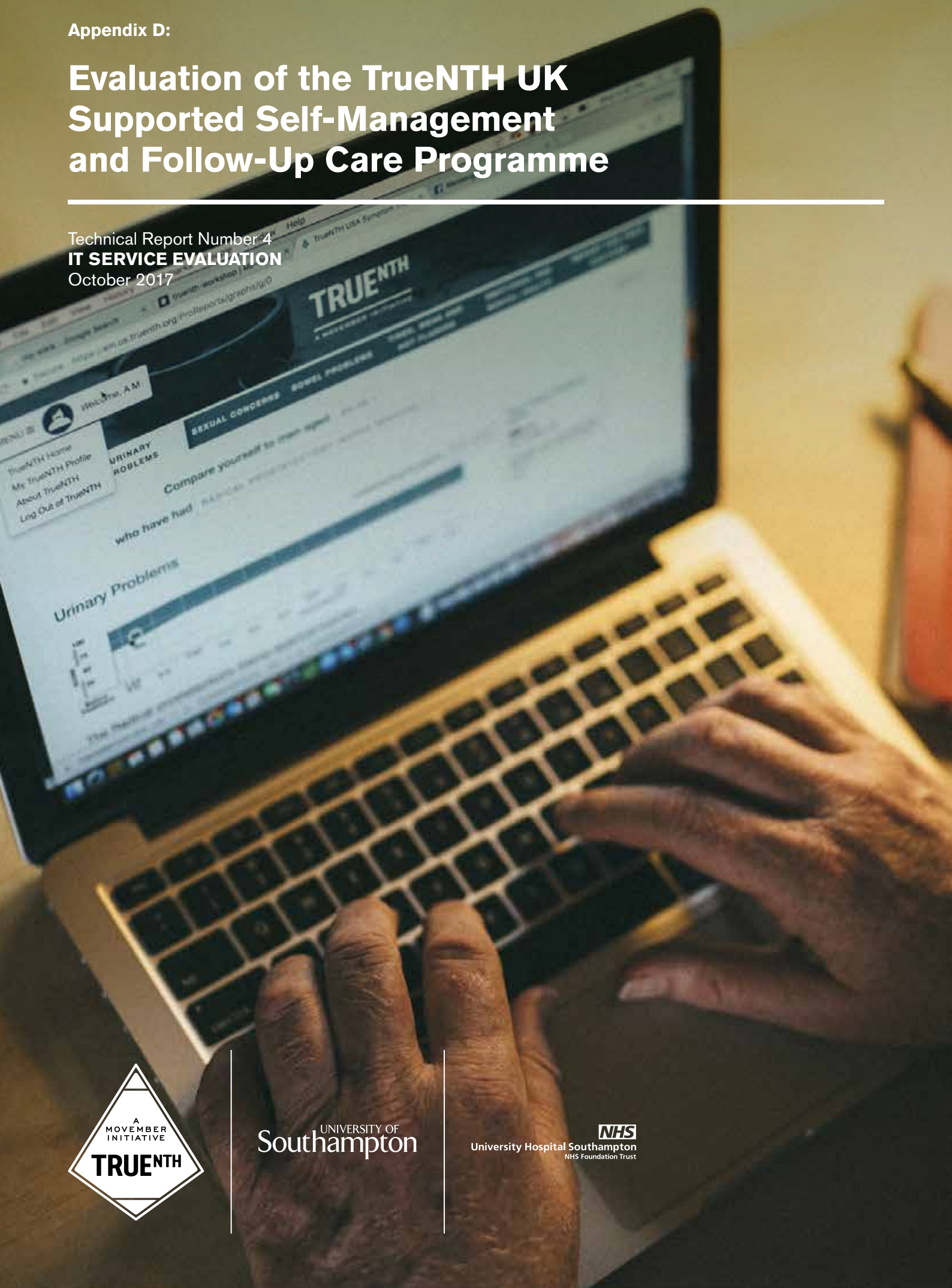


Appendix D:

Evaluation of the TrueNTH UK Supported Self-Management and Follow-Up Care Programme

Technical Report Number 4
IT SERVICE EVALUATION
October 2017



UNIVERSITY OF
Southampton

NHS
University Hospital Southampton
NHS Foundation Trust

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Authors' contributions

- DJO'C wrote the evaluation report drafts and final version, refined the design, and acquired, analysed and interpreted data.
- HB conceptualised and designed the evaluation, interpreted the data and critically reviewed and revised the drafts.
- JW conceptualised and designed the evaluation, and critically reviewed and revised the drafts.
- JF interpreted the data and critically reviewed and revised the drafts.
- KH conceptualised and designed the evaluation, acquired data and critically reviewed and revised the drafts.
- AR conceptualised and designed the evaluation, interpreted the data and critically reviewed and revised the drafts.

All authors had final approval of the evaluation report and agree to be accountable for all aspects of the evaluation ensuring that any questions related to the accuracy or integrity of any part of the evaluation were appropriately investigated and resolved.

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2 EXECUTIVE SUMMARY

The Informatics team of University Hospital Southampton NHS Foundation Trust (UHS NHSFT) has developed an IT Service to facilitate a model of follow up care for prostate cancer patients. The prostate cancer follow up care programme is based on the principles of supported self-management (SSM). The IT Service has been rolled out to five NHS Trusts since 2015, it was funded by the Movember Foundation in partnership with Prostate Cancer UK and managed by a team from the University of Southampton, Faculty of Health Sciences. This report is an evaluation of the IT Service which forms part of a wider evaluation of the SSM programme.

The IT Service evaluation reviewed the functional and non-functional performance of the IT Service along with barriers and enablers of using and implementing it. The evaluation also identified lessons and recommendation for future developments.

The scope of the evaluation covered staff and patients from the five NHS Trusts using the IT Service. The evaluation used a range of qualitative and quantitative methods, these included a focus group and interviews with clinical staff, an online survey and telephone interviews with patients, and quantitative analysis of service use data.

The evaluation concluded that the IT Service meets its functional and non-functional performance objectives. The IT Service is considered valuable and useful by both clinical staff and patients that were using it.

An online survey of patients using the IT Service (n=518) identified an impressive net promoter score¹ (NPS) of 49, 75%-90% of respondents reported the IT Service as being very helpful or helpful in managing their condition and 70% of patients surveyed rated ease of use of the IT Service as very easy or easy, 90% rated the quality of design of the IT Service as “well” or “acceptably” designed and 83% of respondents rated the IT Service as extremely or mostly reliable.

The evaluation highlighted around 40% (n=1,556) of the total SSM patients (n=2,599) were not registered to use the IT Service and of those SSM patients registered to use it (n=1,556), around 48% (n=746) had not logged in over a 12-month period.

¹ The NPS was determined by asking respondents to score how likely would you be to recommend the IT Service to other patients, with 0 = “Not at all likely” to 10 = “Extremely likely”. Respondents scoring 0-6 are classed as detractors, 7 and 8 passives, with 9 and 10 as promoters. NPSs are calculated by subtracting the proportion of detractors from the proportion of promoters. NPS can range from -100 to +100. In general, a positive NPS is considered good, anything over 50 excellent and 70-80+ world class.

Despite the positive feedback from staff and patients there were several areas of the IT Service that require improvement and development. Addressing these issues may encourage greater use of the IT Service.

To build on the foundations of the current IT Service, opportunities to adapt it and roll it out to other NHS Trusts and other clinical conditions should be developed, whilst addressing the issues identified in this evaluation.

3. INTRODUCTION

University Hospital Southampton NHS foundation Trust (UHS NHSFT) Informatics Service developed and provide an IT Service to support a new model of follow-up care for prostate cancer. The new model of follow-up care, based on principles of supported self-management (SSM) and remote monitoring, has been developed by a project team from the University of Southampton, Faculty of Health Sciences. The project is funded by TrueNTH UK, a partnership between the Movember Foundation and Prostate Cancer UK (PCUK).

The IT Service evaluation reported here is part of a mixed methods evaluation of the TrueNTH SSM and Follow up care programme, which was implemented in five NHS sites in England

The objectives of the full evaluation were to assess:

- The effectiveness of the Programme across key outcomes.
- The impact of the Programme on costs.
- The process of implementing the Programme, to identify any facilitating and inhibiting factors.

This technical appendix is the evaluation of the IT Service which was commissioned by the University of Southampton to support the full evaluation. In addition to this IT Service evaluation, technical reports of evaluations of effectiveness, cost effectiveness, the implementation process and a summary report are also available.

3.1 SCOPE¹

The service evaluation focused on the IT Service and, as such, the main topics were:

- Did the IT Service meet functional objectives to provide an online service for patients and clinical staff in support of the SSM model? The four functions of the IT Service were:
 - Prostate Specific Antigen (PSA) tracker.
 - Messaging service between patients and clinical staff.
 - Health MOT (holistic needs assessment)
 - Patient information
- Did the IT Service meet non-functional objectives in relation to the following?
 - Performance.
 - Availability.
 - Reliability.
 - Accuracy (bugs).

- Responsiveness.
 - Security.
 - Breaches of IT policies.
- The users experience.
- Barriers to implementing and using the IT Service.
- Enablers of implementation and using the IT Service.
- Recommendations for future developments.

The IT Service is deployed across five NHS sites, all five are in the scope of the evaluation.

The evaluation included input from patients from all five sites who were using the IT Service, a sample from UHS NHSFT of patients enrolled in the SSM Programme who were not using the IT Service, and clinical staff.

This project was assessed against the NHS Health Research Authority (HRA) Decision Tool² and UHS NHSFT Research and Development General Policy³ criteria as service evaluation rather than research or audit.

The IT Service evaluation complied with research ethics norms and good practice. Participation in the service evaluation was on the basis of informed, voluntary consent.

An evaluation of the SSM programme as a whole⁴ included qualitative interviews with a range of staff and patients, and touched on views and perceptions of the IT Service as part of the programme. Points of similarity and difference between the findings of the two evaluations will be highlighted.

The evaluation starts with the background to the project and its objectives. The next section sets out the methods used to conduct the evaluation. This is followed by the detailed and summary results of the evaluation. Implications and further work are suggested, followed by conclusions.

4 BACKGROUND

Improvements in treatment and aging population have led to the escalating incidence of prostate cancer.⁵ 5-year survival rate is relatively high and men who have completed treatment require long-term follow-up to detect recurrence or progression of the disease, monitor adverse effects of treatment and identify and address psychosocial needs.^{6–10} Health services are struggling to cope with the increasing number of men who have completed treatment and require follow-up care.¹¹

The TrueNTH SSM programme for prostate cancer aims to transform traditional post-treatment care pathways for men. The SSM model of care recognises that a significant proportion of men can manage their own health needs. Men who are identified as suitable for this model of care are provided with support to self-manage. They are no longer invited back for traditional out-patient follow-up. Instead they:

- Are monitored remotely by a specialist team (using a PSA tracking system), receive PSA test reminders and will only be invited back if test results or symptoms or results from holistic needs assessment give cause for concern.
- Attend a 4-hour supported self-management workshop.
- Are allocated a support worker.
- Are given access to an online patient service designed to enable self-management.
 - Not all patients on the SSM programme register to use the online patient service. Those patients that do not use the IT Service can contact their clinical teams using the telephone and receive PSA results through the post.
- Know how and when to contact clinical team.
- Are asked to provide regular feedback to clinical team on outcomes following treatment.¹²

University Hospital Southampton NHS Foundation Trust (UHS NHSFT) Informatics Service developed and provided the Online Patient Service and PSA Tracking System for this project. The solution is based on Microsoft HealthVault and Get Real Health Software. The PSA tracker element of the IT Service was developed by the UHS NHSFT Informatics team. A technical overview of the solution is in Appendix A Technical overview of the IT Service. This system is known by a variety of different names across different user sites such as MyMR, My Medical Record, TrueNTH and My Health Record. To avoid confusion the Online Patient Service and PSA Tracking System will be referred to simply as “the IT Service”.

The SSM model and supporting IT Service were implemented in five NHS Trusts in England during 2015-2016 with about 1,500 patients registering to use the IT Service.

The five Trusts using the IT Service were:

- Dartford and Gravesham NHS Trust
- Royal United Hospital Bath NHS Foundation Trust
- Royal Cornwall Hospitals NHS Trust
- St Helens and Knowsley Teaching Hospitals NHS Trust
- University Hospital Southampton NHS Foundation Trust

This initiative is part the Movember Foundation's True NTH global programme, facilitated in the UK by Prostate Cancer UK.¹³

5 METHODS

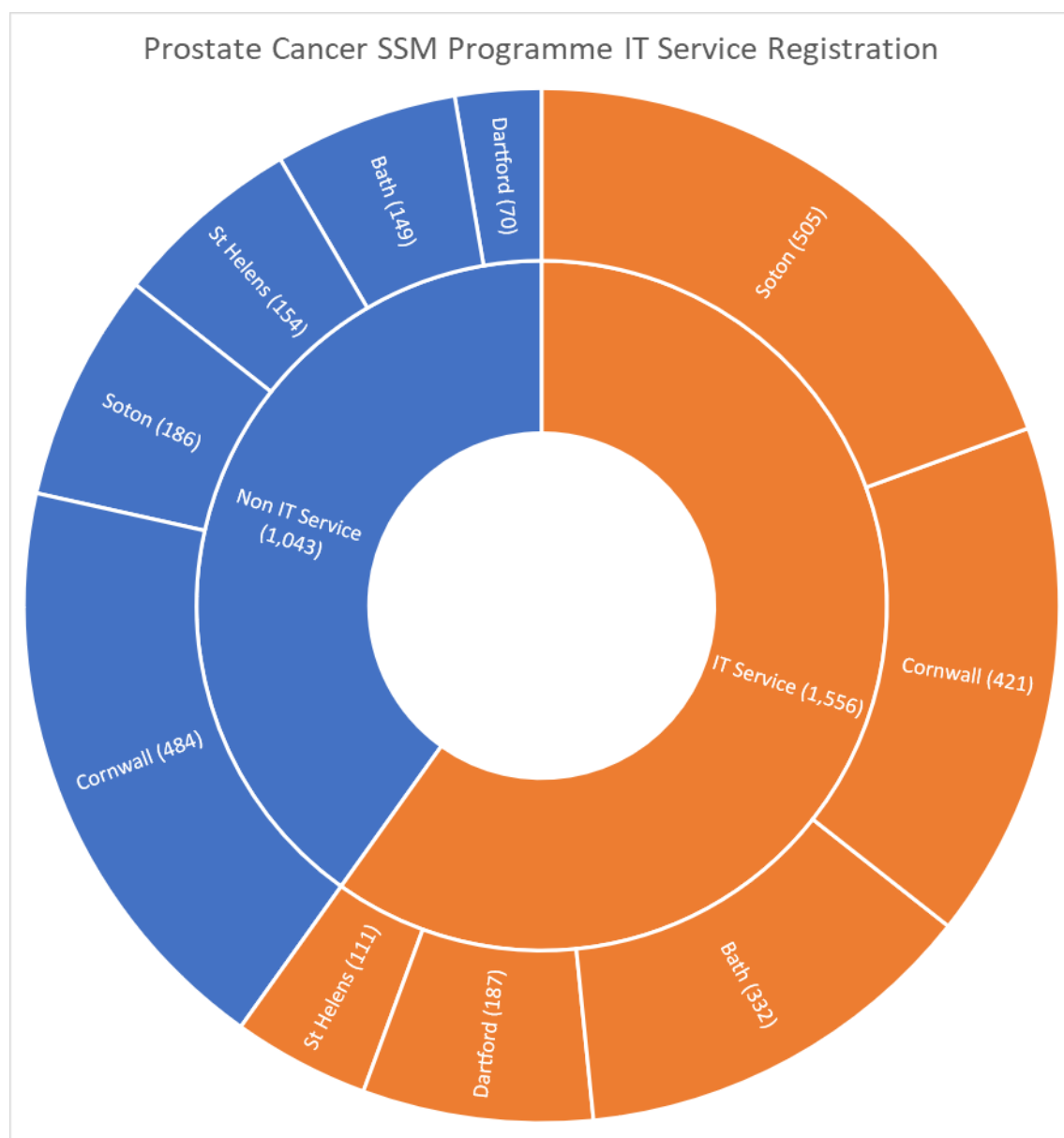
The evaluation used a range of qualitative and quantitative methods to evaluate the IT Service, these are outlined below.

Accurate documentation is critical to produce reliable, consistent, repeatable findings and ensure that there is transparency in how sense was made from the raw data.^{14–20} Well documented procedures for data collection help to establish the quality and trustworthiness of the evaluation by demonstrating dependability and auditability^{14,19}. To ensure the quality of the evaluation findings, clear and well documented procedures and processes were followed during data collection and analysis.

The methods and approaches were informed by several qualitative^{14,15,17,19,21–23} and quantitative^{20,24–26} research methods sources.

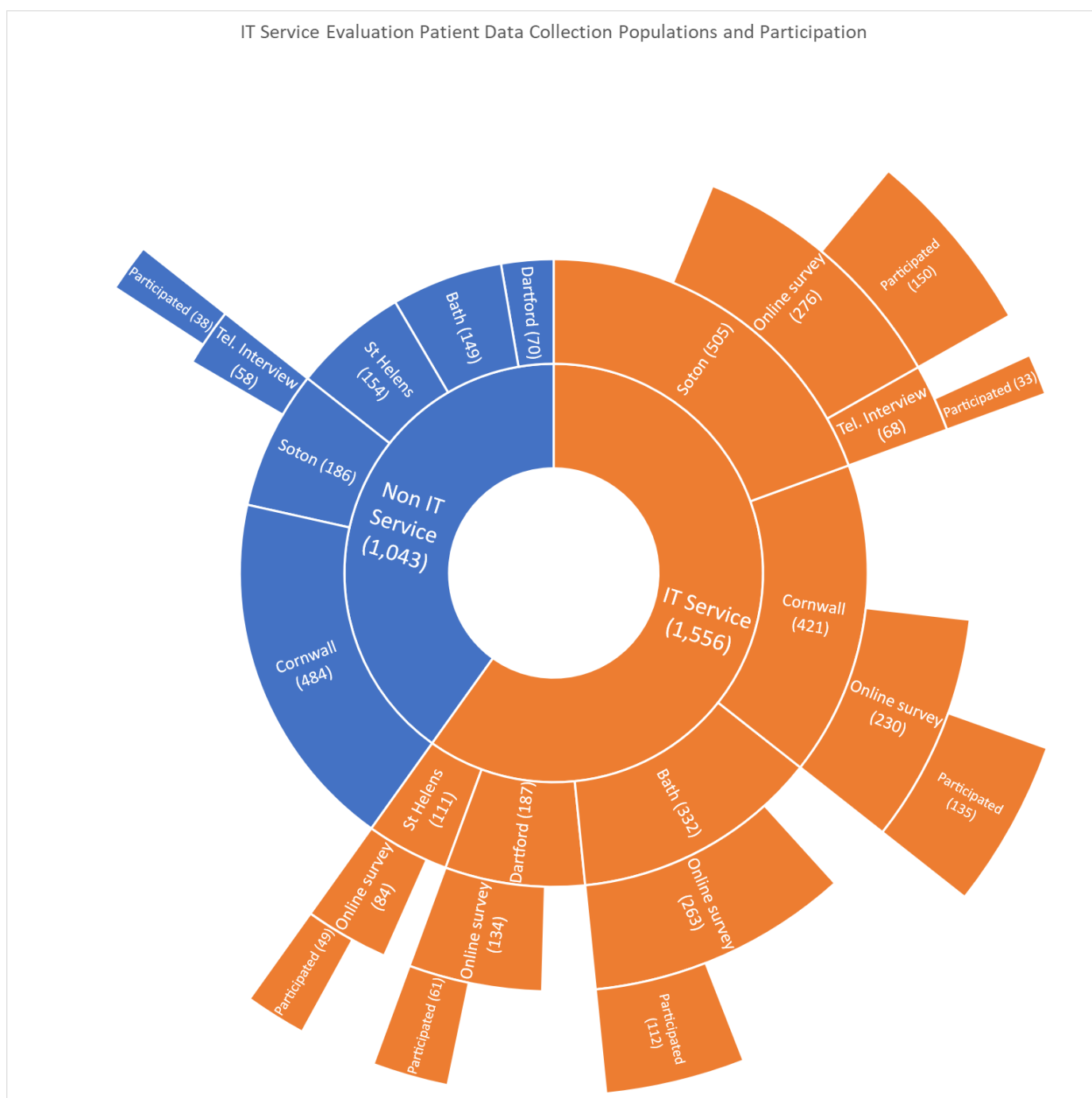
The scope of this evaluation included patients on the SSM programme that are registered to use the IT Service to support their SSM, these patients are referred to as “IT patients” and patients not registered to use the IT Service, but nevertheless still on the SSM programme, these patients referred to as “non-IT patients”. As at 27/09/2017 there were 2,599 patients on the SSM programme across the five NHS Trusts, 1,043 non- IT patients and 1,556 IT patients. Figure 0-1 Prostate cancer SSM programme IT Service Registration, shows the breakdown of IT and non-IT patients across the Trusts.

Figure 0-1 Prostate cancer SSM programme IT Service Registration



The service evaluation included IT patients from the five participating trusts and non-IT patients from UHS NHSFT. An online survey was sent to IT patients from all five Trusts. A subset of IT patients and non-IT patients from UHS NHSFT were interviewed by telephone. Figure 0-2 shows the breakdown of SSM patients included in the evaluation and those that participated.

