FULL/LONG TITLE OF THE STUDY

Ethnographic study of patient pathways and workforce implications of NHS 111 Online

SHORT STUDY TITLE / ACRONYM

NHS111 Online study

PROTOCOL VERSION NUMBER AND DATE

Version 6 29/01/21

IRAS Number:	272729
Ethics Ref:	20/LO/0294
FUNDER:	National Institute of Health Research (Ref: 127590) ‘*Ethnographic study of patient pathways and workforce implications of NHS 111 Online’*
Chief Investigator	Professor Catherine Pope, Nuffield Department of Primary Care Health Sciences, University of Oxford
Investigators	Joanne Turnbull, University of Southampton Jane Prichard, University of Southampton Jeffrey Braithwaite, Macquarie University, Australia Lucie Lleshi, NHS Southampton City CCG Matthew Chisambi, Imperial College Health Partners Organisation, Chelsea and Westminster Hospital NHS Foundation Trust
Sponsor	University of Oxford

SIGNATURE PAGE

The undersigned confirm that the following protocol has been agreed and accepted and that the Chief Investigator agrees to conduct the study in compliance with the approved protocol and will adhere to the principles outlined in the Declaration of Helsinki, the Sponsor’s SOPs, and other regulatory requirement.

I agree to ensure that the confidential information contained in this document will not be used for any other purpose other than the evaluation or conduct of the investigation without the prior written consent of the Sponsor

I also confirm that I will make the findings of the study publically available through publication or other dissemination tools without any unnecessary delay and that an honest accurate and transparent account of the study will be given; and that any discrepancies from the study as planned in this protocol will be explained.

Chief Investigator:

Date:
..29/01/2021..

Cathy Pope

Signature:
Name: (please print): CATHERINE POPE

The chief investigator and all co-investigators declare no conflicts of interest.

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ABBREVIATIONS

CCG	Clinical Commissioning Group
CTRG	Clinical Trials and Research Governance
ED	Emergency Department
GDPR	General Data Protection Regulation
GP	General Practitioner
HRA	Health Research Authority
HS&DR	Health Services and Delivery Research
IRAS	Integrated Research Application System
NHS	National Health Service
NHSE	National Health Service England
NIHR	National Institute for Health Research
OBHC	Organisational Behaviour in Health Care
PMG	Project Management Group
PPI	Patient and Public Involvement
REC	Research Ethics Committee
SSG	Study Steering Group
WP	Work Package

STUDY SUMMARY

Study Title	Ethnographic study of patient pathways and workforce implications of NHS 111 Online
Short title	NHS 111 Online Study
Study Design	Ethnographic case study
Study Participants	Users and potential users of NHS 111 Online and a range of stakeholders/staff involved in delivering urgent, emergency and primary care services associated with NHS 111 services.
Planned Size of Sample	8 case study sites in England (~10 participants per site); ~314 survey respondents and 30-50 staff and stakeholders of Healthdirect Australia
Planned Study Period	18 months
Aim	To examine patient pathways and workforce implications of NHS 111 Online
Research Question	RQ1: What is the impact of NHS 111 Online on patient pathways of care? RQ2: Is there evidence for differential access and use of NHS 111 Online? RQ3: What are the workforce implications of introducing NHS 111 Online? RQ4: How do workforce arrangements (e.g. staffing, skillsets, task allocation), vary within different types of NHS 111 Online services? RQ5: How do variations in these workforce arrangements impact on the wider health and social care system? RQ6. How does UK NHS Online workforce compare with the Healthdirect

	Australia service?

PROTOCOL CONTRIBUTORS

Catherine Pope, Joanne Turnbull and Jane Prichard initiated and wrote the protocol building on previous research. Co-investigators Jeffrey Braithwaite, Lucie Lleshi and Matthew Chisambi contributed specialist /professional expertise and helped develop the protocol. Patients and public, including previous research participants and members of the team's social networks, helped develop the research ideas and informed the development of this protocol. David Browne is lead for PPI and was consulted during the protocol drafting; he sought views of other users and non-users of online triage and eHealth services on behalf of the team.

