

MASTER

# digital human design principles and approach

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# objectives of the design principles and approach

- Enable efficient development, build, operation and maintenance of the digital human capability.
- Maximize the effectiveness of the digital human capability in achieving the agreed use case and associated performance goals.
- Enable operation of the digital human in accordance with the approved Operating Model including, but not limited to:
  - Error identification and correction.
  - Implementing future modifications and enhancements including the addition of use cases.
  - Maximizing visibility of the capability for governance purposes.
- Minimizing key person risk by basing all design activities on a set of standardized principles, templates and accelerators.
- Documenting an easily understood framework for work to be performed by client SMEs.
- Enabling rapid and error free transfer of content between the AI corpus and external control/creation documents (such as spreadsheets).

# core SME design principles

Design Principle	Definition	Rationale
Reduce conversation complexity	Natural empathic conversations are supported by embedded features (video, images, maps, text etc.)	Overly conversational can be difficult to understand and more costly to produce. Also, some concepts cannot be simply explained using words.
Postponement	Postponement is where variation is delayed until required.	Any variations in the middle of an answer reduce efficiency and effectiveness. Offering a video replay or telehealth consultation at the end of an answer facilitates connection to the next step e.g. playing the video or seeking clarification. Also, this facilitates the later addition of video content, telehealth consultations etc. to answers that don't initially support them.
Ease of Modification	Ease of modification is the use of small modules that can be easily changed or replaced	Corpus content will change over time because of R&D, regulatory and policy changes and so on. Long conversations, long videos etc. can all be difficult to change. For example, changes to a long rambling video might require a full reshoot whereas changing a small discrete segment in a structured longer video can be achieved with editing tools. The same applies to answers and conversations.
Choose Conversation for Empathy	Certain intents and answers are emotionally loaded, and conversation is preferred	Videos etc. are a 'one size emotion fits all' which is ok for supplementing many intents and answers. However, where empathy is critical for adherence etc. a lead in empathic conversation is required before using any video content followed by a short empathic clarification to check understanding and acceptance.
Consider Exit and Re-Entry Points	Every conversation needs to allow for the patient to exit and then, if required, re-enter	Exit points are mandatory for certain intents and answers that have an emergency component. For example, an intent to discuss a medication side effect will require an exit to an emergency pathway if the side effect is classed as dangerous (e.g. difficulty breathing, chest pain, bleeding). Re-entry points are required where the exit is temporary/non-emergency such as where the patient needs to go get a drink of water, wants to ask a side question etc.
Designing for Long Cycle Interactions	Psychologists are required to ensure that conversations over time meet design objectives	Each individual conversation can have a transitory emotional outcome but over time the cumulative result can turn a digital human from a role such as coach into a relationship such as mentor. This is especially true for more vulnerable patients. Psychologists advise on the empathy content of individual conversations and are also required to help design long cycle interactions with monitoring questions.
'Chunkories' of Memory	Answers and conversations should include no more than 3 to 5 concepts.	Research in the 80s identified the inability of humans to hold more than 3 to 5 concepts in their mind at the one time without writing them down. For very simple concepts such as lists the digital human might include 5 items such as don't smoke, eat healthy, exercise, don't stress and take your meds. However in most cases, and especially where some if/then logic is required less than 3 concepts should be used. If there is bounded rationality (see below) only introduce one concept at a time.
Bounded Rationality	Answers that are outside of the lived experience of a patient will be hard to understand	From the same research in the 80s, people struggle to believe or comprehend something that doesn't fit with their lived experience. Given the high prevalence of health illiteracy it is critical that anything new is introduced by itself, supported by analogy, and understanding is checked.
Nothing About Me Without Me	Users need to be included in all aspects of design and development, not just occasionally consulted	This is a humanitarian principle and is critical to usability and acceptance. This codesign principle is a critical component of the 'chain of proof' for reducing negligence claims in that a digital human to patient interaction in a transcript or recording can be proven to be fit for purpose because illiteracy, accessibility needs etc. have been met.
Specialization	Specialization is variations in intents and answers outside of the heart health domain but align in terms of Themes and Topics.	Where possible, removing specialization in the digital human cardiac coach intents and answers will enable much faster and cheaper expansion to other chronic conditions. Specialization should not be removed if it downgrades the effectiveness of the digital human cardiac coach
Localization	Localization is variations in intents and answers within the heart health domain that occur between organizations or regions. Localization can be administrative (e.g. will my insurance cover this, how much will it cost, who to contact etc.), procedural (how long does it go for, what do we do in a session etc.), terminology (physician vs doctor, physical therapist vs. physiotherapist etc.) and cultural (language, types of foods etc.)	Where possible, removing localization in the digital human cardiac coach intents and answers will better achieve the aims of a SaaS solution. Localization should not be removed if it downgrades the effectiveness of the digital human cardiac coach.

# developing a health corpus is not a web crawler exercise

- Industry Experience
  - NSW Health
  - Hong Kong Hospital Authority
- Use Case Experience
  - Patient Lived Experience over 13 years
  - Rehab x 3 USA and Australia
  - Mentoring other patients
- Domain Expertise
  - Developed patient education with Canberra Hospital Rehab Team over several years
  - Regular presenter cardiac rehab program
  - Regular presenter Heart Foundation Ambassador Program
  - Heart Support Australia Trained Facilitator
  - Qualified Rehab Trainer
  - Fitness Trainer with specialization in older adults and women
  - Occasional health presenter University of Canberra
  - Invited speaker Pharmaceutical Society of Australia and others
- Technology Experience
  - Research into Expert Systems
  - Large scale systems integration USA, Asia, Middle East and Oz
  - Global ERP health systems experience
- Commercial Experience
  - Successful sales of multi-million dollar re-engineering and software projects around the world
  - Client executive for large systems projects
  - Chief Technology Architect for large systems projects in multiple industries

- Methodology
  - Proprietary digital human methodology for health
  - Deep co-design experience
  - Application of years of experience in consulting and systems with Big 4 consulting firms and global technology vendors to approach
- Corpus Content
  - Active member of heart patient on-line forums in Australia and overseas over 13 years
  - Developed hundreds of intents/questions/answers based on own experience
  - Review of hundreds of health and related websites and blogs over several years to extract relevant content and then rewrite to be compatible with digital human conversational format
  - Review of hundreds of health videos on government, insurer, hospital and vendor sites
  - Review of international language materials for heart health
- Liaison with industry bodies such as the Heart Foundation and Heart Support Australia on current and future trends in Cardiac Health
- Subscriptions to peer reviewed cardiac health publications and consolidation sites
- Reviewed hundreds of peer reviewed articles and research into cardiac health
- Attendee and speaker at national conferences of Heart Foundation and Australian Cardiovascular Health and Rehabilitation Association
- Member of Australian Cardiovascular Health and Rehabilitation Association
- Downloaded and reviewed multiple cardiac health applications

Unique knowledge and expertise in the application of technologies such as avatars and artificial intelligence to cardiac health including primary and secondary prevention, cardiac events and surgeries, hospitalization, recovery and rehabilitation.

