Healthcare Improvement Scotland

SCOTTISH PATIENT SAFETY PROGRAMME

SPSP Adults in Hospital national event

24 March 2026

Leading quality health and care for Scotland

NHS SCOTLAND

Welcome

Jo Matthews

Associate Director of Improvement and Safety

Healthcare Improvement Scotland

Aims

- Explore how the Scottish Approach to Change and human factors can support boards in delivering change across the SPSP Adults in Hospital programme

- Share key learning from readiness for change and system understanding to inform co-design of revised Adults in Hospital change packages

- Provide an opportunity to network with colleagues within workstreams and across the wider programme

Morning agenda

Time	Topic	Lead	Room
9.00am	**Registration**		
9.45am	**Chair's welcome**	**Jo Matthews**, Associate Director of Improvement and Safety, Healthcare Improvement Scotland	Queen Mary Suite
9.55am	**Introduction to the Scottish Approach to Change**	**Clare Morrison,** Director of Engagement and Change, Healthcare Improvement Scotland	Queen Mary Suite
10.05am	**Introduction to human factors for systems safety**	**Paul Bowie**, Programme Director (Safety and Improvement), NHS Education for Scotland	Queen Mary Suite
10.25am	**Application of human factors tool**	**Calum McGregor,** Clinical Director for Quality, NHS Forth Valley **Julie Mardon,** Clinical Director Scottish Centre Simulation and Clinical Human Factors, NHS Forth Valley	Queen Mary Suite
10.45am	**Q&A**	**Chair**	Queen Mary Suite
10.55am	**Morning break and transition to breakouts**		Clyde Suite Lounge
11.10am	**Workstream breakouts** Falls Pressure ulcers Deteriorating patient Medicines EWG	**Chairs**	**Rooms** Queen Mary Suite Queen Mary Suite Queen Elizabeth 1 Queen Elizabeth 2
12.35pm	**Lunch and networking**		Clyde Suite Lounge

Afternoon agenda

Time	Topic	Lead	Room
1.20pm	**Keynote speaker:** Shift happens. Be the change!	**Kev House**, Art of Brilliance	Queen Mary Suite
2.20pm	**Afternoon break and transition to breakouts**		Clyde Suite Lounge
2.35pm	**Workstream breakouts** Falls Pressure Ulcers Deteriorating Patient Medicines EWG	**Chairs**	**Rooms** Queen Mary Suite Queen Mary Suite Queen Elizabeth 1 Queen Elizabeth 2
3.25pm	**Transition to the main room**		
3.35pm	**Feedback from breakouts**	**Chair**	Queen Mary Suite
3.45pm	**Scottish Approach to Change**	**Clare Morrison,** Director of Engagement and Change, Healthcare Improvement Scotland	Queen Mary Suite
3.55pm	**Closing remarks**	**Chair**	Queen Mary Suite
4.00pm	**Close**		

Scottish Patient Safety Programme

SPSP aims to improve the safety and reliability of care and reduce harm

Core themes

Essentials of Safe Care

SPSP Programmes
Perinatal | Paediatric | Mental Health
Adults in Hospital

SPSP Learning System

Essentials of Safe Care 2025

Our vision is	Delivered through...	Which requires...
The delivery of safe care, improving outcomes for every person, every time across health and care	A people-led approach to the planning and delivery of safe care	People and professionals are equal partners in shared decision making
		Care and support is shaped to meet the needs of people
		People, families, carers and staff are systematically listened to, and concerns are acted upon
	Effective and inclusive communication	Communication tailored to individual needs and preferences
		People and teams feel safe and able to speak up
		Team communication and collaboration
	Leadership at all levels to support a culture of safety	Leadership is compassionate and inclusive
		Staff feel supported and valued
		Learning system for continuous improvement
		Everyone has the opportunity to learn and develop
	Safe clinical and care processes	Safe staffing and skill mix
		Care is up to date and evidence based
		Clinical and care governance structures support safety
		Information systems that work together

SPSP Adults in Hospital

SPSP aims to improve the outcomes and reduce harm for adults in hospital

Core themes

Essentials of Safe Care

SPSP Adults in Hospital
Falls | Deteriorating Patient | Pressure Ulcers
Medicines

SPSP Learning System

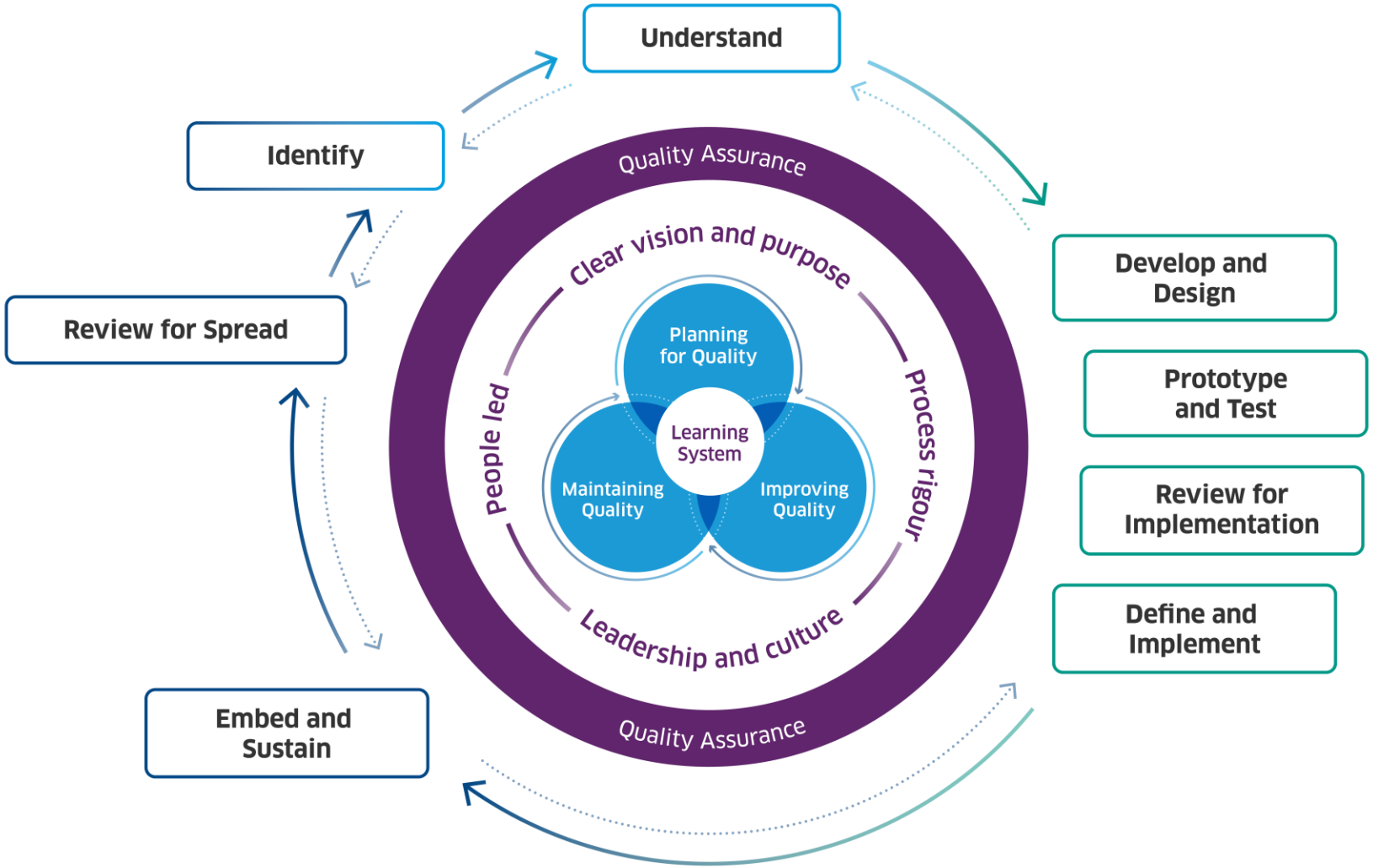
Introduction to the Scottish Approach to Change

Clare Morrison

Director of Engagement and Change,

Healthcare Improvement Scotland

Grounded in the Scottish Approach to Change



EVERY PERSON EVERY TIME
SCOTTISH PATIENT SAFETY PROGRAMME

About the Scottish Approach to Change

The Scottish Approach to Change aims to create a clear pathway to **support everyone to do change well**

About the Scottish Approach to Change

Clear Vision and Purpose

- Maximise benefits of **siloed change methods**
- Translate theory into a **practical** tool
- Create a **universal language** for change

About the Scottish Approach to Change

Development of the approach

- **Building** on what was known already
- Grounded in **collaboration** with a wide range of stakeholders
- Drawing on **real world experience** (including from our pathfinder sites)
- **Learning** and being **curious**

A multi-disciplinary approach to improvement

Quality Improvement

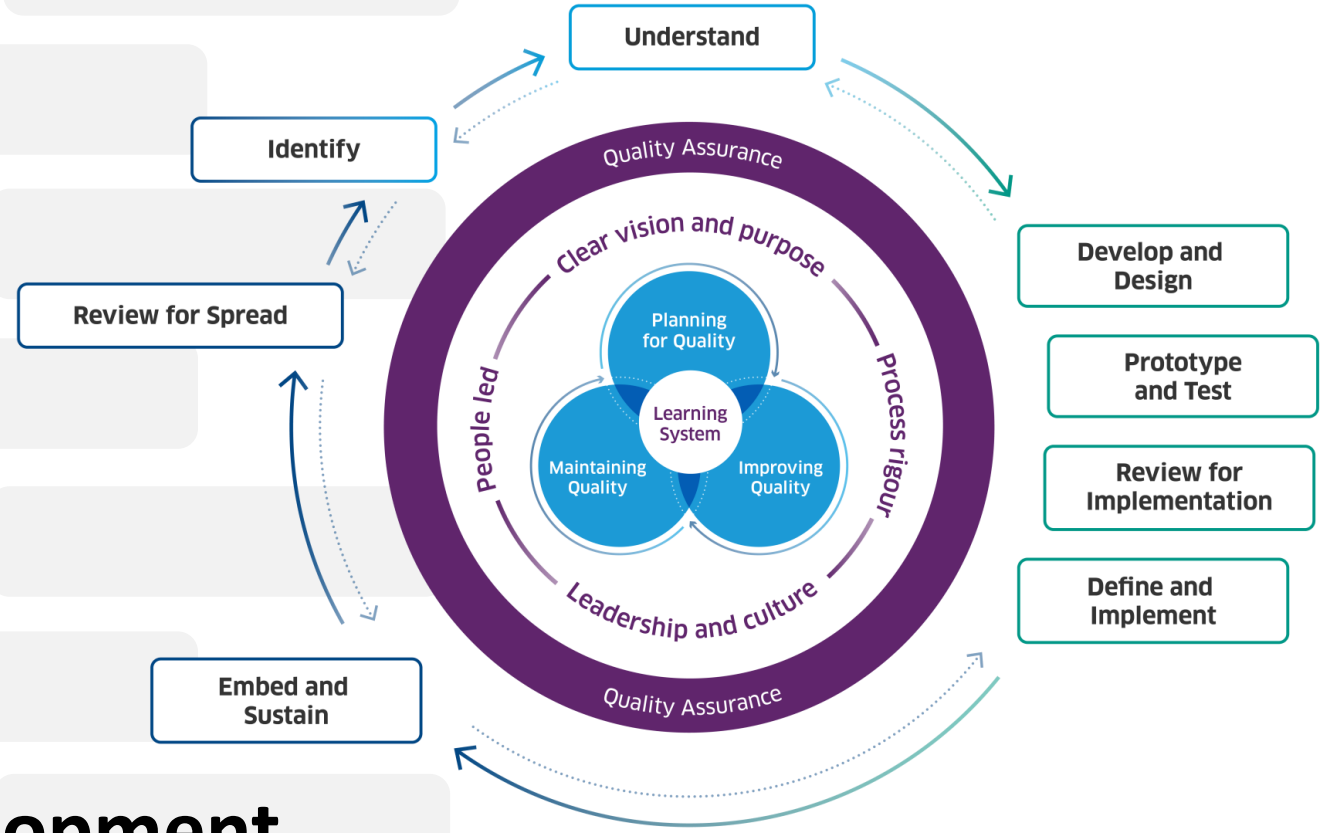
Service Design

Engagement Practice

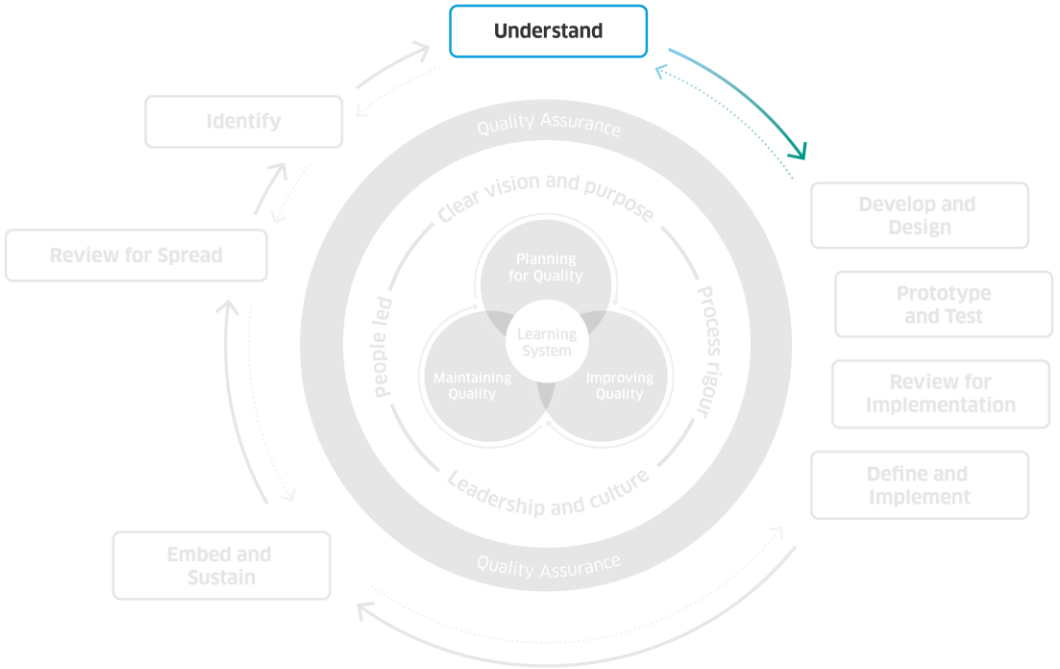
Strategic Planning

Project Management

Organisational Development



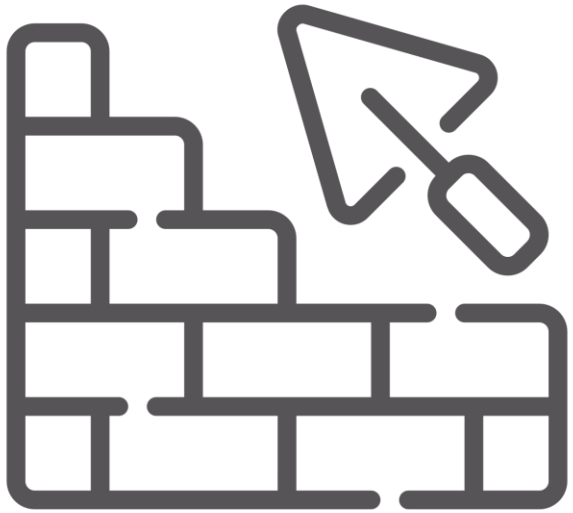
Understand is an investment in good change



When you think about

- What you want to focus on
- Your readiness for change

What you want to change?