STUDY PROTOCOL

Ethnographic study of patient pathways and workforce implications of NHS 111 Online

1. BACKGROUND

The NHS has provided urgent care telephone services underpinned by decision support tools for over 20 years, beginning with the nurse led telephone advice service NHS Direct (1998-2014), and then NHS 111, which uses call handlers supported by triage software called NHS Pathways (Turnbull et al. 2012; Pope et al. 2013; Pope et al. 2017). The current NHS 111 telephone service receives over 15 million calls per year. In 2017, NHS 111 Online was launched in four pilot areas trialling different triage systems, which included commercial products, and one based on NHS Pathways, to allow people to access Web-based triage and assessment bypassing NHS 111 call-handling. NHS 111 Online is being rolled out for NHS England. All the Online services will use the NHS Pathways software developed by NHS Digital.

The introduction of NHS 111 Online sits within an urgent and primary care landscape in which digital technologies are increasingly being enrolled in health care delivery - ranging from electronic health records, e-consultations to decision support systems for triage and assessment. However, evidence addressing key questions about how online systems are used, their effectiveness, and impact on wider health service demand is limited. Typically small scale studies have evaluated symptom checkers and the results are mixed, with some noting that they may encourage users to seek care from health services when self-care is reasonable (Semigran et al. 2015; Poote et al. 2014). These findings confirm our own analyses of risk management in telephone based decision support systems used for NHS 111 (Turnbull et al. 2017). Evidence regarding accuracy of assessments using symptom checkers is also contradictory (see for example Bisson et al. (2016); Sole et al. (2006) Powley et al. 2016; Anhang Price et al. 2013). While there is potential for such systems to support self-management it appears that they may drive demand towards consultations ‘with a doctor’ (Nijland et al. 2010) and/or to emergency services (Powley et al. 2016). Research has also identified that some patients experience difficulties using symptom checkers (Marco-Ruiz et al. 2017) may be confused, lack confidence or simply struggle to navigate software systems (Luger et al. 2014; Nijland et al. 2008). Web based sources of health information can heighten anxiety (Mueller et al. 2017). These findings sit within the context of a wider literature that has raised concerns about the usability and accessibility of digital technologies (Yamin et al. 2011; McCord et al. 2002) and about inequalities of access and use of information and communication technologies (ICT) (Hargittai and Hinnant 2008; DiMaggio et al. 2004).

2. RATIONALE

This research proposal responds to the NIHR Highlight Notice 18/77 for research to evaluate NHS 111 Online, specifically addressing knowledge gaps regarding the impact and sustainability of NHS 111 Online. It builds on our previous projects related to NHS 111 (HS&DR 10/1008/10), the NHS Pathways software (SDO 08/1819/217) and on urgent care sense making (HS&DR 14/19/16). Our team have developed significant expertise in understanding both the NHS Pathways, NHS 111 and urgent care services. This project will also build on theoretical and empirical contributions to the study of Web technologies (Pope and Turnbull 2017, Pope et al. 2013) thus contributing to the wider literature on and digital health care technologies. Online services represent an important potential ‘channel shift’ from offline (face to face) to digital (virtual) delivery that can support the ‘right person, right place right time’ imperative of the NHS, increasing the convenience and timeliness of care, and patient satisfaction. The recent evaluation of the NHS 111 pilots concluded that to “gain further understanding of NHS111 Online and the impact on the health system, larger data sets and linked data will need to be considered” (NHS England 2017b). Our proposal will augment the existing pilot work, and a parallel project to provide a deeper comparative analysis of NHS 111 that will inform the development of these urgent care services.

3. THEORETICAL FRAMEWORK

We will undertake case studies in eight localities informed by systems theory and thinking (von Bertalanffy 1968; De Savigny and Adam 2009), using qualitative and survey methods to investigate user/patient pathways to care and the work and workforce arrangements for NHS 111 Online. Our approach is broadly interpretivist and we will draw on relevant social theory, for example concepts of affordances and accessibility of technologies (Petrakaki et al. 2014; Wilson and Langton 2004) and theoretical and methodological developments in health efficacy (Norman and Skinner 2006).

4. RESEARCH QUESTIONS/AIM

AIM: To examine patient pathways and workforce implications of NHS 111 Online

RQ1: What is the impact of NHS 111 Online on patient pathways of care?
RQ2: Is there evidence for differential access and use of NHS 111 Online?
RQ3: What are the workforce implications of introducing NHS 111 Online?
RQ4: How do workforce arrangements (e.g. staffing, skillsets, task allocation), vary within different types of NHS 111 Online services?
RQ5: How do variations in these workforce arrangements impact on the wider health and social care system?
RQ6. How does UK NHS Online workforce compare with the Healthdirect Australia service?

