Optimising the Depression Pathway Enabled by Novel Digital Assessment Technology

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EVALUATION CONDUCTED BY:

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THIS PROJECT WAS FUNDED BY:

Innovate UK (project number 104641), the UK's innovation agency.

PROJECT PARTNERS:

P1vital Ltd (project lead),
NHS Canterbury and Coastal Clinical Commissioning Group,
University of Kent,
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DISCLAIMER:

The views expressed in the presentation and associated publications are those of the author(s) and not necessarily those of the funder, Innovate UK.

BACKGROUND

In the UK, **1 in 6** people aged 18+ report symptoms of a common mental health disorder (e.g., anxiety or depression)

(Baker, 2018)

Depressive disorders are most **often managed by a GP** in primary care

(Wittchen et al, 2016)

The success rate of standard treatments varies with most exhibiting around **50% response to treatment** with antidepressants

(Gilchrist & Gunn, 2007)

A need for innovative, multi-specialty approaches integrating digital technologies (esp post-Covid)

(Torous & Roberts, 2017)

New Multi-Speciality Walk-In Clinic

GPs

To triage and offer treatment, including access to anti-depressant therapy

One You

To support for lifestyle and behaviour changes

IAPT

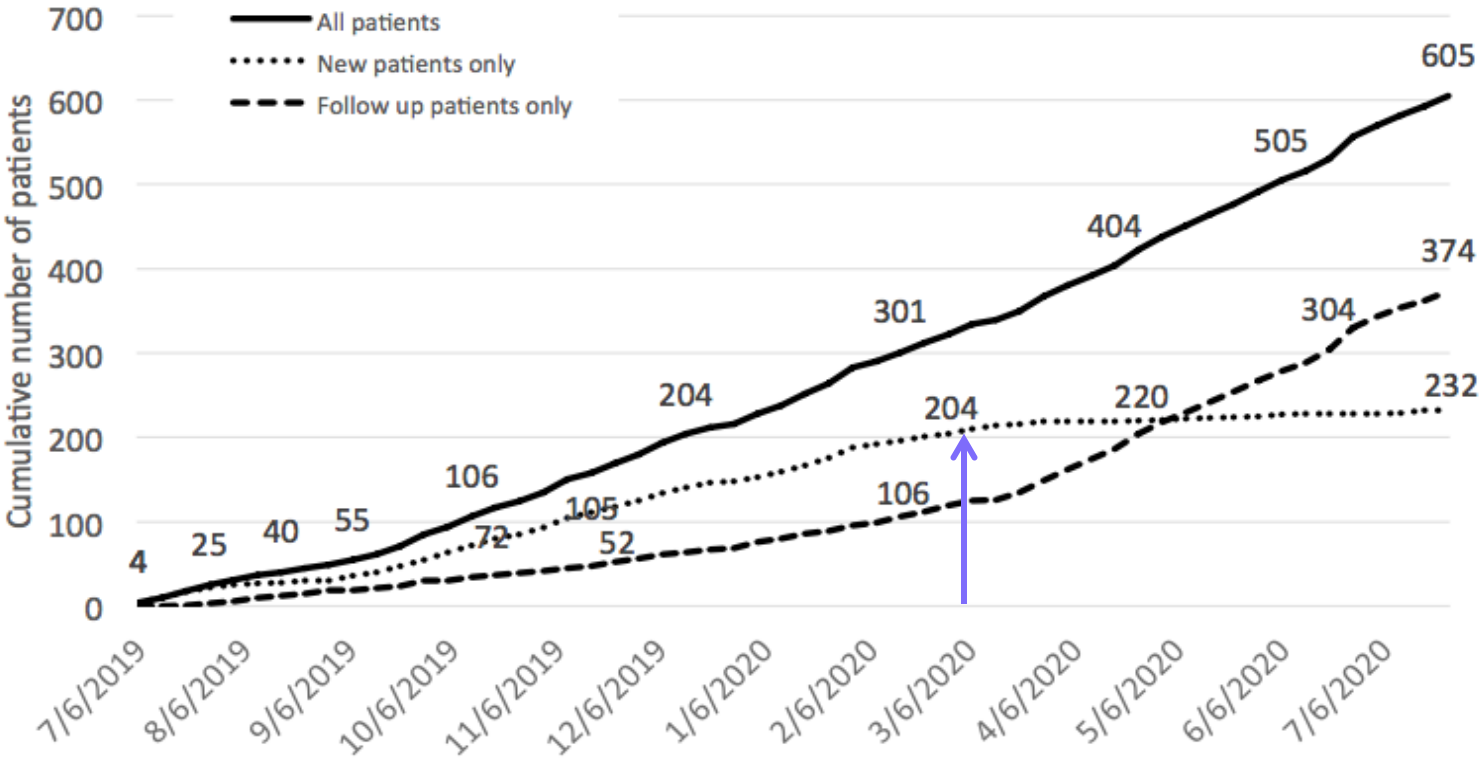
To offer NICE recommended therapies for stress, anxiety and depression

