

MyPreOp[®]

Sustainability Benefits of
Patient driven online
preoperative assessment



Dr Paul Upton

CEO, Co-Founder

Former NHS Anaesthetist & Medical Director

Ultramed[®]

The Problem

- Each preoperative assessment takes 45 minutes with a registered nurse
- 30 minutes of this is the nurse asking questions and recording the answers
- If patients answer the questions online it saves nursing time, can be done from anywhere, and can avoid an outpatient appointment



2

3

1

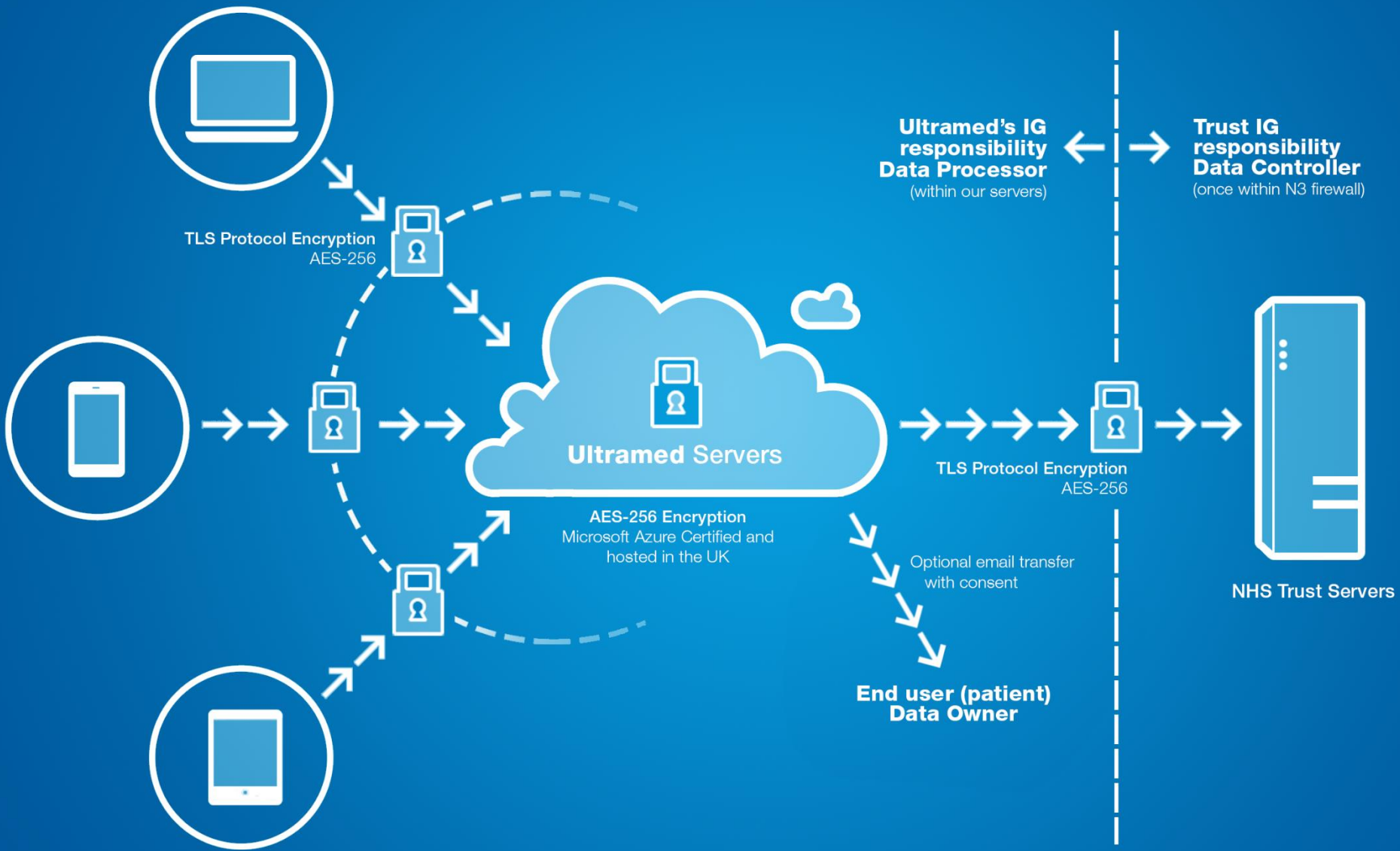
Ultramed®

Your Account


Forename		Surname	
NHS Number ?	012	345	6789
Birth Day -	Birth Month -	Birth Year -	
<p>ⓘ Passwords must have a capital letter, use a number and be at least 10 characters long</p>			
Password		Confirm Password	

☐ You will be providing us with information about your health, and by clicking 'GO', you consent to our processing your information for the reasons described above. You can read about how we use and store your data in our [EULA & Privacy Policy](#).

