The MyHealthRecord System in General Practices: Steps Towards Adoption Sustainability

Full Paper

Dr. Urooj Raza Khan
The University of Melbourne
Email: urooj.khan@unimelb.edu.au / drurkhan@outlook.com

Associate Professor Christopher Pearce
The University of Melbourne
Email: cpearce@unimelb.edu.au

Abstract

Digital health systems such as MyHealthRecord (MyHR) are aimed at enabling the accessibility of health records whenever and wherever, assisting users in making more informed decisions about patient care. This research explored MyHR adoption (Victoria) and user views/experiences in general practice organisations (GPO). Although adoption of MyHR in GPO was encouraged in July 2016, system use was limited, adapting ad hoc procedures mostly to satisfy funding criteria. This paper brings recommendations for GPO and policy makers, referring to lessons from GP computerisation. The adoption triangle theory was contextualised, encapsulating three main themes: (1) To understand and identify 'needs' of GPOs/patients, promoting cultural shift among GPOs and the community; (2) 'Enhance support' to address these needs, including three themes related to users and GPO engagements, and a formal change-management approach; (3) 'Review incentive' to increase system education and interaction, hence increasing the likelihood of adoption sustainability.

Keywords My Health Record, General Practice, Digital Health, Primary Care Organisation, Personally controlled electronic health records, PCEHR

1 INTRODUCTION

Information systems (IS) now deployed in the health sector are impacting patient care in myriad ways (Menachemi and Collum 2011; Raza Khan et al. 2016; Raza Khan et al. 2019a). Having electronic health records in these IS has been the target in past few decades for many countries. A focus is now on having national electronic health record solutions to facilitate easy, fast and safe patient care. Implementation of such digital health (DH) solution, specifically at the national level, has proved to be complex and puzzling, despite tremendous planning (Gajanayake et al. 2013). This has been the case for an Australian national initiative, MyHealthRecord (MyHR), which aimed to store its citizens' health summary data and make it accessible wherever and whenever. It is one of the major foci in Australia's national digital health strategy (ADHA, 2017).

The general practice sector is one of the vital contributors of information in MyHR for patient health summaries (Pearce and Bainbridge 2014). A gateway to the health system, general practitioners (GPs) are the most consulted health services (ABS, 2018; Willis et al. 2014) and considered culturally complex for any change management (Willis et al. 2014). There has been incremental increase in ICT maturity from nil to 100% during 1995–2005 (Pearce 2013), and DH readiness in these organisations since 1999 using practice incentive payments (PIP) (NEHTA, Budde 2015; 2016). However, out of 85% of signed-up general practice organisations (GPOs) prompted by the PIP, only 16% are participating in MyHR (DOH, 2015), indicating a problem in adoption. In July 2016, PIP criteria was revised to stimulate meaningful use of the MyHR (DOH, 2018; RACGP, 2016). This initiated a change in GPO's patient workflow to integrate MyHR and raised concerns about it being time-consuming (Pearce and Bainbridge 2014; Pearce et al. 2014). Though it is recognised that MyHR use must have positive workflow effects to drive benefit (NEHTA, 2016; Pearce et al. 2014), a systematic literature review demonstrated limited knowledge to understand the impacts of this disruption (Raza Khan et al. 2018a). Hence, defining this as a research problem, it became the subject of a doctoral research project in 2017, and published findings of interview/observations (Raza Khan et al. 2019a) and survey (Raza Khan et al. 2018b) results. In this paper, we bring recommendations for GPOs and system operator to balance such digital disruption, so the intended potential benefits could be achieved with sustainable adoption.

2 METHOD

In this qualitative case study research (Eisenhardt 1989; Yin 2014), ten different GPOs (Case Study CS1-10) around Victoria were engaged (Jan-Dec 2017), and data was collected from their MyHR implementers, general practitioners (GP), other staff and patients. Two cases were first studied in detail using one-to-one, structured and face-to-face interviews with MyHR implementers. Twenty observations of two GPs interacting with MyHR during patient consultation were made. Intra-case analysis was conducted by comparing the results of these data collection activities and lessons learnt were used to develop further questions for the other 8 cases. These questions were then asked in face-to-face, one-to-one and semi-structured interviews with the GPs, and findings were published in (Raza Khan et al. 2019a). A survey was also conducted (Jun–Dec 2017) through different platforms to reach as many general practice users (staff working and patients visiting) as possible, receiving 230 valid responses (Raza Khan et al. 2018b). The results of these activities were triangulated with literature to understand adoption status and users' perspectives (Raza Khan et al. 2019b), resulting in recommendations for MyHR implementation (presented below).

