Healthcare Improvement Scotland

Design Community of Practice
26 August 2026

We will be starting shortly

Leading quality health and care for Scotland

NHS SCOTLAND

NB: This webinar is being recorded

Healthcare Improvement Scotland

Welcome

Design Community of Practice

26 August 2026

Leading quality health and care for Scotland

NHS SCOTLAND

NB: This webinar is being recorded

Session hosts



Elizabeth Brooks

Senior Service Design Advisor

Community Engagement and Transformational Change
Healthcare Improvement Scotland

elizabeth.brooks@nhs.scot



Chamithri Greru

Service Design Advisor

Community Engagement and Transformational Change
Healthcare Improvement Scotland

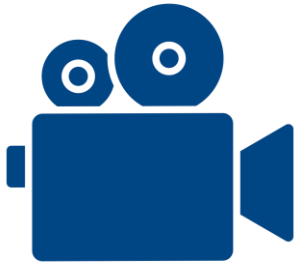
chamithri.greru@nhs.scot

Housekeeping



Support

his.transformationalsystemchange@nhs.scot



Recording

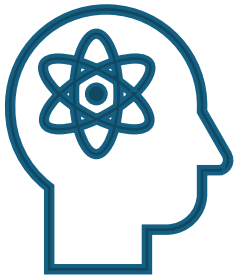
Your cameras and mics are switched off



Share and contribute respectfully



Questions are always welcome and there will be plenty of ‘discussion points’



Be present and avoid multitasking



All materials will be shared

We’ll let you know when they’re available to view online

Share your thoughts, ideas and questions



Raised hand



Chat box



Agenda



- Welcome, introductions and housekeeping
- The WHY, HOW and WHAT of Translational Simulation
- Comfort break
- From Firefighting to Flow: A story of understanding complexity, restoring balance and redesigning care together
- Evaluation
- Updates and closing remarks

Biographies

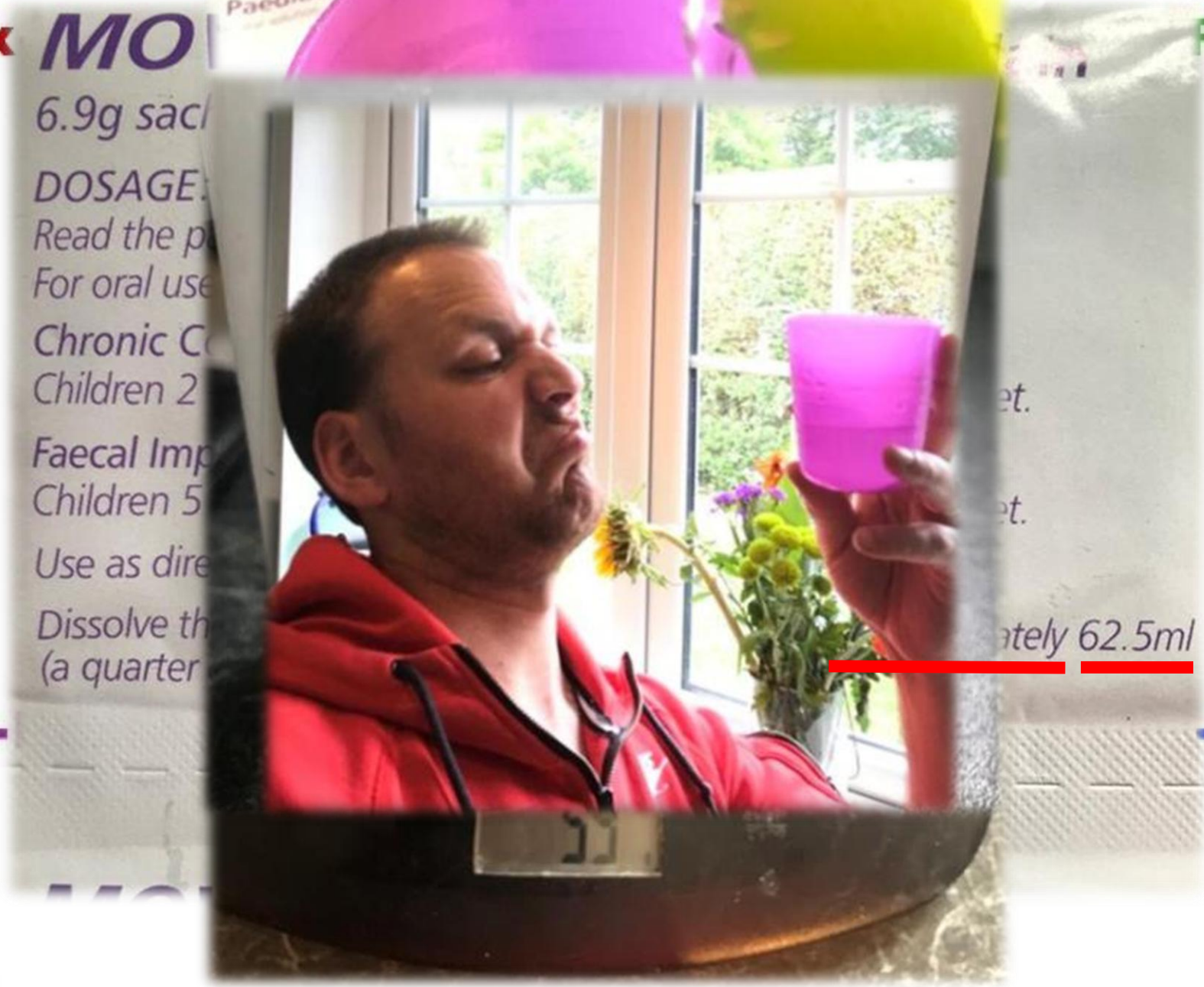
Daniel Hufton



Dan is a husband, father to 3 children and a Paediatrician with a keen interest in Simulation, in particular, **Translational Simulation**. He has an interest in **human factors/ergonomics** and has recently completed the Scottish Quality and Safety Fellowship (SQSF). He currently works as Paediatric Consultant at **Forth Valley Royal Hospital and Clinical Director for the Translational Simulation Service** in Forth Valley at the Scottish Centre for Simulation and Clinical Human Factors. He previously worked as simulation fellow based at Queensland Children's Hospital to deliver, redesign, and innovate simulation that improves paediatric critical illness and resuscitation training in healthcare settings across Queensland.

Work

Prescribed



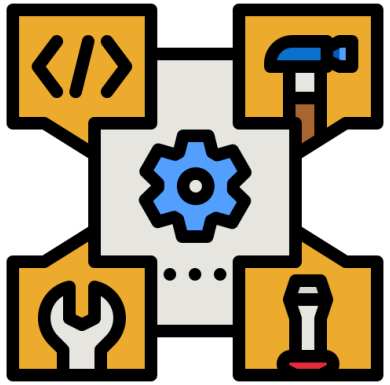
Work-as-

-as-Done

Translational Simulation



What is it



Key Concepts

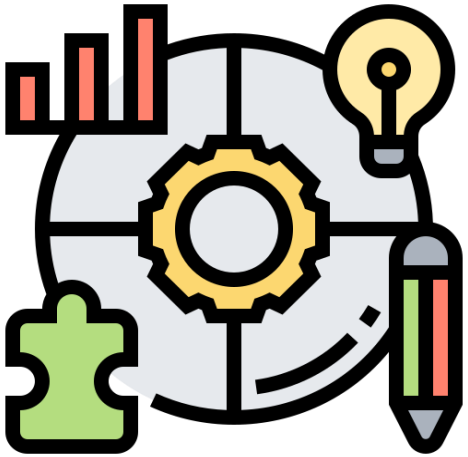


Examples

Core messages



Focus on
Purpose



Methods
aligned to purpose



Listen / Be
curious

Translational Simulation



What is it

Key Concepts

Examples

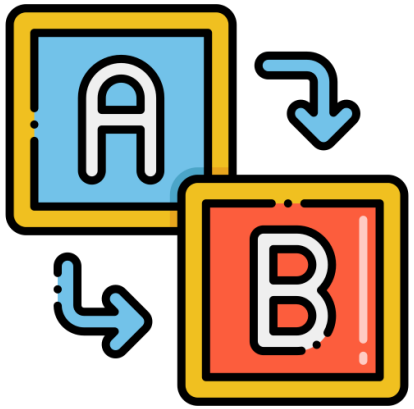
Translational Simulation

A useful **tool**



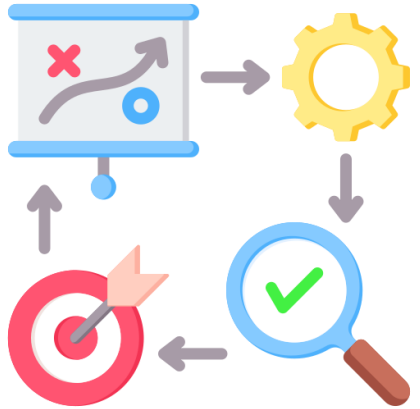
for

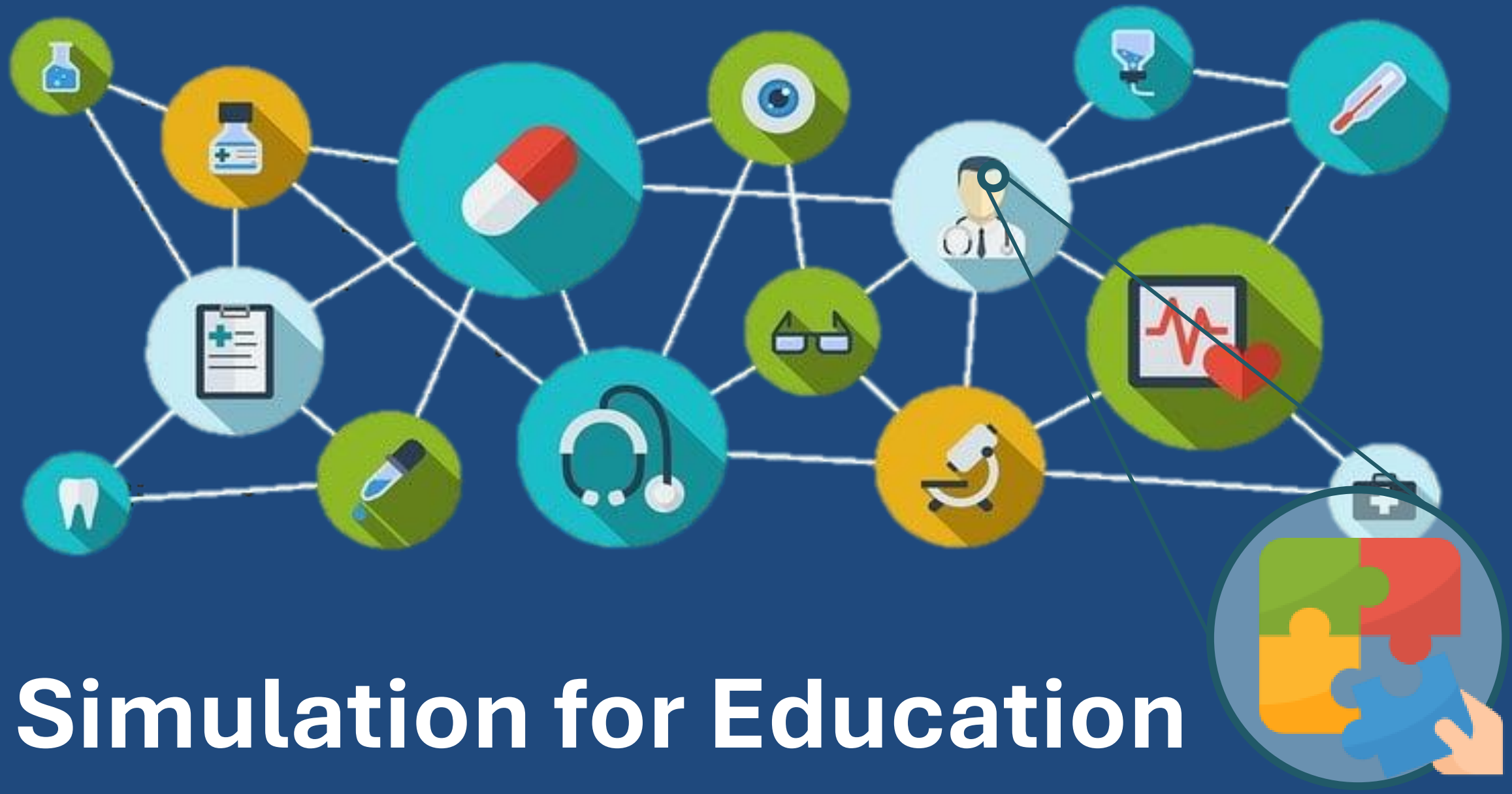
Healthcare **Change**



via

Insights & **Testing**





Simulation for Education



Translational Simulation



Process Mapping

Diagnose / Understand



FRAM / SEIPS etc

Culture



Relational co-ordination



PDSA cycles

Re-imagine / Innovate



Quality Improvement



Human Factors / Ergonomics



Simulation Methodology



Safety Science



Translational Simulation





Focus on **Purpose**

Simulation to understand current processes in new environments

"The simulation today has no participants – we are all co-faculty exploring this together"





