

# **Making the policy of supported self-care a reality in the NHS today – a case study of AI-Guided Clinical Coaching**

**Professor Alf Collins – National Clinical Director of the Personalised Care Group, NHS England**

**Mark England – CEO HN**

**Digital Health Rewired  
March 16th 2022**

# Agenda

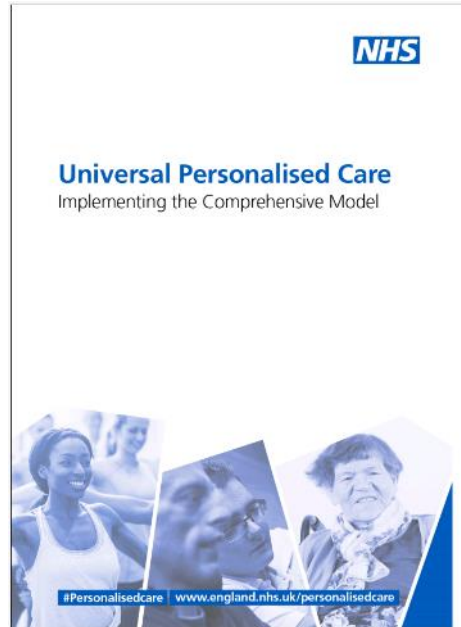
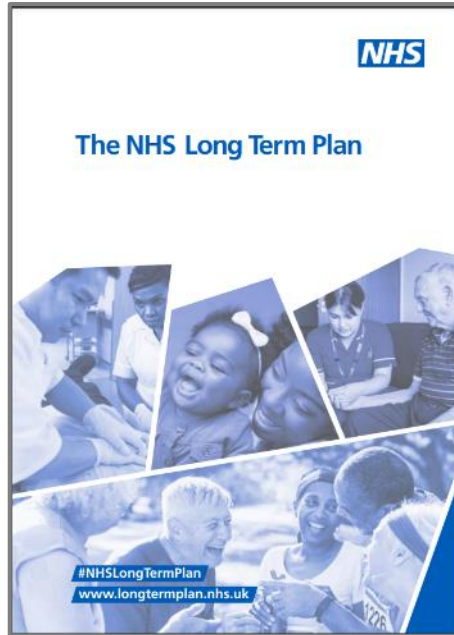
**1. The Policy - The Case for Supported Self-Care –**  
Professor Alf Collins

**2. Into Practice: Providing Supported Self-Care in the NHS**  
– **AI-Guided Clinical Coaching**  
– Mark England



# **1. The Policy - The Case for Supported Self-Care – Professor Alf Collins**

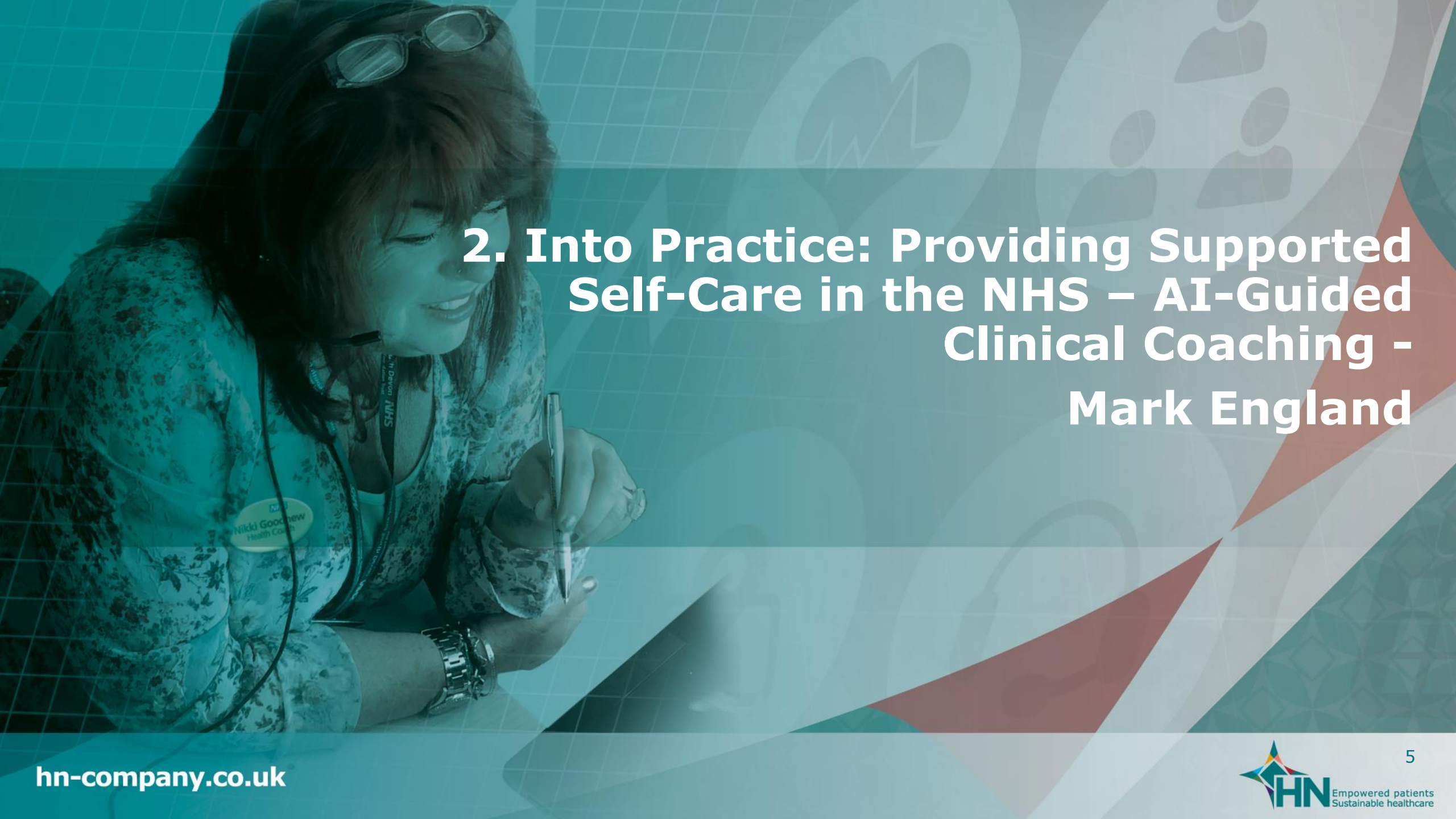
# 1. The Policy Context - The Case for Supported Self-Care – Professor Alf Collins



