We regularly amended our admission protocol to reflect the evolving local and national infection prevention control (IPC) policies. We gained adherence from all referring teams and families, while observing the local requirements of the referring teams in 6 European countries and New Zealand.

Due to the limited access to donor tissue, secondary to reduced elective cardiac surgery, admissions required optimised coordination between multidisciplinary teams to allow for thymus transplantation within 20 days of donor tissue collection and culture.

From May 2020 to March 2021, 10 patients underwent thymus transplantation, reflecting a 50% increase in activity on previous years. The average time for referral-admission was 5 months. 4 patients were identified by NBS in their respective countries and in line with current SCID management guidelines, 2 of them were transplanted by the age of 4 months. One patient tested positive for SARS-CoV2 on return to their home country and made a full recovery. This prompted further changes in our transfer guidance and local IPC practice.

Parental interviews highlighted anxieties around international travel, restricted hospital access for the second parent and non-aligned IPC practices in comparison with referring centres. Equally, they accepted and embraced the additional restrictions in order to access their child's essential and only, treatment option.

Conclusions Upon prompt identification of challenges and risks to treatment delay for athymic infants during the COVID-19 pandemic, we overcame them in collaboration with referring centres, multi-disciplinary hospital teams and the patient families, resulting in the successful delivery of a record number of thymus transplant procedures following a MCP, maximising the opportunity for improved long-term outcomes.

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IMPROVEMENTS IN PAEDIATRIC DIABETES SERVICE USING KAIZEN – A PROCESS OF CONTINUOUS IMPROVEMENT USING LEAN TOOLS

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Background The Lean for Leaders is a 9-month training programme based on Kaizen methodology with the goal of developing skills and confidence of team leaders to use the 'lean' tools to transform health care. The aim is removing waste and using efficiency-based methods to deliver improvements in service.

Objectives To evaluate the impact of Kaizen, continuous improvement, in Paediatric Diabetes Unit (PDU) after Lead Clinician for Paediatric Diabetes completed the Lean for Leaders Programme.

Methods We are a Paediatric Diabetes (PDU) with 232 Children and Young People with Diabetes (CYPD).

We submit data annually to National Paediatric Diabetes Audit (NPDA) undertaken by Royal College of Paediatrics and Child Health (RCPC).

Data submitted includes

1. HbA1c results for all patients
2. Health check completion of 7 key care processes: HbA1c, BMI, thyroid function, retinopathy screening, urine albumin creatinine ratio, blood pressure and foot examination for CYPD over 12 years.

To improve these performance indicators, we used Kaizen bases lean tools as below, without increase in staffing or PDU funding:

- Age specific education sessions at secondary school and university entry
- Diabetes Nurse led review for CYPD with suboptimal control between clinic appointments
- Negotiated availability of Flash Glucose Monitoring with local clinical commissioning group
- Designed and used an electronic proforma at annual review appointments for documenting and completing care processes
- Introduced pre-clinic multidisciplinary team huddle to enable focused consultation and problem solving with clear ownership of jobs arising
- Streamlined process for obtaining retinopathy screening results
- Use of 'live' improvements board. This kept the entire team involved with the improvement process, defined key ownership of improvement work and progress made till date. This was done via emails and reviewed in team meetings.
- To evaluate the results from the year prior to and after implementation of these tools:
- Mean HbA1c results for NPDA 2017/18 (n=218) and 18/19 (n=224) were compared using Two-tail Z-test.
- Health check completion rate were compared for the two years. The health check completion rate was obtained dividing the total number of key processes for CYPD over 12 years having full year of care in our PDU (n=124 in 2017/18, n=101 in 18/19), by the total 'expected' (7 X n) health checks.

Results

- Mean HbA1C in 18/19 showed a statistically significant decrease with p-value of 0.003.
- Median HbA1c levels in 2018/19 (63.5 mmol/mol) reduced compared to 17/18 (67.2 mmol/mol).
- The health check completion rate improved from 78% to 88.3%.
- CYPD getting 4 HbA1c tests per year improved from 62.6% to 100%.
- CYPD getting level 3 carbohydrate training within 14 days of diagnoses improved from 28.6% to 78.6%.
- CYPD getting sick day rule advise during annual review improved from 74.8% to 96.2%.
- CYPD getting additional dietetic 1:1 appointment improved from 85.3% to 94%.
- Ketone meter training improved 76.2% to 95.7%.

Conclusions Kaizen 'lean' interventions improved HbA1c and health check completion for our PDU. This was delivered without any additional financial impact to the service provider.