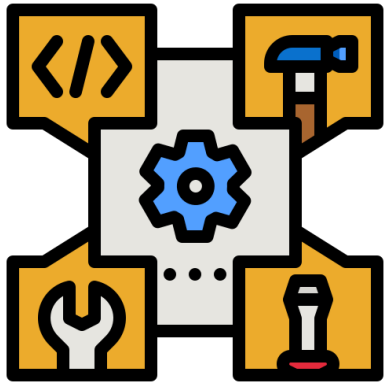






Translational Simulation

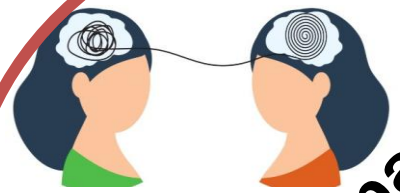
What is it



Key Concepts

Examples

Design Thinking



Empathise

Discover

Define



Ideate

Develop

Prototype



Test

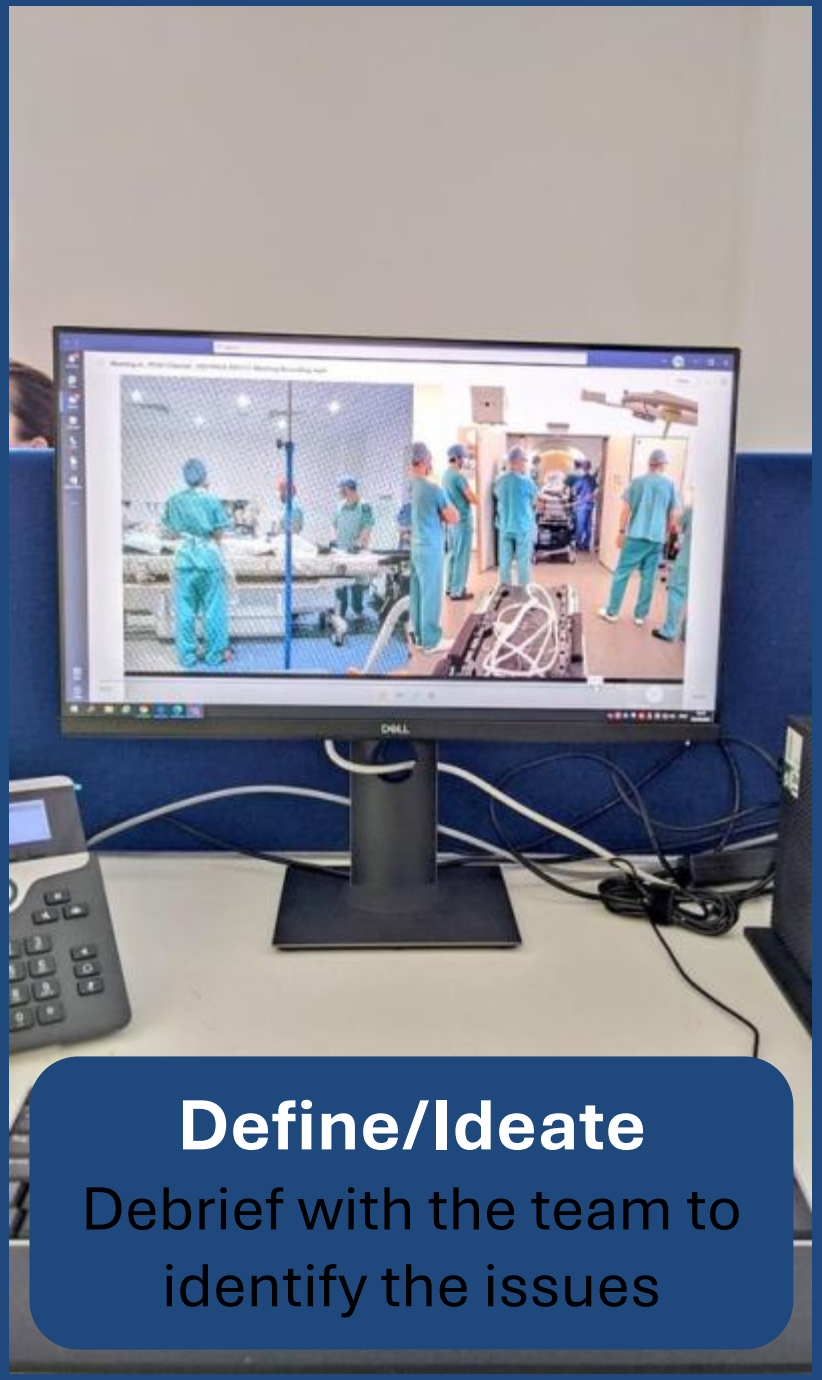


Deliver



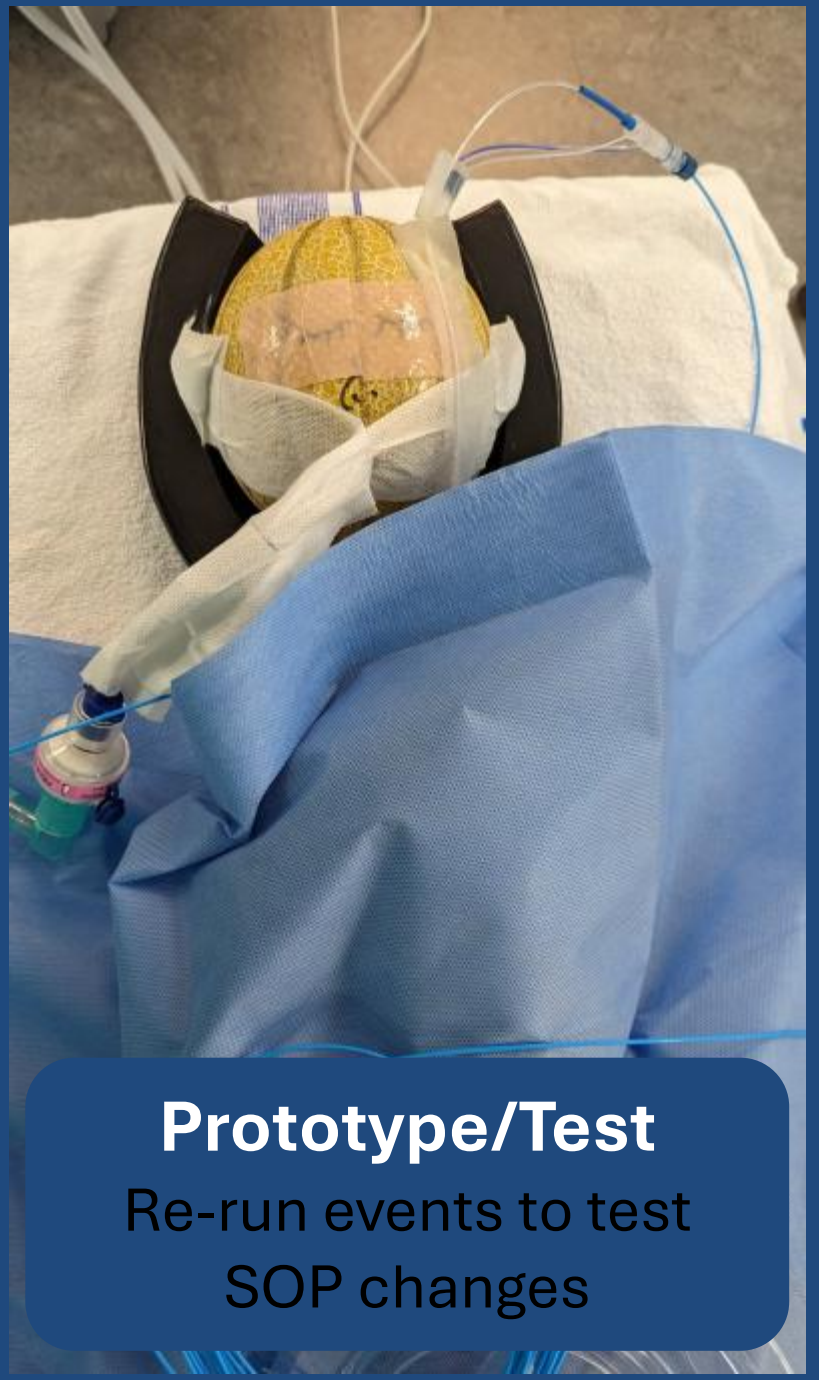
Empathise

Sim designed to understand the SOP



Define/Ideate

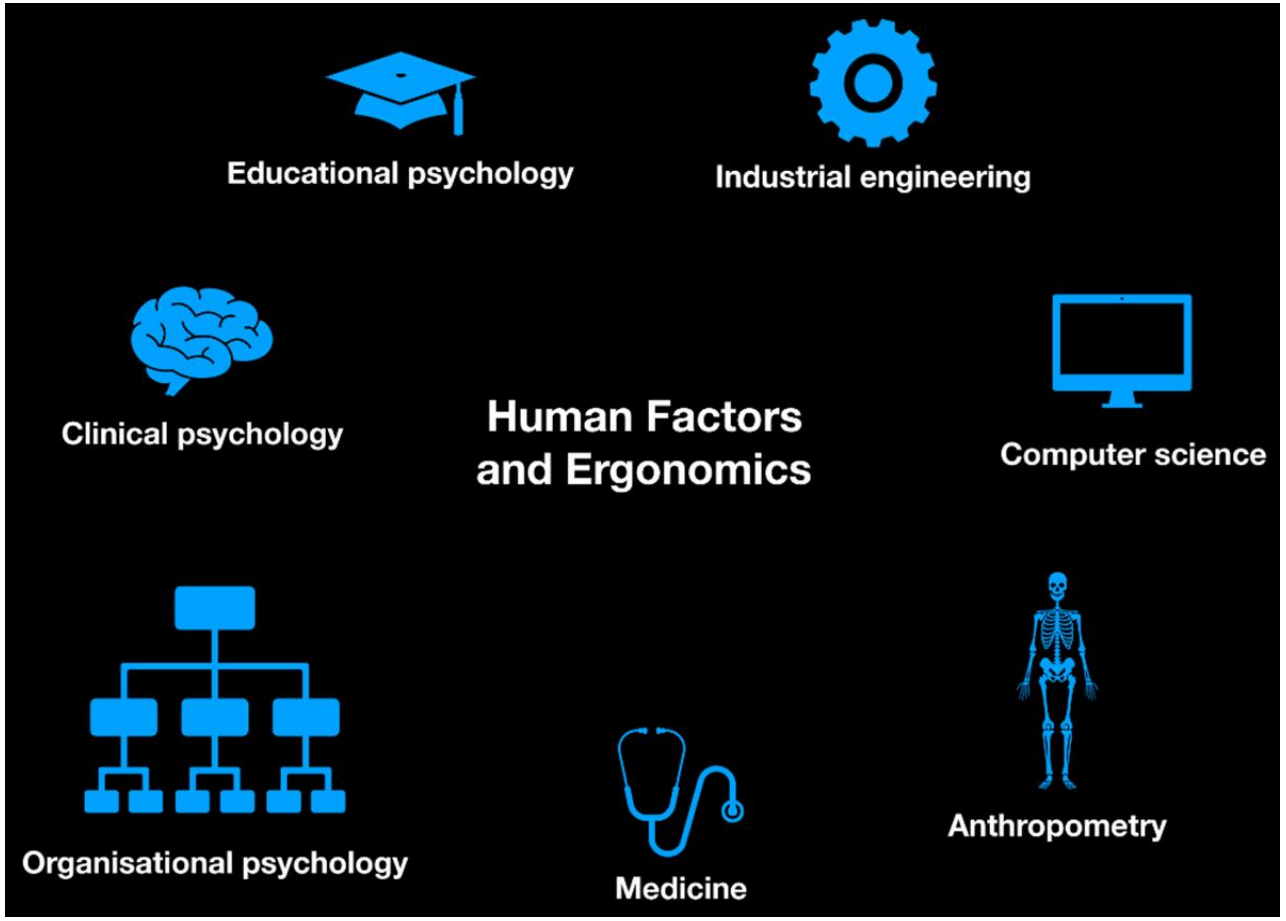
Debrief with the team to identify the issues



Prototype/Test

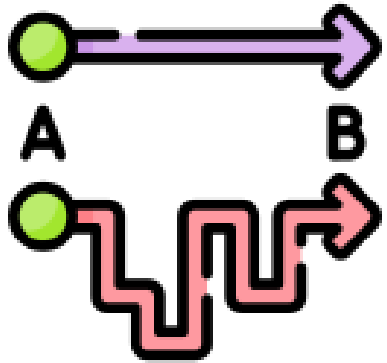
Re-run events to test SOP changes

Human Factors & Ergonomics

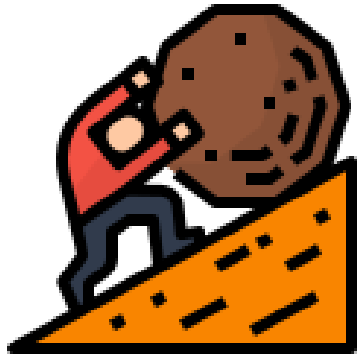


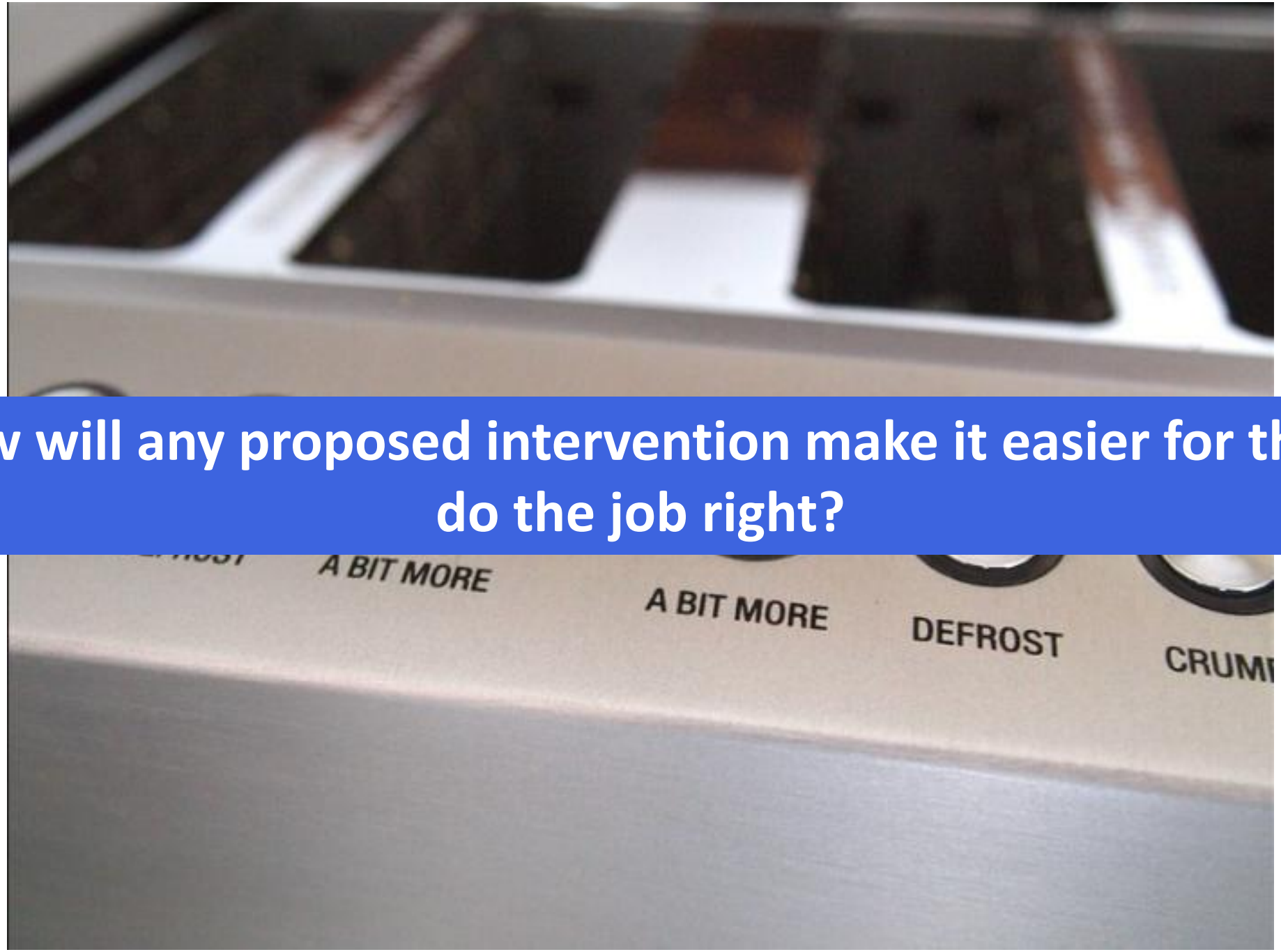
The whole scientific discipline of Ergonomics Summarised in 2 statements...

Making it EASIER to do the right thing.



Making it HARDER to do the wrong thing.