Personalised Care Group system case study  
Proactive health coaching in the Vale of York







## 2. Into Practice: Providing Supported Self-Care in the NHS – AI-Guided Clinical Coaching - Mark England

# Intro to HN: 'Empowered Patients, Sustainable Healthcare'

## What we do:

- ✦ Population health analytics
- ✦ Data-driven case-finding
- ✦ Remote monitoring
- ✦ Clinical coaching
- ✦ Virtual ward solutions

## Our focus:

- ✦ Support patients to become activated and to self-manage and enhancing their health literacy
- ✦ Enhance the efficient allocation of primary and secondary care resources

## Our Credentials

- ✦ UK's largest RCT on clinical case management
- ✦ Supporting over 5,000 patients in 2020 & 2021
- ✦ 40 employees contacts with 5 ICSs
- ✦ NIA Innovation Accelerator fellows 2020 & 2021

**HTN**  
NOW AWARDS  
2021 WINNER

**NHS**  
Vale of York  
Clinical Commissioning Group

**NHS**  
Kent and Medway  
Clinical Commissioning Group

**NHS**  
Cannock Chase  
Clinical Commissioning Group

**NHS**  
Stafford and Surrounds  
Clinical Commissioning Group

**NHS**  
Greater Glasgow  
and Clyde

**NHS**  
South Hambleton and Ryedale  
Primary Care Network

**NHS**  
Selby Town  
Primary Care Network

**NHS**  
Attenborough  
Primary Care Network

**NHS**  
Brompton  
Primary Care Network

**NHS**  
Broughton  
Primary Care Network

**NHS**  
The AHSN Network  
England  
NHS Innovation Accelerator

**SBRI**  
HEALTHCARE

nuffieldtrust



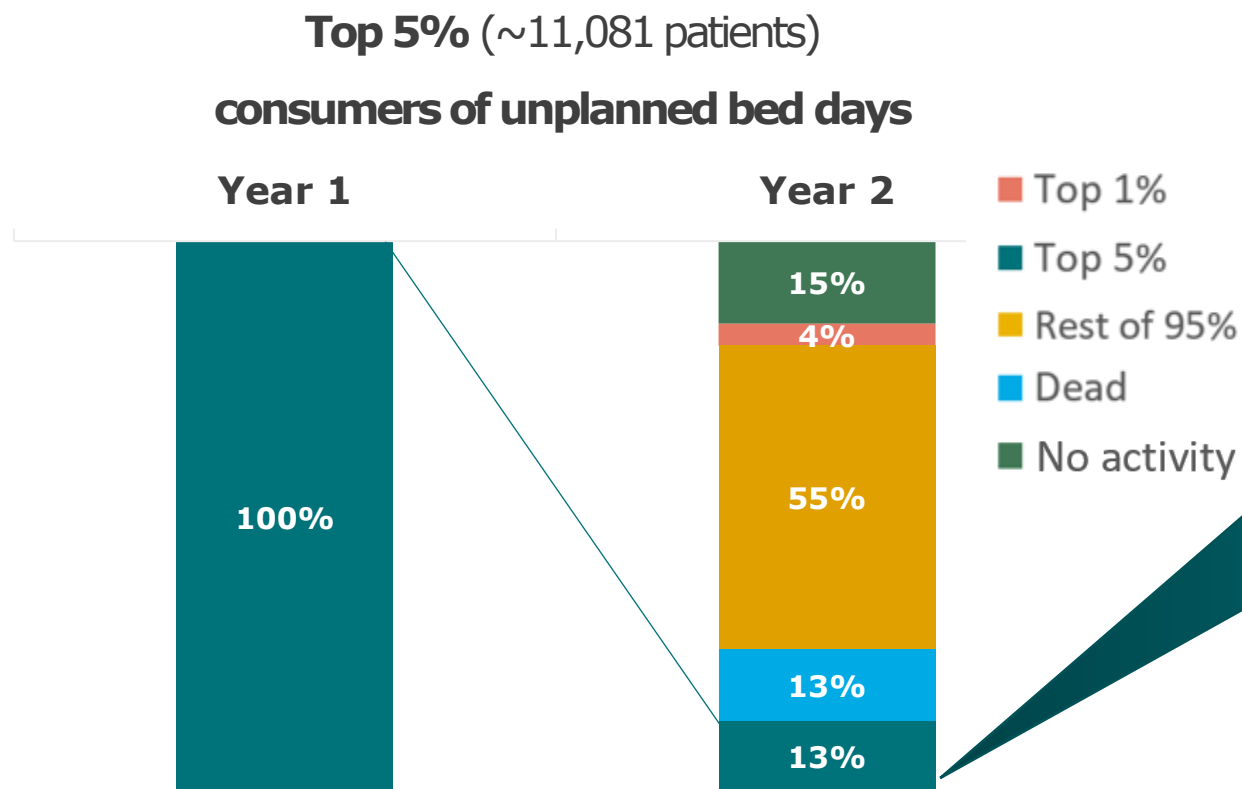
# Birmingham OwnHealth trial evaluated telephone coaching without data-driven case-finding