3 RESULTS AND DISCUSSION

We believe integration of MyHR in GPOs is the next level of general practice computerisation. Patient records have moved from paper-based to clinical information system (CIS), and now to a central national repository. The findings of this study demonstrated that GPOs were in various stages of MyHR adoption (none, low, limited and regular) and change management seemed 'immature', calling for action to achieve adoption sustainability (Raza Khan et al. 2019b). After GP computerisation (Pearce 2013), MyHR brought additional changes in patient workflow: processes and financials. We suggest referring and examining the lessons learnt from this GP computerisation phase. Although there is more complexity in MyHR implementation, the learnings would offer insight into how this sector adapts to change.

According to Pearce (2013), rapid adoption of computers was credited to three elements – a need, incentives and support – in an 'adoption triangle'. Along with this adoption triangle, it was realised that DH would impact patient workflow, hence a focus should be maintained on how to improve patient care and minimise disruption in patient workflow. This viewpoint is adapted as the recommendations align with the contextualised adoption triangle (Figure 1), i.e. MyHR adoption in GPOs can potentially be

improved if needs are recognised, adequate support structures are in place, and a better incentive scheme is applied. These components are further explained below:

Figure 1: Sustainable MyHR@GP Adoption Triangle

3.1 Identify 'Needs'

Pearce (2013) argued informatics should start with a "problem that needs solving" rather than a "technology that needs to be applied". Research indicates users adopt DH when a 'need' is identified, as long as it is accessible, user-friendly and there are opportunities to relate, connect and socialise to enable learning together (Raza Khan et al. 2016).

This research found that the GPO participants' perception of MyHR implementation was driven by the need to satisfy PIP funding criteria and avoid any financial implications. Importantly, improved clinical care did not feature highly. Other than one of the participants (CS1), MyHR implementation was an unstructured and ad hoc process, with minimal formal attention to process, impacts or adoption sustainability. As one GP participant said, "It's only 25 SHS uploads per quarter. It is so easy to do it – no need for any documentation…" i.e., the effort required in satisfying PIP funding criteria did not justify extra time required for any requirements of change management. This may be true for most of the GPOs, given they are characterised as small-to-medium size, busy, private, complex, services-based organisations.

We recommend GPOs and policy makers initiating a cultural shift to promote a broader view about the significance of the MyHR system, as one that facilitates continuity of care by sharing health records. Like CS1, GPOs should invest time in the formal change management for MyHR integration based on their environment dynamics and processes. There should be an ongoing process to evaluate and monitor the change for sustainability.

Other needs identified in this research are related to required consultation, education and reviews, and listed below (Table 1) for meso and macro level:

Level	Needs identified with Challenges
Macro (PHN, DoH and ADHA)	**Consultation** 1. Revising patient workflow and related changes to minimise disruptions 2. Mandate a policy for minimal GP interaction with MyHR 3. Discuss with GPs about incentives 4. Internet speed and MyHR connectivity resolution 5. Risk management strategies or predicting or forecasting potential risks, harm and vulnerabilities related to system security with protection against viruses and hacking 6. Information privacy policies and strict compliance with role-based password settings 7. Medical indemnity insurance requirements for staff 8. The role of health IT/health informatics in the GPO environment to assist in change management, research and policy implementation, focusing on system sustainability **Education and Training** 9. Ongoing MyHR training framework 10. More interaction and use of MyHR to populate records 11. Meaningful information in MyHR records with an indicator to show current record 12. More education about the significance of meaningful current information to healthcare professionals