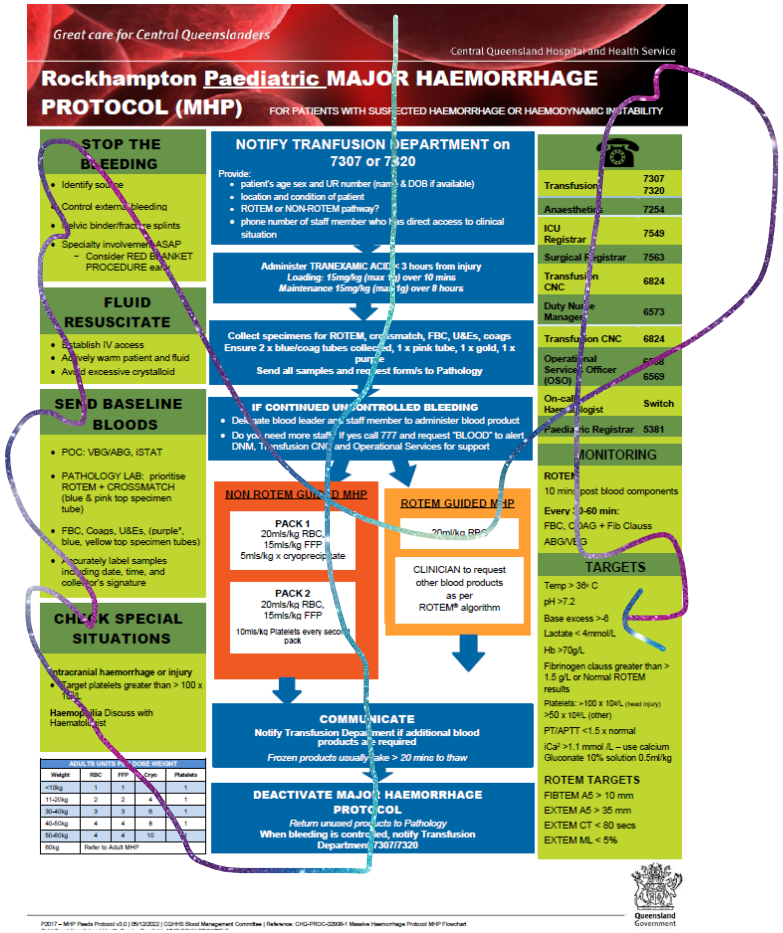
Q: How will any proposed intervention make it easier for them to do the job right?

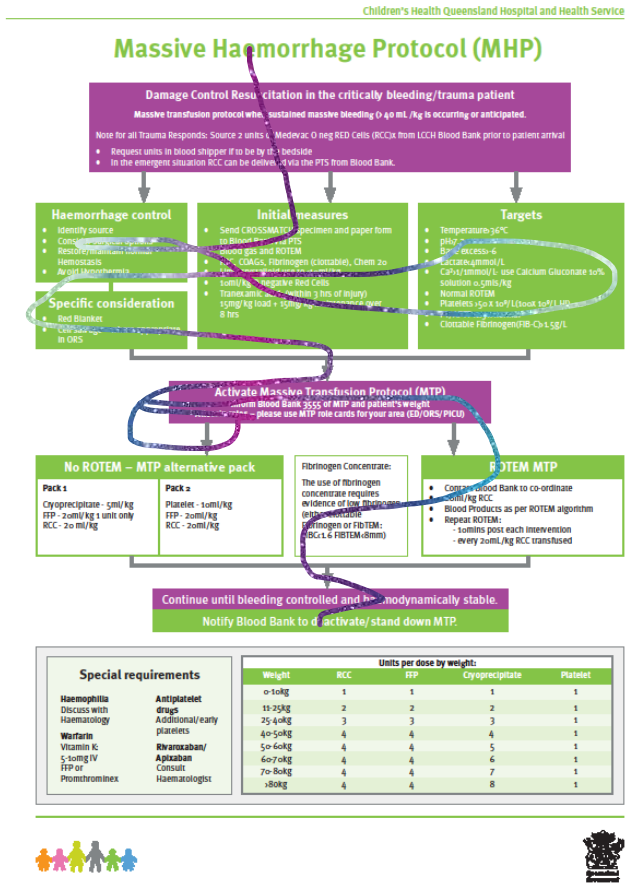
Major Haemorrhage Protocol Analysis





Help guide the flow of viewer's eye





NON ROTEM

Paediatric Massive Haemorrhage Protocol

Flowchart for children > 4kg

1. CONFIRM PLAN AND ALLOCATE ROLES

- **Indications:** Sustained bleeding > 40mL/kg occurred or anticipated
- **Allocate roles:** e.g. Team Leader, Blood Bank Liaison, Transfusion Nurses, Runners
- **Team leader confirms ROTEM / non ROTEM pathway -> if ROTEM utilise ROTEM Flowchart**
- **Continue damage control resuscitation :**
  - Manage Bleeding Source, Maintain Oxygenation, Permissive Tachycardia, Minimise Crystalloid, Warm patient

2. ACTIVATE MHP WITH BLOOD BANK [local No. here]

- Inform blood bank of Patient Name, UR, Diagnosis, Weight (real or estimated)
- Inform blood bank of authorising MO name, and phone extension for dedicated blood bank liaison
- Collect 2 units of Medevac blood [insert local hospital location for O-ve]
- Resuscitate with O-ve via bloodline as required until MHP Pack 1 arrives

3. Collect BLOOD SAMPLES and SIGN CORRECTLY

- Collect: Blood Gas, FBC, Coags, CXM, Chem 20 **[If only intraosseous sample available, must notify lab]**
- Send runner urgently to blood bank with samples

5. Administer Pack 1

- **RCC** 20mL/kg via bloodline + warmer
- **FFP** 15mL/kg via bloodline
- **Cryoprecipitate** 5mL/kg via bloodline

Repeat FBC, Coags, VBG and Ca^{2+} between packs

6. Administer Pack 2

- **RCC** 20mL/kg via bloodline + warmer
- **Platelets** 10mL/kg via bloodline
- **Cryoprecipitate** 5mL/kg via bloodline
- Do not administer cryoprecipitate, fibrinogen or FFP via a fluid warmer [may degrade clotting factors]

Repeat FBC, Coags, VBG and Ca^{2+} between packs

7. Still bleeding?

- Confirm ongoing bleeding with blood bank
- Return to MHP Pack 1
- Confirm definitive plan for underlying diagnosis

8. Patient stabilised?

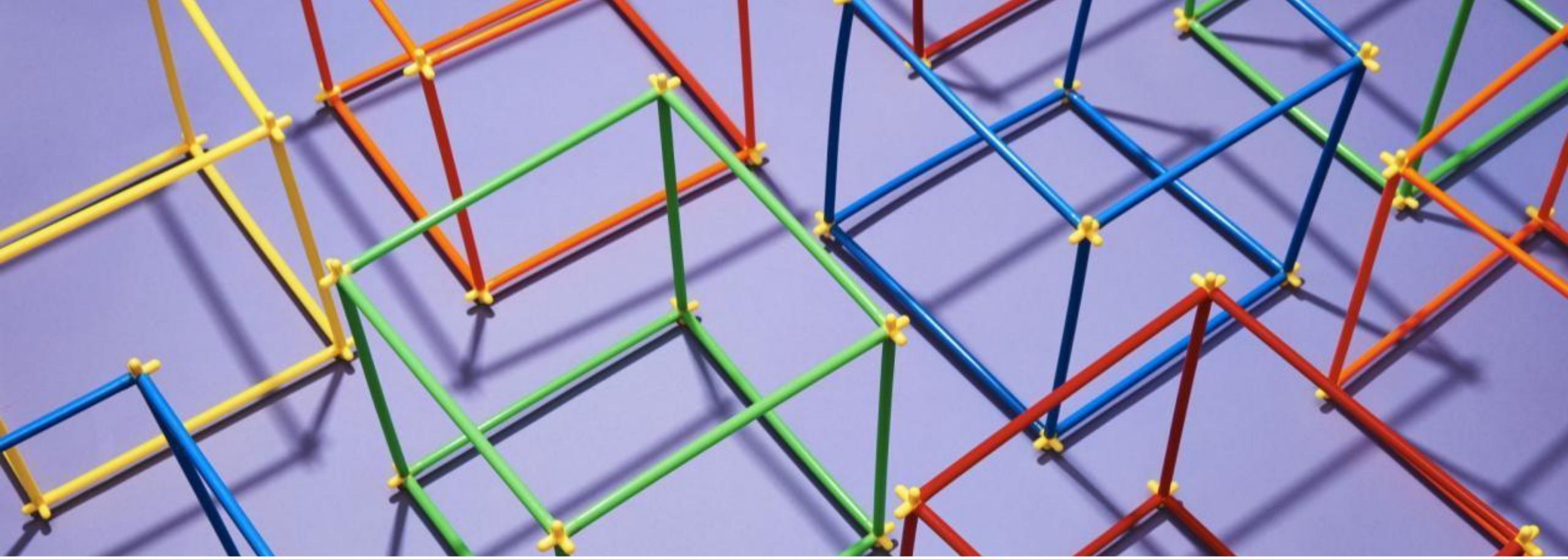
- Confirm with blood bank to stand down MHP
- Return unused packs to blood bank as priority
- Begin to check all documentation

Respond to Blood Results

- If INR > 1.5 or aPPT >40s give additional 20mL/kg FFP
- If Fibrinogen <2.0 g/L give 5mL/kg cryoprecipitate
- If Platelets <75 x 10^9 give 10mL/kg platelets (<100 for head injury)
- If iCa^{2+} < 1 mmol/L give:
  - Ca Gluconate 0.5mL/kg of 10% solution (if peripheral IV)
  - Ca Chloride 0.2mL/kg of 10% solution (if CVL)

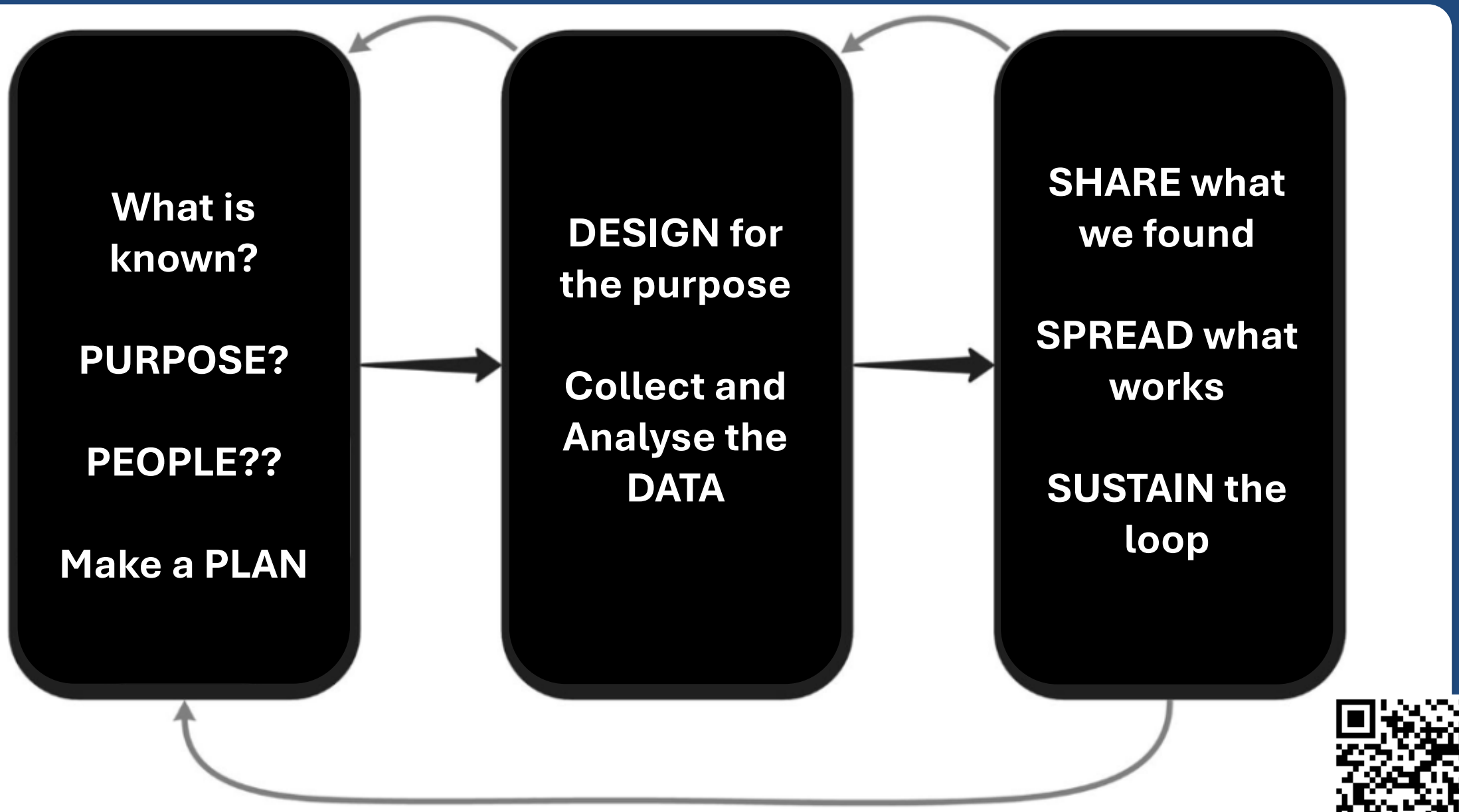
Special requirements

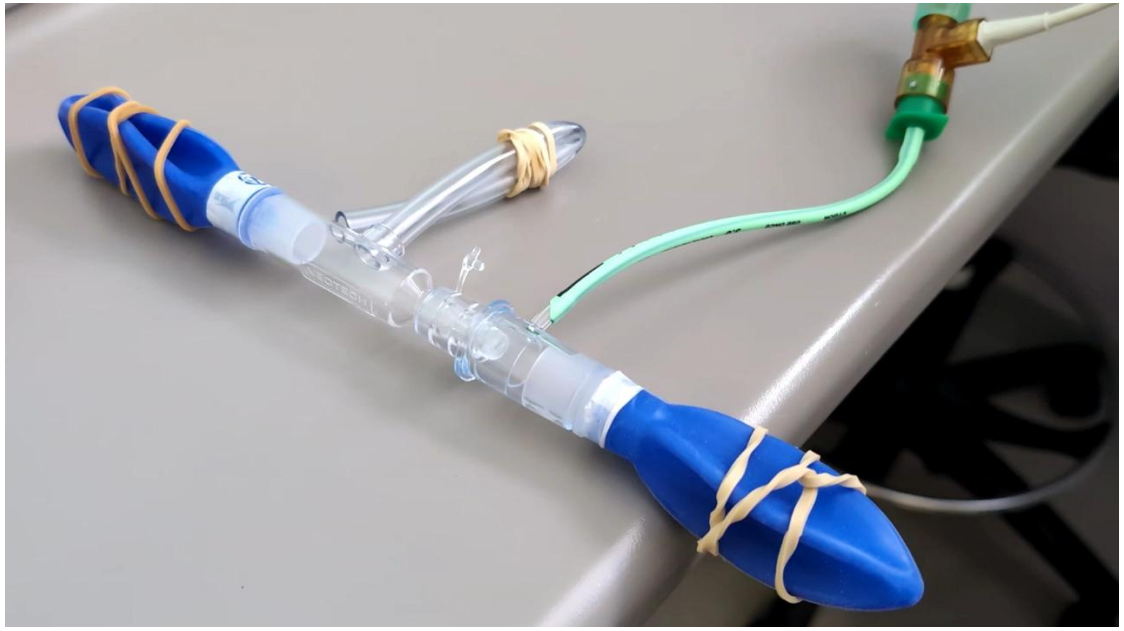
Haemophilia: Consult Haematologist
Warfarin: Phytomenadione (Vitamin K) 5-10 mg IV, FFP or Prothrombin Complex concentrate (Prothrombinex/Beriplex)
Antiplatelet drugs: Consider early platelets
Rivaroxaban/Apixaban: Consult Haematologist

