



Quality Improvement | Design Thinking | Resilience | For Healthcare

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# AM-EPIC Framework



## Academic Medicine – Enhancing Performance, Improving Care (AM-EPIC)

The AM-EPIC Framework is an education and professional development framework that comprises a portfolio of programmes aimed at upskilling and uplifting the Patient Safety, Quality and Innovation capabilities of our staff.

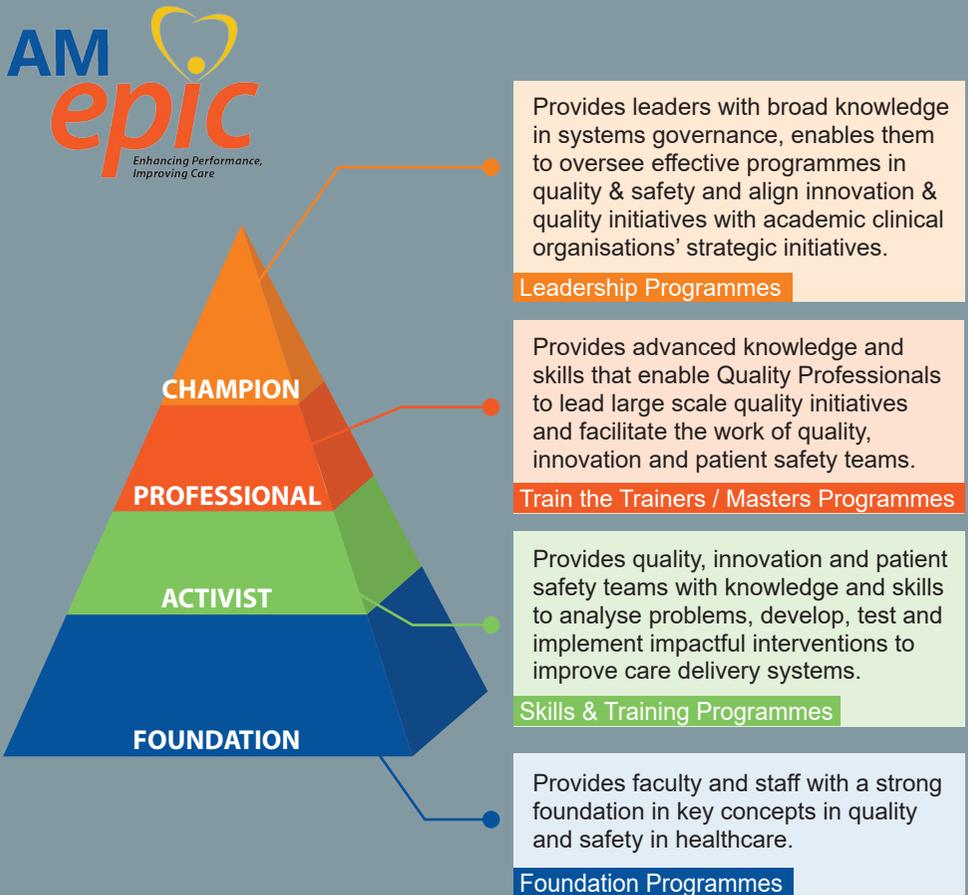


Figure 1: Education and Professional Development Framework for Academic Medicine – Enhancing Performance, Improving Care (AM-EPIC)



# Design Thinking

## 01

### Design Thinking in Healthcare

Design thinking is a human-centered approach that prioritises developing empathy for users when gaining insights, exploring ideas and testing prototypes to improve healthcare system and experience.

Design thinking integrates various improvement methodologies where we see a combination of system-based and empathy-based approach in healthcare improvement. In fact, Design Thinking and Quality Improvement methodologies can work hand in hand to complement each other.

#### **Benefits of Applying Design Thinking in Healthcare?**

- Supports shift from volume to value based care
- Encourages creativity when exploring ideas
- Allows for prototyping where valuable feedback can be gathered, and mistakes can be made. It lets you experiment and take risks that you would otherwise avoid when the cost of failure is too high

# Getting Ready

## 02

### Basic Principles of Design Thinking

Get to know your users and the context so that it can help you understand the perspectives of the people you are designing for.

