Improving Depression Screening in Pediatric Patients with Type 1 Diabetes: A Quality Improvement Initiative

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• BACKGROUND & SIGNIFICANCE

Depression is common in youth with type 1 diabetes (T1D), with a pooled prevalence of approximately 22% across children and adolescents with diabetes — roughly one in four patients (1)

- Childhood-onset T1D is independently associated with an elevated risk of depression (adjusted HR 1.85) compared with peers without diabetes (2).
- Depressive symptoms correlate with lower blood glucose monitoring frequency and higher HbA1c, linking unrecognized depression to worse glycemic outcomes (3).
- The Patient Health Questionnaire 9 in adolescents (PHQ-9A) is a widely used, validated screen for depression (4)
- Despite guideline recommendations, formal screening is rarely performed at baseline due to workflow, time, and follow-up barriers (5).

• AIM STATEMENT

To increase the proportion of eligible patients aged 12–18 years with T1D who complete a standardized depression screen at a routine clinic visit from <20% to ≥75% within 12 months, while ensuring that ≥85% of patients with a positive screen receive documented behavioral health follow-up.

• METHODS

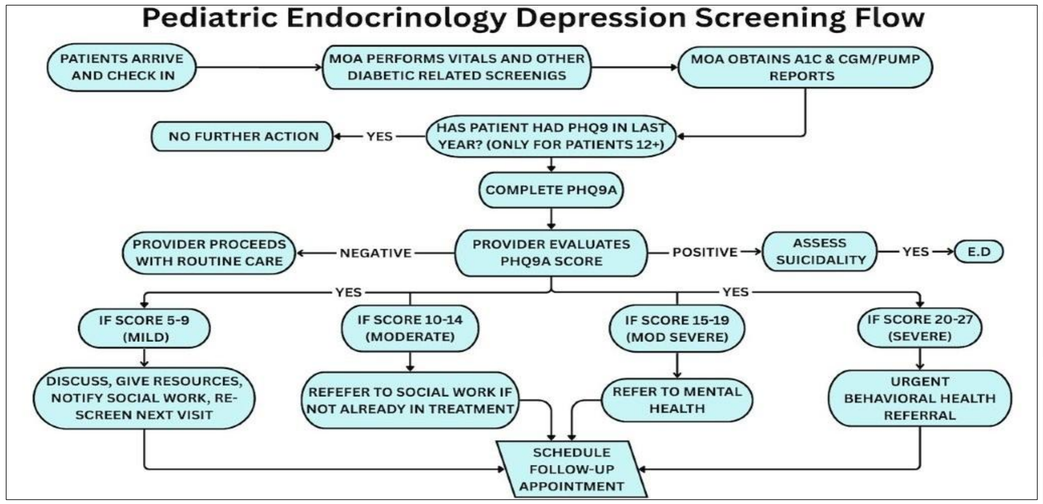
- Setting & population: Pediatric endocrinology clinic(s); all patients aged 12–21 years with T1D presenting for routine visits.
- A multidisciplinary team, composed of physicians, RN, CDCES, medical assistants, and social workers, was established to facilitate PHQ-9 implementation
- Framework: Model for Improvement with sequential Plan-Do-Study-Act (PDSA) cycles; process tracked on statistical process control (run) charts.
- Screening protocol —
  - PHQ-9 administered to all pediatric patients with the diagnosis of diabetes; PHQ-9 ≥10 or any positive response on item 9 (suicidality) triggered escalation (4).

• Key interventions (change package):

- Electronic Health Record (EHR) template and standardized documentation field.
- Standardized escalation pathway with same-visit social work / behavioral health assessment and warm hand-off.
- Monthly "real-time data" pulls with feedback to the care team.
- Staff education and defined role assignments; minimal patient burden (brief tool, family-informed design).

• Measures:

- Outcome: % of eligible patients screened per visit.
- Process: % of positive screens with documented behavioral health follow-up.
- Balancing: clinic visit duration/workflow disruption; patient and staff acceptability.