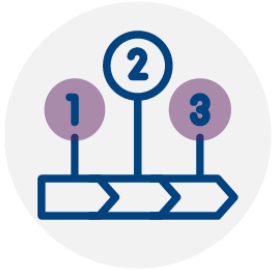


Investing in understanding so you take the best ideas into testing

Readiness – enablers of change

Vision and purpose

Leadership and culture

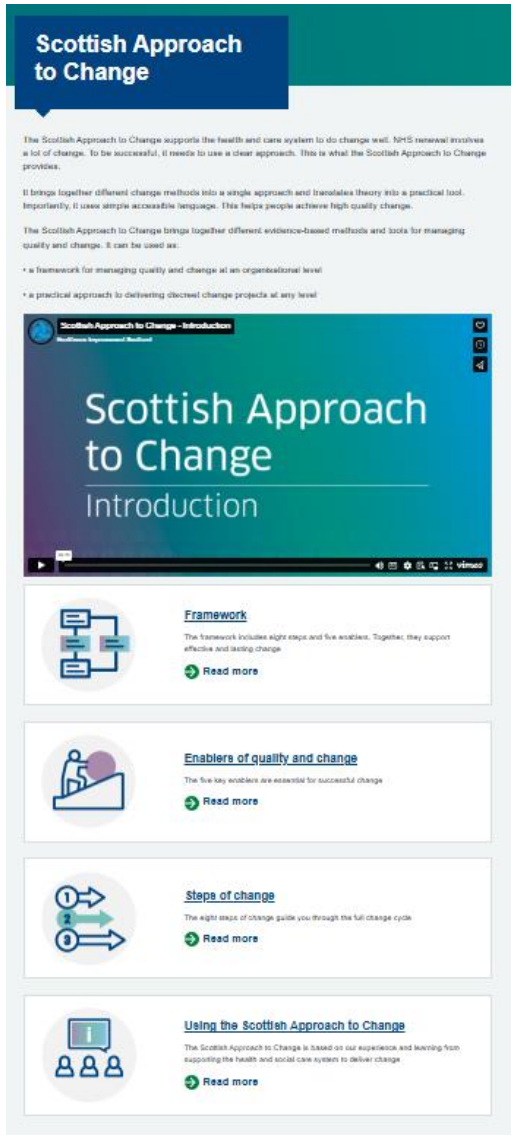


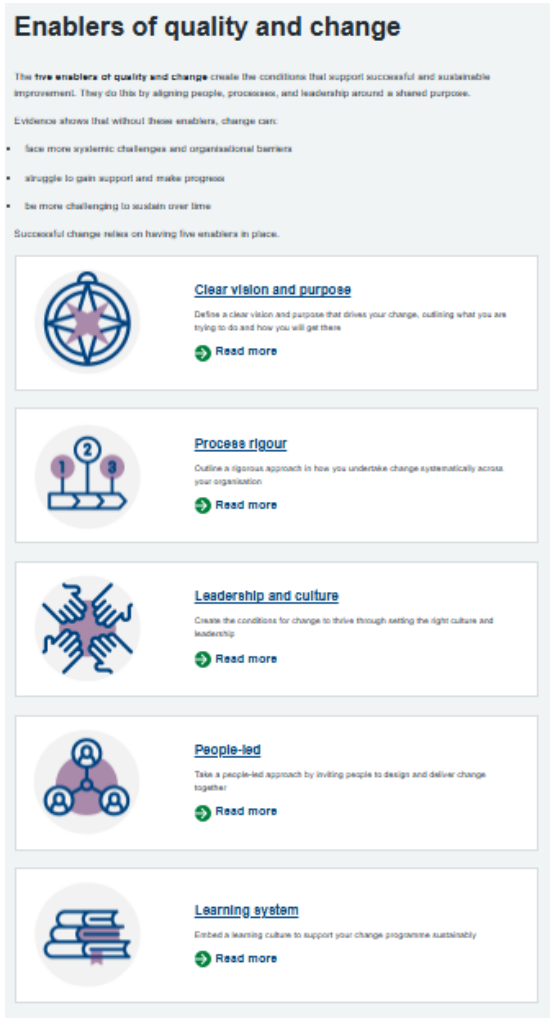
Process rigour

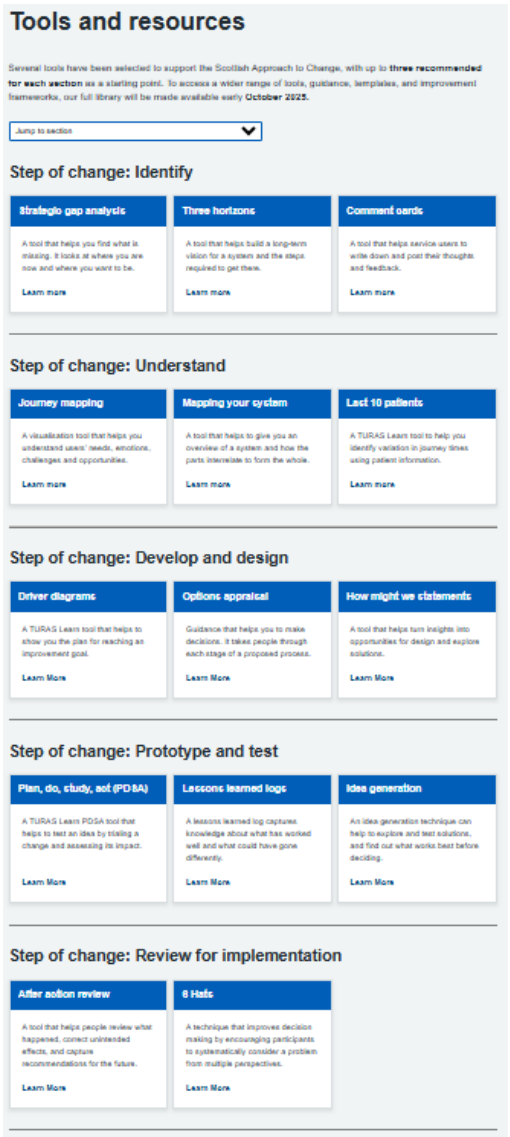
People led

Learning

Scottish Approach to Change: digital resource







https://www.healthcareimprovementscotland.scot/improving-care/scottish-approach-to-change/

Introduction to human factors for systems safety

Paul Bowie

Programme Director (Safety and Improvement),
NHS Education for Scotland

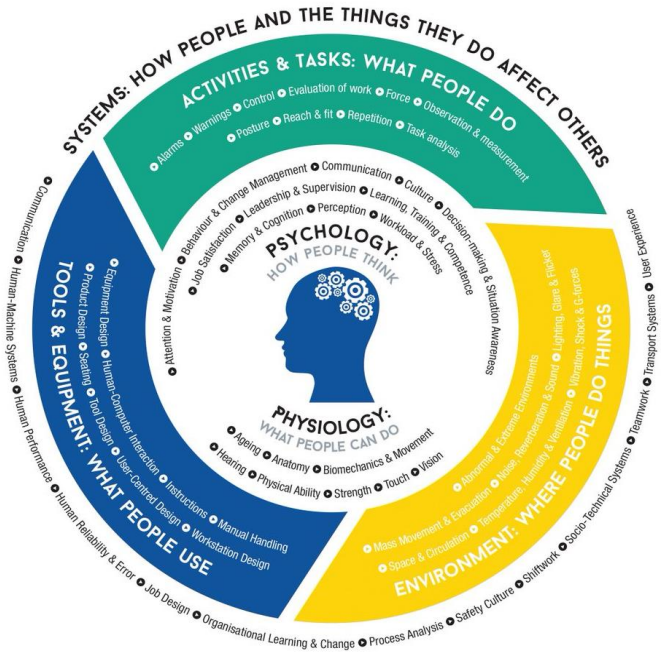
Defining Human Factors/Ergonomics (HFE)

- "Ergonomics (or human factors) is…concerned with the **understanding of <u>interactions</u> among humans and <u>other elements of a system</u>…**in order to optimize human **well-being** and overall **system performance**…" (IEA, 2000)

In simpler terms:

- *Applying human factors ensures that systems, products and services are designed to make them easier, safer and more effective for people to use*

- ***Designing for people to make things easier, efficient, safer, usable, useful, comfortable, enjoyable…***



Focus is on improving all aspects of Human Work e.g.

- New digital information technology
- Reducing work-related musculoskeletal disorders
- New ways of working e.g. AI
- Healthcare procurement of products & services
- Tasks, processes & work systems
- Reflecting on prevailing safety culture
- Medical device design & usability
- Design of care environments / buildings
- Design & usability of incident reporting systems
- Wellbeing - job stress, fatigue and burnout
- Safety & Improvement interventions
- Learning from events & everyday work

Known sources of design failures, risks and harms!

“We cannot change the human condition, but we can change the conditions under which humans work”

[Reason, 1997]

Who is Improving Human Work in Healthcare?

- “Sharp-End” Clinicians, educators, leaders, managers, scientists, ancillary, admin etc.
- Safety Investigators
- Improvement Advisor
- Clinical Risk Advisor
- Patient Safety Officer
- Clinical Governance Manager
- Occupational Health & Safety Professional

- Simulation Educator
- Human Resources
- Health Services Researcher
- Regulators & Accreditors
- Implementation Scientist
- Industrial / Work Psychologist
- User Designer / UX Researcher
- Ergonomist / Human Factors Specialist (very rare!)

THE Mothership Slide
Distinguishing Features of Human Factors & Ergonomics

1. **It ALWAYS takes a Systems Approach** (holistic)

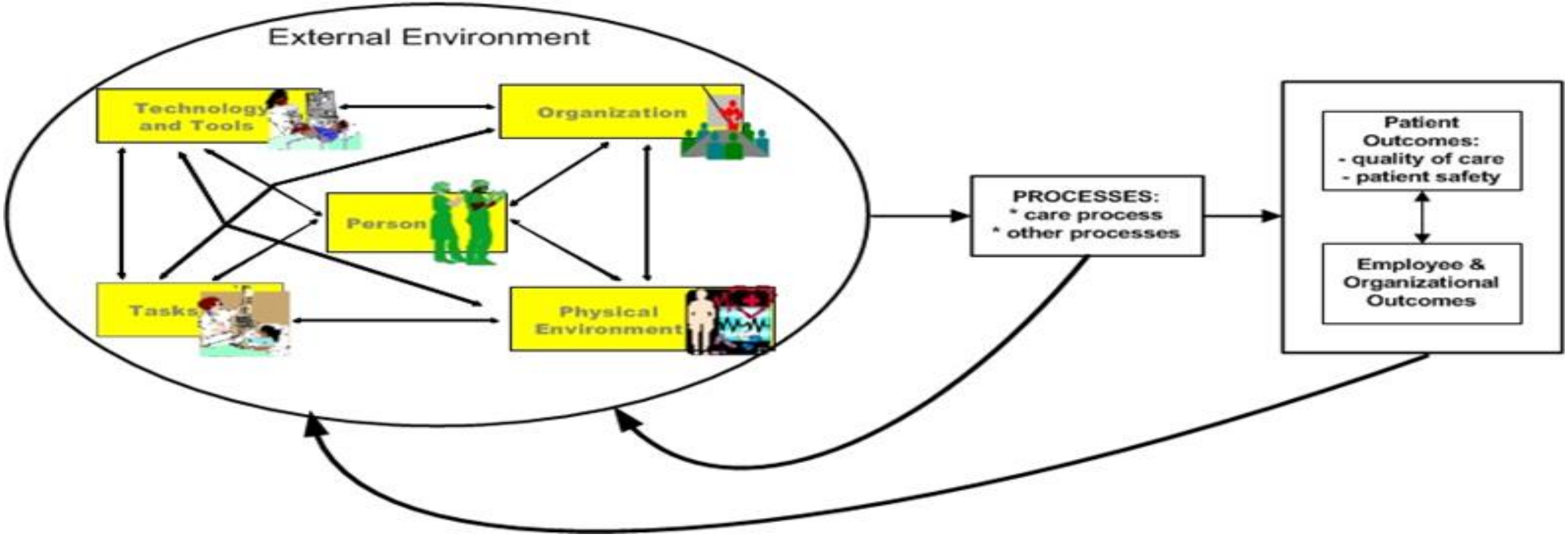
2. **It is ALWAYS Design Driven** (to take account of human characteristics, needs, capabilities and preferences)

3. **It focuses ALWAYS on two closely related outcomes: System Performance** and **Human Well-being**

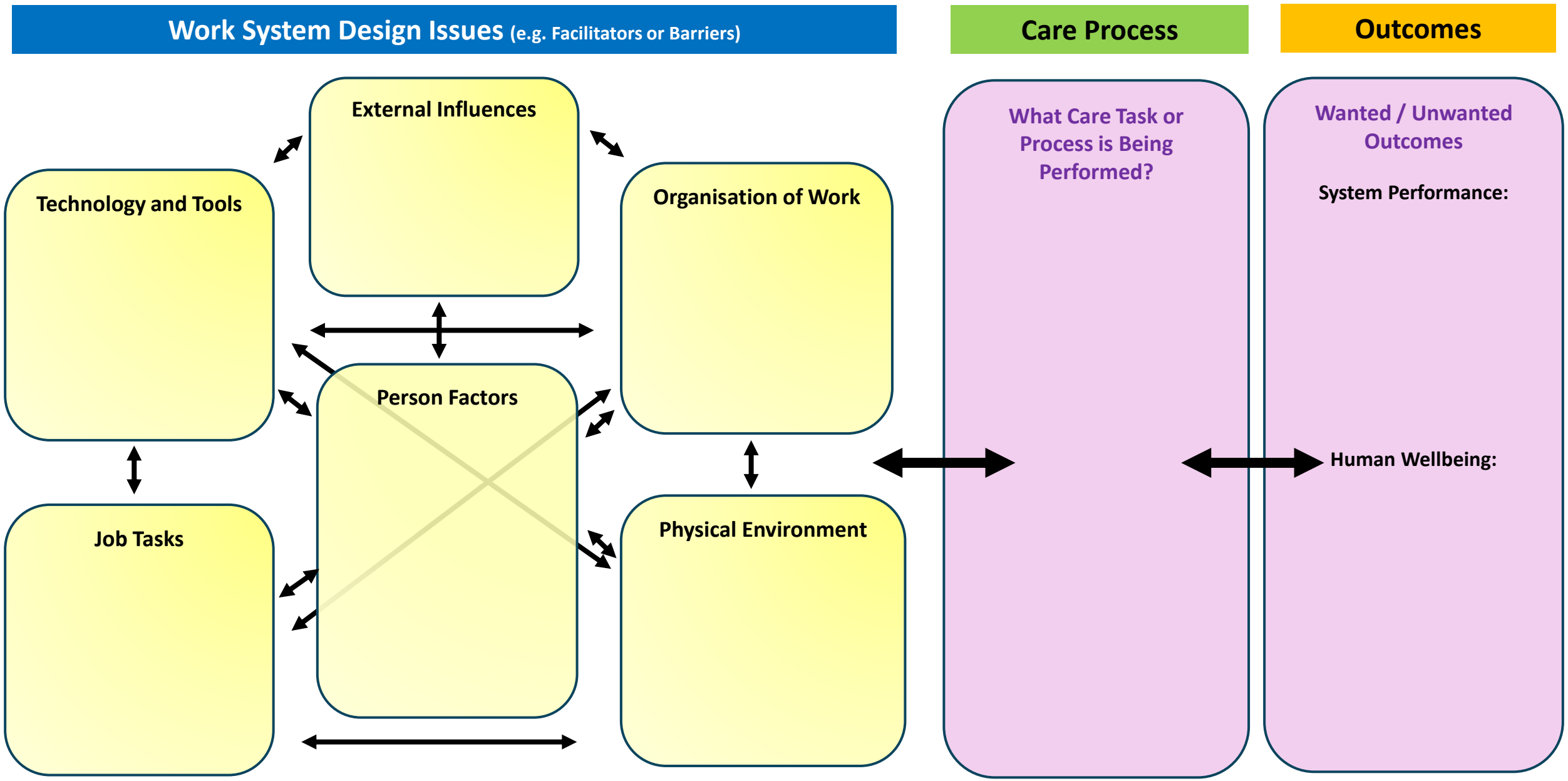
("Twin Aims" = "Joint Optimisation")

Human Factors Science is Systems-Focused…

System Engineering Initiative for Patient Safety (SEIPS) Framework (Carayon et al, 2006)



Care System Analysis Tool (CSAT)



CSAT Explained

- The tool is based on the SEIPS (System Engineering Initiative for Patient Safety) Framework.
- This is a Human Factors systems approach to understanding care processes, work systems and outcomes to inform better design and improvement.
- The Tool can be used by anyone as a general systems analysis and problem-solving tool e.g. safety learning reviews; hazard identification; design of incident reporting & data collection; simulation design; protocol & checklist development; research design and data analysis.

Guiding Step

1. **As a team, use the CSAT worksheet as a prompt to highlight the system-wide factors that contribute to the issue at hand**
2. **Seek to understand how these factors influence processes and *interact* to produce outcomes (both wanted or unwanted)**
3. **Link this new knowledge to making work system redesign or improvement recommendations**

Examples of Interacting System Elements

Person Factors

e.g. Physical, psychological capabilities, limitations and impacts (frustration, stress, fatigue, burnout, musculoskeletal, satisfaction, enjoyment, experiences, job control); personality or social issues; cognitive ; competence, skills, knowledge, attitudes; risk perception; training issues; personal needs and preferences; psychological safety; performance variability; personal goals; adaptation to work conditions.

Care team e.g. roles, support, communication, collaboration, supervision, management, leadership

Patient/client e.g. complexity of clinical condition, physical, social, psychological, relationship factors

Others e.g. families and carers, and other health and social services colleagues

Tools & Technology

e.g. design interaction and device usability issues; familiarity; positioning, accessibility; availability; access; mobility; operational /calibrated /maintained; device usability; various IT design issues.

Task Factors

Specific actions within larger work processes, includes task attributes such as:

- level of task difficulty /complexity;
- time taken;
- hazardous nature;
- variety of tasks;
- sequencing of tasks
- workload, time pressure, cognitive load,

Physical Environment

e.g. Layout; noise; lighting; vibration; temperature; humidity and air quality; design of immediate workspace or physical environment layout; location; size; clutter; cleanliness; standardisation, aesthetics; crowding

External Influences

e.g. Societal, government, cultural, accreditation and regulatory influences e.g. funding, national policies and targets, professional bodies, regulatory demands, legislation and legal influences, other risks and influences

Organisation of Work Factors

e.g. Structures external to a person (but often put in place by people) that organise time, space, resources, and activity.

Within institutions:

- Work schedules/staffing
- Workload assignment
- Management and incentive systems
- Organisational / safety culture (values, commitment, transparency)
- Training
- Policies/procedures
- Resource availability and recruitment

In other settings:

- Communication
- Infrastructure
- Living arrangements
- Family roles and responsibilities
- Work and life schedules
- Financial and health-related resources

Outcomes

Outcomes – System Performance

e.g. Safety; productivity; resilience; efficiency; effectiveness; care quality

Outcomes – Human Wellbeing

e.g. Health and safety; patient satisfaction and experience; enjoyment; staff turnover; staff welfare; job satisfaction

NHS Education for Scotland

Hand Hygiene System Story - Care System Interactions and Outcomes

External Influences
Political priority
Research evidence
Societal expectations

Technology and Tools

Soap dispenser
Design of taps
Drying towels
Alcohol gel
Guidelines and procedures

Organisation of Work

Organisational target
Priority placed on this activity
Safety culture
Quality improvement initiatives

Person
Doctor
Nurse
Patient
Relatives/Visitors
Aux staff
Skin conditions, allergies
Age, ability, clinical condition, reach, height, handedness

Tasks

Task of washing hands effectively
Target time – when should do it
Need to do other tasks (competing goals)

Physical Environment

Availability of sink
Availability of equipment
Ward, out patient, practice, patient's house?
Patient expectation

What Care Task or Process is Being Performed?

- Organisational processes supporting hand washing in local clinical areas

Outcomes

System Performance:

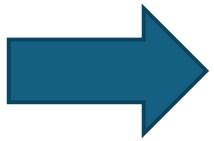
- Increased hand washing evidence
- Easier access to washing facilities
- Smoother working practices

Human Wellbeing:

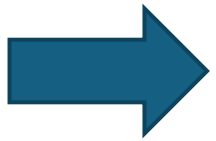
- Reduced harm through less infection
- Reduced work frustration through ease of use
- Enhanced patient and staff experience

HFE Science is Design-Driven…

- **Draws on important principles derived from Human, Engineering, Management & Other Sciences:**
  - Anatomy
  - Biomechanics
  - Physiology
  - Anthropometrics
  - Engineering
  - Psychology
  - Sociology
  - Interaction design
  - Organisational management
  - User experience
  - etc



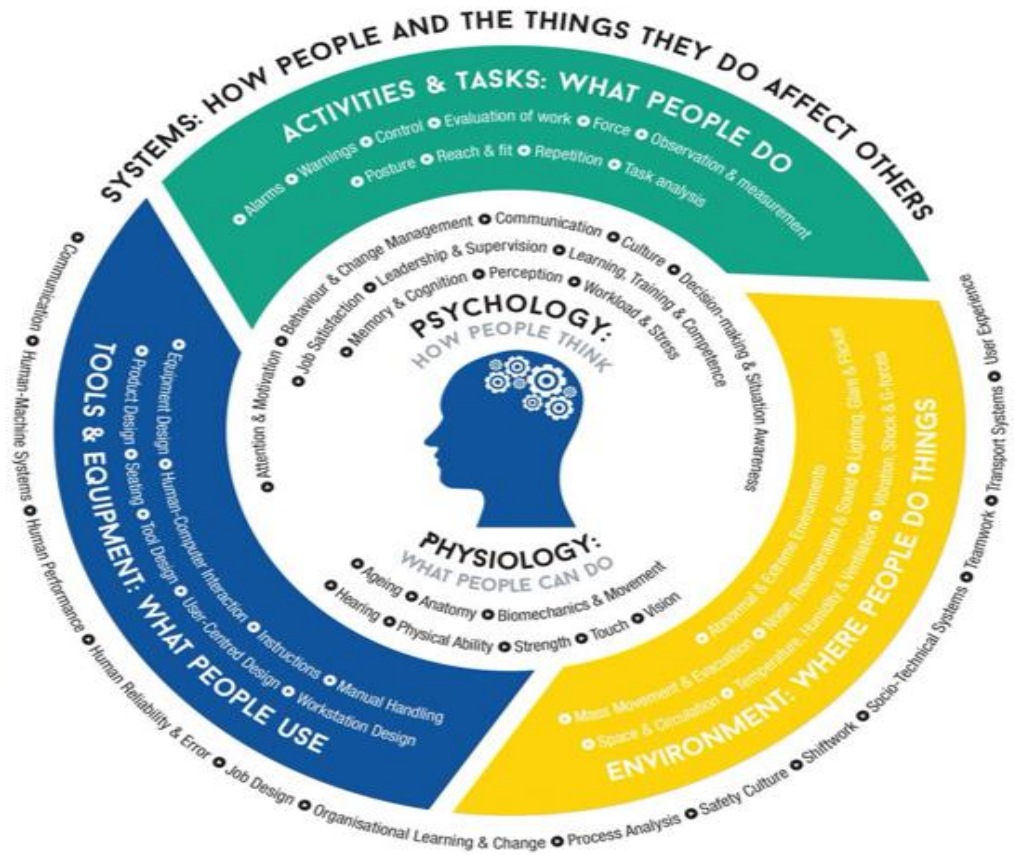
- **Human-Centred Design of:**
  - Tasks
  - Work systems
  - Technology interfaces
  - Products
  - Services
  - Physical environments



- **Organisational Performance**
  - System safety
  - Efficiency
  - Effectiveness
  - Reliability
  - Productivity
- **Human Wellbeing**
  - Health & Safety
  - Satisfaction
  - Experience
  - Comfort
  - Enjoyment

A Human Factors Issue, Problem or Challenge?

