

Improving Back-up Planning in the Event of Pump Failure





Victoria Elliott MD^{a,b,c}, Meghan E. Pauley DO^{a,b,c}, Erin Finn MD^{a,b,c}, Lauren Waterman MD^{a,b,c}, Rachel Sewell MD^{a,b,c}, Anna Valentine MD^{a,b,c}, Olivia Docter BSN^{a,b}, Jennifer Barker MD^{a,b,c}, Todd Alonso MD^{a,b,c}

a. Barbara Davis Center for Diabetes b. University of Colorado School of Medicine, Anschutz Medical Campus, Aurora, CO. c. Children's Hospital Colorado, Anschutz Medical Campus, Aurora, CO

Genter for Diabetes

ANSCHUTZ MEDICAL CAMPU

Children's Hospital Colorado

Background and Problem Statement:

- Use of diabetes technological devices, including insulin pumps and continuous glucose monitors, is associated with improvements in glycemic trends. 1-3
- Device use has become standard of care and pump users should receive education on device complications with back-up plans in case of device failure.^{4,5}
- Over the prior 18 months, only 54% of pump users with T1D in our outpatient diabetes clinic had an active long-acting insulin prescription.

Project AIM:

Improve percentage of active long-acting insulin prescriptions for pump users seen each month from 54% to 61% within 10 months.

Key Drivers and Interventions:

Key Drivers

Health Literacy/
Education &
Support

Use of Data

Insulin Therapy

Interventions

Multidisciplinary
team meetings to
define the problem,
agree on
metrics/goals, &
solicit ideas from
clinic for process
changes

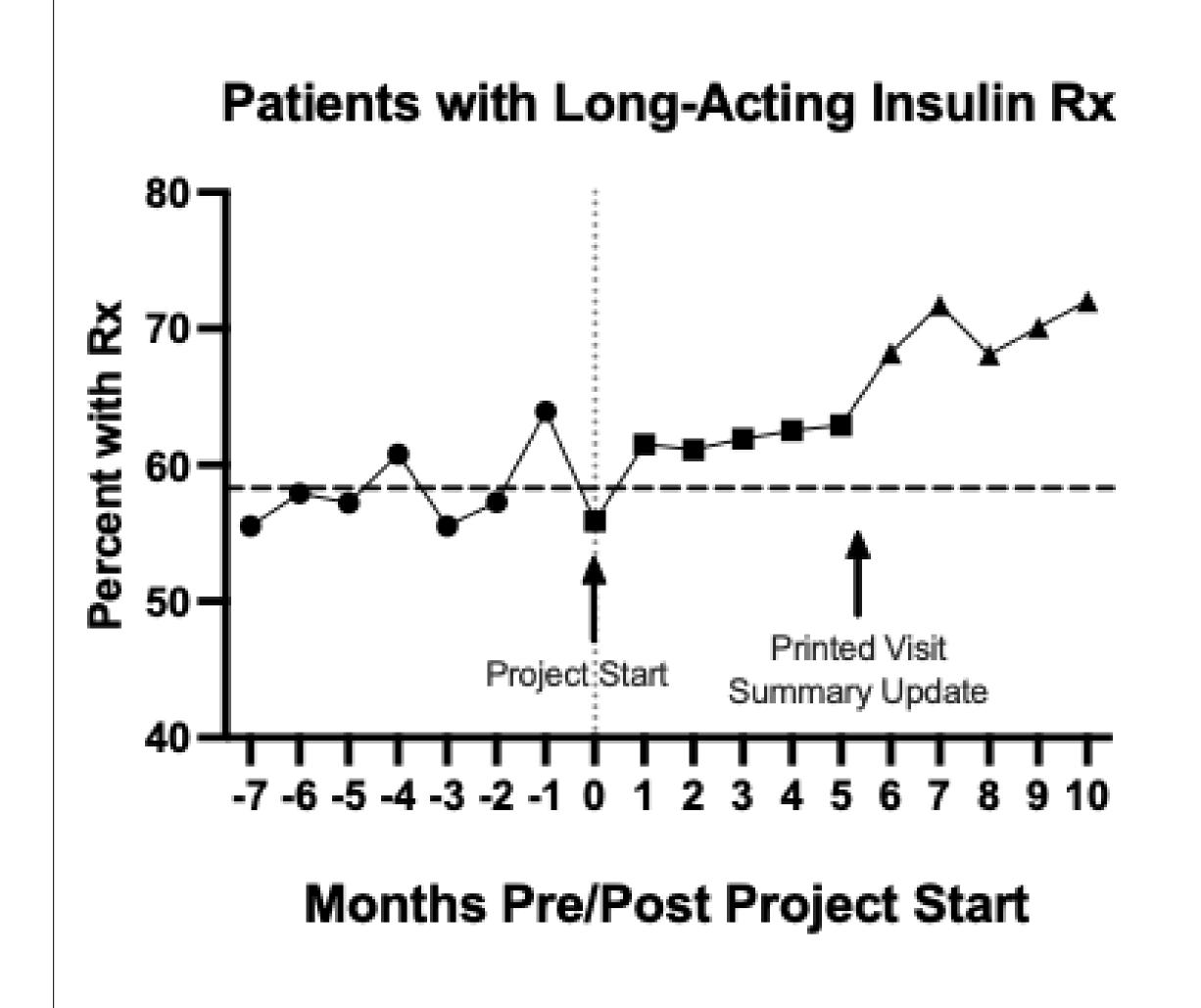
Standardized
language in printed
visit summary to
prompt providers to
give long-acting
insulin dose
instructions