## Conclusions:

- No expected reductions in hospital admissions / secondary care costs over 12 months
- Could have increased care burden

# High users of UEC are transient



Only one out of eight (13%) UEC high consumers are still high consumers the year after. Most other previously high consuming patients have no or low UEC demand

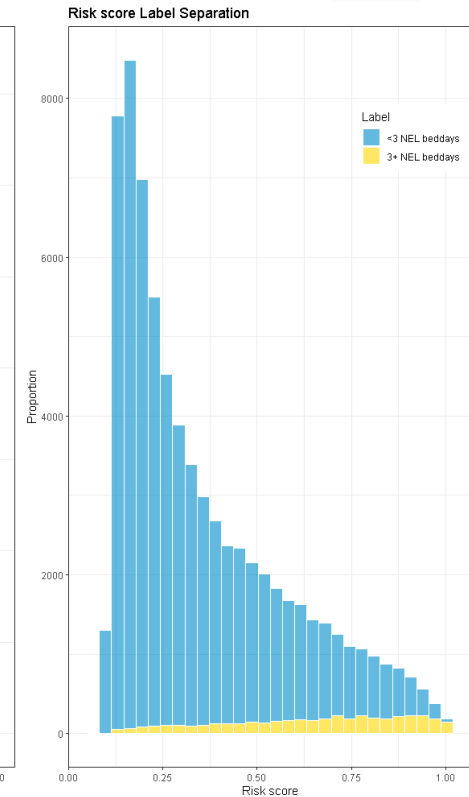
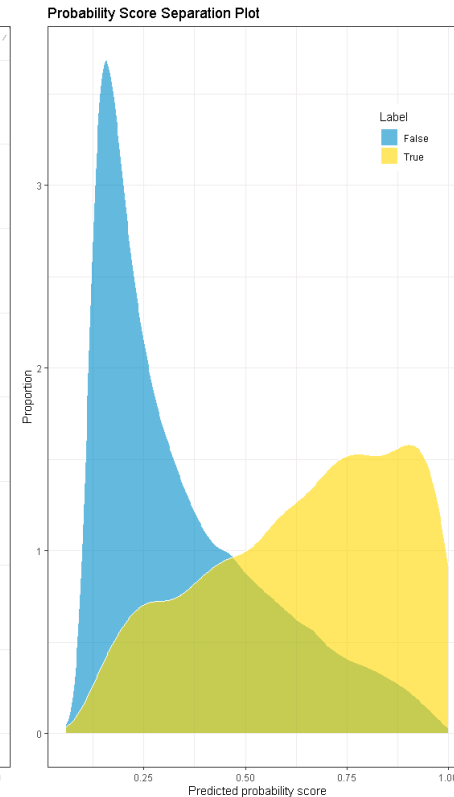
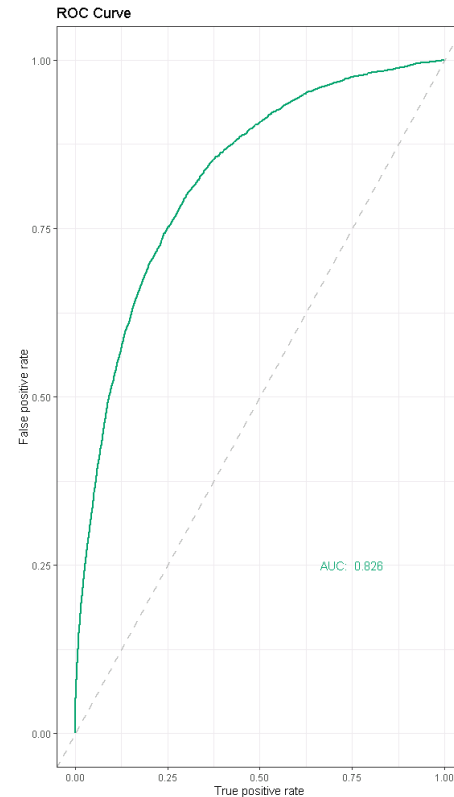
## Implications for Proactive Care Models to Reduce UEC Demand

- Identify the right patients in the right “window of opportunity” e.g. Predictive Analytics in near real-time and intervene directly
- Evaluate against control group as “before and after” will give false positive results – most patients naturally reduce their UEC demand over a 12 month time period