- Clear risk
- Design issue
- Safety concern
- Everyday work:
  - Hassles
  - Frustrations
  - Irritation
  - Anything that…

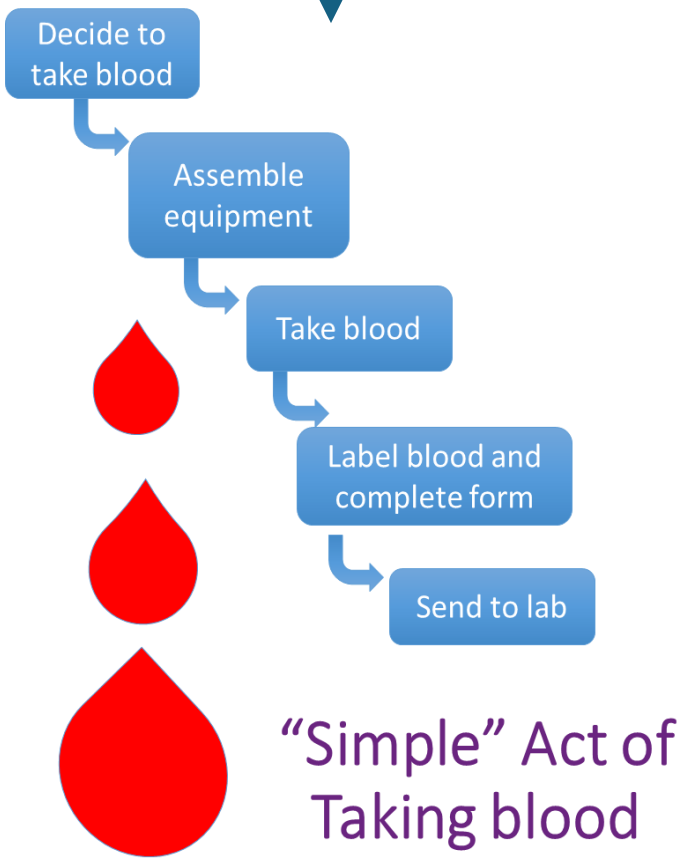


Healthcare Human Factors – Five Fallacies

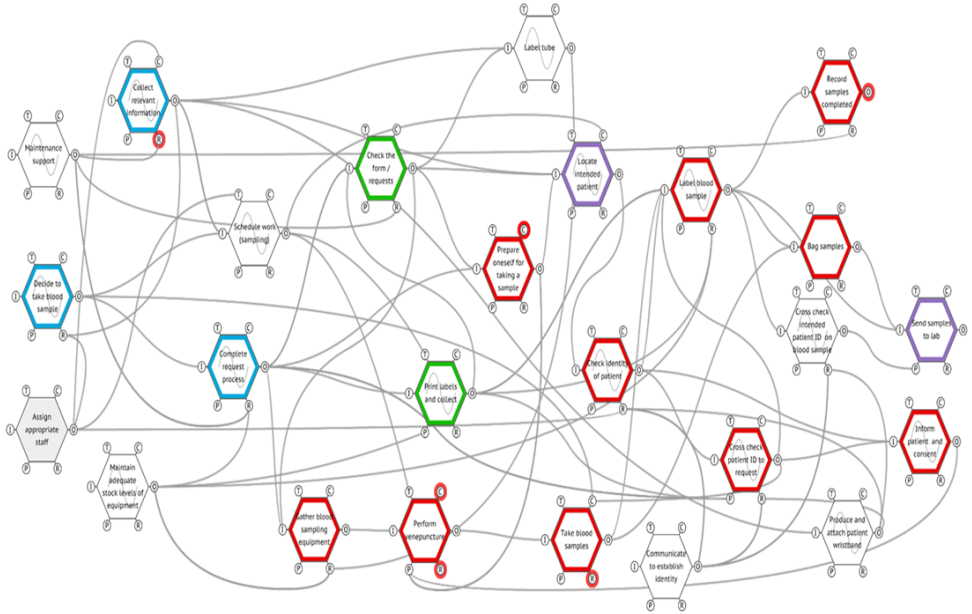
1. **Human Factors addresses workplace problems by teaching people to modify their behaviours** X
2. **Human Factors is about eliminating 'human error'** X
3. **Human Factors is focused only on individuals** X
4. **Human Factors is just 'common sense'** X
5. **Human Factors consists of a limited set of principles that can be learnt during brief training** X

The ‘Simple’ Act of Taking a Blood Sample

Work-As-Imagined



Work-As-Done



Pickup L, Hollnagel E, Bowie P *et al.* Blood sampling - Two sides to the story. *Applied Ergonomics*. 59. 2017; 234–242

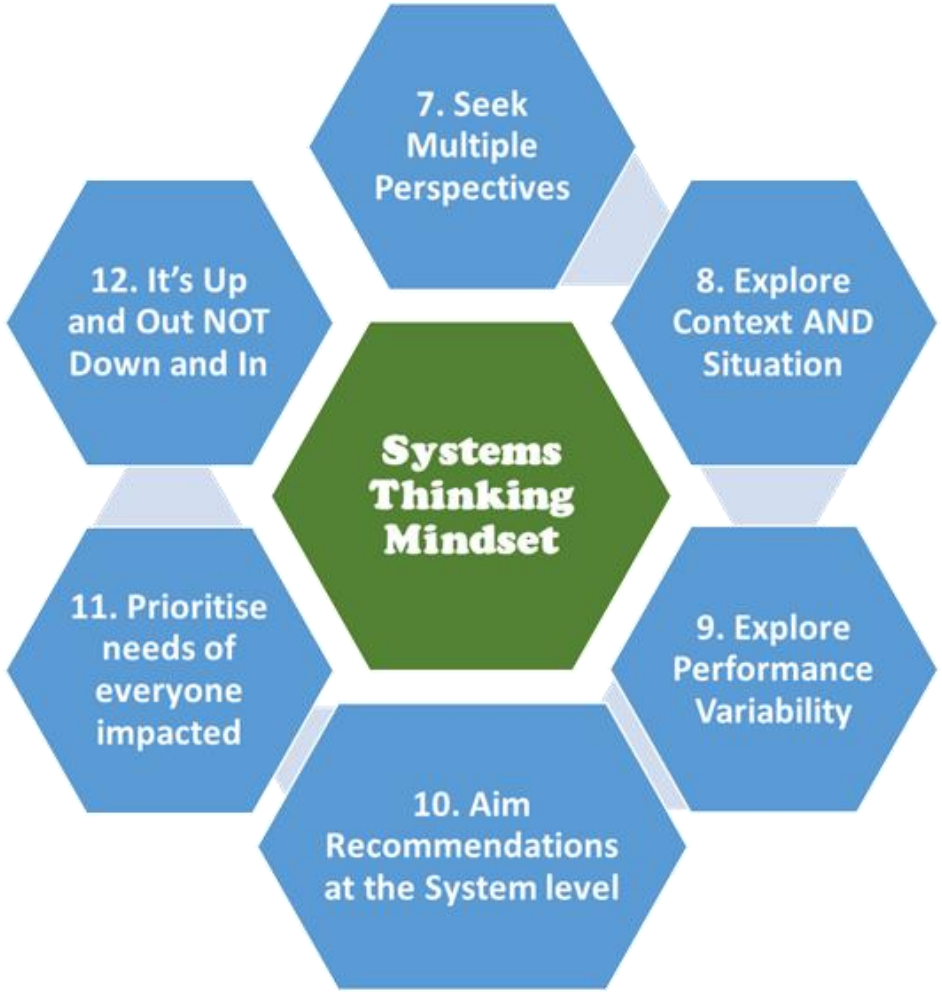
Work System Design?

Complex, non-linear, dynamic, unpredictable:

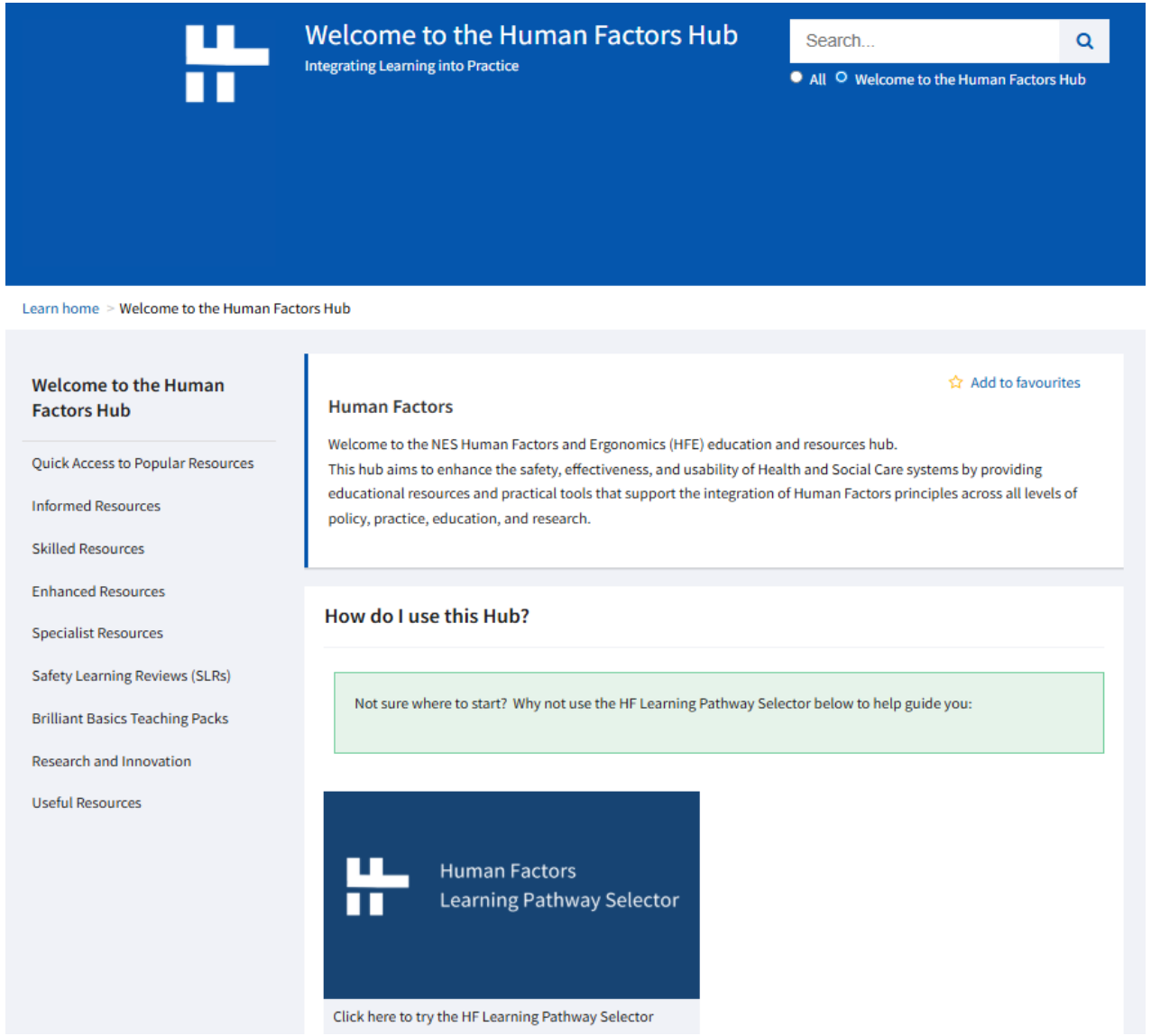
- Printer location
- Printer working
- Ink availability
- Labels available
- Workload distribution
- Interruptions
- Dexterity issues
- Sample tube design
- Etc…

Making Systems Safer

Examples of HFE-Based Systems Thinking Principles/Mindset



Online HFE Hub Development



Application of human factors

Calum McGregor

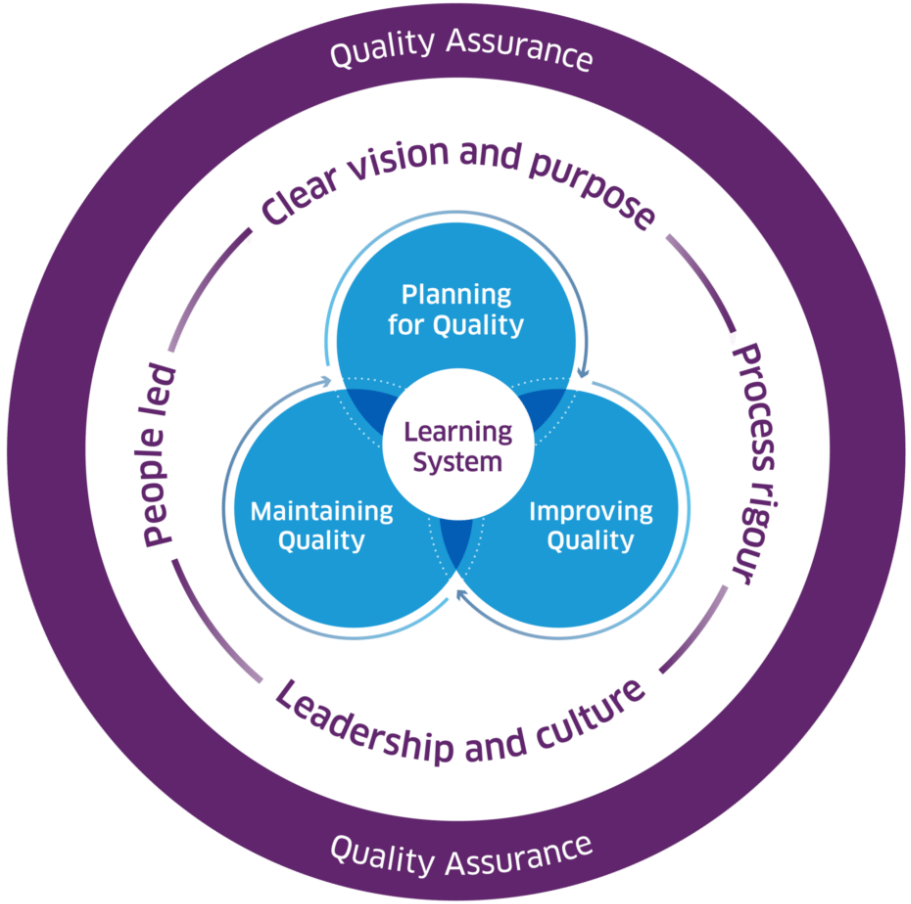
Clinical Director for Quality, NHS Forth Valley

Julie Mardon

Clinical Director Scottish Centre Simulation, NHS Forth Valley

CSAT within Det Pat workstream

- Exercise using CSAT tool
- FV deteriorating patient collaborative aiming to reduce cardiac arrests by 40% by Nov 2025
- How that fits into a quality management system

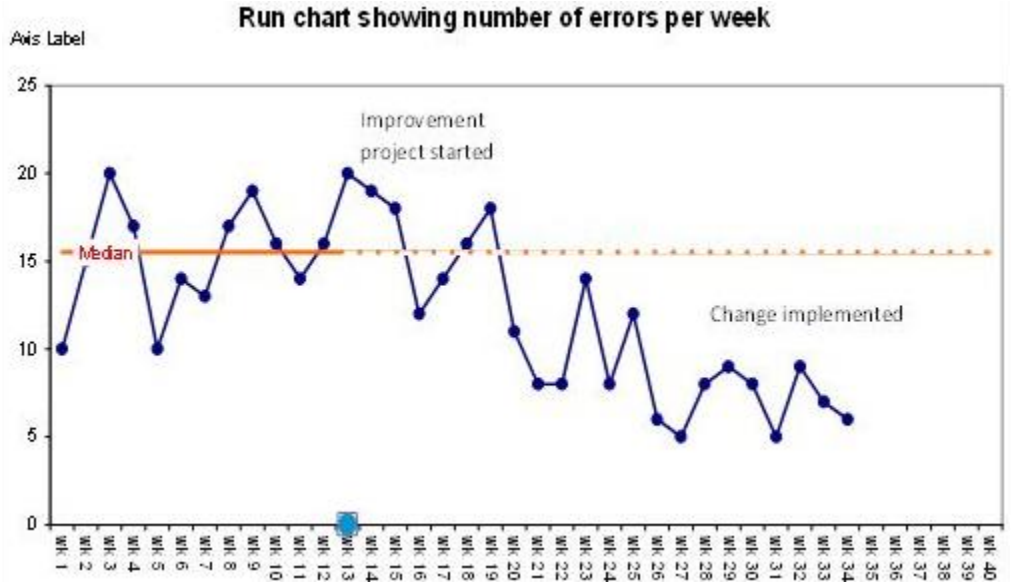


Quality Management System

- **Planning** – understanding current position and population need
- **Improving** – using method to understand system and test changes
- **Maintaining** – monitoring performance over time