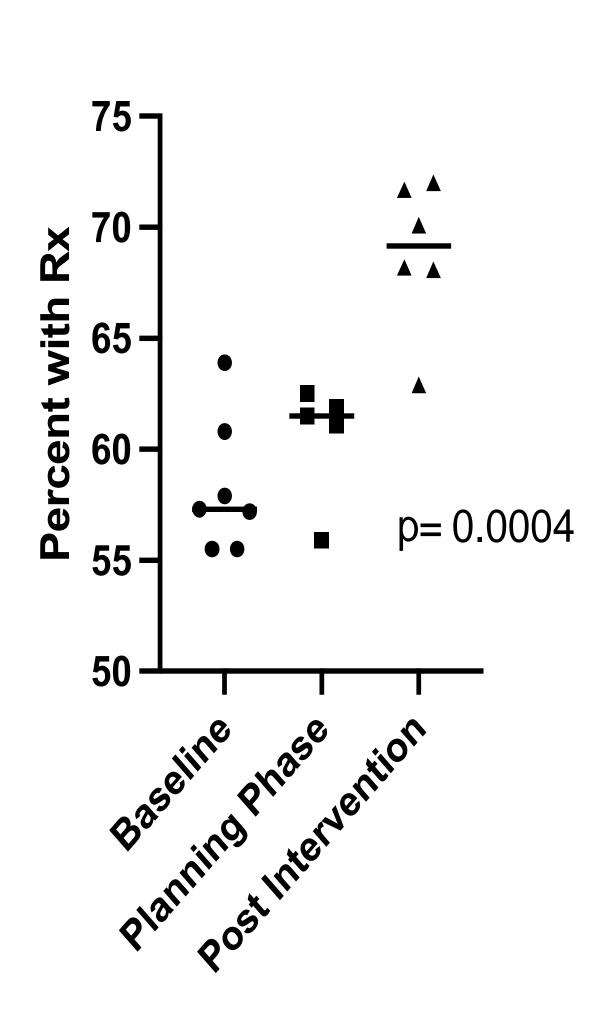


In case of pump failure, *patient name*'s long-acting insulin dose is *** units once every 24 hours. Give it immediately once you realize the pump is not delivering insulin to prevent ketone accumulation. When you're ready to restart the pump, restart 24 hours after the last long-acting dose or run a temp basal at 0% until 24 hours after the long-acting insulin was given.

Project Results / Performance:

- Increases in provider prescribing during clinic visits were noted both during planning phase and following intervention with AVS update.
- Changes over time were statistically significant between the three phases.





Challenges and Barriers:

- If there was no long-acting insulin prescription in the last 12 months, re-prescribing was a slower process.
- Outside of initial pump education sessions, pump failure counseling is not a standard practice at our center

Next Steps:

• Develop and implement a pump failure action plan to assist in utilizing prescribed long-acting Rx

References:

- 1. Sawyer A, et al. Glycemic Control in Relation to Technology Use in a Single-Center Cohort of Children with Type 1 Diabetes. *Diabetes Technol Ther*. 2022.
- 2. Pease A, et al. Glycaemia and utilisation of technology across the lifespan of adults with type 1 diabetes: Results of the Australian National Diabetes Audit (ANDA). Diabetes Res Clin Pract. 2021.
- 3. Cardona-Hernandez R, et al. Glycemic Outcome Associated With Insulin Pump and Glucose Sensor Use in Children and Adolescents With Type 1 Diabetes. Data From the International Pediatric Registry SWEET.

 Diabetes Care. 2021.
- Draznin B, et al. Diabetes Technology: Standards of Medical Care in Diabetes-2022. *Diabetes Care*. 2022.
 Sherr JL, et al. ISPAD Clinical Practice Consensus Guidelines 2018: Diabetes technologies. *Pediatr Diabetes*. 2018.