# what are “themes” and “topics”

## THEMES

*Logical groupings of patient intents largely based on the ‘traditional’ cardiac lifestyle events and educational sessions.*

THEME A | MY ONBOARDING

THEME B | MY MEASUREMENTS

THEME C | ABOUT MY CONDITION

THEME D | MY HOSPITAL STAY

THEME E | MY RECOVERY AT HOME (STRONG CARER FOCUS)

THEME F | MY CARDIAC REHAB PROGRAM

THEME G | MY MEDICATIONS

THEME H | WHAT WILL I EAT

THEME I | HOW WILL I MOVE

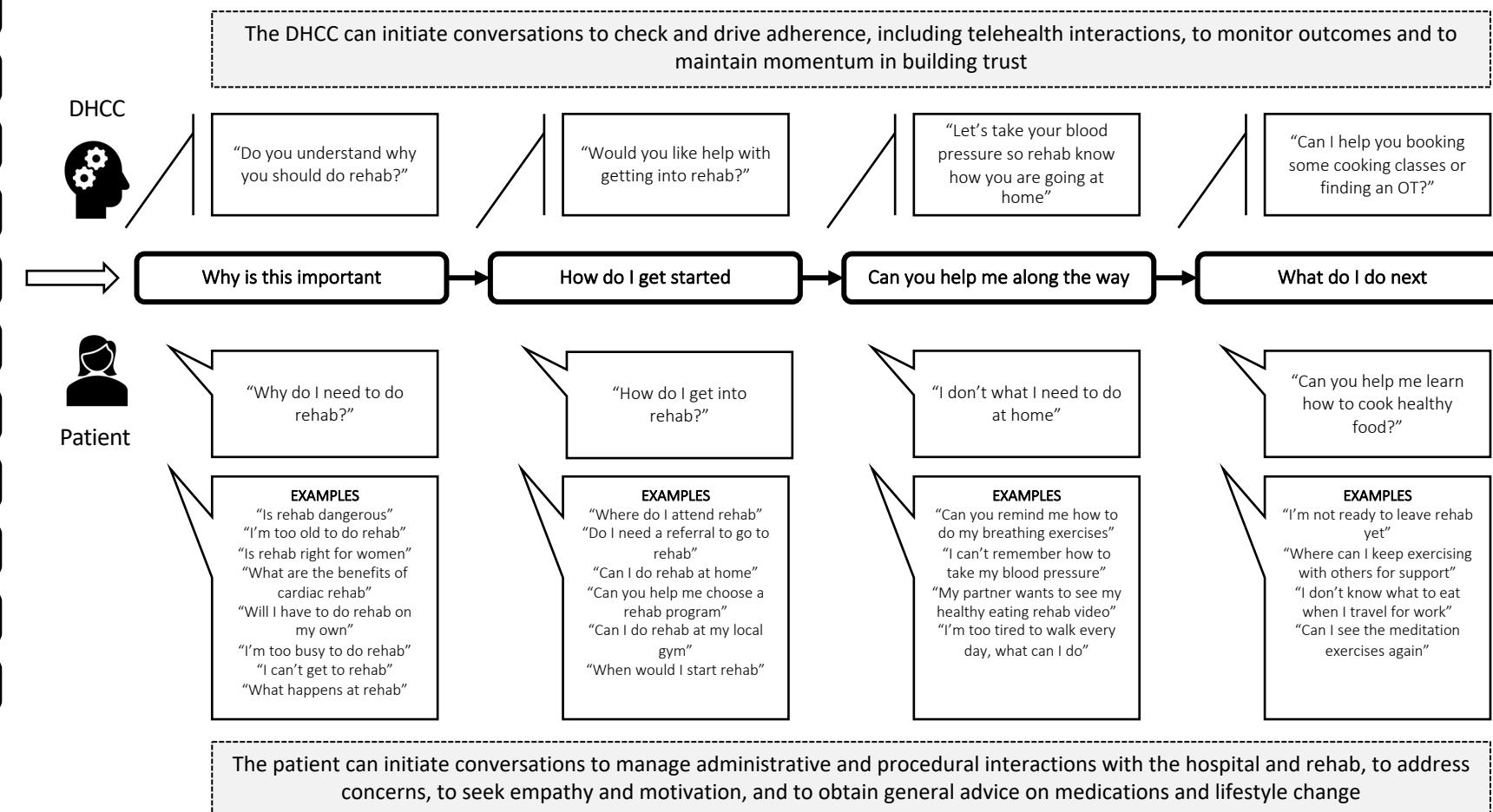
THEME J | MY SLEEP & RELAXATION

THEME K | I WILL QUIT SMOKING

THEME L | MY NEW NORMAL LIFE

## TOPICS

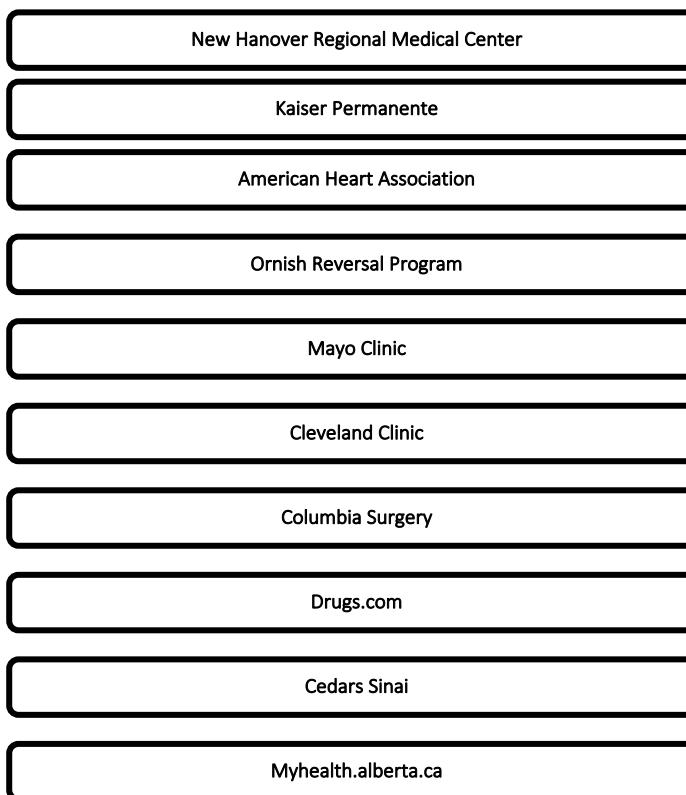
*The time/logic sequenced groups of intents that patients experience within each theme on their cardiac journeys. Each topic can be triggered by the patients themselves or by the digital human as part of conversational and phisologic tracking (code based) to ensure compliance and effectiveness. The sequencing of the topics works to address the barriers (including literacy and attitudes) to compliance with recommended recovery, medication and lifestyle regimes.*