#### **(Re)Frame**

By looking at things differently, you can develop products and services that are meaningful to all users.

#### **Collaborate**

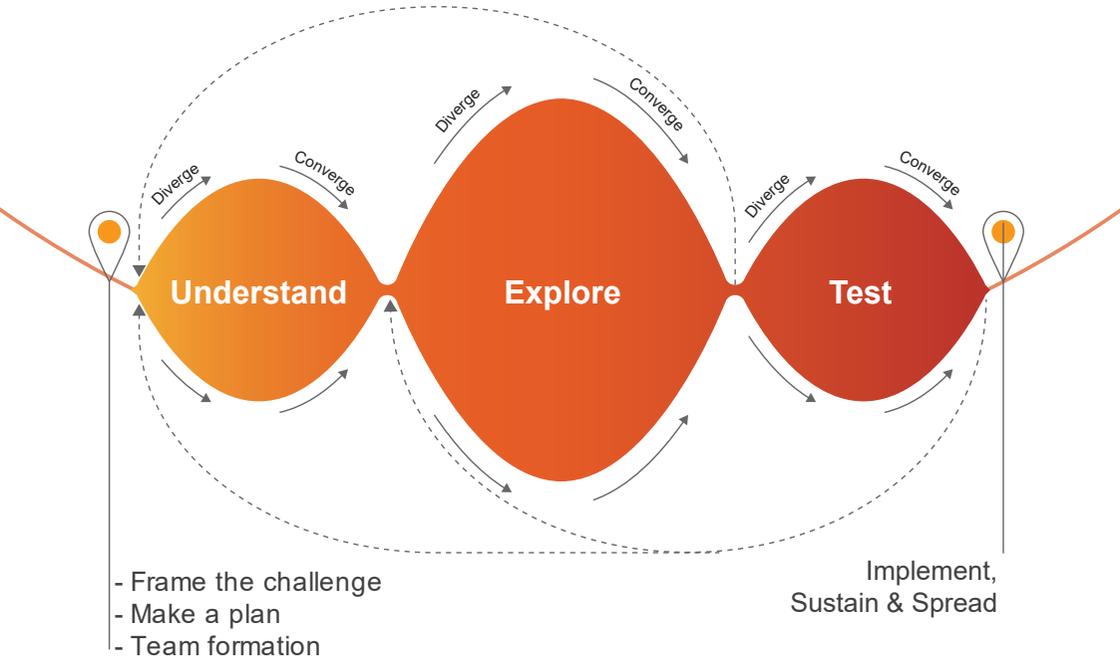
Collaborate and leverage on each other's strengths.

#### **Embrace Experimentation**

Stay curious. Do not fall in love with your first idea. Experiment, test, try and learn from experience.

# 03

## An Overview of Design Thinking Methodology



### Overview of tools used in each phase:

#### Understand



- Stakeholder mapping
- Secondary research
- Empathy interviews
- User observations
- Context immersion
- Make sense of data
- Identify opportunities
- Craft "How Might We" statements

#### Explore

- Brain writing + Round robin
- Analogies
- Trigger cards
- Idea selection



#### Test

- Prototyping
- Test & learn
- Iterate & refine

# 04

## Three Phases of Design Thinking

### Understand

This first phase lays the foundation for innovation. It frames your challenge statement, conducts user research to understand a particular healthcare experience, and how people feel about it.

### Test

This phase allows your ideas to be enriched and refined for development towards implementation through iterative testing with stakeholders. Building prototypes allows you to elicit feedback in the context of use and also help you understand what works and what can be improved. With these information, you can assess the value, impact and potential implementation plan for your ideas.

### Explore

In this phase, you will translate your insights into ideas for new products, services, processes and spaces. Exploring concepts visually, through sketching and storytelling, is a tangible way to develop ideas towards testing.