Objectives

1. describe the pathways of care and services used by patients who access NHS 111 Online (RQ1)
2. describe the extent of differential access to and use of NHS 111 Online (RQ2)
3. describe the workforce for NHS 111 Online (RQ3) and assess the impact of different workforce arrangements on the urgent and emergency healthcare system (RQ4 and RQ5)
4. compare the workforce implications of NHS 111 Online with Health Direct (RQ6)

5. STUDY DESIGN / METHODS

We employ qualitative observation, interviews, and quantitative survey methods as data collection techniques to understand NHS 111 Online. We will have 8 case studies, across different services in 8 geographical locations.

We will have refined our initial pathways model by scrutinising documents and available data, to identify relationships between different services and the routes by which patients access care. We may telephone or email service providers and managers to clarify dispositions (outcomes) resulting from NHS 111 Online interactions and relationships between parts of the system. This information gathering activity will be undertaken by experienced qualitative researchers and supported by the project researcher. Handwritten notes will be made, and drawings of the pathways to care. We will seek input from our Study Steering Group and PPI to check the accuracy of our understanding and the resulting pathways map.

Patient Pathways and eHealth literacy

This addresses objectives 1 and 2 to describe the pathways of care and services used by patients who access NHS 111 Online (RQ1) and to explore eHealth literacy (RQ2).

SURVEY

A cross sectional survey will be undertaken of the eHealth literacy skills of NHS 111 Online users and potential users, and their preferences in relation to phone and online services. eHealth literacy is an essential component of any shift towards digital service use (Norman & Skinner, 2006) and a digital divide in abilities might prevent some service users accessing the online platform or result in them using it in unexpected ways. We will use the eHealth Literacy Questionnaire (eHLQ; 2018). This is a validated 35-item 7-scale questionnaire measuring; use of technology to process health information; understanding of health concepts and language; ability to actively engage with digital services; feeling safe and in control in using online services; motivation to engage with digital services; access to digital services that work, and access to digital services that suit individual needs. This questionnaire has been selected because it combines digital literacy with health literacy and considers both individuals' competences plus individuals' experiences and interactions with technologies and services. We will recruit 314 urgent and emergency care service users (see power calculation below) through multiple channels (e.g. GP surgeries, NHS 111, Urgent Care services, Emergency Departments). We will also ask about use of NHS 111 Online, awareness of the online service and preferences for online/call handling for different types of symptoms from less to more serious. Data from our previous research and the literature will be used to develop symptom scenarios to capture these details. The questionnaire will also ask questions about age, gender, basic demographic details and educational level, which previous research has indicated as influencing levels of digital literacy (Van Deursen et al. 2016). The questionnaire will be available in paper and online forms. Questionnaires will be assigned a reference number that will encode the administrative location (e.g. ED1 for emergency department 1 questionnaire) but no personal identifying medical information will be recorded.

Data Analysis

Primary analysis of the survey will describe eHealth literacy scores using the mean (or median, depending on the shape of the data) of all respondents, alongside the corresponding 95% confidence interval and measure of spread (standard deviation or quartiles). Secondary analysis will assess the effects of age, gender, education and use of online service or not on eHealth Literacy scores using linear regression, pending assumptions of that approach being met. We will also report respondents' preferences for each symptom scenario. In addition, mean eHealth literacy scores and standard deviations will be calculated for call vs online choices for all symptom scenarios.

The full analysis plan will be agreed amongst the team and steering group before closing the recruitment window. Analysis will be undertaken by Prichard, Pope, Turnbull and the project researcher.

Workforce implications

This addresses objectives 3 and 4 (RQ3-6).