Figure 0-2 IT Service evaluation patient data collection populations and participation



5.1 ONLINE QUESTIONNAIRE TO PATIENTS USING THE IT SERVICE

An online questionnaire survey was e-mailed to IT patients using the IT Service to support their SSM programme. To ensure only patients actively using the IT Service were sent the survey the following criteria were applied to patients on the Prostate Cancer SSM pathway across the five participating NHS Trusts. To be included in the survey all conditions were met:

- Registered to use the IT Service to support their SSM.
- Logged in more than once during the period 1 January 2015 to 30 April 2017.

The survey was sent to 1,052 patients, and was open from 17 August 2017 to 14 September 2017, a total of twenty-seven full days and two-part days. The approach to the online survey included e-mailing the patients from the UHS NHSFT Informatics Support team e-mail account, explaining the purpose of the survey (to understand the experiences of those who use the IT Service and how it might be improved). The email stated that the survey was anonymous, that the survey should take between 5 and 10 minutes to complete, the closing date for the survey, and an e-mail address to which any questions should be directed.

The survey included various question types including list, category, ranking, quantity and grid along with options to provide free text responses. To support the reliability and validity of the evaluation, the questionnaire was designed to have clear, coherent, and understandable questions, and to avoid bias and leading questions. The questionnaire was piloted with two patients and refined based on their feedback.

The structure of the questionnaire was:

- Information about the patient.
 - Age.
 - NHS Trust.
 - Length of time using the IT Service.
 - Use of IT devices.
- Questions about the IT Service.
 - Ease of use.
 - Features of the IT Service.
 - Look and feel.
- Questions about support of the IT Service.
 - SSM Workshop.
 - Getting started.
 - Ongoing support.
- Using the IT Service.
 - Printing.
 - Reliability.
- If the IT Service has helped patients.
- Net promoter score.

The results from the survey are presented as a set of descriptive tables and charts as appropriate.

The free text responses from survey data were coded using the NVivo Computer Assisted Qualitative Data Analysis (CAQDAS) software using established qualitative research practices to identify themes and topics from the data. The coding followed the 'Eclectic' approach set out by Saldana²¹ to develop and refine the first and then second cycle codes.

The eclectic approach is a hybrid method that can transition work with an array of first cycle methods that have been used to form a "first draft" of coding into a strategic "second draft" recoding based on experience from earlier coding. Eclectic coding employs two or more, relevant/appropriate first cycle methods to the same data.²¹

An iterative deductive/inductive approach was used in the code generation. There were some a priori codes from the survey questions and experience that were predetermined in a deductive manner, along with codes that emerged inductively from the free text survey responses during the coding process.

5.2 GUIDED TELEPHONE INTERVIEWS OF PATIENTS NOT USING THE IT SERVICE

To explore reasons for patients not using the IT Service guided, structured telephone interviews were conducted. To comply with inter-Trust data governance and patient consent issues, coupled with limited resources, only patients from UHS NHS FT were included in this survey. Two groups of patients were identified as being of interest:

- UHS NHSFT IT patients who were registered to use the IT Service but had never logged in or had logged in only once, referred to as "UHS NHSFT non-using IT patients".
- UHS NHSFT Non-IT patients, those who had chosen not to register for the IT Service, referred to as "UHS NHSFT non-IT patients".

Sixty-eight UHS NHSFT non-using IT patients were initially identified as registered but not actively using the IT Service. To be included in this group patients had to be registered to use the IT Service and either:

- Not logged in the IT Service during the period January 2015 to December 2016.
- Logged in only once during the period January 2015 to April 2017.

The different time periods for the two types of UHS NHSFT non-using IT patients is due to a backlog of patients being added to the IT Service in early 2017. As a result, the evaluation only included IT patients that had not logged in from January 2015 to December 2016. This approach reduced the risk of contacting patients that had not received their introductory information relating to using the IT Service and thus making it inappropriate to contact them in relation to not using the IT Service.

Fifty-eight UHS NHSFT non-IT patients were initially identified as patients who had joined the SSM programme between Jan 2015 and Apr 2017, but who chose not to register for the IT Service.

The UHS NHSFT SSM clinical team reviewed and approved the list of patients invited to participate in the telephone interviews.

The approach to conducting the telephone interviews was developed following guidance for telephone surveys and marketing set out by Ofcom²⁷ and the Direct Marketing Association (DMA).^{28–30} Detailed interview guides and supporting material, scripts and data collection templates were designed, piloted and revised.

The UHS NHSFT Switchboard team made the calls. The Switchboard call handlers were experienced in patient contact over the telephone and were trained and experienced in issues such as data protection, patient confidentiality and handling sensitive information. The calls were made between 4pm and 8pm on weekday evenings, this complied with the good practice guidance from the DMA²⁹, and avoided peak call times for the Switchboard. The Switchboard team were briefed on and provided with detailed guidance and scripts. The guidance included:

- Background information on the TrueNTH prostate cancer SSM programme and the IT Service Evaluation.
- Details of the patients being contacted.
- Procedures for making the calls including pre-call checks, sending warm up text messages where possible, the time of day for making the calls, how long to allow the phone to ring, how to handle leaving messages (answerphone and to a person other than the patient) and no answer (number of redial attempts and gap between attempts).
- How to handle any complaints.
- Call scripts, for guidance.

The telephone interviews were conducted from 24 August 2017 to 19 September 2017.

5.3 CLINICAL STAFF USING THE IT SERVICE

To capture the views of the current and former clinical staff about the IT Service, semi-structured face to face and telephone interviews, a focus group and written feedback were used.

Nineteen current or former Clinical Nurse Specialists (CNS) and Support Workers (SW) who had worked with the IT Service across the five in-scope NHS Trusts were invited to participate in the evaluation. This represented all current or former CNS and SW that we had contact details for. The data collection was conducted based on informed, voluntary consent, that contributions would

not be attributed to any individual participant and that the participants had the right to withdraw from the evaluation at any time.

The semi-structured interviews and focus group were structured around the main topics of the evaluation:

- Functional requirements.
- Non-functional performance.
- User experience.
- Barriers and enablers to implementing and using the IT Service.
- Lessons.
- Recommendations.

One interview was conducted face to face and two over the telephone by an experienced qualitative research interviewer. Data relating the interviewees job role in relation to the IT Service and NHS Trust were captured at the start of the interview along with information relating to the time, date and location of the interview. Notes of the key points and some verbatim quotes were taken during the interview and refined after the interview. The refined notes were sent to the interviewees for validation. A copy of the interview notes template and the template used to capture feedback relating to user experience can be found in Appendix B Clinical staff data collection documentation.

The focus group was facilitated by an experienced facilitator, was attended by six CNS and SW from four of the participating NHS Trusts and lasted for approximately 90 minutes. The focus group included five individual and group activities to cover the evaluation topics in a manner designed to maintain interest in the exercise and to encourage participation of all attendees.

The first focus group activity was an individual exercise where participants were asked to write down on the sticky notes their thoughts on whether the IT Service met the functional objectives, there followed a whole group discussion on the topics raised. The second activity was a discussion in pairs on the IT Service user experience, followed by feedback back to the whole group. The for the third activity the group was split in two, with each group conducting a stop, start, continue (SSC) analysis of the IT Service, again followed by a whole group discussion. The fourth activity was an individual exercise, participants were asked to imagine that they had an e-mail service that could send messages through time. They were asked to write an e-mail to themselves on the day before they first encountered the IT Service to include any lessons and/or recommendations that they would tell themselves. The final exercise kept the participants in the same two groups and used the time travelling e-mail service. They were asked to imagine being

back in the focus group in one years' time and to send an e-mail back to the current focus group telling them about the changes to the IT Service that had been made between then and now, that had improved the IT Service. There was a group discussion of the topics raised in activities four and five. A copy of the focus group slides and the template to capture the user experience feedback is in Appendix B Clinical staff data collection documentation.

Notes of the key points and some verbatim quotes were taken during the focus group and refined afterwards. The refined notes along with any participant generated written output (sticky notes, flipchart, notes) from the exercises (where appropriate) were sent to the attendees for validation.

Written feedback was provided by two current and/or former clinical staff unable to participate in interviews or the focus group. In these cases, the participants provided free text comments in response to the e-mail inviting them to participate in an interview which included details of the main evaluation topics.

The interviews, focus group and written feedback data were coded using NVivo and further developed using the iterative deductive/inductive approach used for the online patient survey.

5.4 REVIEW OF NON-FUNCTIONAL PERFORMANCE

Data and information relating to the non-functional performance of the IT Service was requested from the UHS NHSFT Informatics team who are responsible for the running of the IT Service. Information and data was requested relating to:

- Availability.
- Reliability.
- Accuracy (bugs).
- Responsiveness.
- Number and type of support requests.
- Security.
- Breaches of NHS IT and data policies.

5.5 IT SERVICE USE

5.5.1 Google Analytics

Quantitative data relating to the use of the IT Service was collected from the IT Service itself and via Google Analytics (GA). GA tracks and reports website traffic. The data from the IT Service and GA were used to identify usage of the IT Service and its primary functions.

5.5.2 IT Service adoption analysis

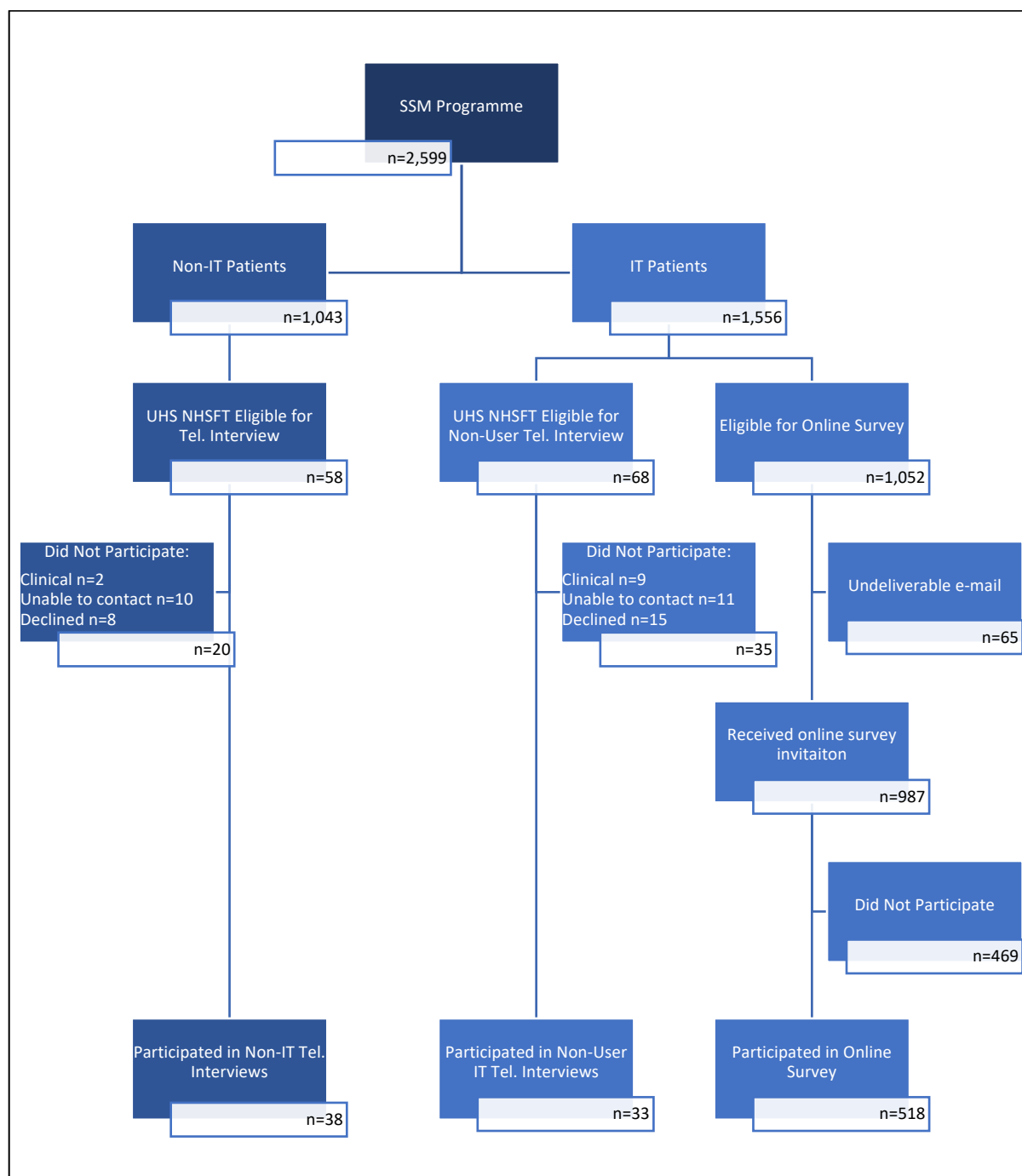
Data relating to patient adoption and use of the IT Service as part of prostate cancer SSM were provided from the IT Service. Data were analysed to explore whether there were any significant differences in adoption and use of the IT Service linked to the individual NHS Trust and patient age. A chi-squared test was used to analyse level of adoption and use of the IT Service by patients on the SSM programme, compared to patient age. The chi-squared test was also used to analyse the level of adoption of the IT Service by patients on the SSM programme, split by NHS Trust.

The chi-squared test relating to the influence of age on patient adoption and use of the IT Service only tells us if age is a statistically significant factor, it does not tell us about the nature of the relationship between age and adoption/use of the IT Service. To explore the nature of any relationship between patient age and IT Service adoption/use for prostate cancer, SSM data for percentage adopting and using the IT Service over twelve months against age range were plotted on a scatter graph (using the midpoint of the age range). A straight line of best fit along with the associated R score (Pearson's correlation coefficient) and R^2 score (co-efficient of determination) were calculated. Scatter graphs are used to demonstrate what, if any, relationship exists between two variables. The Pearson's correlation coefficient measures the strength of a relationship between two variables and the co-efficient of determination determines how close to the best fit line the data are.

6 RESULTS

Figure 0-1 SSM IT Service evaluation patient participant breakdown, shows the number of patients enrolled on the SSM programme in total along with how many patients were invited to participate and the number of patients that chose to participate in the different parts of the evaluation.

Figure 0-1 SSM IT Service evaluation patient participant breakdown



6.1 ONLINE QUESTIONNAIRE TO PATIENTS USING THE IT SERVICE, N=518

1,052 IT patients who were registered to use the IT Service to support their SSM and had logged in more than once during the period 1 January 2015 to 30 April 2017 were invited to participate. Of these patients 65 had invalid e-mail addresses, resulting in the invitation to participate in the online survey being undelivered, 987 patients received the invitation to complete the online survey.

Of the 987 patients invited to participate 518 participated, a 52% response rate. The typical completion time was 10 minutes. A detailed breakdown of the response rates by each NHS Trust can be found in Appendix C, Table 3 Online questionnaire response rates.

The complete results for the survey are in Appendix C Results from online questionnaire to patients using the IT Service. The results include breakdowns of key results for areas of function such as PSA result, messaging, Health MOT and Patient Information.

Chart 5 to Chart 9 in Appendix C set out the age of survey respondents along with the NHS Trust from which they received care, what kind of devices they used to access the IT Service, how often they used the IT Service and how long they had been using the IT Service. 95% of respondents used a laptop or desktop computer to access the IT Service with 32% having used a tablet (iPad or other) and 13% having used a smartphone (note that patients could use more than one type of device to access the IT Service). Patients tended to only access the IT Service when they were expecting a test result (43%), This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole. The online survey results found only 13% accessed it once a month or more. 44% of respondents had been using the IT Service for 12-24 months with 30% between two and three years. The IT Service has been in use since 2015.

In general terms the responses to the survey questions were very positive. The Net Promoter Score (NPS) for the IT Service is 49 which is a very strong score. The NPS was determined by asking respondents to score: “how likely would you be to recommend the IT Service to other patients?” with 0 = “Not at all likely” to 10 = “Extremely likely”. Respondents scoring 0-6 are classed as detractors, 7 and 8 passives, with 9 and 10 as promoters. NPSs are calculated by subtracting the proportion of detractors from the proportion of promoters. NPS can range from -100 to +100. To interpret NPSs it is useful to compare scores over time and between peer organisations. In general, a positive NPS is considered good, anything over 50 excellent and 70-80+ world class³¹. See Chart 20 Online questionnaire IT Service Net Promoter Score for more details.

Other highlights include the following: over 70% rated ease of use of the IT Service as very easy or easy (see Chart 10 Online questionnaire IT Service ease of use). 90% rated the quality of design of the IT Service as “well” or “acceptably” designed (Chart 12 Online questionnaire IT Service design quality). 83% of respondents rated the IT Service as extremely or mostly reliable (Chart 17 Online questionnaire IT Service reliability).

70% of respondents had attended an SSM workshop that included information and support on the IT Service which they found very helpful or somewhat helpful, 5% had attended an SSM workshop

and did not find the information on the IT Service helpful. 13% did not attend an SSM workshop while 12% attended but the IT Service was not covered. See Chart 13 Online questionnaire IT SSM workshop attendance and IT Service for more details. Most respondents didn't need additional help to use the IT Service in the first three months, of those who did, the primary source was their clinical team (Chart 14 Online questionnaire IT Service sources of help (first 3 months)). Very few respondents needed additional help using the IT Service at the time of the survey. Of those who did, the primary source was their family (Chart 15 Online questionnaire IT Service sources of help (current)).

When asked to rank which of the main functions of the IT Service patients used the most, the clear majority used PSA results the most. A lot of people used Patient info the least, ranked either 3rd or 4th (Chart 11 Online questionnaire IT Service function use ranking).

75-90% of respondents reported the IT Service as being very helpful or helpful in managing their condition (PSA results were 90%+ very helpful or helpful, and messaging the clinical team c. 85% very helpful or helpful).

20-30% of respondents either print, or would like to print from the IT Service (Chart 16 Online questionnaire IT Service printing preferences and activity).

Despite the generally very positive results from the survey there was a small minority who expressed dissatisfaction across the board. 10-15% of respondents found the key functional elements of the IT Service very difficult or difficult to use (Chart 10) and 4% found the IT Service poorly designed (Chart 12). Over 30% of respondents needed some help to use some parts of the IT Service at some point, nearly 40% needed help to register and log in. 8% found the IT Service often or sometimes unreliable and between 5%-8% of respondents reported that the main functions of the IT Service (PSA tracking, messaging, Health MOT and Patient information) did not help them to manage their condition. 5% of respondents scored 0 for the NPS question "how likely would you be to recommend the IT Service to other patients?"

Where the survey responses were broken down by functional areas, they indicated that consistent sources of dissatisfaction related to the registration and log in, Health MOT and Patient Information.

In addition to the data from the closed ended questions, nine open ended questions were asked, and respondents were invited to provide free text comments. Table 1 Online questionnaire open-ended questions shows the open-ended questions and number of respondents that provided comments. It should be noted that just because a respondent commented, it does not necessarily

mean that they provided an answer to the question asked, for example, Q07 received many responses of “none” or similar.

Table 1 Online questionnaire open-ended questions

Online Questionnaire – Open Ended Questions	No. of Responses
Q07. Please provide details of any problems that you have had with these aspects of the IT Service	228
Q09. Please list other features you would like to see added to the IT Service and how useful they would be	161
Q11. What would improve how it looks and works for you?	141
Q14. Please provide details of any other sources of help (1st 3 months)	59
Q16. Please provide details of any other sources of help (currently)	47
Q18. Any comments on printing	62
Q21. How has the IT Service helped you manage your condition (other)?	34
Q22. Do you have any further comments in relation to how the IT Service has helped you manage your condition	118
Q24. Are there any other comments you would like to make about the IT Service?	113

The themes that emerged from the coding of the free text responses supports results from the closed ended questions.

It is useful to note that the open-ended questions above were generally asking for information on issues and improvements, despite this, many respondents made comments that were positive and highlighted how helpful and good the IT Service is, and expressed thanks.

Several positive themes emerged from these data, these included:

- PSA results – fast, reducing stress and anxiety, providing reassurance and confidence.
- Messaging – fast, responsive, providing reassurance, confidence and peace of mind.
- Removing/reducing the need for hospital appointments.
- The level of support from clinical teams.

- The system in general.

The themes relating to patient dissatisfaction and development opportunities for the IT Service included:

- Logging in, passwords and registration (very strong theme), with some patients being unable to log in, others being shut out due to incorrect passwords and then struggling to change their passwords. Patients reported difficulty in finding the correct website for the IT Service.
- Issues with multiple platforms and operating systems e.g. tablets, Macs, iPads. Patients reported the IT Service not being configured to work well with tablets, iPads and Apple laptops.
- Health MOT in general and specifically it being both too long and the response options being too restrictive. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole. These interviews looked in more detail at the perceptions and use of the Health MOT.
- Some patients not using the IT Service for a variety of reasons including being unable to get it to work, a lack of support and a lack of desire to use it.
- The user experience in general and specifically.
 - Ease of use.
 - Responsiveness (slow).
 - Site navigation.
- For some patients, the IT Service simply doesn't work (could link back to log on and passwords).
- A desire for more support to use the IT Service.
- Challenges associated with infrequent nature of patients' use of the service (e.g. only using the service to check results every six months) compounding issues of ease of use and navigation. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole.
- Impersonal nature of the IT Service and a desire for face to face clinical contact and regular review.
- The lack of appropriateness of the IT Service for some patients given several factors including IT literacy, physical health, age etc.
- The IT literacy of patients and support available, linking to patients being supported by family members and training and support on the IT Service for third parties supporting patients e.g. family.

