DIGITAL HEALTH LITERACY TOOLKIT

Module 3 – Case Examples

GDHP Clinical and Human Engagement Work Stream

GDHP
Global Digital Health Partnership

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- Individual GDHP members and their colleagues who contributed materials, survey responses, and feedback
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    - Hong Kong: Dr. NT Cheung

Please note that the information presented in this document does not necessarily represent the views of the individuals or organisations mentioned.

ABOUT THE GLOBAL DIGITAL HEALTH PARTNERSHIP

The Global Digital Health Partnership (GDHP) is a collaboration of governments and territories, government agencies and the World Health Organization, formed to support the effective implementation of digital health services.

Established in February 2018, the GDHP provides an opportunity for transformational engagement between its participants, who are striving to learn and share best practice and policy that can support their digital health systems. In addition, the GDHP provides an international platform for global collaboration and sharing of evidence to guide the delivery of better digital health services within participant countries.

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Digital Health Literacy Toolkit: Module 3 – Case Examples

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CONTENTS

1 GLOSSARY

Table 1: Terms Used in This Toolkit

Term	Definition
Caregiver	Individuals who provide support to another individual, including interacting with health care delivery services on their behalf (in some countries, the term *carer* may be used more frequently).
Digital health	The use of electronic information and technologies to manage health and deliver care.
Digital health literacy	The ability to find, understand, and apply health information, and to manage one's own health, by using electronic tools and information sources such as apps, video conferencing platforms, online portals and web sites.
Digital inclusion	The activities necessary to ensure that all individuals and communities have access to and use of technology.
Global Digital Health Partnership	A collaboration of country governments and global partner organisations formed to support the executive implementation of worldwide digital health services.
Interoperability	The ability for information systems and software to exchange mutually comprehensible and usable data.
Lived/living experience	The firsthand, direct experience, choices, and knowledge of a given individual. Lived/living experience is distinct from second-hand or mediated knowledge (e.g., having knowledge *about* a community, as opposed to having the knowledge of *being from* a community).
Patients	Individuals who are actively engaging with health care delivery services to manage or improve their own health.
Person-centered care	An approach to care which prioritizes the individual health needs, goals, and values of the person receiving care.
Personal health information	Any identifying information about a person's health or health care.
The public	The general population, beyond a health care context.
Virtual care	Health care delivered via technology, whether synchronously or asynchronously.

2 EXECUTIVE SUMMARY

Digital health literacy is a foundational element of successful health care transformation. The ability to independently and safely access, understand, and apply health information, and to manage one's own health by using electronic tools and information sources such as apps, video conferencing platforms, and online portals is now essential. As digital tools increasingly support the delivery and management of care, digital health literacy supports patients' autonomy, agency, and participation within the health system, enabling them to:

- Access, manage, and use their own health data to make informed decisions about their health and health care
- Use technology to actively participate in their care
- Use technology to self-manage their health as appropriate
- To the extent possible, choose the modality of care best suited to their individual health needs, goals, and preferences.

This toolkit compiles international learnings and practices to support the advancement of public digital health literacy. Developed by the Clinical and Human Engagement work stream of the Global Digital Health Partnership (GDHP), it is intended for use by anyone seeking to:

- Develop or procure resources to build digital health literacy skills among the general public
- Contextualize their existing digital health literacy work within the international landscape
- Understand the evolving definitions, impacts, and implications of digital health literacy.

The GDHP was founded in 2018 to facilitate cooperation and knowledge exchange in digital health. This toolkit integrates its membership's collective expertise through a members' survey, semi-structured interviews, and consultation at bi-annual summits. Member insights are complemented with a collection of international digital health resources and considerations for developing digital health literacy resources.

This document contains Module 3 – Case Examples. Download the full Digital Health Literacy Toolkit at www.gdhp.health.

3 CASE EXAMPLES

IN THIS SECTION

3.1. BACKGROUND

Based on education priority areas identified in the GDHP Digital Health Literacy Survey, several digital health literacy resources were considered for "deep dive" interviews.

Diversity in geography, health system structure, and resource format was prioritized alongside alignment with the priority areas. Guided by these considerations, candidates were selected from the GDHP member survey and presented to the work stream for consideration.

Case examples were developed for:

- Australia
- Canada
- Hong Kong

3.1.1. Methodology

Interviews were semi-structured and lasted approximately one hour. Draft interview questions were circulated to and revised by the work stream. General themes included:

- Process and resourcing
- Patient engagement
- Outcomes and learnings

The interviews were conducted by the work stream chair(s) and support staff with members of the respective digital health literacy resource's project team.