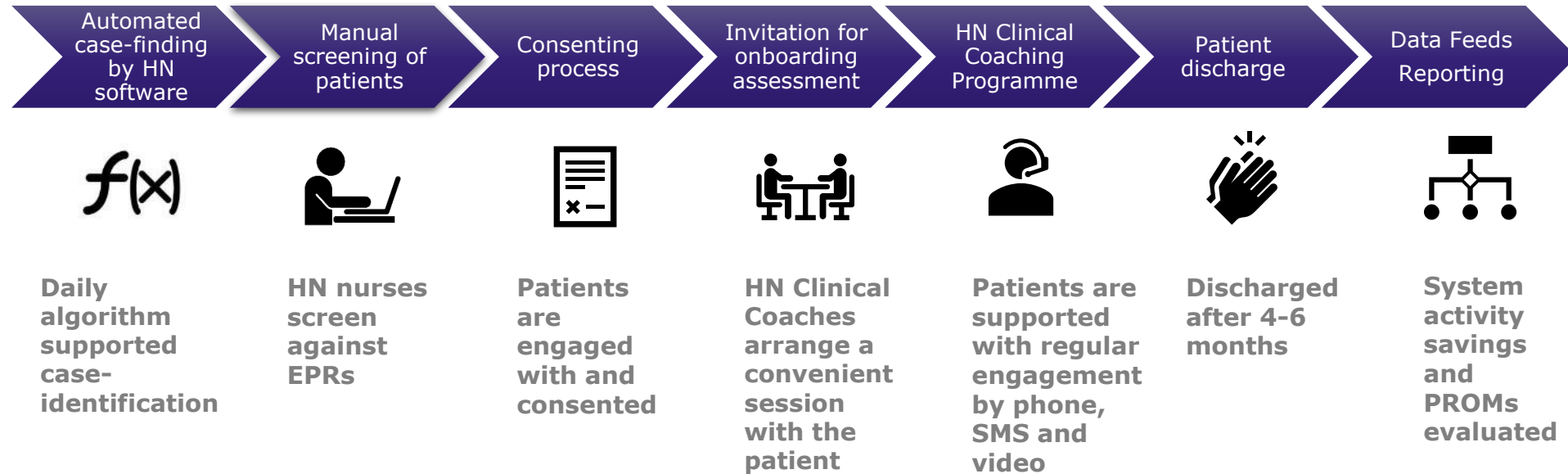
# Our AI model can identify 8 out of 10 HIUs -before they become HIUs (predicting >3 unplanned bed days) – Glasgow City Analysis

- **Validated model performance**  
**ROC<sup>1</sup> = 0.826**  
**Sensitivity = 0.81 (81%)**  
**False Negative rate = 0.19 (19%)**  
**Specificity = 0.68 (68%)**  
**Balanced accuracy = 0.75 (75%)**
- **Tested for equality and fairness**
- **HSNC cloud-operated making it scalable and easy to re-train**

