

Healthcare system preparedness for the early detection of cognitive impairment

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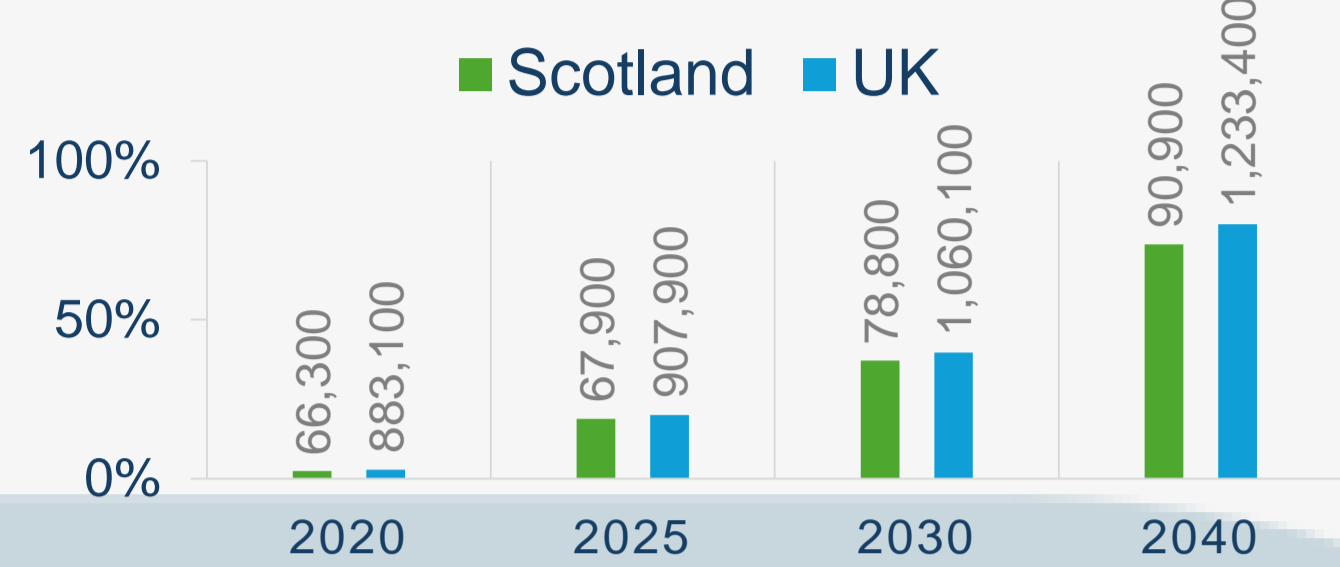
THE ISSUE:

According to projections produced by The London School of Economics, by the year 2040 the number of people living with dementia in the UK will have grown by 80%¹. Difficulty in early diagnosis leads to adverse outcomes². Despite available tools, integrating new innovations into practice faces significant delays³.

Scotland was one of seven flagship sites taking part in the global **Davos Alzheimer's Collaborative** Healthcare System Preparedness (DAC-SP) early detection programme, established to:

- 1) Understand how equipped current healthcare systems are for early detection of cognitive impairment, and
- 2) Identify necessary improvements to enable this

PREDICTED DEMENTIA POPULATION



OUTLINE:

In collaboration with the **Scottish Dementia Working Group**, to help gain buy in, the **importance of early detection and diagnosis** was shared, co-designing **resources and a film**, amplifying the voice of lived experience.

This informed the focus of the project to:

Explore **healthcare system preparedness** to offer new diagnostics for Alzheimer's disease.

Understand the impact on patients and care partners of integrating Linus CCE and PrecivityAD BBM into existing health services.



QUALITY IMPROVEMENT PROJECT:

A quality improvement approach (NHS Education for Scotland) was followed, engaging all stakeholders from the outset. Multiple partners involved with learning captured at system and individual levels.



