Improving Patient Preparedness for Insulin Pump Failure Management in Type 1 Diabetes

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BACKGROUND

- Automated insulin delivery (AID) systems improve diabetes management but increase risk of diabetic ketoacidosis (DKA) when insulin delivery is interrupted.
- Infusion set failures and user error are leading causes of pump-related adverse events.

AIM STATEMENT

- To increase the proportion of insulin pump/AID users who report confidence in managing pump failure from **76% to 90%** over 6 months.

METHODS

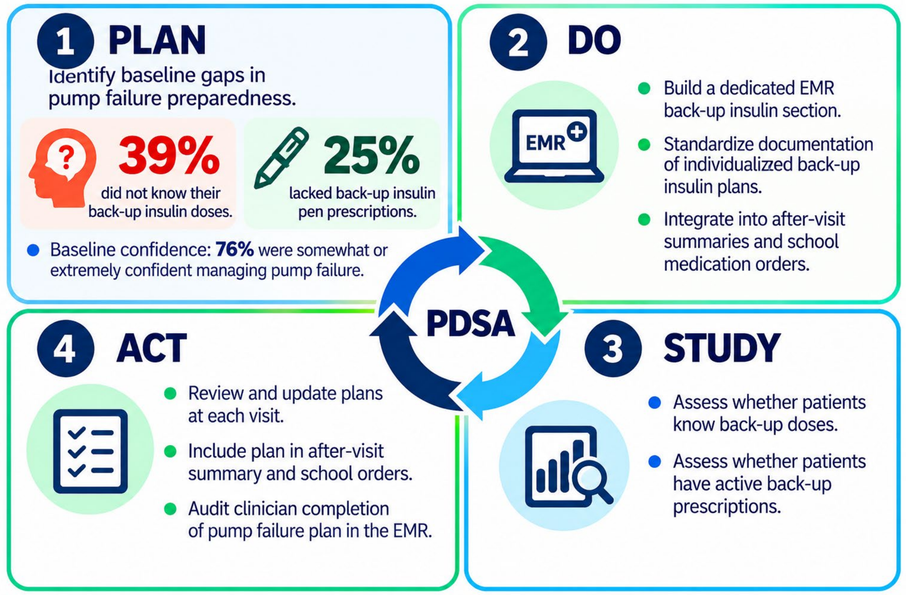
- **Baseline needs assessment survey** administered to insulin pump/AID users.
- **Recruitment** via QR codes posted in clinic rooms and REDCap link sent by text messages.
- **Survey** included 10 multiple-choice items and 3 open-ended questions.
- **Assessed** knowledge of back-up insulin doses, access to back-up prescriptions, and confidence in managing pump failure.
- **Institutional Review Board approval** obtained.

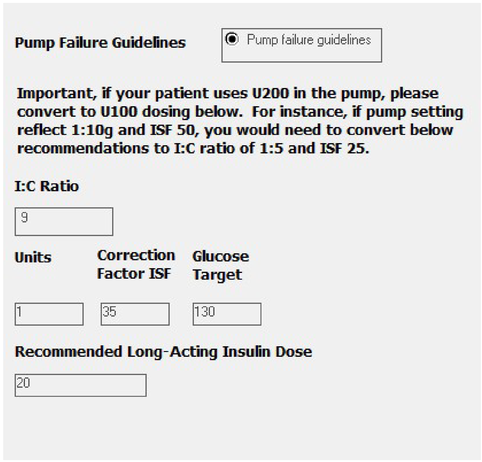


RESULTS

- Participants: 41 insulin pump/AID users responded.
- Backup dose knowledge: 39% did not know their backup insulin doses.
- Prescription availability: 25% lacked long-acting insulin pen prescriptions.
- Identified gaps: Limited patient knowledge of backup dosing and inconsistent documentation and communication of backup plans in the medical record.

Takeaway | **Knowledge gaps regarding back-up insulin doses and missing long acting insulin prescription remain common opportunities for intervention.**





CONCLUSIONS

- The first PDSA cycle established standardized EMR documentation of individualized back-up insulin plans, integrated into after-visit summaries and school medication orders.
- Next steps include auditing clinician documentation compliance to evaluate adoption and guide improvements.

NEXT STEPS

