THE "BEST" PARTNERSHIP: IMPROVING CAPACITY, ACCESS AND EFFICIENCY AT THE CHARLES H. BEST DIABETES CENTRE

Case Study:
CHARLES H. BEST
DIABETES CENTRE
Whitby, ON

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CASE STUDY
CHARLES H. BEST DIABETES CENTRE
IHS PARTNERSHIP

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The Challenge

The Charles H. Best Diabetes Centre is an esteemed leader in providing specialized community-based care to type 1 diabetes patients in Ontario; it promotes the integration of diabetes management throughout all life stages. With an expert team of educators including registered dietitians, registered nurses, and social workers, it supports over 1200 adult patients and approximately 350 pediatric patients per year. *

The Best Centre's mission is to keep children, youth and adults living with type 1 diabetes healthy until a cure is found. The Best Centre offers multiple programs for pediatric, transition and adult patient groups. They use a combination of methods to educate, including individual, telehealth and group sessions, as well as interdisciplinary clinics. As per their 2019-2024 strategic plan, The Best Centre's goals are to deliver excellent care; to be person-centered, to value their people and to sustain and accommodate growth.

Due to the increasing patient demand from the community at large and their aspiration to deliver excellent care for more patients, the centre decided to partner with the Medtronic Integrated Health Solutions (IHS) team to help meet their goals in a timely manner.

In that context, the Centre was eager to:

- Increase overall capacity for patients
- Reduce the wait time for new patients
- Reduce time to achieve A1C target for new patients

CHBDC by the numbers

1,200
ADULT PATIENTS

350
PEDIATRIC PATIENTS ANNUALLY

The Solution

The Charles H. Best Diabetes Centre entered into a two year-year partnership with Integrated Health Solution in 2017.
A tailored solution was created to:

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- increase operational capacity with the creation and development of a remotely accessible float educator role

- improve access and quality of care by standardizing referral processes and optimizing staff workflow

- improve operational efficiency by improving data tracking and analysis and defining specific measures and countermeasures to define success

The Approach

IHS program optimization methodology, based on Lean Six Sigma continuous improvement principles, began with a baseline assessment, and measured the initial capability of the programs and operations of the Centre. IHS consultants looked at baseline data and conducted interviews with key stakeholders to highlight areas of focus. After identifying areas for improvement, IHS consultants organized a "Kaizen" (rapid improvement) workshop to train the working group on the foundational elements behind the Lean Six Sigma methodology.

During the workshop, the group, led by IHS consultants, developed a roadmap for the future: a project charter, problem statements, high-level process maps, value stream maps, a quality improvement action plan, a communication plan, and a control plan.

The working group implemented the action items over a two-year period. Highlights include: a "float" role, a process for intake of new established (already living with type 1 diabetes) patients, and data tracking and analysis improvements.

To assess the success of the float role (responsible for newly diagnosed patients), data from new patient referrals from 2014 and 2015 were used as a baseline.

New patients from 2017 and 2018 were treated as the intervention group. Note, this analysis was conducted in 2019 and therefore limited the timeframe for patients in the intervention group to reach target A1C which may limit the interpretation of the results.

Outliers were identified using the Interquartile Range (IQR) method and the corresponding patients were dropped using a listwise approach. Patients who did not reach the target A1C (defined as <= 7% for clinical study purposes) were further excluded from the analysis.

The time in days from the initial education to when the new patient achieved a controlled A1C was then calculated.

Levene's test for equality of variances was used to show that the variability in time to reach target had changed significantly.

An Independent Samples *t* Test was conducted to show the reduction in time to reach target A1C was indeed significant. This was further confirmed by a Mann–Whitney U test.

TIME TO REACH TARGET A1C REDUCED BY

68%

The Impact

Due to team efforts, The Charles H. Best Diabetes Centre was able to achieve remarkable overall results:

- The number of clinical interactions with all active patients was increased by 12%
- Time to reach target A1C (<= 7%) was reduced by 65% (p-value = 0.039)
- Variability in the time to reach target A1C was reduced by 68% (p-value = 0.012)
- Time for initial appointment was improved by 21 working days (2017=43 & 2018 =22)

TIME FOR INITIAL APPOINTMENT IMPROVED BY NEARLY

50%

Three key success factors were:

- Strong support and involvement of the Centre's executive director, administrative and board leadership
- Very strong motivation and change readiness by staff
- Seasoned Medtronic IHS consultants with more than 18 years of best-practices experiences

CLINICAL INTERACTIONS INCREASED BY

12%

*Data on file

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