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OPTIMIZING ORAL GLUCOSE TOLERANCE TEST COMPLETION AT A PEDIATRIC CYSTIC FIBROSIS CARE CENTER: A TEN-YEAR CONTINUING QUALITY IMPROVEMENT EFFORT

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BACKGROUND

Cystic fibrosis-related diabetes (CFRD) is a common co-morbidity among people with CF (PwCF) and is associated with weight loss, protein catabolism, lung function decline, and increased mortality. Nutritional status and pulmonary function begin to decline in PwCF several years before the diagnosis of CFRD. Early CFRD detection and aggressive insulin therapy have been shown to reduce the mortality gap between PwCF who have CFRD and those who do not. The Clinical Care Guidelines for Cystic Fibrosis-Related Diabetes recommend annual screening for people with CF starting at age 10.¹ In 2011, team members at Children's Mercy Kansas City (CMKC) embarked on a quality improvement (QI) project focused on improving oral glucose tolerance test (OGTT) completion rates in PwCF.

METHODS

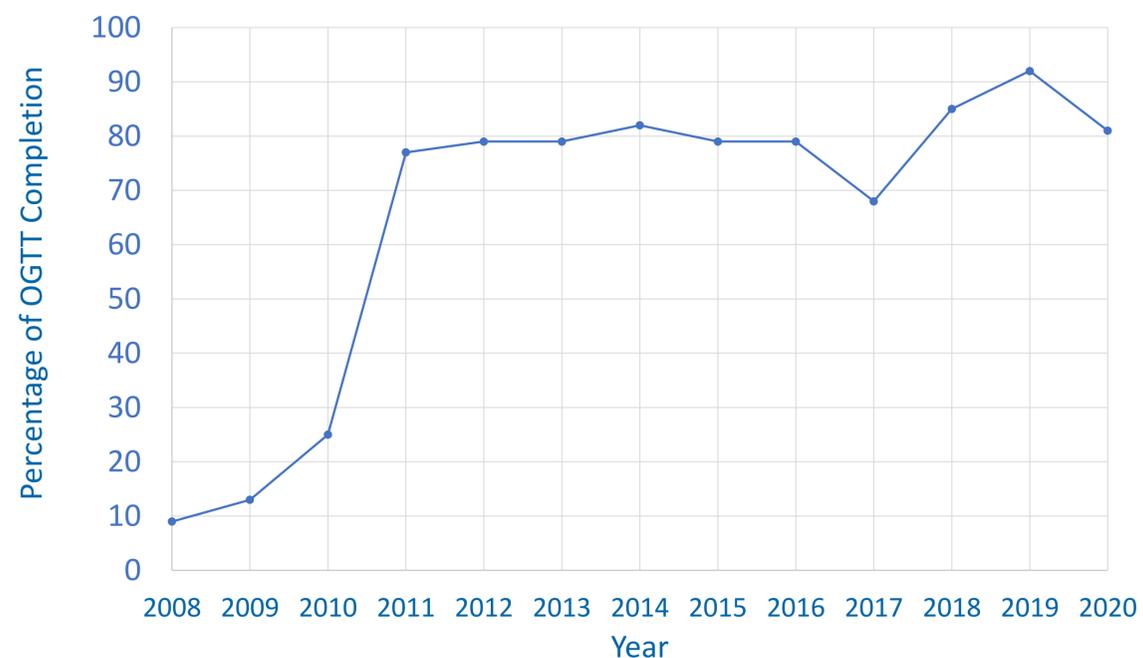
During the initial phase of this project, QI methodology including fishbone diagrams and process flowcharts were employed to identify barriers to obtaining OGTTs.

Subsequently, the following steps were implemented:

- Patient education materials (English and Spanish) were developed and distributed annually
- A database for tracking was developed
- Upcoming appointments were reviewed to avoid missed testing opportunities
- OGTTs were completed with annual laboratory testing at routine clinic appointments, at the end of a hospitalization, or at a local lab facility based on patient preference

RESULTS

Due to the lack of a standardized process and education, previous OGTT screening rates were poor: 9% in 2008, 13% in 2009 and 25% in 2010. During the first year of standard interventions (2011), the rate rose to 77%. By identifying barriers and standardizing our process, OGTT completion rates have continued to rise. In 2019, OGTT completion rate was 92% and in 2020, despite the COVID-19 pandemic, which eliminated 3 months of testing opportunities, the completion rate was 81%. In recent years, endocrinology has partnered with the CF Team in monthly CF/Endocrinology "combo clinics" which allow PwCF who have impaired glucose tolerance or CFRD to be evaluated by an endocrinology provider during their routine CF clinic visit.



CONCLUSIONS

This QI project was initiated in 2011 and quality improvement work has continued to the present day. Despite the COVID-19 pandemic, OGTT completion rates have remained high. By the end of the third quarter of 2021, the completion rate was 68% with an anticipated completion rate of 90%

Education of PwCF and their families regarding the importance of annual testing, patient tracking, coordination of OGTTs with annual laboratory testing during routine clinic appointments and commitment to sustained quality have allowed CMKC to attain high rates of OGTT completion. Earlier identification of impaired glucose tolerance and CFRD has allowed for more timely interventions, including dietary modifications, exercise recommendations, endocrinology involvement in the plan of care, home monitoring of blood glucose and implementation of insulin therapy when necessary.

OGTT completion rates have been further impacted by standardized clinic depart paperwork, the launch of a hospital-wide patient portal and the addition of morning clinic appointment spaces; these changes have allowed for easier communication and greater scheduling availability.

REFERENCES

Moran, A., Brunzell, C., Cohen, R., Katz, M., Marshall, B., Onady, G., Robinson, K., Sabadosa, K., Stecenko, A., Slovis, B., and the CFRD Guidelines Committee. (2010). Clinical care guidelines for cystic fibrosis-related diabetes. *Diabetes Care* 2010 Dec; 33(12):2697-2708