GO!



My PreOp[®]

NHS Number 	<input type="text" value="416"/>	<input type="text" value="821"/>	<input type="text" value="3420"/>
<input type="text" value="01"/>	<input type="text" value="February"/>	<input type="text" value="1975"/>	
<input type="password" value="Password"/>			

GO!

[Forgotten your password?](#)

[Are you a new user? Please register by clicking here](#)



Bookmarks



- > Clinical Summary MyPreOp
- > Clinical Summary MyPreOp
- > My Anaesthetic
- > Who I Am
- > How I Live
- > My Operation
- > My Heart
- > My Lungs
- > My Kidneys
- > My Liver and Guts
- > My Brain and Nerves
- > My Sugar and Hormones
- > My Blood
- > My Other Conditions
- > My Medication
- > Send My Information
- > ICD10 MyPreOp

Clinical Summary MyPreOp

ALLERGIES

1. Penicillin

OPERATION



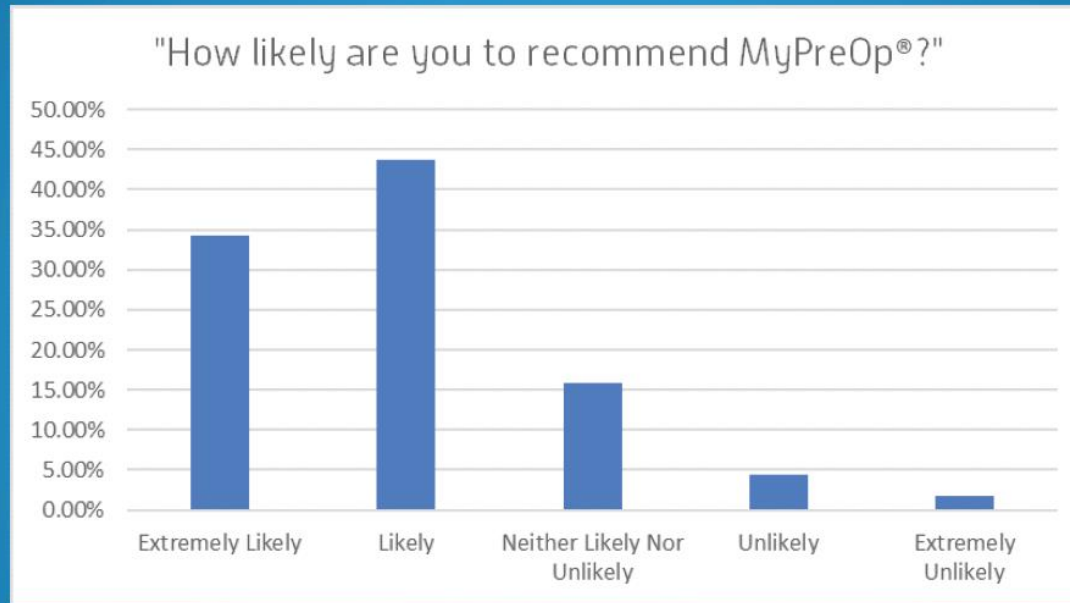
EXERCISE TOLERANCE

- I can take more vigorous exercise

Patient	Chris Cross
NHS NO	4168213420
DOB	01.02.1975
Email	info@ultramed.co
Phone	123456789 / 0700000000
Date	19.12.2018

