Exploration of Queensland Health allied health innovations in the context of the COVID-19 pandemic

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for:

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Contents

Executive summary

The Queensland Health Allied Health Professions' Office of Queensland (AHPOQ) and Directors of Allied Health have sought to foster innovation by allied health professionals for many years, however system wide and sustainable change in many areas of allied health practice remains elusive. This may be due to the complexity of such change and the multiple dimensions (including structural, systemic, workforce, cultural and personal) involved in implementing innovative practices.

The COVID-19 pandemic and subsequent health service actions necessitated a number of innovative service responses from all health professionals, including allied health professionals. AHPOQ recognised the potential to document and further investigate these innovative responses and established an Allied Health COVID-19 Innovation Register as a repository for these new and innovative practice changes. In 2021, AHPOQ commissioned the current qualitative evaluation of five examples of innovative practices documented in the Innovation Register, namely:

- Telehealth: The use of communication technologies to conduct or supplement allied health services.
- Hospital in the Home: The provision of health care and monitoring in the patient's home rather than in an inpatient setting.
- Skill sharing: The sharing of knowledge, skills and responsibilities across professional boundaries in assessment, diagnosis, planning and/or intervention.
- Student-led telehealth: The use of advanced health professional students under supervision to deliver appropriate allied health services using remote technologies.
- Workforce planning: Adopting flexible workforce strategies to enable allied health services to be delivered from and within different settings.

Online interviews were conducted with 28 staff to explore key factors, enablers, barriers and outcomes of the innovative practice examples. Based on thematic analysis of interviews and notes, a number of key issues were identified. Fundamentally, it was noted that **the unique circumstances of the COVID-19 pandemic were a central driver for innovation**. These circumstances led to a defined set of practices and priorities which facilitated the innovations at that time, but which also have relevance to innovation in allied health practice more broadly. From a practitioner perspective, the change process was characterised by a strong focus on **working together towards shared goals**, adopting **more willing and receptive attitudes**, and implementing more **adaptive and iterative approaches to change**. From a management perspective, the approach to enabling change involved **devolved authority and shared leadership** as well as **trusting the capability and actions of staff**. The evaluation found that innovative practices had a basis in **evidence and data**, and emerged out of **existing experience, especially when it aligned with current plans and aspirations**. They emerged where **communication, teamwork and service integration** were strong, where **systems and processes** were conducive, and when **adequate systems and infrastructure** were available or introduced to support and integrate the innovations.

These findings were then compared with key principles identified in the complexity / innovation / human factors literature. Strong alignment between the findings and principles evident in relevant innovation literature reinforced their potential broader relevance to future innovation efforts.

In order to assist with translating the identified enablers into everyday practice, the implications of the findings are drawn together in a number of recommendations which can be realised through an explicit

process established by AHPOQ and Directors of Allied Health. Key strategies are also highlighted to enhance the process of implementation.

Finally, in recognition that telehealth was, to some extent, incorporated in each of the five examples of innovative practices, an additional, more detailed outline of insights gained regarding implementing telehealth is provided in an accompanying document.

1. Introduction

Innovation and positive change in health services can be difficult to achieve. Sustainable changes typically have multiple dimensions including structural, systemic, workforce and cultural factors. In allied health roles and services, attempts at shifts towards more innovative, value-based approaches (including expanded scope of practice) have had limited traction. This is the case despite significant investment in two successive statewide strategies (*Ministerial Taskforce on health practitioner expanded scope of practice* and the *Allied Health Expanded Scope Strategy 2016-2021*), as well as ongoing efforts to pilot and implement new allied health models of care. Models implemented successfully in one jurisdiction have been difficult to implement at scale despite organisational and management-level support and several practical pilot projects.

Interestingly, shifts precipitated by the service response to the COVID-19 pandemic have resulted in some substantial changes and innovations in numerous health service settings. Some of these changes were led by allied health services, and some have been imposed on the services and staff, requiring innovative responses. The need to rapidly adjust to different settings, demands and constraints, has required some services to adopt different scopes of practice, some to use different service delivery methods and principles, and many to change their models of service delivery. In this shift, some longstanding barriers were able to be quickly removed and other challenges were addressed. This enabled Queensland Health allied health services to adopt a number of new and innovative models and service changes to ensure the continued delivery of quality healthcare.

In recognition of this opportunity, the Allied Health Professions' Office of Queensland (AHPOQ) developed an Allied Health COVID-19 Innovation Register in April 2020, as a repository for these new and innovative practice changes. Having catalogued this information, AHPOQ commissioned this project to understand:

- the innovations in greater detail
- the enablers and barriers to the changes
- the outcomes and impacts of the changes for different stakeholders and the service system
- the factors influencing the sustainability of the changes

2. Methods

2.1. Participants

This qualitative exploration of practice innovations implemented during the COVID-19 pandemic involved semi-structured conversations with 28 professionals. For 19 of the participants, the conversations occurred as individual interviews, a further nine participants contributed through focus groups.

Of the 28 participants, 19 were allied health professionals, six were nurses and one was an administrative officer/project officer.

The allied health professions represented across the cohort included dietetics, exercise physiology, occupational therapy, pharmacy, physiotherapy, and speech pathology from different service settings and with varying levels of experience. Participants included recent graduates, experienced clinicians, senior professionals and team leaders, a research coordinator, discipline directors and assistant directors, and a director of allied health.

Twenty-six participants were employees of different Hospital and Health Services, including Darling Downs, Gold Coast, Metro North, Metro South and Cairns and Hinterland, and two were employees of Southern Queensland Rural Health, a University Department of Rural Health.

2.2. Questions

Participants were provided with background information and the interview questions ahead of the interview (Appendix 1). The main topics the interviews sought to explore included:

- The issue/s the innovation was seeking to address and the practice changes that took place
- Factors in the context of the COVID-19 pandemic that enabled the changes to occur
- Differences between the new approach and past practice
- Implications for different stakeholders
- Key issues that informed decisions, the decision-making process and who the decision makers were
- Support for the decisions, from different stakeholders
- New strategies that needed to be developed to implement the changes
- Processes used to monitor and adapt the model over time
- Outcomes arising from the changes for different stakeholders, services and systems
- Lessons learnt and assumptions that were challenged and confirmed
- Collaborations and partnerships that were established or strengthened
- The likelihood of the practice changes continuing and the reasons for the outcome
- Factors that will influence continuity of the changes - decision makers and processes
- The requirements to maintain positive changes into the future
- Details that could have been different about the nature of the change and the change process

2.3. Process

In April 2020, the Allied Health Professions Office of Queensland (AHPOQ) established an Allied Health COVID-19 Innovation Register. This was used to document new and innovative practice models and service changes that Queensland Health allied health professionals had implemented or contributed to, in order to ensure the continued delivery of quality health care during the COVID-19 pandemic.

AHPOQ identified five different categories of service change captured in the Innovation Register, namely:

- telehealth
- Hospital in the Home
- skill sharing
- student-led telehealth
- workforce planning

Having identified these five categories, AHPOQ approached allied health professionals from different locations, inviting them to contribute to the project by participating in an interview. Two services were approached regarding their experience of expanding hospital in the home (HITH) services during the COVID-

19 pandemic (7 participants), two services were approached to discuss workforce planning (8 participants), one service was approached to discuss skill sharing (3 participants), and one service was approached about the student-led telehealth clinic (2 participants). Whilst two services were specifically approached in relation to use of telehealth (8 participants), all of the services that participated in the evaluation had incorporated some aspect of telehealth.