Level	Needs identified with Challenges
	13. Online training/webinars for regional/remote users on an ongoing basis 14. Need for a healthcare provider education program to emphasise patient record keeping and significance of their input into CIS as well as MyHR
	Develop/review 15. A way to monitor quality of information uploads to MyHR 16. Consumer portal usability to address age and limited technological skills in patients 17. Consistency in MyHR labelling conventions in CIS 18. MyHR support centre service to own users' issues end-to-end 19. Benefits realisation strategy to capture real-life benefits stories 20. Users' engagement approach suggested in Figure 2
Meso (GPO)	**Change management** 1. Close management support in working with GPs 2. Revise patient workflow to adjust change and minimise disruptions 3. Mandate a policy on minimal GP interaction with MyHR 4. Internet speed and MyHR connectivity resolution 5. Develop risk management strategies for potential risks, harm and vulnerabilities 6. System security arrangements with protection against viruses and hacking 7. Address information privacy policies and strict compliance with role-based password settings 8. Ensure medical indemnity insurances for engaged staff 9. Define a way to address complicated CIS patient records to assist GPs 10. Consistency in MyHR labelling conventions 11. Facilitate the users' engagement approach suggested in Figure 2 12. Marketing and promotion to consumers regularly 13. Recognise the role of health IT/health informatics in GPO environment to assist in change management, research and policy implementation
	Education and Training 14. Educate staff about security and privacy objectives 15. Educate affected role with changes and train them 16. Educate GPs about incentives matters 17. Develop ongoing training arrangement 18. Facilitate online trainings/webinars for regional/remote users on an ongoing basis 19. HCP education program to emphasise patient record keeping and significance of their input into CIS as well as MyHR
Micro	None specified

Table 1: Needs identified in THIS research for MyHR@GPO adoption

3.2 Enhance 'Support'

This refers to MyHR implementation support given to GPOs by the service providers (including call centre, PHN and Medicare) and collaboration within the GPO to guide staff through the required changes.

Pearce (2013) stated that GP computerisation was encouraged with a thorough program by Division of general practice (DGP)[1] involving education and consultation based on individual GPO requirements. They were shown how computers can be best used in their settings, i.e., close and personalised consultation based on their needs. This research also noted that GPOs were seeking similar support, asking for more and more information.

We believe that although introducing CIS was a change within the organisations, the integration of MyHR – a national system – in GPOs brings further challenges and requires more user engagement and support. Re-using lessons learnt from GP computerisation, this investigation brings three recommendations around user engagement, GP engagement and a change-management approach.

3.2.1 User Engagement Approach

A user engagement approach (Figure 2) was developed and proposed with the help of participants (Raza Khan et al. 2019a). It gives an overall perspective of engaging the MyHR system operator, GPO staff and patient users, developed during the interviews to address improvements in MyHR system adoption.

[1] GP support body prior to Primary Health Network (PHN)/Medicare Local (ML)

This approach emphasises that practice management and the system operator are responsible for facilitating GPs and educating the community. With GPOs, the central responsibility is assigned towards practice management to coordinate with the MyHR system operator and support GPs with internal policies/process. It draws attention towards patient drive to engage GPs while they are well-supported. More patient requests will drive GP interest to learn and use the system. The more GPs feel familiar with the system and supported by the practice, the better the chances that they will feel encouraged to use it (Raza Khan et al. 2019a), and the GPO could potentially be able to achieve sustainable MyHR adoption.

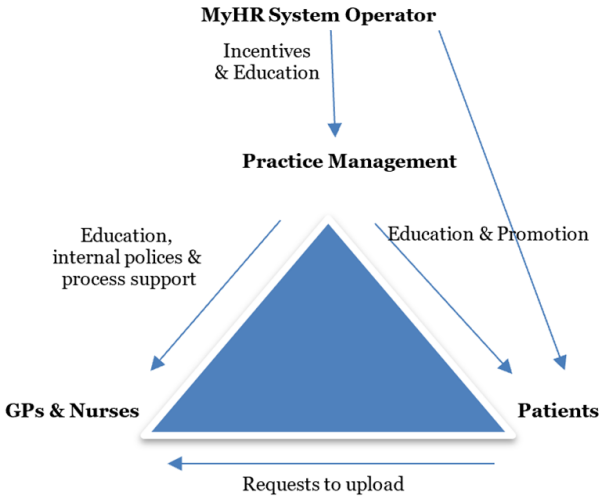

Figure 2: MyHR Users Engagement Approach (Raza Khan et al. 2019a)

3.2.2 General Practice Engagement

Dealing with and engaging GPOs, named as General Practice Engagement (GPE), requires a strategic approach. It is about working with GPOs to implement not just MyHR, but broadly speaking any DH solutions in future. Past lessons show that effective GPE requires communication at different levels (Bensberg et al. 2007) and evidence-based practice (Pearce et al. 2012).