Maintaining quality

No of hand scratches per week

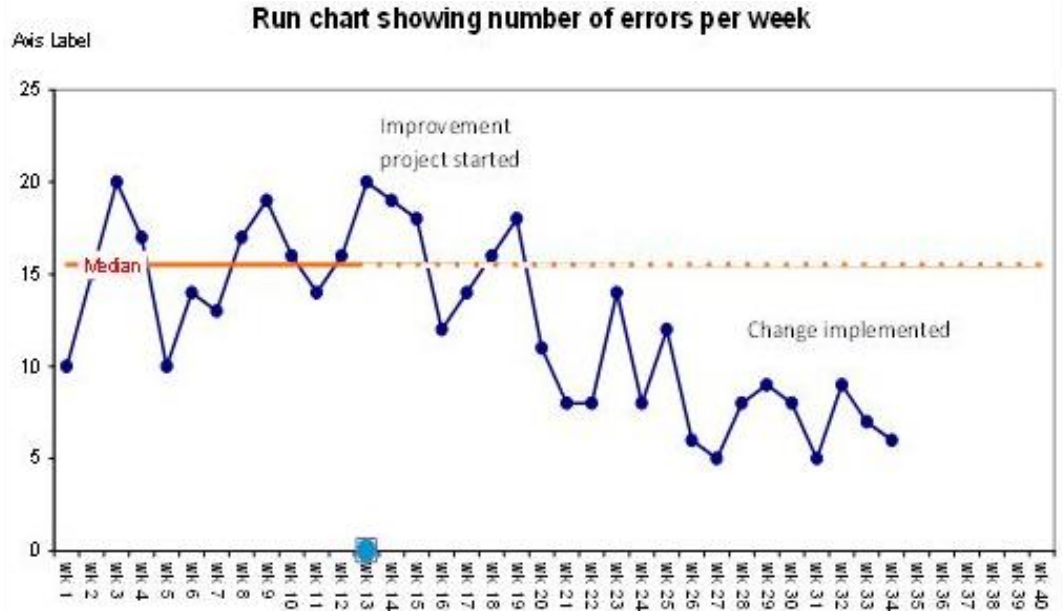


Improved system but harm still occurring

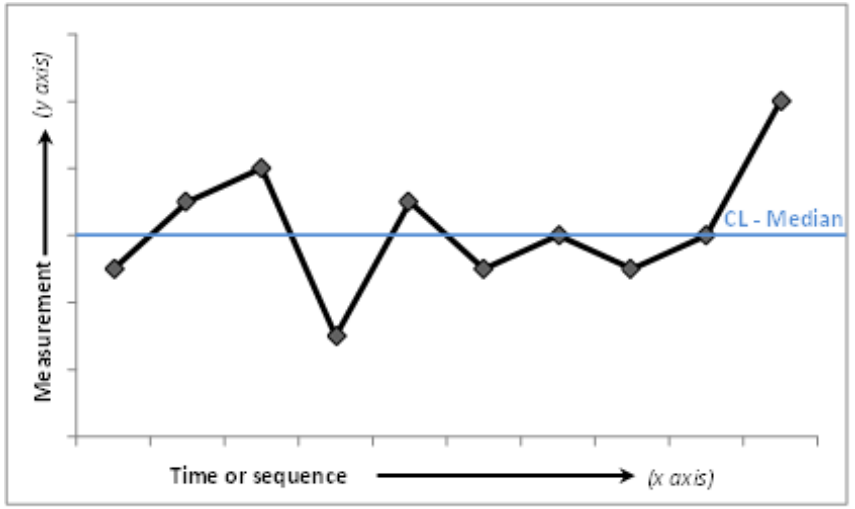
But gloves work??

Maintaining quality: data helps understand system

- No of scratches per week (outcome measure)

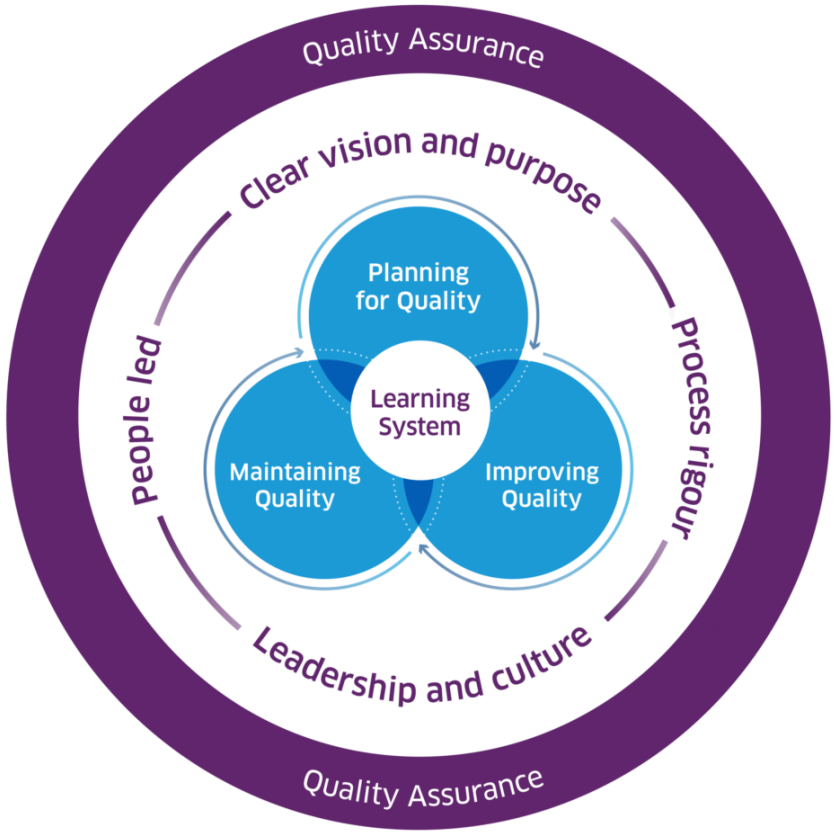


- Glove use when putting cat out (%) (process measure)



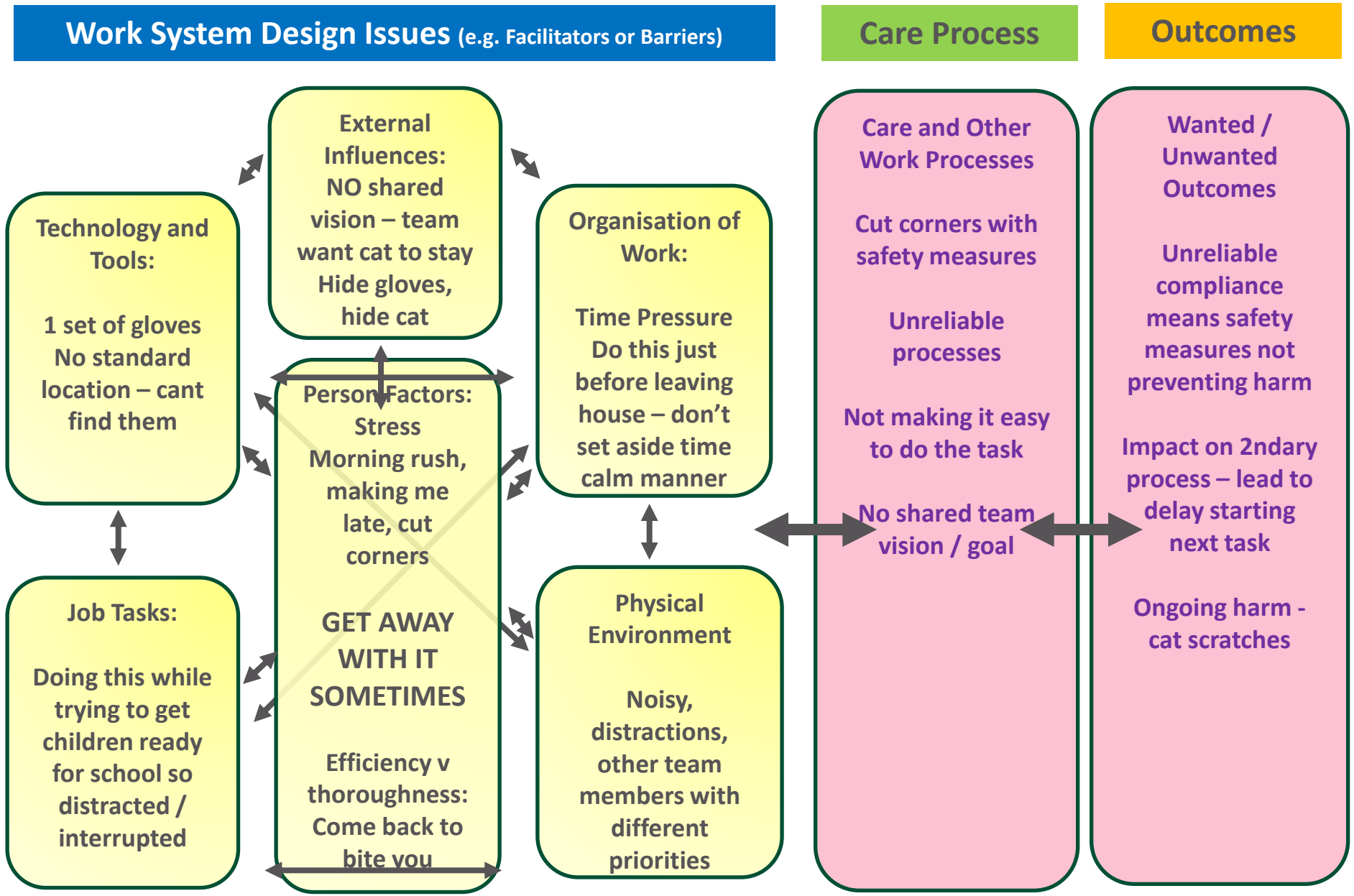
Wear the gloves!!!
Education / policy / something else...?

Quality planning: acceptable level of performance?

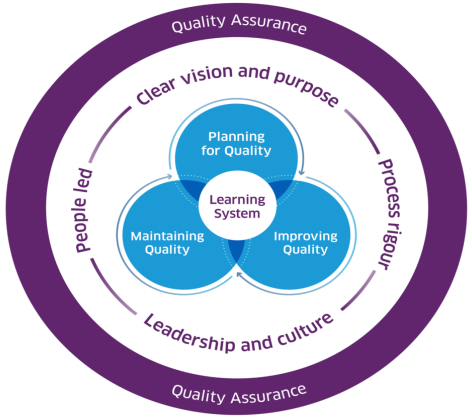


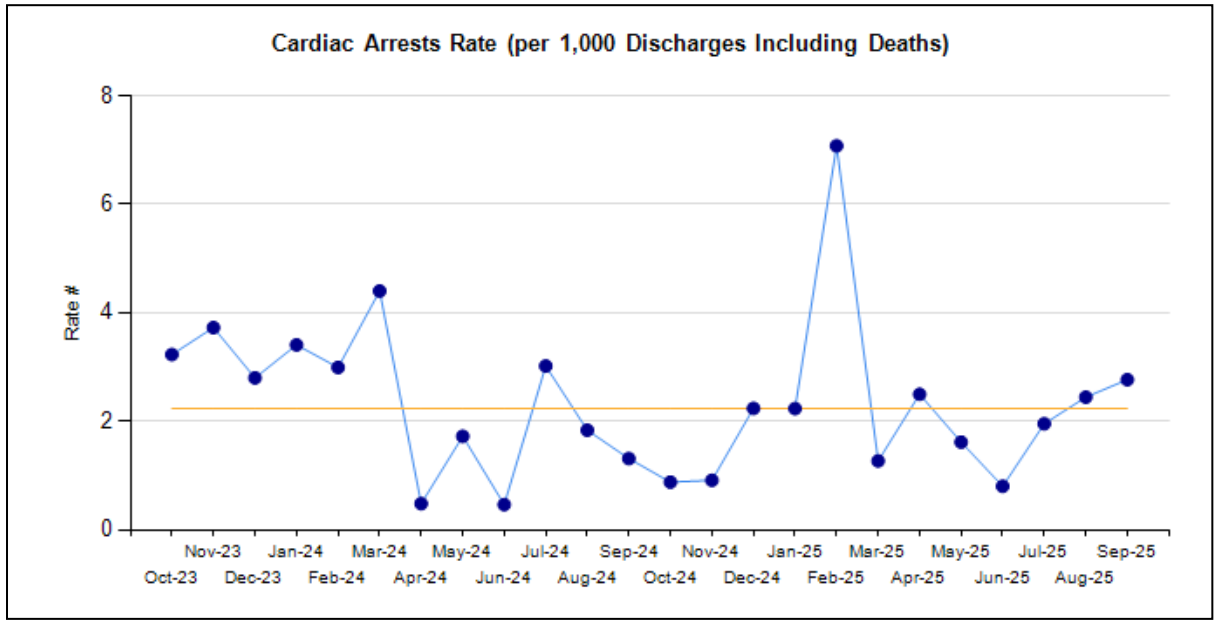
- Aim for further 50% reduction in scratches per week by end of year.
- Understand our system – CSAT analysis tool
- Bring all stakeholders (members of family) in

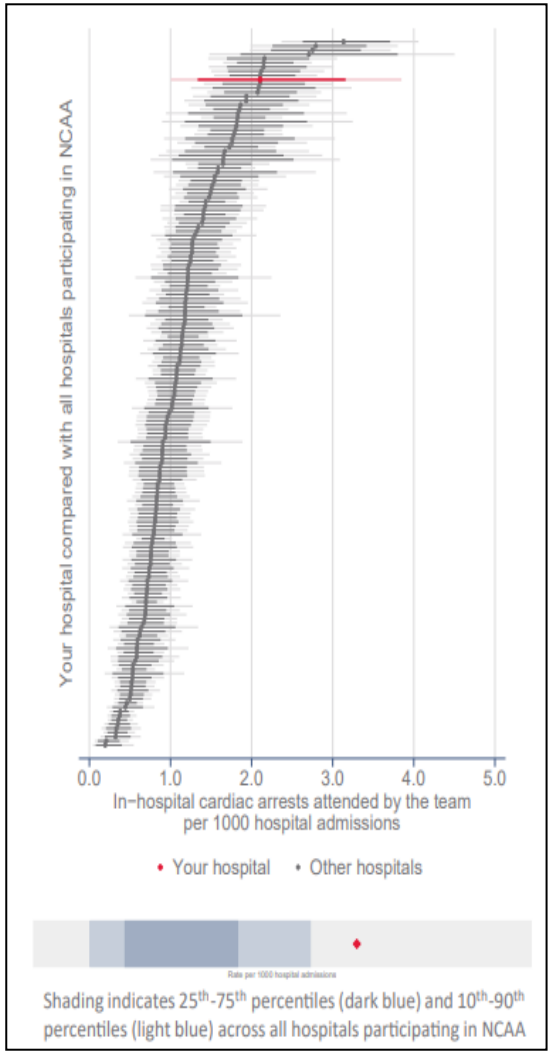
Care System Analysis Tool (CSAT)



Cardiac Arrests in Forth Valley

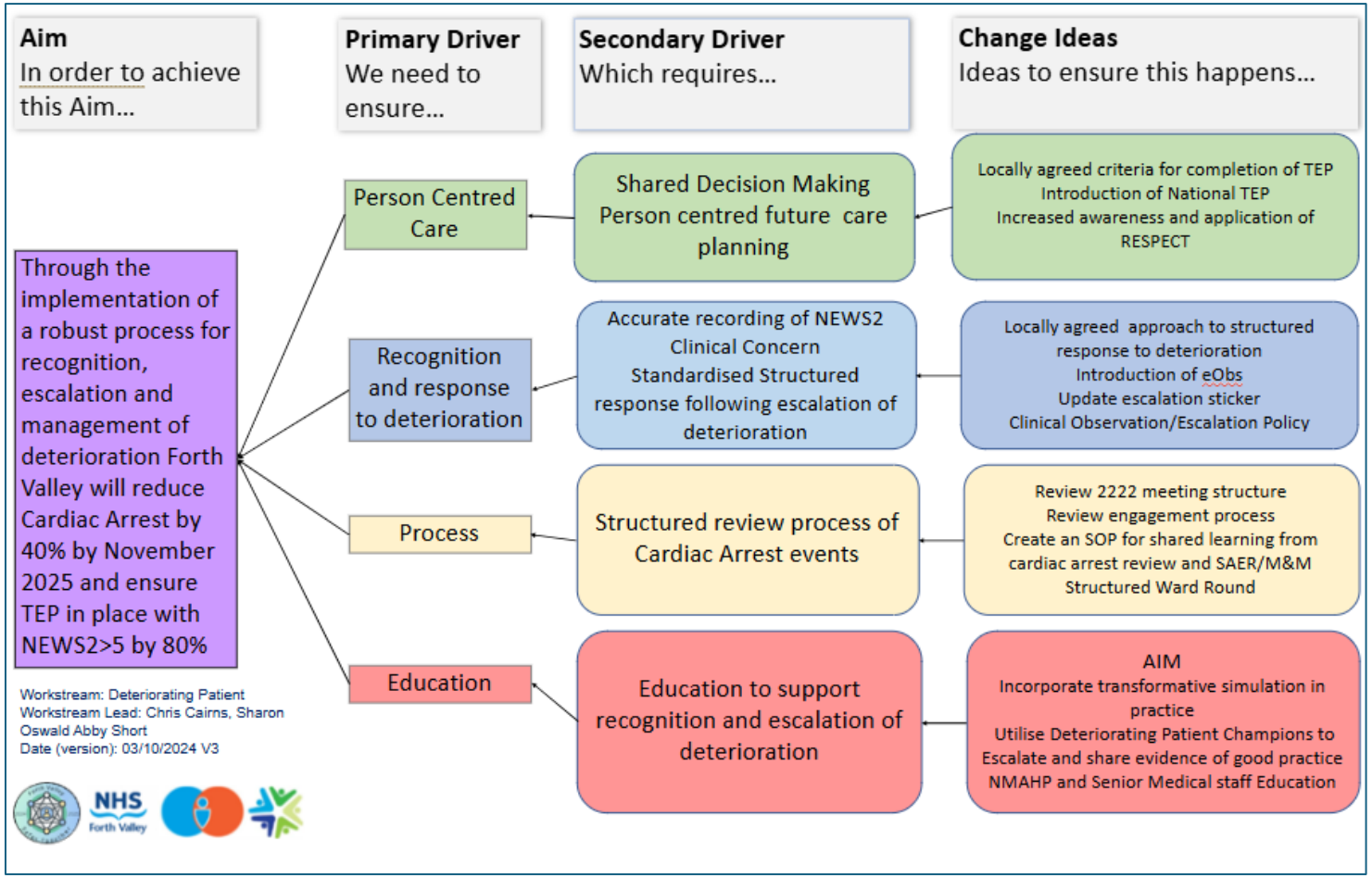






Quality planning

- Aim – Reduce cardiac arrest rate by 40% by Nov 25
- Safer Together collaborative 2024-25
- Senior leadership and QI support