ETHNOGRAPHIC CASE STUDIES

Data collection in the eight case study sites will begin with an orientation visit and phone calls to relevant service managers to map the network of stakeholders and services and negotiate access to the study sites and staff. Posters will be displayed at case study sites with information about the study. We will identify staff and stakeholders implicated in the pathways map– for example GP receptionists, GPs, triage nurses in emergency departments, commissioners, charity personnel and service managers. We will ask open-ended questions about the work undertaken to respond to NHS 111 Online and may observe work practices, depending on the local COVID-19 related working restrictions (e.g. visiting a GP to observe and talk to receptionists about their management of online referrals) to understand work arrangements, everyday processes and work content. Hours spent with each site will vary depending on the complexity of organisation and work practices but we will spend a minimum of two weeks with each site, making sure to examine activity at different times of day/days of the week. From previous studies of this kind we estimate that we will interview – formally in person or by phone, or informally while observing, at least 10 people per site (approx. 80 in total). Potential interviewees include commissioners, system developers, corporate and operational managers, healthcare professionals, charity workers and support staff. The charity sector as non-NHS service providers are involved in many patient pathways locally through signposting, support or referral into care. Repeat interviews (face to face or by phone/email) may be used to clarify and explore changes to work arrangements. Audio recorded interviews will be transcribed verbatim. We will collect copies of relevant policy documents, system specifications and updates, and organizational materials to understand the implementation of and response to NHS 111 Online. Data collection will be undertaken by experienced qualitative researchers Pope, Turnbull and Prichard, supported by the project researcher. Handwritten notes will be augmented with audio-recording where possible. We will seek input from our steering group and PPI to ensure credibility and accuracy of our interpretations.

HEALTHDIRECT INTERVIEWS

Co-Investigator Jeffrey Braithwaite of Macquarie University, Australia and his team will undertake interviews by MS TEAMS (or similar platform) with key stakeholders representing the workforce and organisations implicated in the Healthdirect Australia. 30-50 interviews are envisaged to include service managers, system developers and technical support, and relevant stakeholders in policy and service planning in Australia. These interviews will use open ended questions, based on a flexible topic guide informed by data collection and analysis methods described above. Professor Braithwaite has existing and previous research collaborations with Healthdirect Australia. Data collection will be undertaken by Braithwaite and Dr Mahmoud, the Australian project researcher. Interviews will be audio-recorded where possible, or near verbatim notes will be made contemporaneously.

The ethnographic work will be mainly qualitative, but we anticipate that site visits, interviews and documentary analysis will allow access to some quantitative data about the workforce. These may include information from grey literature, local reports and public materials (e.g. websites). We will gather available information about workforce composition, training and development. We will undertake, where possible, descriptive statistical analyses of quantitative data, for example comparing the English and Australian workforce. We will attempt to quantify the length of time taken for tasks generated by 111 Online by extracting data from interviews and observation e.g., estimating receptionist or GP time spent dealing with online referrals.

No patient identifying data or medical records will be collected.

Data Analysis

Data analysis will be informed by established qualitative approaches, moving from coding through thematic analyses to build explanations. Software such as Atlas.ti or NVivo will be used for data archiving and management subject to the skills and preference of the project researcher. Analysis will undertaken by a core analytical team comprising the project researcher, Pope, Turnbull, Prichard and, for the Australian analysis, Braithwaite. Other investigators, PPI members and the steering group will be asked to comment on and consider the veracity and credibility of interpretations and may be provided with de-identified data for this purpose.

6. STUDY SETTING

We will purposively sample our case study sites to include areas where NHS111 Online was piloted, and newer sites that provide opportunities for robust comparison and exploration. The final decision on sites will be taken in discussion with our steering group, CCG and NHSE/NHS Digital stakeholders and with input from the NIHR Clinical Research Network to ensure we target areas of health need.

7. SAMPLE AND RECRUITMENT

Inclusion criteria

Participants willing and able to give informed consent for participation

Aged 18 years or above

SURVEY: Users or potential users of NHS 111 who employ urgent and emergency care services (e.g. GP surgeries, NHS 111, Urgent Care services, Emergency Departments)

ETHNOGRAPHIC CASE STUDY: staff and stakeholders implicated in the pathways map at the 8 case study centres

HEALTHDIRECT AUSTRALIA: key stakeholders representing the workforce and organisations implicated in the Healthdirect Australia

Exclusion criteria
None

Because the study involves separate components we describe the sampling and recruitment approach for each separately.

Survey

Size of sample: approximately 314 completed surveys in total, around 50 per case study site.

Sampling technique: Survey participants will include adult (aged 18 over) users and potential users of NHS 111 Online.