The interviews and focus groups were conducted using Zoom video conferencing. Each interview was approximately 45 minutes in length and focus groups were 1 hour and 15 minutes. Two evaluators participated in each interview and focus group. One consultant facilitated the discussion and the second scribed in real time. The second consultant also asked clarifying and supplementary questions at relevant points. The focus groups were video- and audio-recorded as a reference to confirm the notes taken during the discussions.

2.4. Analysis

Notes taken during the focus groups and interviews were annotated and expanded after each session. The notes were thematically coded using categories drawn from the evaluation questions and from the information provided by the respondents themselves. This ensured that the evaluation analysis accommodated the questions at hand, but also integrated the relevant issues and comments made by participants, which may not have been anticipated.

On completion of all data collection and coding, the evaluators met and collaboratively identified key themes based on the frequency and prominence of points made within and across stakeholder groups. Thematic analysis was undertaken to inform the evaluation report and recommendations.

After completion of this preliminary analysis, the evaluators met with Dr Satyan Chari (Lead - Human Factors and Systems Safety, Queensland Health), to discuss relevant conceptual frameworks arising from the human factors / complexity / diffusion of innovations literature. They considered the potential utility of such frameworks, to be used as a “lens” to inform the interpretation and application of findings in this project.

In light of the nature of the innovations, and the organisational context, it was agreed that the most suitable (and well established) framework was that developed by Trisha Greenhalgh and colleagues (2004). It was agreed that the framework should not be used as the starting point to interpret the findings, since the evaluation sought to understand each initiative from the perspective of those directly involved. However, the framework was applied to the analysed findings as a form of verification or confirmation. In this way the human factors / complexity lens served to ensure optimal relevance and inform potential strategies to facilitate the translation of key innovations into practice.

3. Innovation summaries

3.1. Skill sharing

A community-based multidisciplinary Transition Care Program sought to ensure service continuity whilst minimising the risk of COVID-19 transmissions, by reducing the number of professionals interacting with each client. Prior to COVID-19, the service had a strong transdisciplinary model, with high levels of skill sharing which facilitated this shift.

The team continued delivering face-to-face services where required, depending on the nature of the clinical need or where telehealth was not an option. Although all team members continued some face-to-face service delivery, it was mostly nursing and physiotherapy services which maintained this approach. At each face-to-face visit, the visiting professional would address as many of the client's needs as possible. For example, when providing wound care, a nurse would also assess and respond to functional and mobility needs. If necessary, the visiting professional could include other professionals in real-time, using Microsoft Teams. Team members in the office could then provide advice, visualise the home environment to inform equipment needs, or decide to prioritise a visit. As client needs or goals changed, one profession might be swapped out for another, whilst still delivering multidisciplinary support.

Since the Transition Care Program was making fewer visits to each client, team members also strengthened their links with other home care support services that were visiting clients more frequently. For each client, these services were informed of issues to look out for, so they could alert the Transition Care Program of specific needs that might arise and require a response before the next scheduled contact.

Historically, the Transition Care Program had only made minimal use of telehealth. During the COVID-19 lock down, telehealth was increasingly used to support service access generally as well as to enhance skill sharing. The team identified clients who had access to the required technology, noted whether they were interested to use telehealth services, and if they needed some support or assistance from the team (or others) to learn to use the technology.

Service delivery through this time was enabled by team check-ins every day, discussions to maintain understanding of why certain sacrifices needed to be made, sharing good news stories about clients, and daily team "scrums" / "huddles" to plan how the needs of individual clients would be met. Whilst support from managers immediately above the team was reported to be excellent, the team felt that the full extent of innovations that could have been possible were not well supported by Executive.

Through the period of the COVID-19 lock down, the Transition Care Program reported wide ranging positive outcomes, including:

- higher than usual occupancy and service delivery
- all patients continuing to receive a service and addressing their goals
- reduced hospital re-presentations
- clients were kept at home safely
- no adverse events.

Looking to the future, the Transition Care Program indicated that they intend to:

- strengthen the team's existing skill sharing approach, including increasing transdisciplinary training
- change the team structure to establish "micro-multidisciplinary teams" and de-emphasise discipline-specific team structures
- continue using digital technology to support clinical service delivery.

3.2. Workforce planning

All of the services that contributed to the project incorporated some change to workforce arrangements to respond to the COVID-19 pandemic. Each of these changes contributed some direct or indirect insights for workforce change, which have relevance beyond the circumstances of a pandemic.

Protecting the workforce by creating discrete teams: Two imperatives served as an impetus for some services to limit the amount of physical contact between team members through this time. The first was the need to reduce the number of staff within the available onsite space to meet physical distancing requirements. The second imperative was the need to create more than one sub-team that included the full complement of skills and experience necessary to sustain effective service delivery in the event that another sub-team would be required to quarantine or isolate.

The drivers for these changes in team structure were unique to the circumstances of a pandemic. However, grouping staff in a way that brings the breadth of roles and functions together (rather than grouping staff based on common roles), had broader relevance and strengthened relationships within teams and teamwork.

In one example where discrete sub-teams were created, the new team structure involved relocation of professionals to be embedded on the wards. Many positive outcomes were reported including more timely clinical interventions, improved multidisciplinary teamwork, increased education of other professionals, reduced clinical risk, improved patient education, and enhanced discharge planning in collaboration with community services.

Working from home: A range of factors resulted in many staff working from home for some or all of the time during the peak of the pandemic. Examples of contributing factors included a) lack of space to enable physical distancing within health services, b) individual staff having health vulnerabilities, and c) staff living over the New South Wales border. (Interestingly, many people spoke about the contrast to earlier unsuccessful efforts to gain approval to work from home and to access adequate information technology to do so successfully).

Benefits were reported for both the workplace and employees including significantly reduced sick leave and carers leave, greater life flexibility for employees, and a sense of safety from the risks of the pandemic. However, some challenges were also experienced, for example employees missed the incidental professional support of colleagues, a few who were expected to work from home full-time for an extended period found this difficult, some employees continued working rather than taking sick leave when this might have been appropriate, and not all individuals' home circumstances were conducive to working from home.

In contrast to the relaxed conditions for gaining access to work from home during the COVID-19 lockdown, one participant explained that the scrutiny of the working from home arrangements required by their workplace, and the perceived lack of trust would be enough to turn people away from this option. Unfortunately, despite the benefits identified for working from home, a number of participants reported that the arrangements made possible during COVID-19 were rapidly wound back.

3.3. Telehealth

Telehealth, in varying levels of sophistication, featured in each of the interviews and focus groups.

When a couple of services spoke of using 'telehealth' it became apparent that they were simply referring to providing services by telephone. These services indicated they had not used video-teleconferencing previously and did not believe that their older clients would have the technology, interest or skills to use videoconferencing. One service spoke about having conducted a brief patient survey, which revealed a reluctance to use video-teleconferencing. Even so, the services that took this approach explained that service delivery by phone enabled continuity of services through this time which would not have been possible otherwise.

In contrast, another service with a pre-existing telehealth model of service delivery, rapidly progressed plans to expand use of telehealth across their service, including implementing a multidisciplinary telehealth model incorporating allied health and medical input.

Numerous services that had never used videoconferencing made a quick transition. Many explained their surprise at how readily some of their older clients took up the idea of using videoconferencing and how successful the approach had been.