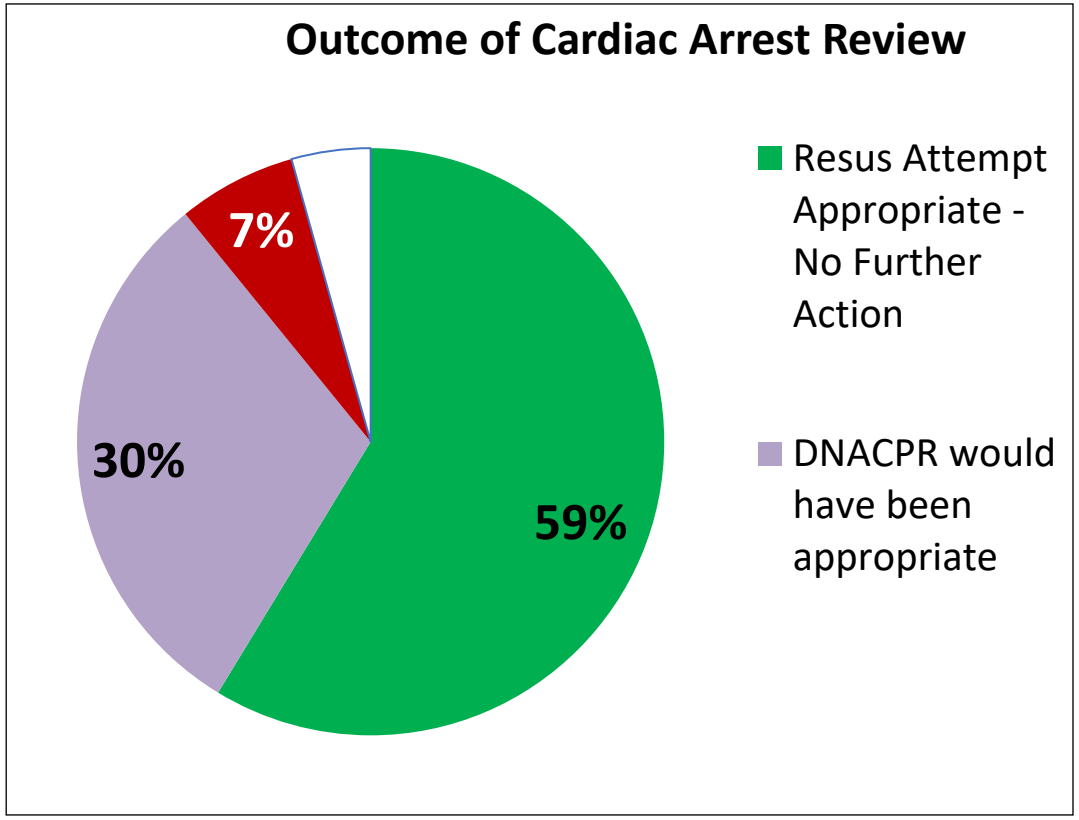
Quality Improvement

Test teams / Leads and Change Ideas

Change Idea
Embed a reliable escalation process within AMU
Introduce National TEP document
Introduce National TEP document
Introduce National TEP document
Embed a reliable process for escalation and response to the deteriorating patient
Embed a reliable process for escalation and response to the deteriorating patient
Embed a reliable process for escalation and response to the deteriorating patient
Embed a reliable process for escalation and response to the deteriorating patient
Improving the process from sharing learning from cardiac arrests

Learning system

Structured review of cardiac arrests



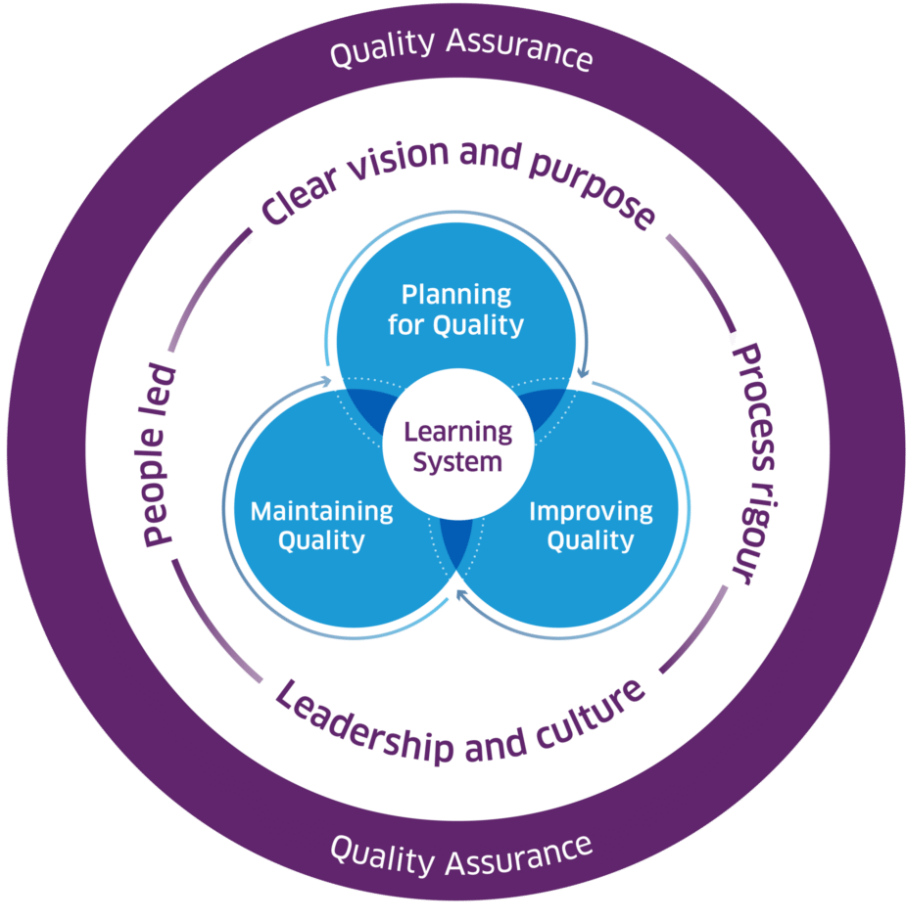
MDT review of last 7 days cardiac arrests.

Cardiac arrest outcomes categorised:

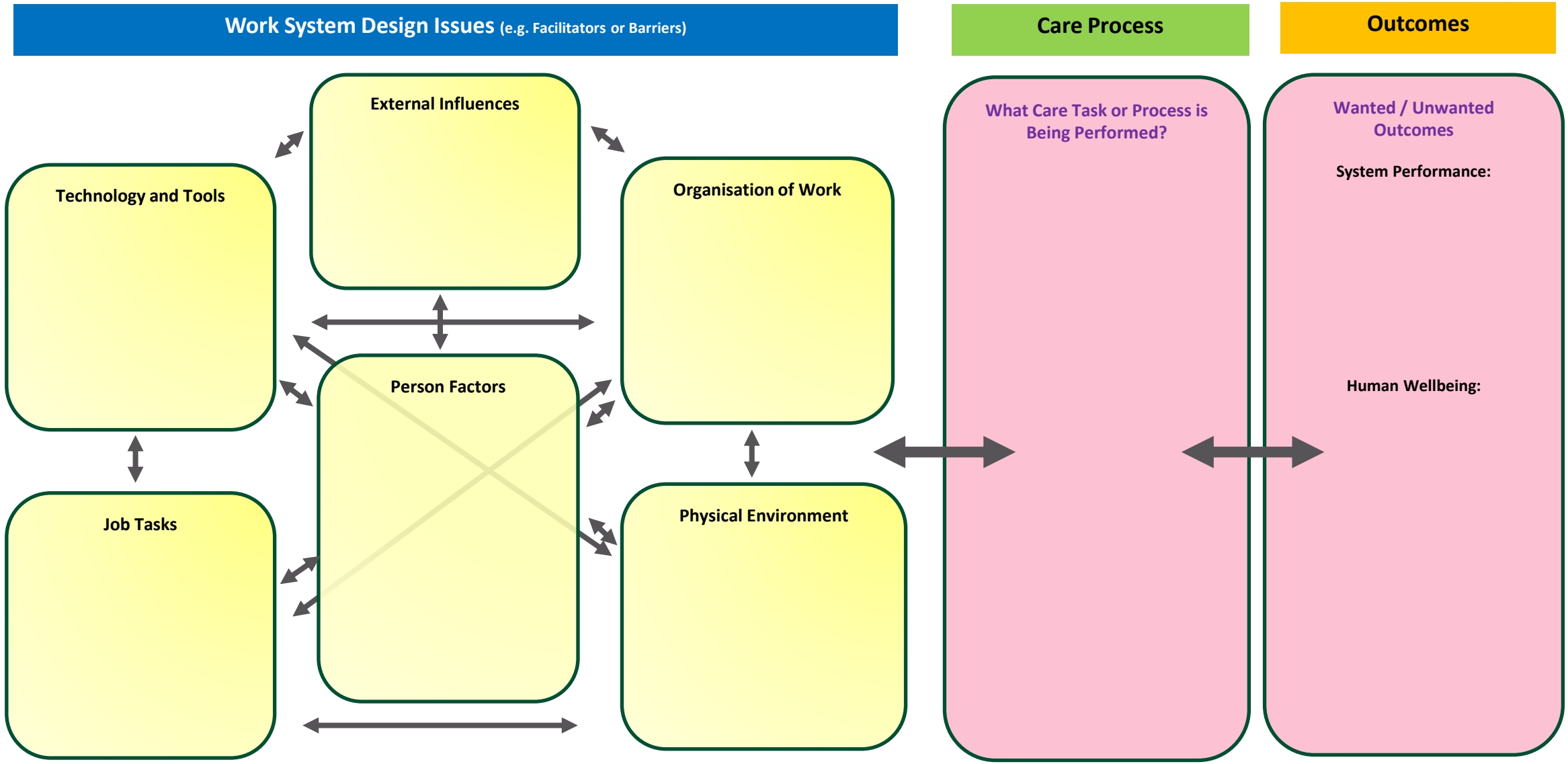
- Appropriate CPR attempt
- Need to recognise and escalate deterioration
- DNACPR would have been appropriate
- DNACPR in place but CPR attempted

Quality planning

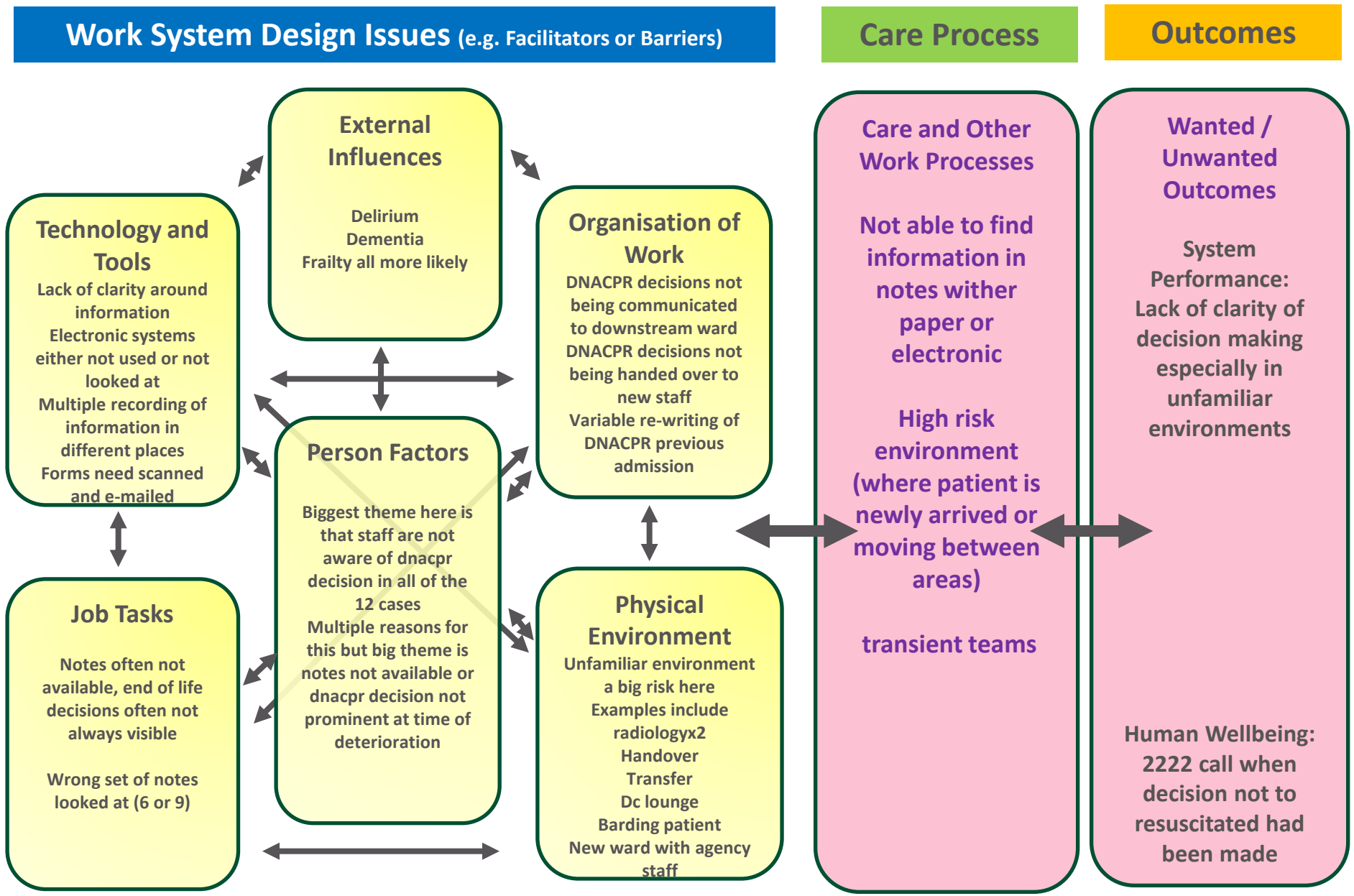
- Aim: have no resus attempts for patients with DNACPR form
- Understand system? How does that happen?
- Education / policy / something else?
- Casenote review – 13 cases
- Phoned a friend….

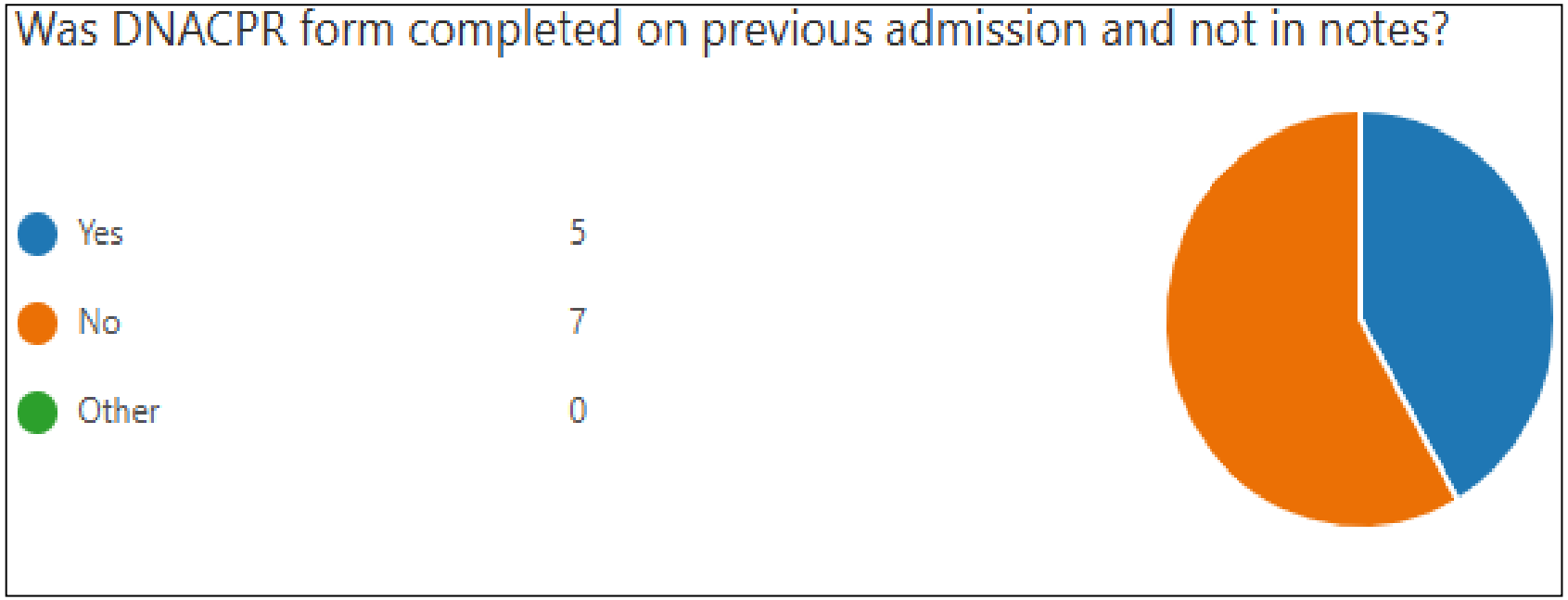


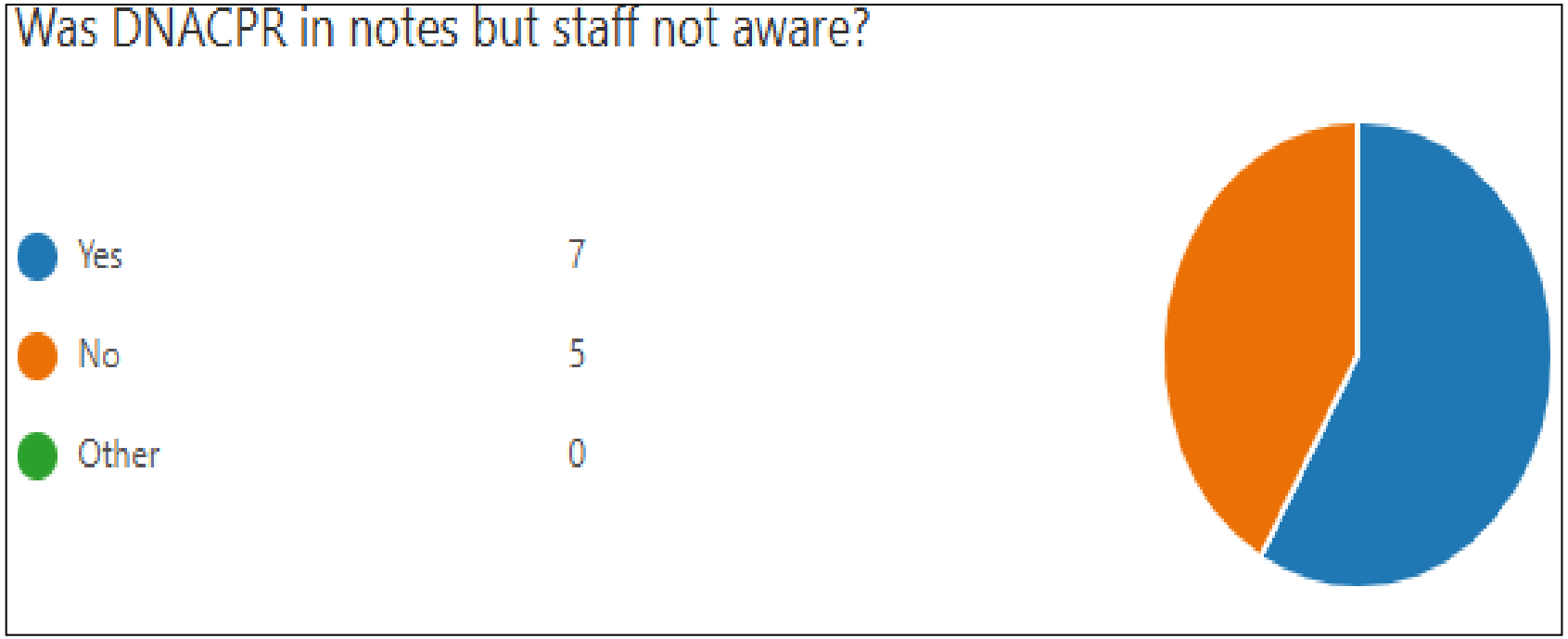
Care System Analysis Tool (CSAT)