# how are intents, questions and answers derived?

## Reference Organizations

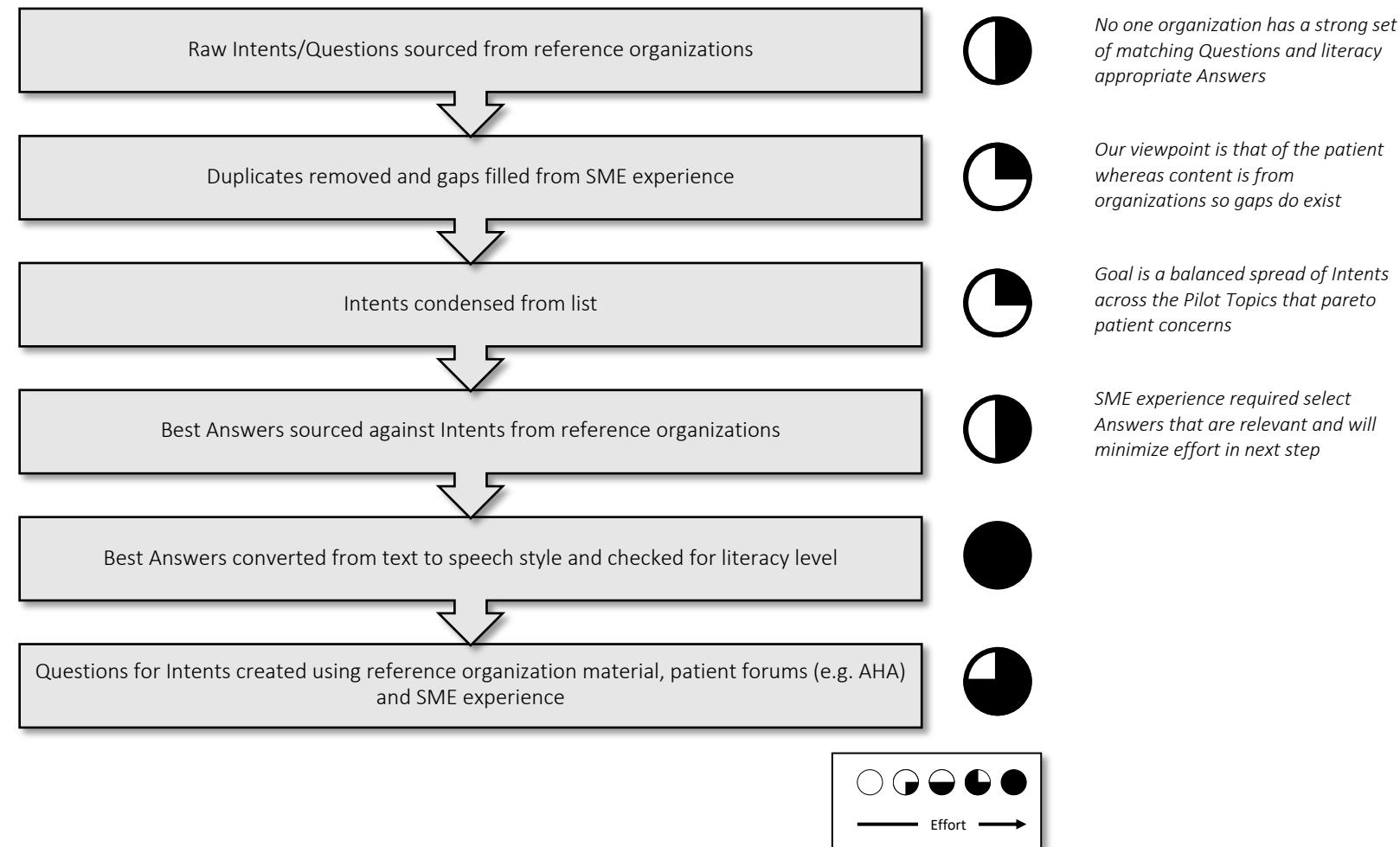
Note: this might not be the final 10. If there are gaps or too much duplication other sites might replace some in this list. Canadian site (Alberta Health) added as it is one of the best in the world for video content.



## Process

Fundamental design principles include:

1. Minimizing rework when moving to full system
2. Making the end result globally applicable within cardiac care and maximally applicable within other relevant chronic conditions
3. Minimizing effort (and associated time and cost) to produce a winning Pilot



# extensive set of themes and topics

## THEME A | MY ONBOARDING

1. What is my DHCC
2. How do I get started
3. How will I use DHCC day to day
4. What do I do if having a problem
1. What do I need to measure
2. How do I measure these
3. When do I measure and report
4. What if I'm having a problem

*Themes and topics required for activating Codes*

## THEME C | ABOUT MY CONDITION

1. What is heart disease
2. How did I get heart disease
3. Can I get better
4. What does this mean for my life

## THEME D | MY HOSPITAL STAY

1. How do I prepare for my hospital visit
2. Can you tell me about my surgery
3. I'm in hospital - what now
4. **What happens when I leave hospital**

Pilot

## THEME E | MY RECOVERY AT HOME

1. What can I expect when I go home
2. How do I prepare for going home
3. What will each day/week/month look like
4. What if something goes wrong at home

## THEME F | MY CARDIAC REHAB PROGRAM

1. **Why should I do rehab**
2. **Can you help me get into rehab**
3. I'm on rehab ... but
4. What do I do after rehab

Pilot

## THEME G | MY MEDICATIONS

1. **Why should I take my meds**
2. **How do I get my meds**
3. How do I manage my meds
4. Help - I'm having trouble with my meds

## THEME H | WHAT WILL I EAT

1. Why should I eat healthy
2. How do I get started with healthy eating
3. How do I manage my eating everyday
4. Help - I'm having trouble eating healthy

## THEME I | HOW WILL I MOVE

1. Why should I move more
2. How do I start moving more
3. How can moving be part of my life
4. Help - I'm having trouble moving more

## THEME J | MY SLEEP & RELAXATION

1. Why should I relax and sleep better
2. How do I start relaxing
3. How can relaxing & sleep be part of my life
4. Help - I still can't sleep or relax

## THEME K | I WILL QUIT SMOKING

1. Why should I quit smoking
2. How can I quit smoking
3. How can I live life without smoking
4. I'm still smoking - can you help me

## THEME L | MY NEW NORMAL LIFE

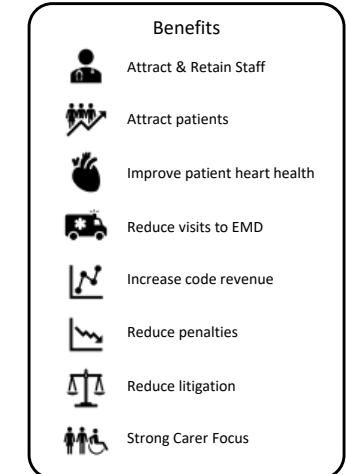
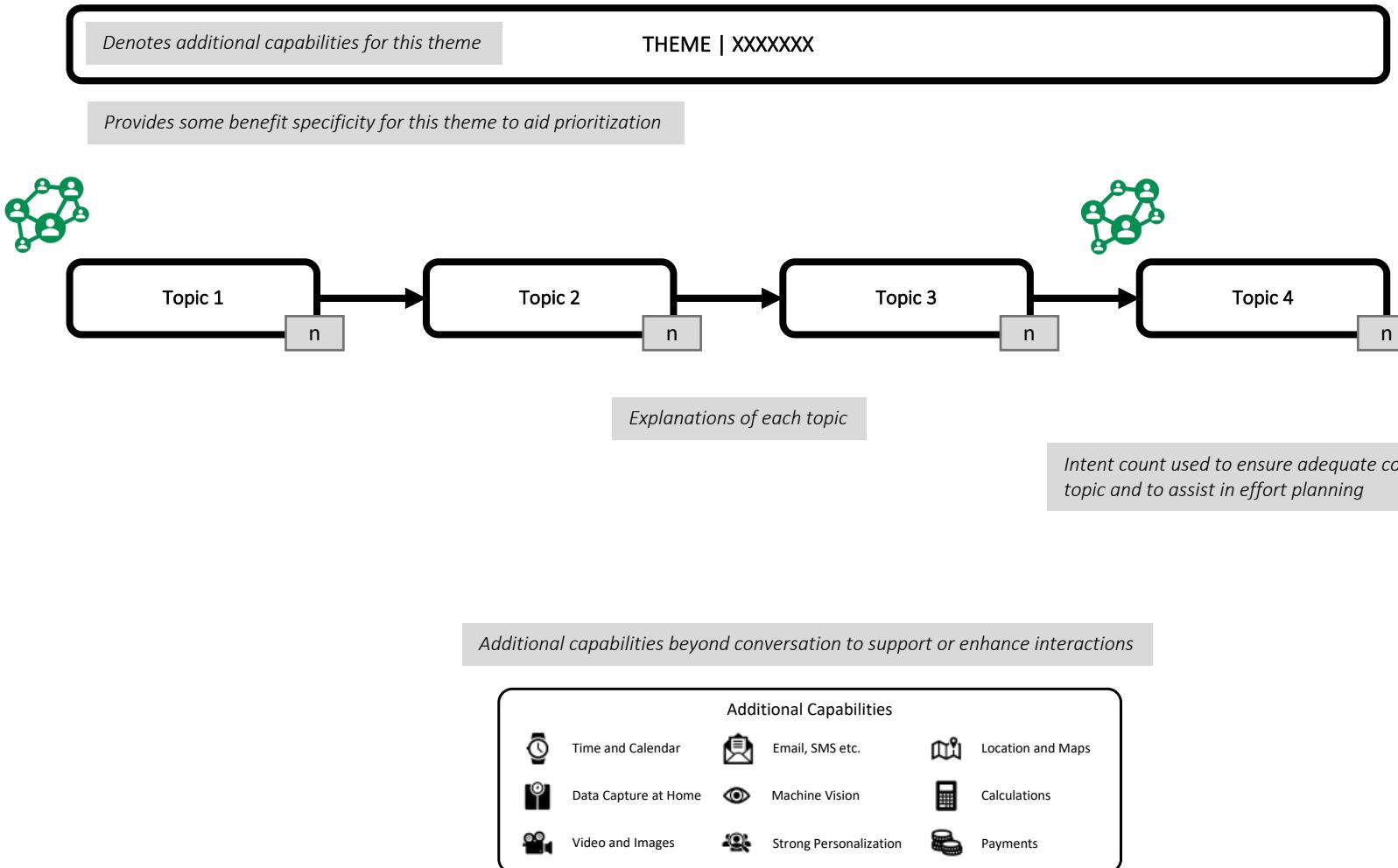
1. What can I do with my new heart
2. How can I safely try new things
3. What if something goes wrong
4. I'm afraid to try anything new - help me