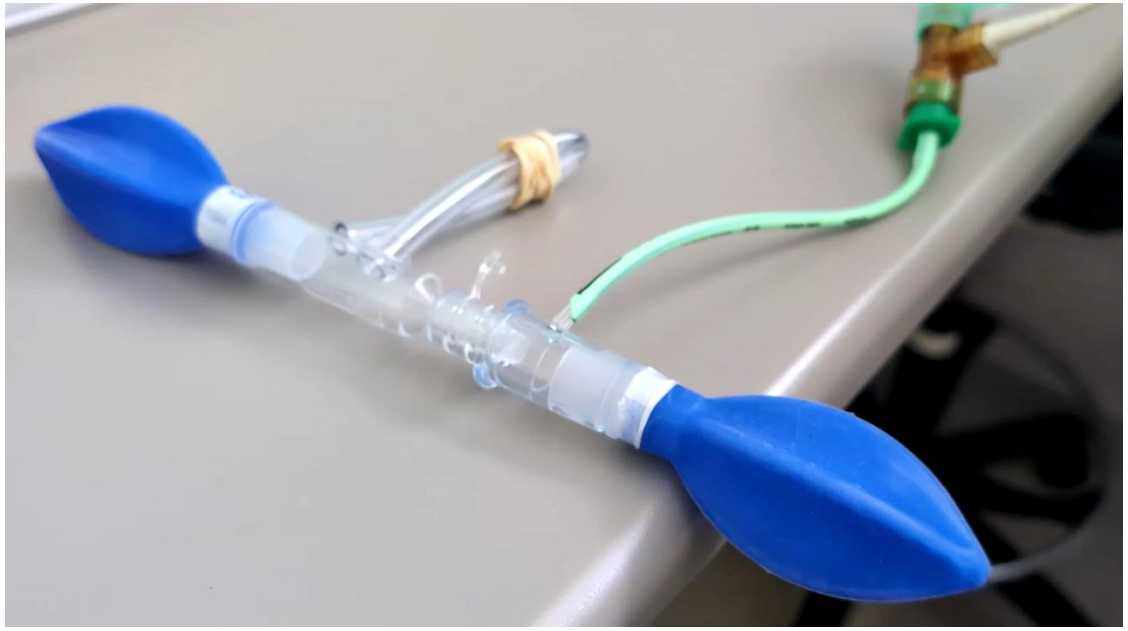


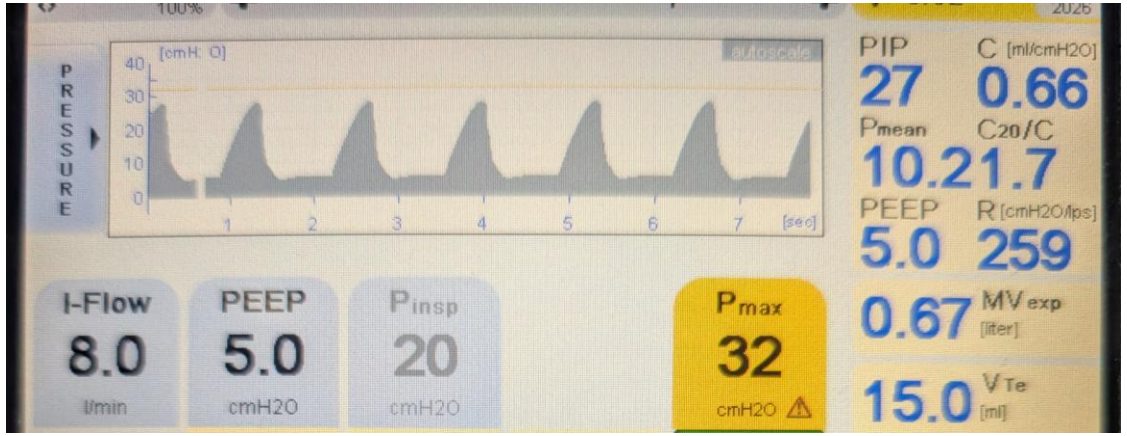
Translational Simulation: From Description to Action

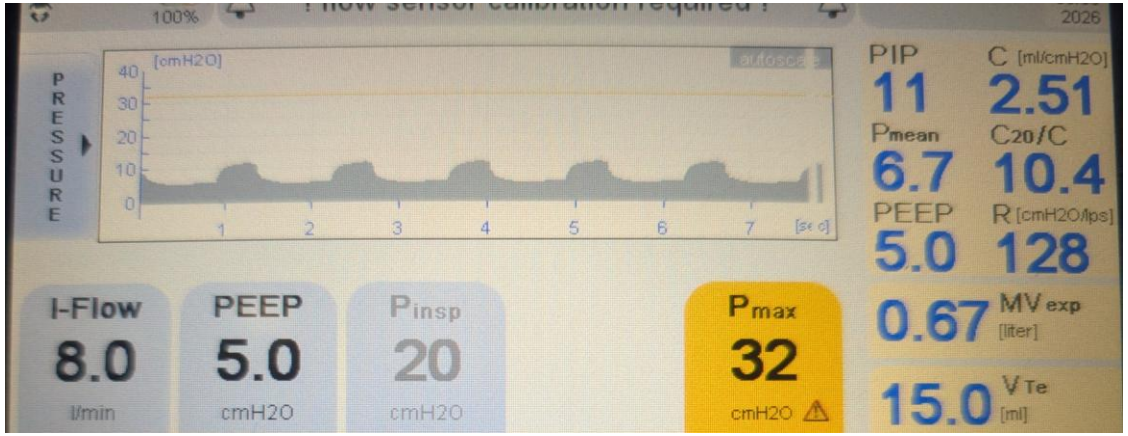
Christopher Nickson,
Andrew Petrosoniak,
Stephanie Barwick
and Victoria Brazil.


What is known?
PURPOSE?
PEOPLE??
Make a PLAN
DESIGN for the purpose
Collect and Analyse the DATA
SHARE what we found
SPREAD what works
SUSTAIN the loop









Design/Methods aligned to the purpose


Visually Enhanced Mental Simulation (VEMS)
Methods aligned to purpose
NRP for the Non-Neonatologist
NRP for the Non-Neonatologist
Towel
Hat
Temperature
Heater
Saturation Monitoring
ECG Monitoring
Flexible Suction

Data strategy for translational simulation

Input

Problem definition

What data/ measures help define the problem?

Examples:

- Staff, consumer, stakeholder perceptions
- Clinical Audits/ Registries
- Process maps, Floor plans
- Findings from previous simulations

Data Strategy

What data will inform solutions?

Examples:

- Quantitative and qualitative measures of safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity

What data is feasible, manageable, actionable?

Does the problem definition need revision?

Process

Simulation design, delivery and debriefing

What simulation design supports data collection?

Consider:

- Simulation location, duration, modality
- Participant selection, Expert Observers

Reframe participant debriefings as data collection

Prepare participants for role in data collection

Data collection and analysis

Monitor utility & feasibility of data collected

- Quantitative & qualitative data collection
- Automated data collection devices
- A.I. enabled analysis tools

Have new questions or possible data sources emerged after initial simulations?

Output

Reporting and dissemination

What data presentation will inform improvement?

Examples:

- Quantitative - visual representations
- Qualitative data - themes, quotes

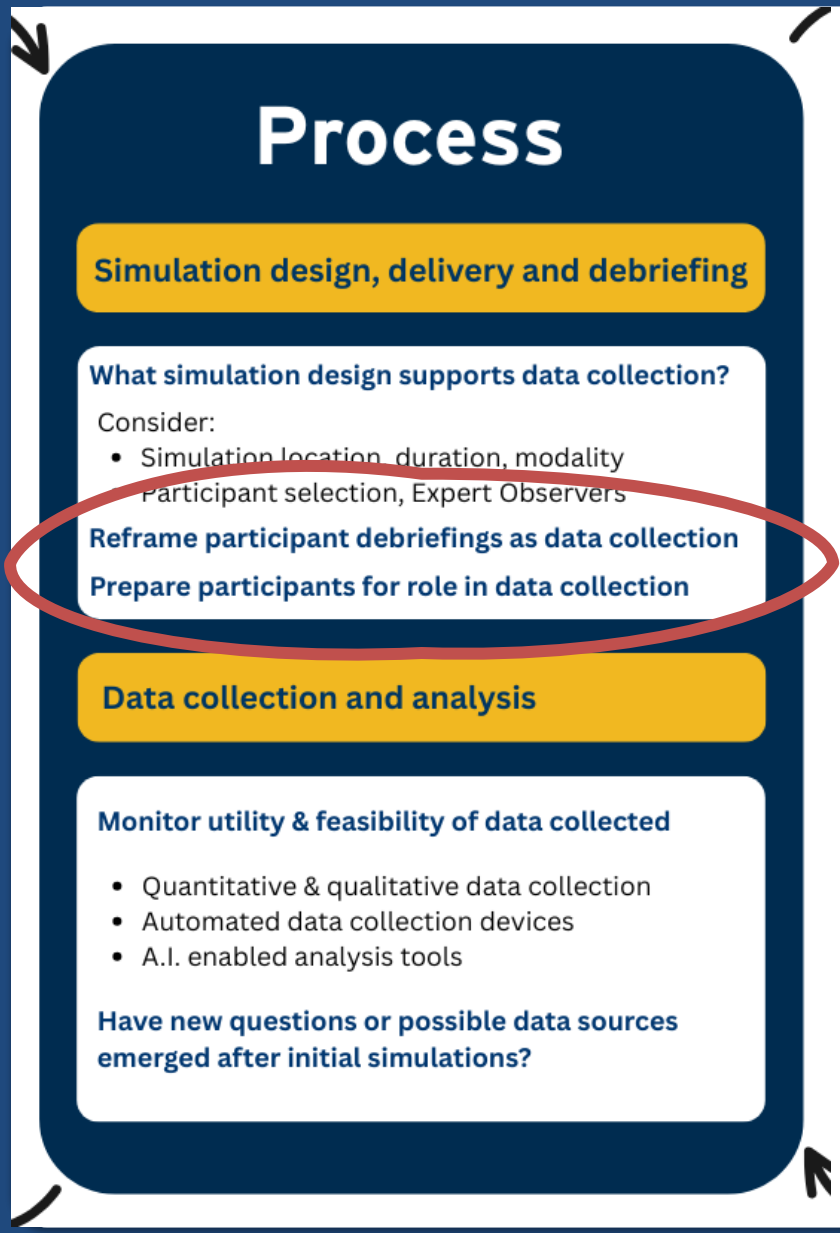
Who needs to receive the data?

Data to evaluate the simulation

What data will help improve simulation design, delivery & data collection?

What data will demonstrate the value of translational simulation to the institution?

- Faculty reflections
- Stakeholder feedback
- Improvement in clinical outcomes
- Return on investment analysis



"You are here to help us understand this process"

"I'm here to learn from you about what you see/feel when doing....."

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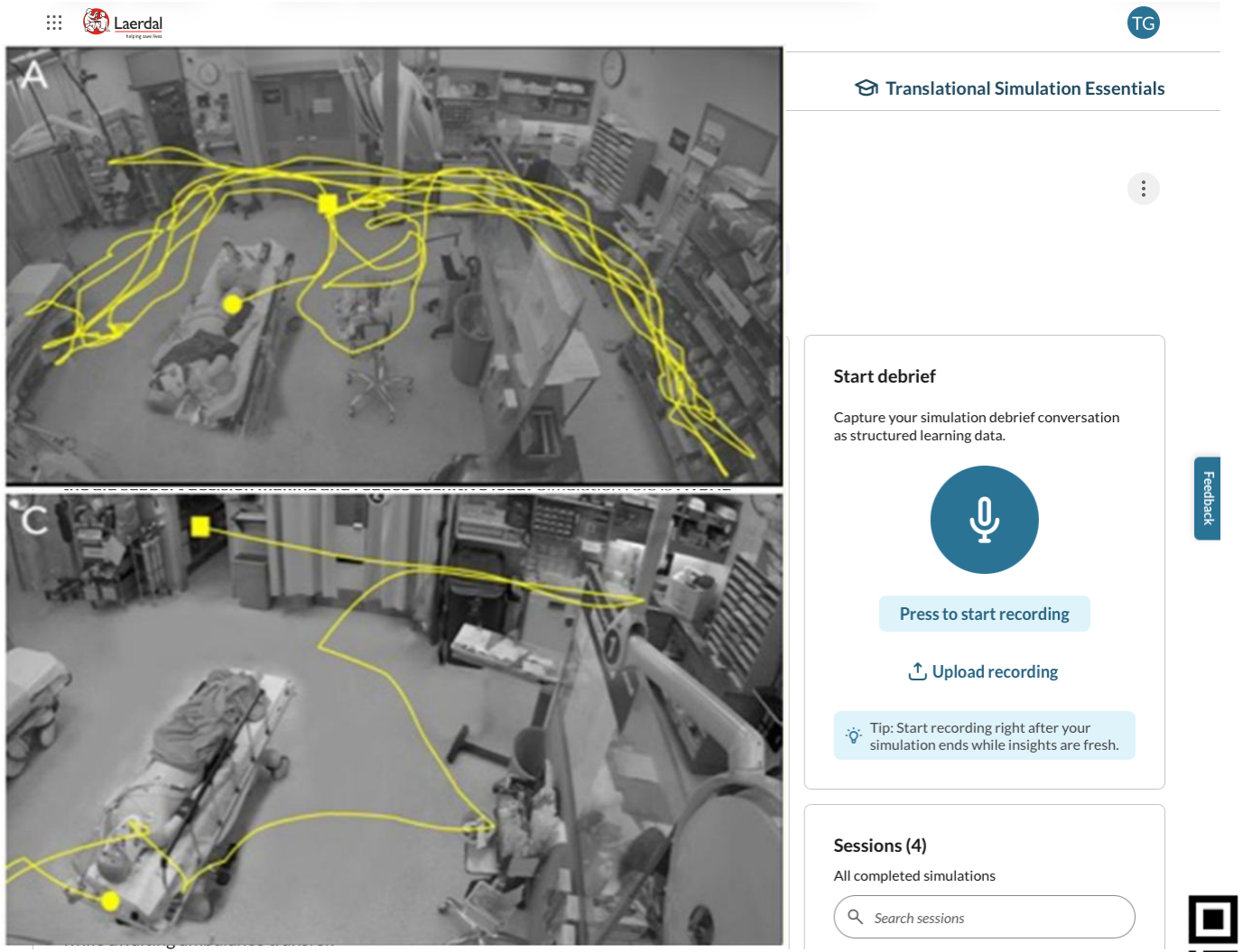
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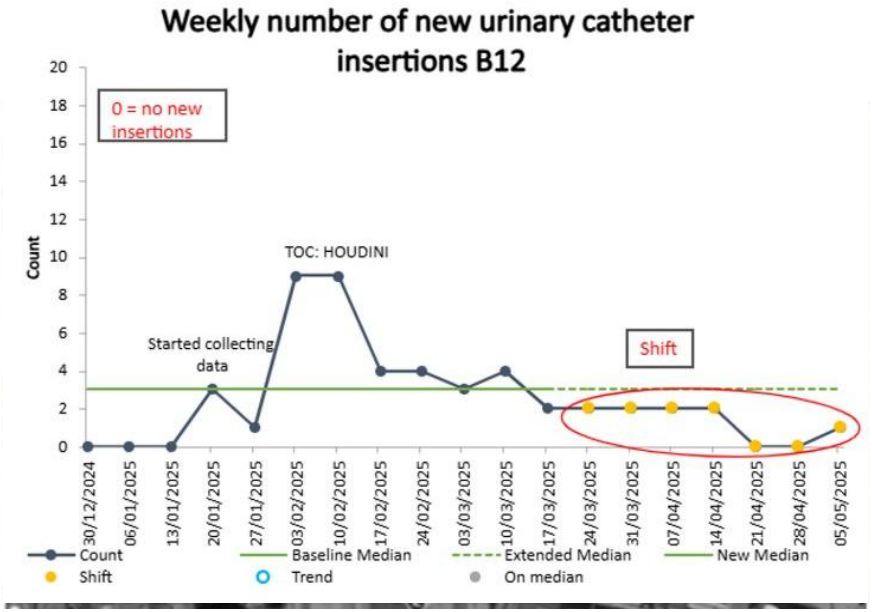
Prepare participants for role in data collection