Care System Analysis Tool (CSAT)




Was DNACPR form completed on previous admission and not in notes?
Yes
5
No
7
Other
0


Was DNACPR in notes but staff not aware?
Yes
7
No
5
Other
0

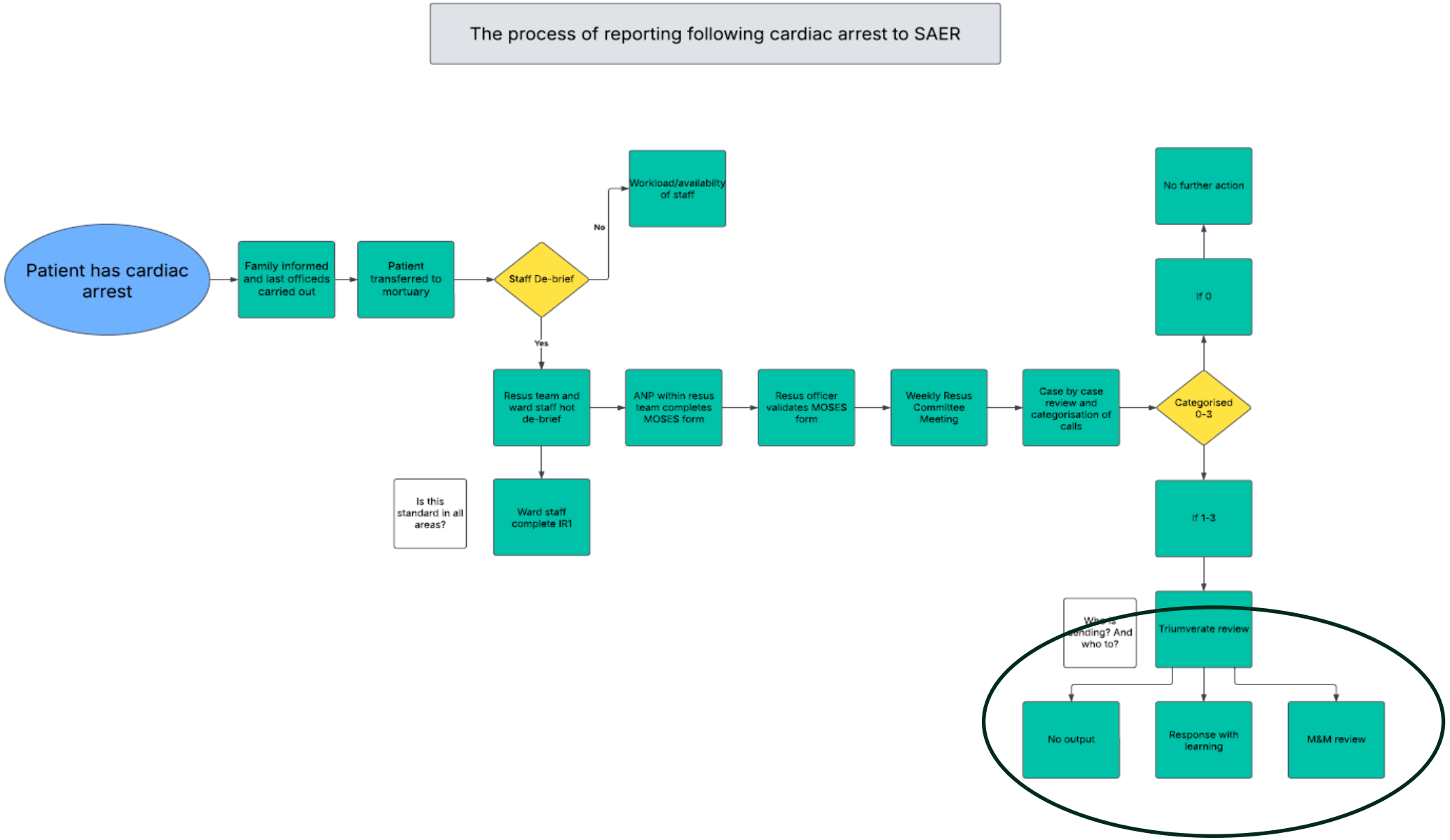
Analysis from CSAT exercise

- Detail that may well not have found
- System issues with switch from paper to electronic system
- System issues with form validity and policy
- Handover / communication issues (eg radiology / discharge lounge) between wards
- Handover within wards
- Process complicated (scanned / e-mailed / uploaded)
- Lack of clarity with regards to completing new forms on admission (electronic to paper)

Quick wins post CSAT tool

- Notes going with patients to radiology / discharge lounge
- Including DNACPR status / form in place in handovers (within and between wards)
- Some issues more challenging to address, short life working group

Learning System – are we learning?



Learning System?

- Learning from 12 cases pre CSAT
- Governance variation – 2 cat 1, 4 cat 2, 2 cat 3s – no SAER, no apologies
- Problem could have been ID'd earlier, but cardiac arrest meetings helped flag, and CSAT helped
- Culture / learning system –

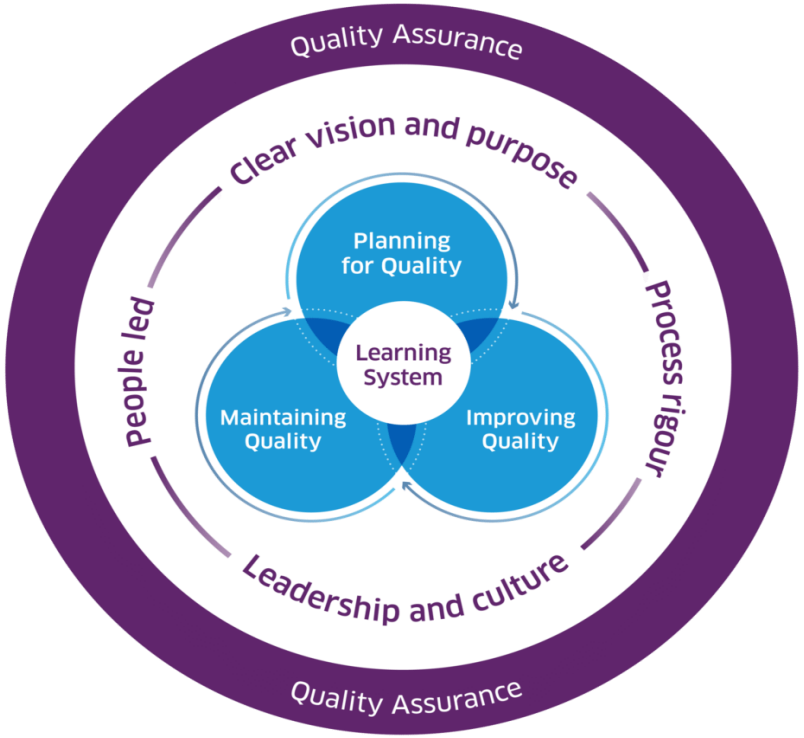
Are senior leaders aware?

Have we learned?

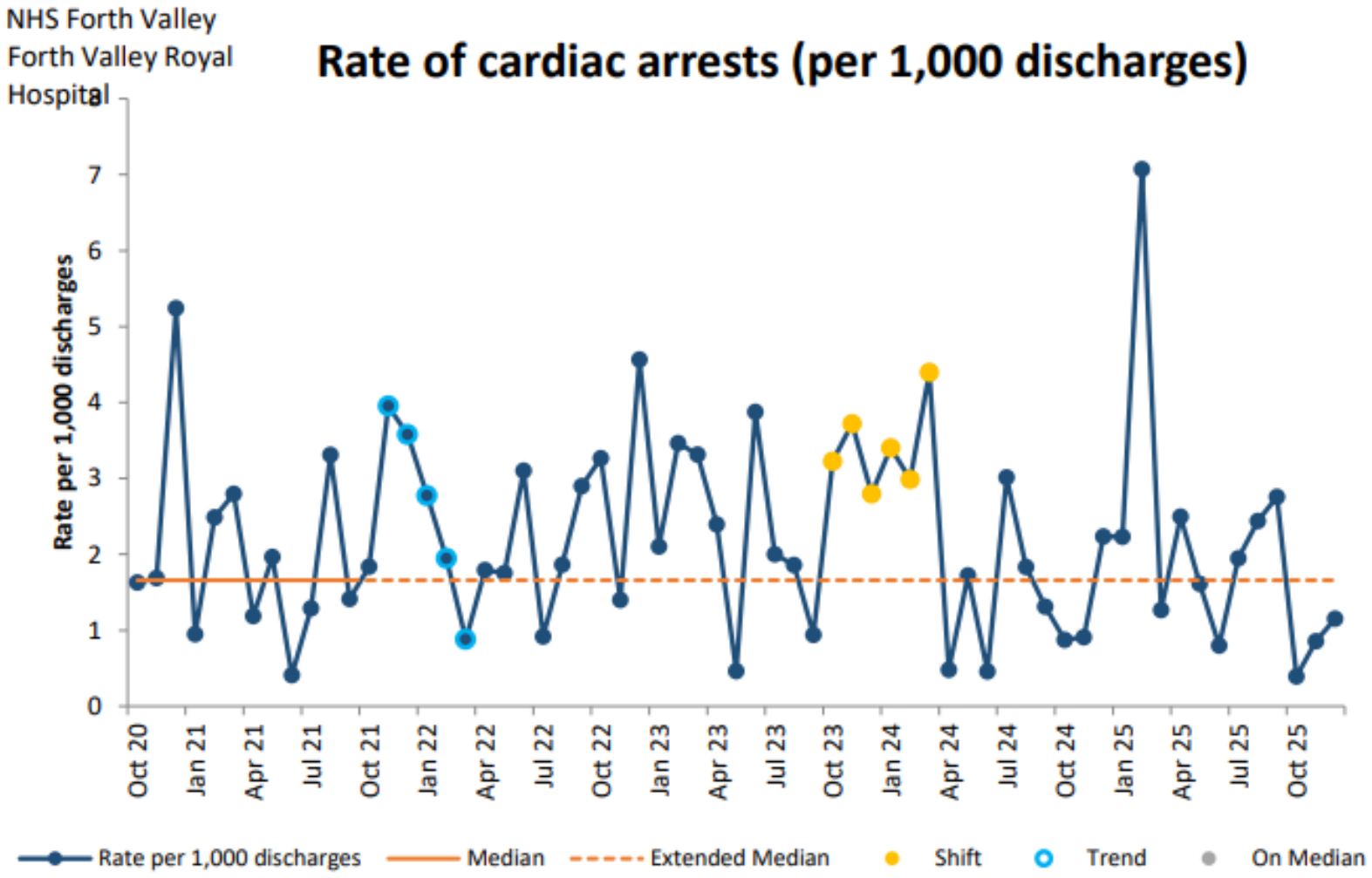
SAER / duty of candour?

Open and transparent?

M and M process

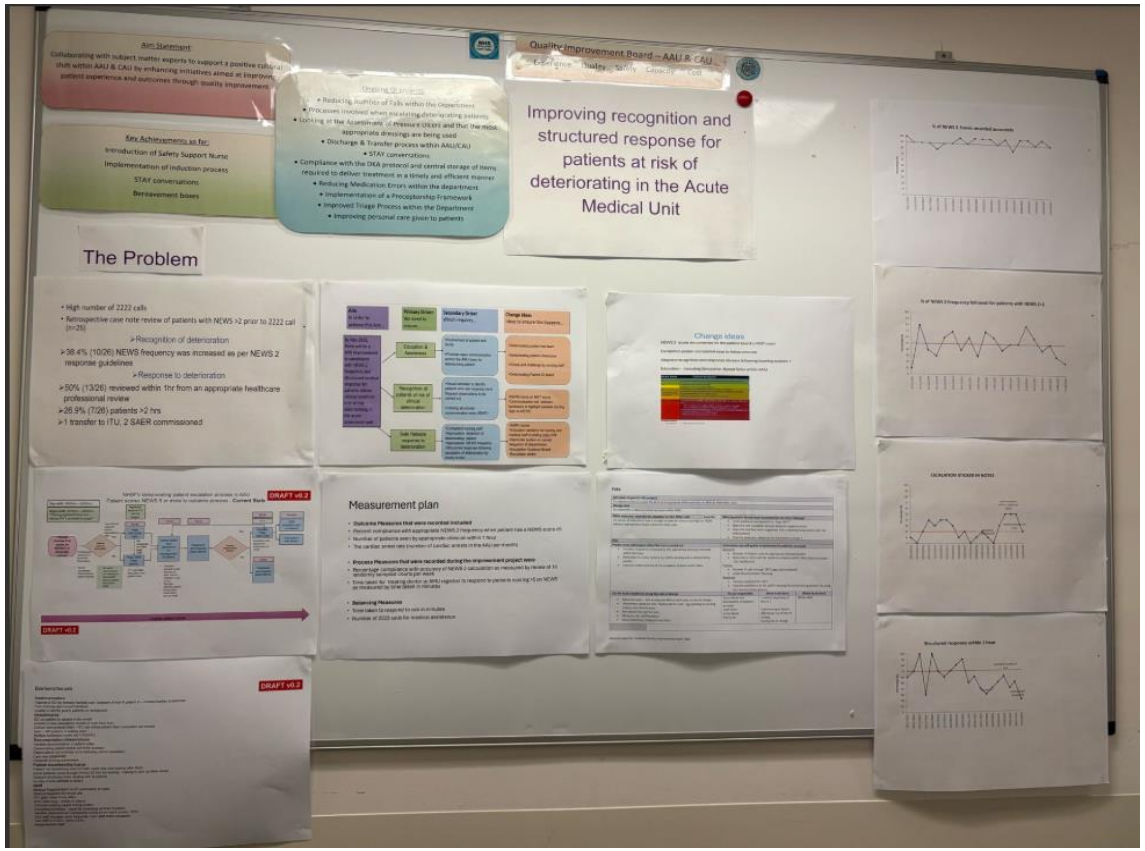


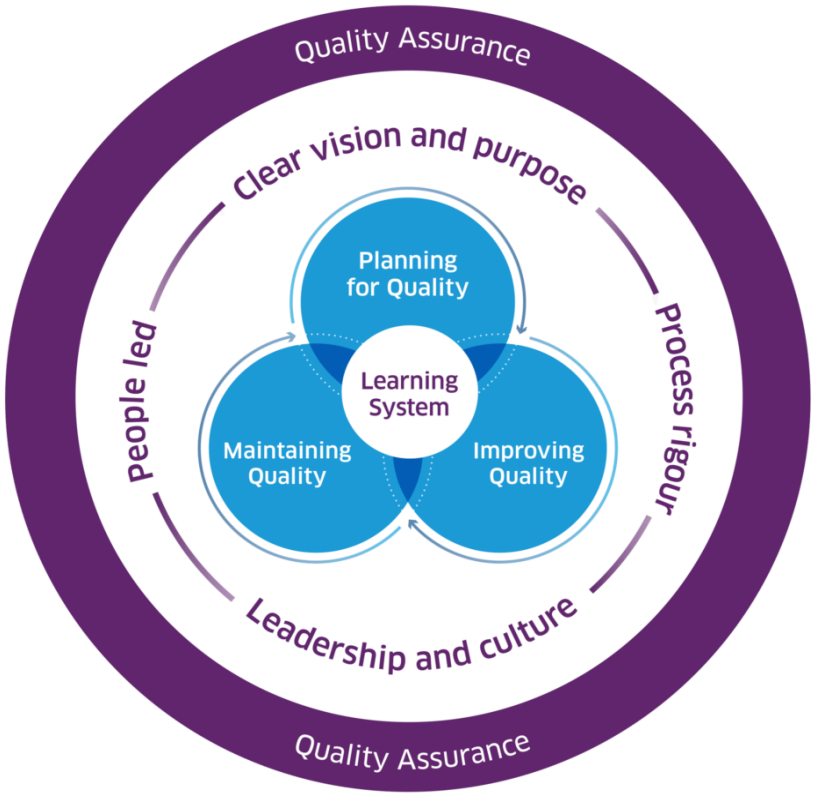
How are we doing post collaborative?