Benefits of videoconferencing were identified across different service contexts, including protection of clients and staff from exposure to COVID-19; continuity of service access; reduced loss to follow up; fewer missed appointments; more timely commencement of services, in line with clinical protocols; access to services at home or closer to home; opportunities to provide services with a better perspective on a client's living environment and the resources around them; and improved opportunities to engage with other professionals involved with patients when providing video-teleconferencing into another local health service.

Despite the rapid and extensive take up of videoconferencing, a range of challenges were also experienced. Examples of these included some clients not having access to the necessary technology or skills; lack of adequate hardware within health services; lack of systems to routinely record details about client capability to engage by videoconferencing (including access to technology, skills to use the technology or support to do so); lack of staff experience and skills using videoconferencing; and staff concerns about risks to clients arising from delivering services remotely.

One issue where there was a range of perspectives was the question of professional and client autonomy regarding the decision to use telehealth clinical care. While some advocates of telehealth indicated that telehealth should be available and offered to every client where it is clinically appropriate (regardless of their proximity to the service provider), they also noted that many professionals believe the decision to use videoconferencing should be left in the hands of each individual professional.

Most services reported that as restrictions on face-to-face service delivery have eased, use of videoconferencing is still higher than it was in the past. Even so, it has diminished very significantly. This is the case despite the many benefits reported.

3.4. Hospital in the home

Participants from the two Hospital in the Home (HITH) services that contributed to the project explained that when the COVID-19 pandemic began there was an immediate priority to free up hospital beds for potential COVID-19 patients and to protect the health of existing hospital patients and patients presenting to the Emergency Department. In one HITH service, the introduction of allied health professionals to the model of care occurred just before the COVID-19 pandemic commenced and in the other HITH service the roles commenced as the pandemic commenced.

The change in circumstances arising from the COVID-19 pandemic meant that the acuity of patients needing care from the HITH services was higher than in the past. This resulted in the need for more frequent monitoring, whilst simultaneously reducing the number of patient contacts.

One of the HITH services noted that past research demonstrating outcomes which were as good or better for people cared for through HITH gave professionals confidence that the approach could be successful in the context of the COVID-19 pandemic. This service also noted that the capacity to respond to the demands of the situation was enabled through an addendum to the statewide HITH guidelines, which allowed

telehealth consultations in lieu of daily face-to-face consultations. This change was in place from the beginning of March 2020.

From October 2020, one of the services was funded to implement virtual health monitoring through access to Bluetooth-enabled equipment for monitoring blood pressure, pulse, oxygen, glucose, weight etc. at programmed intervals with data going straight to the HITH base via an app on the patient's phone or on an iPad provided by HITH. Using the more advanced technology supported the confidence of patients and professionals alike, it enabled higher acuity patients to stay at home, and supported earlier identification of patient deterioration. The monitoring technology was also supplemented by a brief questionnaire to patients once or twice a day for them to provide feedback about any issues relevant to their circumstances.

In both services, allied health roles were identified as key to the success of the HITH service. One service reported having a small core team of allied health staff, which was expanded to respond to the COVID-19 pandemic. Through this time, they had the freedom to continually adjust their staff mix as they learnt what was needed to respond to patient need. For example, at the time of interviewing they reported the intention to convert a proportion of designated medical funding to allied health positions for the remaining months of the additional temporary funding. They also identified the need for resources to be prioritised, so that allied health recommendations could be implemented with patients within the limited duration of HITH services. To achieve this, the team was exploring options to engage allied health assistants to support the team.

One of the two services explained that although a lot of change occurred in how services were provided during this time, existing service governance and risk management systems, as well as strategies for measuring and monitoring outcomes were not changed.

Importantly, during the COVID period, both services reported safely delivering HITH services to more patients and to patients with higher levels of acuity.

One service reported that inpatient and community-based health professionals are now seeking access to the HITH service for their patients. Some patients who have previously accessed the HITH service and were subsequently readmitted to hospital have also asked about using the service again.

The value of seeing patients in the context of their own homes was also emphasised in one focus group. Participants explained the insights gained about the social and economic factors contributing to the patients' health circumstances, and the additional information gained about the supports needed to respond to these factors. A specific benefit noted was the chance to support patients to address issues such as advanced care planning and power of attorney arrangements in a setting that is more conducive to such conversations.

3.5. Student-led clinics

Prior to the COVID-19 pandemic, a University Department of Rural Health (UDRH) provided an inter-professional student-led health and wellness clinic involving allied health and nursing students, for people with risk factors for chronic disease. They also supported the hospital cardiac rehabilitation service by providing exercise physiology staff to the program. Students were included in the cardiac rehabilitation program, but their role was typically limited to observation.

As the pandemic began, clients could no longer attend either program in person, staff with health vulnerabilities had to work from home, some health service nursing staff were redeployed, and the health service was unable to prioritise delivering the cardiac rehabilitation program. With the aims of ensuring

service continuity for both programs and of allowing students to complete their placements, the UDRH offered to continue both through a student-led, telehealth model. The service manager authorised this to proceed based on the continuation of an evidence-based model but delivered via telehealth. The service began within two weeks, and the UDRH delivered the cardiac rehabilitation service from late March to mid-June 2020.

The UDRH formally documented the new systems and refined details along the way with input from staff and feedback from clients. Some challenges were experienced such as providing a service to Queensland Health clients without access to Queensland Health data systems or information technology, but workarounds were found. UDRH training rooms were converted to telehealth rooms, ensuring enough space for exercise physiologists to demonstrate exercises. The UDRH relationship with the University of Queensland Centre of Research Excellence in Telehealth enabled set up of optimal cameras and acoustic panels to support the listening experience.

Service delivery began by approaching existing clients about their interest in participating. While some said they would wait until the service recommenced, many were interested. During the period of telehealth service delivery, a few clients discontinued either because they weren't comfortable with telehealth or they were concerned about online security. Being unable to go into clients' homes, systems were set up for clients to carry out self-assessments. To ensure client safety, clients were asked to have someone at home when they participated in the program.

The telehealth student-led models allowed both programs to continue with positive clinical outcomes, no safety incidents, and the capacity to more effectively meet the needs of people who live a distance from the service. Clients were reported to quickly develop the skills needed to participate using telehealth. Students had significantly greater opportunities to contribute to clinical sessions and were able to graduate on time – including additional students whose placements in other programs had been discontinued. Client feedback was said to be very positive, including the value they placed on supporting the development of the future workforce. An unexpected benefit was the rapport that was built between clients and students, resulting in clients often disclosing more to students than to health professionals.

Whilst the UDRH was motivated to continue delivering an online student-led cardiac rehabilitation program, in June 2020 the program returned to its original face-to-face format, delivered by the health service, with input from the UDRH. One variable identified as influencing the return to the original clinical model was the fact that the changes applied at the height of the COVID-19 pandemic needed to occur so quickly that it was not possible to follow the required processes for making workforce changes of this nature, including consultation with relevant unions. The UDRH suggested continuity of the approach may have been more likely, had there been regular communication with the Hospital and Health Service about progress and outcomes during the period the cardiac rehabilitation service was being delivered.

The UDRH explained that the COVID-19 pandemic provided the opportunity to demonstrate that the service can be delivered effectively and safely through a student-led model, and using telehealth. Although the model hasn't continued, they reported that the health service has increased confidence in student-led services, and opportunities for students to lead cardiac rehabilitation sessions have increased. They also noted that the health service is also more likely to seek support from the UDRH when they have staff absences.

