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MyStay – Development of nurse-facilitated condition-specific multimedia resources to facilitate patient participation in postoperative care

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Abstract

Improved postoperative outcomes and the global drive toward the provision of patient-centred care underpins efforts to enhance the nature and capacity of patient participation in acute postoperative hospital care. In this paper, we describe the design, framework and processes used to develop a modular, procedure-specific, digital health intervention platform aimed at improving the patient experience and patient participation in care following surgery. The intervention, a multimedia application *MyStay*, uses bedside delivery of audio-visual and text-based information to engage postoperative patients to better participate in their care. *MyStay* modules are developed using an iterative, multi-method approach intended to balance procedure-specific best evidence, current clinical practice, and patient preferences. Development involves six key elements: (1) Empathise with target users, (2) Ground in evidence and behavioural theory, (3) Specify target behaviours, (4) Integration of health service standards and clinical care pathways/guidelines, (5) Build and refine the multimedia product and, (6) Pilot implementation to assess potential effectiveness and usability. To-date, we have developed four procedure-specific *MyStay* modules and an additional three are under development. Initial patient usage data for the Total Knee Replacement (TKR) and cardiac surgery applications indicated that users accessed a wide range of text-based and audio-visual information, most frequently recovery goals and exercises following TKR, and postoperative recovery information for the intensive care unit following cardiac surgery. As previous research that tested *MyStay* indicated its efficacy in optimising clinical postoperative outcomes, this framework may be useful in the development of other digital health innovations. Further research is required to assess patient and clinician engagement and determine whether *MyStay* is associated with improved patient outcomes across varied clinical contexts.

Keywords

Patient experience, patient-centered care, consumer engagement, quality of care, communication

Background

Contemporary expert opinion,¹⁻³ professional practice standards,⁴ and standards for quality and safety in healthcare⁵⁻⁷ emphasise the global need for clinicians to provide patient-centred care. The National Institute for Health and Care Excellence (NICE), the Australian Commission on Safety and Quality in Health Care (ACSQHC), and the Agency for Healthcare Research and Quality (AHRQ) have all recognised the key need for greater clinician-patient collaboration to promote the delivery of safe and high quality patient care in healthcare organisations.^{5, 7, 8} Within the wider research literature, patient participation in their own care has been recommended as an indicator for measuring nursing care quality^{9, 10} and has been associated with improved health outcomes,¹¹ including shorter acute care admissions,^{12, 13} and better management of post-discharge recovery.¹⁴

Achieving participation requires patients to be informed and involved in decision-making about their health.¹⁵ Nurses are at the forefront of facilitating patient participation within acute care settings.¹⁶ However, due to high levels of patient acuity, trends toward shorter hospital stays, and complex clinical care involving management of competing demands within fast-paced and busy environments,^{17, 18} effectively engaging patients to participate in their recovery is challenging for nurses in acute care settings.¹⁹

To support patient recovery and avoid in-hospital complications, it is well documented that both preoperative and postoperative education is required.²⁰⁻²² Preoperative information is essential to orientate and inform patients about their surgery and anticipated recovery path,^{23, 24} however some studies have shown that preoperative education alone had a limited impact on

patient outcomes. In contrast, the information provided in the early postoperative period needs to be targeted and specific to engage patients in specific aspects of their care that have an immediate impact on recovery such as early ambulation, effective pain management, and prevention of complications.^{14, 25-27}

Efforts to engage patients through education have conventionally relied upon the dissemination of informational leaflets and other paper-based resources.^{28, 29} Limitations of such approaches in the context of an acute hospitalisation are the static presentation of the information, fluctuation in the cognitive and motivational ability of patients, uncertainty about the best time to deliver the information, and inability to reliably determine whether resources are utilised. Research that observed nurses in two-hour blocks of time identified that on average, surgical nurses spent only approximately four minutes communicating with patients about their care.¹⁸ In this context, patient-facing bedside and mobile digital technology offers a novel solution to facilitate the effective delivery of consumer-focused, evidence-based information and resources to patients in an accessible format at the ‘right’ time.²⁹⁻³¹

Research shows interactive digital multimedia applications can effectively inform patients about expected outcomes during hospital admissions³² and enhance the nurse-patient relationship by encouraging communication.^{33, 34} Digital technology has been integrated within various inpatient settings to guide postoperative ambulation, reduce delirium and in-hospital falls, and improve the management of patient care.^{27, 34-36}