The sample size is based on estimating the mean eHealth literacy scores in the general population of service users of urgent and emergency care services to a desired level of precision, as determined by the width of the 95% confidence interval for this mean. The aim is to estimate the mean to within +/-0.07; based on Kayser et al. (2018), who reported a baseline standard deviation of 0.63, this would require 314 people in total.

Non-probability sequential convenience sampling has been chosen as a pragmatic solution to accessing a range of people who may be users or non-users of NHS 111 within the ED or Urgent Care centres of the case study sites.

Recruitment: Recruitment will be via service users contacting urgent and emergency care services through a range of channels including NHS111, Urgent Care Centres and Emergency Departments linked to the case study sites. Sequential patients (aged 18 or over) attending or using the services identified will be offered a questionnaire. Potential survey respondents (those aged 18 or over) will be identified by administrative or clinical staff at participating case study sites, during contact with the service (e.g. triage or reception staff at emergency department, call handler at close of call for NHS 111 telephony). Potential respondents will be offered an online link (via poster or via NHS 111 Online automated telephony systems), or a questionnaire on the research team tablet in the waiting room that can be cleaned between respondents, and invited to take part in the survey. It is anticipated that the survey will take approximately 15 minutes for an individual to complete.

COVID-19 Procedures:
To reduce contact with potential survey respondents during the COVID-19 pandemic, the practices will send an sms mail out of the survey link to the patients registered at their practice. An internal eligibility check will be required to ensure patients have not opted out of the mail out system. The research team will have no access to this patient identifying information.

The survey will be conducted over several days until approx. 50 responses are obtained in each of the eight case study sites. Posters describing the survey will be available at each site. No identifiable personal information will be collected about potential respondents. An administrative fee will be paid to participating sites to contribute to costs of administering and collecting the questionnaires. NHS 111 telephony will direct potential participants to an online link to complete the survey online. Online completion of the survey at the site will be uploaded immediately once the respondent presses submit at the end of the questionnaire. Online surveys will be hosted at the University of Oxford and data downloaded and stored on password-protected servers for analysis by Prichard, Pope, Turnbull and the researcher.

Consent: The survey provides information for the respondent, and consent will be obtained for all respondents via a tick box at the beginning of the survey.

Ethnographic case studies

The University researcher will spend a minimum of 2 weeks *in situ* or in remote contact at selected case study sites.

Size of sample: The number of interviews at each case study site will depend on the composition of the workforce, but we estimate that we will interview – formally in person, by phone, online or informally while observing if restrictions allow, at least 10 people per site.

Sampling technique: Sampling for observation / interviews will be purposive and flexible in line with the qualitative methodology adopted for this work and responsive to local circumstances at study sites. University researchers will undertake an orientation visit and phone calls to relevant service managers to map the network of stakeholders and services and negotiate access to the study sites and staff. This could be replaced by a phone conversation if COVID restrictions preclude against a site visit.

Recruitment: Participants will be invited to take part by email, letter or face-to-face contact by the University researcher. They will be provided with an information leaflet and consent form. Case study interview participants will take part in one or more interviews either informally as part of observations or formally lasting approximately 45 minutes.

Consent: Participants will receive a participant information leaflet. They will be asked to sign a consent form by the University researcher or give audio recorded consent if the interview is by telephone or online. When taking audio consent the researcher will read the consent form to the participant, who will confirm each statement. Participants will have opportunities to ask questions throughout the research via email or during site visits. Patients or members of staff in the setting who are not invited to interview and/or are not the focus of the ethnographic data collection will be asked to provide verbal consent to the researcher's presence. Posters will be displayed alerting people in the setting to the presence of the researcher and the ethnographic case study work.

Healthdirect Australia interviews

Healthdirect Australia interview participants will take part in one MS TEAMS (or similar platform) / email interview with the MacQuarie University researcher lasting approximately 45 minutes.

Size of sample: approximately 30-50 interview participants.

Sampling technique: interviews will be purposive and flexible in line with the qualitative methodology adopted for this work. Emails or phone calls to relevant service managers will be used to map the network of stakeholders and services and negotiate access to interviewees. Snowball sampling methods may be used (i.e. recommendations from previous participants) to identify potential interviewees.

Recruitment: Co-investigator Braithwaite will facilitate interviews with key stakeholders representing workforce and organisations implicated in Healthdirect Australia. Participants will be invited to take part by email contact by the MacQuarie University researcher.