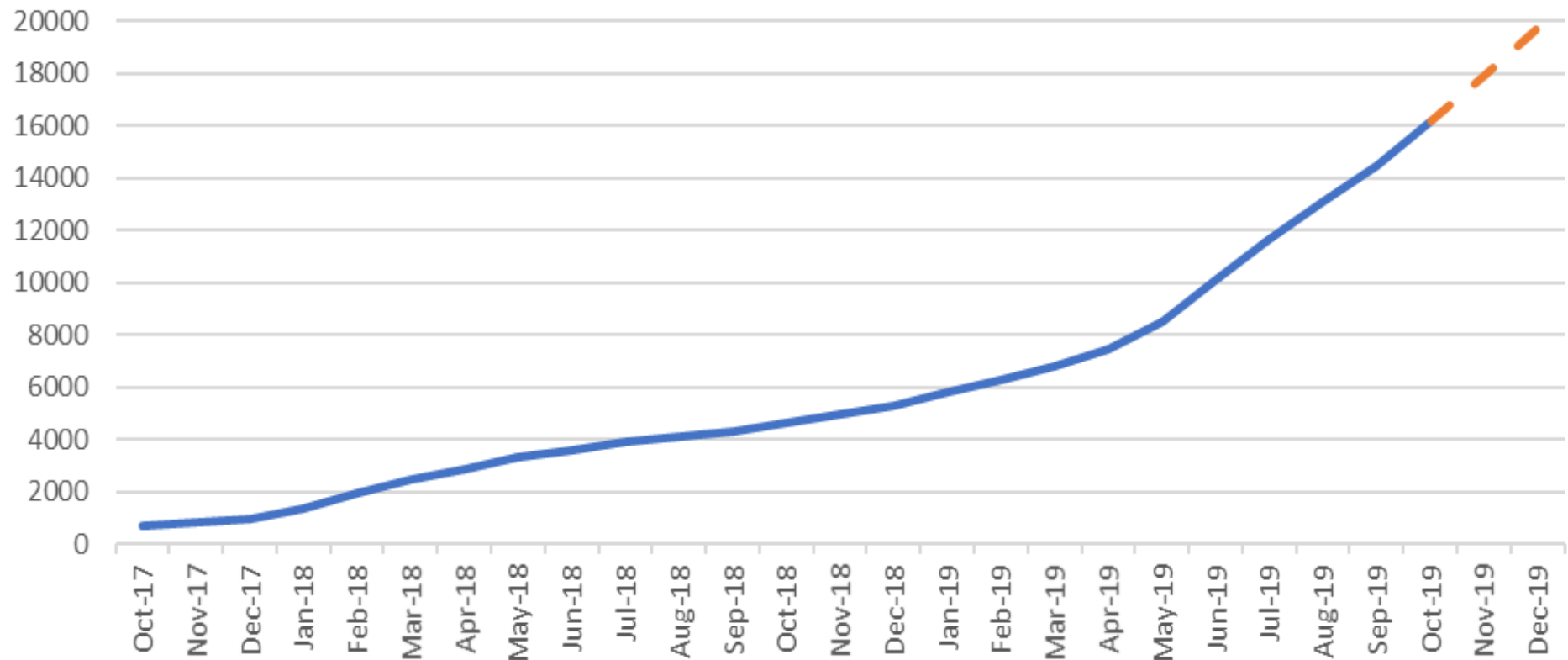
	Who I Am	Name used for login: Chris, Male, Mobile number 0700000000, Prefer contact by letter, Occupation Fireman, Allergic to Penicillin, Allergic reaction Rash & vomiting
	How I Live	Entered height 177, Entered weight 72 (BMI 23), Non-smoker
	My Operation	General surgery, Knee Arthroscopy, Consent already done, Advance care directive, Expecting GA, Expecting day case
	My Heart	No ECG in last 3 months, No ECHO in last 6 months, 1 MI, Last one <12 months ago
	My Lungs	Snores
	My Sugar and Hormones	DM Type 1, suggest first on list, Insulin only, Insulin pump

3812 patients completed MyPreOp® between 22nd July and 14th October 2019.
Upon completion, 91% answered our feedback questions.