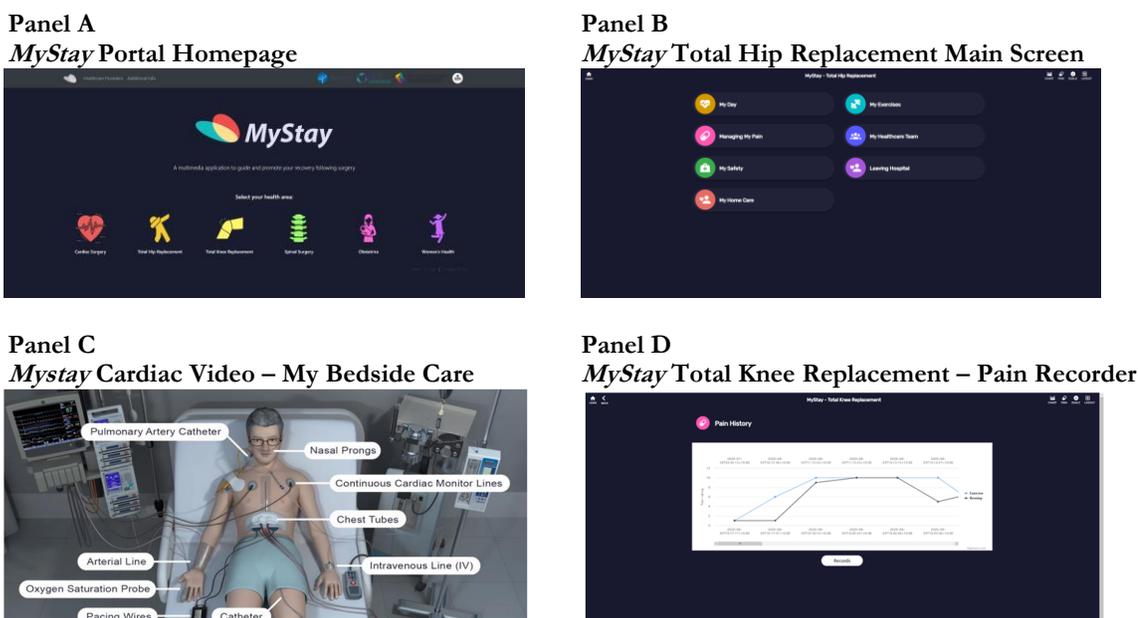
Over the past decade, researchers at our university / hospital partnership organisation have developed and tested an innovative, modular multimedia application for the provision of consistent, procedure-specific, evidence-based guidance for patients undergoing surgery (*MyStay*). *MyStay* was developed through a process of rigorous patient and clinician co-design to reduce variability in the quality-of-care delivery by facilitating patient engagement in meeting their postoperative recovery goals, manage pain, prepare for discharge, and self-manage following hospital discharge. The development of each *MyStay* module is informed by the ten-step IDEAS (Integrate, Design, Assess and Share) framework for developing effective digital interventions.³⁷ The aim of this paper is describe processes used to develop evidence-based procedure-specific *MyStay* multimedia modules to support patient participation in their acute postoperative care and recovery and inform future development of similar applications.

Methods

Description of the intervention

The *MyStay* multimedia program combines text, audio, video, and 3D animations to deliver information to patients and their families to enhance their understanding of, and participation in, postoperative care, meeting recovery goals, and discharge planning (see Figure 1, Panels A - D). The web-based platform allows patients to access *MyStay* both prior to, and following, their surgery. Providing preoperative access to *MyStay* is intended to provide patients with an opportunity to prepare for their surgery by better understanding their likely trajectory of recovery, setting realistic expectations about the care they

Figure 1. Screenshots of *MyStay* multimedia applications



will receive, as well as how they can enhance their own recovery through active participation in exercise and pain management. The ability to access *MyStay* from home also allows for post-discharge care information to be included in the modules. Patients, family members and healthcare professionals are all considered potential 'end-users' of the system,³⁸ as they may interact with the program during trials and clinical use.