3.2. AUSTRALIA – MY HEALTH RECORD E-LEARNING MODULES

3.2.1. Resource Summary

The eLearning resources provided by the Australian Digital Health Agency (the Agency) cover a range of digital health topics including My Health Record, my health app, and electronic prescriptions. Accessed through the Australian Digital Health Agency Online Learning Portal, the resources are presented as online learning modules containing text, instructional videos, and quiz-style questions. Learners are encouraged to explore and complete the modules according to their own interest and preferred pace.

My Health Record is a digital health record that enables Australians and their health care providers to securely view their health information online. It is part of a national system

and has used an “opt-out” model since 2019. My Health Record can be linked to myGov: an online account for Australians to access and manage government services.

The My Health Record eLearning course includes five topic areas:

- Introduction to My Health Record
- My Health Record privacy and access
- Immunisation and COVID-19 related health information in My Health Record
- Key clinical documents in My Health Record
- Personal health information in My Health Record

Older Australians and their carers also have the option to view a curated subset of My Health Record topics.

Each topic area contains 3-10 interactive modules that learners can complete in any order. Interactive elements are used throughout, such as expandable definitions, “click through” information cards, short videos (and transcripts), and quiz-style questions to encourage learners to check their understanding. Graphics are used to highlight key information.

In addition to the eLearning modules on the Australian Digital Health Agency Online Learning Portal, recorded learning sessions are available on YouTube. Videos are presented in two playlists: one in which the session host is visible, and one featuring an Auslan (Australian Sign Language) interpreter. Most videos are between 20-40 minutes long.

3.2.2. Process

Context

On January 31, 2019, My Health Record transitioned from an “opt-in” to “opt-out” model, catalysing a need for digital health literacy resources to support Australians with a My Health Record.

Curriculum Development

The Agency had previously undertaken work in education and digital health literacy support for clinicians. “Consumer education” now followed. Initially, instructional videos were released to support Australians using My Health Record. These videos focused primarily on the functional access and use of My Health record – e.g., demonstrating how to login, view lab results, and upload documents. However, the Agency recognized the need for additional support to help Australians to understand the benefits of My Health Record and managing one’s own health information electronically.

Accordingly, the My Health Record eLearning Modules were initially developed over the course of one year from 2021 to 2022. The project team comprised approximately 20 people. Many project team members were instructional design and adult education specialists, supported by subject matter experts.

Cross-functional collaboration

New bespoke content was developed for the modules, rather than attempting to adapt resources originally intended for health care providers.

Developing resources for a general audience required ongoing attention to balancing technical accuracy and readability/relevance. Collaboration across the Agency was instrumental to achieving this equilibrium: for example, working with privacy/compliance experts to ensure precision in language, while incorporating adult learning principles.

The project team also leveraged animation and other dynamic means of conveying information – to "say more with less." Animations, videos, and other content were developed by internal Agency teams.

Iteration and accessibility

An iterative approach was taken to development. Modules were refined through testing; for instance, experimentation determined the optimal length to linger on animations and text in videos. User feedback also informed module refinement on an ongoing basis. During the 2023 interview, the interview informant commented that a flip card feature then in use posed accessibility challenges. As of 2024, the flip card feature has been removed from the eLearning Modules.

A particular challenge was noted in developing accessible webinars. Efforts were made to utilize Australian Sign Language (Auslan) interpreters. However, the webinars were held on Zoom, which made such interpretation challenging. Zoom shows speakers' heads and shoulders only, but Auslan interpreters must be seen from the waist up. As of May 2024, two distinct playlists are available on YouTube: one with the webinar host visible; and one in which an Auslan interpreter is seen instead.