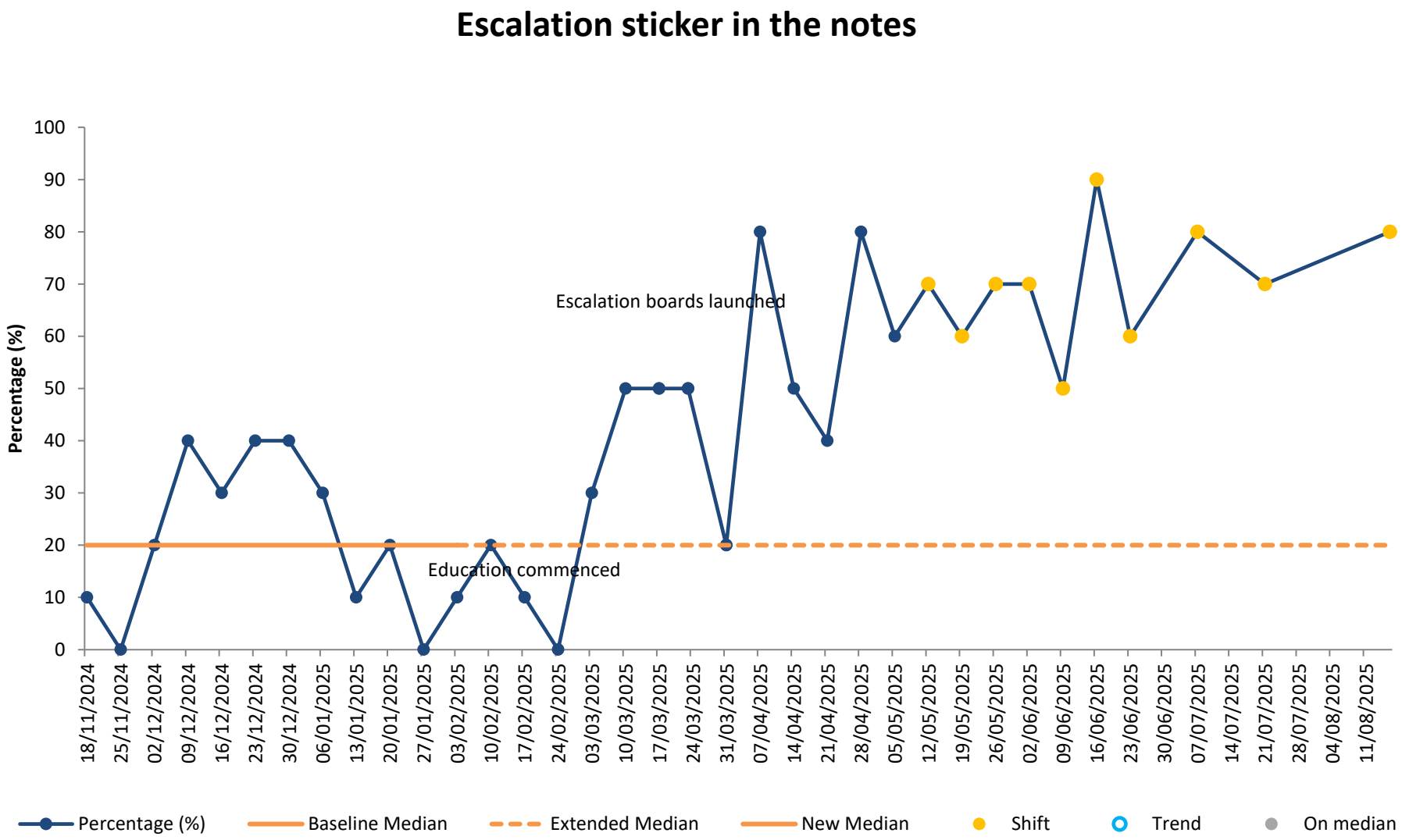
Enablers of change

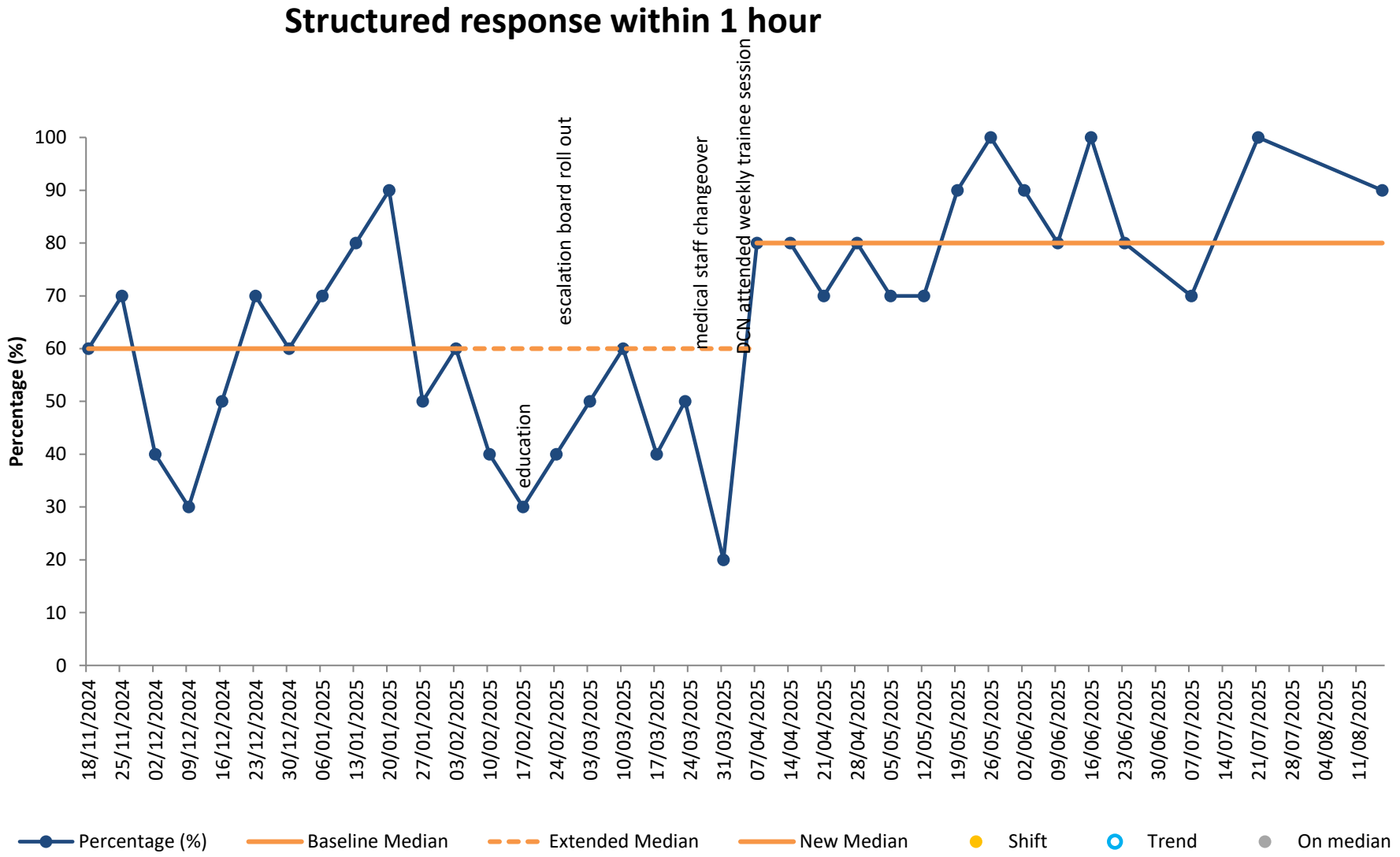
Leadership and culture AMU QI board



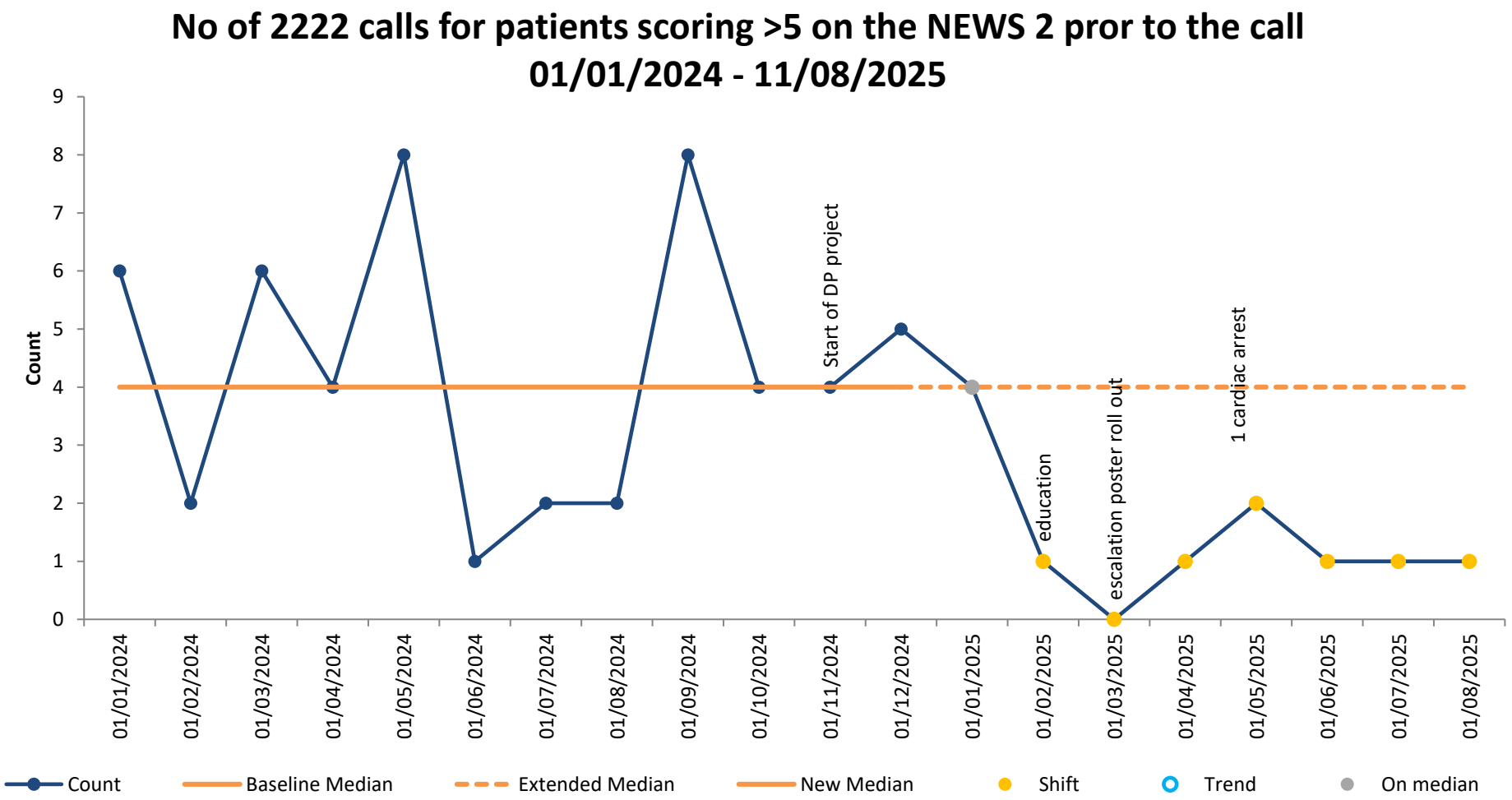


Process measures



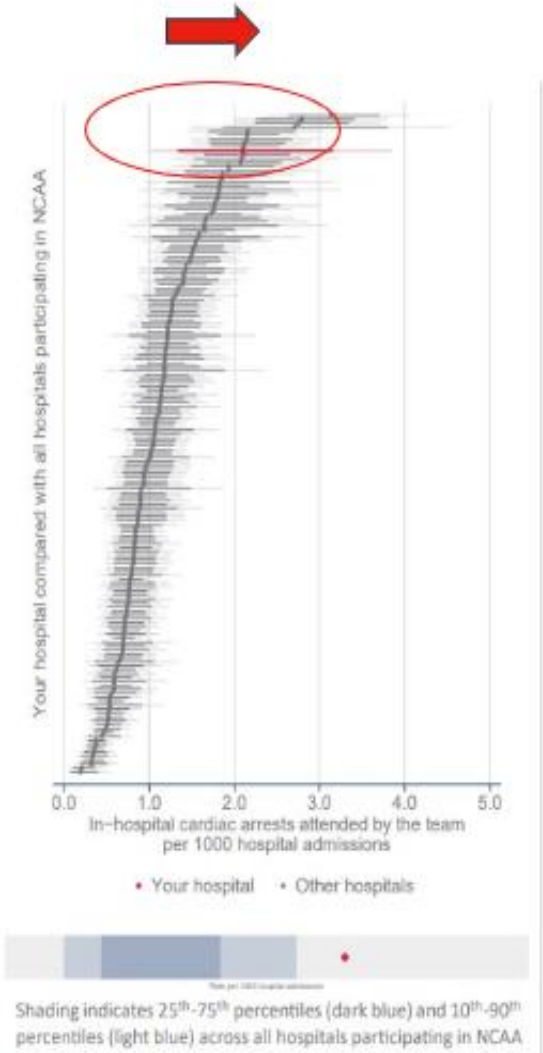

Structured response within 1 hour
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
education
escalation board roll out
medical staff changeover
DCN attended weekly trainee session
18/11/2024
25/11/2024
02/12/2024
09/12/2024
16/12/2024
23/12/2024
30/12/2024
06/01/2025
13/01/2025
20/01/2025
27/01/2025
03/02/2025
10/02/2025
17/02/2025
24/02/2025
03/03/2025
10/03/2025
17/03/2025
24/03/2025
31/03/2025
07/04/2025
14/04/2025
21/04/2025
28/04/2025
05/05/2025
12/05/2025
19/05/2025
26/05/2025
02/06/2025
09/06/2025
16/06/2025
23/06/2025
30/06/2025
07/07/2025
14/07/2025
21/07/2025
28/07/2025
04/08/2025
11/08/2025
Percentage (%)
Baseline Median
Extended Median
New Median
Shift
Trend
On median

Outcome measures

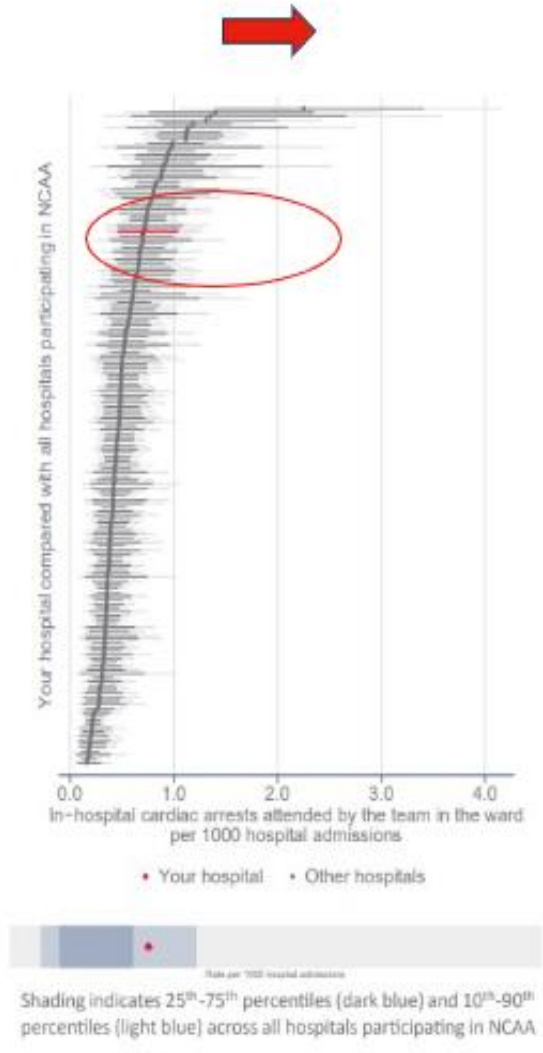


National Cardiac Arrest Audit Data

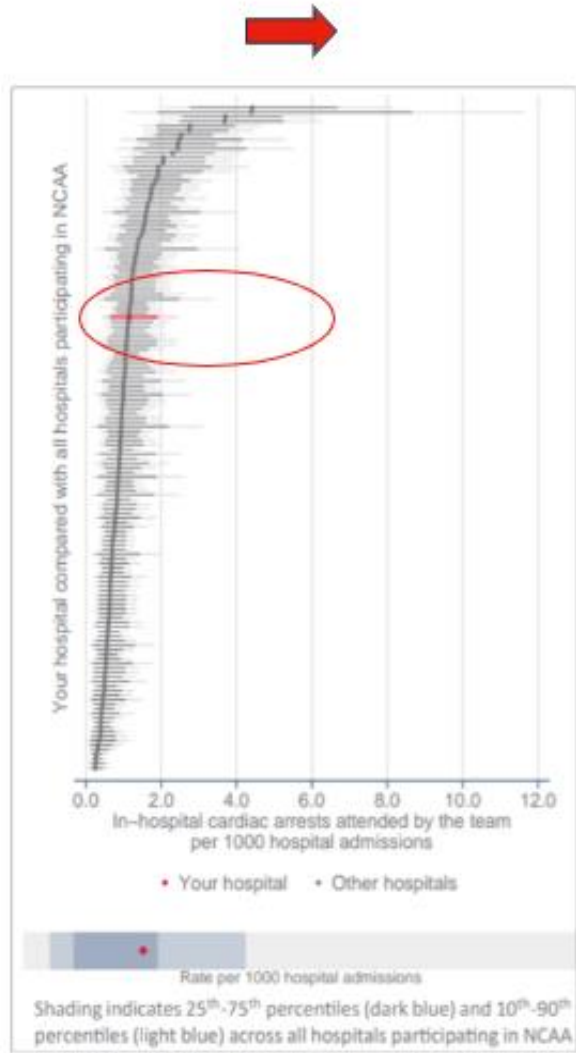
Rate of cardiac arrests per 1000 hospital admissions



Forth Valley Royal Hospital NCAA Report: 1 April 2022 to 31 December 2022



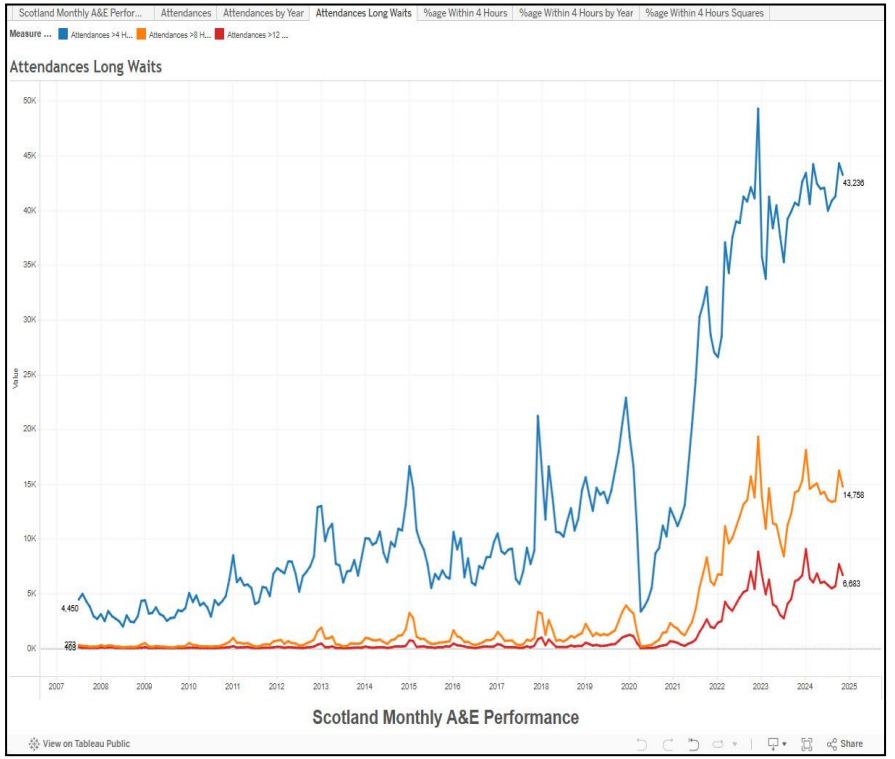
Forth Valley Royal Hospital NCAA Report: 1 April 2024 to 31 December 2024



Forth Valley Royal Hospital NCAA Report 1st April 2025 to 30 June2025

Det Pat maintaining quality

- Outcome measures - Cardiac Arrest Rate
- Process Measures – look for changes
- Case reviews
- Staff and patient / carer feedback
- Complaints / SAERs / M and M

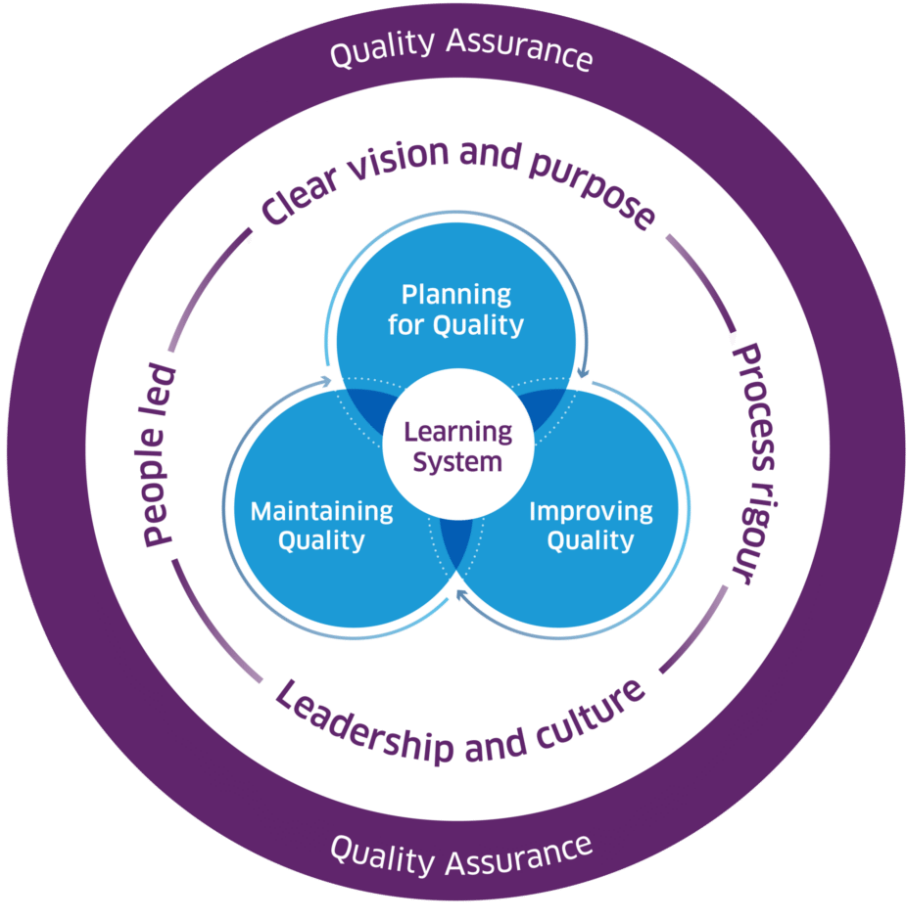


[Association between delays to patient admission from the emergency department and all-cause 30-day mortality | Emergency Medicine Journal]

1 death for every 82 patients waiting over 8 hours

Quality planning – what to focus on?