More information on the Quality Improvement Zone can be found here:

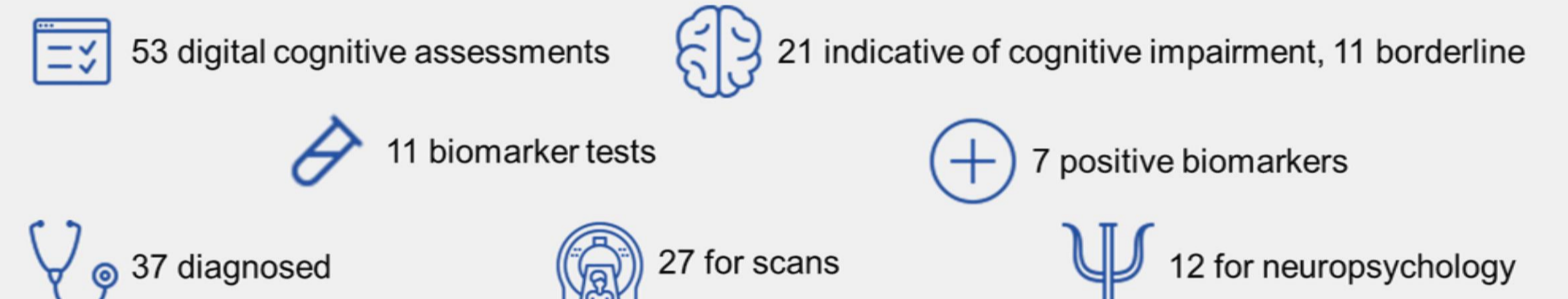


RESULTS:

Data collection focused on the **patient assessment pathway**, allowing **analysis of the DCA and/or BBM inclusion**, and their **results in relation to patient diagnosis**. Pre-program data was gathered for some participants to assess previous engagement with services.

Tools beneficial in supporting diagnostics

- ✓ First UK/European Health service use of Blood Biomarkers for Alzheimer's and highly useful in some cases
- ✓ Linus CCE impact on follow up for MCI v Preclinical



Focus groups held with 6 individuals (4 men; 2 women) with MCI or Alzheimer's disease in August 2023

