Digital Technologies in Primary Care

Showcase - the Covid-19 world and digital primary care - Book of Abstracts

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Digital Primary Care and Remote Services

Professor Jeremy Horwood, University of Bristol

Co-authors: Mairead Murphy, Lauren J Scott, Chris Salisbury, Andrew Turner, Anne Scott, Rachel Denholm, Rhys Lewis, Geeta Iyer, John Macleod

The implementation of remote consulting in UK primary care following the COVID-19 pandemic: the mixed-methods longitudinal RAPCI study.

The problem
To reduce contagion of COVID-19, in March 2020 UK general practices implemented predominantly remote consulting via telephone, video or online consultation platforms.

The approach
Mixed-methods in 21 general practices. Quantitative: Longitudinal analysis comparing volume and type of consultations in April-July 2020 with April-July 2019. Qualitative: 87 staff longitudinal interviews in four rounds.

Findings
There was a rapid change to 90% remote GP consulting by April 2020. GPs/nurses maintained a focus on older patients, shielding patients and patients with poor mental health. Telephone consulting was sufficient for many patient problems, video consulting was used more rarely, and was less essential as lockdown eased. GPs were concerned about increased clinical risk.

Implications
The shift to remote consulting was driven by the imperative to reduce contagion and may have risks; post-pandemic, the model will need adjustment.

Dr Jill Christy, Queen's University Belfast

Co-authors: Dr. Grainne Kearney, Prof. Gerry Gormley, Dr. Richard Conn (Centre for Medical Education, Queen's University Belfast).

'Instinct, intuition or illogical?' The lived experiences of GP trainees managing uncertainty in remote consulting.

The problem
Consulting remotely, by telephone, video or online, was advocated by NHS Long Term Plan, with its implementation expedited by COVID-19 pandemic. The resultant telephone-first system in primary care is anticipated to have a more prominent role post-pandemic. Much literature to date focuses

on feasibility and acceptability of remote modalities within general practice (GP) consultations. Less is understood about processes by which those working in primary care, particularly GP trainees, make decisions about which patients can be managed remotely and which remote consultations should be converted to face-to-face review. There is limited understanding of experiences of GP Trainees within the remote consultation world.

The approach
Systematic literature search and narrative synthesis were undertaken with key databases searched for primary and secondary research relation to remote consultation in primary care. Reference lists and citations were hand-searched.

Findings
Literature reviewed to date has a focus on acceptability and practical aspects of remote consultation styles. However, limited research addresses which patients or conditions are suitable for remote consultation. Minimal research supports evidence-based comprehension of factors that drive conversion from remote modalities to face-to-face, and understanding of how practitioners in training negotiate and experience these decisions is limited.

Implications
Consequently, we are currently recruiting GP Trainees to undertake semi-structured interviews, exploring their experiences of remote consultations within GP and to understand how they make decisions remotely. These interviews will be undertaken with a hermeneutic phenomenology lens and evidence generated aims to inform policy and education programmes to allow adaptation to the rapidly evolving practice of remote consultation.

Dr Jeffrey Lambert, University of Bath

Co-authors: R Winder, Abel G, Campbell, J, Leach, B, Evans, H, Gomez-Cano, M, Atherton, H

Facilitating access to online NHS primary care services - current experience and future potential (Di-Facto): The Practice Survey

The problem
There has been a recent policy drive for general practice to increase provision and use of primary care online services (e.g. booking appointments, arranging repeat prescriptions, and online consultations). However, patient engagement with online services remains slow, particularly in vulnerable and marginalised groups. Whilst practices can facilitate patients' engagement, the extent and nature of 'digital facilitation' is not clear.

The approach
As part of the NIHR funded Di-Facto study, we surveyed 500 general practices in four geographic regions, to identify and characterise how they promote, support and enable patients to use online services. An earlier scoping review informed questionnaire development.

Findings
156 practices responded (31%), with most offering 5 to 8 online services. Passive facilitation (e.g. leaflets, practice website) (30% to 83%) was provided more often than active facilitation (e.g.,

practice champion, workshops) (7% to 23%), with clinical and non-clinical staff being involved. Facilitation supporting patients to order repeat prescribing online was most frequently reported (53% of practices). Practices reported specifically targeting vulnerable or minority groups, in particular older adults. Most responders agreed that both the practice (85%) and NHS policy makers (e.g., CCGs, 88%) had a responsibility to promote and support online services, and that this was beneficial to patients (96%).