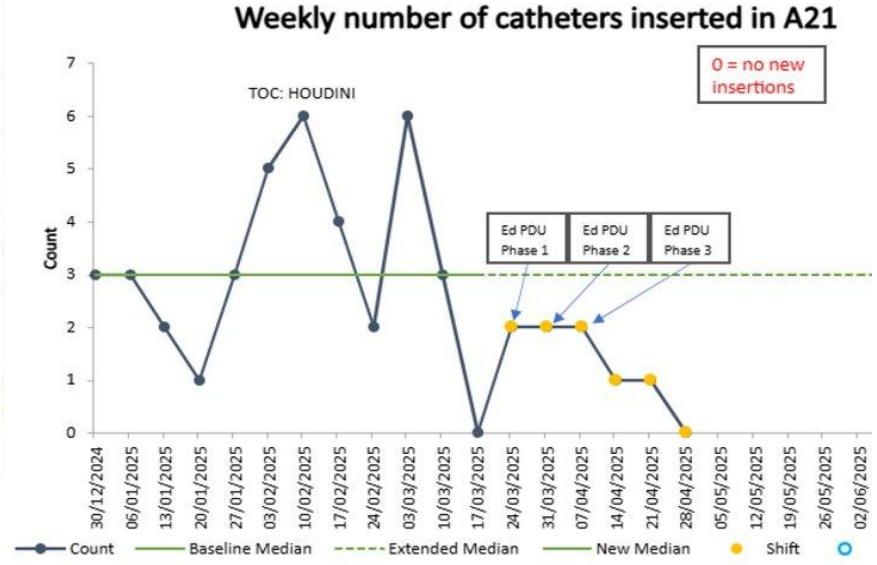
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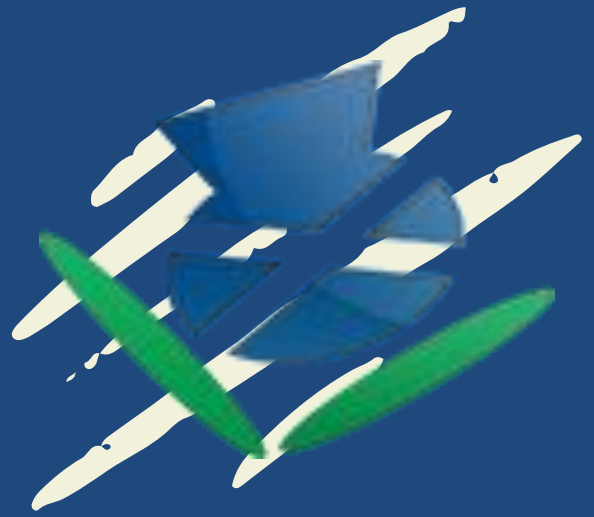


Sim to appreciate "normal" work



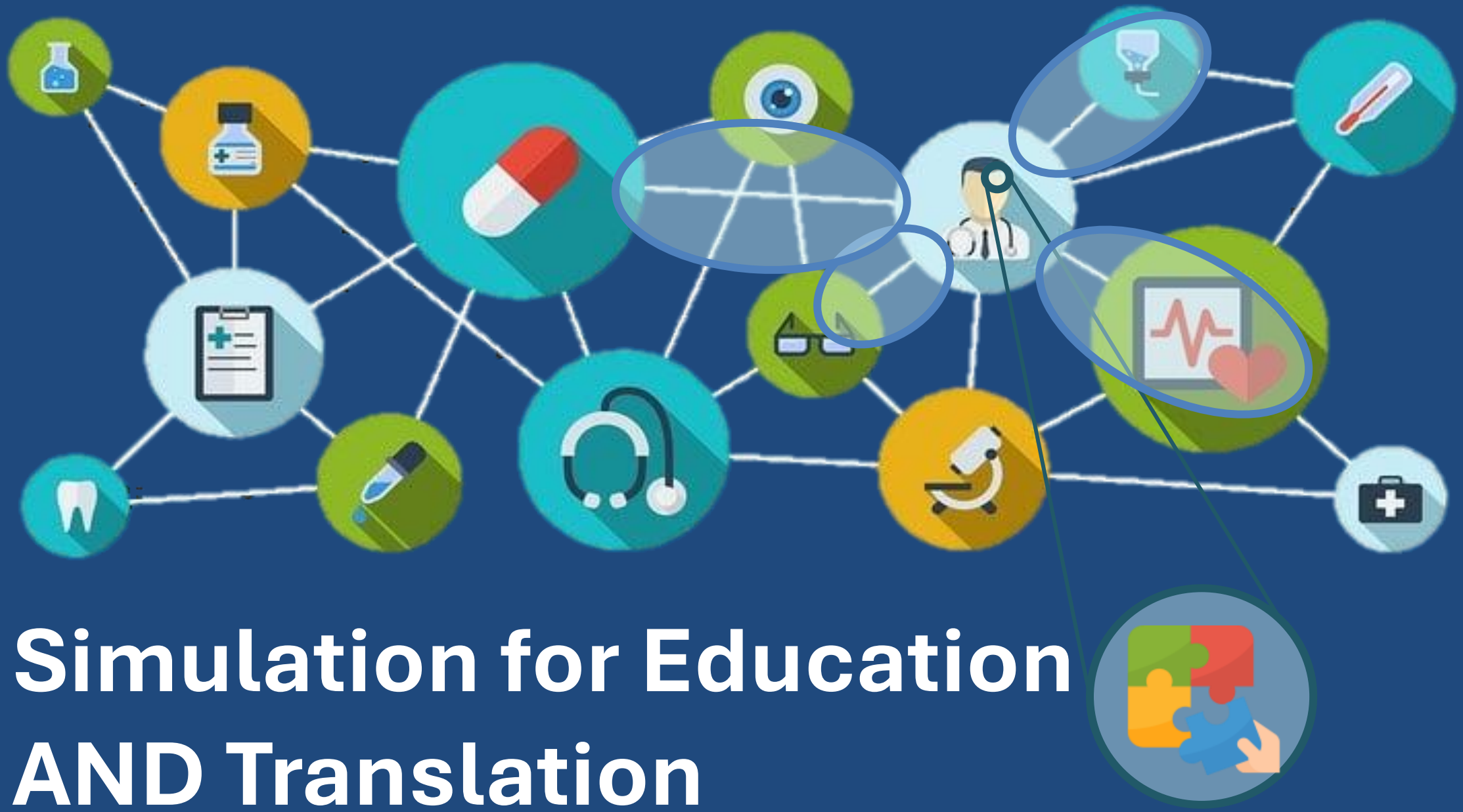


Small pieces of equipment delays



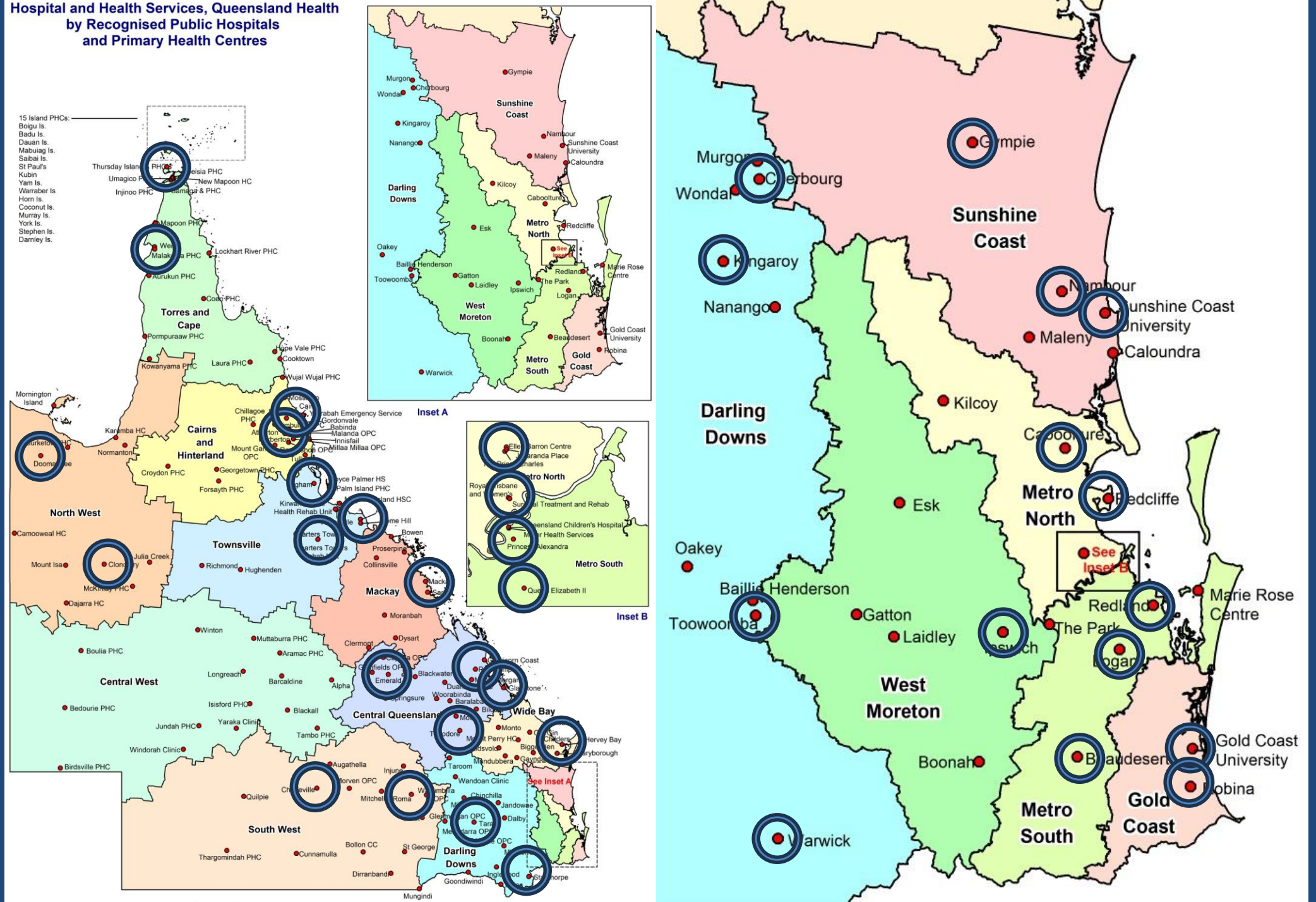

JAYNE
HELEN

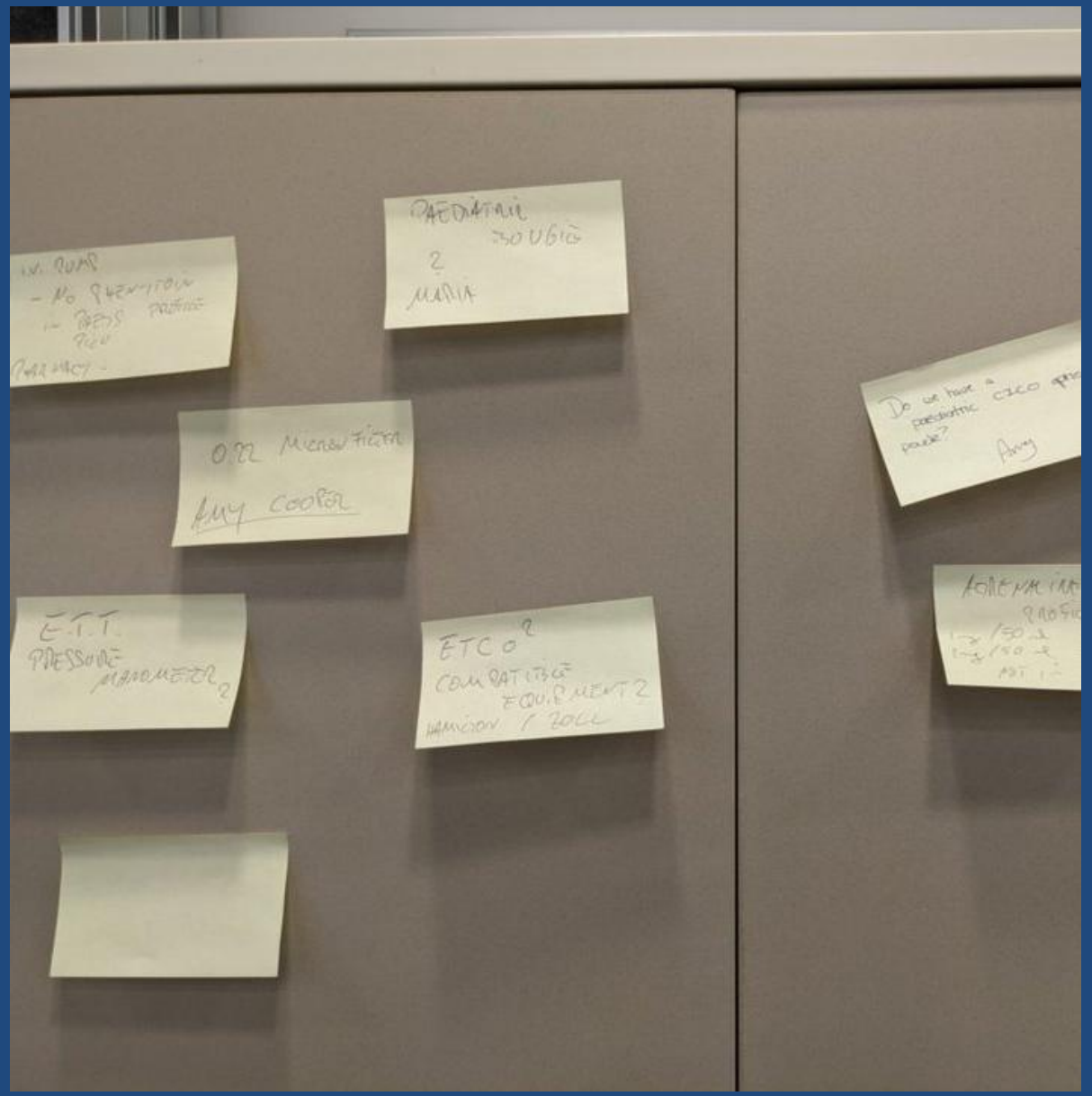
165 years of waiting saved (and counting..)