MyStay uses a modular design so that individual applications for different surgery types can be linked together to share similar content via a central portal hub (Figure 1, Panel A). This design facilitates development of additional surgery-specific modules that can be added and allows the developers to undertake upgrades as required. Content within each surgical application is organised in modules so specific components can be added, edited, or upgraded as needed. Additional features of *MyStay* include the ability for patients to track their own daily progress goals, and record the trajectory of their pain intensity, both while exercising and at rest (see Figure 1, Panel D).

MyStay development process

Each *MyStay* module is developed using an iterative, multi-method approach aimed at ensuring that program content is ecologically valid and reflects an optimal balance between procedure-specific best evidence, current clinical practice, and patient preferences. The key elements in the development process are outlined below.

Empathise with target users

Consumer views are included using participatory co-design methods.^{39, 40} Individuals who recently underwent a surgical procedure relevant to the specific *MyStay* module are identified by healthcare clinicians. Surveys, individual interviews, and consumer co-design workshops are used to obtain consumer views about the content and format of each *MyStay* module.

For each *MyStay* module developed, between six and ten consumers are involved in the co-design process. Consumers are asked to share their views on (1) key information or resources that they believe are important to patients at each stage of their recovery and (2) potential ideas for how and when this information could be provided to consumers. This information is then used to inform the content, design, and delivery of each procedure specific *MyStay* module.

Grounded in evidence and behavioural theory

The content for each surgical module is built on a systematic review to locate current evidence specific to each patient recovery following each surgical procedure. To ensure that the recommendations included in the *MyStay* modules reflect current best practice, literature searches are limited to evidence published within the previous five years. This involves discussion with a nursing

liaison librarian, a structured search of electronic bibliographic databases for relevant published studies (Medline Complete, CINAHL Complete, Embase), grey literature (Google, Google Scholar), and hand-searching of reference lists. Best-practice guidelines for postoperative recovery following specific surgical procedures were also obtained and reviewed as part of the evidence-review.⁴¹

Search strategies are directed toward scoping best evidence to inform procedure-specific consumer information about recommended interventions to improve patient outcomes through guided postoperative care pathways that promote patient engagement and participation in care. Search algorithms comprise combinations of Medical Subject (MeSH) and electronic bibliographic database headings, as well as relevant keywords using *Population, Concept and Context* (PCC) logic, according to the Joanna Briggs Institute method.⁴² An example search used to examine the efficacy of care interventions following coronary artery bypass graft surgery (CABG) is presented in online Supplement A (see Appendix).

The level of evidence for published studies included in each systematic review is graded according to National Health and Medical Research Council (NHMRC) criteria for interventional studies.⁴³ The methodological quality of studies is appraised according to the criteria outlined by the Critical Appraisal Skills Programme (CASP).⁴⁴ Study outcomes are synthesised qualitatively, with a focus on identifying key opportunities for patients to be active participants in their own care at each stage of their recovery, for example participating in pain management, exercise rehabilitation and early ambulation, medication management and patient safety are common elements.

In parallel with the review of the research evidence, evidence-based clinical guidelines and consumer resources provided by peak professional and consumer organisations, in addition to individual hospital care pathways and care guides are reviewed.⁴¹ The key elements extracted from grey literature include: recommended medical, nursing and physiotherapy care at each stage of patients' postoperative recovery and the quality of the evidence to support these interventions.

Specify target behaviours

The findings from the systematic review of peer-reviewed research and grey literature are then used to identify key actionable daily recovery goals for patients during the first week following specific surgical procedures (for example: joint arthroplasty surgery, cardiac surgery, spinal fusion). Health care behaviour science theory was incorporated in the development of recovery goals that could be adapted for individual patients.⁴⁵ These goals were developed using the SMART acronym – Specific, Measurable, Achievable, Relevant/ Rewarding and Timely.^{46, 47} In the context of acute postoperative recovery each of the included patient

goals was developed and framed to be immediately relevant to the early (day of surgery to seven days) postoperative period. There is however the capability on the digital platform to incorporate longer-term recovery and behaviour change goals in future iterations of the *MyStay* modules.