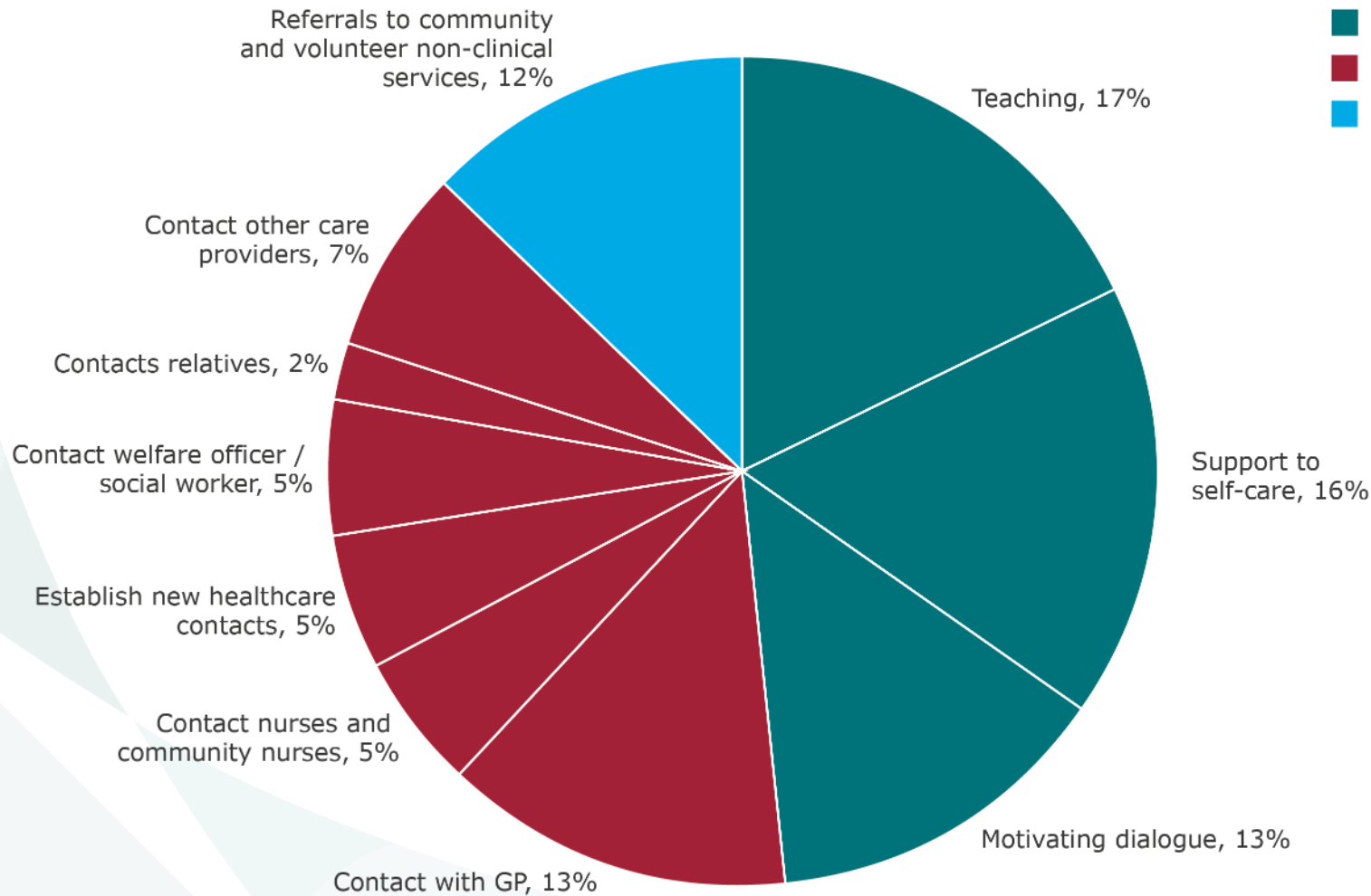


ROC<sup>1</sup> – receiver operating characteristics curve

# AI-guided Clinical Coaching (AICC) process to identify and support HIUs



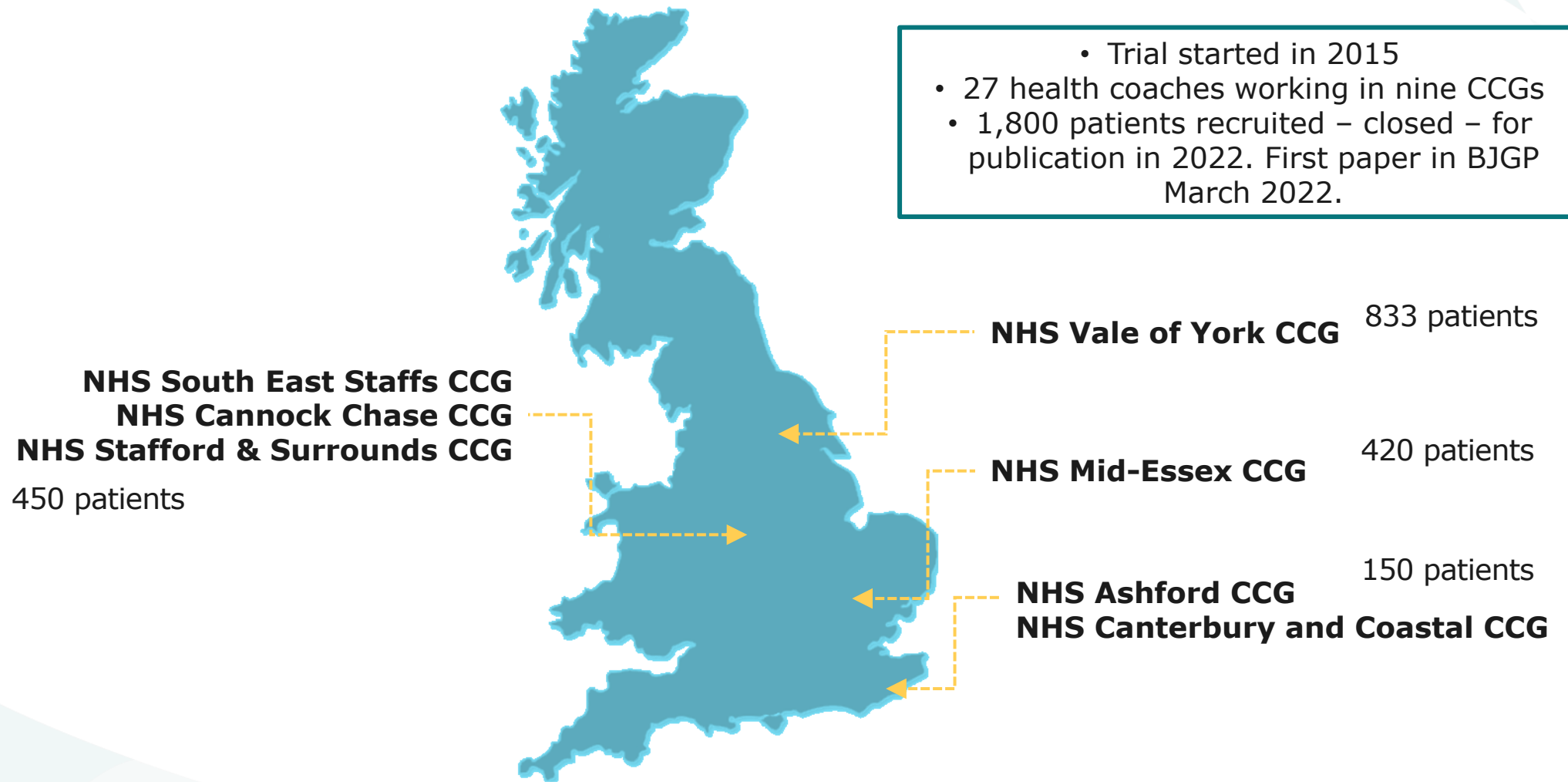
# Clinical Coaching – delivers complimentary support for self-care alongside existing teams