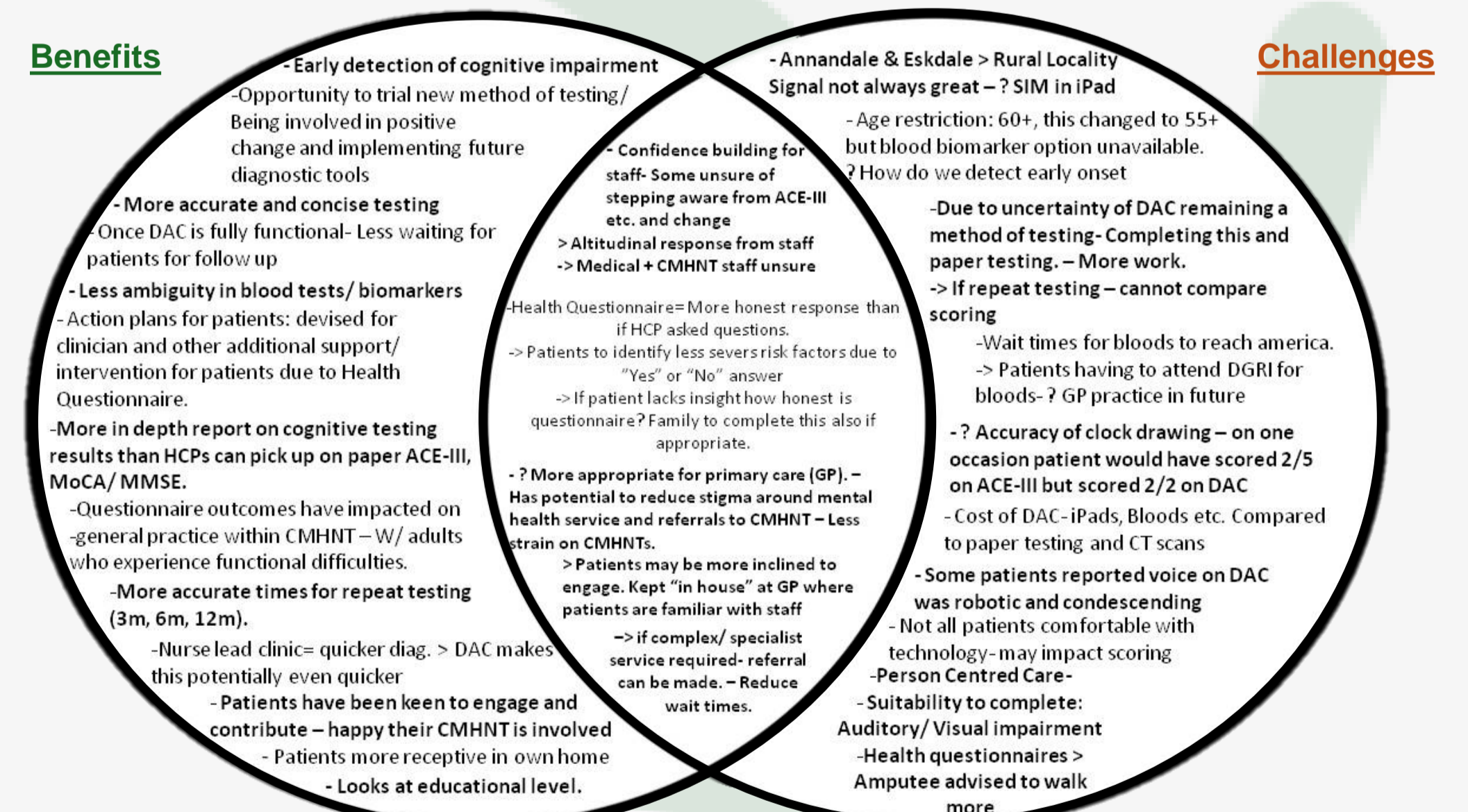
- ✓ Practical lifestyle advice often outweighed discussions on the clinical value of early detection tools like DCA and BBM in DAC pathways.
- ✓ Pleased to be receiving additional investigations and engagement with a specialist programme is seen as a positive

ID	Focus group	DCA date	CCE +/-	BBM date	BBM return	BBM +/-	Diagnosis	Age
P1	Aug 2023	5 months earlier	+/-	4 months earlier	2 months earlier	-	MCI	82
P2		9 months earlier	NA	NA	NA	NA	AD	72
P3		8 months earlier	+/-	3 months earlier	2 months earlier	-	MCI	60
P4		5 months earlier	+/-	3 months earlier	1 month earlier	-/+	MCI	75
P5		7 months earlier	+	5 months earlier	1 month earlier	+	AD	82
P6		6 months earlier	+	3 months earlier	1 month earlier	+	AD	73

Clinician attitudes, values, beliefs and behaviours: Baseline surveys and semi-structured qualitative interviews were carried out as well as interviews at end of programme to further explore this area in relation to early detection and results are being analysed.

- ✓ Some challenges encountered, identified need for good links to infrastructure and other services
- ✓ Feel able to integrate brain health knowledge and new tools into existing models and pathways

Annandale and Eskdale Mental Health Community Nursing Team:
Davos Alzheimers Collaborative Webinar



EARLY DETECTION PROGRAMME:

Initially **two specialist settings** (nurse led assessment team and psychology), followed by **two primary care settings**

- Integration of two additional early detection tools:

- Linus Health (Core Cognitive Evaluation™) – **Linus CCE: a digital cognitive assessment (DCA)** with Life and Health Questionnaire



Digital Clock and Recall (DCR)
(~3 min)