To ensure the module content and identified patient recovery goals reflect current local expert opinion, we seek consensus on the draft *MyStay* goals for each surgical procedure from medical, nursing, physiotherapists, and where appropriate, midwifery clinicians via a Delphi process.⁴⁸

Delphi consensus surveys are distributed for at least two rounds and invite clinicians to provide feedback on the appropriateness, importance, and wording of each patient recovery goal. Clinicians are asked to review the proposed recovery goals and choose one of the following responses: (i) important and should be included; (ii) important but requires revision; (iii) not important; or (iv) unsure. To reach consensus, 80% or more clinicians need to agree on the goal of care.⁴⁹ Goals which did not reach consensus are revised with respect to participant feedback and modified goals are re-distributed. This process is continued until all goals of care receive at least 80% agreement.⁴⁹

Delphi surveys are also distributed to patient consumers who have recently undergone the specific surgical procedure to obtain their feedback on the relevance, wording and completeness of the identified recovery goals.

Integration of health service standards and clinical care pathways/guidelines,

To ensure that *MyStay* has currency with the shared concerns of healthcare organisational leaders, the content of individual modules is designed to align with relevant national standards for quality and safety in healthcare. In Australia, these are the eight National Safety and Quality Health Service standards (NSQHS): clinical governance; partnering with consumers; preventing and controlling healthcare-associated infection; medication safety; comprehensive care; communicating for safety; blood management; recognising and responding to acute deterioration.⁵ As indicated, a key focus of the *MyStay* application is meeting accreditation requirements aligned with the *Partnering with Consumers* standard. However, where possible, *MyStay* modules are designed to incorporate information about daily care in other NSQHS standards. For example, information is included about how consumers can contribute to minimising their risk of complications such as venous thromboembolism and surgical site infections in the early postoperative period. Integration of this information is critical to increasing the ecological validity of the application to ensure it aligns with the local practice context.^{50, 51}

Build and refine the multimedia product

To enable patient participation, the technology needs to be accessible and understandable by people with varying skills, levels of cognition, and educational ability.⁵² Research indicates that multimedia platforms that present information via mixed-modalities are an effective and engaging means of communicating evidence-based health information.³⁴ Consequently, module designs from *MyStay* storyboards are adapted to the web platform in accordance with the Principles of Universal Design: equitable use; flexibility in use; simple and intuitive use; perceptible information; tolerance for error; low physical effort; and size and space for approach and use.⁵³

Of note, the *MyStay* platform was developed in HyperText Markup Language (HTML) to ensure (1) universal accessibility across varied device types; (2) compatibility with both point-of-care and mobile systems - at present, and in the foreseeable future; (3) ability to leverage other web-based resources, such as text-to-speech and online video streaming platforms; and (4) ease in updating content, which can be added to the platform by the research team, rather than via IT professionals, thereby lowering total development costs. All overarching framework and design decisions with respect to the Principles of Universal Design are detailed in Online Supplement B (See Appendix).

During development of each *MyStay* module, patient consumers are again invited to review the pre-final storyboards, to provide comments on the appropriateness of content and language and make suggest ideas for further improvement. Images, text and voiceover scripts, and depictions of videos and 3D animations were included within a storyboard to provide a detailed representation of the application.

Pilot implementation to assess potential efficacy and usability

Once each *MyStay* module is developed feedback is obtained from clinicians and consumers within each clinical area in which the specific *MyStay* module will be used regarding the best approach for implementation within their practice setting.

A pilot implementation study is then conducted to obtain real-time feedback from clinicians and patient consumers following surgery on the accessibility, usability, and acceptability of the digital multimedia resources.

In adapting the design to the technology platform, we embedded functions in *MyStay* to evaluate its clinical uptake in care. We have developed the system to allow the generation of usage reports with respect to the pages visited; activities performed (button pressed, audio played, video played); and duration of videos watched. The ability to track these data will inform future research into the effectiveness and implementation of the application and

refine future upgrades to improve users' experience of the application.

Results

Development outcomes

At the time of writing, four procedure-specific *MyStay* modules have been developed using the framework described above, and three are presently under development (see Table 1). We have produced a total of 58 unique *MyStay* animated videos, with individual surgical modules containing between 17 to 21 videos each. Pilot testing of the *MyStay* in surgical wards has been undertaken for one surgical module (Total Knee Replacement) and is presently underway in another (Cardiac surgery). A cluster randomised cross-over trial of *MyStay* Total Knee Replacement revealed that patients randomised to intervention wards experienced significantly lower acute pain intensity on postoperative Day 3, shorter hospital length of stay, greater satisfaction with care, and earlier return to work, than patients who received usual care.⁵⁴ Semi-structured interviews suggested that patients who used the application had improved awareness of goal-directed recovery with respect to pain management, the need to perform knee exercises to mobilise the joint and regular ambulation on the ward to mitigate risks of surgical complication.^{55, 56} Patients in the intervention group were also more likely than other patients to participate in their care by initiating requests, gathering information, negotiating care strategies and self-monitoring.⁵⁵ Challenges to the development and implementation of *MyStay* modules are summarised in Table 2.