P1vital

To provide i-spero digital technology for symptom assessment

Clinic Footfall

Figure 1: New service footfall during the first year of operation



Quick Evaluation Overview: Evaluating Complex Interventions

Evaluation designed to focus on implementation of an enhanced depression pathway in primary care supported by i-spero

The service evaluation followed **a quasi-experimental mixed methods, observational feasibility study** and the NICE evidence standards framework for digital health technologies

Qualitative data: interviews with service users (n=35 initial; n=20 at follow-up), clinic staff (n=17 across 2 time-points) and wider informants (n=8)

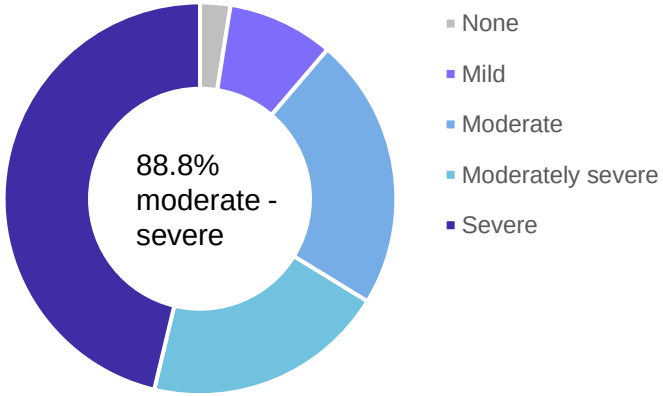
Quantitative data: intervention group of service users (n=80) who received six months' care from the new service, compared to a standard care group (n=40)

Specific focus on **service user experience, outcomes, service costs, implementational contexts and 'active' ingredients** of the service that made a difference.

Study Participants

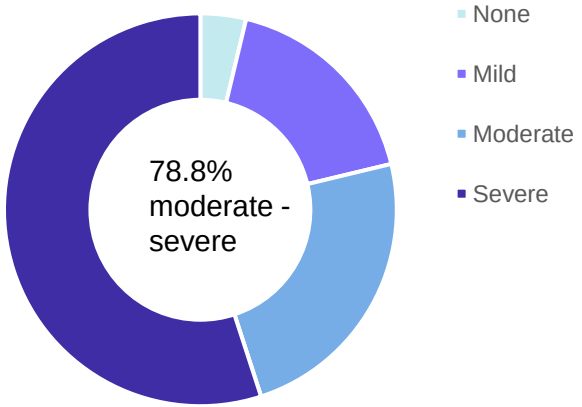
	Intervention group (n=80)	Standard Care group (n=40)
Age (median, min-max)	39, 18-69	41, 18-69
Sex (% male (n))	45.0% (36)	17.5% (7)
Previous history of medicated depression (% (n))	71.3% (57)	77.5% (31)
Number of co-morbidities (median, min-max)	1, 0-6	1, 0-9