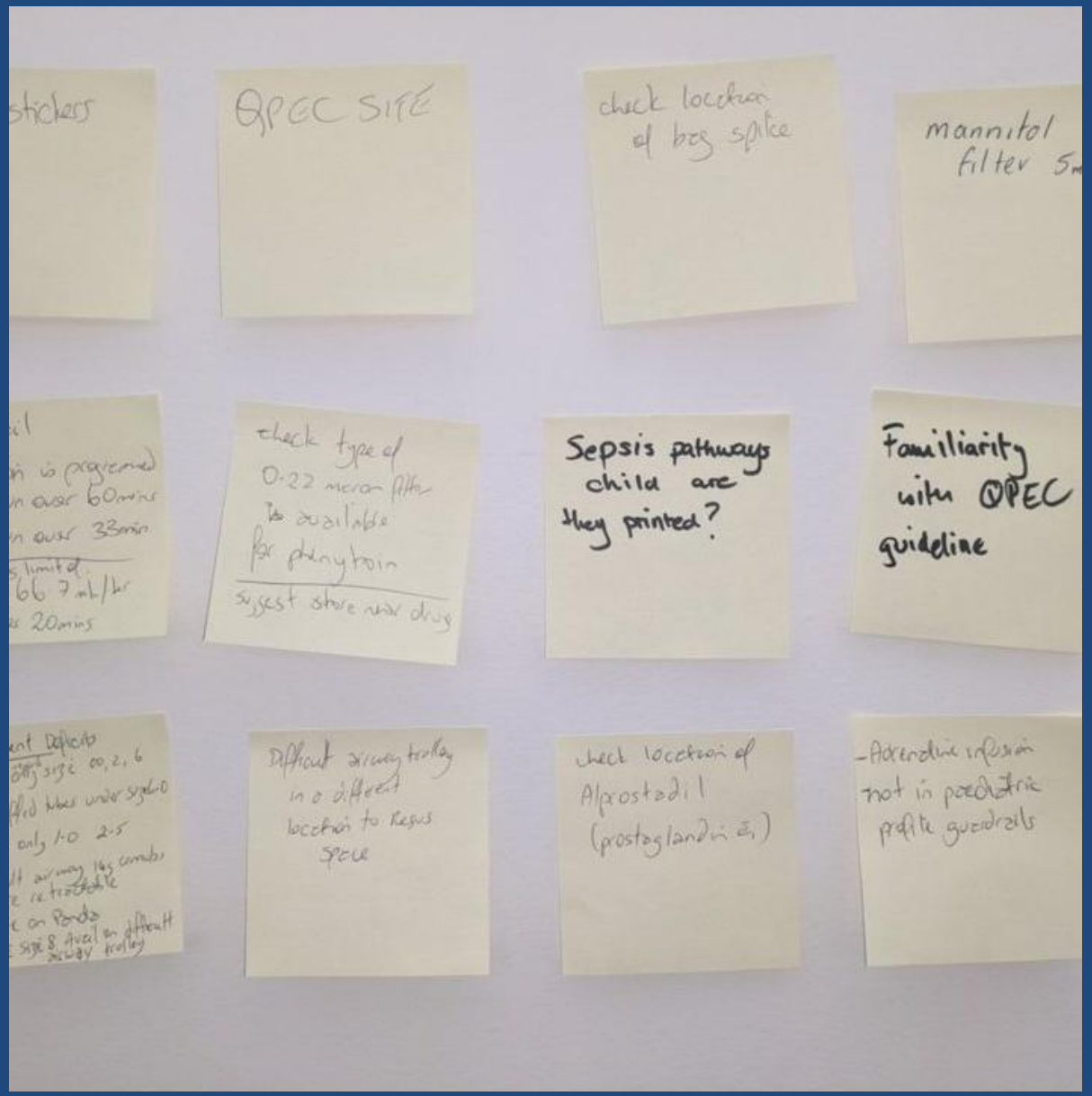


Simulation for Education AND Translation

Hospital and Health Services, Queensland Health
by Recognised Public Hospitals and Primary Health Centres




PAEDIATRIC
2
MARIA
Do we have a paediatric circo
Amy
0.22 MICRONFILTER
AMY COOPER
E.T.T.
PRESSURE MANOMETER
ETCO2
COMPATIBLE EQUIPMENT 2


stickers
QPEC SITE
check location of bag spike
mannitol filter 5
check type of 0.22 micron filter is available for phenytoin
suggest store near drug
Sepsis pathways child are they printed?
Familiarity with QPEC guideline
Difficult airway trolley in a different location to Resus space
check location of Alprostadil (prostaglandin E1)
-Adrenaline infusion not in paediatric profile guardrails

The following strengths, latent safety threats and ideas were identified by participants on the course. These issues are provided in good faith to assist local sites advocate for change and are not intended as an accreditation or auditing document.

Our team noted the following STRENGTHS of the service:	
	Staff reported pride for their service and the supportive relationships between local doctors and nursing staff. There were many positive reflections about the benefits of long term relationships built in a country setting, and how local GPs felt supported on call by their colleagues if needed in a paediatric emergency. A new in situ simulation program is running monthly in the emergency department, with a mix of adult and paediatric cases. Staff reported this has been very helpful education, and built confidence in managing emergencies in general.
Issues with DRUG preparation, prescription and administration:	
	Phenytoin (20mg/kg over 20 mins) and Levetiracetam (60mg/kg over 5 minutes) could not be administered at the rate and dose currently recommended by Children's Health Queensland algorithms. Staff had to manually over-ride the software to administer Phenytoin at less than 60 minutes.
Suggested Actions:	Liaise with pharmacy regarding pump profile updates Action Status: **ACTION NEEDED**
Contact Person:	regionalpharmacist@health.qld.gov.au
Issues with EQUIPMENT or LAYOUT of department:	
	A new paediatric resuscitation trolley had recently been purchased, but stock for intubation was limited. Neonatal HME filters and neonatal nasopharyngeal airways were not available, and would be helpful in the event of a neonatal resus.
Suggested Actions:	Resus committee to consider purchasing neonatal HME filters and NPAs (see appendix for ordering codes) Action Status: **ACTION NEEDED**
Contact Person:	localnurseeducator@health.qld.gov.au

Reporting the issues, identifying **actions** (+ people) to **effect change**

Barriers to accessing appropriate PROTOCOLS/ALGORITHMS/RESOURCES:	
	Staff had no access to a computer in their resus bay, and instead relied upon a manilla folder containing print outs of common paediatric algorithms. Several were from previous file versions or prior publications and were significantly out of date. Access to paediatric resuscitation algorithms could be vital in an emergency, as such we suggest installation of a computer in resus or a version control process for printed algorithms.
Suggested Actions:	Action Status: ACTION NEEDED
Contact Person:	localemergencyphysician@health.qld.gov.au
Issues identified with SYSTEMS, PATHWAYS or TEAM RELATIONSHIPS:	
	Staff recognised that there were many supportive relationships within the hospital, but that paediatric intubations on the ward could become challenging. In particular, a lack of clarity regarding the safest place to intubate (theatre vs the ward vs emergency) and who should attend a medical emergency response call (anaesthetics vs paediatrics vs emergency) contributed to the confusion. Clarity regarding the medical esclation process in airway emergencies on the ward may be warranted.
Suggested Actions:	Resus committee assess current policy Action Status: ACTION NEEDED
Contact Person:	localemergencyphysician@health.qld.gov.au

In addition to the above, STORK believes your site may wish to consider the following resources:

Input 🔁 Process 🔁 Output

Listening,



Curiosity,



Share of voice



Inclusion,



Collaborative solutions,



Visible action & change.

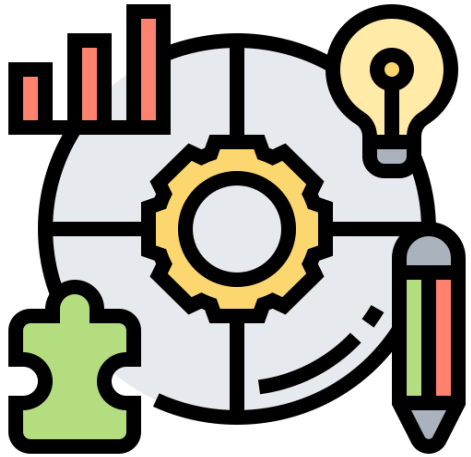




Core messages



Focus on
Purpose



Align methods
to purpose



Be curious /
Listen

Complex Systems Change Requires:



Frontline Engagement



Diversity of Views



Systems Approach



Sociotechnical solutions



Social Capital / Networks

Translational Simulation can assist



Alison Gillan
GP Partner Taybank Medical Centre and GP Cluster Lead for HSCP, Dundee, NHS Tayside



Alison White
Emergency Department Consultant
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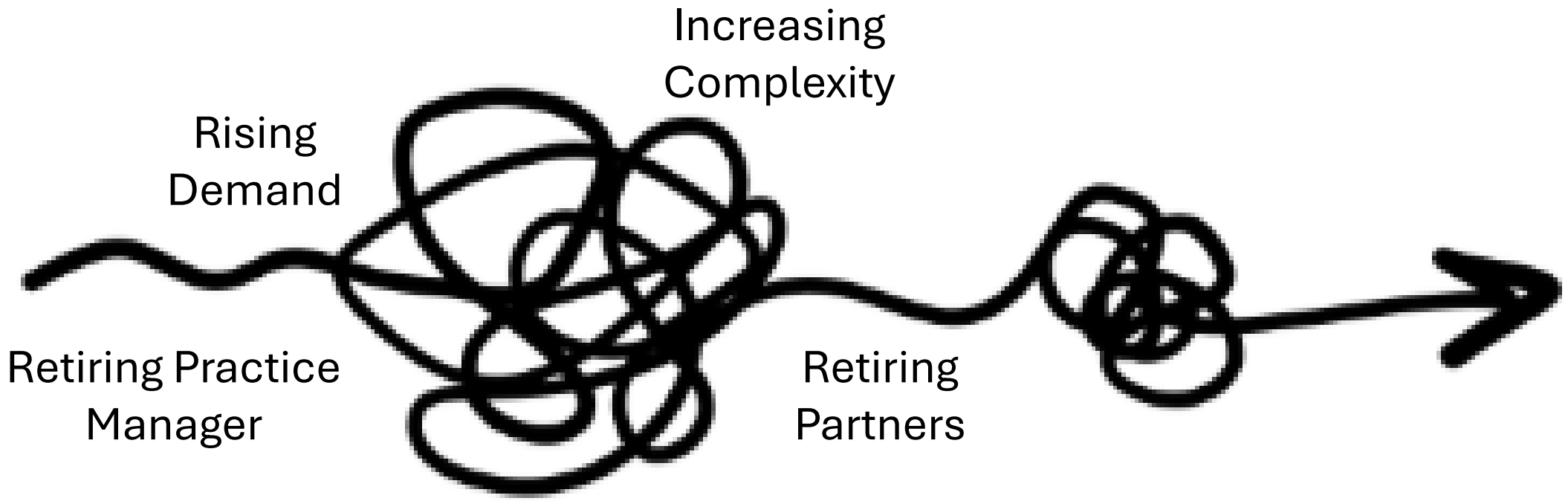


Hilary Provan
Realistic Medicine Programme Manager
NHS Tayside

From Firefighting to Flow

How one GP practice stepped back, understood its system and started redesigning care

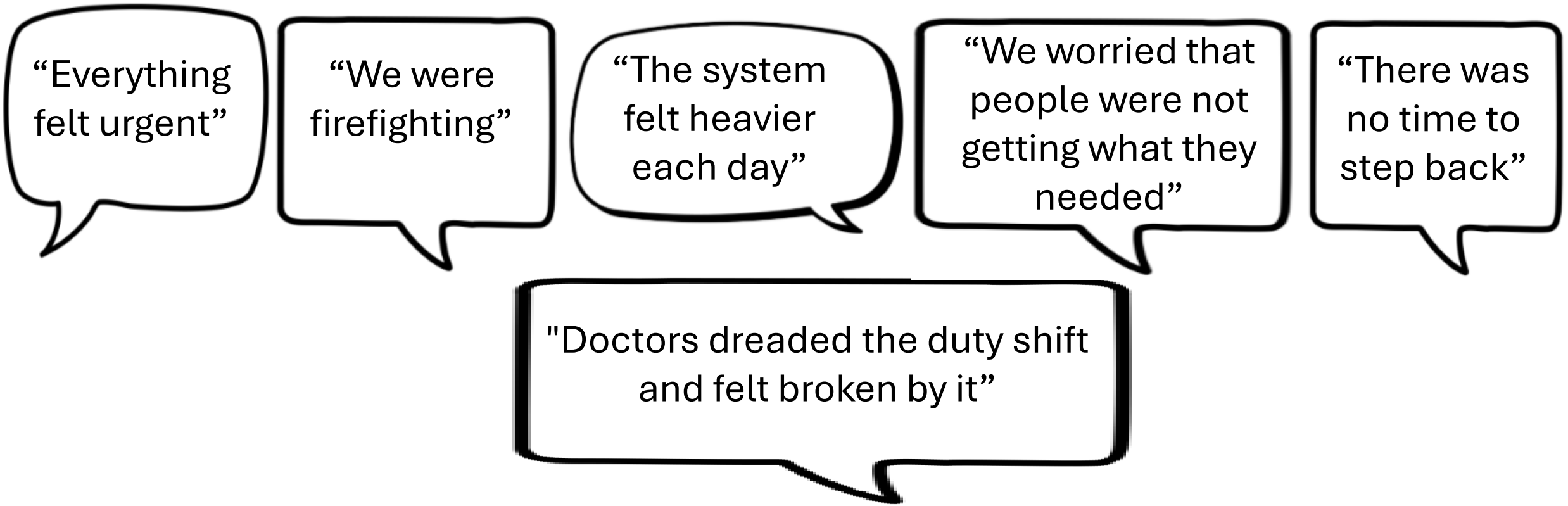
This was our reality...



"The duty doctor day was becoming overwhelming"

"It felt like a survival shift"

What it felt like to run the system



The problem wasn't that people weren't working hard. The problem was that the system had become increasingly difficult to manage