Patient usage outcomes

Survey and interview responses from the evaluation of the initial *MyStay* module (*MyStay* Total Knee Replacement, Mobile app version; see Table 1) revealed that of the 89 of 104 intervention group participants who provided open comments, 47 (52.8%) and 44 (49.4%) explicitly identified that they had used the exercises and goals sections, respectively. During the evaluation, the key need for an

integrated information system to track the quantity of patient use was identified and contributed to the early decision to shift development from a native mobile application to an online, html-based system.

Usage data from the subsequent procedure-specific *MyStay* (Cardiac Surgery) is presented in Table 3. A total of 167 sessions of the *Cardiac MyStay* module were initiated on the surgical ward of a private-sector metropolitan hospital over a 13-month period between August 2020 and September 2021. Content analysis of application usage indicated three distinct patterns of use: rapid views (session \leq 2 minutes total duration, involving rapid sequence of clicks); content exploration (session $>$ 2 minutes total duration, videos/audios previewed, but not completed); and in-depth looks (session $>$ 2 minutes total duration, videos/audios viewed to completion). The most frequent pattern of use were rapid views ($n = 79$, 47.3%), followed by content exploration ($n = 57$, 34.1%) and in-depth looks ($n = 31$, 18.6%). This pattern of use is consistent with staff reports of using the *Cardiac MyStay* module as a tool to enhance preoperative education for patients and families, most usage sessions involved accessing material on recovery in the Intensive Care Unit (ICU) ($n = 111$, 66.5%). Information of recovery goals were accessed during 41.9% of sessions ($n = 70$). Exercise information and video content was accessed in approximately one-third of usage sessions.

Discussion

Positive engagement in care through e-health technologies can improve patients' functional and psychological outcomes.⁵⁷ This work addresses the critical need for a strategy to develop a technological solution that create opportunities for patient involvement in their hospital care that is also feasible for use in an acute hospital setting. Our solution is founded in effective behaviour change and knowledge translation theory, enhanced by structured facilitation by clinicians.^{39, 40, 48} Consistent with behaviour change theory *MyStay* supports capability, opportunity and

Table 1. Current development status of procedure-specific *MyStay* modules

| Procedure-specific module | Current development status | Number of videos (<i>n</i>) |
|--------------------------------------|-----------------------------------|-------------------------------|
| <i>MyStay</i> Total Knee Replacement | | |
| Mobile app version | Developed, tested | 17 |
| html version | Developed, pilot testing underway | 18 |
| <i>MyStay</i> Cardiac Surgery | Developed, pilot testing underway | 16 |
| <i>MyStay</i> Total Hip Replacement | Developed, pilot testing underway | 21 |
| <i>MyStay</i> Spinal Surgery | Under development ¹ | 17 |
| <i>MyStay</i> Caesarean Section | Under development ² | TBA |
| <i>MyStay</i> Hysterectomy | Under development ² | TBA |

Note. TBA – to be announced.

¹Phase 5 – Build and refine the multimedia product

²Phase 4 – Integration of health service standards and clinical care pathways

Table 2. Challenges regarding the development and implementation of the *MyStay* Multimedia Application for clinical practice

| Challenge | Solution |
|---|---|
| Application development | |
| Mismatch between consumer input and higher design principles | Co-design workshops facilitated with the explicit goal of eliciting the essence of consumers' contributions within a streamlined format appropriate to digital solutions. Following application development, discussions were held with key stakeholders and consumers to review decisions made by the design team |
| Accommodating individual clinician preferences, where a range of clinical responses are appropriate | Text and voice-over information designed to reflect a range of clinical scenarios and reinforce the need for consultation with treating clinicians for individualised patient care. |
| Change in clinicians' perspectives prior to, and following, beta testing | During the development process, we emphasised that each module is a 'live' application, subject to further refinement on at least a biannual basis. To allow further penetration of patient input, application updates are performed following formal pilot testing with patient-consumers. |
| Application implementation | |
| Misunderstandings of application purpose by clinical staff ¹ | Ongoing engagement with key clinicians, seeking continual feedback about the use of <i>MyStay</i> applications. |
| Organic integration into usual patient education and care procedures | Staff education during implementation to encourage the integration of <i>MyStay</i> into the clinical workflow. Supported by ongoing clinician education and engagement to promote its optimal use. |

