Improving Pediatric Diabetes Care by Unifying Data Analytics

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NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.

Background

Nationwide Children's Hospital (NCH) has significantly advanced data management by centralizing diverse data projects into a single data mart with consistent, well-defined metrics and a user-friendly dashboard.

This unification has enhanced Diabetes data access, collection, and quality across clinical care, public dissemination, leadership oversight, and quality improvement (QI) initiatives.

Objective

Our aim was to build on our institutional success in data unification by collaboration with data analytics experts to create seamless and accurate data resources, including 1) an Endocrinology/Diabetes-specific data mart and 2) an interactive data dashboard.
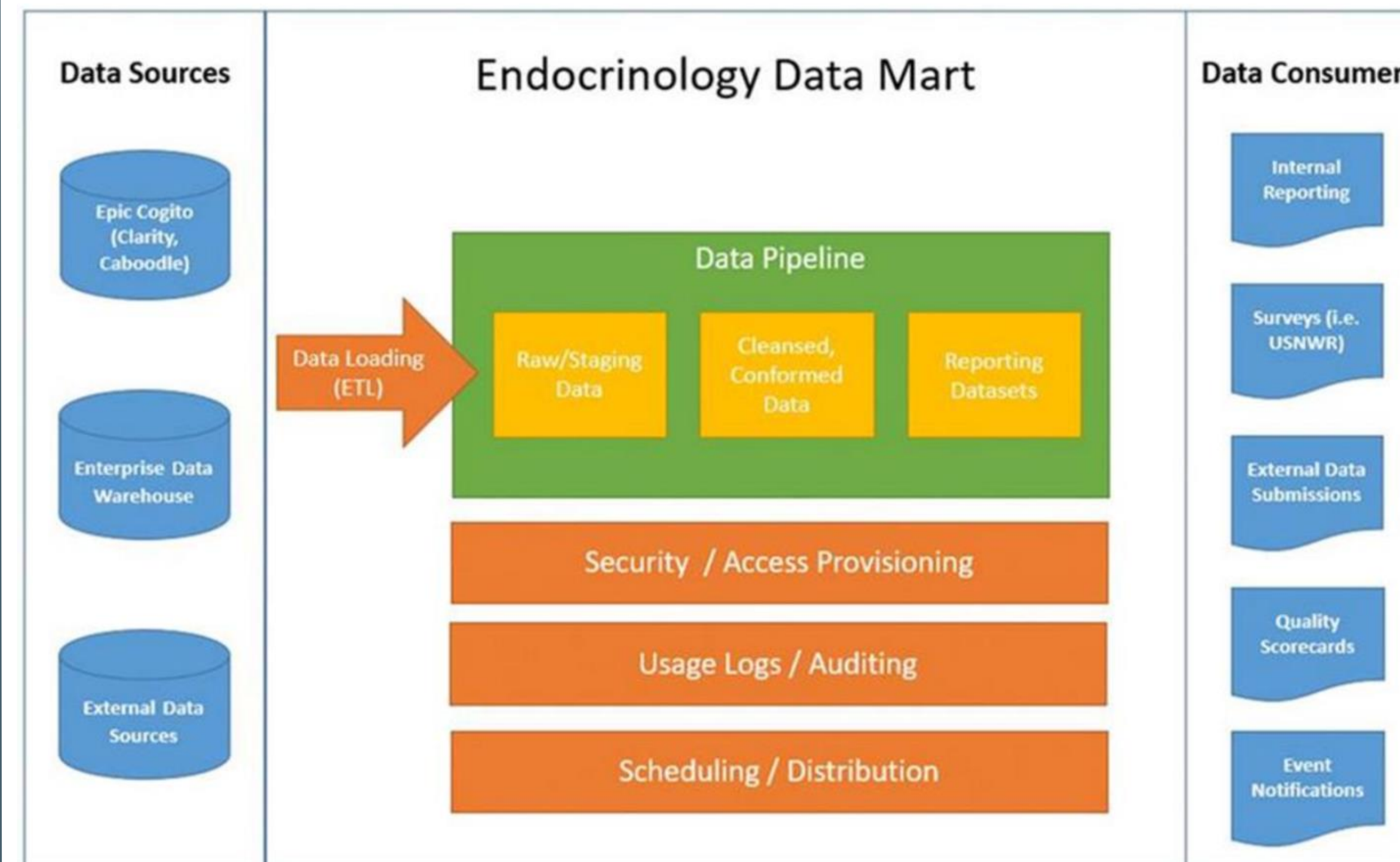
Methods

NCH has gradually been transitioning to a unified data approach, prioritizing shared data sets and architectures over siloed data sources.

This shift supports quality improvement goals across pediatric chronic illness conditions, enhancing usability and cross-program applicability for making evidenced based interventions in diabetes patient care.