Severity of depression at presentation



Intervention group only

Severity of anxiety at baseline



Intervention group only

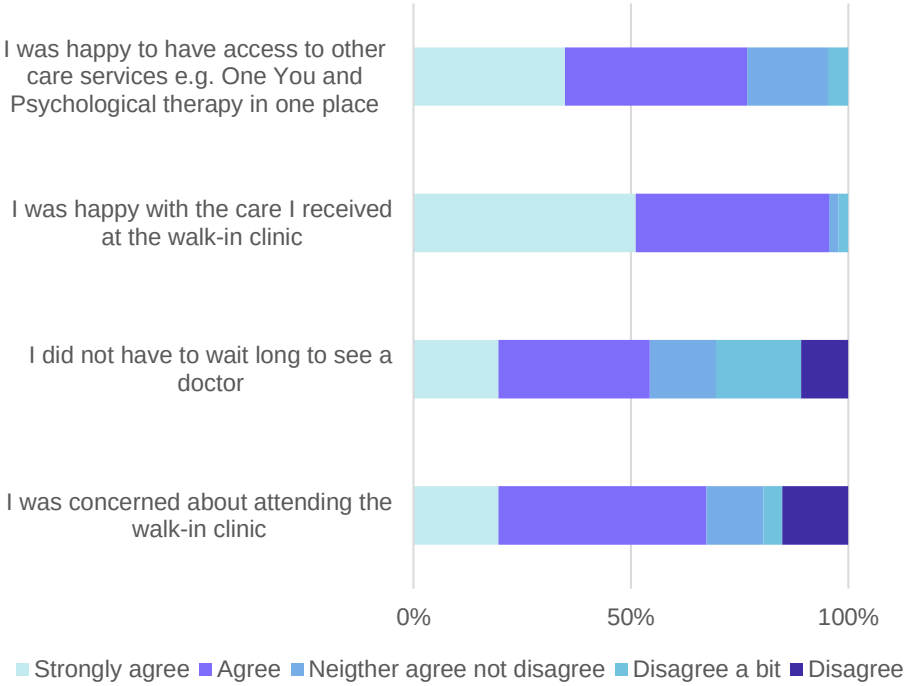
1. What impact has the systematic pathway had on service user experience and outcomes?

SUer experience of care pathway

Chi-squared significant difference between groups - p<0.001	Control		Intervention	
	n	%	n	%
Fell short of expectations	20	51.3	6	13.0
Just met expectations	11	28.2	14	30.4
Exceeded expectations	8	20.5	26	56.5
Total	39	100	46	100

"[I]t definitely exceeded my expectations because it was like a wrap around care..." (SU41)

"100%. Yeah, I think it's much much better than any other service I've had around mental health." (SU59)



1. What impact has the systematic pathway had on service user experience and outcomes?

SUer experience of care pathway

- Clinic patients (intervention group only) improved in terms of depression, anxiety and general wellbeing

Outcome measure	Baseline Mean score (Standard error, SE)	6 months Mean score (SE)	p-value (paired t-test)
PHQ-9	17.3 (0.66)	11.8 (0.98)	p<0.001
GAD7	14.2 (0.57)	10.1 (0.85)	p<0.001
ICECAP-A	0.554 (0.03)	0.666 (0.03)	p<0.001

- Recovery was observed in 41.5% of participants using the new service and reliable improvement in 45.5% of participants in this intervention group.

"I'm infinitely better than I was when I first, you know, when I first went in October, I was really low and it stayed low for quite a long time, and you know, the last month or so you know, things have really improved" (IDC33)

"Even just playing with my children is much easier because my head's clearer. I'm not feeling down, you know, as if the world's crashing in on me. It means that I can get up and face it" (SU69)

1. What impact has the systematic pathway had on service user experience and outcomes?

SUer experience of care pathway

- The intervention group exhibited borderline significant lower depression symptoms when compared to the standard care group after six months of care (*p=0.075)*

Outcome measure	Control group Mean score (SE)	Intervention group Mean score (SE)	Difference between groups (Confidence Intervals, CI)	p-value (independent samples t-test)
PHQ-9	14.5 (1.03)	11.7 (0.98)	2.6 (-0.26 - 5.49)	0.075
GAD7	11.3 (0.86)	10.6 (0.85)	1.2 (-1.23 - 3.74)	0.324
ICECAP-A	0.622 (0.031)	0.674 (0.028)	0.028 (-0.13- 0.04)	0.275

1. What impact has the systematic pathway had on service user experience and outcomes?

LTC6 Questionnaire (asks patients with a long term condition about their healthcare over the last 12 months)

✓ **Discuss what's important**
Did you discuss what was most important to you in managing your own health?

✓ **Amount of information**
How would you describe the amount of information you receive to help you to manage your health?

✓ **Joined up care**
Do you think the support and care you receive is joined up and working for you?

✗ **Involved in decisions**
Were you involved as much as you wanted to be in decisions about your care or treatment?