¹ Some clinicians perceived the *MyStay* as purely for information provision rather than to promote participation. Others had concerns that the application was supposed to substitute for expert clinical input

motivation for patients to be activate participants, and work with the multidisciplinary team in complex acute healthcare environments.^{3, 4, 58-62}

Known barriers to the use of bedside technology include perceptions of limited time to engage, perceived irrelevance to nurses' existing roles, and poor usability.⁵⁴ In an attempt to mitigate the impact of such barriers, we employed the Principles of Universal Design⁵³ to optimise application usability, accessibility and safety. First, by structuring the program in a daily format with specific goals for patients to achieve, it is intended that the application minimises the time burden and maximises the clinical relevance. Second, we deliberately chose to deliver *MyStay* via a HTML-based web-based platform; thus leveraging ubiquitous technology with virtually universal accessibility across device types. Third, the ability to use

touch-screen devices, and the choice of text layout and graphical designs were selected to reduce the physical effort and cognitive burden when used by postoperative patients. Future research will be conducted by the research team to determine the degree to which end users rate *MyStay* as being useful, accessible and useable.

Limitations

MyStay modules are currently only available in the English language, limiting accessibility. There is however potential to develop and evaluate the use of *MyStay* in other languages and cultural contexts. A cluster randomised trial of a past iteration of *MyStay* indicated reduced postoperative pain intensity and hospital length of stay, and greater satisfaction with care in Total Knee Replacement patients.⁵⁴ However, the effectiveness of *MyStay* in promoting patient engagement and participation

Table 3. Use of Cardiac *MyStay* in one metropolitan hospital ward (Aug 2020 – Sep 2021)

| | Session type | | | Total (N = 167) |
|--|------------------------|------------------------------------|---------------------------|--------------------|
| | Rapid view (n = 79) | Content exploration (n = 57) | In-depth look (n = 31) | |
| Type of material accessed, n (%) | | | | |
| ICU recovery | 37 (46.8%) | 45 (78.9%) | 29 (93.5%) | 111 (66.5%) |
| Ward recovery | 23 (29.1%) | 32 (56.1%) | 15 (48.4%) | 70 (41.9%) |
| Goals | 21 (26.6%) | 28 (49.1%) | 21 (67.7%) | 70 (41.9%) |
| Exercise | 5 (6.3%) | 29 (50.9%) | 19 (61.3%) | 53 (31.7%) |
| Accessed audio-visual material, n (%) | | | | |
| Accessed video | 6 (7.6%) | 13 (22.8%) | 31 (100%) | 50 (29.9%) |
| Accessed audio | 0 (0%) | 8 (14%) | 13 (41.9%) | 21 (12.6%) |
| Total clicks, <i>Mdn</i> (<i>IQR</i>) | 5 (10) | 22 (31) | 73 (128) | 14 (29) |
| Total session length, mins <i>Mdn</i> (<i>IQR</i>) | 38 (62) | 429 (506.5) | 957 (1189) | 165 (574) |

in care may be influenced by the degree of clinician, nursing and physiotherapy engagement, endorsement and training in the application.⁵⁴ It is critically important that factors to optimise the successful implementation of *MyStay* in healthcare settings are analysed in future randomised controlled trials. Finally, while it is known that preoperative patient engagement assists to educate patients about their expected recovery after surgery,^{56, 63} our understanding of the *MyStay* application is limited by the general dearth of research about how technology fosters engagement in the immediate postoperative period.⁶⁴ We hope that the development and testing of this application may begin to help address this knowledge gap.