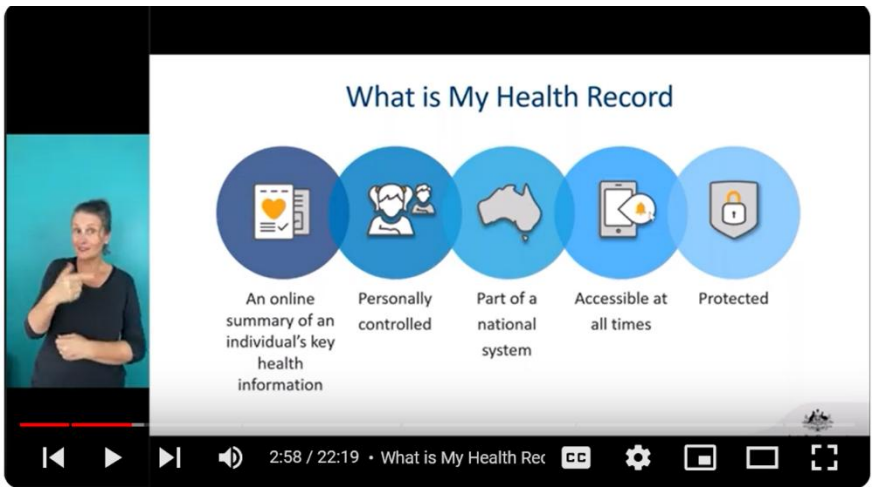

Figure 6: Recorded webinar with an Auslan interpreter.

3.2.3. Patient Engagement

Consumer advisors were engaged in the development of eLearning Modules' curriculum. A balance was sought between tailoring information for groups with specific lived/living experience, and developing broadly relevant content. An example of such balance may be seen in the creation of a curated subset of modules which may be particularly pertinent to older Australians and their caregivers.

Community networks were engaged in the dissemination of the eLearning Modules, such as through partnerships with the Good Things Foundation, Diabetes Australia, and leaders and representatives from 2SLGBTQIA+ and Aboriginal and Torres Strait Islander communities. Activities involving community groups included:

- Live learning opportunities
- Webinars
- Train-the-trainer initiatives

As of January 2025, free online digital health learning sessions for community groups and organisations can be requested by emailing education@digitalhealth.gov.au.

3.2.4. Evaluation

It is difficult to ascertain the eLearning Modules' reach as only page views are recorded. However, according to the Agency's 2022-2023 Annual Report (Australian Digital Health Agency, 2023), in 2022-2023, the Agency delivered:

- 461 education sessions
    - 5000 live participants
    - 6000 people viewing recorded sessions
- 133 learning sessions co-delivered with Agency partners
- 66 train the trainer sessions
    - 750+ attendees

Note that the attendance figures listed above include health care providers as well as the general public/communities.

Feedback is collected regularly on eLearning content, webinars, and live education sessions, and is used to inform future developments. The eLearning Modules include a brief survey at the module's conclusion that seeks user feedback about the content and its delivery. The survey is not intended to assess the respondent's digital health knowledge or skills.

3.2.5. Lessons Learned

The My Health Record eLearning Modules were premised on the notion that digital health literacy encompasses more than technical proficiency. An underlying principle in the eLearning Modules' development is that digital health literacy involves understanding the benefits, relevance, and purpose behind digital health literacy tools and resources: the why, as well as the how. Engaging materials that provide greater context can encourage digital health adoption: the ability to functionally use a tool is insufficient if individuals lack the motivation and/or confidence to do so, or if perceived risks outweigh perceived benefits.

The eLearning Modules were also grounded in adult education and instructional design principles. The interdisciplinary expertise within the Agency ensured that the modules' development was supported by digital health subject matter knowledge and a deep understanding of how adults learn.

Though consumer advisors were engaged in the development of the curriculum, involving patients and the public earlier in the resource development process was identified as a potential area for future growth. Community partnerships were primarily leveraged in the dissemination of content.

Similarly, an "accessibility by design" approach was raised as a potential area for further consideration. The value of proactively embedding accessibility from the planning stages was highlighted.

3.2.6. Case Example References

Australian Digital Health Agency. (2023). Annual report 2022-2023. https://www.digitalhealth.gov.au/sites/default/files/documents/australian-digital-health-agency-annual-report-2022-23.pdf

Australian National Audit Office, 'Implementation of the My Health Record System,' (Canberra: Commonwealth of Australia, 2019). https://www.anao.gov.au/sites/default/files/Auditor-General_Report_2019-2020_13.PDF

3.3. CANADA – DIGITAL HEALTH LEARNING PROGRAM

3.3.1. Resource Summary

The Digital Health Learning Program is a collection of free learning resources developed by Canada Health Infoway. Content is grouped into three overarching themes:

- Learn About Virtual Care
- Get Familiar with Health Data
- Explore Proactive Health Management

The Digital Health Learning Program resources include:

- Articles
- Infographics
- Checklists
- Frequently Asked Questions

All resources were designed to be suitable for displaying/disseminating in hard copy (e.g., at health care provider offices, in religious centres, community centres, etc.) in addition to being accessible online. The resources are available in a variety of languages in addition to Canada's official languages, English and French.