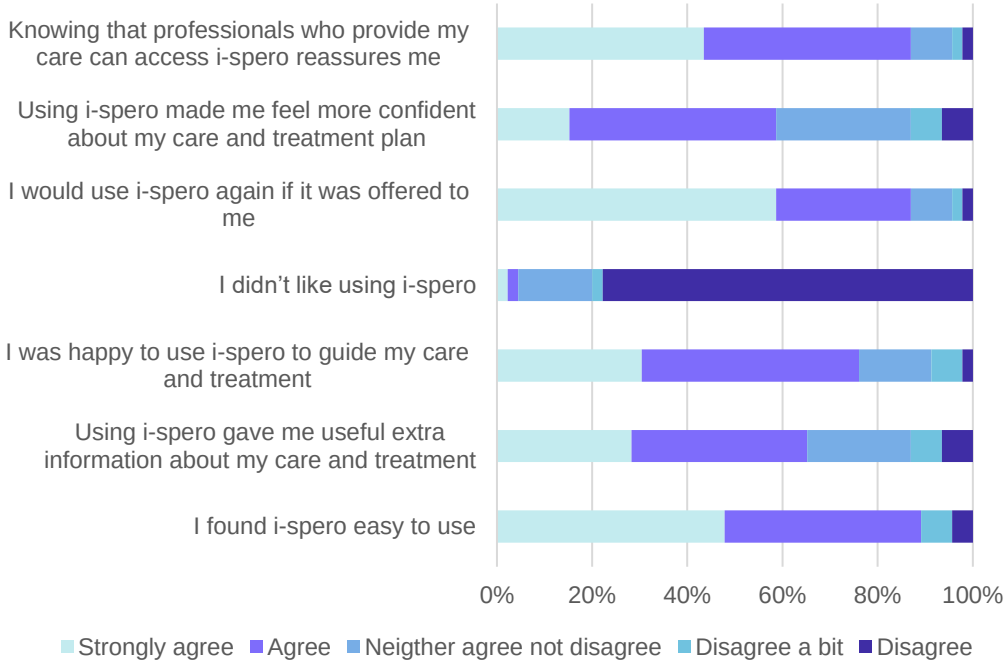
✓ **Enough support**
Have you had enough support from your health and social care team to help you manage your health?

✗ **Manage own health**
How confident are you that you can manage your own health?

✓ *- intervention group scored significantly higher than the control group*

1. What impact has the systematic pathway had on service user experience and outcomes?

Experience of i-spero digital technology



"Yeah, I really like it. I think it is a fantastic tool and I think it does need to be nationalised" (SU29)

"You just need to look at the scores and you can see people are improving… I think that's actually boosting the confidence of the staff because they can all see that, and it makes them feel proud that they are helping people" (FG02T1)

"So I've had a phone call from her before when she would say "right, how are you?" and I say "fine" and she'll say "well looking at your last test results you don't seem to be feeling fine, do you want to talk to me about that?" […] So she planned and prepped for that phone call to know that I wasn't alright, and she already knew that so she didn't really have to take my "yeah, I'm fine" for granted because she could rely on another resource" (SU47)

