Case study: Connected Health

Tunstall

Remote health monitoring for eating disorders

The challenge

Children with eating disorders would normally receive clinic-based care, but this is not possible during the COVID-19 pandemic. How has Cornwall Partnership NHS Foundation Trust, working with Kernow Health CIC, adapted its service to support this cohort of patients?

What we did

Since 2017 Kernow Health CIC has delivered the Children's Eating Disorder Service (CEDS) Physical Monitoring Service on behalf of Cornwall Partnership NHS Foundation Trust (CPFT) Children and Adolescent Mental Health Services as a sub-contractor. The Physical Monitoring Service team offers physical monitoring to children (8-18) with a range of restrictive eating disorders including Anorexia Nervosa. Children attending face to face clinics for monitoring of their vital signs and symptoms.

The demand on the CEDS Physical Monitoring Team has grown from a case load of 36 patients in 2017 to one of 161 in February 2022 (home and Face to Face monitoring). This increased demand is reflective of the national trajectory, "the number of young people completing an urgent pathway for eating disorders has increased by 141 per cent between quarter four in 2019/20 and quarter one in 2021/22" (Mental Health Network, 2021) due to the impact of the Covid-19 pandemic on children and young people's mental health, and is expected to continue.

In November 2020 the NHS committed to investing into early intervention services to support young people in the early stages of eating disorders – First Episode Rapid Early Intervention for Eating Disorders (FREED), as part of the NHS Long term plan. With eating disorders causing serious physical and mental health problems which can last decades, the NHS expanded service will target care to those who have been living with a condition for fewer than three years, to tackle problems before they escalate.

In 2020, due to restrictions in place during the pandemic, risks to patients and practitioners, and a reduction in the use of onsite premises, it was essential for the CEDS Physical Monitoring Service team to find alternative ways to engage with their cohort of patients. Working with Tunstall, who had a well-established programme working alongside CPFT providing Digital Health Service remote monitoring by nurses for patients with Respiratory and Cardiac Conditions, Kernow Health and Tunstall were able to introduce remote health monitoring for patients.

Kernow Health

NHS
Cornwall Partnership
NHS Foundation Trust

About remote health monitoring

Patients use Tunstall's myMobile app and peripheral medical devices (e.g. blood pressure monitor, thermometer and scales) in their own homes. They also access a special health interview that was developed based on the Junior MaRSiPAN (Management of Really Sick Patients with Anorexia Nervosa) risk assessment framework.

Depending on the child's assessed physical risk monitoring ranged from daily to monthly, patients use devices to take their vital signs:

- Blood pressure and pulse from a lying and standing position
- Temperature
- Weight

They then answer the following symptom related questions:

- Experiencing light headedness
- Fainting episodes
- Ability to sit up from lying flat
- Ability to stand from a squat position

All the information is collected via the myMobile app on the patient's smart device, and is automatically uploaded to ICP triagemanager, where any breaches of parameters set for individual patients will raise an alert on the system.

Clinicians can log in to a secure portal to view a colour coded dashboard which prioritises patients according to the need for intervention. Individual patient's readings can also be viewed over time to monitor their progress.

> "The children we support are extremely vulnerable, and any delay or interruption to the treatment they receive could have serious implications for their recovery. Being able to deploy a solution so rapidly enabling us to continue helping them has been a real relief."
>
> **Michele Boyce, Service Lead Nurse, Kernow Health**

Evaluation

In April 2021 the development and digitalisation of the Children's Eating Disorder Service Physical Monitoring Service using remote healthcare monitoring equipment, was supported with capital and revenue funding from the NHSE&I Digital Community Health Services Programme.