- A desire for the IT Service to expand to include comprehensive medical reports and links/incorporation of other clinical issues. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole.

It is important to note that the number of patients raising these themes is not necessarily large, but the issues were identified by several patients.

6.2 GUIDED TELEPHONE INTERVIEWS WITH PATIENTS NOT USING THE IT SERVICE

Sixty-Eight UHS NHSFT non-using IT patients were initially identified as registered but not actively using the IT Service. These patients had registered to use the IT Service and had either not logged in between Jan 2015 and Dec 2016 or had logged in only once from Jan 2015-Apr 2017. Nine patients were excluded (deceased, clinical reason, no longer UHS NHSFT patient) leaving 59 patients in the evaluation population. 15 patients declined to participate, 11 were unable to be contacted (no answer etc) and 33 of N=68 (48%) agreed to participate.

Fifty-Eight UHS NHSFT non-IT patients were initially identified as patients who had joined the SSM pathway between January 2015 and April 2017 and had chosen not to register for the IT Service. Two patients were excluded (deceased or admitted to UHS NHSFT as a patient) leaving 56 patients in the evaluation population. Eight patients declined to participate, ten were unable to be contacted (no answer etc) and 38 of N=58 (66%) agreed to participate.

A breakdown of the UHS NHSFT non-using IT patients and UHS NHSFT non-IT patients response rates and results from the survey are in Appendix D Guided telephone interview results - UHS NHSFT patients not using IT Service.

6.2.1 UHS NHSFT non-using IT patients, n=33

The UHS NHSFT non-using IT patients were asked why they were not using the IT Service. Surprisingly 23 of N=33 patients said that they are using the system, the reasons for this are unclear. Of these, one used it but not all the time, one only when they felt they need to, one found it fiddly, one did not need to use it anymore and commented that when they had used it they couldn't find the Health MOT, one thought the service is very good, found it difficult to use at first but that it was ok now, another initially struggled but used it currently after getting help from their clinical team, one used the system but is not happy about the software and said he did not like the fact that the software is not NHS but Microsoft, and one patient's wife checks for him.

The most common reason for not using the IT Service amongst UHS NHSFT non-using IT patients, 10 of the N=33 UHS NHSFT non-using IT patients was not having access to a computer

anymore and/or not having internet access (four participants). Two participants found it too difficult, two could not remember their passwords and one did not trust the internet.

The participants were asked what could be done to make it more likely that they would use the IT Service. For five participants there was nothing that can be done, they did not want to use the IT Service, despite having signed up to use it. Four participants suggested that making the log in processes easier would help and five would have liked more support either face to face (3) or telephone (2). A loan device with internet access would have made two participants more likely to use the IT Service.

Twenty-Four UHS NHSFT non-using IT patients attended an SSM workshop as part of their care programme and the workshop provided information about the IT Service. 14 participants found the information in the workshop on the IT Service very helpful, eight found it somewhat helpful and two found it not helpful. In addition to the workshop 20 of the participants recalled being told about telephone support. Ten participants had used the telephone support, three found it very helpful and five somewhat helpful, while two found it not helpful.

Of the ten participants not using the IT Service, five raised issues with the IT Service preventing them from using it, these included problems with logging in and passwords (3), the system not working (1) and that it could be easier (1).

To increase the likelihood of using the IT Service one participant suggested a user forum to avoid bothering their clinical team, while another would like an occasional call from the clinical team, to check that everything was ok.

6.2.2 UHS NHSFT non-IT patients, N=38

The UHS NHSFT non-IT patients were asked why they chose not to use the IT Service. The most common reason for not using the IT Service was not having a computer (12) or access to the internet (2), with one participant's computer not working well enough. Five participants did not like using computers along with eight who did not want to use a computer for their healthcare. Five participants said they would find it too difficult. Of the participants who did not have a computer, five were not interested in computers, three felt they were too old for them and one did not want to learn something new.

The participants were asked what could be done to make it more likely that they would use the IT Service. Twenty-eight said there was nothing that could be done to encourage use of the IT Service. Five suggested more support would help. One participant said he had wanted to use the IT Service but he gave an incorrect e-mail address initially. He said that he had since rectified this,

but had not heard anything back from UHS NHSFT. Another patient did not use the IT Service because he believed it to be incompatible with Apple operating systems.

One patient said that he had used the IT Service but did not find it helpful.

Of the participants who said nothing would encourage them to use the IT Service, four of the participants would prefer to speak to a person and three were not good with computers, two said that they did not have the time to use the IT Service and another two had concerns over using the internet. One participant was visually impaired and as a result did not use computers and one participant could not read or write.

6.3 CLINICAL STAFF USING THE IT SERVICE, N= 9

Nineteen clinical staff were invited to contribute to the IT Service evaluation, of which nine participated. Six clinical staff attended a focus group, three were interviewed (including one who had attended the focus group) and two provided written feedback. The focus group and interviews were conducted, and the written feedback collected in July and August 2017.

Several themes emerged from analysis of the clinical staff focus group, interviews and written feedback. In general, the feedback from clinical staff was very positive. The clinical staff were strong advocates of the solution and the project that delivered it. They were proud of the SSM programme and the IT Service. They had enjoyed participating in the project to develop and implement the SSM programme and IT Service. They were involved in the development, refinement and implementation of the IT Service which resulted in a solution that met their requirements and that they were committed to. The clinical staff reported that the UHS NHSFT Informatic team that developed and delivered the IT Service worked in a collaborative manner with the clinical teams and were responsive to, and acted upon feedback in the development and implementation.

The clinical teams confirmed that the core functional objectives (PSA tracker, messaging, Health MOT and patient information) were met, and that the IT Service made life easier for both staff and patients.

No significant issues with non-functional performance were identified, but several minor issues were raised including:

- The IT Service being described as “A bit clunky”.
- Patient loading (patient lists) taking a long time.
- That the IT Service can be slow.

There were generally, no concerns regarding user experience in relation to ease of use, trust, security, reliability, availability etc. In contrast, the qualitative interviews conducted as part of the wider evaluation of the SSM programme found some lack of trust, for example, from wrong PSA results being pulled through by the system resulting in double checking. There was also some concern about security. The inconsistency in findings may be due to timing of interviews and confidence that issues have been resolved. The qualitative interviews for the full evaluation were conducted from April to November 2016, whereas the IT Service evaluation focus group and interviews were conducted in July and August 2017.

The clinical staff identified several opportunities to improve and enhance the current IT Service.

- Ability to change patient status from “non-IT” to “IT”.
- Ability to stop reminders to complete a Health MOT with each PSA test.
- Facility to change patient e-mail address.
- Electronic rather than paper letters.
- Improved ability to comment on patient record and to document interactions (calls). This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole.
- Improve the patient search functionality (for messaging and in general).
- The ability to change reminder letters.
- Increased accuracy of the traffic lights colours on reminders.
- Improve and streamline the password change process as it currently is burdensome.
- Changes to the alert levels.
- Adding patient hospital number validation.
- Link to broader NHS systems to spot changes in patient details such as change of GP.
- Improvements to deceased patient status functionality.

The clinical staff highlighted that the initial patient registration process was too long and complicated, and that the revised process was much better. This finding was supported by patient feedback from the online survey and telephone interviews of IT patients.

The clinical staff emphasised that early integration/interface with core hospital systems is crucial to release the benefit potential. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole. They also made clear that it is very important to have dedicated CNS/SW resource to support the delivery of the project to implement the IT Service. In addition, they highlighted the need for buy in and commitment from consultants, IT, and hospital management as important to the successful implementation of the IT Service.

The feedback from clinical staff identified that some Trusts may be running shadow/grey systems/record keeping as a contingency. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole, and could be linked to issues of a lack of trust and confidence in the IT Service when it was first implemented.

There was a strong desire to improve the training and supporting material for the IT Service. The clinical staff identified the need for user guides, a training manual and programme coupled with formal and informal staff training sessions. The need for additional training sessions and material has been amplified by staff turnover at several NHS Trusts. The turnover of clinical staff has resulted in staff who had been involved in the development and implementation of the IT Service leaving and being replaced by new staff who have had to develop the skills and knowledge to use the IT Service from a standing start and without formal documentation or training material to support the knowledge transfer. There is a need to ensure second and subsequent generation clinical staff users of the IT Service are provided with the support to use the IT Service. To further enhance the support of the IT Service they were keen to establish improved ongoing support from UHS NHSFT Informatics such as a contact telephone number for raising issues.

The clinical staff saw the opportunity to roll the IT Service out to other long-term conditions. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme as a whole.

6.4 REVIEW OF NON-FUNCTIONAL PERFORMANCE

There was little formal documentation to support an analysis of the IT Service's non-functional performance. The UHS NHSFT Informatics team provided the following information.

- Availability.
 - The service is available 24/7. Since September 2014 when UHS NHSFT Prostate went live it has experienced four incidents of unplanned downtime, totalling 14 hours non-availability. Estimated 99.92% uptime.
 - Three incidents of downtime were due to an unexplained issue with Microsoft HealthVault (so did not affect all users). One incident was with the UHS NHSFT network.
- Reliability.
 - Estimated mean time between failures is 4358 hours.
- Accuracy (bugs).
 - Bugs have occurred from time to time but there is no management information (MI).
- Responsiveness.

- No formal MI.
- Number and type of support requests.
 - No formal MI.
- Security
 - No known security breaches.
 - All servers are regularly security patched as updates are released by Microsoft.
- Breaches of IT or other policies.
 - There have been two reported Information Governance (IG) incidents where a patient number was keyed incorrectly resulting in a record being created that contained someone else's details. Both times this was fixed with minimal intrusion/effect/upset on the patients involved. The UHS NHSFT Trust Records Manager (and Data Protection (DP) head) reviewed the incidents for reporting to the information commissioner. Learning from the incidents led to altering the registration process.
- Penetration testing
 - The UHS NHSFT Informatics network team were responsible for managing the penetration testing of the IT Service.
 - The penetration testing carried out by an external company, Cygnia Technologies. They looked for security weakness and vulnerabilities.
 - The testing was carried out on the 19th and 20th January 2016. A number of Medium risk vulnerabilities were found, and remedial work to resolve those vulnerabilities was carried out.
 - The resulting changes re-scored the IT Service as Low risk.

6.5 ANALYSIS OF IT SERVICE USE

6.5.1 Google Analytics (GA), N=1,911

A range of descriptive data relating to the use of the IT Service were extracted from Microsoft Google Analytics (GA) and analysed. The data covered the six-month period 1 March to 31 August 2017 and are combined for all NHS Trusts using the IT Service and, unless otherwise stated, will include data for both staff and patients.

The detailed data and definitions are in Appendix E Google Analytics data and included metrics on:

- Audience

- Sessions, users, page views, unique page views, proportion of new and returning visitors, pages per session, sessions per day and average session duration.
- Type of device (computer, tablet, mobile) used to access the IT Service.
- The number of unique active users of the IT Service over one, seven, fourteen and thirty days.
- Main patient functions page views.

Highlights from the data for the six months from 1 March to 31 August 2017 included:

- 1,911 unique users visited the IT Service websites of which c. 18% were new visitors.
- 82% of visits to the IT Service use a computer (desktop/laptop), with 15% using a tablet and 4% a mobile device.
- The median number of unique users is 28 per day, 135 weekly and 441.5 every 30 days.
- The page views of the main patient functionality breaks down as:
 - PSA results 47%
 - Messaging 25%
 - Patient information 15%
 - Health MOT 14%

6.5.2 IT Service adoption and use analysis, N=2,599

Data relating to patient adoption of the IT Service as part of prostate cancer SSM were extracted from the IT Service and analysed to explore whether there are any significant differences in adoption of the IT Service linked to the individual NHS Trust and patient age. The data tables and charts are in Appendix F.1 IT Service adoption and age data and F.2 IT Service adoption and NHS Trust data.

Figure 0-2 SSM IT Service Users, shows the patients registered to use the IT Service and details of how many patients have logged into the IT Service at least once in the 12 and 6 months to 31 August 2017.

Figure 0-2 SSM IT Service Users

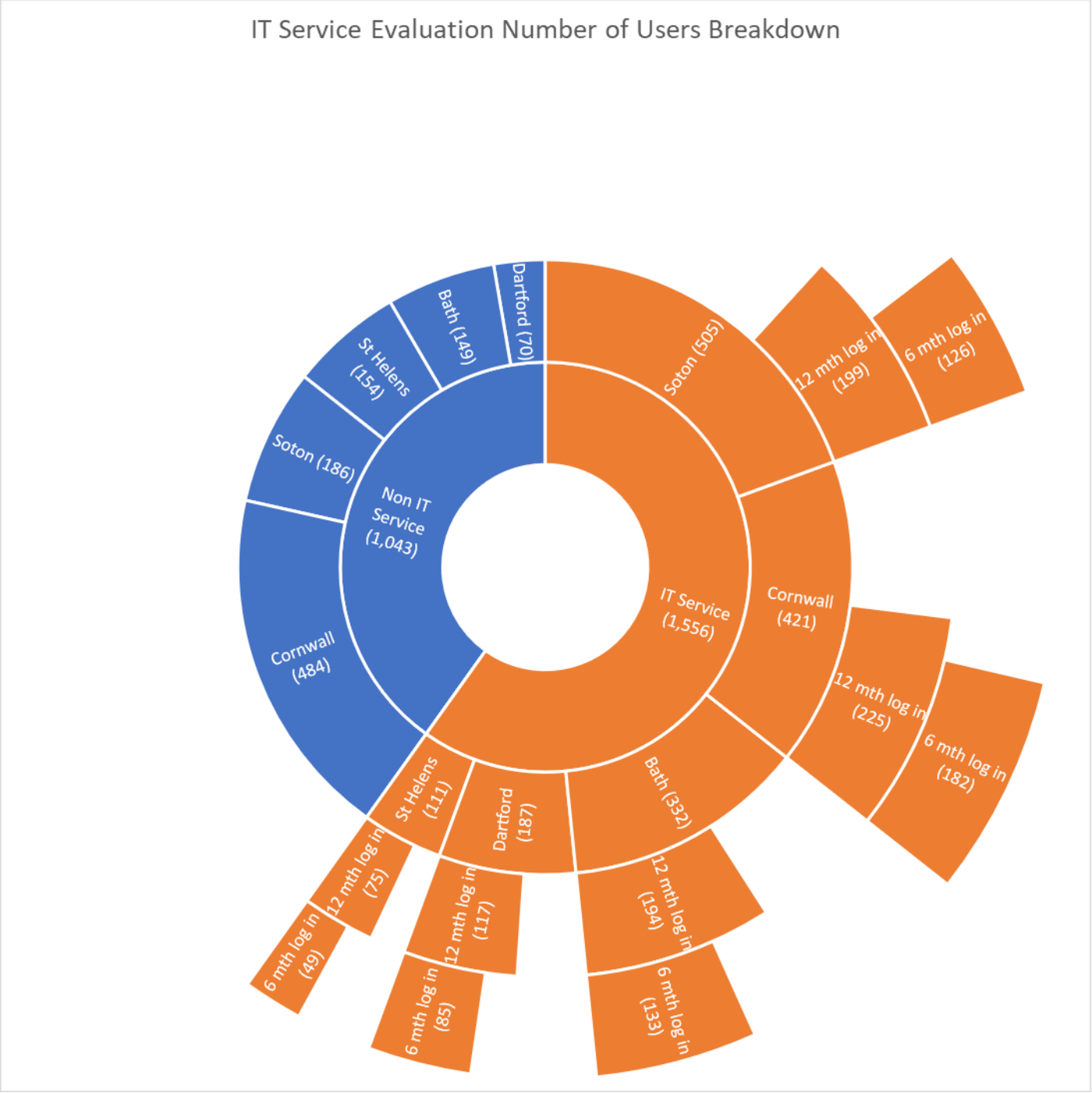
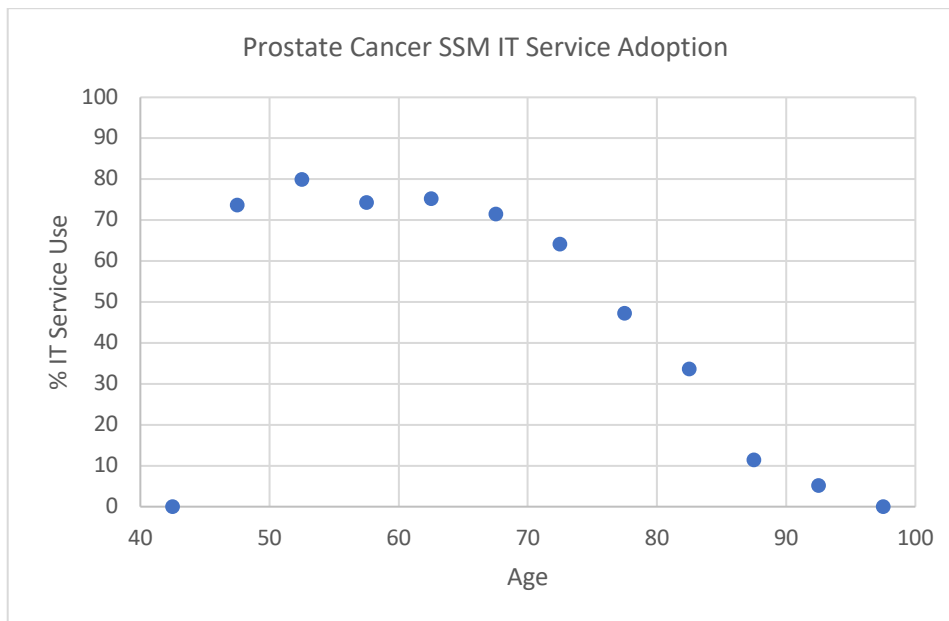


Chart 1 IT Service adoption and age scatter graph, shows the IT Service adoption rates by age of patient at time of registration. The data points are based on the mid-point of the age range and do not take into account the number of patients in each age range. It should be noted that there is an outlier at age range 40-45 which is due to only one patient in that age range, and that patient not being registered to use the IT Service.

Chart 1 IT Service adoption and age scatter graph



The key findings from the data analysis were:

- There was a strong correlation between patient age and IT Service adoption (χ^2 (11, N = 2,599) = 122.73, $p < .001$) with older patients less likely to use the service (r (2,598) = -.94, $p < .001$, $R^2 = .88$), this excluded single outlier point at (42.5, 0)..
- There appeared to be a plateauing of IT Service adoption rate at c. 80% from patients aged 65 and under at registration (N=2,599).
- 53% (n=810) of IT patients (N=1,556) had logged in at least once in the 12 months up to 31 August 2017.
- 37% (n=575) of IT patients (N=1,556) had logged in at least once in the 6 months up to 31 August 2017.
- There was a weaker, but still significant, correlation between age of patient and whether they had logged into the IT Service at least once in the 12 and 6 months up to 31 August 2017, with older patients less likely to have logged in.
 - 12 months χ^2 (9, N = 1,556) = 12.22, $p = .2$. and r (1,556) = -.78, $p < .01$, R^2 0.61.
 - 6 months χ^2 (9, N = 1,556) = 17.46, $p = .04$. and r (1,556) = -.90, $p < .01$, R^2 0.81.
- There was a statistically significant variation of patient adoption of the IT Service between NHS Trusts, χ^2 (4, N = 1,556) = 75.15, $p < .001$.

7 SUMMARY OF RESULTS

The feedback from patients and clinical staff using the IT Service is very good. The NPS score of 49 based on n=518 IT patients using the IT Service, who participated in the online survey is excellent and indicates a high level of satisfaction with the IT Service (see Chart 2 Online questionnaire IT Service Net Promoter Score and Table 2 IT Service NPS calculation). The feedback from the clinical teams (n=9) was generally very positive.

Chart 2 Online questionnaire IT Service Net Promoter Score

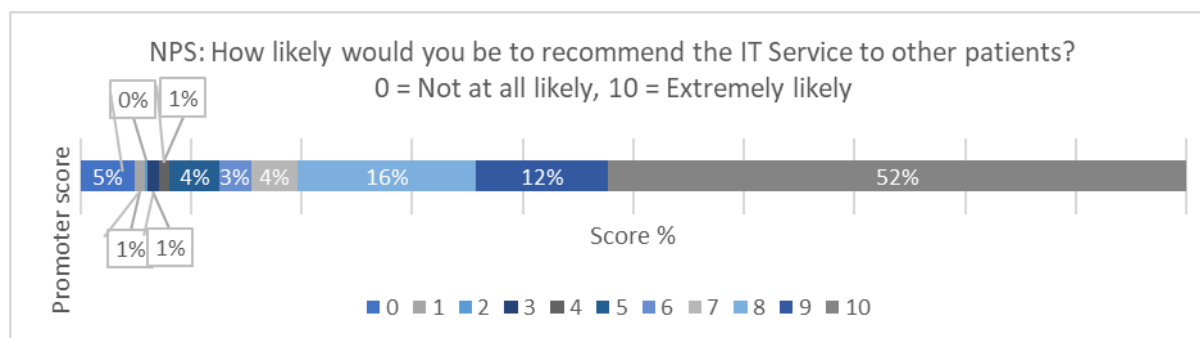


Table 2 IT Service NPS calculation

NPS	
Detractors	15%
Passive	20%
Promoters	64%
NPS	49

The overall patient satisfaction with the IT Service is illustrated by patients' comments from the online survey such as:

"...I love the IT service, I am disabled and it is a great benefit. Wish more departments could use a similar system. Thank you."