Consent: Interview participants will receive a participant information leaflet by email will then be asked to sign and return a scanned copy of the consent form. If taking part in a telephone or online interview, audio recorded consent will be documented. When taking audio consent the researcher will read the consent form to the participant, who will confirm each statement. Participants will have an opportunity to ask Professor Braithwaite and/or the MacQuarie University researcher questions.

Withdrawal of participants from the case studies and interview data collection

Case study/interview participants may withdraw from the study at any point but data obtained up until the point of the withdrawal will be retained for analysis.

Definition of End of Study

The end of the study is the point at which all study data has been collected by the University researcher.

8. DATA MANAGEMENT

No clinical data from patient records will be collected for this study. Digital data (e.g. interview audio recordings) will be transferred to password protected storage on University computers / servers as soon as possible after collection. Interview audio recordings will be given a unique identifier and will be sent securely (via University owned file transfer interface requiring authentication) to approved transcribers who have signed a confidentiality agreement with the University of Oxford and will not retain a copy of audio files following completion of transcription. Interviews will be transcribed verbatim and de-identified at the earliest opportunity by the researcher. De-identified data will be stored in computer files on password protected University servers. ID numbers and consent forms will be stored in locked filing cabinets at the Nuffield Department of Primary Care Health Sciences, University of Oxford. Audio files will be deleted at the end of the study.

Paper copies of the survey will be retained by each site in a secure place for collection by a member of the research team and then stored in a locked filing cabinet in a University office protected by card access before processing to electronic files stored on password- protected University servers. Online surveys will be hosted at the University of Oxford network and data downloaded and stored on University of Oxford password-protected servers. Individual IP addresses are not recorded. De-identified data may be shared with the co-investigators, study steering group and PPI for quality control and analysis purposes. Care will be taken when presenting findings to ensure that confidentiality of individuals and sites are preserved (for example by using identifying codes etc. that obscure the origin of the data).

9. ETHICAL AND REGULATORY CONSIDERATIONS

This is a low risk study involving volunteer staff and professional stakeholder participants in the case study, and volunteer adult survey respondents for the survey. There are no identified risks to participants. There are no direct benefits to survey participants but knowledge gathered will inform policy and practice for future staff, professionals and service users. Participants in case studies will receive feedback which may be beneficial to service planning and decision making.

Assessment and management of risk

The research team conducting the survey and case study research will be non-clinical and will not be competent to assess clinical practice or medical risks. They will comply with research best practice and local policies regarding safeguarding and will seek advice from local clinicians/managers as appropriate should issues arise. If site access is possible, the case study research will involve some lone working by researchers and the relevant lone working procedures will be followed, including notification of location, start and end times of visits and reporting in.

Research Ethics Committee (REC) and other Regulatory review & reports

Following Sponsor approval the protocol, informed consent form, participant information and other relevant documents e.g. advertisements will be submitted to an appropriate Research Ethics Committee (REC), HRA, and host institution(s) for written approval.

The Investigator will agree substantial amendments with the Study Steering Group and funder. They will submit and, where necessary, obtain approval from the above parties for all substantial amendments to the original approved documents.

All correspondence with the REC will be retained. The Principal Investigator will oversee the submission of annual reports as required and notify the REC of the end of the study. An annual progress report (APR) will be submitted to the REC within 30 days of the anniversary date on which the favourable opinion was given, and annually until the study is declared ended. If the study is ended prematurely, the Chief Investigator will notify the REC, including the reasons for the premature termination. Within one year after the end of the study, the Chief Investigator will submit a final report with the results, including any publications/abstracts, to the REC.

Peer review

This project has received independent expert peer review as part of the NIHR HSDR Programme competitive funding process.

Protocol compliance

As with all qualitative research, there is some flexibly in the research design to allow the objectives to be met. Significant changes to the design or conduct of the study will be discussed with the Study Steering Group and the Funders, and documented as required.

Data protection and patient confidentiality

All investigators, research staff, PPI and steering group members will comply with the requirements of the Data Protection Act 2018 and General Data Protection Regulation (GDPR) 2016/679 with regards to the collection, storage, processing and disclosure of data including any personal information. The Principal Investigator (Pope) is the data custodian. University of Oxford is the data controller.