1. What impact has the systematic pathway had on service user experience and outcomes?

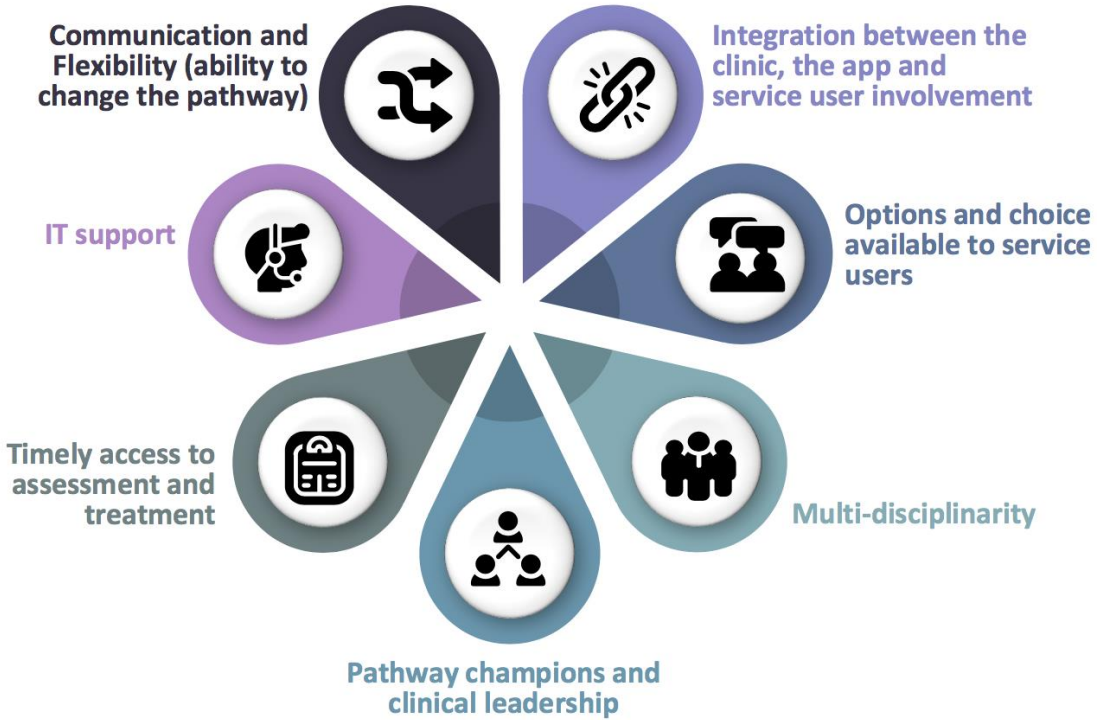
i-Spero alerts

Number of alerts from individual service users to the GP practice, n (%)				Max alerts by any one service user (n)	Total alerts from all service users (n)
Type of alert	**0**	**1**	**2 or more**		
Suicidal[a]	66 (79.5)	8 (9.6)	9 (10.9)	13	62
PHQ-9 deterioration[b]	25 (30.1)	58 (69.9)	0 (0.0)	1	58
GAD7 deterioration[b]	24 (28.9)	59 (71.1)	0 (0.0)	1	59
				Total alerts	**179**

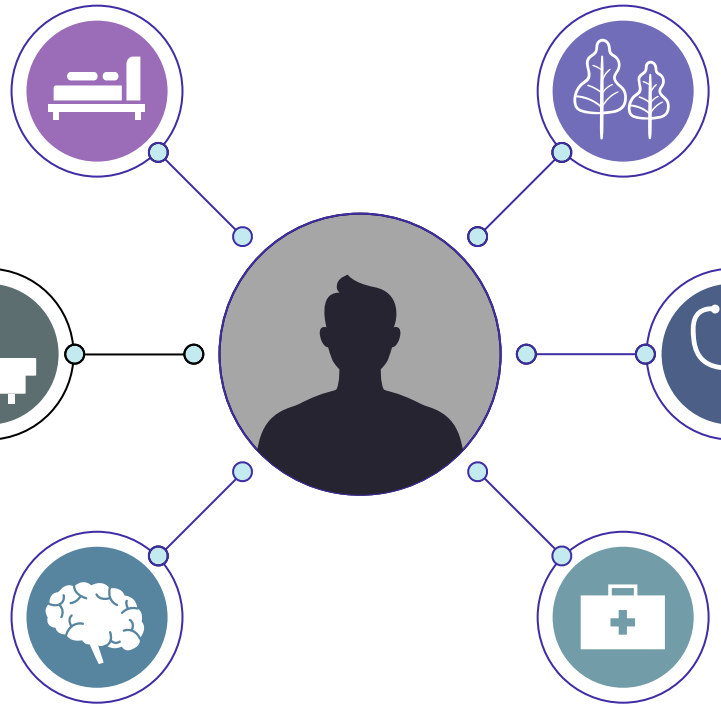
[a]suicide alerts are based on service user scores on Q9 of PHQ-9 answering nearly every day or thoughts of death or suicide within the QIDS-SR16 questionnaire of the PReDicT test,
[b] PHQ-9 or GAD7 deterioration alerts are based on a reduction of <50% in scores recorded four weeks (or nearest score) after the first care plan added service.

"Unless someone actively phoned us to say that they were suicidal, we would never have known that and therefore we would never have managed that. Now, I think the fact that we do know that and we can give someone a call is a good thing and maybe is something that you would hope we should be doing anyway" (KI03T2)

2. What are the components of the care delivery model (‘active/successful ingredients’) that are really making a difference?