"A feeling that I am being supported on this rather lonely journey!"

"It might sound silly, but I feel that I am in control of my condition and treatment,"

"Knowing it works and that it is expanding gives one hope that it will be a great help to the ever-pressed NHS."

"I think that this is one of the best new services provided through the NHS, not only does it save my time on visiting the hospital, but it must also free up hospital staff to provide a better service to patients that are in the position I was in 4 years ago."

"It's great. Kind regards,"

Alongside the broadly positive feedback from patients using the IT Service, the evaluation identified patients not registered to use it, patients registered to use it, but not logging in and a small, but not insignificant minority of patients who had problems with the IT Service. The patients

using the IT Service and encountering problems reported issues with functionality and user experience that were a source of dissatisfaction. The interviews with clinical staff also identified some issues with functionality and user experience. This finding was supported by the qualitative interviews conducted as part of the evaluation of the SSM programme , which included more detail on the use and perception of the IT Service. There are areas of the solution that require further development to improve performance and to unlock potential.

Patient dissatisfaction with the IT Service and a reminder that there is still work to be done was illustrated with comments from the online survey such as:

“I have not appreciated any advantage from the system”

“I have had no benefit from this service”

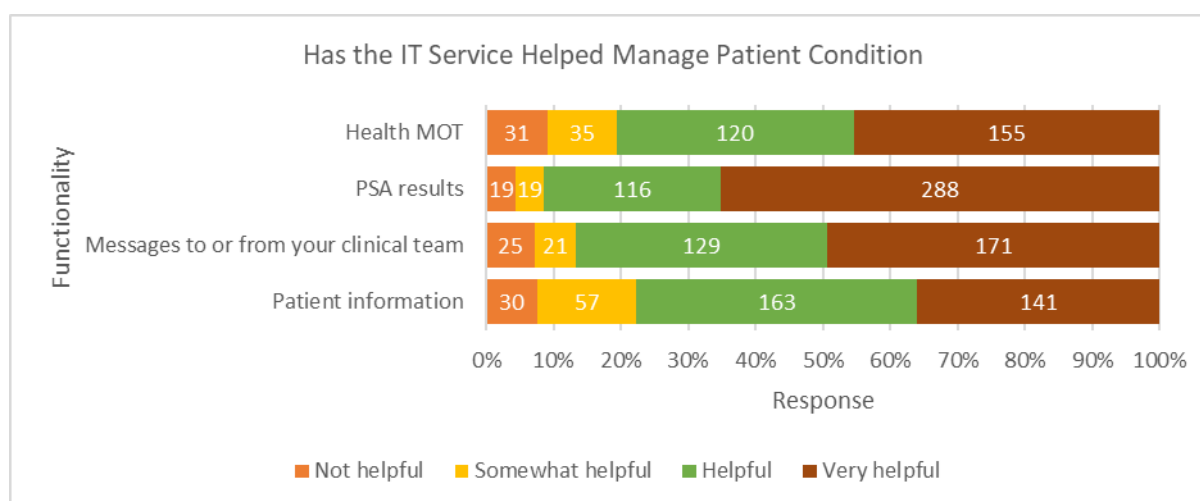
“Hasn't helped at all as it's not worked every time I've tried to get on it”

7.1 DOES THE IT SERVICE MEET THE FUNCTIONAL OBJECTIVES TO SUPPORT THE SSM MODEL?

The data from patients and clinical staff indicated that the IT Service meets the core functional objectives (PSA tracker, messaging, Health MOT and patient information) as set out at the start of the project, but that there is scope to improve the delivery of these objectives.

Chart 3 Online questionnaire IT Service and condition management illustrates how the key functionality of the IT Service are enabling the SSM programme for IT patients who were using the IT Service and participated in the online survey (n=518). 75-90% of respondents reported the IT Service as being very helpful or helpful in managing their condition.

Chart 3 Online questionnaire IT Service and condition management



The PSA results functionality and messaging service drew praise from patients as highlighted with comments such as those below:

“The service has provided my PSA results reliably and it has avoided any anxiety or stress as I have been able to monitor my health without a visit to health professionals.”

“Very quick information on PSA results gives me peace of mind. Clinical team can get in touch easily if required, and I can contact them quickly if needed. A very useful system much appreciated by me. Thank you very much.”

“Very reassuring to have quick access and knowing I can contact my clinical team. Saves me also not having to take time out of work to get a PSA test result and frees up hospital staff to treat more important cases.”

“Being self-employed the saving of all the time spent travelling and waiting in clinics is of real value. Living 20 miles away each appointment means the loss of half a day.”

“To have access to my PSA results the day after my blood test without having to call a receptionist is excellent. It is also a more private way to receive potentially upsetting data. I very much hope it will be continued!”

“System excellent when contact with team is required. Answers to queries answered very promptly. This is the real strength of the system and provides much peace of mind”

“The ability to send a simple message to the clinical team without having to go through lots of phone calls is absolutely excellent and gives great peace of mind.”

The data and free text comments from online survey of IT patients along with the telephone interviews of IT patients and the qualitative data from clinical staff highlighted functional areas that require attention. The Health MOT attracted criticism from both staff and patients, being criticised for being both too long; not able to capture relevant information; being difficult to find and complete; and not being appropriately used. The Patient Information section appears to be underutilised. Not all patients appreciate the messaging service with some patients finding it impersonal, preferring face to face contact with their clinical teams.

“The messaging system seems un personal [sic], you have no idea who will actually receiving your message”

“In spite of the ease of messaging my clinical team, having no direct human contact over a period of 2 years felt a bit isolating. The opportunity for a stock-take meeting occasionally would have helped.”

“...it feels very impersonal and the feeling of being an outcast”

“No problems with service but would still prefer more personal contact with medical personnel. Feel a bit abandoned and having to rely on a not very accurate PSA test.”

7.2 DOES THE IT SERVICE MEET NON-FUNCTIONAL OBJECTIVES?

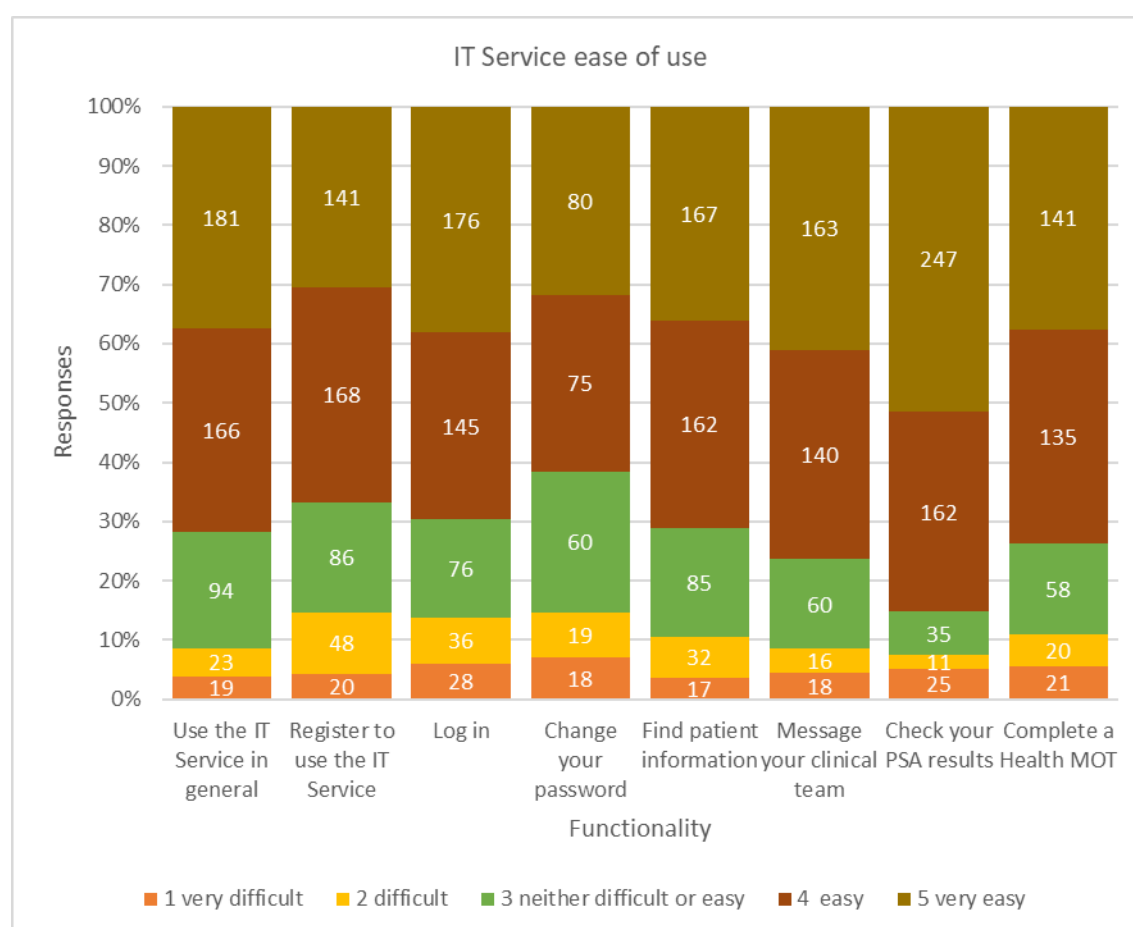
The information provided by UHS NHSFT Informatics coupled with the data from patients and feedback from clinical staff indicated that the IT Service meets key non-functional objectives. There was a lack of non-functional performance MI production and therefore it was not possible to have or monitor key performance indicators (KPIs) and/or service level agreements (SLAs) in relation to non-functional performance. There is an opportunity to improve MI reporting and to establish, monitor and report on KPIs/SLAs.

7.3 THE USER EXPERIENCE

The data from IT patients and clinical staff indicated that the user experience of IT patients and staff using the IT Service is good, although the experience of patients that have chosen not to use the IT Service are not as positive. 70% of patients surveyed (n=518 IT patients) rated ease of use of the IT Service as very easy or easy (see Chart 4 Online questionnaire IT Service ease of use), 90% rated the quality of design of the IT Service as “well” or “acceptably” designed and 83% of respondents rated the IT Service as extremely or mostly reliable. As one patient put it in their online survey...

“no problems at all with the IT service it is so easy to use and convenient, Don't have to phone my Doctor or hospital to find out the results of my PSA tests.”

Chart 4 Online questionnaire IT Service ease of use



The survey data and free text comments from patients and the qualitative data from clinical staff highlight consistent issues with the registration, log in and password processes which are, and continue to be, a source of dissatisfaction and frustration to patients. The feedback from patient open-ended questions also identified issues with the ease of use of the IT Service and problems associated with using the IT Service on devices other than desktop or laptop PCs, such as Apple Macs, tablets and smartphones.

The views of patients struggling to use the IT Service are illustrated by comments from the online survey such as:

"It is not very patient-friendly"

"I JUST WISH IT EASIER TO USE" [sic, caps in original]

"I am not computer literate so out of frustration I give up"

7.4 BARRIERS TO IMPLEMENTING AND USING THE IT SERVICE

An obvious barrier to implementing the IT Service is patients not using it. This could be patients not wanting to sign up to using the IT Service or patients that have initially agreed to use the IT Service and subsequently stopping using it or using it less often.

The telephone interviews with patients of UHS NHSFT non-IT patients (those who had chosen not to use the IT Service) provide a useful insight. Data suggested there are a small but material group of patients who are unable or unwilling to engage with an IT Service for SSM. Reasons for not engaging included not having the necessary equipment (internet enabled device and/or access to the internet), skills and knowledge (IT literacy and confidence, ability to read and write), physical capacity (visual impairment), lack of trust in IT and internet services, not enough time and wanting to engage with a clinician rather than a computer.

Several patients suggested being too old was a reason for not signing up to the IT Service. It is possible that age is a proxy for factors that would reduce use of the IT Service such as physical and mental capacity, and IT literacy.

Across the five NHS Trusts using the IT Service, 60% (n=1,556) of SSM patients (N=2,599) are IT patients (those registered to use the IT Service). The analysis of the SSM IT patients showed that there is a strong correlation between patient age and adoption of the IT Service, with older patients being less likely to use the Service.

In addition to patient age, the NHS Trust that the patient is receiving care from also statistically significantly influences the rate of adoption of the IT Service. The influence of NHS Trust on the rate of IT Service adoption remains when inter-Trust patient demographics are control for. The IT Service adoption rates across the five NHS Trusts range from 42% to 73% (see appendix F.2 IT Service adoption and NHS Trust data and Figure 0-1 Prostate cancer SSM programme IT Service Registration). This would suggest different practices at different Trusts resulting in different adoption rates which should be explored further.

The information from all the groups who participated in the evaluation provided insights into why patients who had signed up to use the IT Service may not have used it. The first point to note is

that 48% of patients registered to use the IT Service (n=1,556) had not logged in during the 12-month period to 31 August 2017, and 63% had not logged in during the 6-month period to same date. This may or may not indicate an issue, as we do not have a view on how frequently patients should be/are expected to be logging into the IT Service, but it does show that a significant proportion of registered IT patients who could be using the IT Service are not using it very often.

A range of reasons for patients not using the IT Service emerged from the evaluation, these included: lack of access to a suitable, internet enabled device; problems registering and logging in to the IT Service; lack of ease of use; the IT Service not working; lack of support; the IT Service not being compatible with their device; and wanting to engage with a clinician.

The feedback from the online survey indicated that many patients that struggled with the IT Service wanted to use IT but need more support, as highlighted by the comments from patients below:

“I would like clearer Access instructions, a step by step pamphlet would be helpful. There appear to be several sites and I'm unsure as to which one I should be using” [caps in original].

“I need help from whoever manages the site. It needs fixing in my case or some sort of advice about how to make it work”.

“Unable to access the service after about 9 months and no source to which to get assistance”

“I have had ongoing problems logging on. I have give up on using the site. This is disappointing because the idea is very good.”

“A good thing that is currently useless through lack of support.”

Where the IT Service was not performing as patients and staff expect it to, this acted as a barrier to implementation and use.

The clinical teams identified several barriers to implementing the IT Service, these included: a lack of buy in from key stakeholders (hospital management, consultants, clinical staff, patients); lack of dedicated resources to deliver the IT Service; the failure to integrate the IT Service with hospital system; and insufficient formal and informal training, documentation, knowledge and support for the IT Service.

7.5 ENABLERS OF IMPLEMENTATION AND USING THE IT SERVICE

Several key factors were identified as enabling the implementation and use of the IT Service. The fact that staff and patients considered the IT Service to meet the functional and non-functional

objectives was a key enabler. The IT Service works, and in general does what the patients and staff expected it to, this supported staff and patients being willing and able to use it.

The clinical staff highlighted that dedicated clinical resource and stakeholder buy in were important factors in implementing the IT Service. The involvement of clinical staff from the start of the project, to help define the solution, coupled with the inclusive and responsive approach to implementation, and support of the UHS NHSFT informatics team were also key to implementing the IT Service.

7.6 RECOMMENDATIONS FOR FUTURE DEVELOPMENTS

The evaluation of the IT Service has highlighted a range of functional and non-functional developments, suggested by staff and patients that should be considered as part of the development of the IT Service. These fall into several broad categories.

The first category relates to accessing the IT Service and includes improvements to the registration and log in process and system along with making it easier for users to change their password.

The second category covers enhancements to the overall user experience and ease of use. This category covers the improvements to website navigation, compatibility with devices (PCs, tablets and phones) and operating systems (Windows, Apple iOS and Android), the search facility, patient list loading speed and general look and feel of the IT Service.

The next category relates to improvements to the existing core functionality (PSA trackers, messaging, Health MOT and patient information). The feedback from both staff and patients suggested a need to fully review and improve both the Health MOT and patient information functions. In addition, improvement and fixes to the existing functionality were suggested as detailed below:

- The ability to remove/archive deceased patients.
- The ability to change patient status from “non-IT” to “IT” to allow patients on the SSM to be added to and removed from using the IT Service to support their SSM programme.
- Ability to stop the automated reminder for a patient to complete a Health MOT that is triggered by each PSA test (as part of the review of Health MOT).
- Change patient e-mail address.
- Electronic rather than paper letters.
- Improved ability to comment on patient record and document interactions (calls).
- Improve the patient search functionality (for messaging and in general).

- Changes to the reminder letters have been suggested.
- Improve accuracy of traffic lights colours on reminders.
- Improvements to the alert levels functionality.
- Automatic validation of patient hospital number.

The final category is new functionality suggested by staff and patients to improve the overall patient care programme. These suggestions included:

- Links to other health records (GP, other hospital departments, commercial health monitoring apps etc) to provide a comprehensive patient health/wellness record.
- Printing and export of patient data, reports and information.
- Automatic PSA reminders to patients.
- The ability to book clinical appointments online.
- Inclusion of other clinical prostate results (other than PSA), and an online patient forum.

In addition to the broad categories above, staff and patients also identified a need to develop better support for the IT Service.

UHS NHSFT Informatics should review the detailed feedback from the clinical staff, telephone interviews with patients and the online patient survey, to identify potential IT Service developments. It is important to note that there may be other areas for development of the IT Service that have not been captured by this evaluation. Potential development areas that have been identified from the staff and patient feedback may not be representative of all IT Service users. UHS NHSFT Informatics should put in place a mechanism to solicit, capture, assess and validate IT Service development suggestions from staff and patients that can form part of a development roadmap.

Finally, staff and patients suggested that the IT Service could be used to provide SSM services to other clinical conditions.

8 IMPLICATIONS AND FURTHER WORK

It is apparent that the IT Service is used to support the SSM programme to a broad population of patients. These patients have a wide and diverse range of characteristics and preferences relevant to using an IT Service to enable a SSM programme. Some patients are willing, able, pleased and grateful to be able to use the IT Service, while others are unwilling, unable, unhappy and resentful at being asked to use it. The current IT Service appears to be well suited to patients who are willing and able to use an IT Service for their healthcare. These patients are likely to be IT literate and tolerant, be comfortable with using technology for sensitive personal data and value the timeliness and time saving associated with accessing information and support online rather than having to attend a hospital clinic.

The IT Service appears to be less well suited to patients less willing and less able to use an IT Service for SSM. There will always be a segment of patients for whom using the IT Service will not be appropriate. However, there are opportunities to improve the IT Service and the support of the IT Service to increase usage among those patients who are currently less willing and able.

The IT Service is being used to support prostate cancer patients, which by their nature are likely to be older and aging men. The evaluation identified that the older a patient was the less likely they were to be registered to use the IT Service and of those patients registered to use it, the older a patient was the less likely they were to be using it. There is an opportunity to improve the IT Service and its support to increase the likelihood of older patients registering and then using the IT Service.

The evaluation has identified that with 48% of registered users (n=1,556) of the IT Service having not logged in during the 12 months to 31 August 2017 and 63% not logged in during the 6 months to 31 August 2017, there may be an issue around whether patients are using the IT Service appropriately. There is anecdotal evidence of a drop off in IT patient engagement with the IT Service. This may be related to patients' aging or a more general reduction in patient engagement with IT Service over time. This may explain why some patient had not recently (within 6 or 12 months) logged into the IT Service. A further factor influencing use of the IT Service is that patients can access functions provided by the IT Service such as their PSA results and contacting their clinical teams by other means. The PSA results are posted to patients and can be provided over the phone, and the clinical teams can be contacted by telephone.

In addition, problems with patients accessing the IT Service (registration, log in and passwords) as well as more broad ease of use and user experience concerns have been identified. These issues could contribute to patients finding it difficult to use the IT Service and ultimately not using it at all.

The issues relating to accessing and using the IT Service are potentially amplified because of a lack of appropriate support for staff and patients resulting in problems not being resolved satisfactorily.

These issues are interrelated and require a joined-up solution. If the problems related to accessing and using the IT Service are identified and fixed, it is likely that use of the IT Service will increase. If there are fewer problems with the IT Service, the demand for support (from clinical and/or IT staff) will drop. Similarly, if support for patients and staff can be sourced from within the IT Service, online or via user guides and other documentation, the demand for support from both the clinical and IT team will reduce. Good training and supporting material for the clinical team will reduce the likelihood of user error on their part and increase the opportunities of them to resolve issues with the IT Service raised to them by patients. If alternative sources of the information provided by the IT Service (post and telephone), in particular PSA test results, are discontinued or discouraged patients will be encouraged to use the IT Service and seek support if they have problems rather than giving up and using an alternative method to access the information.

It is important to note a patient's willingness and ability to use the IT Service is not necessarily fixed, and may vary over time, in particular, with issues relating to aging. The SSM programme and the IT Service needs to be flexible to accommodate the potentially changing nature of patient preferences, such as moving patients from being IT patients to non-IT patients and vice versa, this would be particularly important if steps were taken to discontinue or discourage alternative methods of acquiring the information provided by the IT Service.

Further work in relation to the IT Service could be based around four main themes. The first theme focuses on how the five NHS Trusts are using the IT Service, the remaining three themes look at management information, support and development of the IT Service.

