Workshop report

Digital Innovation in the NHS:
Is it safe?

26th Sept 2019

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Executive summary

Members of the Yorkshire and Humber Patient Safety Translational Research Centre led short workshops considering the safety implications of digital innovations and technology in healthcare.

Through two collaborative activities, the attendees discussed attributes of digital/technology innovations in healthcare using case studies and their own experiences. Together we identified the Stakeholders, Rewards, Risks, Issues and Solutions.
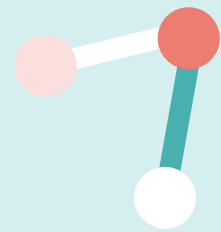
Each of the two workshop deliveries ended with a question for the attendees that introduced Eric Hollnagel *et al.*'s [1] distinction between Safety-1 and Safety-2: should we focus on finding and prevent harm, or on finding and encouraging best-safe practice?

This document contains a summative analysis of the perspectives collected during the day. We hope that attendees will reflect on their own contribution and the collective impact.

A collation of everyone's contribution, across both workshops

1. Hollnagel, E., Wears, R. and Braithwatie, J. (2015) From Safety I to Safety II: A White Paper. Edited by T. R. H. C. Net. University of Southern Denmark, University of Florida, USA and Macquarie University, Australia.

Stakeholders

Attendees were asked: Who are the stakeholders in safe digital innovations in healthcare? Below is a crossword with some of the attendees contributions.

AHSN Network workshop

Y	D	T	D	S	R	S	M	R	C	M	S	R	A
N	C	C	T	E	C	E	C	N	R	C	R	H	E
N	A	S	E	E	A	C	O	S	P	R	L	I	N
D	R	S	C	R	R	O	M	E	C	I	E	H	U
G	E	C	H	E	E	N	M	S	R	T	C	I	G
P	H	I	P	S	R	D	I	R	N	I	N	A	O
S	O	D	R	U	S	A	S	U	R	C	A	E	V
R	M	E	O	S	A	R	S	N	E	A	L	S	E
S	E	M	V	T	A	Y	I	O	S	L	U	T	R
A	S	A	I	E	N	C	O	A	U	C	B	S	N
O	A	R	D	A	D	A	N	A	E	A	M	U	M
O	V	A	E	M	E	R	E	V	H	R	A	R	E
E	R	P	R	M	O	E	R	H	T	E	E	T	N
A	R	C	S	M	U	C	S	H	M	D	T	R	T

GPS
PARAMEDICS
COMMISSIONERS
TRUSTS
CARERS
THE USER
NURSES
RESUS TEAM
NHS
AMBULANCE
CRITICAL CARE
SECONDARY CARE
CARE HOMES
GOVERNMENT
TECH PROVIDERS
MDT
A AND E

Play this puzzle online at : https://thewordsearch.com/puzzle/721057/
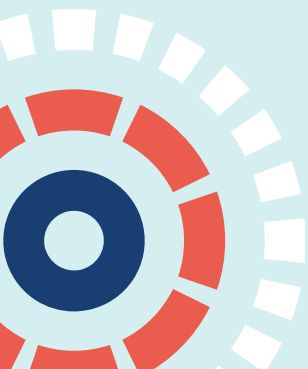
Other contributions included:

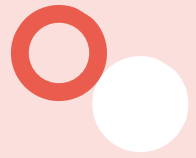Acute care   Patients   EPR super users

Regulatory bodies   Health economist   Pharmacy

H.I.T. developers   Academics   Patients'

families

# How has the input been analysed?

We summarised the input from attendees using the SEIPS2.0 model - Systems Engineering Initiative for Patient Safety version 2. The model was developed by Pascale Carayon, Richard Holden and colleagues [1], and provides lens through which we can view the safety of a healthcare system.