Conclusion

Delivering improved evidenced-based care and user satisfaction with healthcare is a priority for governments and healthcare organisations worldwide.⁴⁻⁸ *MyStay* may enhance patient engagement and participation in care and recovery following surgical and other invasive healthcare procedures. Enabling opportunities for patients to engage in their acute recovery after surgery without placing an additional burden on nurses in this context is a crucial consideration. *MyStay* is developed as a shared intervention where the patient and families can navigate in their own time at their own pace without placing an additional responsibility on nurses. Further research is required to assess patient and clinician engagement with *MyStay* and whether use of *MyStay* results in improved patient outcomes in a range of clinical contexts.

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Appendix

Online Supplement A. Example systematic review search terms for a review of the efficacy of care interventions following coronary artery bypass graft surgery (CABG)

| Search element | Search terms |
|----------------------------------|--|
| Population – type of surgery | “Cardiac surgery” OR “heart surgery” OR “open heart surgery” OR “thoracic surgery” OR sternotomy or “CABG” OR “coronary artery bypass graft” OR “valve replacement” OR “mitral valve replacement” OR “tricuspid valve replacement” OR “aortic valve replacement” OR pulmonary valve replacement” OR “heart valve replacement” |
| Concept – postoperative outcomes | “Postoperative complication*” OR “post operative complication*” OR “ambulation difficulties” OR “mobili?*” OR “breathing exercises” OR “deep breathing and coughing” OR “goal* of care” OR “pain management” OR “length of stay” OR “discharge criteria” OR “adverse event” OR recover* OR “phase I recovery” OR “postoperative recovery” OR “post operative recovery” OR mood OR fatigue OR cognit* OR affect |
| Context – the care context | Nurs* or physio* or therap* or “nursing care” or “acute care” OR “care pathway*” OR “patient participation” OR “client participation” OR “patient involve*” or “client involve*” OR “bedside care” OR “patient centered care” OR “patient-centered care” |

Appendix (cont'd.)

Online Supplement B. Using the principles of Universal Design to transition the *MyStay* framework to technology

| Universal Design Principle | <i>MyStay</i> framework | Design application |
|--|--|--|
| Equitable Use | <ul style="list-style-type: none"> Application accessible via personal computers and mobile digital technology. Able to be accessed by multiple users, with no limit on concurrent users. Accessible at point-of-care at health service providers and from patients' homes. | Universal accessibility. <ul style="list-style-type: none"> Application coded in html Delivered via a website Low use of system resources to reduce processing load and maximise compatibility with old systems Self-registration system allows creation of login details independent of research team |
| Flexibility in Use | <ul style="list-style-type: none"> Ability for users to navigate the application at their own pace. | <ul style="list-style-type: none"> Modular design structure |
| Simple and Intuitive Use | <ul style="list-style-type: none"> Supported by a user-friendly interface. Use of simple English to promote understandability. | <ul style="list-style-type: none"> Clean, modern design. Large buttons. Use of high contrast colours for visibility. Language use verified by a third-party linguist specialist to ensure content written at a literacy level of Year 8 English. |
| Perceptible Information | <ul style="list-style-type: none"> Communication and engagement optimised via mixed-modality information delivery. Ability to modify visual and accessibility parameters to suit users' needs via device settings. | <ul style="list-style-type: none"> Information delivered by the combined use of static text, visual images, audio, and video. <i>MyStay</i> videos incorporate a variety of methods - use of text, audio, and visual information. Delivery via web technology (html) ensures user can modify device settings, e.g., screen brightness, volume level and text size to suit individual needs. |
| Tolerance for Error | <ul style="list-style-type: none"> Supported safety features. | <ul style="list-style-type: none"> Content co-designed with best-evidence, expert opinion, and patient-feedback. Cannot be altered by end-users. |
| Low Physical Effort | <ul style="list-style-type: none"> Touch screen enabled to allow minimal effort to use and encourage patient use within 24 hours postoperatively. | <ul style="list-style-type: none"> Screens and navigation designed and scaled for use with touch screen devices |
| Size and Space for Approach and Use | <ul style="list-style-type: none"> Accessible on any portable handheld device and can be used both in the hospital bed and when patients were sitting in a chair. | <ul style="list-style-type: none"> Application coded in html Delivered via a website |
| Patient Safety and Infection Prevention | <ul style="list-style-type: none"> Ability for users to access <i>MyStay</i> using their own handheld device decreases the risk of cross-infection between patients sharing the same device. It also means <i>MyStay</i> can be accessed by patients being cared for in protective isolation | <ul style="list-style-type: none"> Accessible on mobile devices |