At the end of the study data (including consent forms) will be stored for 10 years in accordance with University of Oxford policy and then destroyed. After the 10 year retention all research data (including consent forms) will be securely destroyed using the appropriate procedure advised at that time by the University of Oxford research data team. Any personal identifiers relating to individual participants will be held for less than six months after the end of this 18 month study.

Indemnity

Insurance and indemnity arrangements lie with the sponsor (University of Oxford). The University of Oxford maintains Public Liability and Professional Liability insurance, which will operate in this respect.

Access to the final study dataset

Pope, Turnbull, Prichard and the employed researcher will have access to the full dataset. De-identified data will be shared with additional investigators, PPI and the steering group. Case study sites will receive feedback including site specific de-identified data analyses. Use of de-identified data for research or teaching will only be undertaken with the consent of the participants. Direct access will be granted to authorised representatives from the Sponsor or host institution for monitoring and/or audit of the study to ensure compliance with regulations.

Declaration of Helsinki

The Investigator will ensure that this study is conducted in accordance with the principles of the Declaration of Helsinki.

Contractual arrangements

Appropriate contractual arrangements will be put in place with all third parties.

10. DISSEMINATION POLICY

A project webpage will provide updates on progress, access to papers and reports, and supplementary details about the methods used. We will have dedicated Twitter account. We will work closely with our PPI advisers to communicate our findings in accessible ways using a variety of face to face, online and written formats. The final report will synthesise the findings from the work packages and outputs will also be presented via academic peer-reviewed publications and appropriate conferences and meetings directed to health services research and digital technology audiences. We will feedback to service commissioners via regular updates in our study sites and to the NHS Clinical Commissioners (www.nhscc.org) national group. We will write targeted research briefings and work to disseminate these to national and local policy audiences. To ensure international reach we will target a relevant international conference in 2020/2021 with a submission presenting the UK and Australian workforce comparison.

Outputs

a) Final Report for NIHR HS&DR (will be open access/ available on the NIHR website)

b) Main papers: These will be open access where funding and journal allows, and prepublication copies will be available from the study team and in University repositories.
   - NHS 111 Online eHealth literacy and pathways of care (target: Heath Expectations)
   - Workforce implications of NHS 111 Online (target: J Health Serv Res Policy)
   - Comparison of NHS111 and Health Direct workforce implications (target: Medl J Australia)

c) Targeted Dissemination:
   - Feedback meetings with health professionals and stakeholders from study sites, briefing paper for NHS England, NHS Digital, commissioners and digital health technology audiences.
   - Public and patient facing feedback – to be co-designed with PPI reference group but will likely include newsletter type updates, blog and podcast materials developed with our PPI group, and an interactive dissemination workshop at the end of the project.
   - A paper/presentation about workforce implications of UK-Australian online triage services to be submitted to OBHC or relevant international conference.

d) Outreach:
   - Website and social media – dedicated Twitter feed and web page.
   - Policy brief.

- Two posters for conference or public dissemination

Authorship eligibility guidelines and any intended use of professional writers

Co-investigators, the researcher and PPI members will have the opportunity to be involved in writing publications from this study by agreement of the Project Management Team and in accordance with the International Committee of Medical Journal Editors and British Sociological Association guidance on authorship.

Archiving

Where possible and subject to relevant consents qualitative data will be de-identified, archived and made available for reuse/secondary analyses. Anonymised survey data will be tabulated and provided as supplementary files for relevant publications and /or hosted on the project website. The Funders will be acknowledged within the publications and notified of these as per the research contract. The study protocol will be available on the study website. The final report will be available on the NHR website. Ownership of IP generated by employees of the University vests in the University. The University will ensure appropriate arrangements are in place as regards any new IP arising from the study, conforming to contractual arrangements specified by the Funder.

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12. Amendment History

Amendment No.	Protocol version no.	Date issued	Author(s) of changes	Details of changes made
1	1	28/02/2020	V.Eade	Update of survey following PPI input.
2	2	14/09/20	J.MacLellan	Clarification of remote interviewing consent and use of online versus paper surveys in light of current COVID working restrictions.
3	3	01/10/2020	J.MacLellan	Survey host changed from Southampton to Oxford and 3 research sites added.
4	4	13/10/2020	J.MacLellan	Sms wording included for primary care survey mail out.

List details of all protocol amendments here whenever a new version of the protocol is produced. Protocol amendments must be submitted to the Sponsor for approval prior to submission to the REC.