The UDRH clinic spaces are now set up to provide a hybrid face-to-face and telehealth service model, and UDRH staff are now confident in delivering clinical services through both modalities. Given these services

were provided safely and effectively during the pandemic, it would appear that implementing a stepwise or incremental approach to adopting such an approach should not be necessary.

4. Enabling the innovations

Our discussions with allied health professionals, nurses and administrative staff revealed numerous enablers of the innovations that have been implemented during the COVID-19 pandemic. These are detailed below, and further illustrated with quotes from interview participants.

1. Responding to the circumstances of the COVID-19 pandemic
2. Working towards shared goals
3. Bringing different attitudes
4. Implementing adaptive change
5. Allowing devolved authority and shared leadership
6. Trusting the capability and actions of staff
7. Drawing on experience, existing plans, and future aspirations
8. Utilising existing systems and processes
9. Developing new systems and accessing infrastructure
10. Using evidence and data
11. Strengthening communication, teamwork and service integration

Some of these enablers overlap with concepts that have been identified in previous evaluations supported by AHPOQ. For example, concepts such as working to shared goals, effective communication and teamwork, and access to appropriate systems and infrastructure, reflect concepts identified in other initiatives to implement changes to allied health models of care and scope of practice. However other enablers identified in the current evaluation reflect experiences that have not been a strong feature of previous initiatives (e.g. implementing adaptive change, allowing devolved authority and shared leadership, trusting staff capability and actions).

4.1. Responding to the unique circumstances of the COVID-19 pandemic

It was clear that the ***unique circumstances of the COVID-19 pandemic*** were a fundamental driver of innovation and change in this instance. Professionals were faced with a rapidly changing and unfamiliar situation that posed a significant threat to the safety of patients and staff and the capacity of the health system to respond to the community's needs. In a way that professionals have never experienced, normal practice essentially stopped and there was a pressing need to adopt new practices.

> *"Clinics were shut down. It was either telehealth or nothing."*
>
> *"Things can happen in an emergency. We band together quickly to make things happen."*
>
> *"There was an imperative to reduce face to face contact for the safety of patients and staff."*

Interviewees were clear that the changes arose from necessity, not by design or choice.

"Change wouldn't have happened without COVID."

"The changes weren't a product of advocacy, but necessity."

"Basically, it was a situational imperative."

4.2. Working towards shared goals

The very particular circumstances of the COVID-10 pandemic created community-wide understanding of the need to protect individuals, health professionals and the capacity of the health system itself. In a way that is rarely experienced, there was a ***universally shared goal*** – both within the health system and across the community. This included the need to prepare the health system for the possibility of caring for high numbers of people affected by COVID-19, whilst continuing to respond to the existing and emerging health care needs of the rest of the community.

"There was community-wide agreement that this is a risk that needs a response."

"We all knew why. We all knew what needed to be done. We all knew the outcome we wanted. It is easy to map the details if you have clarity."

"It reinforces the importance of mutual understanding of the goals of the change. Everyone needs to have the same understanding of why."

4.3. Bringing different attitudes

The attitudes of key persons were described by interviewees as highly important. The openness to taking on new challenges and the ***can-do attitude*** of many facilitated both the exploration of innovative ideas as well as their adoption.

"There was a can-do attitude."

"There was a greater willingness to take risks."

"There was a feeling that anything is possible. People were more open to suggestions and change in general. That was the vibe."

Arising from the necessity to work differently, numerous interviewees said that their assumptions about what might be possible were challenged.

"Many assumptions were challenged. It was assumed that the way things were already done should be how it's always done. It was assumed that we couldn't bridge the gap between public and private services any more than we already had. It was assumed that the patient demographic wouldn't respond well to telehealth. These were all proven to be incorrect."

"All of the myths about what we can change and what we can't have been blown up. People are open to things."

"Previously we couldn't do these things because of fear."

Associated with these experiences and outcomes were suggestions from some interviewees that professionals should become stronger advocates for ideas they recognise as having potential to contribute to positive change.

> *"If you see a viable option, stick to your guns."*
>
> *"My advice to management is that no new ideas are not worth looking into. All things are possible and should be looked into to improve efficiency and patient care."*

4.4. Implementing adaptive change

Change is clearly inherent within any innovation, but there was a sense in the feedback from interviewees that innovations were linked with change processes that were adaptive and focused. ***Adaptive change*** appears to have been driven by the urgency and the need for immediate, practical actions. Participants suggested this contrasted to processes of incremental change typically experienced. Numerous interviewees explained that through this time, they didn't feel impeded by the usual administrative and organisational constraints of traditional processes of change.

> *"We learned to adapt very quickly."*
>
> *"There was a swing, a clear momentum, the resisters had to follow the majority."*
>
> *"The usual hold up of ticking boxes stops momentum. There was a need for rapid change. They removed the red tape and gave us a chance to just get started."*
>
> *"A stepwise approach is consistent with the risk-averse nature of public health services."*

The opportunity to introduce logical and constructive changes, then ***review and refine*** the approach based on monitoring its effects in real time, was seen as refreshing and highly beneficial.

> *"We could give things a go and learn from it, rather than having to get it perfect first."*
>
> *"Here was a brief moment of 'can-do'. 'Let's try this and see how we go.'"*
>
> *"Perfect is the enemy of good."*
>
> *"We were able to evolve and change as we went along."*

4.5. Allowing devolved authority and shared leadership

An important factor commonly described across many interviews was the ***devolved authority*** structure. It seems that during the early days of the COVID response, key staff felt empowered to make decisions about service change to a level they had not previously experienced. This devolution of authority seems to have greatly facilitated the consideration of innovations, the pace of change, and subsequent adoption.

"The specific requirements weren't stipulated. We were allowed to be creative."

"The approach was signed off by Executive, but they didn't ask about the details."

"I was empowered by the allied health leadership and the rest of the hospital to make those decisions."

"There were less issues with authority during COVID. We had decision making freedom. We were told 'Do what you must.'"

"Management said, 'Go make it happen.'"

Allowing devolved authority, contributed to more efficient decision making and action.

"We had the sponsorship of the Executive Director of Allied Health, so changes could be rolled out quickly."

"Typically, we have to go through many more processes to achieve change – it was a blessing in disguise to not have to do that. We just had to get on to doing it."

Complementing devolved authority, the current evaluation found that ***shared leadership*** played a significant role in the innovations described. Greater leadership both within and between teams, may have been a necessary artefact of the pandemic crisis, but also appears to have fostered more innovative thinking and actions as well as staff engagement.

"Leaders in telehealth were pulled in to work collaboratively with other services."

"Each team decided how they would operate."

"We have been able to influence our own resource allocation. We have some extra resources and staff are excited at the opportunities."

"Our executive here is very amenable. It has created an appetite for change and innovation."

4.6. Trusting the capability and actions of staff

Closely connected with devolved authority is the sense of ***trust*** that seems to have accompanied most examples of innovation among allied health professionals. Service managers spoke about the trust they needed to place in their staff, and staff noted being trusted in ways that were not typical of their usual experience. It would seem that working on a foundation of trust between service leaders, managers and staff is vital to fostering innovation.

"We have had to - and have – trusted staff more. They've worked out the best way to make things work."

"They said 'You are the expert, go for it!'"

"Trust is the key issue. Actually, it was forced on management to trust us during COVID."

4.7. Drawing on experience, existing plans, and future aspirations

As anticipated, our interviews indicated that the uptake of innovations was facilitated by the ***previous experience*** as well as the ***plans and aspirations*** of key staff.