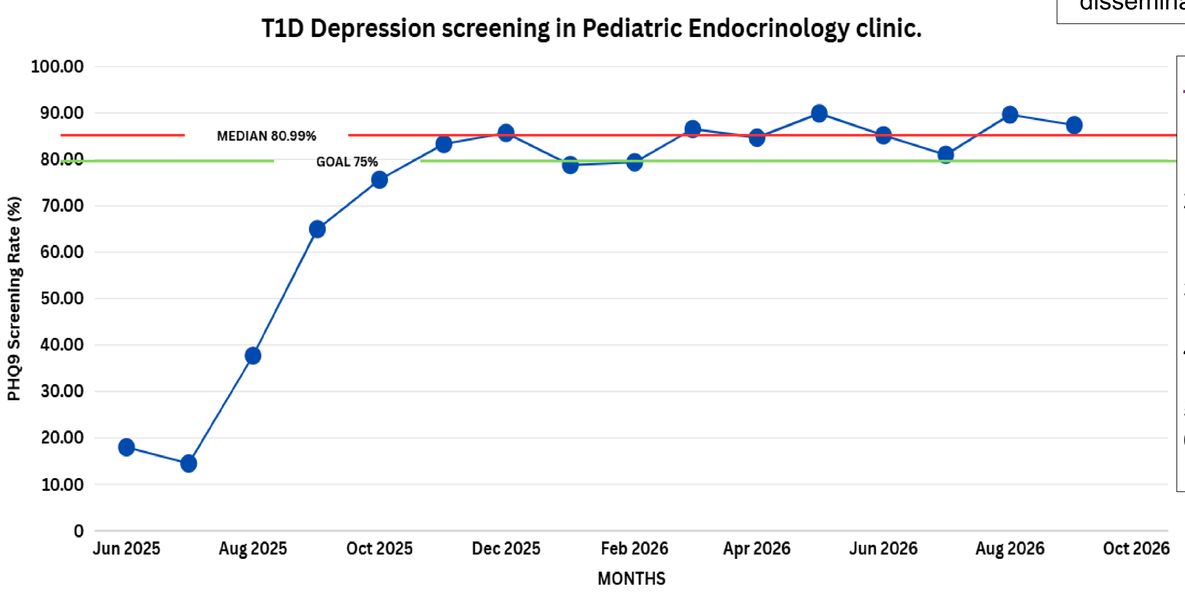


• RESULTS

- Depression screening rates increased from <20% at baseline to [85]% (target ≥75%) over the initiative, consistent with published T1D QI programs achieving 75–85% (5;6).
- [100]% of patients with a positive screen completed a targeted behavioral health assessment (benchmark: 89%; 5).
- Screening was feasible and acceptable to both patients and staff.

• KEY DRIVERS OF SUCCESS

- Real-time data feedback sustained momentum across PDSA cycles.
- Embedded behavioral health follow-up closed the loop from detection to care.
- Brief, validated tool minimized patient and workflow burden.



• LIMITATIONS

Single-system experience may limit generalizability to non-metropolitan or lower-resourced clinics.

- Standard PHQ cutoffs may under-detect depression in adolescents with T1D; adjusted cutoffs improve sensitivity (7).
- Overlap of depressive symptoms with diabetes distress and hyperglycemia can increase false positives, requiring clinical confirmation (1).

• Conclusions

This project demonstrates the critical role of a multidisciplinary approach in enhancing depression screening in adolescent patients with T1D.

- Systematic depression screening can be reliably implemented in a pediatric T1D clinic with high uptake and robust follow-up using automated workflows and real-time data.
- The successful establishment of a stable screening and referral process was driven by the co-location of mental health providers, which facilitated timely intervention, and was supported by iterative PDSA cycles informed by EMR data tracking.
- **Next steps:** sustain gains, incorporate anxiety and diabetes-distress screening, and disseminate to additional sites.

References

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