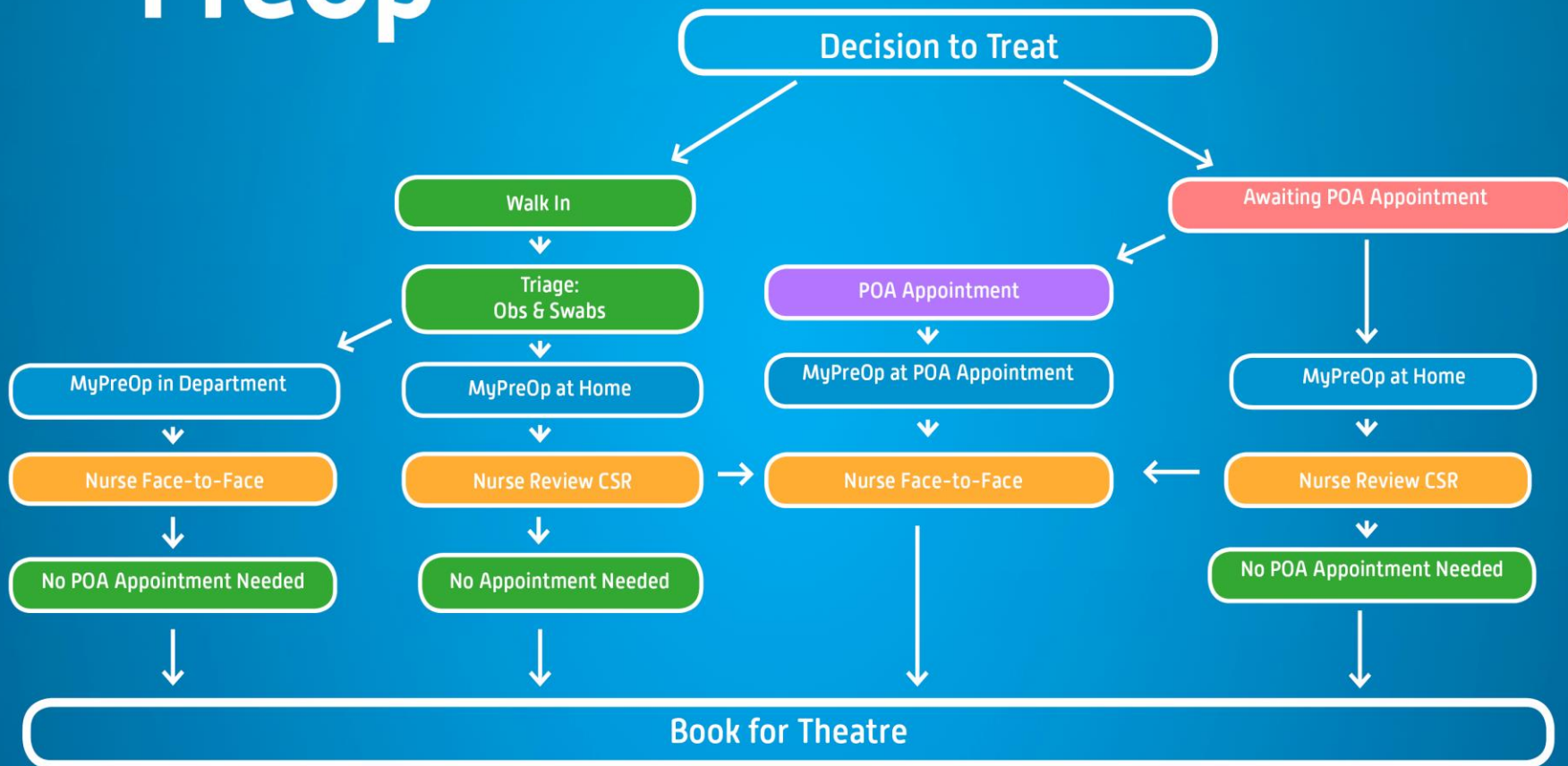
78% of patients said they would be **extremely likely** or **likely** to recommend MyPreOp®

Cumulative uses of MyPreOp October 2017 - December 2019



The POA Pathway using

MyPreOp[®]



Ultramed[®]

Winner of the 2019 Innovation Award for anaesthesia, critical care and pain

Dr Paul Upton and Alan Sanders

MyPreOp® - online patient owned preop assessment



Association
of Anaesthetists



NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Examples of Effectiveness and Economic Digital Health Case Studies

JOYCE CRAIG, Associate Project Director
JUDITH SHORE, Research Consultant
JOEL RUSSELL, Research Consultant

25 February 2019

Tier 1: Case Study with MyPreOp

Developers: Ultramed Ltd

Please note: This case study is intended to demonstrate how the evidence for effectiveness framework could be used in practice. It is not intended to represent an evaluation or endorsement of the digital healthcare technology.