"Our strategic plan, even before COVID, was to expand telehealth."

"We had been looking to develop multidisciplinary telehealth - COVID sped it up."

Staff explained that progressing an innovation during the COVID-19 pandemic was easier when they could build on experience with the intended approach, or when they already had ***clear goals or intentions*** to implement a particular innovation.

"It didn't happen in one go. It is a very nuanced topic.
We were very fortunate. We had all the nuts and bolts in place."

"We had been looking to develop multidisciplinary telehealth, COVID just sped it up."

"There was already quite a lot of skill sharing going on."

Linked to this, some interviewees recognised that the COVID-19 pandemic provided an unexpected opportunity to advance changes that an individual or team believed had potential, but which had been slow to progress or had not been accepted previously.

"An on-ward pharmacy model has always been wanted…
We knew it worked – we just didn't have it."

"The psychology of it - belief in it, attitude, response - came from my previous experience. I had previously had thoughts and plans for change like this, but it wasn't accepted."

Not surprisingly, where the COVID-19 pandemic provided the chance to scale up an accepted way of working, or advance existing plans and previously proposed options, interviewees expressed a greater commitment to continuing the innovation.

"I will certainly fight to keep it."

"We've been trying to get remote access from home for afterhours work for a long time, but it was never allowed before now. The team want it to continue - particularly for weekends."

4.8. Using evidence and data

For our interviewees, the existence of ***relevant data*** regarding the innovation as well as whether there was existing ***research or evidence*** to reinforce the efficacy and suitability of the innovation were key enablers. For all health professionals, the evidence base of health-related practices and interventions was an important factor, which is also borne out in the case of potential uptake of innovations.

"[They said] if it is evidence based and appropriate, go for it."

"Evidence that telehealth is adequate for service delivery and has similar outcomes, has been a big thing."

"The pre-established telehealth services - developed with a scientific, rigorous approach, and evaluated meant we were well-positioned to scale things up during COVID."

Access to data was also emphasised as key. Being able to track caseload status and staff activity and whereabouts enabled effective service management at a time of rapid change. A couple of services emphasised the importance of having the capability to manage and effectively use available data.

"We saw our situation and our tasks in real time via a dashboard."

"We had a live spreadsheet to track every patient at any given time."

"We have a data guru and are always considering data."

"Management had access to the whole service. They could see it."

Data was also used as an important feedback mechanism for staff to reinforce the purpose and outcomes of their efforts.

"There needs to be a feedback loop to staff. We need to show the impact [of our work] on patients."

"We share all of our data and documents. This keeps people connected and motivated."

Many interviewees noted the importance of gathering evidence and evaluating the outcomes and impacts of the changed practices implemented during the COVID-19 pandemic and the value of this information as an enabler for long term change. The extent of evaluation varied from site to site.

"We had a clear plan to evaluate from the start."

"We use a survey with everyone. We're assessing telehealth and outcomes."

"We decided to do a formal evaluation and collected data from day one - so we can advocate on the basis of data."

"We need to collect evidence about this whole event and then debrief. We need to ask, "What have we learned?"

4.9. Strengthening communication, teamwork and service integration

Recognising the multidisciplinary, team-based work of allied health professionals, it was not surprising that ***communication, teamwork and the integration*** of the innovation within the team's work were all aspects that interviewees emphasised. It would seem that innovations and the processes of adopting innovations in such health-service settings must capitalise upon and foster teams.

"There was support from the whole allied health team…we all learnt from each other. It wasn't just one discipline driving it. We were all able to support each other."

"There was more integration of services in COVID."

"Team culture has been important."

Most services established new and more regular communication and support strategies, with many services meeting daily to keep staff informed, to plan service delivery and to check in as a team.

"We plan together each day and have a multidisciplinary team meeting two days a week."

"Our daily huddles are vital."

"The buddy system has improved teamwork."

Many interviewees explained that the new systems needed to respond to the COVID-19 pandemic had strengthened team culture within existing teams, facilitated stronger links with other teams, and provided opportunities to build new relationships within and beyond Queensland Health.

"There's much more sharing between settings."

"The support across disciplines has been sustained. Relationships were strengthened and these are continuing to be used."

"A better culture has developed."

"Siloes within the department have broken down."

"It enabled us to work closely with teams we haven't worked closely with before. We've built new relationships."

Despite these positive efforts and outcomes, challenges were still experienced in day-to-day work within and between teams.

"There have been fewer incidental conversations between staff."

"For those teams completely off site, there's been less collaboration."

"There was less multidisciplinary communication because of remote service delivery."

4.10. Utilising existing systems and processes

We noted that in contexts where there were some ***existing systems*** which were conducive to innovation, or ***clear processes*** supportive of the innovation, this supported uptake of innovations during the COVID-19 period. In each location, the nature of the enabling systems and processes described by interviewees were quite different.

Some interviewees spoke about the importance of their service leaders already supporting a culture of innovation and backing them to implement change effectively.

"Our Executive Director…she's very accommodating. If you take something to her and explain it, she's like "Right, do it." …Right from the top we get the backing to do this. As long as you can explain the vision and get the backing and that's where the can-do attitude comes in. That people just say "Righto, I understand what you need to do. Righto, go ahead and do it."

One interviewee explained that although the way in which they delivered their service was constantly changing during this time, the existing clinical governance arrangements did not change.

"For monitoring and review we do the same as what we normally do. We do a monthly KPI report. We do the quality, the quantity…we have risk registers and quality improvement registers. So, it's all formal as normal. Our governance and processes are still safe, we're just thinking outside the square."

A range of other existing systems such as data platforms, infrastructure and relationships with other professionals and services, were reported be important facilitators of the changes that took place.

"We were able to transition our remote learning space to a suitable telehealth studio quite easily."

"Part of our success was a good relationship with the telehealth and tele-rehab clinic at UQ."

"We were working on a background of years of telehealth service delivery. It was good to have pre-existing launching pad."

4.11. Developing new systems and accessing infrastructure

Unsurprisingly, interviewees emphasised the importance of the need to establish new ***support systems and relevant infrastructure*** to enable the innovations. Ensuring that systems and procedures enhance rather than diminish the potential and practical aspects of an innovation is fundamental to successful and sustainable adoption.

In almost every interview, participants spoke about the active development of mechanisms to ensure staff could fulfil their roles and stay connected and supported. The need for this was further reinforced in the few instances where such mechanisms were limited.

"We identified those staff [who needed more support] and we spent more time with them. We did one-to-one sessions with them. We got the team leaders to sit with them to try and gauge what was their biggest fear. All of them had different fears. We tried to help them understand what we were doing and tried to support them."

"We worked on a buddy system – with one person at the hospital, and one at home."

"There wasn't strong feedback [about what was happening]. There was not enough support for addressing staff's feelings and concerns. There was no formal process, it was all just inferred."

"We need downwards support - from management; upwards support - from admin staff; and sidewards support - from our staff."

Interviewees spoke about quickly developing and sharing new procedures and guidelines.

"We developed clear guidelines, which helped."

"We put together a check list. A sheet to guide the clinician about certain requirements in the decision-making and telehealth process."

"We had to come up with staff, client and admin procedures."

At the start of the COVID-19 pandemic, infrastructure access (space, equipment, online platforms) to allow health service continuity was challenging. While these challenges were not necessarily fully resolved, interviewees explained that usual processes were set aside to expedite addressing these issues.

"Unfortunately, there was a disconnect between advocacy for telehealth and the nuts and bolts of making it work. Over 90% of the computers here were not telehealth-ready."