The resources reflect Canada's federated model of health care, in which Canada's 13 provinces and territories are responsible for the management, organisation, and delivery of health care services to their residents. As such, the resources in the Digital Health Learning Program include, where appropriate, information specific to each province and territory.

Though replete with sources and hyperlinks to additional resources, the Digital Health Learning Program's content is generally static, with limited user interactivity.

3.3.2. Process

In 2021, Canada Health Infoway received federal funding to support virtual care, including improved digital health literacy for patients, families, and caregivers. The Digital Health Learning Program had an overarching objective to, "Provide a set of materials and tools to provide a baseline of digital health literacy for patients, families, caregivers and Canadians, specifically in virtual care" (Canada Health Infoway, 2021).

The Digital Health Learning Program was developed in accordance with three guiding principles:

- Collaboration: Co-design with patients, clinicians, and minority/vulnerable populations
- Engagement: Continuous, respectful engagement with diverse groups/associations, provinces and territories, and other pertinent individuals
- Governance: Develop an empowered Advisory Committee reflective of Canada's diverse cultures and experiences within its health systems

Project team members characterized the project's process as unfolding in three distinct stages over the course of one year:

- Discovery
    - Program charter and project plan
    - Advisory Committee established
- Definition and Building
    - Environmental scan and needs assessment
    - Validation of findings through interviews and focus groups
    - Topic selection, based on feasibility and desirability
        - *Topics ranked medium/high feasibility and medium/high desirability were prioritized for inclusion.*
    - Core content created and tested
- Deployment
    - Materials translated and disseminated
    - Communications campaign to drive awareness of and engagement with the program
    - Project evaluation

The core project team consisted of two patient engagement leads, a change management specialist, and a project manager, with additional support from an external consulting firm.

3.3.3. Patient Engagement

Continuous, meaningful engagement and co-design with patients, families, and caregivers was a guiding principle in the development of the Digital Health Learning Program. Engagement occurred through multiple channels, and with varying degrees of depth:

Advisory Committee

The Digital Health Learning Program was guided and shaped by an Advisory Committee, whose members reflected the diversity of cultures in Canada, and the diversity of experiences within its health systems. Advisory Committee members included clinicians and patients that represented a breadth of geographies, experiences, and perspectives, including in Indigenous health, primary care, mental health, and substance use. The committee met monthly and communicated on an ad hoc basis as needed.

Advisory Committee Mandate:

To provide advice, guide us and make recommendations to the Digital Health Literacy Program as we advance from ideation to execution.

The Program aims to improve the digital health literacy for patients, families, caregivers and Canadians by:

1. *Developing a set of materials and tools which will form a baseline of digital health literacy, specifically in virtual care.*
2. *Creating enhanced awareness, capability and trust in using virtual solutions*
3. *Provide patients, families and caregivers the ability to take higher agency over their health and health choices.*

Project Engagement

In addition to governance through the Advisory Committee, patients, families, and caregivers were involved throughout the program's research and development:

- To ensure diversity of perspectives, 40+ community engagements were held with community members and/or organisations representing marginalized/minority populations, and mature and senior adults. Over ten engagements were held with Indigenous community members and leaders.
- Interviews and focus groups were conducted at each project phase for validation, and to direct future work. These engagements included 29 in-depth interviews with patients, families, caregivers and subject matter experts.
- A survey validated perspectives and information gathered during initial research. The 1200+ survey respondents included representation from all provinces and territories and a broad demographic range.

Implementation

To raise awareness and engagement among priority populations, engagement continued through the implementation phase. Rather than focusing on traditional channels for finding health information, a strategy was undertaken to "meet people where they are at," by communicating at a community level. The project team expressed that this strategy was particularly important to reach populations which may experience barriers within the health systems.

As such, Digital Health Learning Program materials were translated into diverse languages, white-labelled, and shared with health care organisations as well as disseminated through community settings: e.g., libraries, religious centres, and community centres. This approach enabled Digital Health Learning program materials to be accessed through sources with which audiences had pre-existing relationships, familiarity, and trust.

3.3.4. Outcomes

During the project, in total, 23 million Canadians were exposed to the Digital Health Learning Program materials[1]. This number included:

- Over 300,000 website visitors
- Nearly 12,000 downloads
- 7.5 million offline interactions (through traditional print media, radio, etc.)

