilizing insulin pump therapy

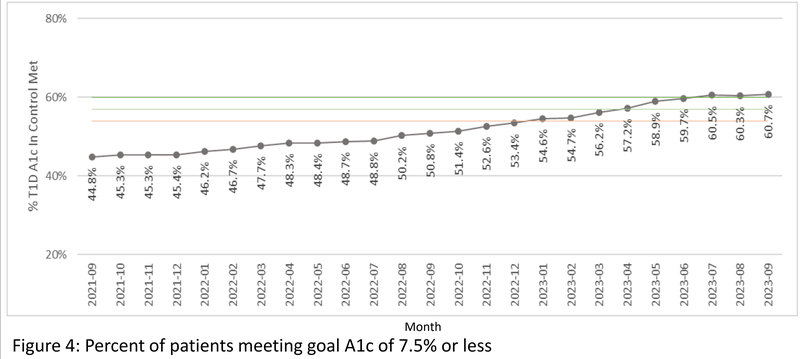

Figure 4: Percent of patients meeting goal A1c of 7.5% or less

- Percentage of eligible patients receiving pump information increased from 32% to above 60% after 8 months of PDSA cycles
- Percentage of insulin pump users in our clinic steadily increased from a baseline of 70% to over 80% during this same period
- Percent of patients with A1c in goal range has increased by about 6% since project initiation

Results

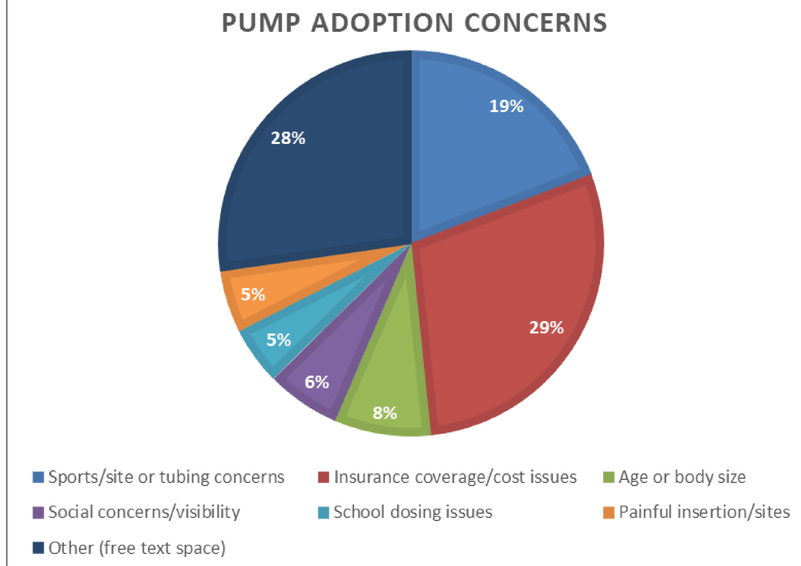

Figure 5: Pie chart representing concerns marked on the pump misconceptions form

- Biggest concerns regarding insulin pump were overall cost and pump site/tubing issues
  - Cost of supplies being the single biggest concern
- Miscellaneous (other concerns) included parent interested in pump but child not ready, phone or other technology concerns, total daily dose not enough

Conclusions

- Interventions to improve our pump start process led to increase insulin pump adoption by our patients
  - Improving access to pump information based on family's availability and learning styles
  - Provider education on recent data
  - Addressing common pump concerns among patients and families
- Improved A1c noted as pump adoption increased
- Future interventions will focus on cost concerns and assessing hybrid-closed loop adoption

Acknowledgements

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References available upon request.