"Initially we didn't have enough headsets, cameras, or speakers - but this was expedited."

"Red tape was shifted to access infrastructure quickly."

"Setting up the digital hospital made remote outpatient service delivery easier."

"We got immediate access to remote access to ieMR - despite previously not being able to."

"A lot of older people don't have the IT infrastructure needed for telehealth."

"We need more tech-oriented infrastructure and systems - like routinely understanding the feasibility of telehealth for each individual patient."

4.12. Conclusion

Each of these enablers, in varying combinations, across different circumstances, played a role in facilitating the innovations that were introduced at the height of the COVID-19 pandemic. As discussed above, the nature and pattern of the enablers during the pandemic were different to that which has been reported in past evaluations of changes to allied health practice. The most noteworthy differences relate to applying an adaptive approach to change (i.e. a process of applying new learning to the change process), bringing different attitudes to the change process, facilitating devolved authority and shared leadership, and trusting the capability and actions of staff.

As such, these noteworthy differences reflect a stronger emphasis on interpersonal and attitudinal dimensions of fostering innovations; they are reliant on cooperative teamwork. The translation of such enablers into everyday practice is unlikely to come through a simple introduction of new policies or procedures. Rather, it will be fostered through a more reflective group process, which may be guided by a set of key recommendations and strategies.

5. Translating enablers into everyday practice

Through necessity, the COVID-19 pandemic and associated responses of different Queensland Health Hospital and Health Services resulted in the development and implementation of new ways of working that contributed some positive outcomes for allied health practice. Beyond the innovations themselves, the processes through which the innovations emerged offer many lessons for future innovations and innovative practices. As Queensland Health allied health professionals continue seeking ways to deliver innovative, value-based care, at scale, across the state, these lessons will provide an important opportunity to identify effective ways to reach that goal.

As detailed above (in Chapter 2. Methods), before considering recommendations for applying the findings to progress future initiatives, we verified our analysis of the enablers (in Chapter 4. Enablers of the Innovations) against principles identified in the Trisha Greenhalgh model, described in the innovations literature. The alignment of the findings with these principles, known to be key to achieving successful innovation, as well as the positive results achieved, affirm the capability of the participants to conceptualise and introduce successful innovative strategies. The professionals involved, and their managers, should take significant confidence from this finding when considering future service development.

Appendix 1 presents an adaptation of the Greenhalgh model highlighting eight features of the model that have the greatest relevance to this context and in Appendix 2 we map the enablers detailed in Chapter 4 against these features.

5.1. Recommendations to sustain and advance the service innovations

On the strength of the common enablers identified and the subsequent verification against the review by Greenhalgh, we believe that the enablers of the innovations detailed above provide valuable guidance for not only successfully implementing and sustaining discrete innovations but also for fostering a culture of innovation.

Recognising that many of the innovations introduced at the height of the COVID-19 pandemic achieved positive outcomes but have not been sustained into the long term, we emphasise that there is an important opportunity to continue this work in a timely way. While the Allied Health COVID-19 Innovation Register provides one valuable reference point for service innovations that occurred during this time, we recognise that many other service changes were also implemented.

We recommend that AHPOQ and the Queensland Health Directors of Allied Health establish an explicit process to:

- support a culture of allied health innovation across the state
- foster specific innovations in every HHS
- identify the changes that occurred during the COVID-19 pandemic that warrant continuation and/or further development (or reinstatement if the change has already been discontinued) and continue the implementation initiative in order to support allied health innovation in general across the state, as well as foster specific innovations in identified HHSs and teams:

Recommendation 1: Working closely under the direction of AHPOQ and the Queensland Health Directors of Allied Health, each Director of Allied Health systematically review initiatives implemented during the COVID-19 pandemic to identify innovations that warrant continuation or reinstatement – in whole, part, or in a modified form

Recommendation 2: Through a reflective team process within each Hospital and Health Service, and potentially within identified teams, identify potential strategies, informed by the enablers (Chapter 4), to facilitate continuation of the selected innovations (or relevant variations) within their organisation

Recommendation 3: Through a participatory statewide process, identify strategies to develop and sustain a culture of innovation across the allied health workforce. This will necessitate incorporating strategies which foster innovation, in particular those that prioritise the interpersonal and social dimensions of innovation, which were strongly evident in the early days of the pandemic.

5.2. Strategies for translating enablers into everyday practice

To support progress on the three recommendations above, we suggest consideration and application of two concepts detailed below:

- Recognising where there may be value in unlearning existing practices and beliefs

- Appreciating the circles of control, influence and concern of allied health professionals within different roles and practice contexts

5.2.1. Appreciating the role of unlearning

The COVID-19 pandemic has precipitated a major reconceptualisation of many aspects of our societies, social organisation and systems. In this reconceptualisation some accepted norms, long held beliefs and common practices have been challenged and are continuing to be questioned. Part of this questioning also pertains to workplace structures, work practices and the models through which services are delivered. It is manifest in the quest for new (post-COVID) models of work and service delivery and reflected in questions about what we may need to learn in order to implement such new models. Conversely, the extent of the influence of the pandemic is also reflected in questions about what long-held assumptions we may need to challenge or "unlearn".

This reconceptualisation is also relevant for the current evaluation. The enablers to the innovations explored in this project are not simple procedural actions. Many of the enablers reflect interpersonal or attitudinal issues and pertain to the nature and quality of workplace and managerial relationships and individual actions of professional leadership across all levels of the workforce.

As such, some of them may challenge (and in some cases contradict) currently held assumptions, practices, or accepted workplace strategies. They cannot simply be added to the existing repertoire of skills or behaviours.

Enacting some of the above enablers will necessitate both ***unlearning assumptions and long held notions which currently constrain innovation*** and, in their place, ***learning new ways of thinking about allied health practice and innovation***.

Based on our interviews we suggest that some of the potential areas for unlearning to support implementing and sustaining innovative practice might include:

- *Disruption is a risk and threat* (Evaluation findings indicate the COVID-related disruption precipitated constructive actions leading to positive outcomes).
- *Our role is just providing therapy and clinical services* (Evaluation findings suggest that some of the unique contributions of allied health professionals were as problem-solvers and creative thinkers).
- *We need to have all our ducks in a row before we implement anything* (Evaluation findings indicate that adaptive change, followed by an ongoing process of monitoring, reviewing, and refining was a hallmark of these innovations)
- *Managers have to be in control and make all the decisions* (Evaluation findings indicate that devolved authority and shared decision making was conducive to innovation)
- *Managers need to oversee the details of everything their staff are doing* (Evaluation findings indicate that trust was integral to innovative practices and that staff are worthy of the trust placed in them).

Based on our interviews we suggest that examples of potential areas for unlearning relating to specific allied health practices might include:

- *Telehealth is an inferior option of last resort, for patients a long way from major service centres* (Evaluation interviews indicate there are many benefits to telehealth, regardless of patient location)

- *Older people aren't interested in or capable of using current technology to access healthcare* (Evaluation interviews indicate that this was not the case)
- *Students need to just watch and follow instruction* (Evaluation interviews suggest that student-led clinics can provide high quality, evidence-based services)

Importantly, it is worth considering, that for a brief window during 2020 the capacity to set aside past assumptions and ways of working was demonstrated across the health system. The challenge now is to sustain this ability to unlearn and harness the opportunities it affords clients, the workforce, and the service system.