Immediate verbal recall:
Patient repeats back three words

DCTclock™:
Patient draws two clocks

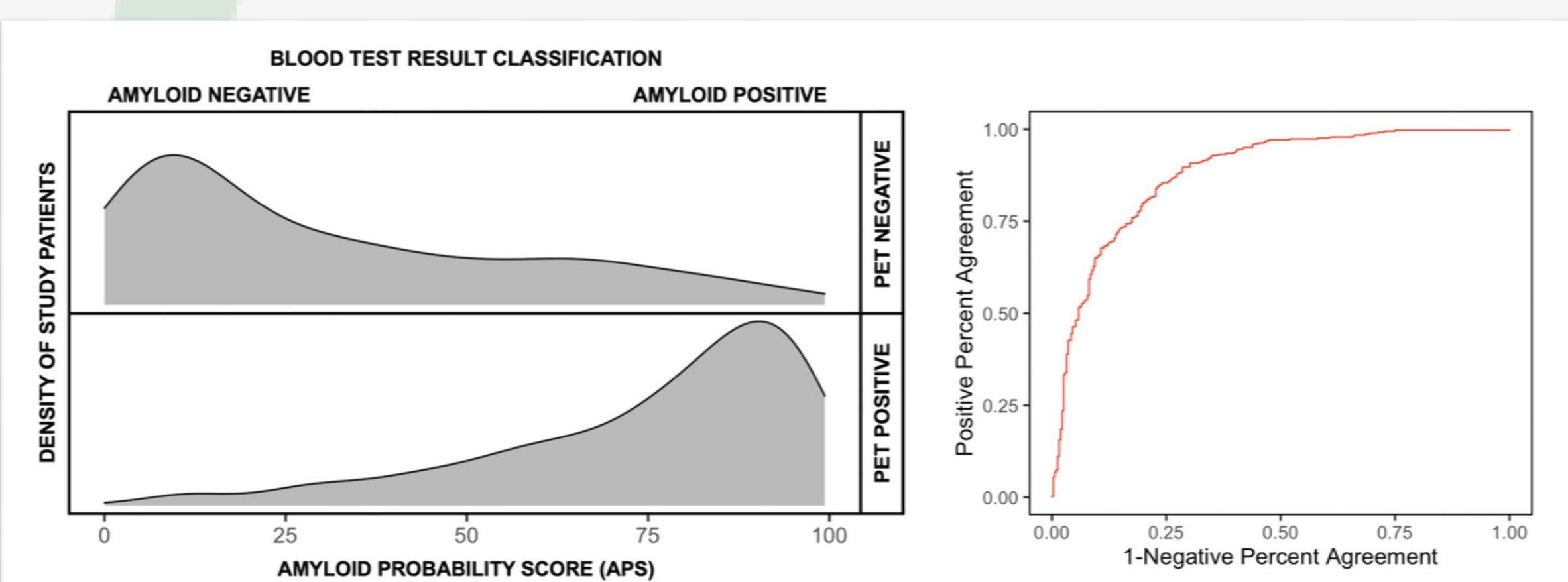
Delayed verbal recall:
Patient repeats same three words, without reminder

All in 8-10 minutes

Life and Health Questionnaire (LHQ)

Digital patient survey that uncovers modifiable risk factors for cognitive impairment

- C2N Diagnostics (PrecivityAD™): A blood-based biomarker (BBM) testing for Beta Amyloid and ApoE Allele**



Brain Health Scotland partnered with **NHS Dumfries & Galloway** to assess integration of these tools for patients presenting with cognitive concerns or undergoing cognitive assessments.

NEXT STEPS:

- Completing data analysis and continuing to share learning
- Continue sustainability reviews with healthboard area, expanding on current data and exploring new areas for integration
- DAC have created an open access Early Detection Blueprint for Healthcare Systems
- Contribute to work of Brain Health Scotland and the importance of Public Health

REFERENCES:

1. London School of Economics and Political Science (2019). *Projections of older people with dementia and costs of dementia care in the United Kingdom, 2019–2040*.
2. The Scottish Government (2017). *Scotland's National Dementia Strategy 2017-2020*.
3. Baur, M.S. and Kirchner, J. (2020) Implementation science: What is it and why should I care? *Psychiatry Research*. Vol 283