Empowered patients
Sustainable healthcare

A HN CASE STUDY

The AI-guided clinical coaching intervention that prevents 34% of A&E attendances and significantly reduces health inequalities

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THE PROBLEM

More than 15 million people may be living with one or more long term conditions in England. Their care accounts for 50% of all GP appointments, 64% of all outpatient appointments and over 70% of all inpatient hospital bed days produced by the NHS. With the unprecedented pressure on hospitals and demand on urgent and emergency care in the NHS, frequent users of A&E and primary care services are having a significant impact on the health system every year. In Staffordshire, local analyses showed most chronic conditions will increase by 25-30% until 2030, primarily driven by an ageing population.

USING AI TECHNOLOGY TO IDENTIFY PATIENTS AT HIGH RISK OF A CLINICAL CRISIS AND HOSPITAL CARE

Stafford & Surrounds CCG started working with HN in 2016 when it began a randomised control trial in South West Staffordshire. The aim was to look at how existing patient data could be used to predict those most likely to attend A&E or need hospital care in the near future, and intervene with targeted clinical coaching to reduce their dependence on A&E and GP services.

The CCG wanted to demonstrate how existing patient data could be used to make its services run more effectively and control its growing demand on urgent and emergency care. Current GP-initiated referral demands time from hard pressed clinicians and can be uneven in uptake. The CCG wanted to develop an AI-driven process that could alleviate pressure on the system and staff while at the same time, providing a better patient experience.

The project, led by Dr Paddy Hannigan, Chair of the Stafford and Surround CCG and Clinical Lead for Staffordshire & Stoke-on-Trent ICS Digital Programme, launched the trial with two of the six CCGs and three acute hospitals.

Using HN's AI-powered predictive analytics (HN Predict), Staffordshire was able to identify and prioritise people with risk of worsening health conditions in real-time by analysing their patient records. The algorithm targeted individuals who were likely to consume three or more acute hospital bed days in the next six months or require an increase in GP-led care.

> Absolutely invaluable. Great to have my coach at the end of the phone. She listens, is easy to talk to and she has put me in touch with other services... She has given me the confidence to speak to my doctor.
> **Patient - Staffordshire**

RESULTS

35% reduction in **A&E attendances** on average

34% reduction in **non-elective spells** on average

30% reduction per patient in the average **total hospital care cost**

57% reduction in **A&E tariff registered cost** in the 49–79 year age group

59% of patients reported an improvement in their **mental health**

Source: Interim Results from RCT 2016–2019. Results for all patients who received the complete intervention and were observed for up to two years (average observation time = 457 days per patent). https://bjgp.org/content/early/2022/05/12/BJGP.2021.0545

STAFFORDSHIRE'S UNPLANNED CARE DEMAND

HN's analysis showed that in Staffordshire the 5% highest consumers of hospital services were using 71% of all non-elective (NEL) hospital bed days. 88% of these patients had one long-term condition. In University Hospitals of North Midlands NHS Trust (UHNM), HN was able to predict more than eight out of ten people who were consuming three or more unplanned bed days. As a result, there was a 35% reduction in A&E attendances and a 34% reduction in non-elective spells on average. Data from patients recruited at UHNM, University Hospitals of Derby and Burton (UHDB), and The Royal Wolverhampton NHS Trust (RWT) showed a 25% reduction in bed days.

> Data can play a huge role for the NHS if it is collected, analysed and acted upon in the right way. **The key to this study was the data-driven case-finding**.
>
> By using data to better forecast demand and predict outcomes we were able to manage the resources we had accordingly and **reduce hospital care costs by 30% per patient**.
>
> **Paddy Hannigan** - Clinical Chair Stafford & Surrounds CCG, SRO Staffordshire & Stoke-on-Trent ICS Digital Programme

In primary care, HN's analysis revealed that the 5% highest consumers of GP appointments were transient, meaning those who had most contact with primary care were not the same users the following year. This insight proved invaluable and demonstrates the need for a data-driven approach to finding suitable patients for clinical coaching.

The trial data was able to show reducing demand on urgent and emergency care did not have an adverse impact on primary care.

THE IMPACT OF COACHING ON PATIENTS

The coaching programme, which is delivered by HN's trained clinical staff, is co-created with the patient and lasts for a period of 4-6 months. It helps to improve the individual's quality of life and reduce the immediate risks of unplanned care by empowering them to take responsibility for their own health. The personalised approach focuses on motivation, health literacy, self-management and care coordination. As a result of this programme of coaching, 59% of patients in the trial reported an improvement in their mental health, 34% in their general health and 52% showed an improvement in their physical health.

THE DATA-DRIVEN MODEL AT ICS LEVEL

In 2020 the service was repurposed to deliver care to patients at home during the pandemic. It was subsequently upscaled to include South Staffordshire and the CCG has plans to include the whole ICS footprint in the coming year, recruiting over 3,000 patients on to the programme in total. This gradual way of implementing the service helped the ICS to prove the model and gain valuable data insights before scaling it across other areas.

Staffordshire ICS and HN are now working together on their Frailty and Health Ageing programme and to see how data prediction methods might work for patients at risk of falls, or those who would benefit most from an MDT review (where patients cases and their care plans are discussed). It will also be considered for those who are at a higher risk of delayed discharge from hospital should they be admitted.

FIND OUT MORE

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HN PREDICT

About HN

We use AI to identify adverse and avoidable patient events and provide clinically-staffed virtual wards to mitigate these risks.

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