Data Mart

Ongoing outcomes include reduced data collection downtime, faster report turnaround times, enhanced quality access, the ability to cross-verify internal and external data, and support for a broader range of projects with increased consistency and clarity in data definitions.
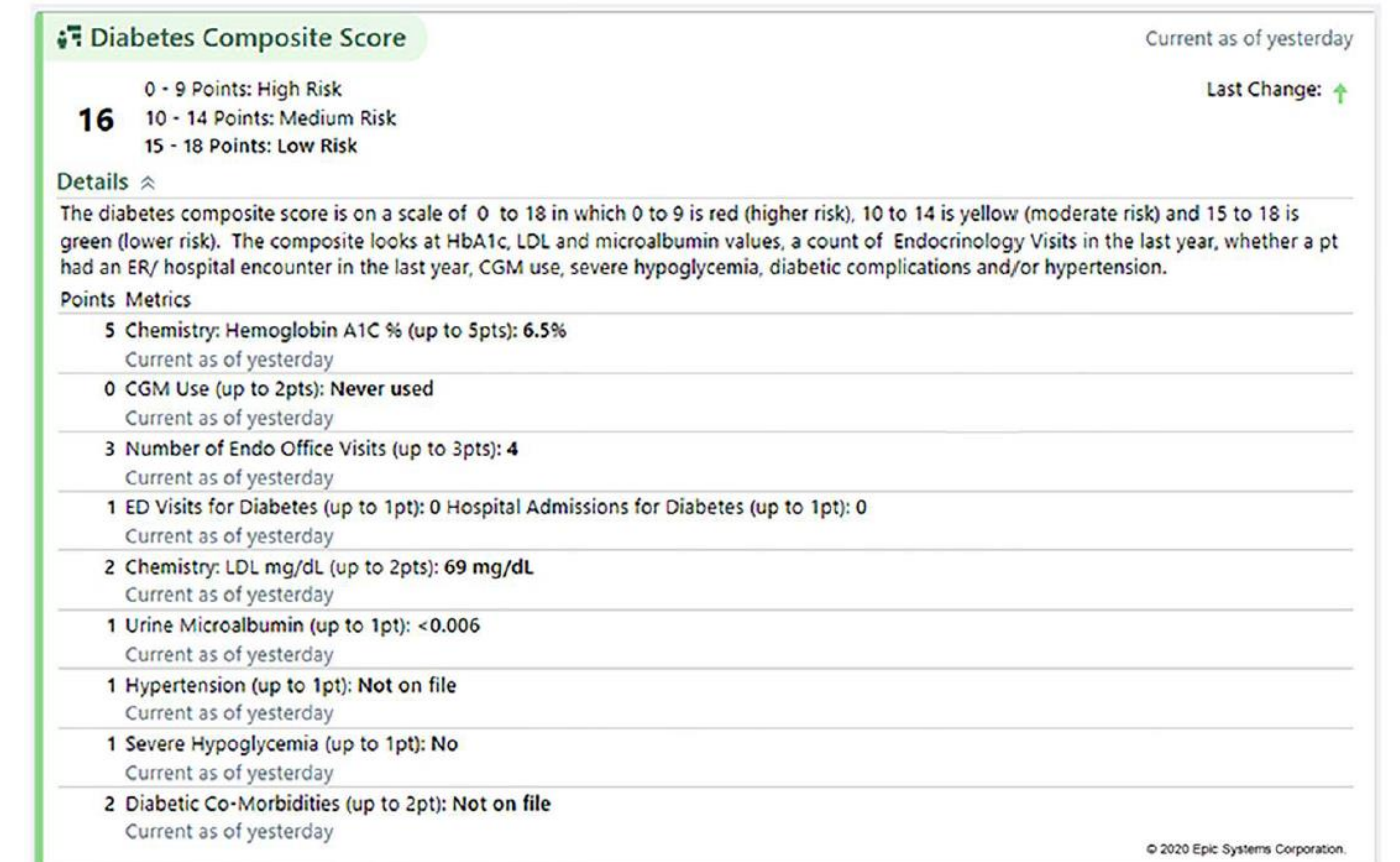

A notable example was our development of a Type 1 Diabetes Composite Score* measuring patient care outcomes, illustrating our commitment to uniform data usage.

The Type 1 Diabetes Composite Score: An Innovative Metric for Measuring Patient Care Outcomes Beyond Hemoglobin A1c
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Pediatric Quality & Safety, DOI: 10.1097/pq9.0000000000000354)

Dashboard

Sample screenshot of an individual patient's T1DCS. "Not on file" signifies that no flagged abnormalities were detected, thus "not on file" for hypertension and diabetic comorbidities indicates normal blood pressure and lack of diabetic complication diagnoses, respectively. ER or ED indicates emergency room; LDL, low-density lipoprotein; pt, patient; pts, points.

Conclusions

Our journey from scattered data and definitions to a unified data source marks a significant transformation.

We continue to refine our metrics and methods, aiming for comprehensive data coherence and utility across our institution, furthering our commitment to improving pediatric diabetes care.