*Some Themes transition from **Therapeutic** to **Lifestyle** focused. Theme H | What will I Eat starts off with a **Therapeutic** focus on eating for recovery and adopting a new healthy diet but then moves to a **Lifestyle** focus on take-out, dining out with family, eating when travelling, eating daily at work and business functions etc.*

*Theme L | My New Normal Life is largely **Lifestyle** based and therefore anticipated to derive revenues from promoting associated goods and services rather than from Codes and penalty/ litigation avoidance*

# key to theme/topic representations

Benefit codes for early prioritization: note, not using brand benefits etc. at this time

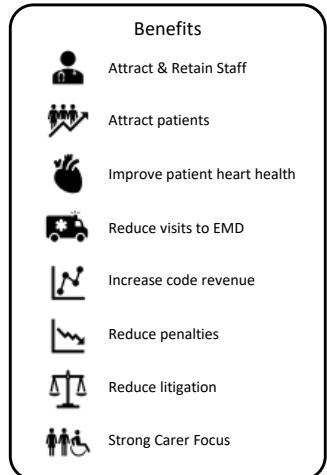
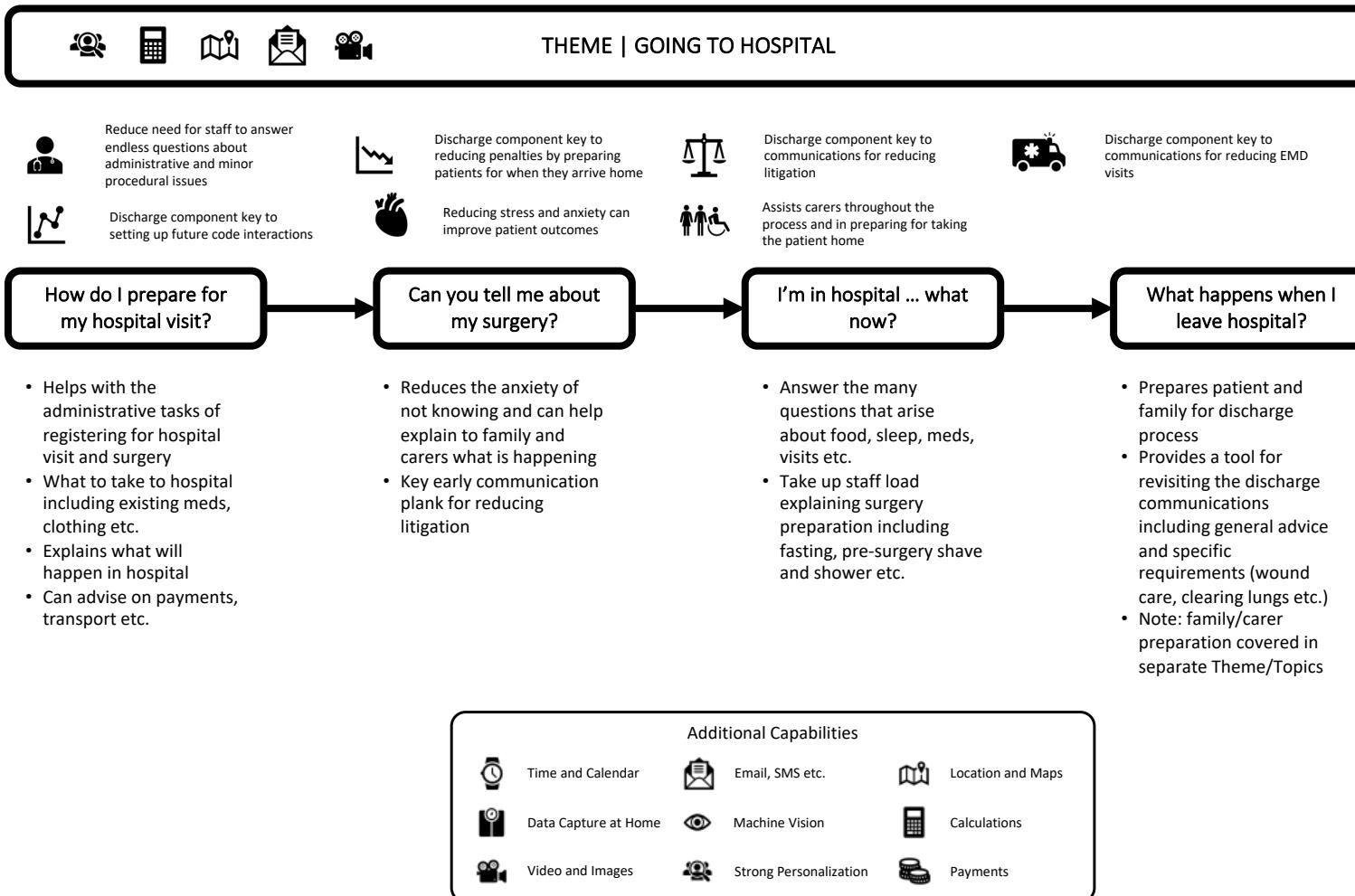