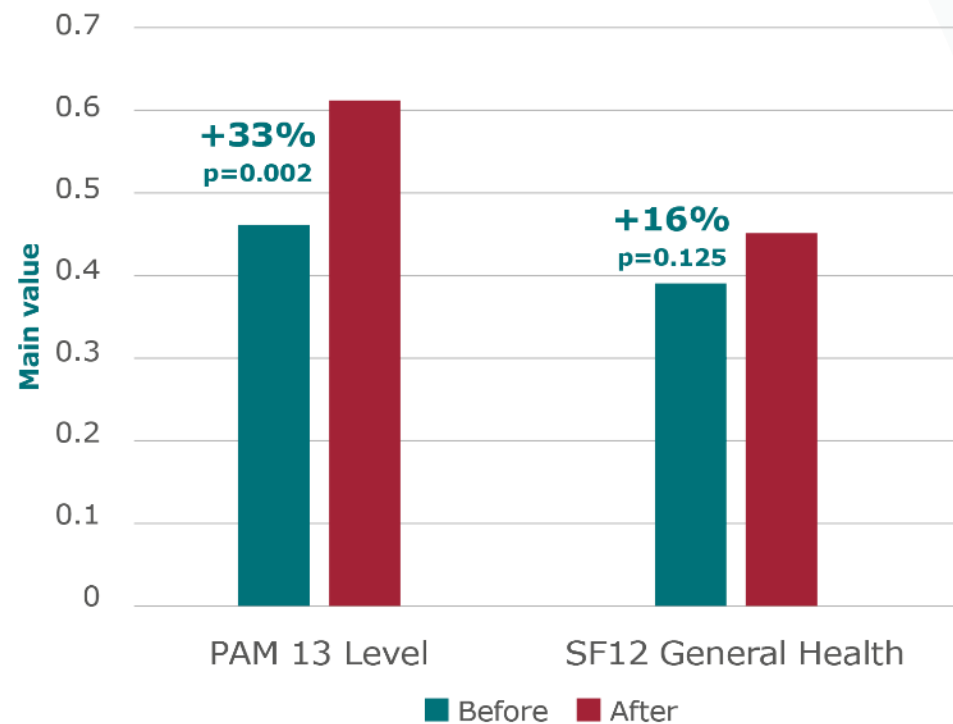
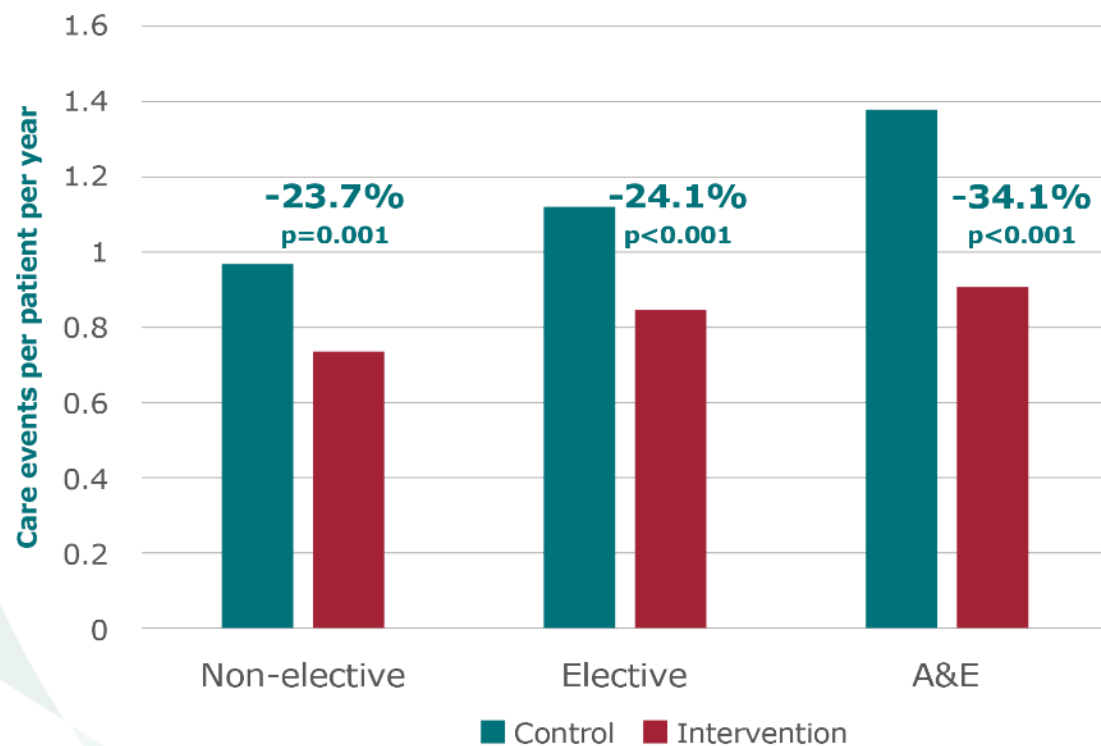
- Motivational Coaching & Health Education
- Care Coordination
- Social Prescribing