3. What are the influencing contextual factors and how have they affected implementation and outcomes?



COVID-19

The COVID-19 pandemic led to changes in the delivery of the service and impacted on the referral rates into the service

BREXIT

Brexit continues to create uncertainty in terms of staffing and sustaining services

Severity of SU presentation

The majority of service users were experiencing moderate or severe depression. This put more demand on clinic GPs than originally intended

Commissioning landscapes

Changes to the local commissioning landscape emphasised the need for continued commissioner engagement

Demands on primary care

Primary care is experiencing increasing demand which impacts on the ability to deliver enhanced services

Demands on mental health services

High demand on mental health services impacted on primary care demand and ability to employ a CPN

4. What changes to the use of resources and activity have occurred and how have they impacted costs?

In line with other enhanced services, the average **total costs for the use of health and care services** were higher – £756.00 (SD £511.69) for the intervention group compared with £239.49 (SD £387.34) for standard care (*p*<0.001).

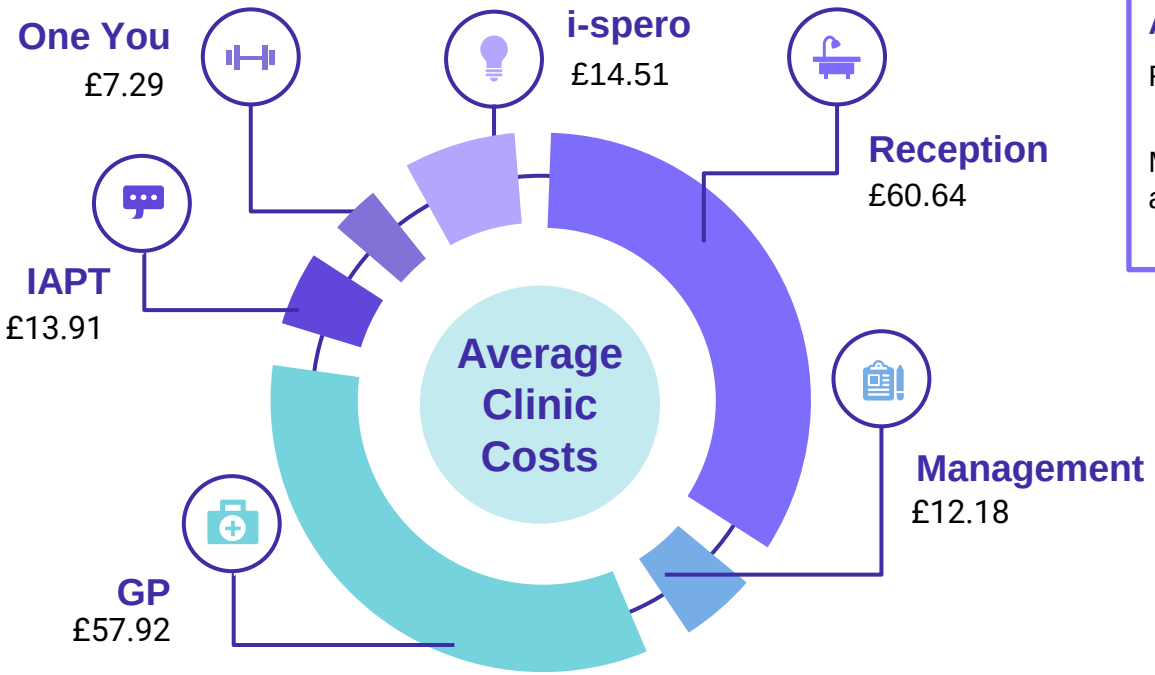
Running the clinic was expensive due to:

- the additional services provided
- overheads and staff costs (especially on a Saturday)
- sub-optimal number of service users seen (walk-in clinic was unpredictable, which made balancing staff costs difficult)
- the use of the technology was seen as expensive

Primary care professionals considered how future costs could go down:

- reduced appointment times (without the need to consent to take part in the evaluation)
- the use of technology at scale
- benefits of people with mental health needs being seen early, by the right clinicians and with the right access to timely therapies

4. Average Costs of Saturday Clinics (intervention group)



Additional costs:

Reception (overtime) £2.97

Management/Management admin/GP sessions £51.94

Based on 288 clinic appointments. [a] We were unable to separate the actual reception time spent on running the Saturday clinic from the time spent on other research activities, thus this may be an upper bound of the true reception time.[b] This estimate excludes the cost of GP follow-up appointments that had to be scheduled during the week due to limited Saturday availability.