## 1. Stakeholder Mapping

Stakeholder maps are used to document key stakeholders and their relationships involved within the problem statement. Mapping all of the different people that surround the patient can reveal important relationships and social dynamics that can influence people's experiences of care.

**HOW:** Discuss and identify a list of social relationships within a user group and map the network of their interactions.

## 2. Secondary Research (Desk Research)

Secondary research will help you build your base of knowledge and complements the information from empathy interviews and other qualitative research methods to help you gain a better understanding of the situation.

**HOW:** Review published articles and other relevant documents to develop an informed point of view on the challenge statement.



# 06

## Understand Phase: Tools



### 3. User Observation

Observing what people do and how they interact with their environment gives you clues about what they think, feel and why they act the way they do. It also helps you learn about what they need. By observing people, you can capture physical manifestation of their experiences – what they do and say.

**HOW:** Observe and record behavior within its context, without interfering with people's activities. Use the **POEMS** observation framework to guide and provide a structure to your research during user observations.

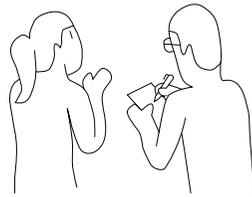
**POEMS** stands for:

- P** - People
- O** - Objects
- E** - Environments
- M** - Messages
- S** - Services

If possible, take photos. A photo tells a thousand words.

# 07

## Understand Phase: Tools



### 4. Empathy Interviews

Begin by understanding the hopes, motivations and needs of users by interviewing them.

**HOW:** Conduct the interviews in the interviewees' point of view. During these interviews:

- **Probe** to uncover the truths behind their stories
- **Observe** their non-verbal cues, as well as pick out observations of their natural setting
- **Record** all interview data for analysis (word for word)

# 08

## Understand Phase: Tools

### 5. Context Immersion

There is no better way to understand the people you are designing for than to immerse yourself into their lives and communities.

**HOW:** Identify stakeholders involved in the challenge statement and enact the activities within a real or imagined context to trigger empathy for actual users and raise other relevant issues.

### 6. Craft “How Might We....?” Statements

“How Might We” (HMW) is a process to reframe challenge statement into actionable problem statements. HMW defines the design intents and will be used as a basis for the Explore phase.

**HOW:** Discuss and define the users, their needs that will be the subject of the project and the insights that will be the basis for brainstorming in the Explore phase.

**Who** does **What** because of **Why?**  
(User)    (Action/Problem)    (Insights)

# 09

## Explore Phase: Tools



Set the stage for a successful brainstorming session by sharing these rules with the team.

### Rules for Brainstorming

1. Defer judgement
2. Encourage wild ideas
3. Go for quantity, not quality
4. Build on the ideas of others
5. Stay focused on topic
6. Be visual



# 10

## Explore Phase: Tools

### Brain-writing + Round robin

Brain-writing is recommended as a first tool to start off ideation session. It equalises the contribution of the resource group and allows for more introverted people to communicate their ideas. Round robin allows participants to build on each other's ideas.

### Analogies

Useful to help one move away from the obvious and encourage out-of-the box thinking.

### Trigger Cards

Provide diverse thought-provoking stimuli with the intention to act as trigger for discussion, further research and reflection for the future.

# 11

## Explore Phase: Tools



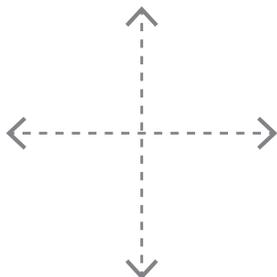
### Idea Selection

This is a necessary convergence step once you have generated a volume of potential ideas. The idea selection process uses either the Venn diagram or 2 x 2 Matrix as a decision tool to evaluate, shortlist and prioritise ideas.

### 2x2 Evaluation Matrix

The 2x2 Evaluation Matrix creates a systematic way to analyse multiple solutions and helps build consensus within the team to select and evaluate a variety of promising solutions against selected criteria.