At the highest level, the model has four parts: *Work system*, *Work processes*, *Outcomes*, and *Adaptations*. In this report, we look at attendees' responses at this high level, before looking at the elements within the parts.
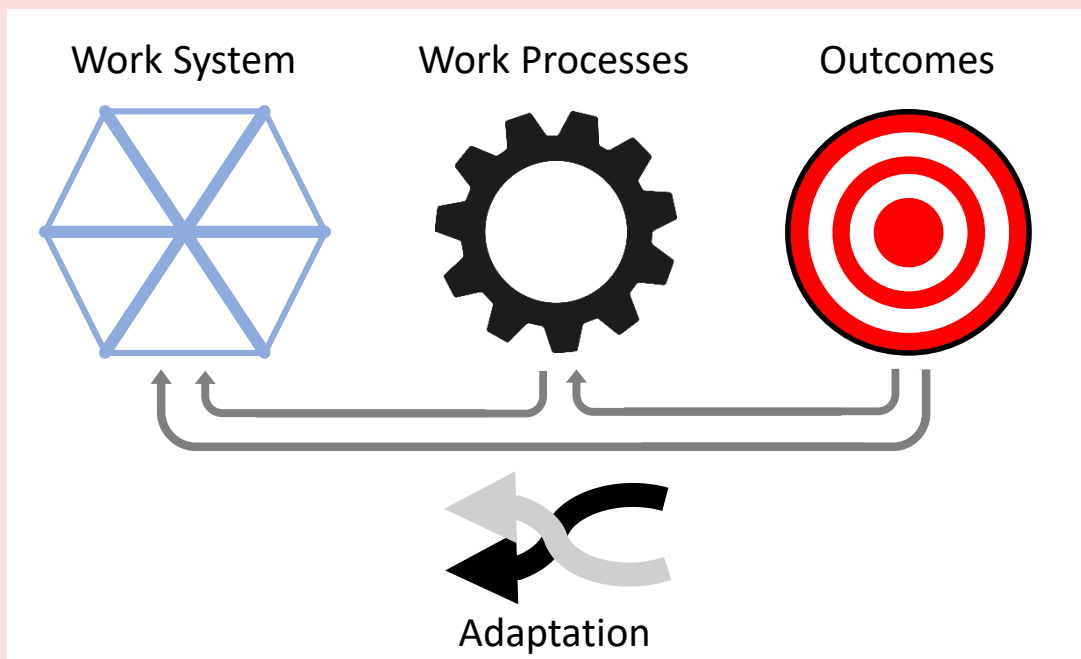
Work System   Work Processes   Outcomes

Adaptation

1. Holden RJ, Carayon P, Gurses AP, Hoonakker PLT, Hundt AS, Ozok AA, et al. SEIPS 2.0: A human factors framework for studying and improving the work of healthcare professionals and patients. Ergonomics. 2014;56(11):1–30.

Image by Samuel1983 from Pixabay
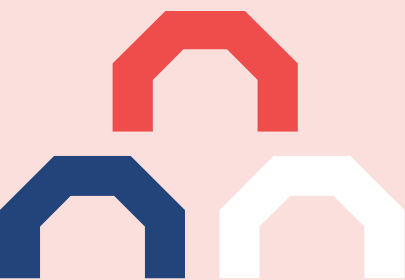
High-level summary

Most unique ideas provided by attendees related to Work System, followed by Work Process, Outcomes, then Adaptations.

Work System

Reward: "*Streamlined care*"
Risk: "*Malware*"

Work Processes

Reward: "*Quick to input*"
Issue: "*Time to teach patient not there*"

Outcomes

Reward: "*New treatment ideas*"
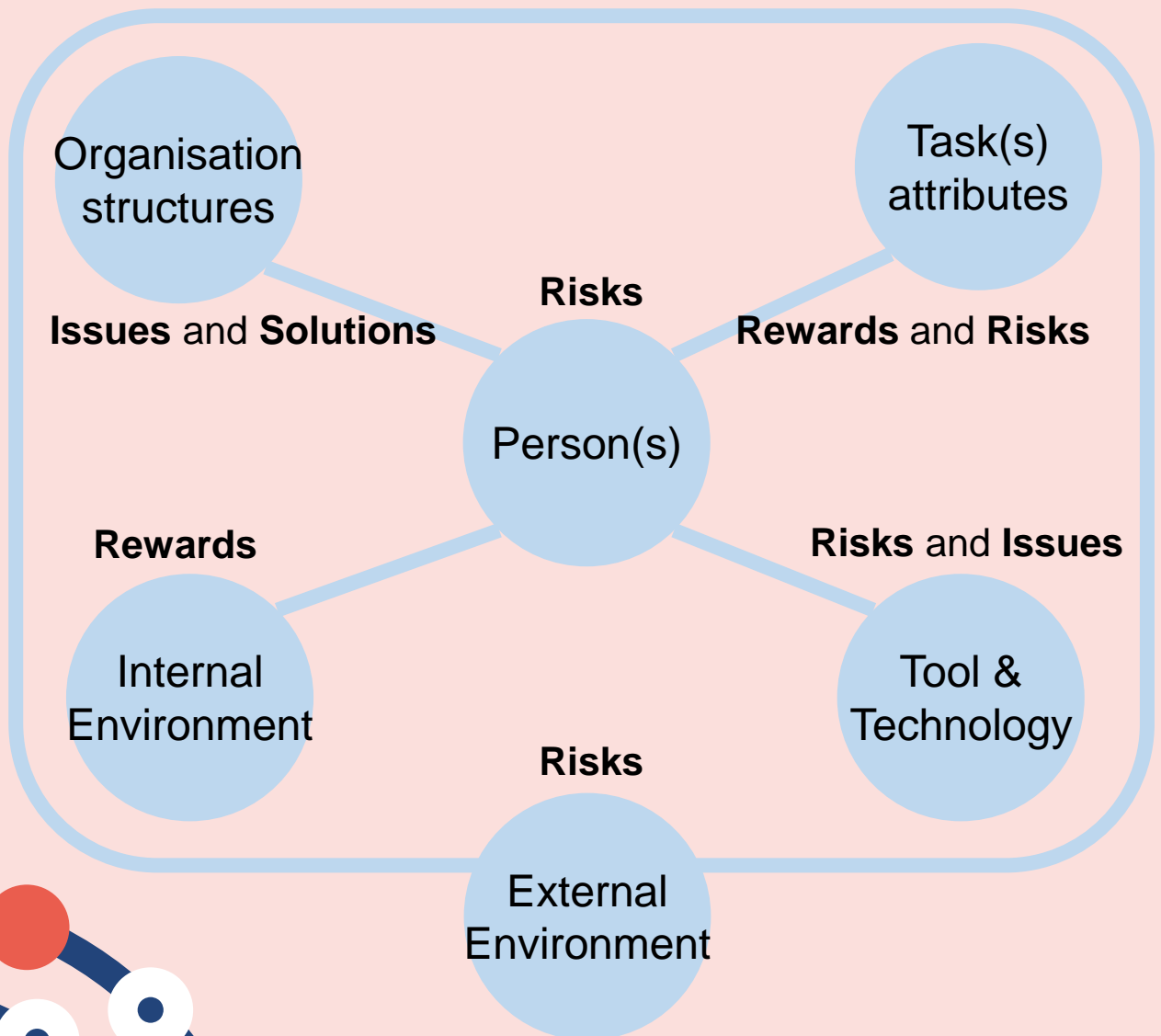**Risk:** "*Counter-intuitive*"