**n** Denotes number of intents for each topic

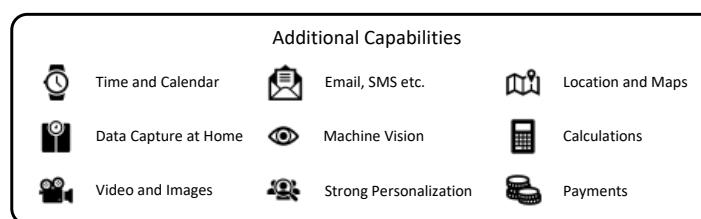
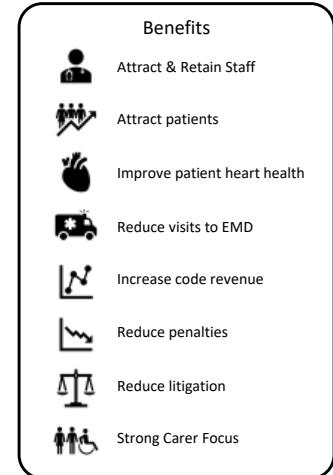
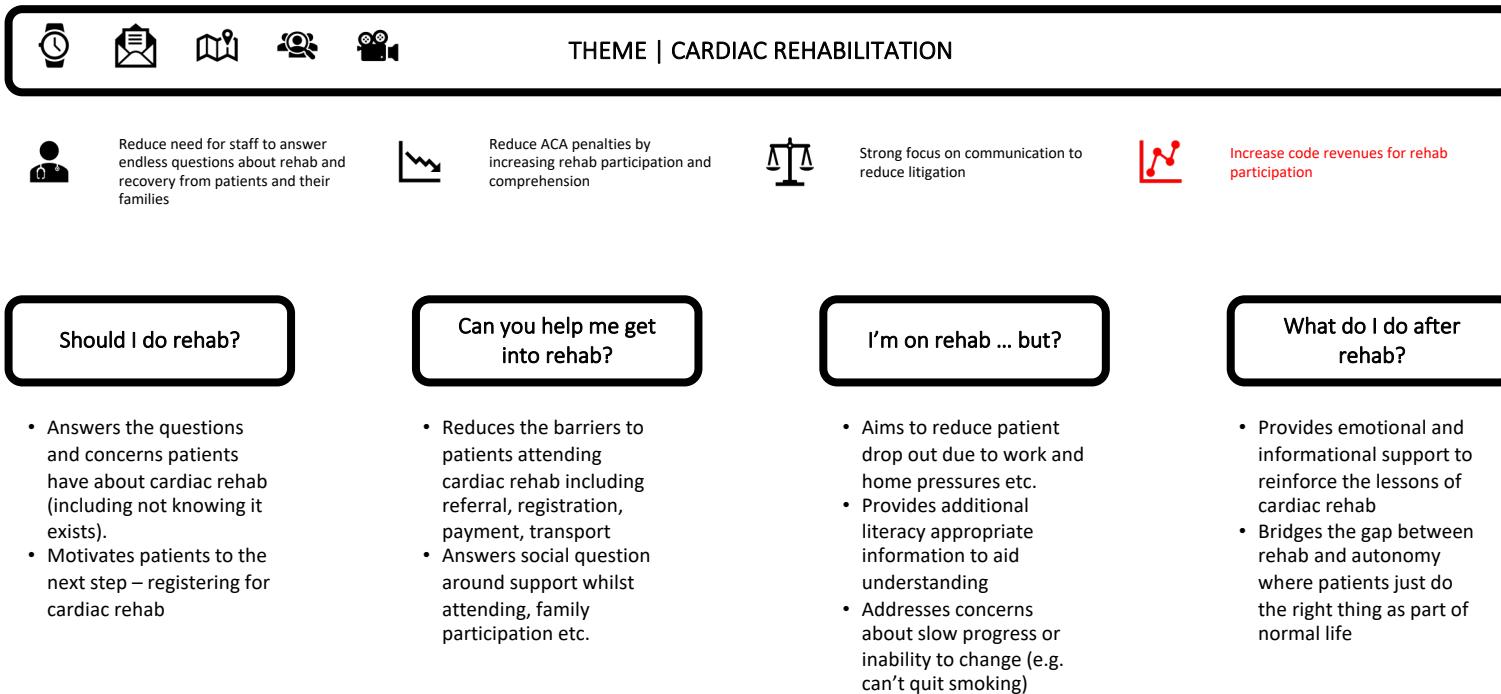


Pilot potential based on high benefits, focus on conversation rather than additional capabilities and ease of development

# intent themes & topics | going to hospital



# intent themes & topics | cardiac rehab



# intent themes & topics | medications

## THEME | MEDICATIONS

 Reduce questions to staff about meds from patients and their families – gives consistent answers

 Reduce ACA penalties by increasing medication compliance

 Strong focus on meds communication and adherence to reduce litigation

 Increase code revenues for interacting with medical team with questions about side effects etc.

 Reduce visits to EMD from interactions and non-adherence

### Why should I take my meds?

- Builds understanding of the importance of taking prescribed meds
- Addresses the concerns patients have about taking meds

### How do I get my meds?

- Some people have never taken regular meds so covers the pharmacy process, prescriptions etc.
- Addresses cost issues, generics etc.

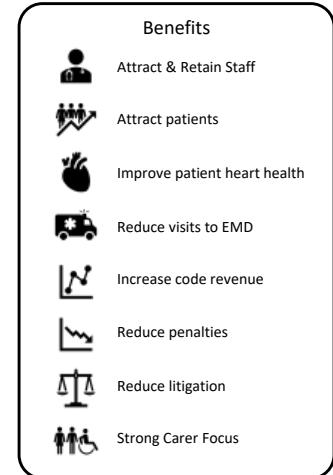
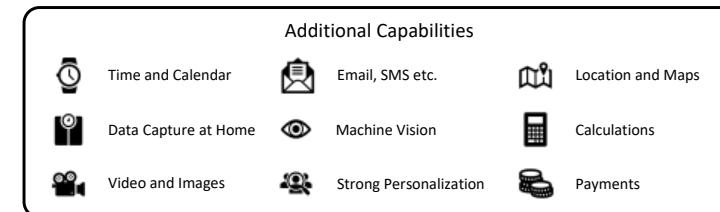
### How do I manage my meds?

- How to take meds – morning, evening, with/without food etc.
- Avoiding interactions with foods and OTC drugs
- Tracking including pre-packs, pill boxes, apps etc.

### Help – I'm having trouble with my meds?

- Concerns that meds are causing side effects to not working
- Avoiding patients taking 'drug holidays' and stopping meds

	Location/maps to help patients find closest drug store for their insurer for drugs, advice, OTC meds etc
	Timer function for medication reminders
	Replay video/images/text describing meds, how to take them, manage them etc. as covered in rehab
	Personalization – patient specific medications etc.
	Email information and reminders
	Machine vision to help patients identify their medications by looking at packaging



# sample rehab intents by topic – strictly illustrative – detail in corpus documents

## THEME | CARDIAC REHABILITATION

Should I do rehab?

What is cardiac rehab  
When will I do rehab  
I don't have the time to do rehab  
Do I have to do rehab to get better  
Can I do rehab later  
Where do you do rehab  
I'm too old to get any benefit from rehab  
I'm too sick to do rehab  
What other options are there besides rehab  
I'm too busy to do rehab  
What are the benefits of cardiac rehab  
What happens in cardiac rehab  
How does cardiac rehab help me  
How long does rehab go for  
Will rehab help me  
Who needs cardiac rehab  
How long is cardiac rehab  
What are the benefits of cardiac rehab  
What should I expect before cardiac rehab  
What should I expect during cardiac rehab  
What should I expect after cardiac rehab  
What happens at cardiac rehab  
Who should go to cardiac rehab  
Will I exercise on my own  
How often will I need to go  
How long does it last  
When should I start cardiac rehab  
What are the risks of cardiac rehab  
What qualifications do the cardiac rehab staff have  
Is cardiac rehab one size fits all  
Is the cardiac rehab program tailored to my needs  
Will cardiac rehab help me with everyday tasks at home

Can you help me get into rehab?

Do I need a referral from my doctor to start cardiac rehab?  
My doctor is always so busy. How can I get a referral with so little time to communicate?  
I can't get to rehab  
I don't have anyone to support me doing rehab  
How do I choose the right rehab program  
How do I get onto cardiac rehab  
Can I do rehab at my local gym  
How soon can I start rehab  
I can't afford rehab  
Where can I get cardiac rehab  
What should I consider when choosing a cardiac rehab program  
Can someone come to cardiac rehab with me for support  
Can my family do cardiac rehab with me  
Can I do cardiac rehab at home

I'm on rehab ... but?

I'm not ready to finish rehab  
Will I be asked to leave rehab if I can't stop smoking  
Can cardiac rehab show me where to get travel insurance  
Can I stay at cardiac rehab until I feel ready to leave

What do I do after rehab?