Implications
Findings from this survey and the wider Di-Facto study have implications for patient and practice needs and will inform the shaping of policy at the regional and national level including policy aimed at ensuring how best to include and support vulnerable and minority groups in their use of NHS online services.

Dr Sarah Rybczńyska-Bunt, Plymouth University

Co-authors: Gemma Hughes, Sara Shaw, Richard Byng, Rebecca Rosen, Teresa Finlay

Leaving no one behind? Understanding and managing tensions between utilitarian, universal and inclusive perspectives on remote service design for complex needs groups.

The problem
Efforts to achieve fair and equitable access for complex needs groups are likely to be tokenistic if they are not thought about alongside the longer-term vision for a remote primary care service. A utilitarian approach aims to prioritise the needs of many while minimising inequity through reasonable adjustments for patients with known vulnerabilities. Deficit models of understanding digital exclusion fail to address the dynamics of intersecting vulnerabilities. Conversely, universal design aims to ensure technological ease of use for all but this is difficult to operationalise and overlooks individual complex needs.

The approach
Findings will be drawn from the 'Remote by Default' Covid-19 study that explored the digital communications between patients and primary care practices. This presentation will specifically hone in on the impact of remote working for complex needs groups

Findings
Despite efforts to make provisions for patients, the rapid shift to a remote service meant that practices were not able, to think through all the potential vulnerabilities and adjustments needed to minimise health inequities. With some patients continuing to turn up at the door, practices had to quickly respond to the needs of those who could not contact them remotely.

Implications
We make the case for an inclusive approach that proactively engages with complex needs groups in co-design and planning of remote services. Using the Planning and Evaluating Remote Consultation Services framework (PERCS) we demonstrate that understanding the intersections between multiple layers of disadvantage needs to be embedded into the strategic planning for primary care services so as to mitigate against health inequities.

Application of Digital Technologies

Miss Jamie Hertel, University College London

Co-authors: Julia Bailey, Patricia Schartau, Lorna Hobbs

Effectiveness, feasibility, and acceptability of interactive digital interventions for treatment of sexual difficulties: a systematic review.

The problem
Sexual difficulties are common in the UK, but availability of treatment services is scarce. Interactive digital interventions (IDIs) have the potential to deliver tailored psychotherapies for the treatment of sexual difficulties. However, more evidence is needed to determine their effectiveness, feasibility, and acceptability, before widespread implementation.

The approach
We conducted a systematic review across 5 databases, following Cochrane review methods. Meta-analysis of functional, cognitive, emotional, and behavioural outcomes associated with sexual experiences, taken from RCTs only, were used to measure effectiveness of IDIs for sexual difficulties. Subgroup analysis was carried out, by gender and IDI level of guidance. A thematic analysis of qualitative and quantitative studies was performed to evaluate feasibility and acceptability.

Findings
9 RCTs were included in the meta-analysis and 10 studies in the thematic analysis. Guided IDIs improve functional (SMD 0.68; 95%CI 0.21-1.15), cognitive (SMD 0.62; 95%CI 0.17-1.07), and behavioural (SMD 0.35; 95%CI 0.11-0.59) outcomes for women with sexual difficulties. Little data on men meant no significant conclusions could be drawn. Although study attrition and intervention adherence need addressing, IDIs were found to be feasible and acceptable provided content is personalised and relevant to a diverse range of participants. Users appreciated interventions involving partners and valued therapist support.

Implications
This review strengthens evidence that IDIs can be effective, feasible, and acceptable for people with sexual difficulties. Incorporation of partner involvement, therapist support, and personalisation when developing IDIs is recommended. IDIs offer an alternative to face-to-face treatments, which could help to reduce waiting-lists and increase availability of services for sexual difficulties.

Dr Yvette Pyne, University of Bristol

Co-authors: Dr Edwin Simpson

Natural Language Processing of Primary Care Consultations

The problem
A significant proportion of a GP's day is spent interacting with the Electronic Health Record (EHR). While the EHR can improve patient care, it can also create a barrier to the human connection needed for good medical care and can contribute to physician burnout, increased cognitive load, and documentation errors.

Natural Language Processing – a field of 'Artificial Intelligence (AI) – is evolving to be able to 'understand' human conversation – can we leverage this technology to work as a 'Digital Scribe' writing a GP's notes for them during the consultation?