Adaptation

Reward: "*Prevention of crisis*"
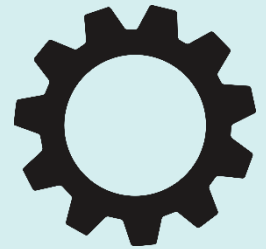**Risk:** "*Trailblazing BUT…reactive to issues*"

Low-level summary: Work System

The image below shows the details of the Work System. Next to each element in **bold** is the category most frequently associated by attendees.

- Organisation structures
- Task(s) attributes
- **Risks**
- **Issues** and **Solutions**
- **Rewards** and **Risks**
- Person(s)
- **Rewards**
- **Risks** and **Issues**
- Internal Environment
- Tool & Technology
- **Risks**
- External Environment

Low-level summary: Work Processes

The image below shows the details of the Work Processes. The size of the categories indicates how often attendees associated the category with either *Patient*, *Professional*, or *Collaborative* processes.

Patient

Rewards
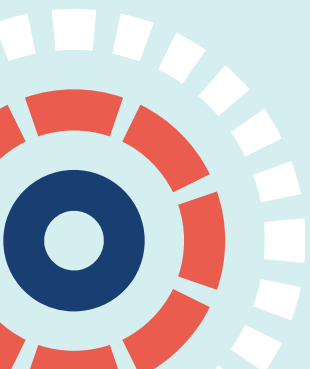
Risks

Issues

Solutions

Rewards

Risks

Issues

Solutions

Professional

Rewards

Risks

Issues

Solutions

Low-level summary: Outcomes

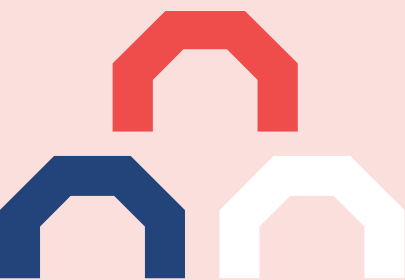The image below shows the details of the Outcomes part of the model.