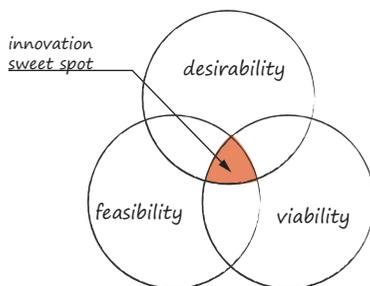
**How:** Define criterion for each axis that the team has agreed to use to evaluate the generated concepts.



### Venn Diagram

A Venn diagram allows the team to visualise how different parameters share overlapping impacts.

**How:** Define at least two criteria for each of the domains that the team agreed to use for evaluating the generated concepts.



# 12 Test Phase: Tools

## Why test with users ?

Testing with users is a fundamental part of a human-centered design approach. You test with users to refine your solution and also to refine your understanding of the people for whom you are designing for.

### Objectives of Testing:

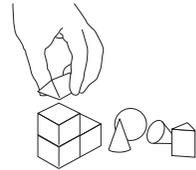
- Communicate idea (Visualise and contextualise)
- Gather feedback
- Fail cheaply and learn quickly



### Paper Prototyping

Paper prototyping is a quick and cheap way of gaining insights and inform decision-making without the need for costly investment. It is a good way to quickly organise, articulate, and visualise interaction design concepts.

**HOW:** Using any materials available, rapidly sketch and assemble possible forms or interaction for evaluation.



### 3D Prototype

3D prototypes allow user to interact more effectively than a sketch and will lead to more useful insights gathered during testing.

**HOW:** Depending on the level of fidelity, team may need to outsource to external prototyping services.

# 13

## Test Phase: Tools



### Storyboarding

Storyboarding is a series of drawings or pictures put together in a narrative sequence. It shows the interactions between user and the design at every touchpoint.

**HOW:** Illustrate a user-centered story line describing different contexts when the product or service is used.

### Role-playing

Role-playing helps teams to imagine and explore new ideas or communicate design intentions, which allows users to understand other points of views. It allows user to explore pain points and potential user scenarios.

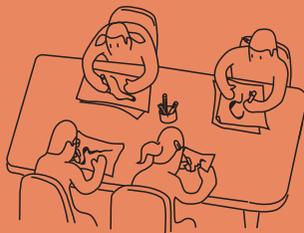
**HOW:** Using any materials available, rapidly sketch and assemble possible forms or interaction for evaluation.

# Design Thinking Collaboration

The IPSQ Design Team provides project consultation and facilitation to enhance patient safety.

## **Our expertise are:**

- Project Consultation & Facilitation
- Product Design
- UI/UX Design
- Systems/ Service Design
- Spatial Proposal



Please email [ipsq@singhealth.com.sg](mailto:ipsq@singhealth.com.sg) for more information

# Quality Improvement & Design Thinking Methodology

## Quality Improvement

### Understand

Form Team  
Construct Mission Statement  
Map Process Flow

### Identify Problems & Causes

Identify & Prioritise Root Causes  
Identifying Wastes of the Process

### Propose Solution

Brainstorm  
5S + Safety  
Visual Management  
PICK Chart  
Communicate to Stakeholders  
PDSA

### Implement, Sustain & Spread

Implement  
Run Chart  
Change Management  
Sustain & Spread



### Understand

Stakeholder Mapping  
Secondary Research  
Empathy Interviews  
User Observations  
Context Immersion  
Make Sense of Data  
Identify Opportunities  
Craft "HMW" Statements

### Explore

Brain-Writing & Round Robins  
Analogies  
Trigger Cards  
Ideas Selection

### Test

Prototyping  
Test & Learn  
Refine & Iterate

### Implement, Sustain & Spread

Implement  
Sustain & Spread

## Design Thinking

**In your Patient Safety and Quality  
Improvement journey,  
please contact your institution  
representatives for their support.**



Scan the QR Code to visit  
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