5. What could be improved, sustained and replicated?

	Improve (1)	Sustain (2)	Replicate (3)
1.	Widening referral and advertising to increase clinic use	Structured clinic based on triage and integration of services	Professionals in primary care with a special interest/skills in mental health
2.	Integration into standard practice, e.g. admin support	Providing options and choice in one place or dedicated clinic	Taking time with service users to provide holistic care
3.	Reduction of waiting times	Champions and effective leadership	IT support for professionals/services users for i-spero and implementation
4.	Peer support provision to complement services	Team reflection/communication with flexibility to adapt to need	Symptom tracking was seen as key to service user improvement
5.	Other methods of triage outside technology (i-spero) – accessibility	Timely access to treatment, avoiding waiting lists	
6.	Adapting delivery to reduce cost and improve sustainability	Retaining multi-disciplinary skill-mix	
7.	Further aligning delivery to needs of people with severe depression		
8.	Improving referral rates from other GP practices in the area		

Implications of the Study

Addressing knowledge gaps

There is limited knowledge of what recovery rates look like in standard UK NHS care – especially primary care.

Within the context of primary and secondary care, as well as increasing mental health difficulty prevalence, more people do not meet thresholds for secondary MH care, yet cannot be supported adequately with short GP appointments

Changing contexts

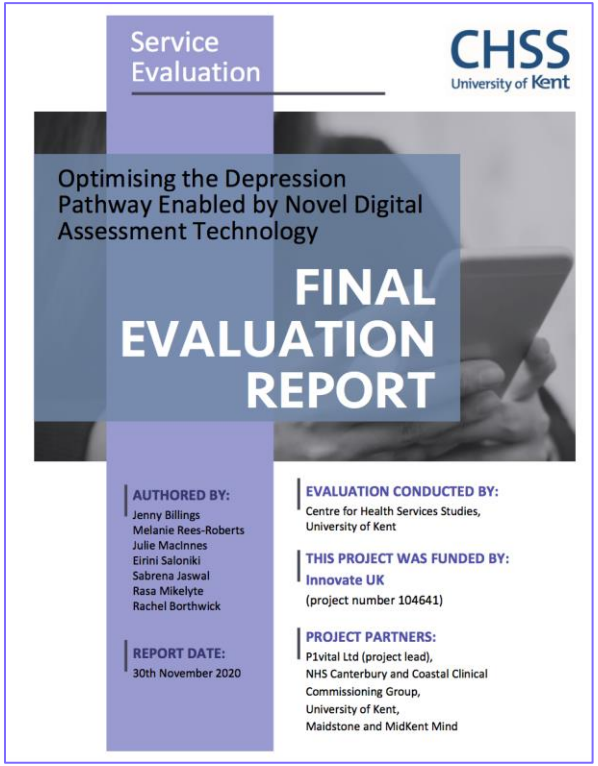
Specialism, integration and singposting

This study showed the need for greater MH specialism, better integration and better signposting to different service options in primary mental health / depression care. Ability for the patient to chose treatment approaches was also important.

Novel Digital Assessment Technology, if integrated well within the overall service, can (1) support patient in between appointments, (2) alert care teams to deterioration and (3) offer an potentially easy way to measure patient outcomes

Benefits of digital tech integration

Want to know more?



Service Evaluation

CHSS University of Kent

Optimising the Depression Pathway Enabled by Novel Digital Assessment Technology

FINAL EVALUATION REPORT

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REPORT DATE:
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Service Evaluation

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EXECUTIVE SUMMARY

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DOWNLOAD FULL REPORT:
https://kar.kent.ac.uk/84843/

PROJECT LED BY:
P1vital Ltd

EVALUATED BY:
Centre for Health Services Studies

PROJECT PARTNERS:
P1vital Ltd
NHS Canterbury and Coastal CCG
University of Kent
Maidstone and MidKent Mind

PROJECT BACKGROUND

In the United Kingdom, one in six people aged 18 or over report symptoms of a common mental health disorder such as anxiety or depression. Despite the growing interest in the quality of care for depression, there has been little evaluation of this in primary care settings. Digital technology, including applications (apps) for mobile phones, tablets and desktops are being created to complement clinical care and more than 13 web applications and 35 smartphone apps are available in the NHS for depression, anxiety or stress.