The first theme looks at how the IT Service is being used in general and across the five NHS Trusts, with a focus on the processes, procedures and practices across the Trusts. Good practices should be identified and shared, opportunities for continuous improvement should be developed. This theme would include exploring:

- The approach to recommending and registering SSM patients to explore overall IT Service adoption and the wide variation in IT Service adoption rates across the five Trusts. This would include the initial and ongoing assessment of patient suitability for the IT Service as part of their SSM.

- Investigate the level of use of the IT Service overall and across the NHS Trusts looking at how frequently patients are using the IT Service, if the levels are as expected and if anything can and should be done to change them.
- The alternative methods of accessing the services the IT Service provides (post/phone etc).
- How the IT Service is used by staff to support SSM and how it fits with the broader SSM and clinical processes and systems. This would include identifying and reviewing the need for any informal/grey systems that are supporting the IT Service.
- Support of the IT Service (provided from and to the clinical team).

The second theme is the development of a set of management information (MI) reports and key performance indicators (KPIs). UHS NHSFT Informatics should consult with the key stakeholders from the five NHS Trusts using the IT Service to develop a suite of MI/KPI reports for the IT Service. The MI could cover non-functional performance, bugs/error reporting and resolution, and IT Service use such as service adoption and use/log in rates. The MI could be used at NHS Trust level and whole IT Service level to allow inter-Trust benchmarking and as a catalyst to discussions on best practices.

The third theme is the support of the IT Service. UHS NHSFT Informatics should consult with the key stakeholders from the five NHS Trusts using the IT Service to review and develop an enhance model for supporting the IT Service. The review could cover:

- The development of online and in-system support.
- Approaches to first and second line support.
- Formal and informal, regular and ad hoc, training and support for clinical staff.
- Induction and training material/sessions for new staff.
- User guides, procedures and other documentation for both staff and patients.
- An error logging/service request process to manage and report on bugs and issues with the IT Service.
- A mechanism to capture, assess and manage issues and opportunities for the IT Service raised by clinical and IT staff and patients.
- Regular user group for clinical staff.
- Mechanisms for eliciting feedback from staff and patients.

The final theme is the strategic development of the IT Service. UHS NHSFT Informatics should have a strategic roadmap for the development of the IT Service. This would include a process for identifying, assessing and prioritising functional, system and process improvements, this would build on the support theme above. The development plan for the IT Service should be based on

the areas for improvement and development identified in this evaluation (see section 0 7.6 Recommendations for future developments), in particular, consider:

- A review of the Health MOT and its continued relevance given developments of the NHS national Patient Reported Outcome Measures (PROMs).
- A review of the patient information function with a view of gaining a clear understanding of what men want in terms of information about their condition and what is and could be available.
- Improvements to the registration and log in process and system along with making it easier for users to change their password.
- Enhancements to the overall user experience and ease of use

The strategic roadmap would also include development opportunities such as rolling out the IT Service to other NHS Trusts and other clinical conditions. The roadmap would define the direction of the IT Service assess developments and opportunities for their suitability, feasibility and acceptability.

During the evaluation, several data quality issues were identified. These data issues related to undeliverable patient e-mail addresses, inaccurate patient phone numbers and missing or clearly erroneous patient dates of birth being held on the system. Details of these issues will be fed back to the relevant clinical teams and fed into the development pool to see if system or process enhancements could help prevent these issues in future.

This evaluation has focused on the acceptability and use of the IT Service, essentially looking at “what” has been delivered, which is generally positive. It would be useful to identify and evaluate how the project delivered these objectives, with a view to informing future projects.

9. CONCLUSION

The IT Service meets its functional and non-functional performance objectives in enabling the PSA results tracking, messaging between patients and clinicians, Health MOTs and Patient Information for the SSM programme for prostate cancer.

The IT Service evaluation data showed that for most IT patients who completed the online survey, the IT Service's core functions (particularly the PSA tracker and messaging functionality) have helped manage their condition, that it is easy to use and well designed.

The evaluation highlighted around 40% of SSM patients were not registered to use the IT Service and of those SSM patients registered to use it, c. 48% had not logged in over a 12-month period.

Despite the positive feedback from staff and patients several areas of the IT Service have scope for improvement and development. Addressing these issues may encourage greater use of the IT Service.

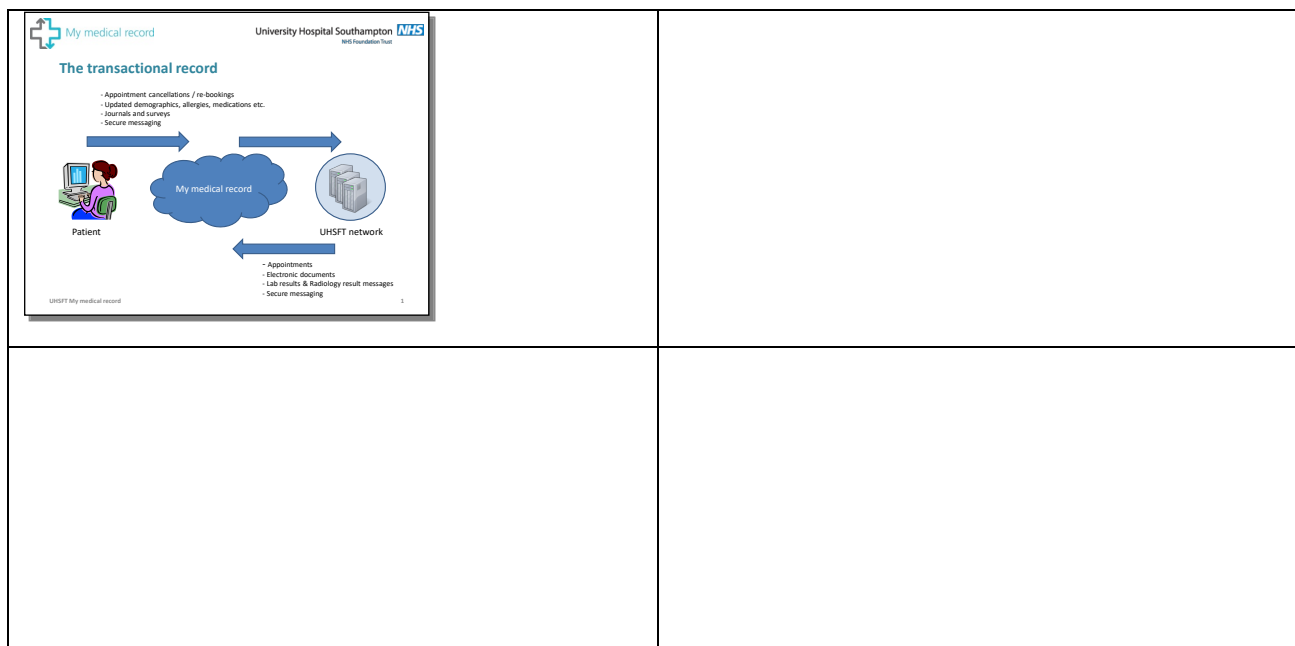
The IT Service is considered valuable and useful by both clinical staff and patients.

To build on the successful foundations of the current IT Service, opportunities to rollout the IT Service to other NHS Trusts and other clinical conditions should be developed, whilst addressing the issues identified in this evaluation.

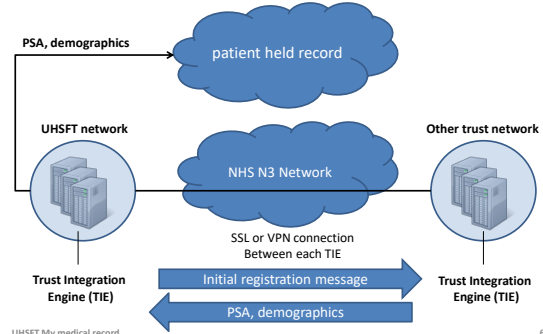
Appendix A Technical overview of the IT Service

The IT architecture provides patients with a secure personal health record. This is 'cloud based' in that it is internet hosted and accessible from any internet enabled device though the physical servers currently reside on site at UHSFT. The patient facing website sits outside of the hospital network, but all data is held securely within the hospital network, a secure link between the website and the data is established once the patient has successfully authenticated.

A number of other NHS organisations use the IT solution to manage their Prostate patients. In order to maximise the efficiency of the service for the CNS/support worker, it is optimal for patient data from remote systems to be uploaded to the online patient record. This is achieved by establishing a secure link between the UHSFT Trust Integration Engine (TIE) and the TIE at the remote NHS organisation over the NHS N3 network with additional security configured between the two endpoints. Once this link is established patient information is passed between the TIEs upon registration and when new, relevant, information occurs (e.g. new PSA blood result). Internal systems at UHS then facilitate the loading of data from the UHSFT TIE in to the relevant patient record.



Integrating other sites



Appendix B Clinical staff data collection documentation

B.1 Interview notes template

SSM IT Service Evaluation

Non-Patient (clinical staff) Interview Notes

Ref	Interviewer Name	Date	Time	Location
Setting (quiet or noisy, any interruptions, can you be overheard etc)				

Name	NHS Trust	Role ¹	Time ²	Cat ³	Type ⁴

¹Role wrt the IT Service. ²Time in role wrt the IT Service. ³CC, FC, IT. ⁴Participant type.

- Functional objectives – does the system deliver these, is it better with the system than without (for staff and for patients)?
 - PSA tracker
 - Messaging
 - Health MOT
 - Patient information.
- User experience - what is it like to use? (see UX template)
- Barriers and enablers of use (for staff and for patients)
 - Enablers
 - Barriers
- Lessons and recommendations
 - Lessons
 - Recommendation

B.2 User experience template (interviews and focus group)

SSM IT Service Evaluation – User Experience

Thinking about the IT Service, what is it like to use? Are you happy with your overall experience using the IT Service, how easy or pleasing it is to use? There are some pointers below that might help to focus your thoughts. Please note what you think about the IT Service, if you're happy with these aspects and how we can improve them.

Is it easy and intuitive to use?

Do you like the look and feel of it?
Is it available when you want it to be?
Is it reliable – does it work when it's supposed to?
Does it work correctly , does you have to raise many bugs?
Is it quick enough , responsive enough?
Is it secure ?
Do you trust it?
Does it make you happy ?

B.3 Clinical staff focus group slides

1	<p align="center">SSM IT Service Evaluation Clinical Staff Focus Group Approach</p> <p align="center">31 July 2017 1.30pm to 3pm Room A, Education Centre (building E7) RUH Bath</p> <p align="center"><small>©Coroner Strategic Research and Implementation Limited</small></p>
2	<p>Agenda</p> <ul style="list-style-type: none"> • Introduction 1.30-1.35pm • Functional objectives 1.35-1.55pm • User experience 1.55-2.15pm • Barriers and enablers of use 2.15-2.35pm • Lessons and recommendations 2.35-2.55pm • Wrap up 2.55-3.00pm <p align="center"><small>©Coroner Strategic Research and Implementation Limited</small></p>

3	<p>Introduction – why are we here?</p> <ul style="list-style-type: none"> • The TrueNTH Supported Self-Management (SSM) programme for prostate cancer, aims to transform traditional post-treatment care pathways for men. • The SSM model of care recognises that a significant proportion of men can manage their own health needs. • UHS Informatics Service developed and provided the Online Patient Service and PSA Tracking System for this project. <ul style="list-style-type: none"> • MyMR, My Medical Record, TrueNTH, My Health Record. • To avoid confusion the Online Patient Service and PSA Tracking System will be referred to simply as "the IT service". • Capture the experience of clinical teams to identify user experience, barriers to implementation, enablers of implementation, lessons learned throughout development and recommendations for future development. <p align="center"><small>©Coroner Strategic Research and Implementation Limited</small></p>
4	<p>Does the IT Service do what you want it to do?</p> <ul style="list-style-type: none"> • High level objective <ul style="list-style-type: none"> • Provide an Online Patient Service and PSA Tracking System • Detail objectives (what the IT Services is trying to do) <ul style="list-style-type: none"> • Allow patients to be monitored remotely by a specialist team (using a PSA tracking system). • Receive PSA test reminders. • E-messaging service between patients and clinical teams. • Functionality (how the IT Services tries to meet the objectives) <ul style="list-style-type: none"> • Clinical tracker <ul style="list-style-type: none"> • PSA results & reminders • Messaging • Patient supplied information • Health MOT • Individually, please write down on the sticky notes your thoughts on does the system deliver these, is it better with the system than without (for staff and for patients)? (5-10 mins) <p align="center"><small>©Coroner Strategic Research and Implementation Limited</small></p>

5	<h3>What's the experience of using the IT Service?</h3> <ul style="list-style-type: none"> • Get into pairs • Discuss what it's like to use the IT Service (15 mins) <ul style="list-style-type: none"> • Is it easy and intuitive to use? • Do you like the look and feel of it? • Is it available when you want it to be? • Is it reliable – does it work when it's supposed to? • Is it work correctly, does you have to raise many bugs? • Is it quick enough, responsive enough? • Is it secure? • Do you trust it? • Does it make you happy? • Note down key points on the sheet provided <p><small>©Concor Strategic Research and Implementation Limited</small></p>
6	<h3>Barriers and enablers of use (for you and for patients)</h3> <ul style="list-style-type: none"> • Thinking about starting to use the IT Service <ul style="list-style-type: none"> • Either when it was first rolled out to your NHS Trust • Or when you personally started using it • What should we.... <ul style="list-style-type: none"> • Stop • Start • Continue • Thinking about any feedback you've had from your patients regarding using the IT Service what should we... <ul style="list-style-type: none"> • Stop, start, continue • Capture your thoughts on the flipcharts (10 mins) <p><small>©Concor Strategic Research and Implementation Limited</small></p>

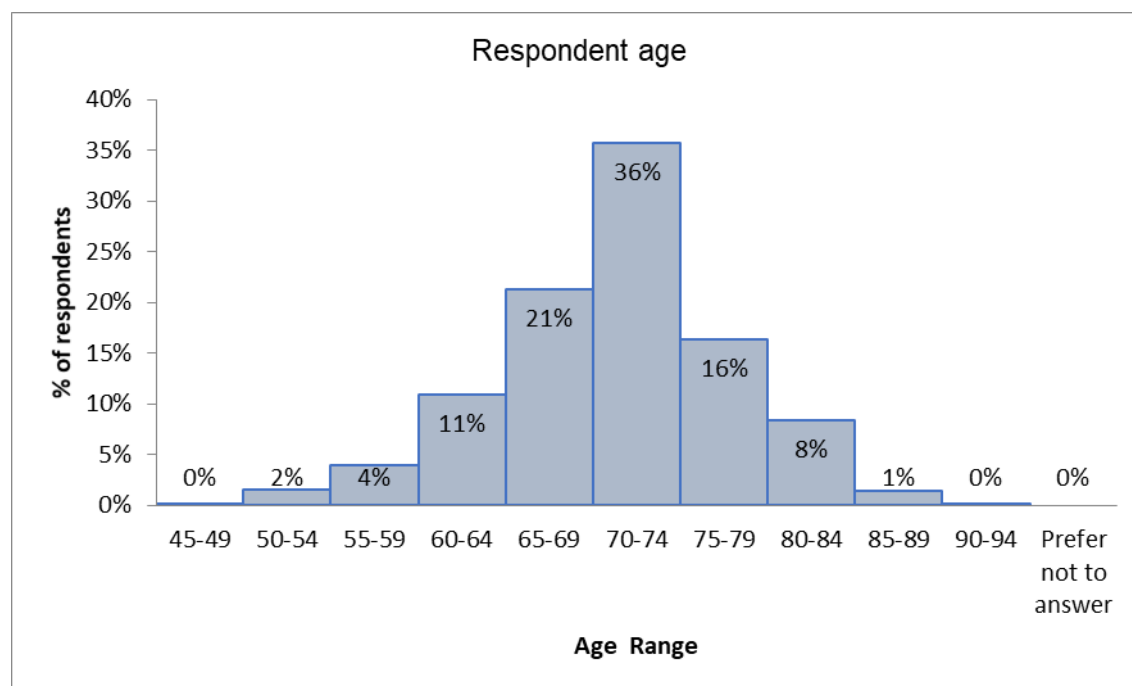
7	<h3>Lessons and recommendations</h3> <ul style="list-style-type: none"> • Imagine that you have an e-mail service that can send messages through time... <ul style="list-style-type: none"> • If you could send an e-mail to you the day before you first encountered the IT Service what would tell yourself (in relation to the IT Service rather than lottery numbers) <ul style="list-style-type: none"> • Individually, please note down the points on the paper provided and label it letter back in time (5 mins) • In your small groups I'd like you to imagine being here this time next year, sending an e-mail back to us today, where you tell us about the changes to the IT Service that we made between then and now, that have improved the IT Service <ul style="list-style-type: none"> • In your small groups, please note the changes and how they have improved the IT Service on the flipcharts <p><small>©Concor Strategic Research and Implementation Limited</small></p>
8	<h3>Wrap up</h3> <ul style="list-style-type: none"> • Next steps • Thanks you. <p><small>©Concor Strategic Research and Implementation Limited</small></p>

Appendix C Results from online questionnaire to patients using the IT Service

Table 3 Online questionnaire response rates

Online questionnaire to patients using the IT Service						
NHS Trust	Sent Survey	Undel	Undel (%)	Received by Patient	Response	Response Rate (%)
Dartford and Gravesham	136	2	1.5	134	61	46
Royal United Hospital Bath	278	15	5.4	263	112	43
Royal Cornwall Hospitals	259	29	11.2	230	135	59
St Helens and Knowsley Teaching Hospitals	86	2	2.3	84	49	58
University Hospital Southampton	293	17	5.8	276	150	54
Other/Don't Know					3	
Skipped					8	
Total	1052	65		987	518	52

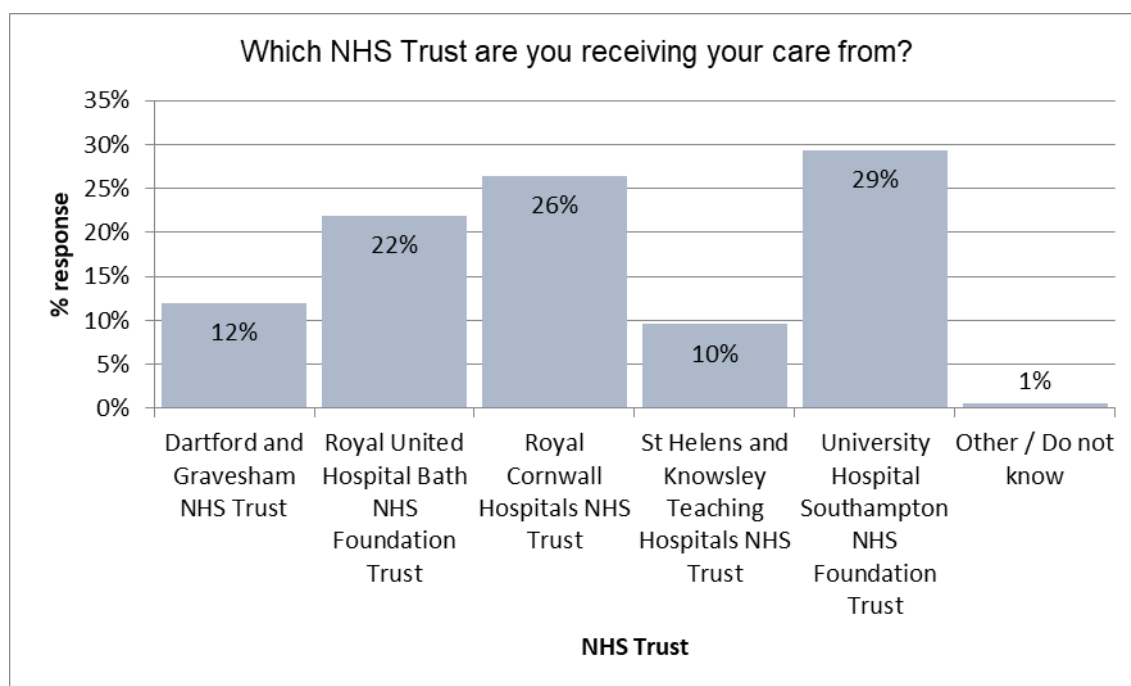
Chart 5 Online questionnaire respondent age