5.2.2. Appreciating circles of control, influence, and concern

As is clear from the above description of the enablers of innovation, as well as the findings of the Greenhalgh review (Appendix 1), there are a number of levels at which innovations can be fostered (these include systemic, structural, organisational, inter-personal, etc). Likewise, there are a number of mechanisms through which any such implementation can be realised (for example management decisions, organisational policies, professional scope boundaries, leading by example, practice guidelines, etc). It also follows that in Queensland there are many different stakeholders with varying levels of influence over these levels or mechanisms (which include AHPOQ, Directors of Allied Health, discipline Directors, Team Leaders, etc).

A worthwhile exercise would be to consider the extent to which each of the identified enablers are within the:

- Immediate ***circle of control*** of each of the stakeholders. (Can the stakeholder determine …?)
- Broader ***circle of influence*** of each of the stakeholders. (Does the stakeholder influence …?), or
- More general ***circle of concern*** of each of the stakeholders. (Could the stakeholder encourage …?).

An important dimension of the innovation process will be to consider the extent to which each stakeholder can foster innovation, and to recognise that a number of issues are outside of the potential influence of allied health stakeholders. However, given that many of the findings pertain to interpersonal and social dimensions of fostering innovation, it would appear that most allied health stakeholders have the potential to contribute substantially to a **culture of innovation**, rather than being dependent upon the decisions and actions of others within the service system.

Appendix 1

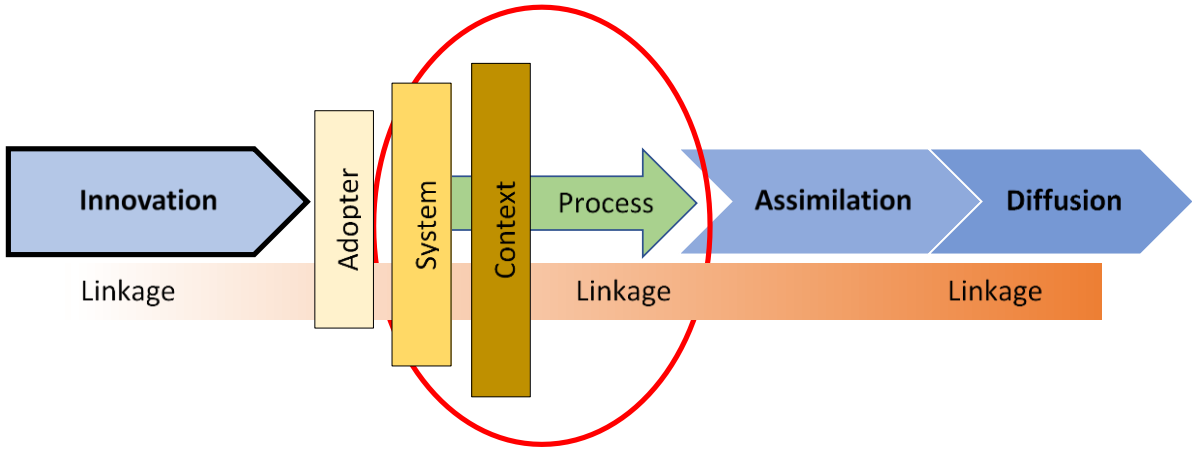
Applying a complexity and human factors lens

With the support of Dr Satyan Chari (Lead - Human Factors and Systems Safety, Queensland Health), we explored a number of conceptual frameworks arising from the human factors / complexity / diffusion of innovations literature. Our goal was to consider the potential utility of such frameworks, to be used as a "lens" to inform the interpretation and application of findings in this project.

In light of the nature of the innovations, and the organisational context, we agreed that the most suitable (and well established) framework was that developed by Trisha Greenhalgh and colleagues[1,2]. The Greenhalgh model is based on an extensive literature review to identify which factors play a role in spreading and sustaining innovations in health service delivery and organisations. Since publication, the relevance of the model has been confirmed on a number of occasions.

Our adaptation of the Greenhalgh model identifies eight broad factors that are important in ensuring that innovations are established and then more broadly implemented in health service delivery and across health service organisations.

Figure: Visual representation of the Greenhalgh Diffusion of Innovations Model (adapted)



Relevant aspects of these eight factors are summarised below. Four of these (System, Context, Process and Linkage) are seen as within the influence of AHPOQ and the Directors of Allied Health, and are presented first. The other factors (Innovation, Adopter, Assimilation and Diffusion) are less able to be influenced by AHPOQ, but are also outlined.

1. The system (within the influence of AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

An organisation will adopt innovations more readily, if it:

- Is large, has a departmental structure and special units to promote professional knowledge,
- Has decentralised decision-making structures,
- Has adequate resources to channel into new projects

An organisation will be better able to assimilate innovations when it has:

- A pre-existing knowledge/skills base, the ability to find, interpret, share, and integrate new knowledge.
- Strong leadership and a clear strategic vision, with clear goals and priorities
- Good managerial relations
- A climate conducive to experimentation and risk taking
- High quality data capture

Factors influencing system readiness are:

- When the current situation is seen as intolerable.
- The innovation fits the organisation's existing values, norms, strategies, goals, skill mix, supporting technologies, and ways of working.
- When its implications are fully assessed and anticipated.
- If the supporters outnumber and are more strategically placed than the opponents.
- When an organisation has a sufficient budget and adequate and continuing resources to allocate to an innovation,
- The capacity to evaluate the innovation

For the selected allied health innovations in the context of the COVID response:

- Many interviewees described decentralised decision-making, increased resources and an increased capacity to allow risk.
- While system readiness was not a feature of the COVID-19 context, the rapid application of a number of innovative practices fitted well with the organisation's methods during the extraordinary circumstances.
- This was temporarily supported in the form of a more flexible budgets and system processes.

Considerations for realising the recommendations:

Further implementation initiatives should:

- Establish a knowledge base and data capture (to apply and disseminate research evidence).
- Foster clear leadership
- Advocate for decentralised decision making
- Ensure adequate resources
- Support meaningful evaluation of service outcomes and broader implications.
- Where possible, ensure alignment between system values/processes and the proposed innovation.

2. The context (within the influence of AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

External influences are important and include:

- Socio-political climate
- Incentives (such as funding streams for an innovation) and mandates (political "must-dos").

- Whether enough comparable organisations / teams have done so.
- Environmental stability

For the selected allied health innovations in the context of the COVID response:

- The external context was clearly a pervasive driver in the COVID-19 context, but in an unplanned manner

Considerations for realising the recommendations:

Further implementation initiatives should:
- Not occur in isolation. The focus should be on multi-site implementation across a number of comparable teams.
- Ensure adequate incentives.

3. The process (within the influence of AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

The process of implementation of innovations is enhanced by:

- System readiness (see above)
- Structures and processes that support devolved decision making (e.g. to teams on the ground).
- Top management support and advocacy in the implementation process, and ongoing.
- Involving staff early and broadly
- Dedicated and continuous funding
- Effective communication across (departmental) boundaries within the organisation.
- Adapting an innovation to the local context,
- Accurate and timely information on the impact of the implementation process.