This funding enabled an evaluation to determine whether this digital capability improves the capacity to manage assessed children using this remote monitoring model. An options appraisal was undertaken:

Do nothing (no funding)

- Current capacity will remain
- Remote case load will continue to grow without necessary resource to manage it
- Delay in patients receiving 6-weekly face to face appointments
- Patients will remain on caseload for longer due to resource capacity and inability to progress treatment plans
- Burden will fall to primary and acute care for treatment and support
- Increase in waiting times, assessment times and delivery of service
- Significant delays for patients accessing care and treatment; implication that patients will stay ill for longer
- Admin tasks will take up CEDS Physical Monitoring team capacity
- Patients will Do-Not-Attend (DNA) appointments due to 'appointment-burn out' and opposing requirements of school and family life (possible patient suspension from service and deterioration of symptoms)
- Patients and their families will need to travel to appointments, extending appointment times, impacting schooling, and resulting in additional costs
- Patients feel isolated and detached from clinical team leading to patient decline and withdrawal from treatment plan
- Requirement to provide the necessary clinic space on a weekly basis
- Reduction in referrals to KHCIC service due to waiting times
- Patients will feel disconnected to treatment plan and rely on external factors for improvement, potentially preventing recovery
- Only a select number of patients will be able to benefit from remote monitoring

Do something (benefits of funding)

- Patient safety
- Service demand will be met
- Future proofing the service
- CEDS Physical Monitoring team will have admin support, increasing number of clinical appointments available
- Patients will have timely access to CEDS Physical Monitoring team for 6-weekly appointments
- Timely discharge from the service
- Clinics will be able to cope with patient appointment requirements
- Reduction in Do-Not-Attend (DNA) appointments
- Less appointment burden and burn-out for patients and their family
- Reduction in patient/family car journeys and therefore environmental impact
- Patient feels supported and autonomous throughout their treatment plan
- Early identification of stalling or falling physical recovery and response, reducing the risk of escalation to an urgent case, and avoiding secondary care admission
- Flexibility in the Physical Monitoring treatment plan when concerns identified without the need for face-to-face contact
- Reduction in clinic space requirement – freeing capacity for other services
- Efficient and effective use of the developed, county-wide pathway
- Increased referrals to the physical monitoring service due to greater confidence in the service provided by KHCIC
- More digitally deprived families supported to utilise innovative technology in healthcare
- Achievement of the access and waiting time standards for CEDS services

Results

Feedback from patients, families and clinicians involved in the service is very positive. Benefits include:

- Vulnerable eating disorder patients are enabled to monitor their physical recovery without the need for face to face contact, maximising the effective use of resources within the CEDS team
- Early identification of stalling or falling physical recovery and response, reducing the risk of escalation to an urgent case and avoiding secondary care admission
- The CEDS Team are able to use regular, accurate data to drive clinical decision making
- This digital solutions will support the development of the pathway from ward to physical monitoring service to ensure a safe referral process
- Enabling the CEDS team to manage the caseload and its increase effectively, supporting the achievement of the access and waiting time standards.
- Reducing anxiety some patients have regarding travelling to and attending clinics, and the associated expense

A total of £81,000 costs were avoided (FY 2021/22) as a result of the remote monitoring service due to reduced inpatient stays, Emergency Department stays, and use of the community clinic room, as well as reduced environmental impact, with the service saving:

- 64.5 hours of travel time per patient
- 978 miles per patient not travelled
- £890 saved per patient in petrol costs
- 546kg CO2e savings per patient

> In our situation, where our daughter was compliant with weigh ins and did not attempt to falsify results (e.g., by weighting her pockets) it was helpful. A round trip for clinic attendance was an hour of travel. Fuel costs added up and it was not always possible to schedule checks to avoid her missing school. She found both attending the clinic and missing lessons very stressful. She felt it was also obvious what she was waiting for and she often saw people she knew which seemed to add to the stress.
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> Home monitoring was easy to set up and use, and meant no issues with missing school. Feedback was quick by text and ensured the team had up to date readings to hand and could communicate any concerns. Our daughter was able to use the monitoring equipment herself and this helped empower her in her recovery from her eating disorder. I believe the home monitoring contributed to a faster recovery time.

Patient's family member

Tunstall Healthcare (UK) Ltd is a member of the Tunstall Healthcare Integrated group.
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