Where can I go after rehab  
What do I need to do after rehab

Illustrative only

# aligning patient and DHCC intents/questions/answers



Patient

Why should I do this?	How do I do this?	How do I know its working?	From a Carer?
I don't feel sick	I wasn't/haven't been told what to do	I still feel sick – same symptoms	How do I help them
I've heard you don't need to do it	I don't understand what I was told	I feel worse than before	Will they be ok
I've heard its dangerous	I forget what I was told	Why is it taking so long	What are they supposed to do
I've heard it doesn't work	I don't have any support	I feel sick – new symptoms	They aren't like they used to be
I don't want to do it	I don't have enough money	My measurements aren't improving	xxx
I'm too busy to do it at all	I'm very busy – how do I fit it into my life	I don't feel any different	xxx
I've heard there are other things I can do	I can't access it	Why do I feel so sad	xxx
I'm sick of doing it	I keep forgetting to do it	xxxx	xxxx
Do I need to do it for ever	What do I do next	xxxx	xxxx
I miss my old life	Is there somewhere else I can do this	xxxx	xxxx



DHCC

Why should they do this?	How do they do this?	How do we know its working?	For a Carer?
To improve patient health outcomes to reduce ACA penalties and litigation costs	By using low cost revenue generating channels wherever possible such as CMS code interactions and totally within the DHCC where external input is not required	By ensuring compliance with physiologic measuring and reporting regimes and by using general reminders (e.g. have you had your flu shot) and self-assessment questions(e.g. do you have more energy this week) within the DHCC	Provide corpus content explicitly targeted at carers so that are better able (emotionally settled and informed) to help the patient meet the desired health outcomes

## Key Issues:

1. Balance is personality driven – a shy patient might require more DHCC initiated conversations whereas an extrovert might require the DHCC to ‘push in’ its conversational requirements to ensure they are met.
2. The mix could be subtly changed over time as the patient becomes more familiar with the DHCC
3. Psychologist input can help insert some simple baseline questions to determine broad personality type as part of initial personalization
4. Machine learning could then ‘drift’ the question mix for each personality type and (possible future functionality) tailor for each patient through personalization.

# standard lexicon for adding video and telehealth using “postponement”

*I keep forgetting to take my medications*

That's ok, it can be hard to remember anything at all when you first come home after hospital. Your druggist can pack your meds so it's easier to remember and take them but you can also use a diary or an app. **Would you like me to show you the rehab video on medications that can explain these to you?**

Yes

Show video

No

Okay. You can always ask me later if you want to see the video.

*I think my medications are giving me a rash*

A mild rash can be a side effect from some heart meds but it usually goes away. If you are worried about it you can take a photo of the rash and I can help you send it to your doctor to have a look at it (CMS coded conversation).

Yes

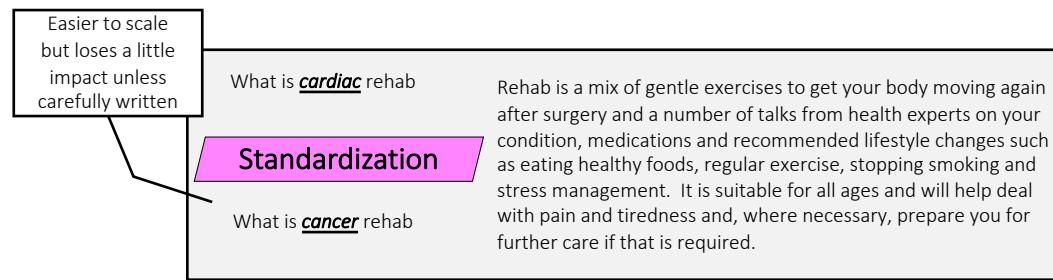
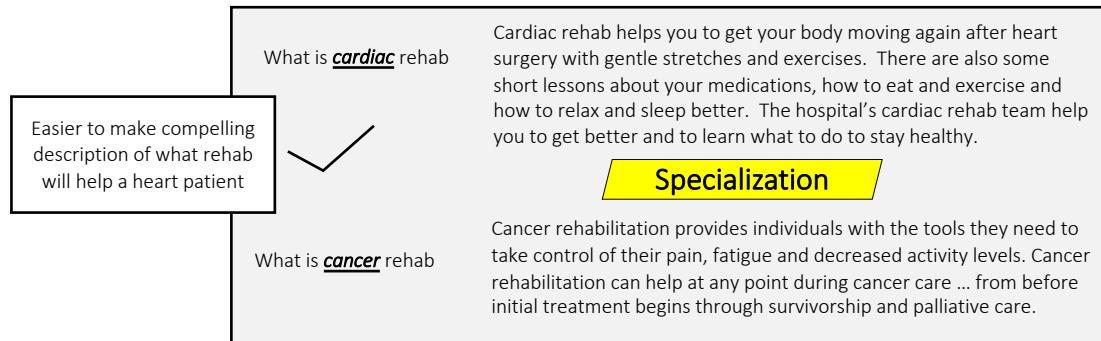
No

Initiate CMS coded conversation

Okay. If the rash is bleeding, or you have other symptoms such as pain or shortness of breath you should seek urgent medical attention.

# design principles & patterns for replication and scale

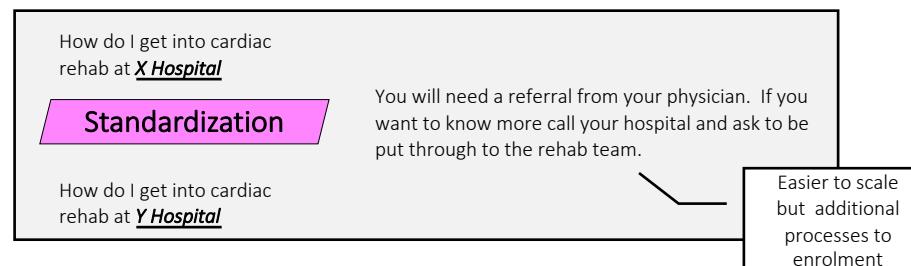
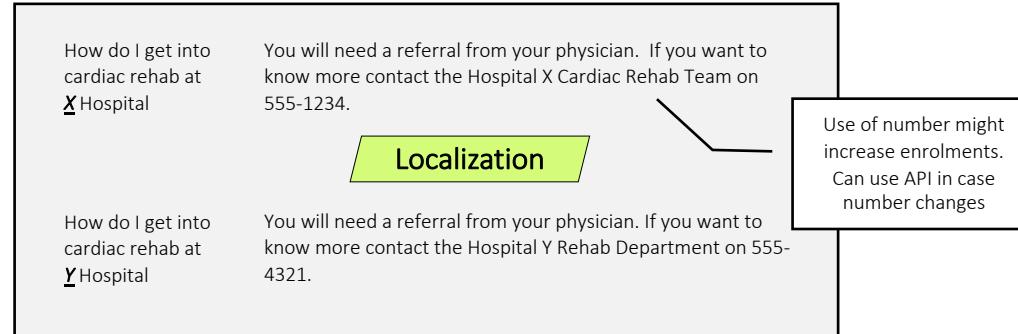
## designing for specialisation – localisation – standardisation



- **Specialization** is variations in intents and answers outside of the heart health domain but align in terms of Themes and Topics.
- Where possible, removing specialization in the digital human cardiac coach intents and answers will enable much faster and cheaper expansion to other chronic conditions.
- **Specialization** should not be removed if it downgrades the effectiveness of the digital human cardiac coach.

**Decisions required:**

1. What balance do we want between {standardization/scalability} and {specialization/localization/effectiveness}.
2. Can we develop some simple guidelines for future SMEs to use for balancing scalability and effectiveness when developing intents/questions/answers.
3. How do we embed content or use attached tags to facilitate searching and modifying the core SaaS where clients or use case requires specialization or localization.