DESCRIPTION OF DIGITAL HEALTHCARE TECHNOLOGY

MyPreOp® is a patient facing app designed to replace preoperative paper based assessments. Patients requiring an operation can create an account and complete a comprehensive assessment of their general health and medical history via MyPreOp®. Patients can complete the assessment at home prior to their operation. The output includes a clinical summary providing an American Society of Anesthesiologists (ASA) risk grade of 1 to 5 and recommends additional tests the patient may need. This information is then submitted to a nurse from the pre-operative team who reviews the summary and acts on any information provided. Any areas of concern or complex co-morbidities are automatically highlighted to the nurse.

The cloud hosted service can be accessed using a smartphone, tablet or home computer. To date, more than 5000 patients have used MyPreOp® across 8 UK hospitals (7 NHS hospitals and 1 private hospital).

Figure 1: Screenshot of MyPreOp®



Figure 1: MyPreOp® value proposition

Value Proposition	Benefits to health and care system	Benefits to patients
Patients can complete preoperative assessment without a preoperative assessment appointment, saving time and reducing the number of cancelled operations due to patients not fit for anaesthesia being identified earlier, enabling the theatre time to be reassigned.	<ul style="list-style-type: none"> Authorised staff can access preoperative assessment information electronically. May reduce number of cancelled operations due to patients not fit for anaesthesia being identified earlier, enabling the theatre time to be reassigned. The reporting capability gives an overview of activity levels of the pre-op service to improve service planning. Reduced preoperative assessment time, ensuring that hospitals receive expected income. 	<ul style="list-style-type: none"> Fewer appointments in hospital are required as some patients do not need to be seen face-to-face. Patients can spend as much time as they need considering their answers to the preoperative assessment at home. Web links are provided allowing patients to enhance their understanding around the questions that they are being asked related to their health. Patient experience may improve as staff can focus their time on patients with complex needs or concerns. Service can act on patient feedback to improve it.

Figure 2: MyPreOp® classification

Expected functional category:	System services
Evidence tier:	Tier 1
Additional Risks:	Contextual questions do not reveal any factors of high risk and hence this is a lower risk technology

CURRENT EVIDENCE

Tier 1

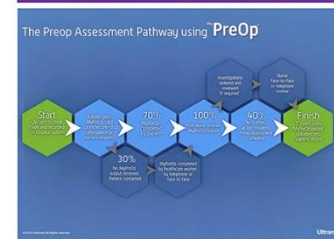
The company has submitted MyPreOp® for inclusion in the NHS apps library, is CE marked and is a registered MHRA class 1 medical device. A retired anaesthetist / medical director developed MyPreOp® by reviewing publicly preoperative questionnaires from multiple hospitals and taking the best aspects from each. Clinical psychologists were involved in developing the app to ensure that patients are asked clear and unambiguous questions. The app is in its 6th version, and undergoes continuous development. Its content is reported to be consistent with the [Guidelines from the Royal College of Anaesthetists](#).

MyPreOp® has undergone incremental improvements based upon feedback from patients and clinicians. Feedback from patients is sought using a short questionnaire after preoperative details are completed. The app has accessibility options in that visually-impaired users can select larger text or a choice of background colours. It may improve service access for people in rural areas.

In line with the current paper-based approach, the accuracy and reliability of the app is dependent on user responses. However, with the app conflicting data inputs are flagged to a nurse who reviews all outputs, and the provision of additional information via hyperlinks, may result in better informed and empowered users.

MyPreOp® is hosted on Microsoft Azure (UK server) and can therefore be scaled up to support use in large numbers of patients. The NHS performs 10 million operations each year.

Figure 3: The MyPreOp® assessment pathway



Please note: All references are provided as hyperlinks. To access these, right click on the hyperlinked text and choose 'open hyperlink'.

NHS Digital – Sustainability Unit - survey

1878 patients completed MyPreOp between 11th June and 22nd July 2019 at Maidstone & Tunbridge Wells NHS Trust, Ashford & St Peters Foundation Trust & the Royal Surrey County Hospital NHS Foundation Trust.

Send My Information

On behalf of NHS Digital, we are conducting an environmental impact study. Please answer the following 4 questions:

By completing MyPreOp have you avoided making an additional journey to the hospital for your preoperative assessment?