- Participate in SPSP deteriorating patient / adults in hospital programme
- Treatment escalation planning
- Processes in ED – sepsis/escalation
- Preventing CPR in patients with DNACPR – short life working group
- Learning system



Where does CSAT fit in?

- Understanding system
- Variation / change in process measure
- Escalating deteriorating patients in ED
- Embedding TEP into practice at front line

Summary

- Example of using CSAT tool
- Helps understanding and generate change ideas
- Fits into quality management system
- Help with planning improvement work
- We are all still learning!

Q&A

Julie Mardon

Clinical Director Scottish Centre Simulation, NHS Forth Valley

Calum McGregor

Clinical Director for Quality, NHS Forth Valley

Paul Bowie

Programme Director (Safety and Improvement),
NHS Education for Scotland

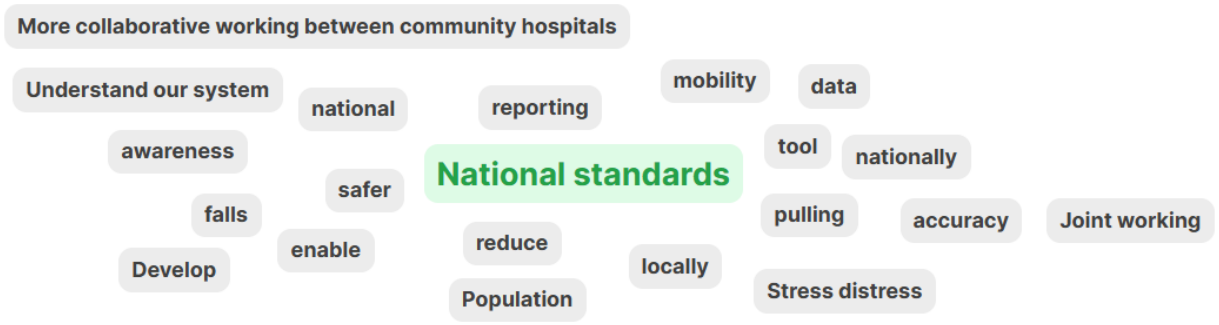
Feedback from Falls breakout

What are the 3 key themes emerging from your discussions?

Review answers 20

What actions or opportunities should we take forward nationally?

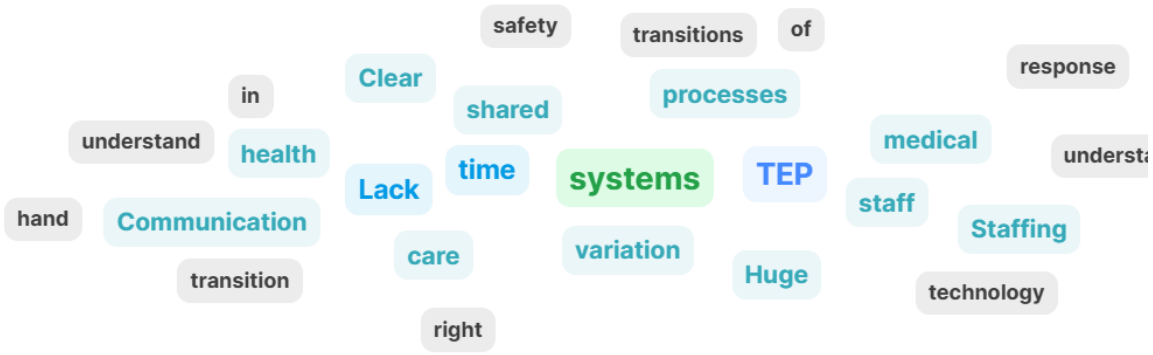
Review answers 15



Feedback from Det Pat breakout

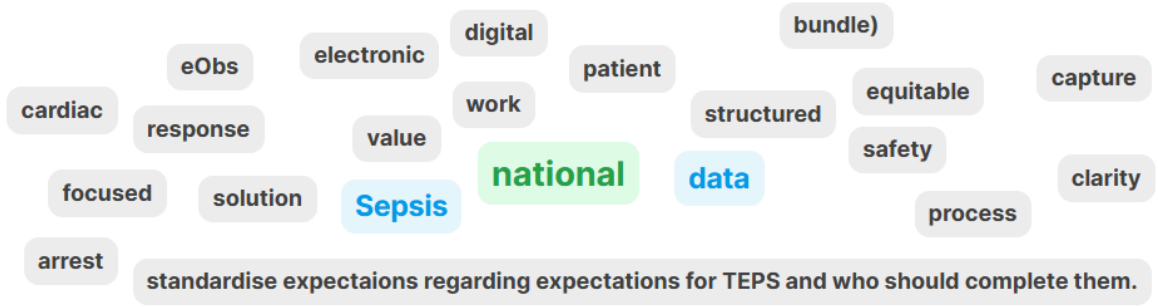
What are the 3 key themes emerging from your discussions?

Review answers 26



What actions or opportunities should we take forward nationally?

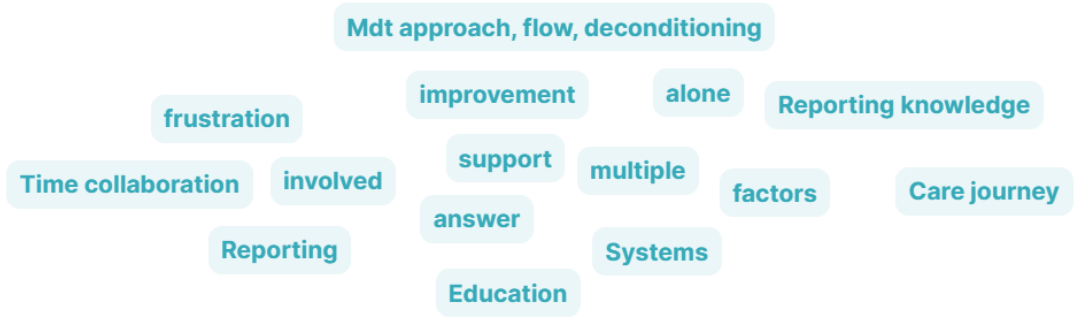
Review answers 23



Feedback from Pressure Ulcers breakout

What are the 3 key themes emerging from your discussions?

Review answers 12



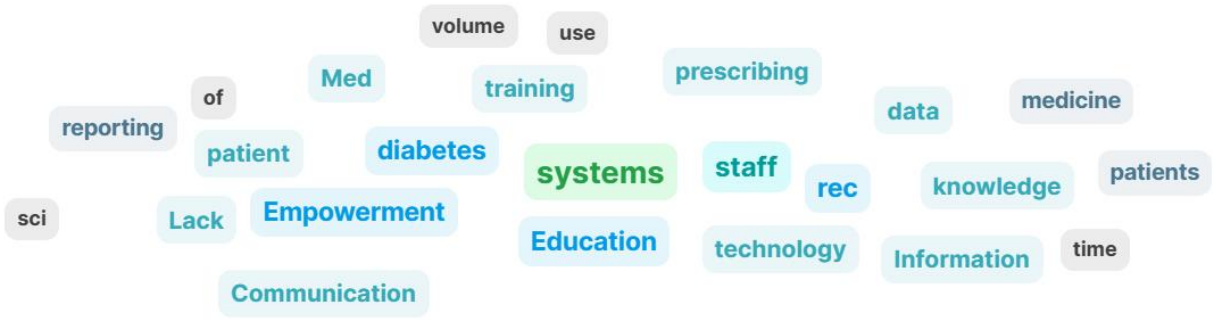
What actions or opportunities should we take forward nationally?

Review answers 9

Feedback from Medicines EWG

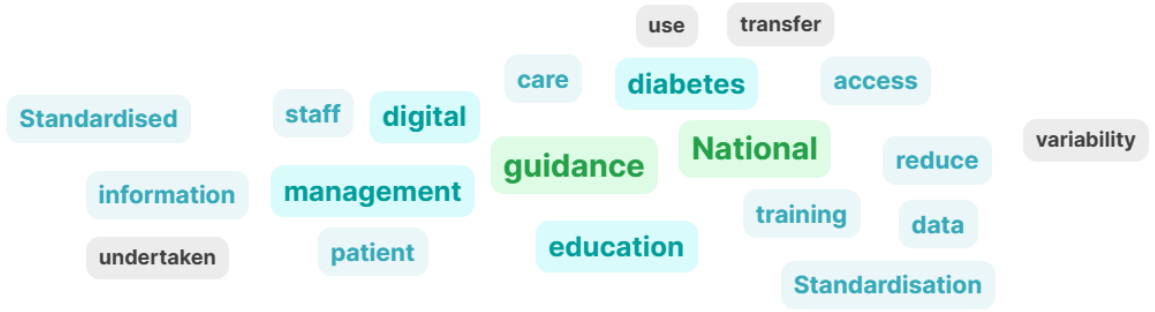
What are the 3 key themes emerging from your discussions?

Review answers 37



What actions or opportunities should we take forward nationally?

Review answers 33



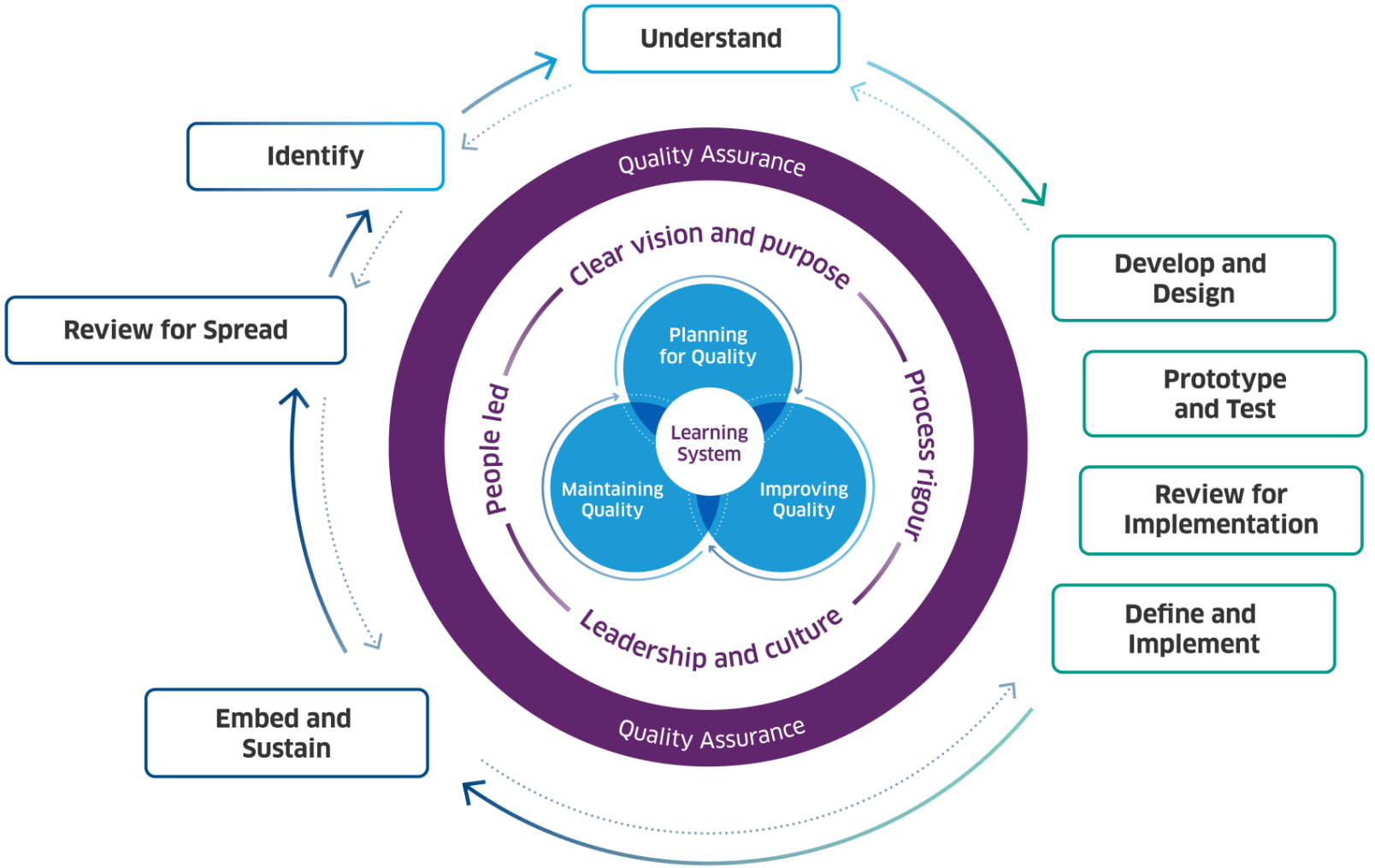
Closing reflections
Scottish Approach to Change

Clare Morrison

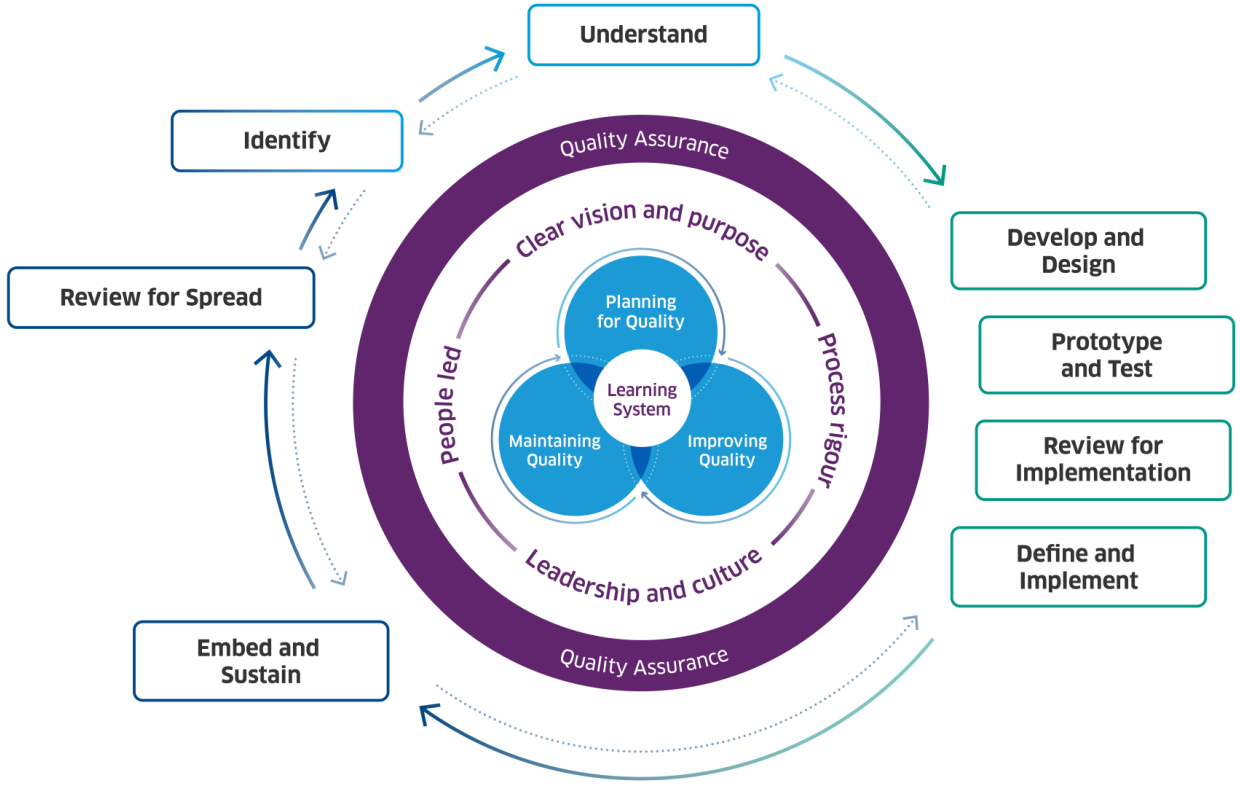
Director of Engagement and Change,

Healthcare Improvement Scotland

Reflecting together



Reflecting together



Reflections

Jo Matthews

Associate Director of Improvement and Safety,
Healthcare Improvement Scotland

MS Teams channel/ learning system

HIS SPSP Adults in Hospital MS Teams Channel Registration Form