- Each Coach has an active case-load of at least 60 patients at any one time
- Contact is several times p/w initially, then gradually reduced
- Discharge after 4-6 months as UEC risk mitigated
- Any unscheduled care events monitored and automatically triggers clinical coach to respond and provide remedial support
- Focus on building relationships, understanding context, and work alongside new roles eg social prescribers to focus on the most Personalised Care Plan
- Coaches work mostly remotely and are recruited nationally
- Accredited by Personalised Care Institute

# NIHR portfolio-adopted RCT sites with 1800 participants

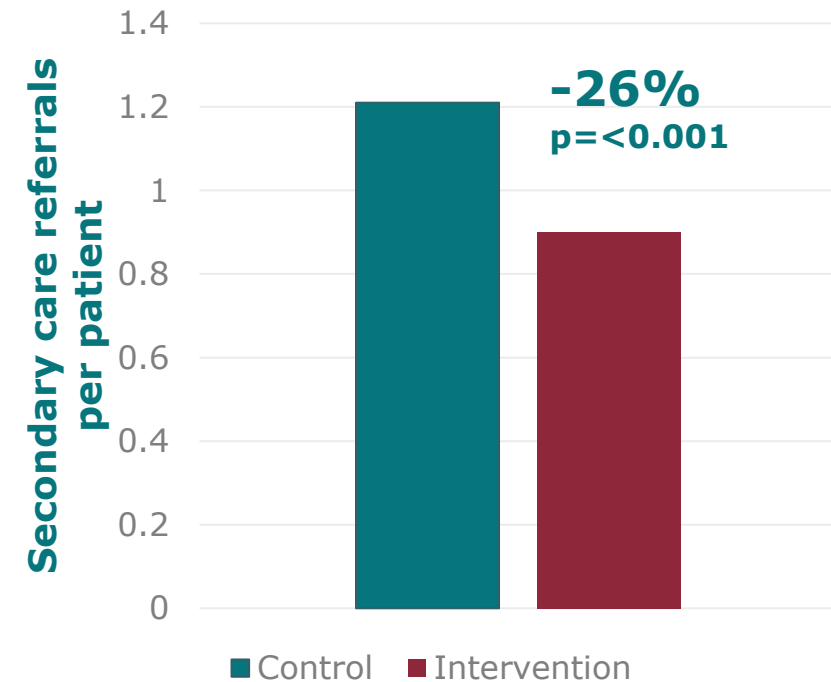
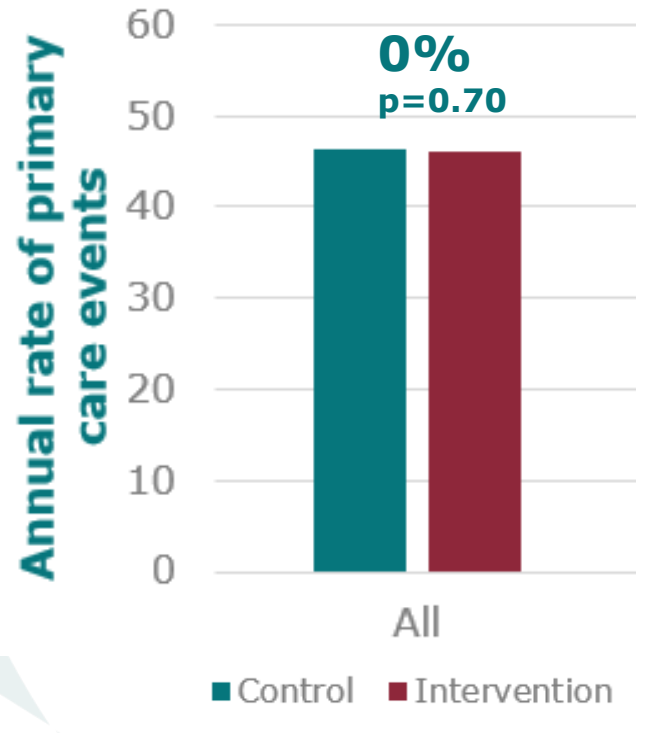