☐ Yes

☐ No

☐ Don't know



How many miles from the hospital do you live? Please enter this to the nearest mile.

When you visit the hospital, which mode of transport do you usually use?

Please select

How much time does attending a hospital appointment usually take? (From leaving home to returning home after your appointment)

Please select



574 patients said that MyPreOp saved them an additional trip to the hospital (31%).

Patients were asked their mode of transport:

Bicycle users: **2** (0.4%)

Bus users: **21** (3.7%)

Car users: **526** (92%)

Motorcycle users: **5** (0.9%)

Train users: **9** (1.6%)

Walk: **10** (1.7%)

Did not answer: **1** (0.2%)

Average miles travelled by each mode of transport (return journeys):

Bicycle users: **5**

Bus users: **15.5**

Car users: **23.4**

Motorcycle users: **16.8**

Train users: **43.8**

Walk: **4.6**

Did not answer: **55**

13,029.4 miles of travel were saved (return journeys)

This equates to a carbon saving of **5.96** tonnes of CO₂.

The patients reported that an average of 2.45 hours of their time was saved by not having to attend an additional POA appointment.

Money saved by patients (Mileage priced according to HMRC, at 45p per mile)

Royal Surrey

105 patients that attend by car, and were saved an appointment

The average saving for a round trip (including £4.50 parking): **£19.80**

Ashford & St Peters

66 patients that attend by car, and were saved an appointment

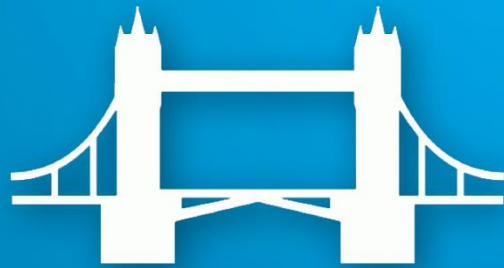
The average saving for a round trip (including £3.50 parking): **£10.13**

Maidstone & Tunbridge Wells

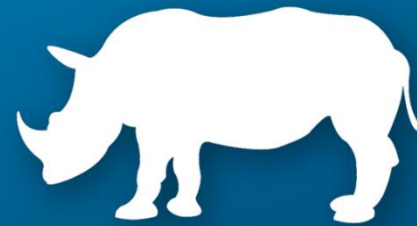
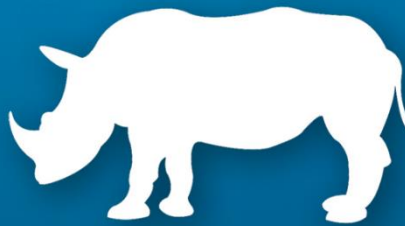
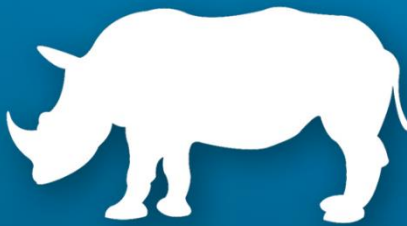
355 patients that attend by car, and were saved an appointment

The average saving for a round trip (including £2 parking): **£11.72**

More than 13,000 miles were saved in hospital trips...
That's further than London to Sydney!



That's a CO₂ saving of nearly 6 tonnes...
The equivalent weight of 3 x White Rhinos!



Impact on hospital car parks

For this calculation the 526 car journeys saved by not requiring a POA appointment saved is rounded down to 525 appointments saved in a 5-week period with 29 working days.

This means 18 appointments saved per working day.

If each person would have needed 2 hours of paid parking, then that is 4 people per day using one parking space (9-11 am, 11-13, 13-15, 15-17)

This means that 4.5 parking spaces are not needed that would have been required before the introduction of MyPreOp. This means approximately 3 at Maidstone and Tunbridge Wells, 1 at the Royal Surrey and half a parking space at Ashford and St Peter's Trust.

Scaling these findings across the NHS

The NHS carries out 3 million operations per year.

Using MyPreOp could save approximately 1million outpatient appointments.

This could save 6,700 tonnes of carbon and remove the need for approximately 1,000 car parking spaces.