We recommend that PHNs should provide broad and specific consultation on a regular basis to GPs as well as practice staff, customised according to their roles and needs. They need to consider a whole-of-practice approach, i.e., being mindful of differences in the mindsets of practice staff/GPs and the impact of broad/specific communication, as PM and nurses are becoming more of a servicing channel to reach GPs. The argument is that it takes more than a practice visit. Instead, it involves regular informing, consulting, collaborating and empowering GPOs to change practices and policies (Bensberg et al. 2007).

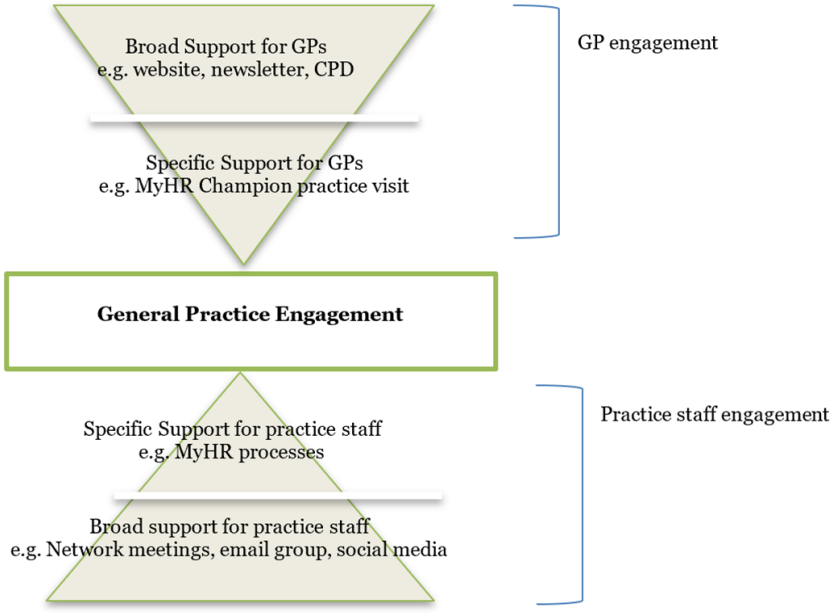

Figure 3: Whole-of-practice GPE Approach (Bensberg et al. 2007), contextualised to MyHR@GP adoption

GPE framework (Pearce et al. 2012) suggest a practical and proven roadmap to deal with GPOs, using an evidence-based approach (Figure 4). It commences with GPO need analysis and an action plan, but first collects pre-change data to set the baseline. Proposed change strategies are piloted prior to full implementation and training. Post-change data is compared against pre-change data. Evaluation is conducted to produce evidence of the impact following a survey to gather GPO feedback. This is a step-by-step guide to make a difference and then produce evidence of benefits, which seems very relevant in this case of MyHR implementation changes in GPOs.

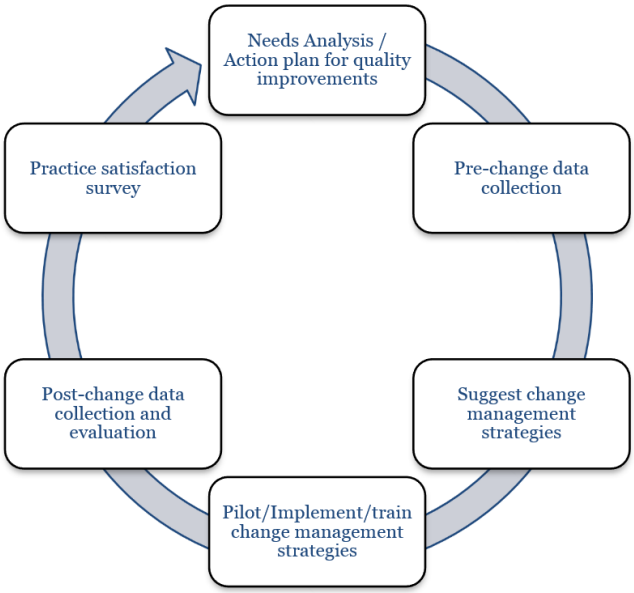

Figure 4: GPE Framework (Pearce et al. 2012)

3.2.3 GPO Change Management Approach

Understanding GPO settings from this research, we also agree that change is seen as a challenge in these GPOs (Willis et al. 2014) and that is due to a lack of a formal change-management approach. We recommend GPOs understand that change is ongoing in this emergent technological era, hence acknowledge its handling in a structured manner to improve their service and patient care benefiting from DH.