No evaluation was undertaken to assess Digital Health Learning Program users' digital health literacy skills before and after interacting the resources.

3.3.5. Lessons Learned

Project conception to deployment took approximately one year. The project team reported that scoping was consequently vital to the project's success. Amidst constrained timelines and resources, the strategic decision was made to concentrate on high-feasibility, high-desirability topics, to ensure greatest impact.

The project team emphasized the criticality of co-design to each project phase. The project team cited ongoing multiple surveys/focus groups/interviews to validate findings, the Advisory Committee to guide the project's approach, and community partnerships in disseminating the completed resources.

The project team also shared that a philosophy of "in-reach" supported the Digital Health Learning Program's efforts to bridge the digital divide. Rather than relying on traditional channels of finding health information, the project team leveraged community networks, bringing information *into* priority population's spaces, rather than reaching *outwards* from health system settings.

3.3.6. Case Example References

Canada Health Infoway. (2021). Digital Health Learning Program. https://www.infoway-inforoute.ca/en/patients-families-caregivers/digital-health-learning-program

Statistics Canada. (2023). Canada's population estimates: Record-high population growth in 2022. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/230322/dq230322f-eng.htm

[1] In 2022, Canada's population was about 38.5 million people (Statistics Canada, 2023).

3.4. HONG KONG – HA GO WEBSITE

3.4.1. Resource Summary

HA Go is the Hong Kong Hospital Authority's app, a "one-stop mobile platform" (Hong Kong Hospital Authority, 2021) that enables patients to check and book appointments, pay bills, view their medications and health records and improve patient experience in the overall health care journey. The HA Go website provides an overview of the app, its features, the registration process, and frequently asked questions.

The website is available in English, Chinese (Traditional), and Chinese (Simplified). The content is organized into six sections:

- About HA Go
- Registration
- Carer/My Family
- Features
- FAQs
- What's New

Hovering over each tab displays subsections and their respective topics, facilitating information finding:

Hovering over each tab displays subsections and their respective topics, facilitating information finding.

Subsections and their topics are also displayed in a footer menu located at the bottom of the web page, enabling users to navigate to another topic without scrolling back up to the main menu, or searching elsewhere on the website.

The website uses graphics and video extensively. Tables are also used for visual comparisons (e.g., for carer access scope). Graphics assist website navigation. For example, the "How to Register" page directs users to content based on whether they are self-registering as an adult, or registering a minor.

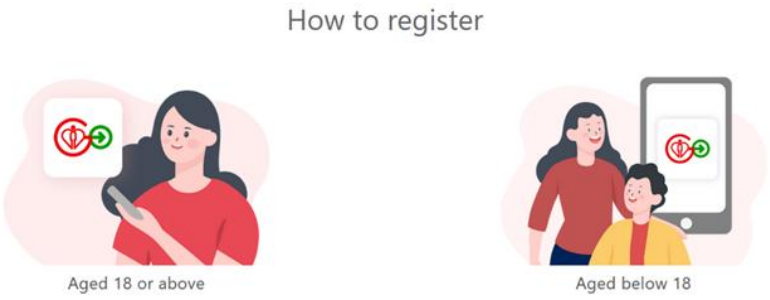

Figure 7: Graphics assist users in finding the information most relevant to them.

Videos demonstrate the app's use. The videos are accompanied by PDFs that contain similar information in a downloadable format. Like the videos, the PDFs rely heavily on graphics, with minimal text.

The HA Go website focuses on teaching users how to use the app and its features. While one page outlines the app's benefits to patients and clinicians, less emphasis is placed on managing and applying one's own health information.

The website contains no interactive features or mechanisms to collect user feedback.

3.4.2. Process

Background and Context

In the 1990s, Hong Kong's health system underwent significant structural change, in which its public sector hospitals and most clinics were gathered under the Hong Kong Hospital Authority (HA). This transformation included modernization of the hospitals' management and information technology, including investment in the EMR system; HA built its own EMR aligned with its clinicians' needs and workflows.

Initially focused on health care providers, HA's digital systems expanded to include patients and leverage consumer tools such as smartphones and apps. Mirroring the strategy to build and deploy a single EMR system throughout the hospitals, HA developed a single patient-facing platform: the HA Go app.