- **Localization** is variations in intents and answers within the heart health domain that occur between organizations or regions.
- **Localization** can be:
  - administrative (e.g. will my insurance cover this, how much will it cost, who to contact etc.),
  - procedural (how long does it go for, what do we do in a session etc.),
  - terminology (physician vs doctor, physical therapist vs. physiotherapist etc.) and
  - cultural (language, types of foods etc.)
- Where possible, removing localization in the digital human cardiac coach intents and answers will better support replication.
- **Localization** should not be removed if it downgrades the effectiveness of the digital human cardiac coach

# selecting themes and intents for a proof of concept

# determining initial Pilot scope

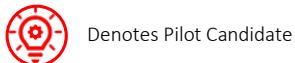
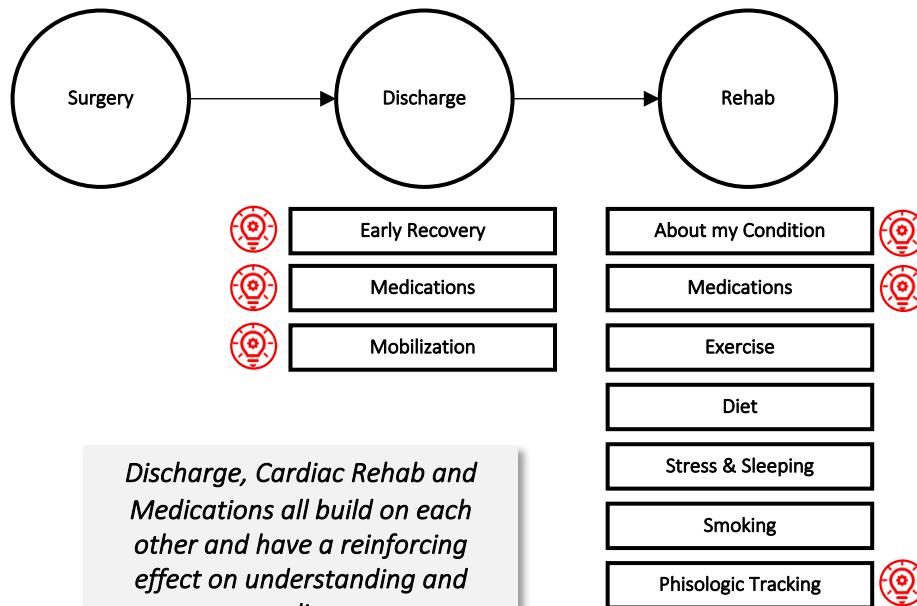
**DISCHARGE** | Importance:

- Initial awareness and preparation for key concerns & activities
- Establish commitment
- DHCC allows patient and carers to replay content when they get home

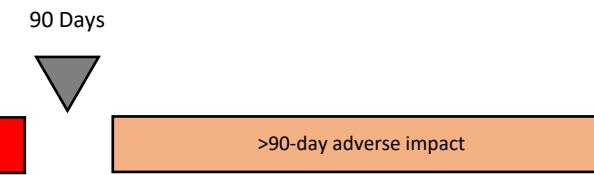
**REHAB** | Importance:

- Initial education and supervised practiced activities
- Further builds commitment
- DHCC makes demonstrations and education available after rehab finished

*Discharge, Cardiac Rehab and Medications all have significant impacts on 90 day success rates and if not successful can lead to ACA penalties and litigation.*



Denotes Pilot Candidate



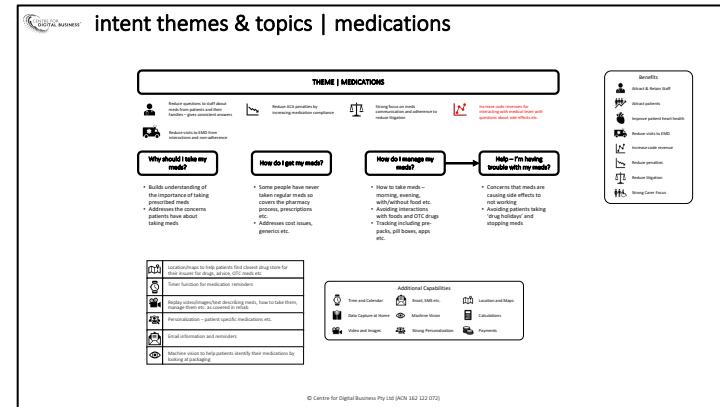
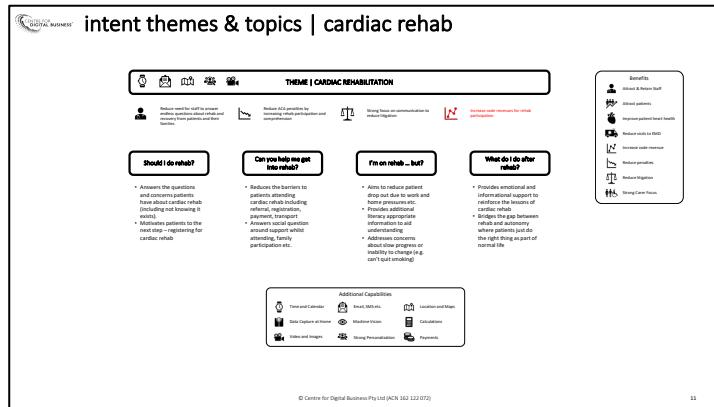
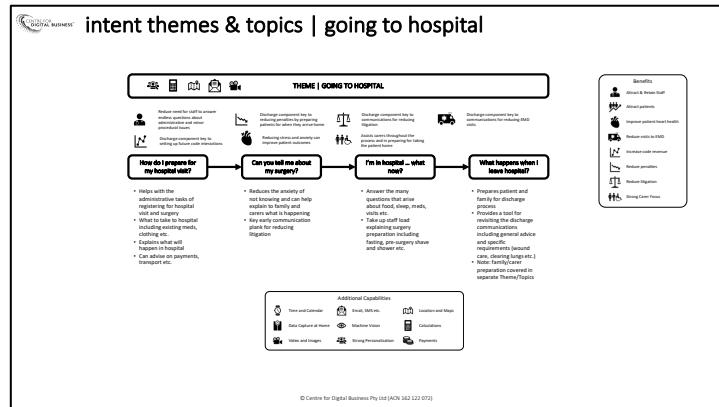
- Don't get started – poor understanding and/or commitment
- Medication adherence
- Poor wound care
- Poor lung exercises
- Poor mobilization
- Home environment & support
- Doing too much too soon
- Not attending appointments

- Stopping – stress & commitment
- Diet
- Exercise
- Smoking
- Not tracking
- Not attending appointments

**MEDICATIONS** | Importance:

- Can have immediate adverse effect
- Adherence is a major contributor to poor outcomes
- Is 'safety belt' for poor diet

# Potential pilot scope



## What happens when I leave hospital?

- Prepares patient and family for discharge process
  - Provides a tool for revisiting the discharge communications including general advice and specific requirements (wound care, clearing lungs etc.)
  - Note: family/carer preparation covered in separate Theme/Topics

## Should I do rehab?

Can you help me get  
into rehab?

- Answers the questions and concerns patients have about cardiac rehab (including not knowing it exists).
  - Motivates patients to the next step – registering for cardiac rehab
  - Reduces the barriers to patients attending cardiac rehab including referral, registration, payment, transport
  - Answers social questions around support whilst attending, family

## Why should I take my meds?

## How do I get my meds?

- Builds understanding of the importance of taking prescribed meds
  - Addresses the concerns patients have about taking meds
  - Some people have never taken regular meds so covers the pharmacy process, prescriptions etc.
  - Addresses cost issues, generics etc.