# RTC results: Safely reducing demand and improving outcomes



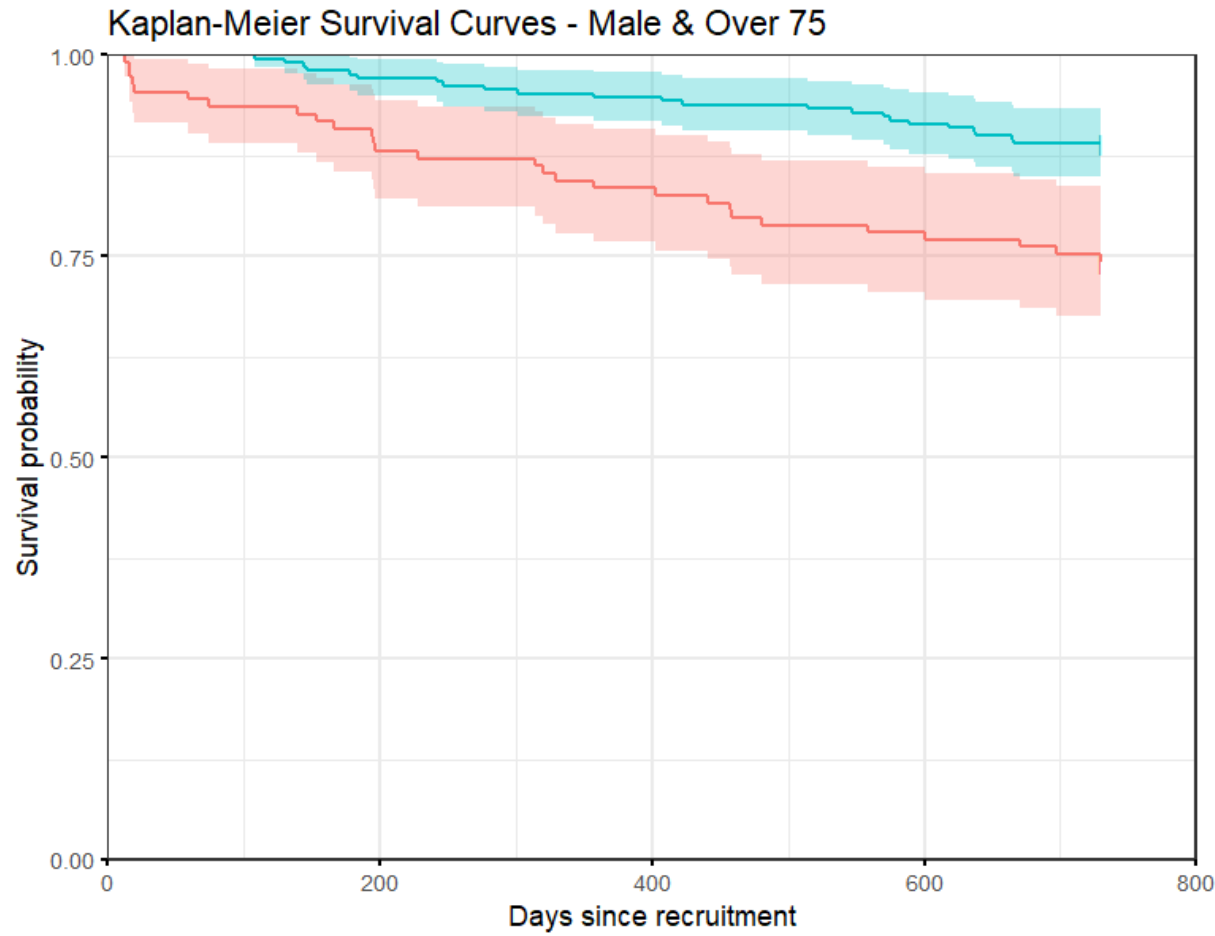


# AICC does not shift from hospital to primary care. Referrals to secondary care reduced by 26%.



# AICC RCT Mortality Evaluation – Males Over 75

Strategic Intelligence Unit



62% reduction in mortality on the intervention vs. control

Cohort  
+ Control  
+ Intervention

Cohort	Deaths	Mortality
Control	28	151.7
Intervention	23	57.7

# The impact of AI-Guided Clinical Coaching

## Tim's story

“ *If you are brave enough to take control with the help of the coach who helps you through this, you truly can make a difference to the immediate crises as they turn up...*

*In my case I went from being an asthmatic, to someone who happens to have asthma.*

*I went from 6 admissions to none within a couple of months. ”*

– **Tim**, patient receiving the AICC intervention in York



# Our evidence

- ✦ [European Medical Journal, 2015](#) Edgren et al. (2016). 23(5), pp.344–350.
- ✦ [European Medical Journal, 2012](#) Reinius et al (2013). 20(5), pp.327–34.
- ✦ [East Kent Poster, 2019](#) Poster produced by East Kent NHS analytics team – winners of Association of Healthcare Analysts' Team of the Year award.
- ✦ [HETT Slides, 2019](#) Healthcare Excellence Through Technology (HETT) 2019 – presentation of HN's RCT results.
- ✦ [M. Wieske Thesis on PROMS, 2019](#) UCL masters thesis analysing the PROMS impact of Clinical Coaching.
- ✦ [Mark England, 2020](#) The NHS at Home
- ✦ [J. Cohen Thesis on Primary Care Impact, 2021](#) UCL masters thesis analysing impact of Clinical Coaching, concluding that activity is not simply shifted to other points of care. Published in BJGP, March 2022.
- ✦ [Intensity and dynamics of the top 1% and 5% highest users of primary care, 2021](#) poster of our analysis from Attenborough Surgery in Hertfordshire
- ✦ [Sara Reis, 2020](#) Ensuring fairness and inclusion in AI-guided patient screening
- ✦ [HN Advisory Board, 2020](#) - Hospital at Home
- ✦ [Matthew Cooke, 2021](#) – Reducing the high healthcare demand of a few individuals
- ✦ [NHSE Case Study, 2020](#) A case study of our York deployment, written by the NHS England Personalised Care Group.
- ✦ [Policy paper, 2020](#) produced to explain the benefits of clinical health coaching.
- ✦ [Videos](#) Interviews with HN, our NHS partners and patients.