Answer Choices	Responses	
45-49	0%	1
50-54	2%	8
55-59	4%	20
60-64	11%	56

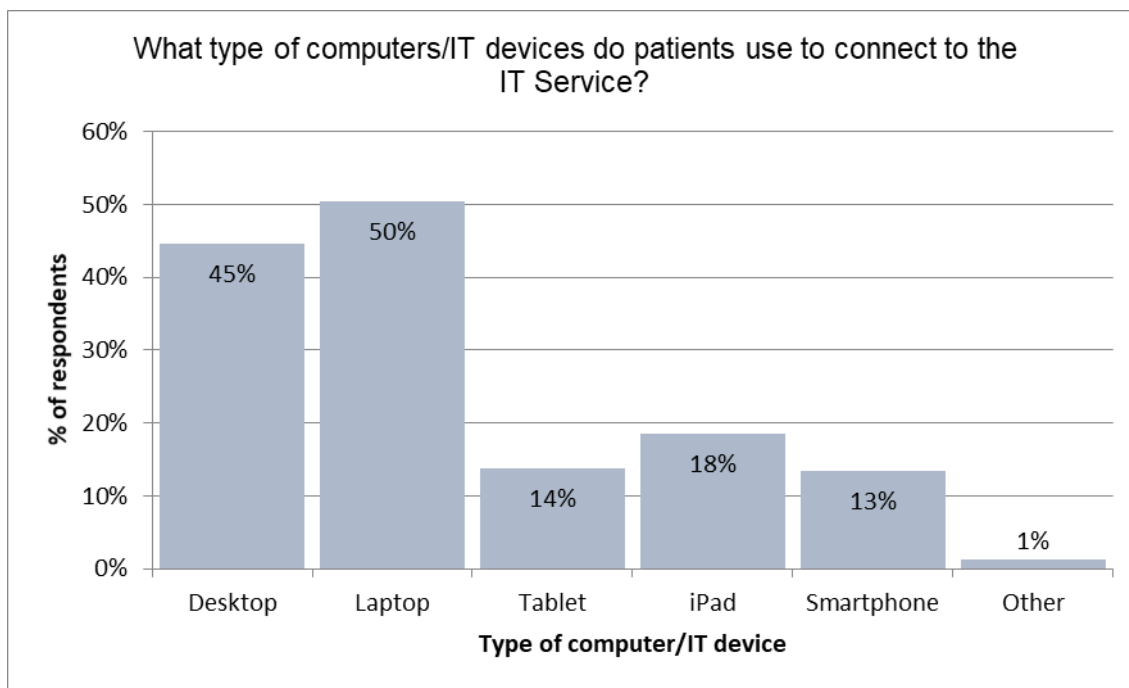
Answer Choices	Responses	
65-69	21%	109
70-74	36%	183
75-79	16%	84
80-84	8%	43
85-89	1%	7
90-94	0%	1
Prefer not to answer	0%	0
	Answered	512
	Skipped	6
		518

Chart 6 Online questionnaire respondent NHS Trust



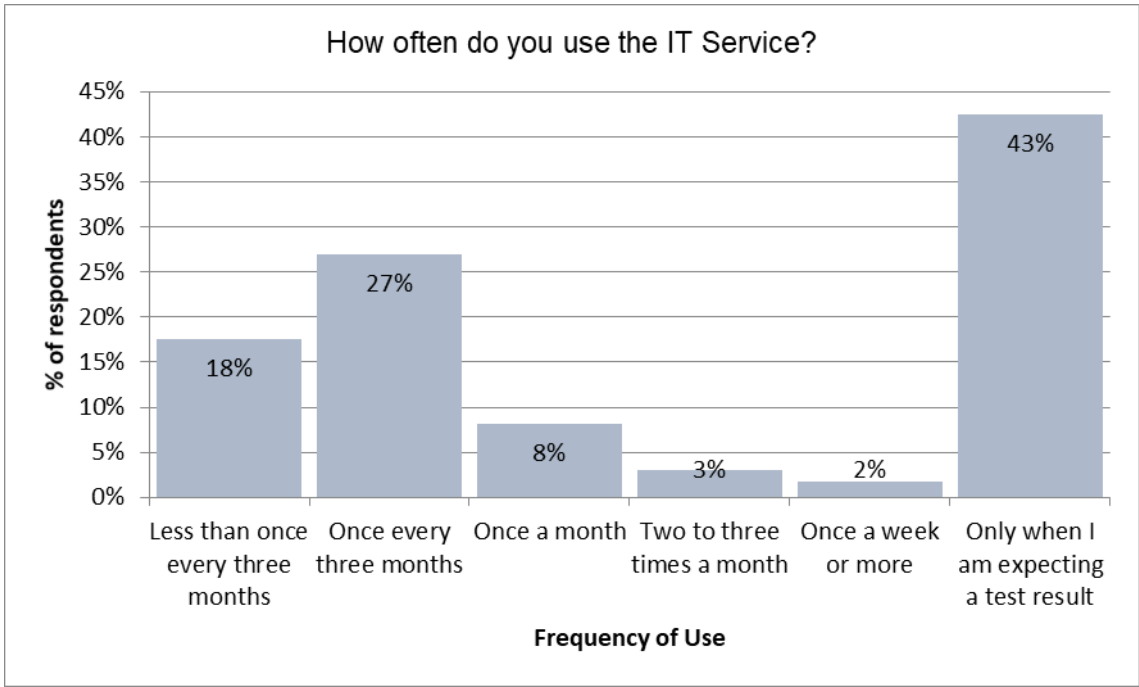
Answer Choices	Responses	
Dartford and Gravesham NHS Trust	12%	61
Royal United Hospital Bath NHS Foundation Trust	22%	112
Royal Cornwall Hospitals NHS Trust	26%	135
St Helens and Knowsley Teaching Hospitals NHS Trust	10%	49
University Hospital Southampton NHS Foundation Trust	29%	150
Other / Do not know	1%	3
	Answered	510
	Skipped	8
	Total	518

Chart 7 Online questionnaire IT Service type of device



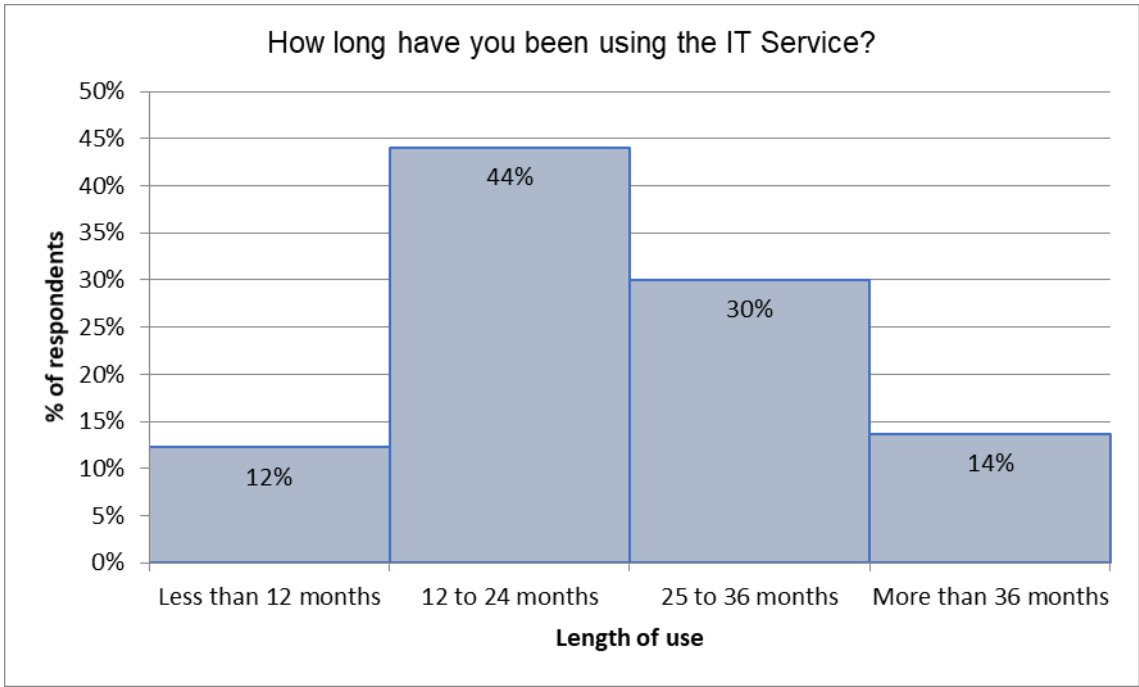
Answer Choices	Responses	
Desktop	45%	227
Laptop	50%	257
Tablet	14%	70
iPad	18%	94
Smartphone	13%	68
Other	1%	6
	Answered	510
	Skipped	8
	Total	518

Chart 8 Online questionnaire IT Service frequency of use



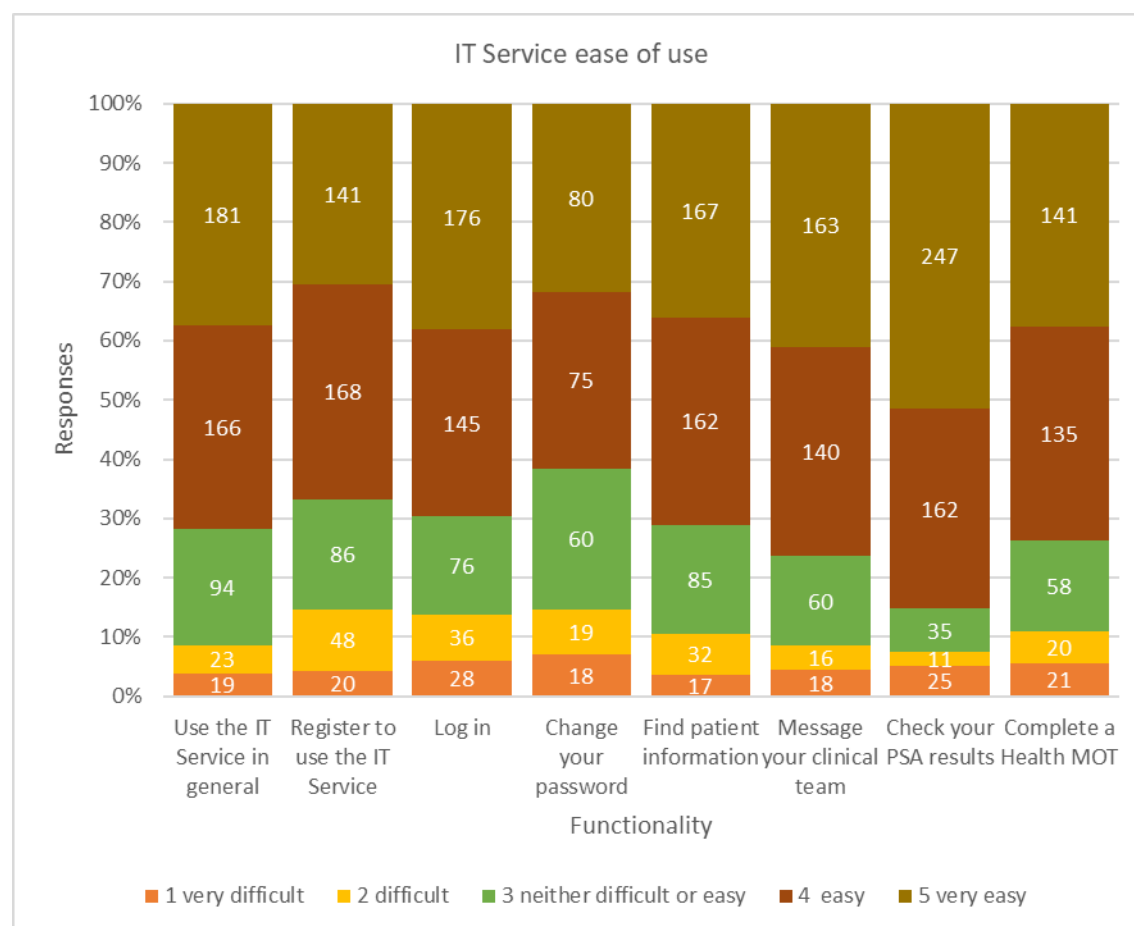
Answer Choices	Responses	
Less than once every three months	18%	88
Once every three months	27%	135
Once a month	8%	41
Two to three times a month	3%	15
Once a week or more	2%	9
Only when I am expecting a test result	43%	213
	Answered	501
	Skipped	17
	Total	518

Chart 9 Online questionnaire IT Service length of use



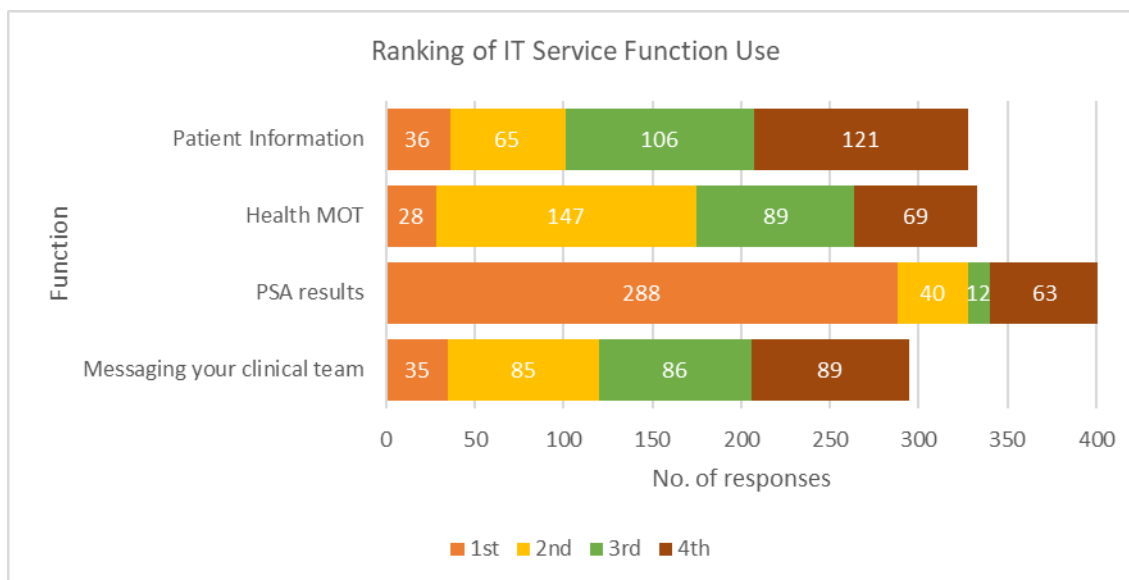
Answer Choices	Responses	
Less than 12 months	12%	62
12 to 24 months	44%	223
25 to 36 months	30%	152
More than 36 months	14%	69
	Answered	506
	Skipped	12
	Total	518

Chart 10 Online questionnaire IT Service ease of use



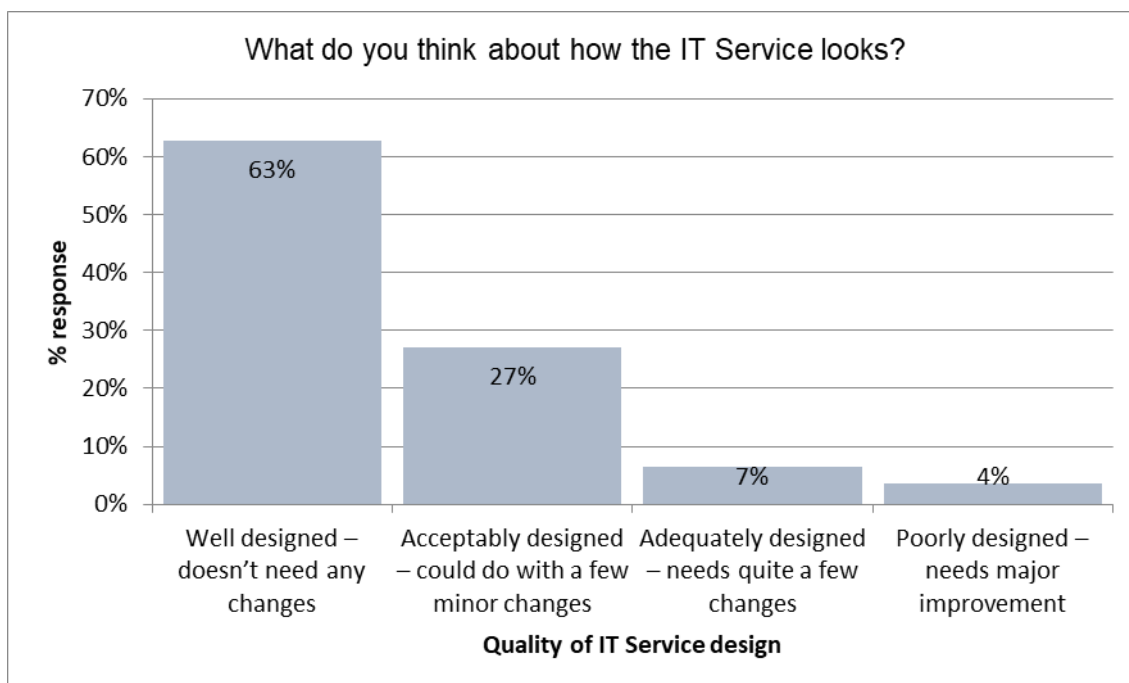
	Total	Skipped
Use the IT Service in general	489	29
Register to use the IT Service	476	42
Log in	467	51
Change your password	469	49
Find patient information	482	36
Message your clinical team	479	39
Check your PSA results	488	30
Complete a Health MOT	462	56
Totals	498	
	20	

Chart 11 Online questionnaire IT Service function use ranking



	Total	Skipped
Messaging your clinical team	295	223
PSA results	403	115
Health MOT	333	185
Patient Information	328	190
Answered	451	
Skipped	67	

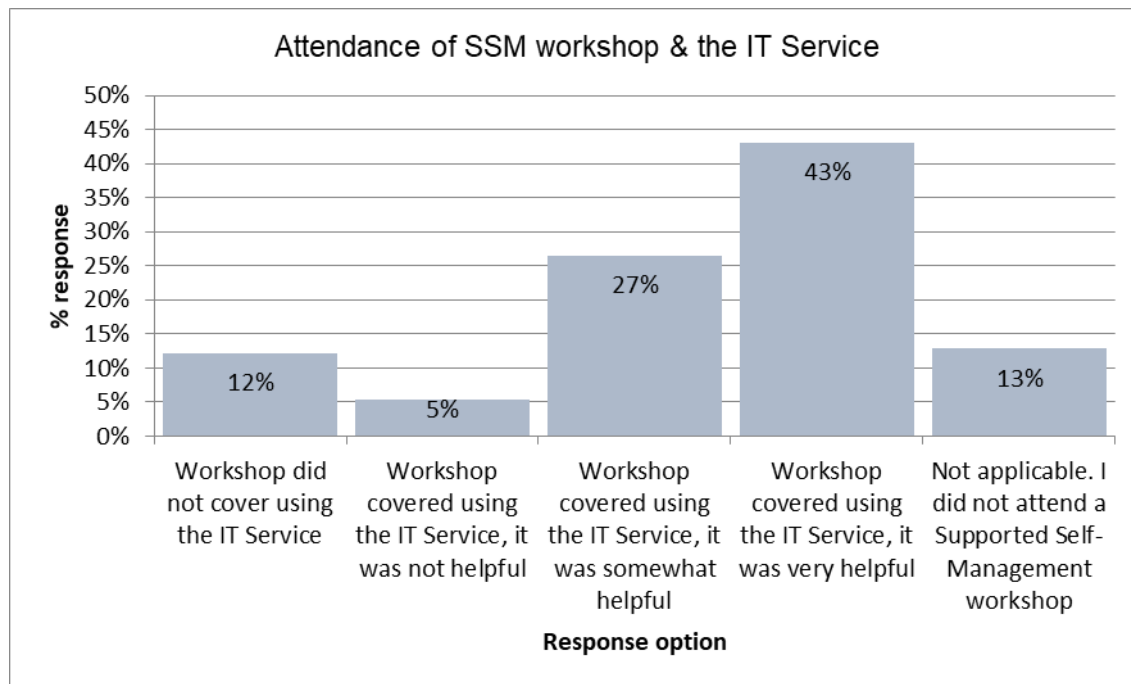
Chart 12 Online questionnaire IT Service design quality



Answer Choices	Responses	
Well designed – doesn't need any changes	63%	287
Acceptably designed – could do with a few minor changes	27%	124

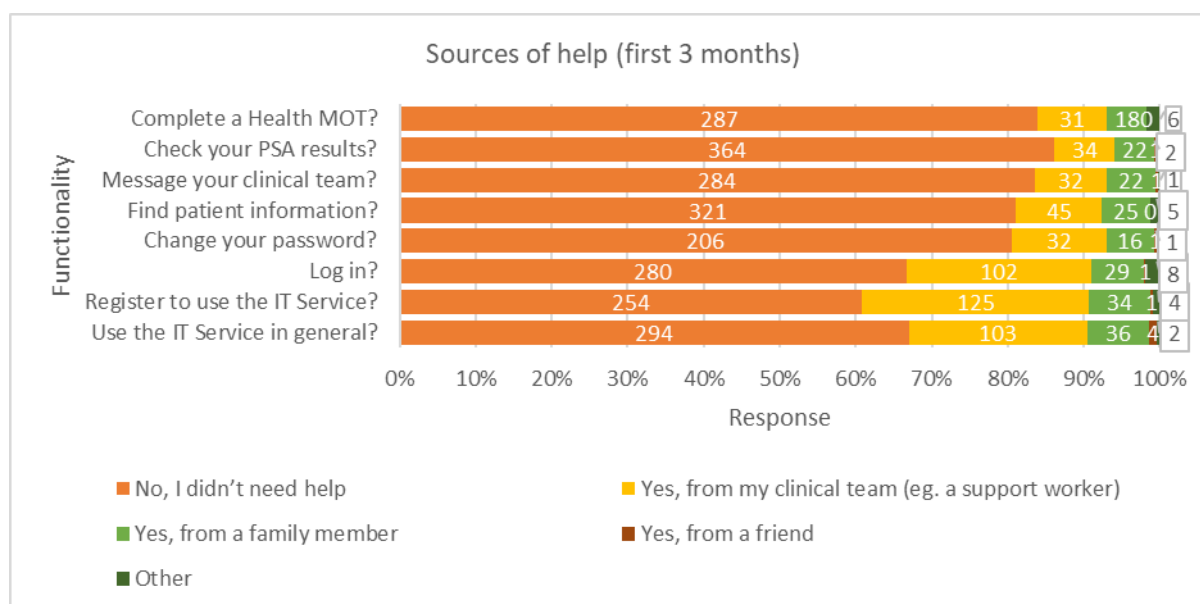
Answer Choices	Responses	
Adequately designed – needs quite a few changes	7%	30
Poorly designed – needs major improvement	4%	16
	Answered	457
	Skipped	61
	Total	518

