

Facilitating telehealth in a paediatric endocrinology department: A quality improvement initiative to reduce the discrepancy between parent-reported and auxologist height measurements

S. MCGLACKEN-BYRNE^{1,2}, A. ALEXANDER¹, S. TOLLERFIELD¹, A. ATTERBURY¹, H. ANTELL¹, V. MEAD¹, A. DASTAMANI¹, C. PETERS¹, HW. GAN¹, R. AMIN¹, M. DATTANI^{1,2}, S. HOSKINS³, H. KATUGAMPOLA^{1,2}

1. Department of Paediatric Endocrinology and Diabetes, Great Ormond Street Hospital, London, United Kingdom
2. UCL Great Ormond Street Institute of Child Health, London, United Kingdom
3. Head of Programme Delivery, Project Management Office, Great Ormond Street Hospital, London, United Kingdom



INTRODUCTION

- The COVID-19 crisis required paediatric endocrinologists to rapidly adopt telehealth into their clinical practice.
- Accurate auxology is a cornerstone of paediatric endocrinology care and is needed to monitor growth and guide medication changes.
- Remote consultations depend upon parent-reported measurements. However, home height measurements are often inaccurate¹⁻⁵.

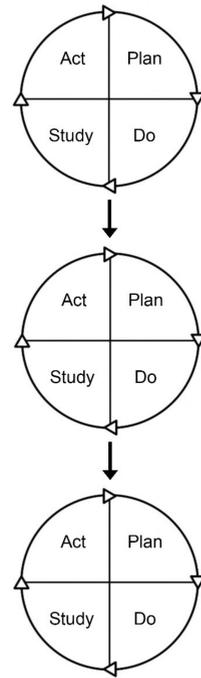
'SMART' AIM

We designed a quality improvement study with the aim of reducing the mean percentage difference between auxologist and parent-reported home measurements from 2.6% to 0.5% over a 2 month period.

METHODS

- Patients aged 2-18 years attending face-to-face Paediatric Endocrinology clinics over a 10-week period (August-October 2020) were included.
- We compared the mean percentage difference between parent-reported height measurements taken prior to clinic to the "gold standard" height measurements taken on the day of clinic review by a paediatric auxologist.
- We conducted a baseline audit over a two-week period which demonstrated the mean percentage difference between parent-reported and auxologist height measurements to be 2.6% (SD 4.1) and the proportion of parents providing home height measurements to be 57.4%.
- Three Plan-Do-Study-Act (PDSA) cycles followed.
- The mean percentage difference between home and auxologist height measurements was tracked prospectively on a run chart.
- Data were also collected on the proportion of parents providing home height measurements.

RESULTS



A total of 59 children were included (61.0% male, n=36) over the 10-week period with a mean age of 12.1 years (SD 3.8).

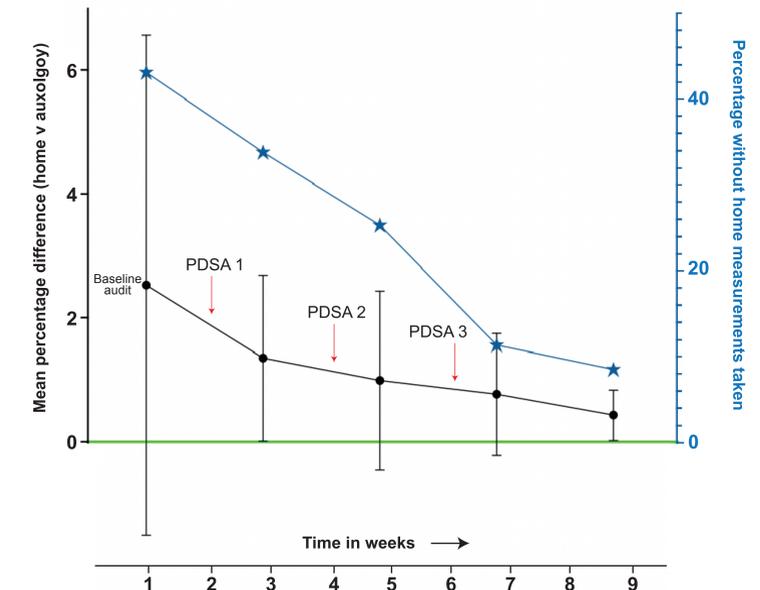
PDSA Cycle 1: During the first PDSA cycle, parents were provided with verbal reminders and brief instructions on how to measure their child a week prior to clinic review.

PDSA Cycle 2: The second cycle focused on ensuring all families were registered on MyGOSH, the patient communication portal of the hospital's electronic healthcare record system (Epic). Parents were then sent an electronic MyGOSH reminder two days before their clinic review. Parents were also called by a clinical team member to discuss the home height measurement process in detail facilitated by departmental guidelines.

PDSA Cycle 3: The third PDSA cycle focused on sustainability; parent reminders and home height measurements instructions were embedded into standard pre-visit MyGOSH hospital communications sent electronically.

Findings from each PDSA cycle were discussed collaboratively at the end of each cycle at the paediatric endocrinology "Big Room" quality improvement sessions at Great Ormond Street Hospital⁶.

Mean percentage difference between home and auxologist height measurements was reduced from a baseline of 2.6% to 0.4% (SD 0.4), with 91.6% of parents (from a baseline of 57.4%) providing home height measurements.



Run chart: Mean percentage difference between home and auxology height measurements was tracked prospectively over time (black axis). The proportion of parents not taking home measurements (expressed as a percentage of total) was also measured (blue axis). PDSA cycles are indicated using red arrows.

CONCLUSIONS

- Quality improvement initiatives can be used to help health care professionals, young people, and their families adapt to the large-scale changes occurring within healthcare environments during the COVID-19 pandemic.
- Change interventions focusing on simple reminders and parental empowerment resulted in improved reliability of parent-reported height measurements.
- This will facilitate clinical care decisions during teleconsultations, which are likely to remain a part of routine paediatric endocrinology practice going forward.
- Further work is ongoing on developing a video for parents – "How to measure your child at home" – which will be embedded into electronic messaging sent to parents prior to clinic reviews.

REFERENCES

1. O'Connor, D. P. & Gugenheim, J. J. Comparison of measured and parents' reported height and weight in children and adolescents. *Obesity (Silver Spring)* **19**, 1040–1046 (2011).
2. Garcia-Marcos, L. *et al.* Validity of parent-reported height and weight for defining obesity among asthmatic and nonasthmatic schoolchildren. *Int. Arch. Allergy Immunol.* **139**, 139–145 (2006).
3. Huybrechts, I., De Bacquer, D., Van Trimont, I., & De Henauw, S. Validity of parentally reported weight and height for preschool-aged children in Belgium and its impact on classification into body mass index categories. *Pediatrics* **118**, 2109–2118 (2006).
4. Gordon, N. P. & Mellor, R. G. Accuracy of parent-reported information for estimating prevalence of overweight and obesity in a race-ethnically diverse pediatric clinic population aged 3 to 12. *BMC Pediatr.* **15**, 5 (2015).
5. Dubois, L. & Girad, M. Accuracy of maternal reports of pre-schoolers' weights and heights as estimates of BMI values. *Int. J. Epidemiol.* **36**, 132–138 (2007).
6. Crisp, H., Watt, A., Jones, B., Amevenu, D. & Warburton, W. Improving flow along care pathways: Learning from the Flow Coaching Academy programme. *The Health Foundation*. (2020) doi:10.37829/HF-2020-104.