*Pilot intents and questions are selected from these topics to positively impact patient and understanding over the first 90 days*

**Questions and answers, including on medications, will be tested in the controlled environments of discharge and rehabilitation.**

# theme D | my hospital stay

## THEME D | MY HOSPITAL STAY

1. How do I prepare for my hospital visit?
2. Can you tell me about my surgery?
3. I'm in hospital ... what now?
4. What happens when I leave hospital?

### Qualifications & Assumptions

- This Topic would typically rely on prerequisite themes and topics to explain a patient's condition and personalize the DHCC with patient specific information so the Pilot interactions will need to accommodate these gaps without creating unnecessary temporary functionality.
- The Pilot will prioritize interactions that:
  - Motivate and assist patients to perform recommended actions at home (e.g. wound care) that meet the goal of reducing any unnecessary returns to hospital by stabilizing patient health
  - Establish the motivation and ability to perform the required measurements and reporting (against codes) to monitor patient progress
  - Educate the patient on the use of code interactions for scheduled provider interactions and when assistance is required.

- Process integrated with discharge activities
- Provides ability to revisit discharge information as reminder and for caregivers
- Provides repeatable guidance on measurement and reporting

Design Objectives	
	Attract & Retain Staff
	Attract patients
	Improve patient heart health
	Reduce visits to EMD
	Increase code revenue
	Reduce penalties
	Reduce litigation
	Strong Carer Focus

	Pilot Design Objective
	Interactions to focus on those having high impact on <90-day adverse outcomes
	Clear literacy and numeracy appropriate communications to reduce litigation
	Strong communication of measurement / reporting requirements and use of devices (using video etc. in Pilot) plus other telehealth to drive code use
	Empower caregivers (e.g. family) to understand patient recovery procedures and any equipment so as to provide emotional and physical support
	Provide early information and advice to help minimize EMD visits (this will be more fully covered in Theme E   My Recovery at Home which is not in Pilot)
	Provide empathetic gestures and lexical content to conversation to reduce anxiety and gain commitment
	Look for opportunities to move interactions from staff to DHCC to demonstrate how burnout loads can be reduced (limited Pilot scope)

	Additional Capability	Pilot Scope
	Demonstrate playback of video, image and text content as reminder and for caregivers/family and to reduce conversation complexity	IN
	Patient will be shown how to use measurement devices, report as required etc.	IN
	Calendar function would be used to record follow-up appointments etc. in DHCC – requires personalization	OUT
	Personalization would normally commence with Topic 1 and build through to 4 with specific discharge instructions	OUT
	Maps / location would be used to show where local services (drug store etc.) are located	OUT

Additional Capabilities	
	Strong Personalization
	Data Capture at Home
	Video and Images
	Time and Calendar
	Email, SMS etc.
	Machine Vision
	Location and Maps
	Calculations
	Payments

# theme F | my cardiac rehab program

## THEME F | MY CARDIAC REHAB PROGRAM

1. Why should I do rehab?
2. Can you help me get into rehab?
3. I'm on rehab ... but
4. What do I do after rehab?

- Promote the benefits of rehab to motivate the patient to attend.
- Address concerns such as time, location/transport, not for me etc.

- Provide advice on referrals, payments, registration etc.
- Also provide advice on alternatives such as telehealth or community-based programs if location / schedule is a problem.

### Qualifications & Assumptions

- These Topics could be accessed by patients in hospital or after they leave depending on how the hospital administers the program.
- The Pilot will prioritize interactions that:
  - Motivate patients to attend rehab and to help them overcome any barriers to their attendance.
  - The Pilot will not deliver rehab content however replay of rehab content after graduation should be part of the MVP.
  - The Pilot can advise on patient registration for rehab but will not actually do the registration as that is a continuation of the hospital registration and personalization in Theme D | My Hospital Stay that is not in Pilot scope. Note that actual registration is typically part of a hospital's ERP suite and integration with those is not planned.
- Note: could eventually remotely deliver the education component of cardiac rehab to meet patient location and schedule challenges.

Design Objectives	
	Attract & Retain Staff
	Attract patients
	Improve patient heart health
	Reduce visits to EMD
	Increase code revenue
	Reduce penalties
	Reduce litigation
	Strong Carer Focus

Pilot Design Objective
Interactions to focus on those having high impact on <90-day adverse outcomes
Clear record of patient being offered rehab and help with removing barriers to attendance using clear communications
Include learning how to use telehealth and perform home physiologic measurements as part of benefits
Empower caregivers (e.g. family) to understand patient cardiac rehab so as to provide emotional and physical support
Use empathy to help overcome anxiety about attending cardiac rehab especially related to psychosocial factors.
Look for opportunities to move interactions from staff to DHCC to demonstrate how burnout loads can be reduced (limited Pilot scope)
Potentially draw fee paying rehab participants from other hospitals?

Additional Capability	Pilot Scope
Demonstrate playback of video to show how rehab can be delivered and replayed as part of the Why should I topic	IN
Demonstrate how SMS/email can be used to provide reminders or additional information	IN?
Calendar function would be used to remind patient of rehab appointments and 'homework' – requires personalization	OUT
Personalization would normally commence with Topic 1 and build through to 4 with specific program tailoring	OUT
Maps / location would be used to show where rehab services are located and transport options	OUT

Additional Capabilities
Strong Personalization
Data Capture at Home
Video and Images
Time and Calendar
Email, SMS etc.
Machine Vision
Location and Maps
Calculations
Payments

# theme G | my medications

## THEME G | MY MEDICATIONS

1. Why should I take my meds?

2. How do I get my meds?

3. How do I manage my meds?

4. Help – I'm having trouble with my meds

- Promote the need for and benefits of the meds
- Address concerns that might act as a barrier to taking meds
- Use rehab meds video to help explain the meds if needed

- Some people haven't taken regular meds before so address overall process for their insurer.
- Address issues such as choosing generics, payment etc.

### Qualifications & Assumptions

- These Topics are critical to promoting medication adherence. Topics 3 and 4 would be high priorities for the MVP.
- The Pilot will prioritize interactions that:
  - Motivate patients to obtain and take their prescribed medications.
  - Help establish the regular supply of the medications so that they are always available to take.

Design Objectives	
	Attract & Retain Staff
	Attract patients
	Improve patient heart health
	Reduce visits to EMD
	Increase code revenue
	Reduce penalties
	Reduce litigation
	Strong Carer Focus

	Pilot Design Objective
	Interactions to focus on those having high impact on <90-day adverse outcomes
	Clear literacy and numeracy appropriate communications to reduce litigation
	Promote code interactions if patient has concerns or requires assistance beyond those the DHCC can provide
	Empower caregivers (e.g. family) to understand patient medications so as to encourage adherence and provide emotional and physical support
	Provide a path to obtaining information about side effects to avoid EMD/hospital visits for side effects (full coverage of this is in Topic 4 which is not in Pilot scope)
	Provide empathetic gestures and lexical content to conversation to reduce anxiety about medications and promote adherence

	Additional Capability	Pilot Scope
	Demonstrate playback of video in Topic 1 using typical rehab meds content (existing video content?)	IN
	Machine vision to recognize patient medications packaging. <i>Recording of session for legal</i>	OUT?
	Calendar function for medication taking and resupply reminders – requires personalization	OUT
	Personalization would normally commence with earlier Themes	OUT
	Maps / location would be used to show where local services (drug store etc.) are located	OUT
	Email/SMS would be useful for reminders and re-ordering as part of Topic 3	OUT

Additional Capabilities	
	Strong Personalization
	Data Capture at Home
	Video and Images
	Time and Calendar
	Email, SMS etc.
	Machine Vision
	Location and Maps
	Calculations
	Payments