Chart 13 Online questionnaire IT SSM workshop attendance and IT Service



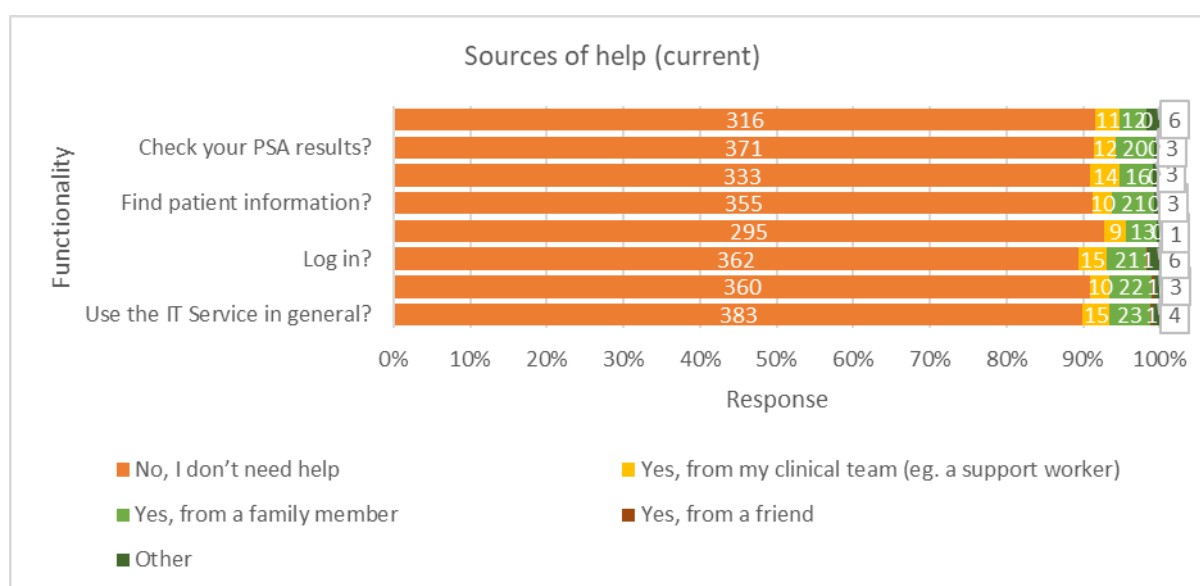
Answer Choices	Responses	
Workshop did not cover using the IT Service	12%	57
Workshop covered using the IT Service, it was not helpful	5%	25
Workshop covered using the IT Service, it was somewhat helpful	27%	124
Workshop covered using the IT Service, it was very helpful	43%	202
Not applicable. I did not attend a Supported Self-Management workshop	13%	60
	Answered	468
	Skipped	50
	Total	518

Chart 14 Online questionnaire IT Service sources of help (first 3 months)



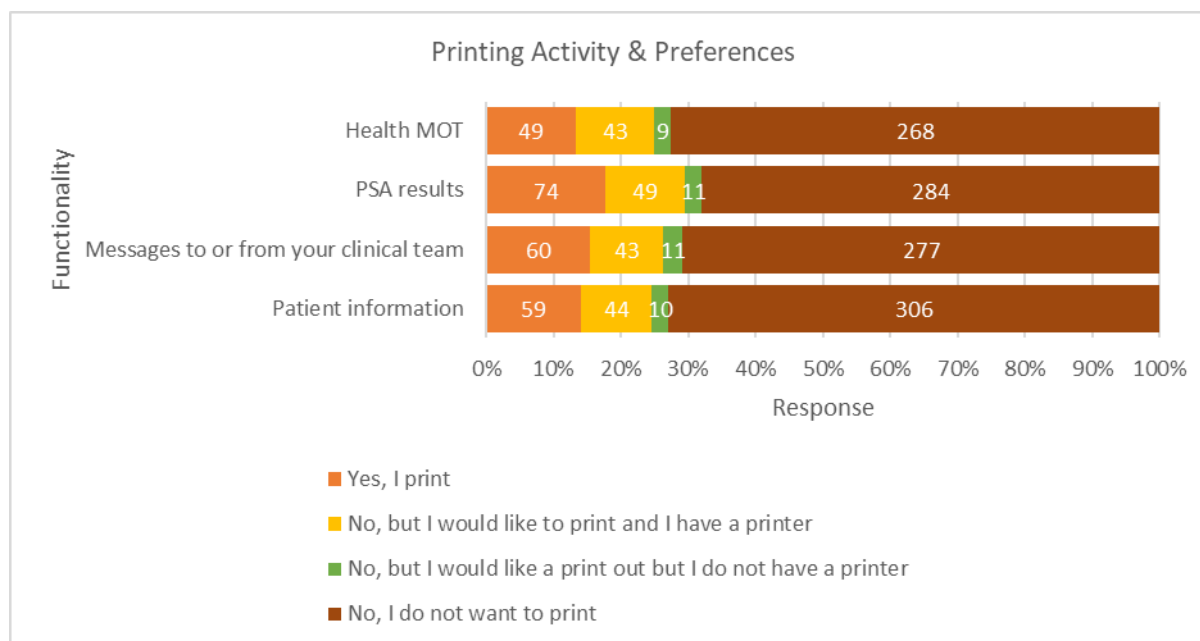
	Total	Skipped
Use the IT Service in general?	454	64
Register to use the IT Service?	436	82
Log in?	437	81
Change your password?	424	94
Find patient information?	431	87
Message your clinical team?	430	88
Check your PSA results?	439	79
Complete a Health MOT?	427	91
	Answered	461
	Skipped	57

Chart 15 Online questionnaire IT Service sources of help (current)



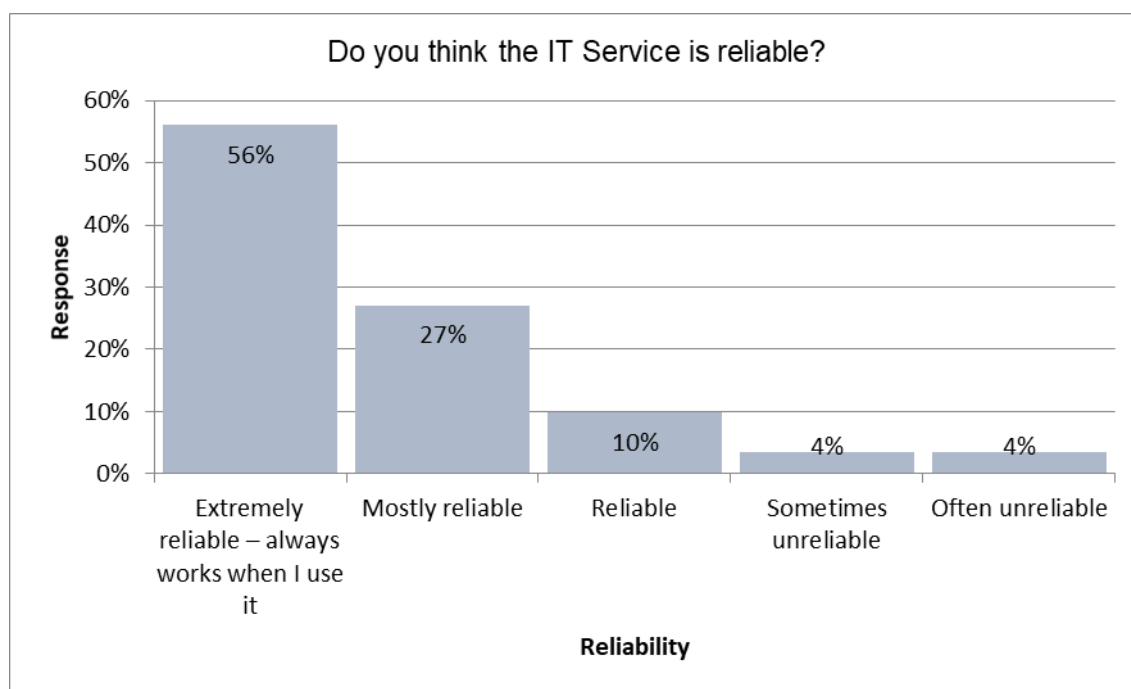
	Total	Skipped
Use the IT Service in general?	445	73
Register to use the IT Service?	426	92
Log in?	426	92
Change your password?	418	100
Find patient information?	423	95
Message your clinical team?	423	95
Check your PSA results?	425	93
Complete a Health MOT?	408	110
	Answered	451
	Skipped	67

Chart 16 Online questionnaire IT Service printing preferences and activity



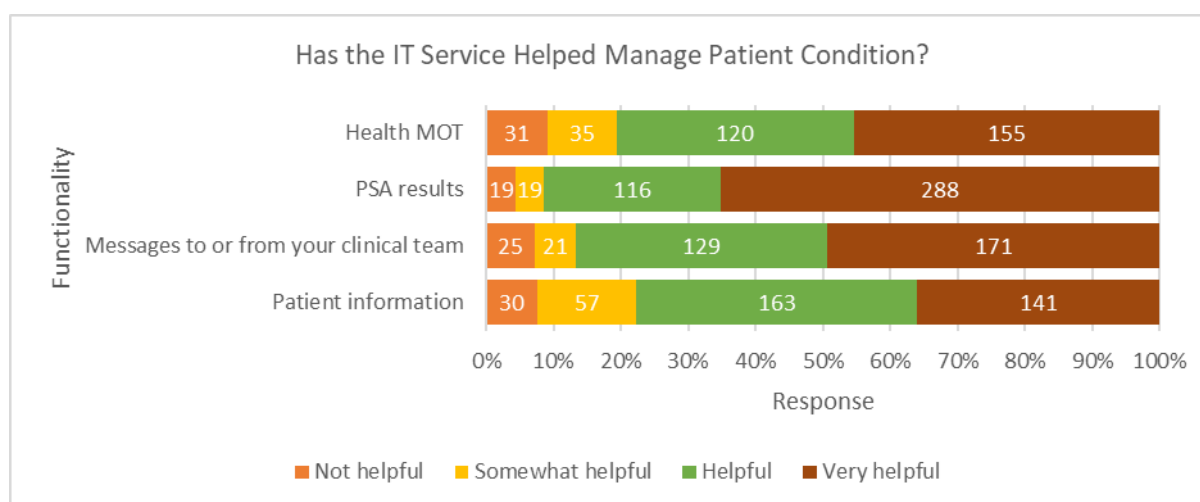
	Total	Skipped
Patient information	441	77
Messages to or from your clinical team	427	91
PSA results	439	79
Health MOT	422	96
	Answered	451
	Skipped	67

Chart 17 Online questionnaire IT Service reliability



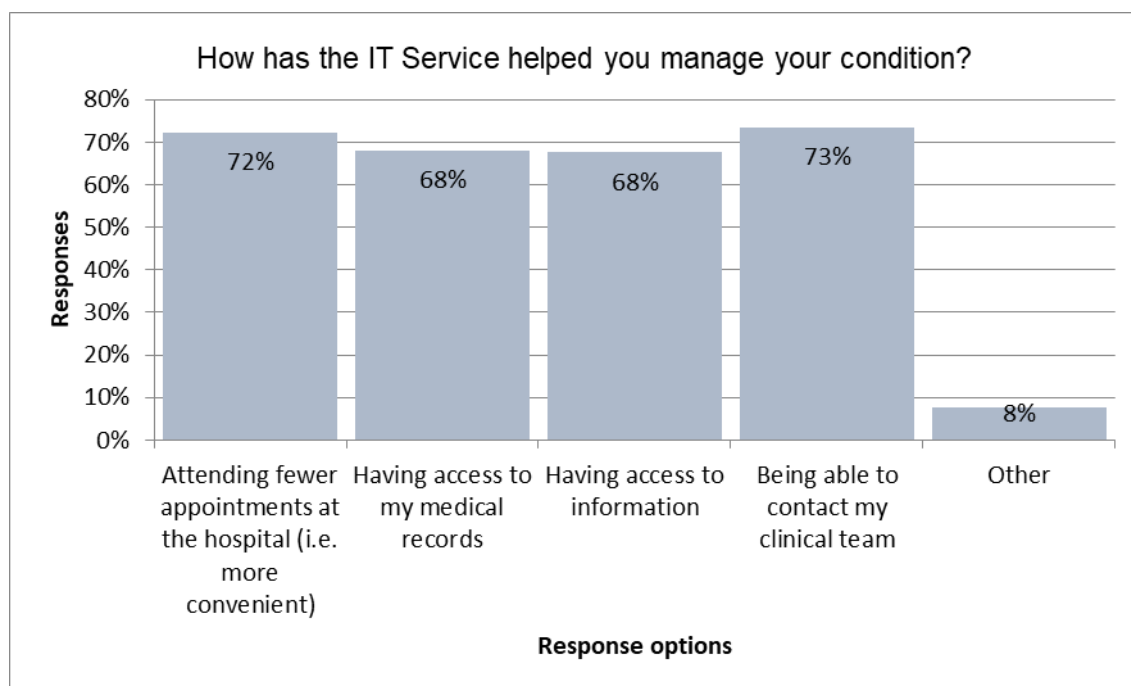
Answer Choices	Responses	
Extremely reliable – always works when I use it	56%	251
Mostly reliable	27%	121
Reliable	10%	44
Sometimes unreliable	4%	16
Often unreliable	4%	16
	Answered	448
	Skipped	70
	Total	518

Chart 18 Online questionnaire IT Service and condition management



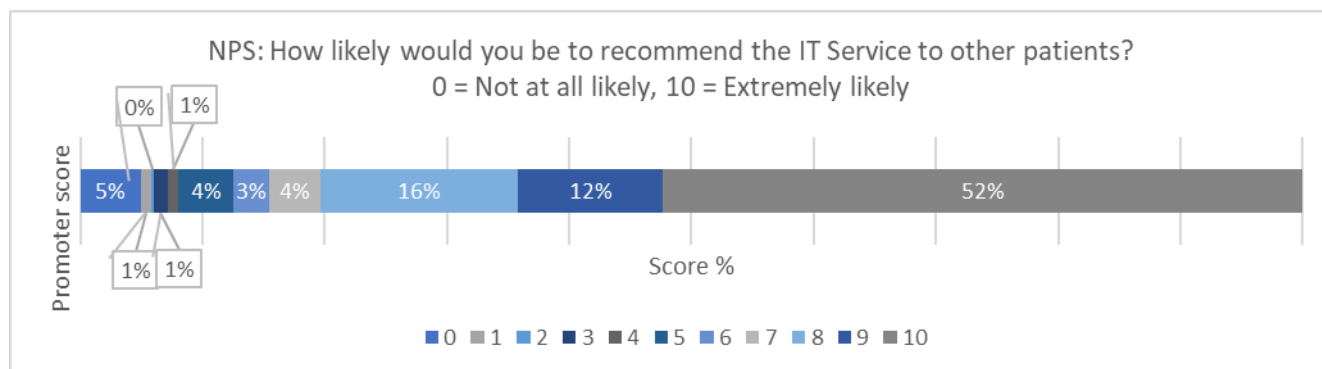
	Total	Skipped
Patient information	435	83
Messages to or from your clinical team	432	86
PSA results	449	69
Health MOT	423	95
	Answered	454
	Skipped	64

Chart 19 Online questionnaire IT Service and condition management (how helped)



Answer Choices	Responses	
Attending fewer appointments at the hospital (i.e. more convenient)	72%	321
Having access to my medical records	68%	302
Having access to information	68%	300
Being able to contact my clinical team	73%	326
Other	8%	34
	Answered	444
	Skipped	74
	Total	518

Chart 20 Online questionnaire IT Service Net Promoter Score



Score	0	1	2	3	4	5	6	7	8	9	10	Total
%	5%	1%	0%	1%	1%	4%	3%	4%	16%	12%	52%	100%
Number	22	4	1	5	4	20	13	19	72	53	234	447

Table 4 IT Service NPS calculation

NPS		
	%	No.
Detractors	15%	69
Passive	20%	91
Promoters	64%	287
NPS	49	
Skipped		71
Grand Total		518

Appendix D Guided telephone interview results - UHS NHSFT patients not using IT Service

D.1 UHS NHSFT non-using IT patients' and UHS NHSFT non-IT patients' response rates

Table 5 UHS NHSFT non-using IT patients and UHS NHSFT non-IT patients telephone interview response rates

	UHS NHSFT non-using IT patients		UHS NHSFT non-IT patients	
	n=	%	n=	%
Total Population	68		58	
Excluded from survey	9	13	2	3
Sub Total	59	87	56	97
Declined	15	25	8	14
Unable to contact	11	19	10	18
Participated	33	56	38	68

D.2 Guided telephone interview results – UHS NHSFT non-using IT patients

Table 6 Guided telephone interview results - UHS NHSFT non-using IT patients

Q1. "You were invited to use an IT service called My Medical Record to manage your prostate cancer. You registered but have not used the service. We would like to understand why?"	Yes	Prompted ²	Total
Too difficult	2	0	2
Would like more training	0	0	0
Can't remember my password	2	0	2
Don't have access to the internet	1	0	1
Don't have access to a computer (e.g. broken and not repaired, I don't have one anymore)	3	0	3
Don't have access to the internet anymore (no broadband access, no data allowance on mobile devices)	0	0	0
The IT Service is not in a language that I am confident with (e.g. lack of proficiency in reading/writing English)	0	0	0
It doesn't work well on my devices (e.g. not optimised for my tablet)	0	0	0
I don't trust the internet	1	0	1

² Indicates where the participant was prompted to provide a response by the interviewer.

Other	29		29
Did not answer			0
Q2. "What could we do to make it more likely that you would use the IT Service?"	Yes	Prompted²	Total
Nothing – I don't want to use it?	4	1	5
Make the log in process easier?	4	0	4
Provide a face to face session on my own helping me to use it	3	0	3
A telephone call to talk me through how to use it	2	0	2
Provide a loan computer/ device with internet access	2	0	2
Other type of support (please ask them to give details)	0	0	0
Other	16		16
Did not answer			7
Q3. "When you first registered for the IT Service?"	Y	P	Total
Did you go to a workshop when you started on the supported self-management pathway?	24	0	24
No			5
Don't know			2
Did not answer			2
If you attended a workshop did it provide information on the IT Service?	24	0	24
If you attended a workshop, and it provided information on the IT Service, was it helpful?			
not helpful	2		
somewhat helpful	8		
very helpful	14		
don't know	1		
Did not answer	8		
Did you see a demonstration of the IT system when you signed up to use it? If so where?"			
In clinic	3		
During workshop	8		
At the end of the workshop	3		
Other	3		
don't know	7		
Did not answer	9		
"Were you told about the telephone support available to use the IT solution?"			
Yes	20		
No	3		
Did not answer	10		
Have you used the telephone support, if yes was it helpful?			
not helpful	2		
somewhat helpful	5		
very helpful	3		
don't know	1		

Not used	19		
Did not answer	3		
“Did you get a leaflet or any printed information about the IT Service? If “yes” what information.”			
Yes	20		
No	8		
Did not answer	5		
What printed information?			
“How important do think it is for patients to have access to their own medical records?”			
not important	1		
slightly important	2		
somewhat important	4		
very important	15		
extremely important	0		
Did not answer	11		

D.3 Guided telephone interview results – UHS NHSFT non-IT patients

Table 7 Guided telephone interview results - UHS NHSFT non-IT patients

Q1. “You were invited to use an IT solution to manage your prostate cancer. You have declined to use it and we would like to understand why?”	Yes	Prompted²	Total
I don't have a computer	10	0	10
I don't have internet access	2	0	2
I don't like using my computer	5	0	5
I don't want to use computers for my healthcare	5	3	8
It would be too difficult for me	5	0	5
The IT Service is not in a language that I am confident with (e.g. lack of proficiency in reading/writing English)	0	0	0
Other			14
Did not answer			1
Q1a. Only ask this question if they told you that they have not got a computer. “Please can you tell me the reason(s) you don't have a computer?”	Yes	Prompted²	Total
Not interested in using a computer	5	0	5
Would rather spend my money on other things	0	0	0
Don't want to learn something new	1	0	1

Too old for computers	3	0	3
Other			1
Have computer			26
Did not answer			2
“What would encourage you to use an IT service as part of your care?”	Yes	Prompted²	Total
Nothing	28	0	28
Provide a computer for me to access it	0	0	0
Explain to me how you keep my personal data safe	0	0	0
More support to use it	3	2	5
Other			5
Did not answer			2
“How important do think it is for patients to have access to their own medical records?”			
not important	18		
slightly important	1		
somewhat important	4		
very important	8		
extremely important	0		
n/a	4		
don't know	3		
Did not answer	0		

Appendix E Google Analytics data

Table 8 GA Audience summary data

IT Service Audience Summary (1 March to 31 August 2017)	
Metric	No.
Sessions	8828
Users	1911
Pageviews	47420
Unique Pageviews	30790
New visitors (%)	18
Returning Visitors (%)	83
Pages Per Session	5
Ave Session Duration (mins.sec)	11.39

Table 9 GA Use by device

IT Service Use by Device (1 March to 31 August 2017)		
Device Category	Sessions	
	Total	%
desktop	7215	82
tablet	1283	15
mobile	330	4
Total	8828	