Many change-management approaches, such as Lewin's basic stages of change, ADKAR, Force Field analysis, the speed of trust, change curve, change leaders' roadmap, have been suggested (Hovenga 2010; Rowlands 2017). Our recommendation is based on the viewpoints of taking an approach that focuses on systematic change in improving patient care and evidence-based practice, hence suggests the implementation of the change model (ICM) by (Grol et al. 2013), which is systematic and aligned well with the above proposed GPE approach. It has an evidence-based focus through analysing current performance and conducting diagnostic analysis (involving segmentation of target groups, multiple intervention planning, and implementation of stages) and leads towards sustainable change.

With its five phases and a seven-step process (Figure 5), ICM can facilitate the implementation of change in healthcare settings, whether those related to scientific reviews, clinical guidelines, best practices or innovations that result in better patient care (Grol et al. 2013). Briefing about the process steps, phases and associated relevance to this research is given below (Table 3):

a) 1. **Development of change proposal.** Commencing with the planning and organisation of required change, a 'change proposal' is formulated, justifying reasons for and credibility of change. We believe findings of this research about proposed patient workflow changes (Raza Khan et al. 2019a) and ideas about a user engagement approach (Figure 2) could feed into a change proposal (step 1 in ICM) for GPOs to integrate MyHR.

b) 2. **Analysis of actual performance and concrete targets** for change definition is the next step, if the change proposal is to move forward. A detailed assessment of the actual practice performance is needed to understand and create a sense of urgency in the target audience. It also involves defining performance indicators and reliable methods of collecting performance data for later evaluation.