Why We Needed to Pause

What We Knew

System under pressure

People working hard

Patients feeling the impact

The Catalyst



Seeing how others created space to improve encouraged us to do the same

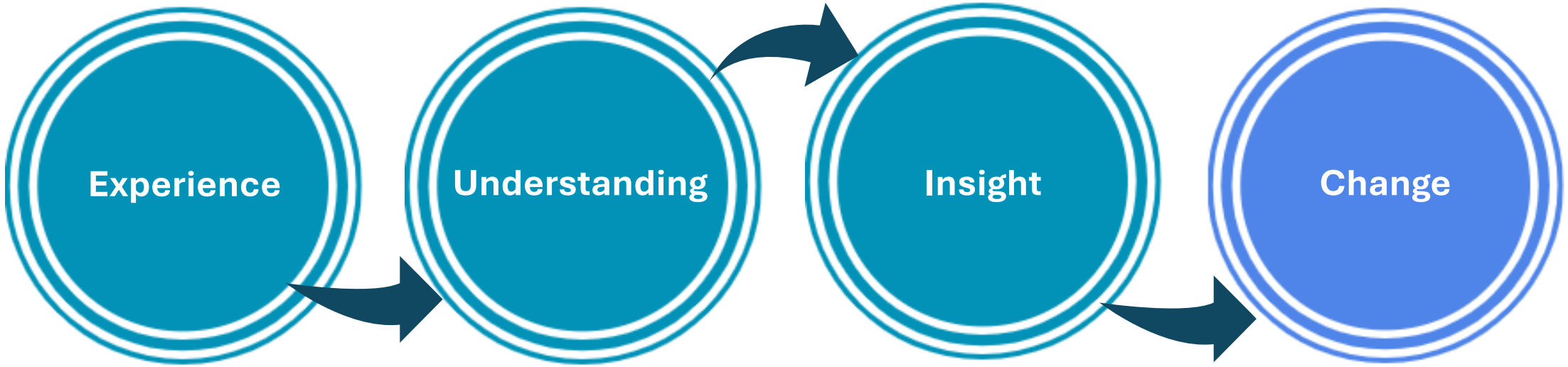
Deliberate Choice



Prioritise one day to understand before trying to change

To understand, we needed to step back

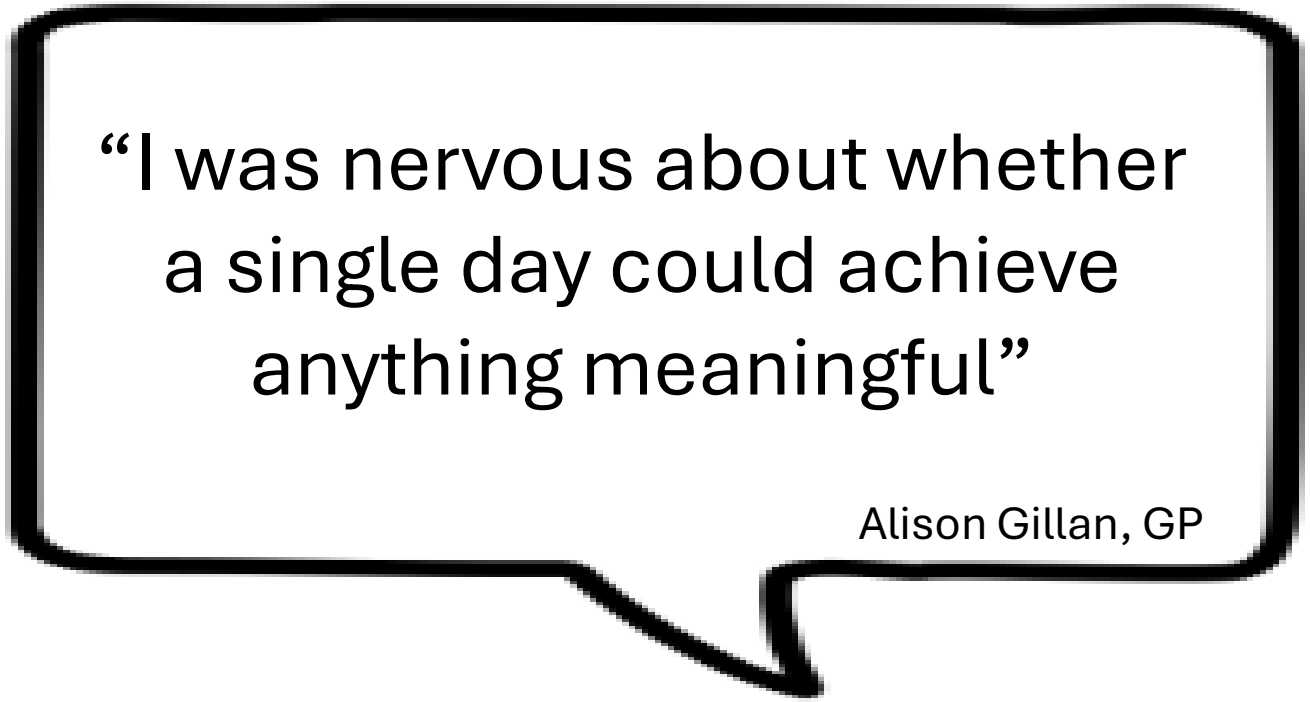
Why We Took a Different Approach



Rather than jumping straight to solutions, the practice deliberately invested one day to understand the system before changing it

We stopped doing the work…

To understand the work…



Creating space became the intervention

How We Worked

One day session



Team Canvas

Current State Blueprint

Future State Blueprint

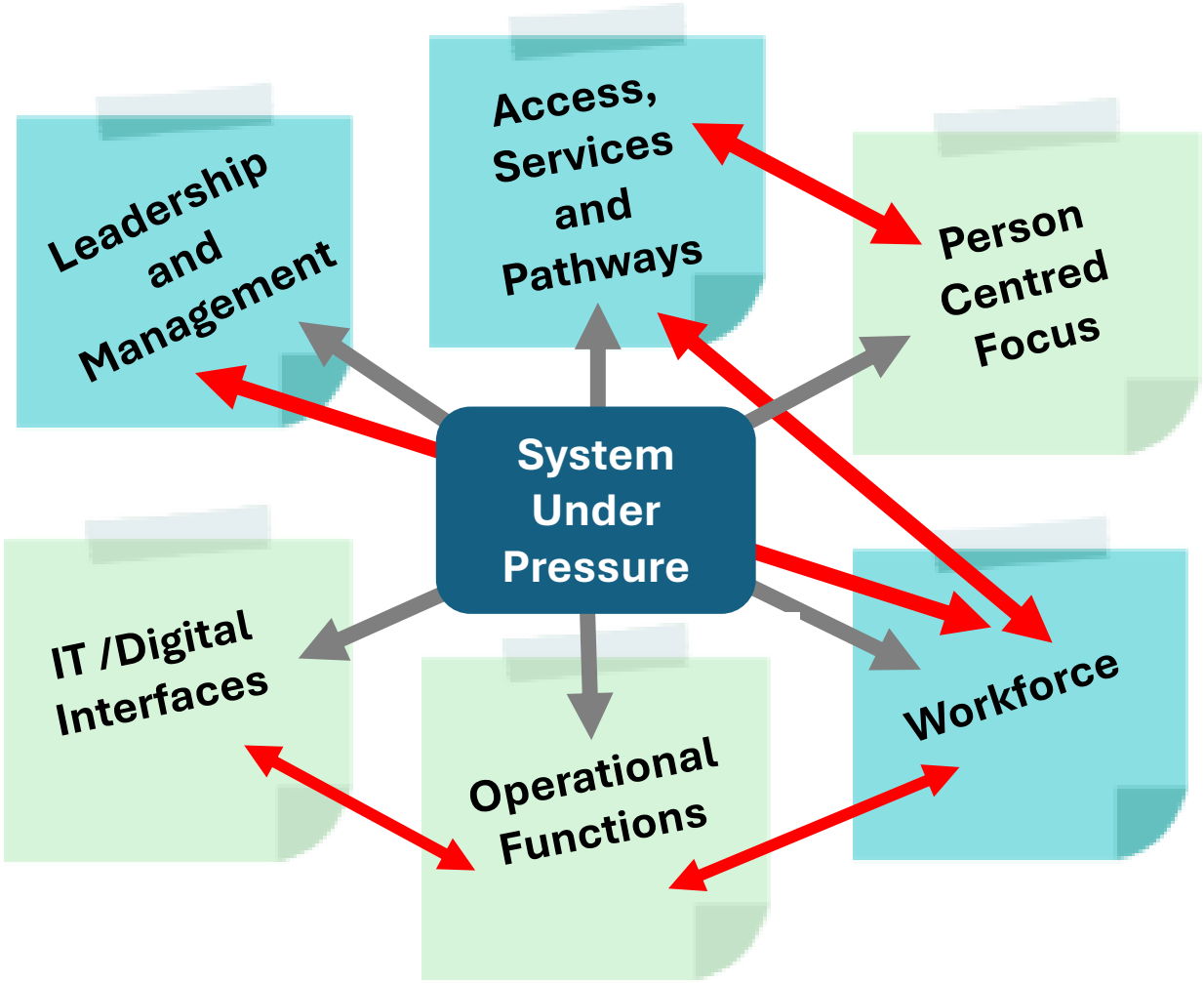
Patient Journey

HOW MIGHT WE

"The marrying up of the admin and clinical team was hugely valuable"

Clinical and administrative colleagues were given the opportunity to understand the system together

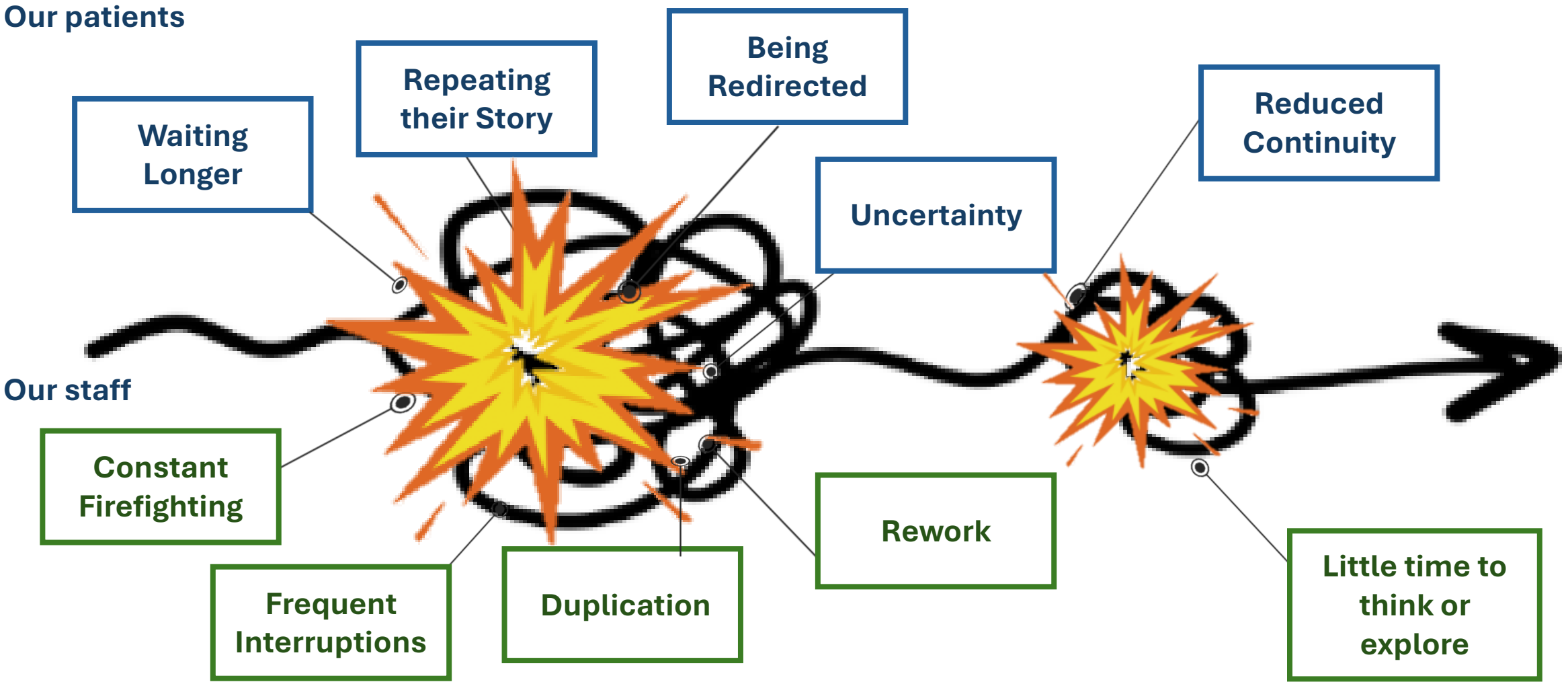
What The Team saw wasn't working



Six interconnected challenges emerged

No issue existed in isolation. Pressure in one area created pressure elsewhere

What it Feels Like (Patient and Staff Experience)



The same system was creating challenges for everyone

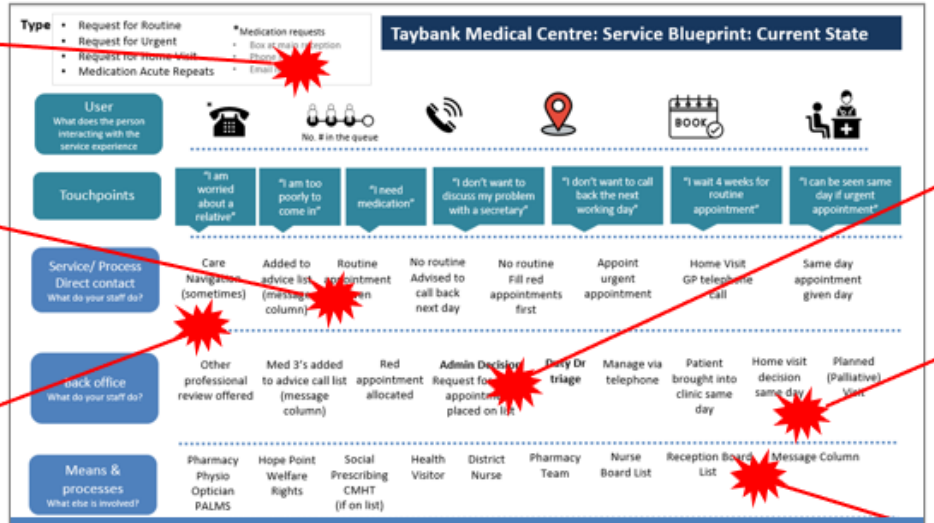
The Messy System

Challenges in current process identified as:

Number of current routes for medication requests:
- Challenges in attending to all routes of access reliably

Current routine appointment – 4 weeks:
- Limited availability for review appointments

Care Navigation inconsistently applied in process leading to patients:
- Not being seen by right person – use of other professionals not fully optimised
- Allocation of Urgent appointment
- Less availability of routine appointments to focus on proactive care interventions



What is the impact for patients and staff team?

- **Needs of patient met quickly**

- **High demand on practice workforce**
- **Imbalance in appointment type**
- **Failure demand (inefficiencies, patient need not being met by right person)**
- **Limited decision-making points**
- **Variation in staffing and resource**

Patients appointed to red 'urgent' appointments as limited routine available:
- Duty Dr activity increased – unsatisfactory and unsustainable workload

Home Visits:
- No time allocated to make decision for Home Visit
- Limited approaches taken to group geographical locations to ensure efficiency of resources

Use of multiple Boards/Lists:
- Leading to actions being unattended to though lack of clarity who has been tasked to manage list/s
- No process currently supporting communication and delegation of tasks

"Oh my, we have made a mess... now what do we do?"

Nobody needed convincing anymore

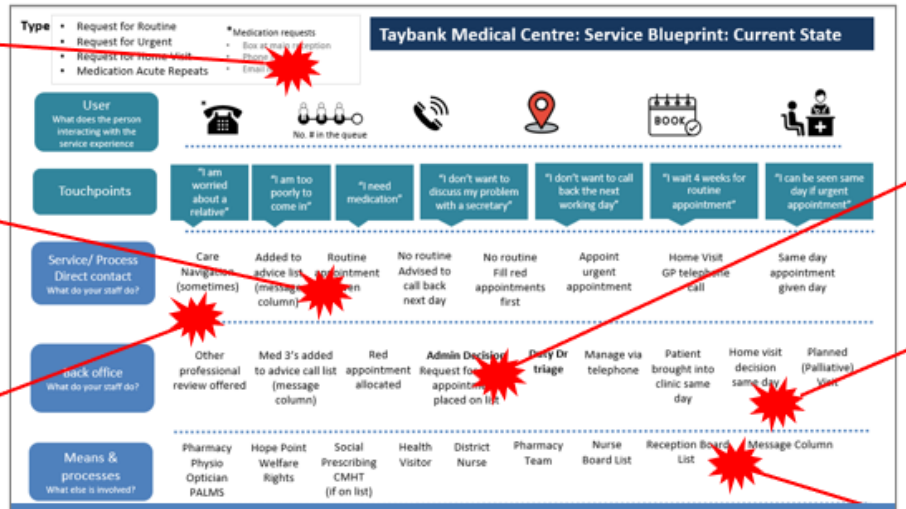
Seeing the System

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Demand flow

Rework Loops

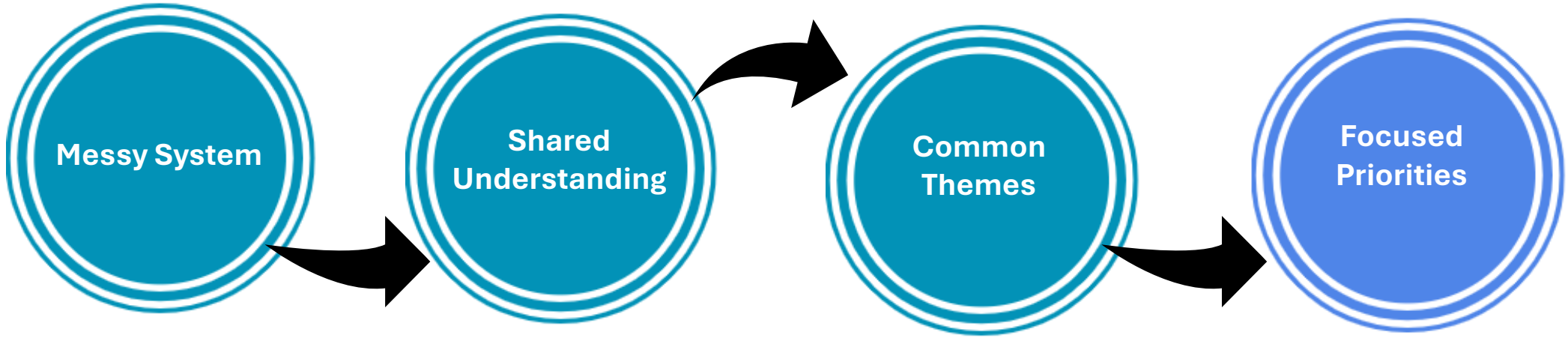
Multiple Handoffs

Bottlenecks

Duplication

The team could see the whole system rather than just their part of it

Something Clicked



Shared understanding created focus

What We Realised

What We Thought

Access Problem

Demand

40-60 calls Appointments often full by 08:30

More appointments?