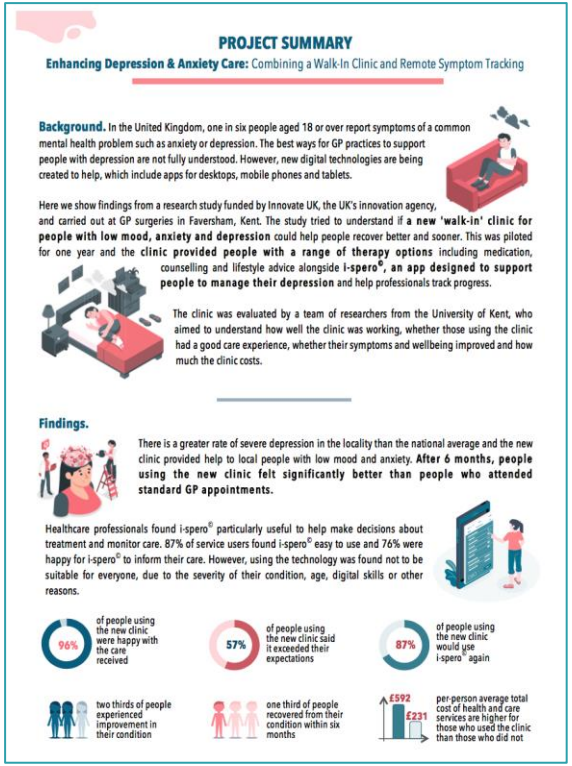
This summary details findings from the implementation and evaluation of a new service, seeking to optimise the current depression care pathway in a primary care setting. A 'walk-in' service was piloted for one year at GP services (a single primary care network) using a multi-disciplinary team with specialist knowledge of mental health and wellbeing providing a range of therapy options. Built into the service was the use of a novel digital technology, i-spero©, designed to assist service users with managing depression and supporting professionals in clinical decision making and management.

METHODOLOGY

The service evaluation followed a mixed methods, observational feasibility study design to identify changes regarding implementation, impact and resource use, the effects on user outcomes and experiences, plus the experience of healthcare professionals. NICE evidence standards framework for digital health technologies was employed. The study comprised an intervention group of service users (n=109) who received six months' care from the new service, compared to a standard care group (n=48).

Specifically, **the evaluation set out to answer the following questions**:

1. What impact has the pathway had on service user experience and outcomes?
2. What are the components of the care delivery model ('active ingredients') that are really making a difference?
3. What are the influencing contextual factors and how have they affected implementation and outcomes?
4. What changes to the use of resources and activity have occurred and how have they impacted costs?



PROJECT SUMMARY

Enhancing Depression & Anxiety Care: Combining a Walk-In Clinic and Remote Symptom Tracking

Background. In the United Kingdom, one in six people aged 18 or over report symptoms of a common mental health problem such as anxiety or depression. The best ways for GP practices to support people with depression are not fully understood. However, new digital technologies are being created to help, which include apps for desktops, mobile phones and tablets.

Here we show findings from a research study funded by Innovate UK, the UK's innovation agency, and carried out at GP surgeries in Faversham, Kent. The study tried to understand if **a new 'walk-in' clinic for people with low mood, anxiety and depression** could help people recover better and sooner. This was piloted for one year and the **clinic provided people with a range of therapy options** including medication, counselling and lifestyle advice alongside **i-spero©, an app designed to support people to manage their depression** and help professionals track progress.

The clinic was evaluated by a team of researchers from the University of Kent, who aimed to understand how well the clinic was working, whether those using the clinic had a good care experience, whether their symptoms and wellbeing improved and how much the clinic costs.

Findings.

There is a greater rate of severe depression in the locality than the national average and the new clinic provided help to local people with low mood and anxiety. **After 6 months, people using the new clinic felt significantly better than people who attended standard GP appointments.**

Healthcare professionals found i-spero© particularly useful to help make decisions about treatment and monitor care. 87% of service users found i-spero© easy to use and 76% were happy for i-spero© to inform their care. However, using the technology was found not to be suitable for everyone, due to the severity of their condition, age, digital skills or other reasons.

96% of people using the new clinic were happy with the care received

57% of people using the new clinic said it exceeded their expectations

87% of people using the new clinic would use i-spero© again

two thirds of people experienced improvement in their condition

one third of people recovered from their condition within six months

£592 £231 per-person average total cost of health and care services are higher for those who used the clinic than those who did not

Thank you!

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