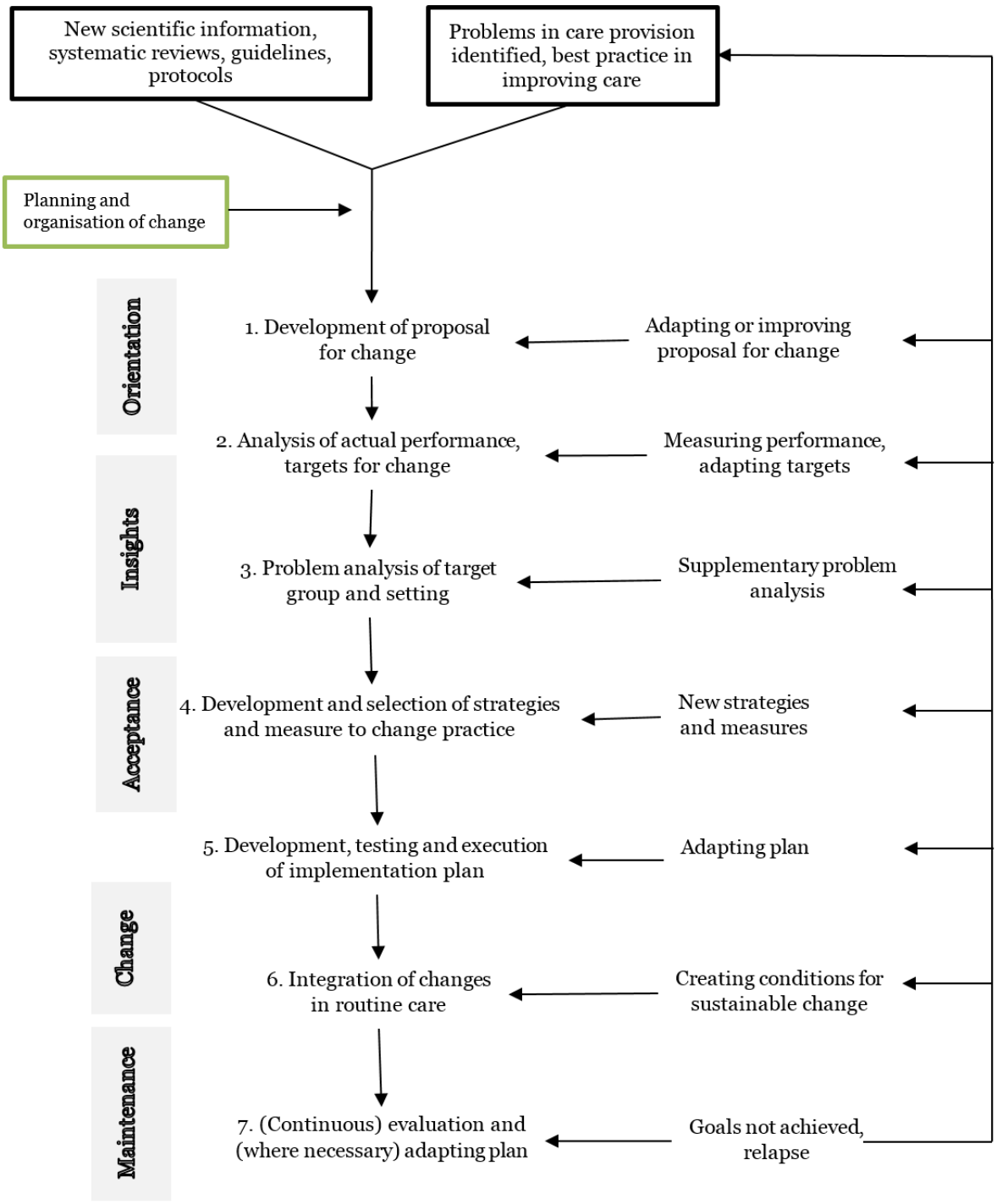

Figure 5: Implementation of Change Model (Grol et al. 2013)

Target Segments	Definition and examples from this research
Innovators	Individuals keen to learn, e.g., PM in CS1
Early adopters	Active group with good status among the group and point of reference, e.g., GP participants in CS8 & 10
Early majority	Group that is not the leader but work closely with early adopters e.g., GP participants in C5, 6 & 7
Late majority	Individuals that are sceptical of change, influenced by colleague pressure e.g., GP participants in CS1, 2, 4 & 7
Laggards	Conservative group with resistance to change e.g., GP participants in CS10

Table 2: Target segments of MyHR@GPO adoption

Phases	Barriers and facilitators	Improvement strategies	Indicator to evaluate impact
1. Orientation Aware of the innovation interest and involvement	• Limited learning opportunities for GPO staff • Lack of system awareness among GPs and patients • Lack of GPs interest and involvement • Negative media coverage • Top management involved • Funding associated with system use • PMs and nurse's Health IT skillsets and motivation	• MyHR champions visits and follow-up for GPE (through PHN) • Keep management involved and informed • Training of PM/DH staff • GPs' ongoing education program with CPD points • GPO practice staff training program • Patient awareness campaign	• GPE evidences
2. Insight Understanding insights into own routine	• Ambiguous about the increase in GP/patient consultation time • Unsure about the data quality in their CIS • Uncertain about GPs' familiarity with MyHR	• Analysis of MyHR integration in the GPO patient workflow • CIS data quality review clean-up • Medical indemnity insurance review	• MyHR policy considerate of GPs schedule and CIS data quality • GP education about MyHR policy
3. Acceptance Positive attitude, motivation to change or decision to change	• GPs view it as time consuming and complex • GPs may not be motivated toward MyHR • Top management made decisions to adopt it with one or few GPs volunteering to use it	• MyHR policy embedded with existing policies, like care plans, flu vaccination, etc. • Nurses' engagement in MyHR policy • MyHR policy for 'patient continuity of care' • Seek innovators and early adopters among staff • Seek flexible ways for GPs/nurses to update MyHR without patients' presence, but with consent.	• Communicate and present this research work to demonstrate time consumption
4. Change Actual adoption in practice, confirmation of benefit or value of change	• Patient workflow/policy revised to embed the change, but actual adoption is slow and limited to minimal use required.	• Mandating GP minimal interaction over a period or with certain existing policies • Professional roles review • Address GP incentives aspects • Better health together campaign for awareness	• Data audit to check policy compliance • Every GP has the MyHR trigger checklist accessible
5. Maintenance Integration of new practice into routines, embedding of new practice in the organisation	• Integration of the MyHR policy in infancy	• Arrange GPs/nurses survey/feedback over a time period regularly • Keep track of experiences with MyHR, to develop potential benefits showcase	• Every GP/nurse involved to submit feedback • Showcase benefits/ experiences in team meeting