More GP Activity?

More Slots?

But...



What We Realised

Flow problem

Demand

- Care navigation
- Right Person
- Right Care
- Resolution

- Better allocation
- Better navigation
- Better first time decisions

Demand was not always ending up in the right place. Improving flow became just as important as increasing capacity

Deliberate Choices

Access & Pathways

Workforce

Operations

Leadership

Digital

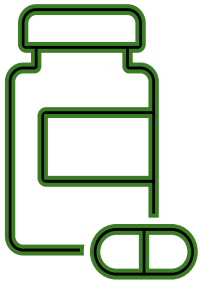
Person centred care

Shared understanding

Where could we make the biggest difference?



Improve demand flow



Reduce hidden workflow



Build capability and confidence

We chose not to do everything

Our Design Priorities

Appointments

Managing demand flow

- Navigation
- Allocation
- Right Person
- Continuity

Aim: Improve demand flow

Medicines

Reducing hidden workload

- Repeat Prescriptions
- Workflow
- Safety
- Duplication

Aim: Reduce hidden workload

Team Development

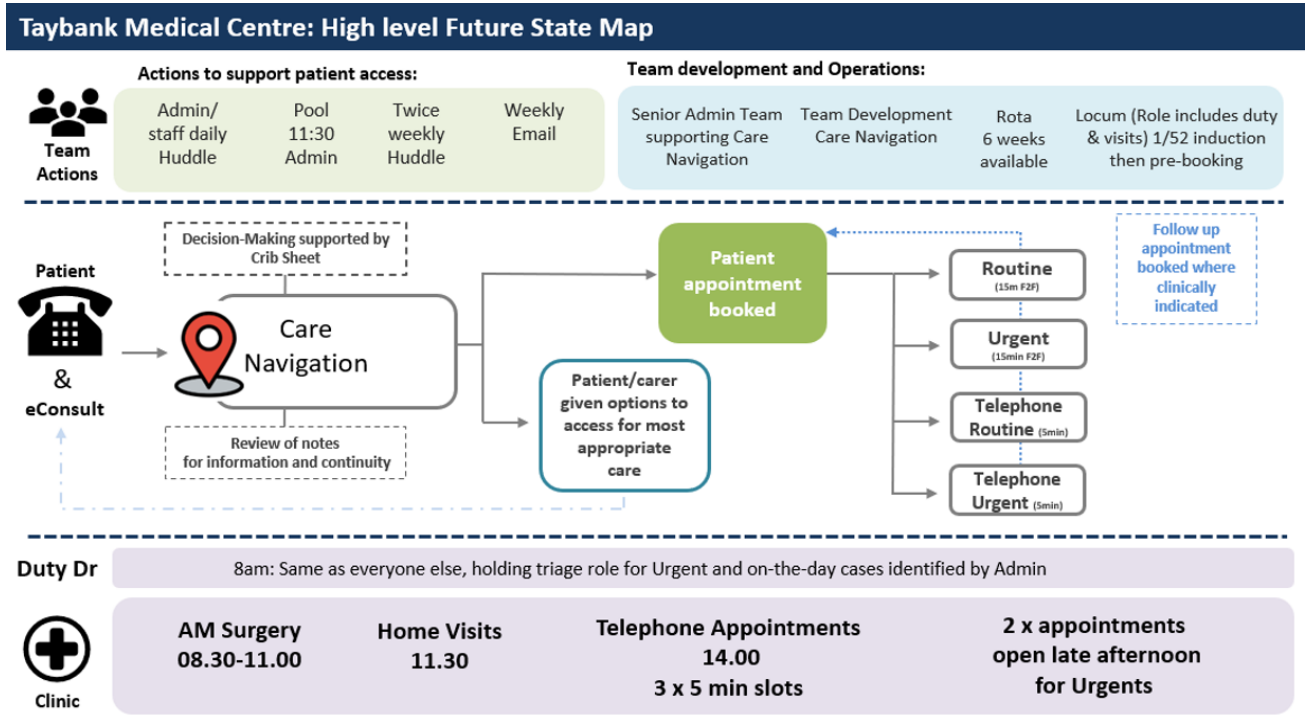
Building capability

- Skills
- Confidence
- Ownership
- Decisions

Aim: Strengthen the team's ability to adapt

Designing a Better System

- Better continuity
- Better demand Flow
- Earlier decisions



- More team-based working
- Better use of skills

The aim wasn't a perfect system. It was a better one.

A Day in the Life

Before

- 40-60 calls
- Constant interruptions
- GP as a bottleneck
- Rework and duplication
- Unclear ownership
- Reactive decisions

"It felt like a survival shift"

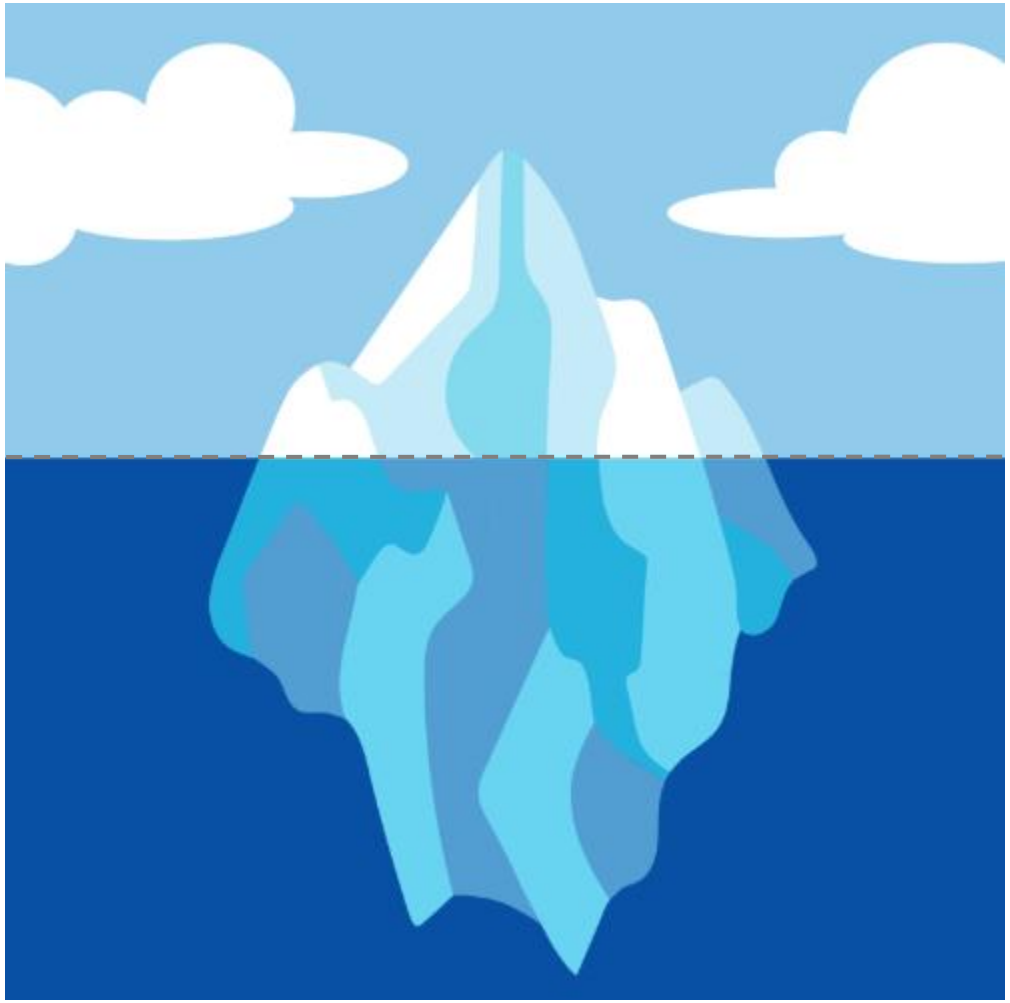
After

- Better care navigation
- Team-based decisions
- First-time resolution
- Planned work
- Clear ownership
- Better flow and demand

"The duty doctor shift is now often the best shift of the week"

What needs to change behind the scenes

- ☑ Better appointments
- ☑ Better continuity



- ☑ Better flow
- ☑ Better teamwork

- ☑ Training
- ☑ Role clarity
- ☑ Communication
- ☑ Planning

- ☑ Processes
- ☑ Culture
- ☑ Relationships

New systems require new habits

From workshop to Practice

Protected improvement day



Practice led improvement

Follow up session
Returning with focus

Implementation

Data analysis
Reviewing appointment data

Testing changes

Ongoing learning

The workshop wasn't the intervention - It created the conditions for change

From Design to Action

Appointments

- Appointment data reviewed
- Rolling appointment model
- Improved balance between routine and same day appointments

Care navigation

- Dedicated clinical oversight
- Scenario discussions
- Call reviews
- Ongoing staff development

Medicines

- Email prescription requests removed
- Medlink introduced
- More reliable prescribing process

Team roles

- Clearer responsibilities
- Better ownership
- Greater control of priorities

The value of the workshop wasn't the paperwork produced on the day. The value was the decisions and actions that followed

What Has Improved?

"Now frequently still have appointments at 10:30"

Better Flow

The team describe a happier and less stressful workplace

Better Working Environment

Patients are more likely to see the same GP

Better Continuity

Partners feel more in control how the practice is run

Better Control

"They go home on time"

Better Balance

"The duty doctor shift is now often the best shift of the week"

What Is Still Hard?

Improving: What's getting better

- Stronger teamwork
- Better oversight of demand
- More confident care navigation
- Shared understanding across the practice

In Progress: Still embedding

- Balancing demand and capacity
- New ways of working becoming routine
- Maintaining momentum
- Continuing improvement work

Still Challenging: Complex ongoing pressures

- Medicines workload
- Increasing demand
- Dependencies on wider health and care systems
- Pressures outside the practice's direct control

We didn't remove complexity, but we did build confidence that change was possible within it

What Does This Tell Us?

The Issues Were Real

The workshop reflected the reality of day-to-day practice. The challenges identified by the team remain important areas of focus.

The Team Helped Shape The Solutions

The solutions emerged from the people who understood the system best: those delivering care every day.

Protected Time Matters

Stepping away from operational pressures enabled the team to understand the system and agree where to focus.

Change is Continuing

Improvement didn't end with the workshop. The team continues to learn, adapt and refine how the practice works

One day of shared understanding created months of change

Looking Back...

Discover | **Define** | **Develop** | **Deliver**

Understand Reality | **Focus Together** | **Designing a better system** | **Test, Adapt and Learn**

One day workshop

Practice led improvement

This work pre-dated The Scottish Approach to Change, yet many of its core principles are visible throughout the journey: understanding the whole system, involving the people delivering care, focusing on what matters most, and learning through testing and adaptation.

Whole system understanding

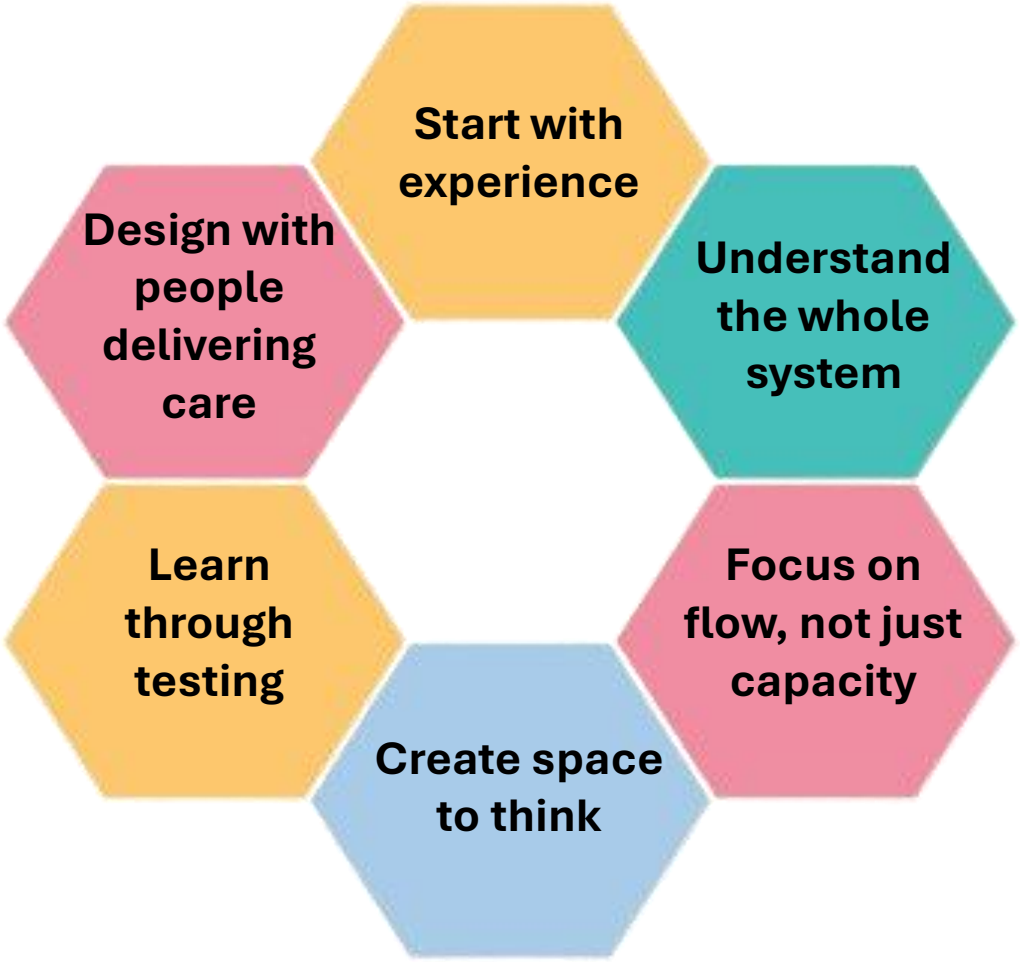
Involve people delivering care

Focus on what matters most

Learning through testing and adaptation

The workshop was intentionally designed using a service design approach

What Mattered Most?



The most important thing wasn't the workshop itself. It was creating space for the whole team to understand the system together

Thank you and Questions

If your team had one protected day, what would you choose to understand first?

Where are the biggest pain points in your system today?

Have you mapped your service from end to end and truly understood how demand flows through it?

Updates and closing remarks

The next virtual DCOP will take place on **25 November 2026**.

Thank you

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