Getting Noticed

- Demo to NHS at Leeds HQ and London HQ
- Demo to NHS England Digital Transformation lead
- Demo to NHS England clinical lead for outpatients
- Demo to the National Lead for Personal Health Records
- Face to face meeting with NHSX Chief Digital Officer who tweeted this -

Great to hear the progress of MyPreOp which enables patient led surgical preassessment & how strong takeup in southern England is making a real difference to patients & staff
@Ultramed LTD zooming in from Cornwall to @NHSX team in Leeds & London

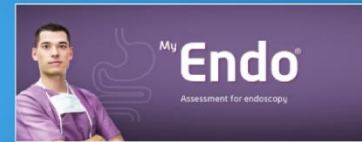
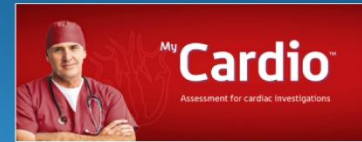


The Ultraprep Suite



Welcome to your Ultramed account,
your personal health record.

Please select the Ultraprep module
you have been asked to complete in
preparation for your procedure or
operation.

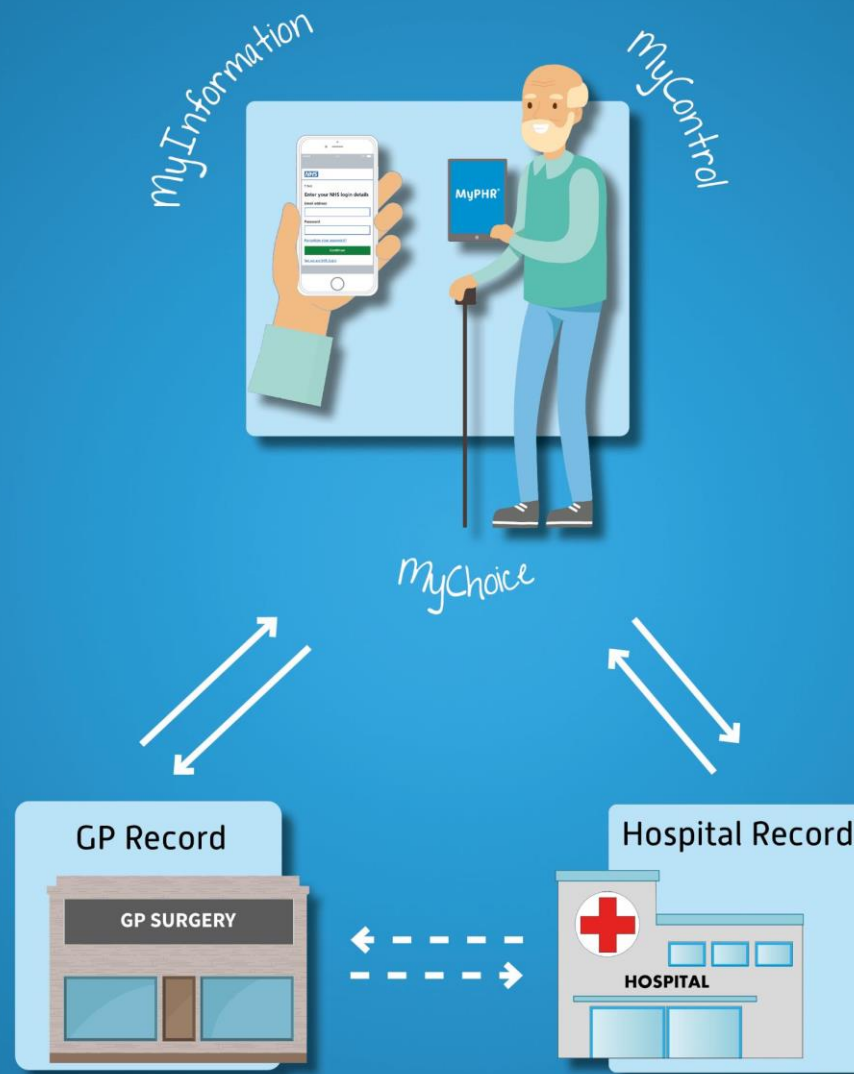


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Ultramed

Ultramed®

My Personal Health Record



Ultramed[®]

Health Technology for People

Four levels of Integration



Printed PDF
can be added
to paper
patient records



Digital PDF
can be added
to Electronic
Patient Record



Fully editable
digital file can be
added to Electronic
Patient Record



Can be dispersed directly with
fully populated fields directly
to Electronic Patient Record