> *That's how we got into our single app strategy. We said, "Okay, we need to bring all this stuff together... into one single app where all they need to know is how to use HA Go."*
>
> - *Interview informant*

Literacy by Design

HA's approach has been to build digital health literacy capacity through their products' design, rather than through concentrated educational initiatives. Features and apps within HA Go are intended to provide seamless transitions, and/or to be self-evident in their operation. Accordingly, usability and design were significant areas of project investment; design firms were engaged to assist and supplement the project team's technical expertise.

A Single Common Entry Point

Within the broader health ecosystem, HA Go is intended to serve as a common point of entry for patients. As additional functionalities become needed, they are built onto the existing platform. While this "single entry point" structure may not be feasible or desirable for every health system, in the case of HA, it has facilitated patient engagement through common, consistent messaging and the ability to involve clinicians in supporting patients to use the app and in "prescribing" digital tools.

3.4.3. Dissemination

As HA Go is opt-in, dissemination efforts for the app and website have leveraged clinicians to enroll and support patients at the point of care. Clinician education has thus been a priority for disseminating resources. In addition, HA has fostered motivation amongst its hospitals through a "smart" hospital dashboard. Displaying metrics relating to patient- and digital-focused initiatives enables hospitals to compare their performance relative to others, thereby incentivizing hospitals to action.

HA has also deployed public-facing dissemination materials in print media and television media interviews, as well as YouTube, Instagram, and other social media platforms. Media dissemination has led to demonstrable increases in enrollment. Currently, more than three million people (out of a population of seven million) are enrolled in the HA Go app.

3.4.4. Patient Engagement

While previous HA engagement efforts have concentrated on clinicians, a shift is underway towards a person-centered approach, focusing on patient challenges and experiences in addition to clinical workflows.

Particular efforts have been put towards understanding and articulating HA Go's value proposition for patients. For instance, Hong Kong has a significant population of older adults, who may be less likely to engage with digital tools. Engagement efforts thus centered not only older adults, but carers as well; for example, promoting the ability for digital-literate carers to assist patients to manage their appointment bookings and bills payment via HA Go mobile, or to accompany the patient to attend a teleconsultation through the HA Go app to provide emotional and care support.

There remains further opportunity to support other specialized and/or underserved groups; for example, AI is being explored to assist with translation for South Asian minority groups.

3.4.5. Evaluation

Behavioural changes and positive feedback have both been observed from the HA Go app. One recurring piece of feedback from users is the desire for more features and content, implemented at a faster rate.

There is a movement towards integrating more value-based metrics, in addition to building in measurement at the design stage of its resources. Rather than relying on feedback channels like surveys and manual reporting, metrics about the resource would populate a dashboard.

3.4.6. Lessons Learned

Digital health literacy capacity can be built through educational efforts, but the ability for people to use digital health tools can also result from strong, user-centric design. The platform's design indicates how to use it (El Morr, 2018). While such "intuitive" interfaces remain reliant on a baseline level of digital literacy, they enable patients to learn by doing. Moreover, a platform that is easy to use – and offers a higher-quality and/or more convenient experience – becomes in itself a strong value proposition to motivate and encourage use.

Early focus on digitizing medical records built a strong foundation for long-term, sustainable initiatives. Efforts to create an electronic medical record which supported HA clinician workflows facilitated the eventual entry of a patient-facing platform. It also encouraged the notion of a "single point of entry" – HA Go is not only designed to be easily used, it is designed to be the only app patients need to use to access digital health services within the authority.

3.4.7. Case Example References

El Morr, C. (2018). Introduction to Health Informatics: A Canadian Perspective. Canadian Scholars.

Hong Kong Hospital Authority. (2021). What is HA Go? HA Go. https://www2.ha.org.hk/hago/en/about-ha-go/ha-go/what-is-ha-go

3.5. APPENDIX: DEEP DIVE INTERVIEW QUESTIONS

Digital Health Literacy Resource Repository: Case Example Interview Questions

Process and Resourcing:

- What was the process for creating this resource?
- Tell us about the team that created this resource — what experiences and talents did they bring to the table?
- What challenges did you face? How did you overcome them?

Patient Engagement:

- What strategies did you undertake to engage patients through the development of this resource? What impacts did their contributions have?
- What about specialized populations, i.e., seniors, marginalized groups, those whose first language is different than your country's official language(s), etc.?
- When the resource was completed, how did you communicate about/market it to audiences?

Outcomes and Learnings:

- How have patients responded to this resource? What impacts or benefits have you seen?
- Do you feel this resource has met its goals? Why or why not?
- What would you change if you undertook this process again?


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