Table 10 GA active users' summary data

IT Service		Active		Users
(1 March to 31 August 2017)				
Statistic	1 Day Active Users	7 Day Active Users	14 Day Active Users	30 Day Active Users
Mean	27.8	136.6	238.1	433.9
Median	28	135	241.5	441.5
Mode	14	133	260	464
Min	5	84	153	341
Max	63	208	310	498
Range	58	124	157	157
StdDev	12.8	24.5	33.0	40.5

Chart 21 GA active users

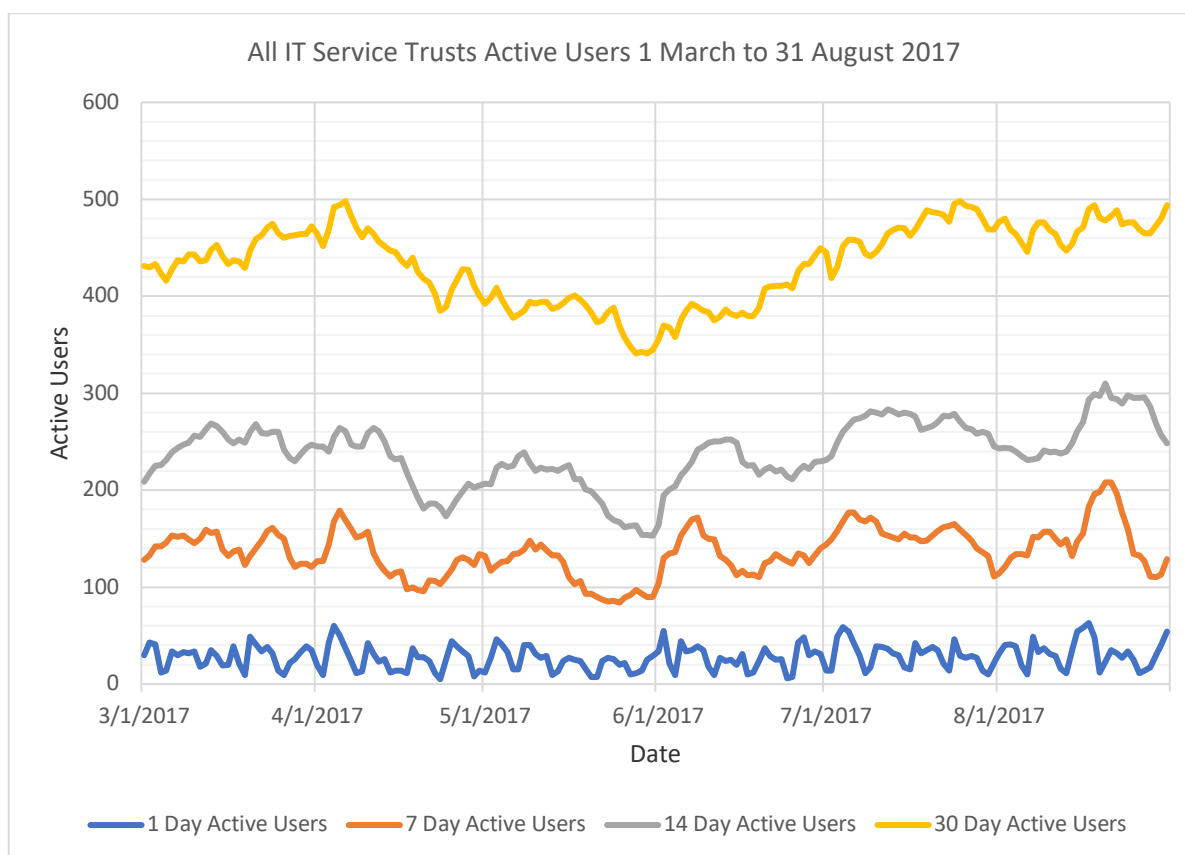


Table 11 GA Sessions per day summary data

IT Service Sessions Per Day (1 March to 31 August 2017)	
Statistic	Sessions
Mean	48.0
Median	52
Mode	60
Min	7
Max	110
Range	103
StdDev	25.6

Table 12 GA Main patient functions page views

IT Service Main Patient Functions Page Views (1 March to 31 August 2017)		
Function	No	%
PSA Results Tracker	4275	47
Messaging	2245	25
Patient Information	1329	15
Health MOT	1305	14
Total	9154	100

E.1 Google Analytics Definitions

[<https://support.google.com/analytics> Accessed:25/09/2017]

E.1.1 How users are identified for users' metrics

The Users and Active Users metrics show how many users engaged with your site or app.

In order for Google Analytics to determine which traffic belongs to which user, a unique identifier associated with each user is sent with each hit.

E.1.2 Pageviews vs. Unique Pageviews

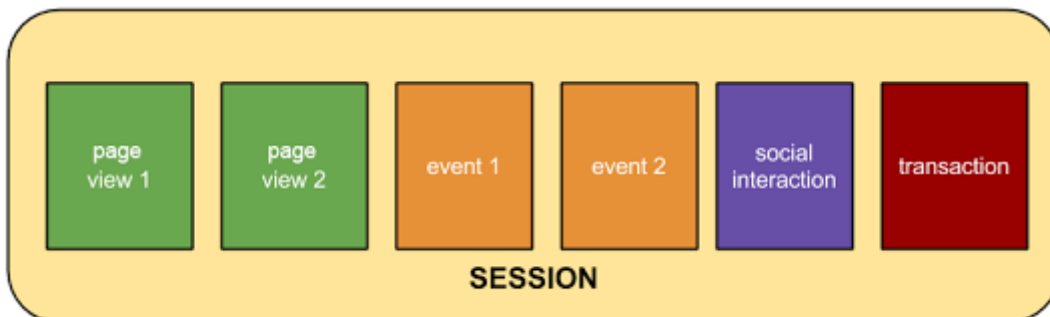
A *pageview* is defined as a view of a page on your site that is being tracked by the Analytics tracking code. If a user clicks reload after reaching the page, this is counted as an additional pageview. If a user navigates to a different page and then returns to the original page, a second pageview is recorded as well.

A *unique pageview*, as seen in the *Content Overview* report, aggregates pageviews that are generated by the same user during the same session. A *unique pageview* represents the number of sessions during which that page was viewed one or more times.

E.1.3 Sessions

A session is a group of user interactions with your website that take place within a given time frame. For example, a single session can contain multiple page views, events, social interactions, and ecommerce transactions. [Learn more about the different request types in Analytics.](#)

You can think of a session as the container for the actions a user takes on your site.



A single user can open multiple sessions. Those sessions can occur on the same day, or over several days, weeks, or months. As soon as one session ends, there is then an opportunity to start a new session. There are two methods by which a session ends:

- Time-based expiration:
 - After 30 minutes of inactivity
 - At midnight

E.1.4 Sessions vs. Users

Analytics measures both *sessions* and *users* in your account. *Sessions* represent the number of individual sessions initiated by all the users to your site. If a user is inactive on your site for 30

minutes or more, any future activity is attributed to a new session. Users that leave your site and return within 30 minutes are counted as part of the original session.

The initial session by a user during any given date range is considered to be an additional *session* and an additional *user*. Any future sessions from the same user during the selected time period are counted as additional *sessions*, but not as additional *users*.

E.1.5 Active Users

The metrics in the report are relative to the last day in the date range you are using for the report. For example, if your date range is January 1 to January 30:

- *1-Day Active Users*: the number of unique users who initiated sessions on your site or app on January 30 (the last day of your date range).
- *7-Day Active Users*: the number of unique users who initiated sessions on your site or app from January 24 through January 30 (the last 7 days of your date range).
- *14-Day Active Users*: the number of unique users who initiated sessions on your site or app from January 17 through January 30 (the last 14 days of your date range).
- *30-Day Active Users*: the number of unique users who initiated sessions on your site or app from January 1 through January 30 (the entire 30 days of your date range).

Appendix F IT Service adoption data

F.1 IT Service adoption and age data

Table 13 IT Service adoption and active use data by age group

Age Range	Count IT	Count Non- IT	Total SSM	12 months log in	6 months log in
40-44	0	1	1	0	0
45-49	14	5	19	9	8
50-54	32	8	40	12	12
55-59	93	32	125	48	34
60-64	189	62	251	95	62
65-69	397	158	555	163	128
70-74	436	244	680	247	187
75-79	240	268	508	137	85
80-84	80	158	238	58	31
85-89	11	85	96	6	5
90-94	1	18	19	0	0
95-100	0	3	3	0	0
Null	63	1	64	35	23
Total	1556	1043	2599	810	575

Table 14 IT Service adoption and age chi squared test

	All	Exc 42.5,0 (outlier)
Chi Squ Test Stat	122.73	122.13
95% critical value	19.68	18.31
99% critical value	24.73	23.21
<i>p</i>	5.119x10 ⁻²¹	1.86972x10 ⁻²¹

Chart 22 IT Service adoption and age scatter graph

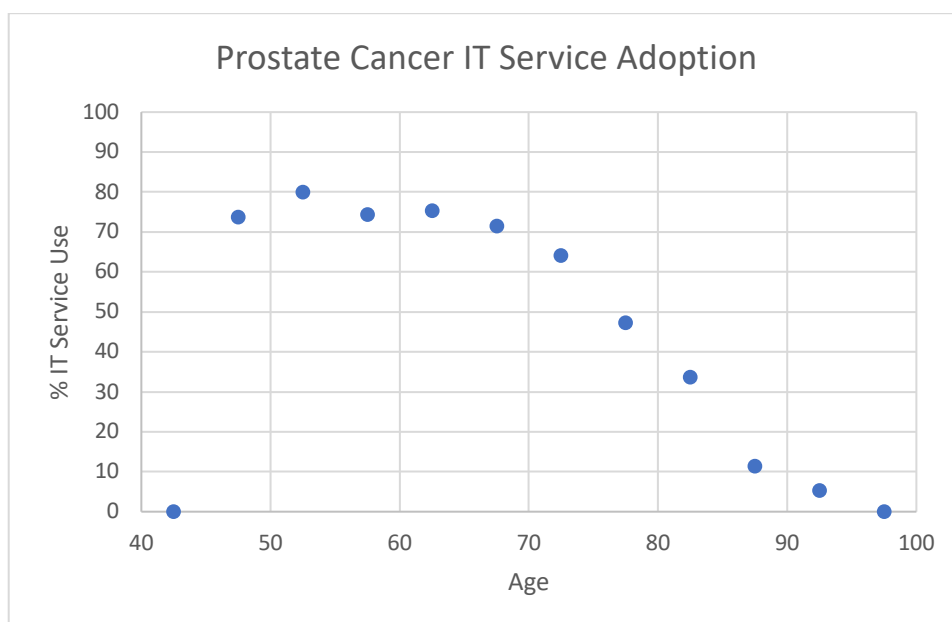


Chart 23 IT Service adoption and age scatter graph (exc 42.5 age outlier)

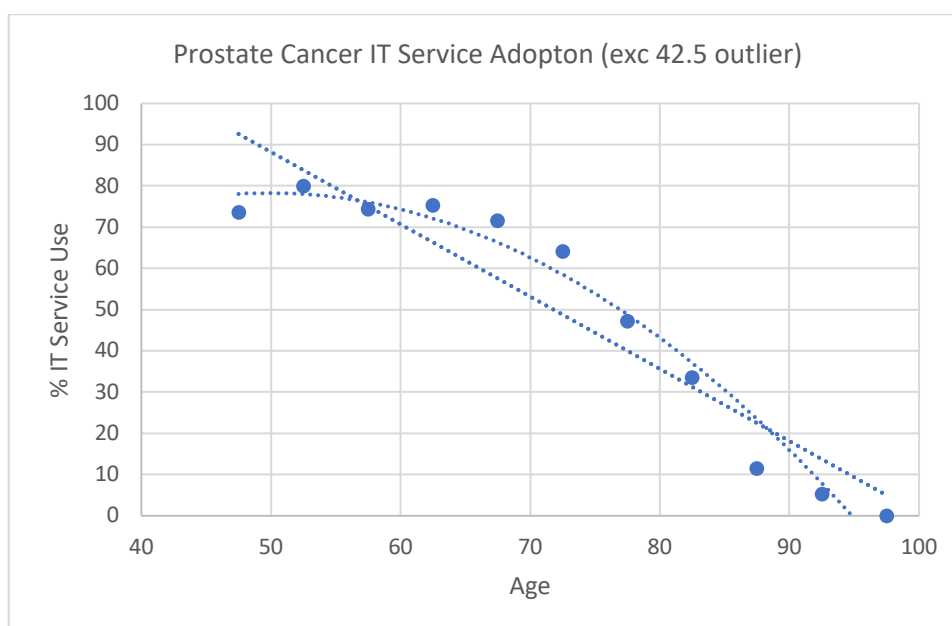


Table 15 IT Service adoption by age correlation r and r^2

IT Service Adoption to Age				
Test	df	Score	R 95% critical value	R 99% critical value
R^2	10	-0.536	0.576	0.7079
R^2		0.29		
R (exc 42.5,0)	9	-0.94	0.6021	0.7348
R^2 (exc 42.5,0)		0.88		

Chart 24 IT Service 12 months active use by age scatter graph

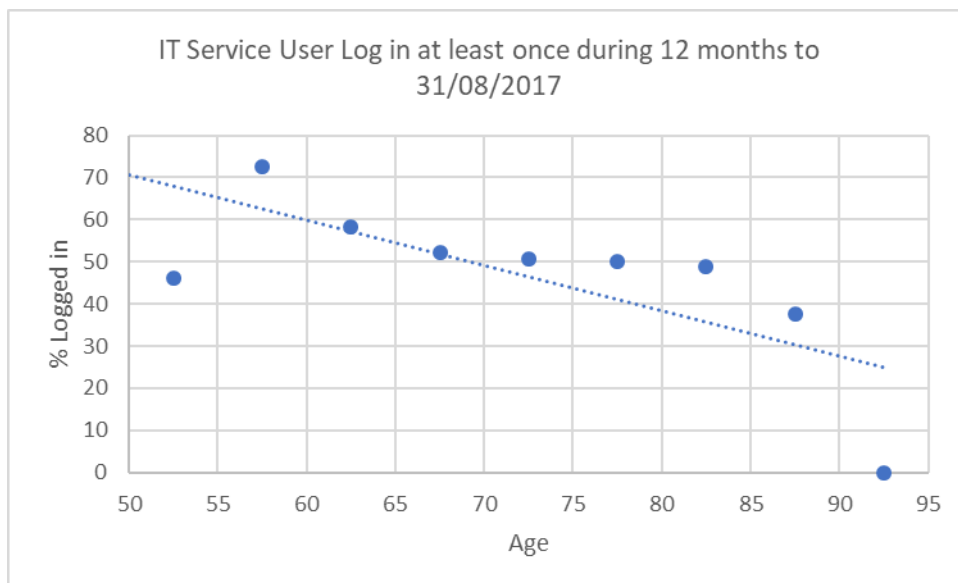


Table 16 IT Service 12-month active use and age chi squared test

Chi Squ Test Stat	12.22
95% critical value	16.92
99% critical value	21.67
<i>p</i>	0.20

Table 17 IT Service 12-month active use and age correlation *r* and *r*²

IT Service Adoption to Age			
Test	Score	R 95% critical value	R 99% critical value
R	-0.78	0.6319	0.7646
R ²	0.61		

Chart 25 IT Service 6 months active use by age scatter graph

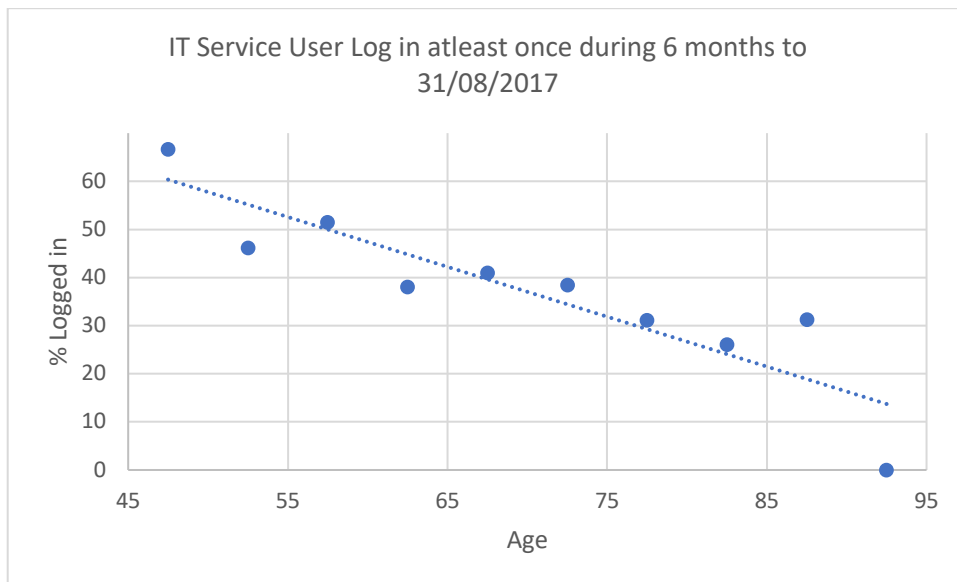


Table 18 IT Service 6-month active use and age chi squared test

6 months log in	
Chi Squ Test Stat	17.46
95% critical value	16.92
99% critical value	21.67
p	0.04

Table 19 IT Service 6-month active use and age correlation r and r^2

(6 mth log in) IT Service Adoption to Age			
Test	Score	R 95% critical value	R 99% critical value
R	-0.90	0.6319	0.7646
R^2	0.81		

F.2 IT Service adoption and NHS Trust data

Table 20 IT Service adoption and NHS Trust data

NHS Trust	Count IT	Count Non- IT	Total SSM	% IT
Bath Prostate Cancer	332	149	481	69
Cornwall Prostate Cancer	421	484	905	47
Dartford Prostate Cancer	187	70	257	73
Southampton Prostate Cancer	505	186	691	73
St Helens Prostate Cancer	111	154	265	42
Total	1556	1043	2599	60

Table 21 IT Service adoption and NHS Trust chi squared test

Chi Squ Test Stat	75.1
p	1.88×10^{-15}

95% critical value	9.49
99% critical value	13.28

Chart 26 IT Service adoption by NHS Trust

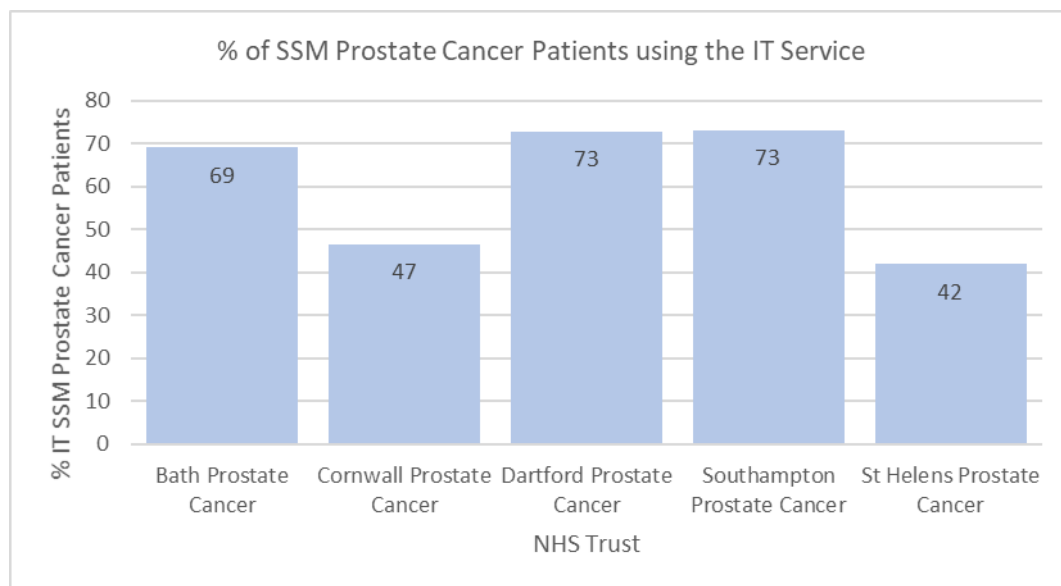


Table 22 SSM patient age and NHS Trust data

NHS Trust	Age in years								
	Mean	Median	Std Dev	Min	Max	Range	Q1	Q3	IQR
Bath Prostate Cancer	70	70	7	47	93	46	66	75	9
Cornwall Prostate Cancer	73	73	8	45	96	51	68	79	10
Dartford Prostate Cancer	69	69	8	46	91	45	63	74	10
Southampton Prostate Cancer	71	72	7	44	91	47	67	76	9
St Helens Prostate Cancer	74	75	7	48	93	45	71	79	9
All Patients	72	72	8	44	96	52	67	77	10

% of SSM Patients Registered to use IT Service					
NHS Trust	Total SSM (No.)	Actual Patients		Expected IT Patients (controlled for age)	
		%	No.	%	No.
Bath Prostate Cancer	481	69	332	63	302
Cornwall Prostate Cancer	905	47	421	56	504
Dartford Prostate Cancer	257	73	187	65	167
Southampton Prostate Cancer	691	73	505	64	441
St Helens Prostate Cancer	265	42	111	54	142
All Patients	2599	60	1556	60	1556

Chi Squ Test Stat	35.17
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p	4.29×10^{-07}
95% critical value	9.49
99% critical value	13.28

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