The approach
Using the "One in a Million" dataset – 300 high quality video recordings of UK primary care consultations with associated verbatim transcripts and medical record entries – we are using Machine Learning (ML) techniques to code the consultation with a clinical topic solely from the transcripts of the conversation. Techniques we are trialling so far include:

1. A simple 'Bag of Words' with 'Term Frequency - Inverse Document Frequency' (TF-IDF) where common words said in the consultation can be associated with clinical areas (e.g. shoulder musculoskeletal)
2. Zero-shot Learning

Consultations have been pre-coded with their appropriate ICPC-2 (International Classification of Primary Care) codes and we are also looking to associate the consultation with a CKS Health Topic.

Findings
This is an active ongoing project in its early stages but initial results are showing some success (significantly greater than chance) in determining the ICPC-2 code associated with the consultation.

Implications
The burden for documentation and the expectation of knowledge of complex guidelines is only growing in primary care. A tool that can ease this has significant implications on the quality of care a doctor can provide to a patient and the doctor's working practice.

Ms Gemma Donovan, University of Sunderland

Co-authors: Professor Felicity Smith, Professor Jonathan Ling, Professor Scott Wilkes

Development of an initial realist programme theory for patient engagement within a two-way automated text messaging intervention for medication taking

The problem
Text messaging has potential to support patients with medication taking. However, such interventions are only effective if patients engage with them. This study explored patients' engagement in text messaging during a two-week simulation of a new intervention combining two-way automated text messaging with support from a community pharmacist.

The approach
The intervention was developed using peer-reviewed literature and focus groups with patients and healthcare professionals. To explore engagement, diary-interviews were conducted with eight patients recruited through a public, patient and carer involvement group. Transcripts were coded to identify contexts, mechanisms and outcomes related to patient engagement in text messaging using realist evaluation principles. The Capability Opportunity and Motivation model of Behaviour (COM-B) was used to describe the mechanisms by which text message engagement was supported (or not) in the intervention.

Findings
The outcomes for the initial programme theory were two behaviours: reading text messages and replying to them. We identified 12 mechanisms which seemed to mediate engagement, including physical opportunity (e.g. time), psychological capability (e.g. knowing how to reply) and reflective motivation. Contexts which seemed to affect these mechanisms included the community pharmacy setting and perceived severity of disease.

Implications
Understanding the factors which affect patient engagement in two-way digital communication is important to ensure that intervention effects are delivered. By developing an initial realist programme theory, this study provides insight into the potential mechanisms and contexts which may be important for engagement. However, it will be important to explore this with a larger and more diverse sample.

Professor Ala Szczepura, Coventry University

Co-authors: Sonja Woodhouse, Helen Brewster, Marc Greenwood, Dr Sarah Raistrick, Professor Guy Daly, Professor Mark Johnson, Mark Collinson.

Developing a Digital Ecosystem for Carers & the new Integrated Care Systems.

The problem
There are 7 million unpaid carers in the UK, and 1.2 million spend ≥50 hrs per week on their care duties. Digital challenges identified by the last SIG meeting are considered in the context of this important workforce. The problem is how, in a post-COVID-19 world, a digital ecosystem can be developed to support carers bringing together different partners with the new Integrated Care Systems.

The approach
A partnership between Coventry City Council, Coventry University, Vodafone, Coventry & Warwickshire LEP, and Coventry & Warwickshire CCG has been established to explore and maximise the impact of planned 5G infrastructure on Health, Social Care and Wellbeing in the area's multi-ethnic population. Carers Trust Heart of England is acting as a prototype living lab for assessment of technologies intended to support carers in the community. Alongside development of a digital strategy, innovations are being assessed for future use by GPs, Social Prescribing link-workers, Carers' Services, including: a platform to enable carers to organise family carers (CareWeShare); an app to help delay cognitive decline in people living with dementia (ArtOnTheBrain); and a facilitated peer-to-peer support platform (H4C).

Findings
Pre-/post-pandemic analysis of caregiver patterns of service use; carers' perceptions and views on digital innovations; staff views on impact on service delivery and wider potential; framework for value-based evaluation of innovations.

Implications
An approach bringing together health, social care, academics and industry can provide evidence for newly established Integrated Care Systems; assess innovations in a real-world context; and build and test a digital ecosystem for carers in the community.