For the selected allied health innovations in the context of the COVID response:

- While system readiness was not a feature of the COVID-19 context, some features such as devolved decision making, management support, and ongoing communication may have facilitated innovation

Considerations for realising the recommendations:

Further implementation initiatives should:
- Devolved decision making
- Management support
- Participatory implementation processes
- Ongoing funding
- Effective communication
- Scope for adapting the innovation to the local context
- Provide information feedback about the implementation of the innovation

4. Linkage (within the influence of AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

For successful adoption of an innovation, there should be:

- Clear collaboration and mutual understanding with those who design the innovation
- Common understanding of the relevance of the innovation
- Participation with those who evaluate the innovation
- Strong capacity within the agency designated to implement the innovation (technical capability, communication, etc)

For the selected allied health innovations in the context of the COVID response:

- Most innovations reviewed took place outside of broader organisational links

Considerations for realising the recommendations:

There may be value in establishing a designated team to support linkages and the process of implementation of the innovation. Such a team should:

- Be credible and have some similarity with the potential adopters
- Reflect strong interpersonal relationship skills
- Communicate users' needs back to those rolling out the innovation.

5. The innovation (less potential for influence from AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

An innovation will be more easily adopted, when:

- Effectiveness or cost-effectiveness is clear.
- It is compatible with the intended adopter's values, norms, and perceived needs.
- It is perceived as being simple to use.
- The intended user has opportunity to "experiment" with it.
- The benefits are observable to the intended adopters.
- The innovation can be adapted or modified to suit the adopter's needs.
- The innovation has a low level of perceived risk
- The innovation has some certainty of outcome.
- The innovation is relevant to the adopter's work/task performance.
- The knowledge required to use the innovation can be written for others to use.
- The innovation is supported by training and specialised support.

For the selected allied health innovations in the context of the COVID response:

- The COVID 19 circumstances provided numerous AHPs with an opportunity to consider the effectiveness and compatibility of innovations.
- While cost-effectiveness has not been established in any cases, there have been opportunities to trial a number of innovations.
- In a small, but practical way, practitioners have been able to explore needs, outcomes, risk and relevance of innovations.

Considerations for realising the recommendations:

Priorities should include:

- Clearly document effectiveness and cost-effectiveness, perceived needs and norms, utility, benefits, and risk.
- Establish a case for how the innovation enhances the adopter's work/task performance.
- Ensure that the details of the innovation are clearly documented for all to use.
- Provide sufficient training and specialised support on task issues.

6. The adopter (less potential for influence from AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

The innovation process should recognise:

- The adopter's capacity (and context) to try out and use innovations (motivation, values, learning style)
- The meaning they might attach to the innovation
- The alignment between the meaning they attach compared with the meaning others might attach (top management, service users, and other stakeholders)
- The influence of others in their organisation (the decision of their immediate team or other relevant group, or top management)

For the selected allied health innovations in the context of the COVID response:

- The COVID context provided an opportunity for small groups to consider the personal and professional implications of innovations. They were able to think about the meaning of such innovations for their practice.
- To some extent, the perspectives and influence of management and other stakeholders were suspended during the COVID response.

Considerations for realising the recommendations:

Further implementation initiatives should:

- Be aware of the "meaning" attributed to an innovation by key potential adopters
- Provide information on the function and usage of the innovation,
- Promote awareness of how the innovation would affect them personally and professionally.
- Provide feedback to the adopters about the consequences of adoption.
- Provide sufficient support to adapt and refine the innovation to improve its fitness for purpose.
- Ensure that the perspectives and influence of management and other stakeholders supports implementation.

7. Assimilation (less potential for influence from AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

Assimilation is about adoption in an organisation, team or department.

- This process is more complex than adoption on an individual level, but requires
    - building of organisational knowledge and awareness,
    - promoting evaluation and choice,

- supporting adoption and implementation.

- Organisations may move back and forth between stages of assimilation

For the selected allied health innovations in the context of the COVID response:

- This level was not reached in the brief COVID response timeframe.
- Assimilation did not occur in any of the reviewed innovations.

Considerations for realising the recommendations:

Organisational level assimilation should promote organisational awareness about the innovation and support evaluation.

8. Diffusion of the innovation (less potential for influence from AHPOQ and Directors of Allied Health)

The Greenhalgh model indicates:

Adopting of innovations is also influenced by the structure/quality of social networks (including between colleagues and within the hierarchy). Important aspects are:

- Common educational, professional, and cultural backgrounds as other adopters.
- Peer opinions
- Expert opinions
- Champions and boundary spanners who are broadly connected, respected and facilitate adoption.

For the selected allied health innovations in the context of the COVID response:

- This level was likewise not reached in the brief COVID response timeframe.
- The reviewed innovations were still very much within isolated pockets.

Considerations for realising the recommendations:

Further implementation initiatives should:

- Deliberately use opinion leaders to influence others
- Consider potential adopter's needs and perspectives,
- Tailor strategies to the specific structural and professional features of different subgroups.
- Use appropriate communication channels with a message with appropriate style, imagery, metaphors, etc.
- Evaluate and monitor goals and milestones.

References

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2. European Public Health. The Greenhalgh Model. http://www.europeanpublichealth.com/health-systems/innovations-in-public-health/the-greenhalgh-model/

Appendix 2

Congruence between evaluation findings and the complexity / human factors lens

An overview of evaluation findings (as detailed in Chapter 4) mapped against key aspects of the systematic review of the diffusion of innovations in service organisations.

4.1 The evaluation found that the ***unique circumstances of the COVID situation*** were a fundamental driver of innovation in this instance. This is confirmed by the Greenhalgh review in which the potential of extreme situations to facilitate innovation is described.

4.2 The evaluation described ***working towards shared goals*** as an important driver in innovations. This is also reflected in the Greenhalgh review in which participatory processes and alignment between management and other stakeholders is recognised as important.

4.3 The current evaluation noted the importance of ***different attitudes*** of key persons in fostering innovation. The Greenhalgh review likewise noted the importance of attitudes, particularly of management.

4.4 The evaluation identified that ***implementing adaptive change*** in the innovation process followed by continually monitoring, reviewing and refining iterations was a characteristic. Likewise, the Greenhalgh review stressed the importance of a participatory process in which an innovation is adapted over time, with ongoing communication back to those rolling out the innovation.

4.5 Examples of ***devolved authority and shared leadership*** were recognised as important characteristics in the evaluation. These are explicitly identified in the Greenhalgh review in which devolved decision-making supported by clear support of leadership is emphasised at a number of points.

4.6 The evaluation found that ***trusting the capability and actions of staff*** were key aspects of successful innovation. While not specifically articulated in the Greenhalgh framework, such trust underpins many of the system and context factors identified.

4.7 The evaluation also noted that innovative practices ***drew on the past experience, existing plans and future aspirations*** of key staff. This is confirmed by the Greenhalgh review in which the need to articulate the function and usage of an innovation is stressed as well as its implications and "meaning" for such dimensions.

4.8 Evaluation findings emphasised the importance of ***using evidence and data*** in establishing, refining and demonstrating the outcomes of innovations. This is strongly reflected in the Greenhalgh review in which effectiveness, utility, cost-effectiveness, as well as evaluation, including data capture, are emphasised.

4.9 The current evaluation described the importance of ***communication, teamwork and service integration*** in the adoption of innovations. Likewise, the Greenhalgh review stressed the importance of good interpersonal communication, participatory actions and organisational level assimilation.

4.10 The evaluation highlighted the importance of ***utilising existing systems and processes*** in the implementation of innovations. Again, this equated with the Greenhalgh review in which the need to integrate with existing organisational level issues, current processes and subgroups within organisations is noted.

4.11 Complementing the above, the evaluation also recognised the need to ***develop new systems and infrastructure***. Similarly, the Greenhalgh review stressed the importance of developing specialised training and support, feedback cycles and establishing new management support and funding.