Table 3: Phases in a process of change (Grol et al. 2013) and MyHR@GPO Recommendations from this research

c) 3. **Problem analysis of target group and setting.** This is about analysing aims, individuals involved, and processes/settings of the change implementation. Segments within the target group/individuals are identified as innovator, early adopter, early majority, late majority and laggards (Table 2). Stages of changes are defined with barriers and facilitators to changing practice. A source of input is offered in (Table 3) considering this research.

d) 4. **Development and selection of strategies and measures to change practice**. Based on the understandings developed in the previous step, a cost-effective mix of measures and improvement strategies are developed for dissemination and implementation of change. Various plans, policies and interventions are discussed in (Grol et al. 2013). This research also developed some suggestions based on users' perspectives and views, listed in Table 1 and 2.

e) 5. **Development, testing and execution of implementation plan.** This is about implementing the plan based on the change proposal and analysis of previous steps. Many strategies are suggested by (Grol et al. 2013) that should be considered when developing this plan. We believe essential learnings from this research context include piloting change on a small scale, involving the target audience, planning activities over time, distributing tasks/responsibilities, building on existing structure/channel/resources and, most importantly, attending to organisational culture.

f) 6. **Integration of changes** in routine patient care is crucial to guarantee the sustainability of an improvement. When the new routine is no longer actively supported, the chances of relapse increases (Grol et al. 2013). It was identified as a challenge in this research, as the driving factors (PIP funding criteria) of MyHR adoption require a cultural shift. Many CS participants were not at a point of including MyHR part of their regular patient care. Hence, this research emphasis GPOs pay close attention to this aspect/step of change management.

g) 7. **Evaluation and adaption plan.** The final step in innovation implementation is the evaluation of results based on the performance indicators set earlier (Table 3) to understand its impact and value. This is vital to realise the return of the effort/energy applied on the change, which determine the way forward for that change. Further actions may be required, hence, either continuing the processing of ongoing improvements or stopping the change (Grol et al. 2013). At the moment, the only evaluation indicator set in the GPOs was satisfying the funding criteria audit, resulting in limited adoption of change.

3.3 Review 'Incentives'

The PIP policy revision 2016 associated MyHR with meaningful usage (DOH2018; Koh 2016; RACGP2016). MyHR statistics show an increase in use of the system as the SHS uploads reached 6,372,433 in Jul 2018, compared to 893,530 in Jun 2017 (Raza Khan 2019). This research also exhibited the impacts on GPOs, with changes in roles, updates in the patient care process, negative financial outcomes (as in CS2), and improved patient care (in two instances). It is clear that the 2016 policy revision initiated system adoption in these organisations (Raza Khan et al. 2019a), however, with low criteria of 0.5% SWPE for funding, has resulted in limited adoption, with ad hoc change management (Raza Khan et al. 2019b).

Participants in this case study noted embedding of MyHR system usage with their existing patient care policies, e.g., care plans, pregnancy, chronic conditions, flu vaccination, etc. (labelled as MyHR triggers), as practical and effective for its integration in their routines. More interaction with the system by GPs and patients is mostly believed to be the key, hence we suggest reviewing the incentive criteria with an increased percentage of SWPE. This should encourage the practice management to pay more attention to change management, as frequent interaction would be required. At the same time, research recommends linking GP and nurse training in MyHR with subsequent system usage and PIP payments, as initially proposed in (DOH, 2015). Mandated annual training and more interaction with the system would increase the familiarity and improve the intention of use/use behaviour. At the same time, it is also essential to audit the shared health records quality in MyHR to develop its credibility.

4 CONCLUSION

Although it is realised widely that DH can play a vital role in making this world better place with improved patient care in general practice, more attention is needed to detail of digital disruption and transformation. We recommend using lessons learnt in GP computerisation, a proven General Practice Engagement approach and change management framework, with useful insights that could be used in dealings for MyHR and similar DH implementations across this sector. It could also provide support in MyHR studies that are required for benefits realisations. More benefits transparency would nourish better user engagement. Although the study supports mass participation of consumers as well as GPOs, it highlights that caution needs to be taken in organisational impacts in order to sustain adoption.

In future, findings of this research project can be taken further to implement suggested patient workflow changes using the frameworks and model outlined in this paper. This would enable evaluation of the

research recommendations, building best practices/guidelines for MyHR adoption in general practice sector and contribution to the knowledge base of digital transformation in this environment.

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