The size of the categories indicates how often attendees associated the category with *Patient*, *Professional*, or *Organisational* outcomes.
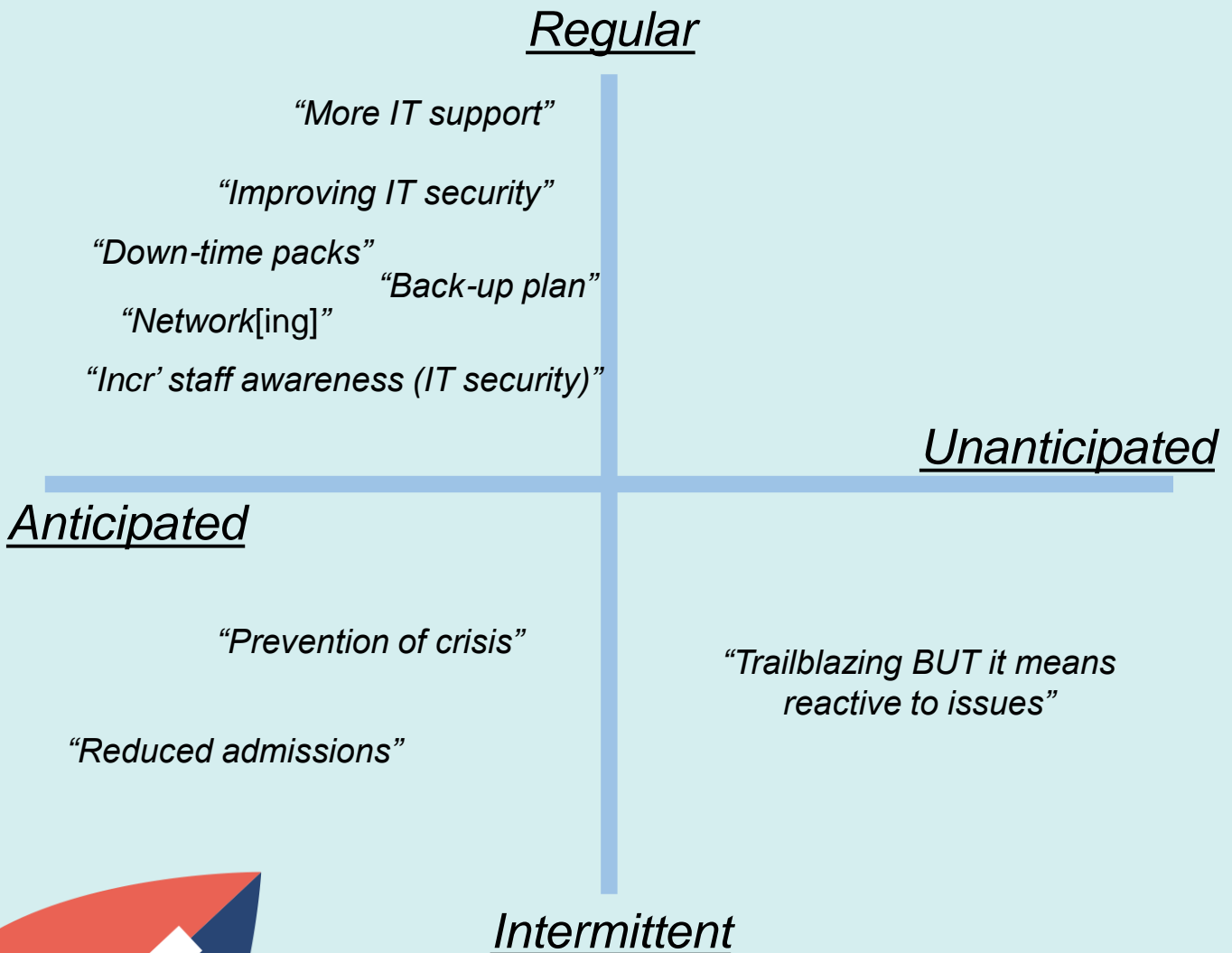
Professional

Rewards

Risks

Issues

Solutions

Patient

Rewards

Risks

Issues

Solutions

Organisational

Rewards

Risks

Issues

Solutions

Low-level summary: Adaptations

The image below shows two dimensions of Adaptations: anticipation and regularity. Opinions provided by attendees are categorised across these two dimensions, and show that most of the suggested adaptations could be regular and anticipated.

Regular

"More IT support"

"Improving IT security"

"Down-time packs"

"Back-up plan"

"Network[ing]*"*

"Incr' staff awareness (IT security)"

Anticipated

Unanticipated

"Prevention of crisis"

"Trailblazing BUT it means reactive to issues"

"Reduced admissions"

Intermittent

Final summary

Attendees' contributions covered all aspects of the Systems Engineering Initiative for Patient Safety model [1]. It is suggested that reader reflect on aspects that were less represented:

Work System

The Task(s) factor refers to attributes or characteristics of the task such as difficulty, complexity, variety, ambiguity, and sequence. How can digital innovations safely change these?

Work Processes

Very few Work Processes were associated with the Patient and most were associated with the Professional.
As healthcare professionals, what is your perspective of Patient and Organisational Work Processes?

Outcomes

Risks were most often associated with the Patient.
How can digital innovation be designed to improve patient-safety outcomes?
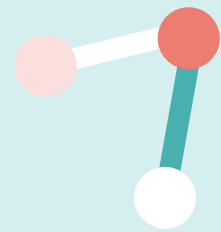
Adaptation

Adaptations were the least contributed aspect, but feedback loops are vital for a dynamic healthcare system to function well. What feedback loops are you aware of within healthcare?
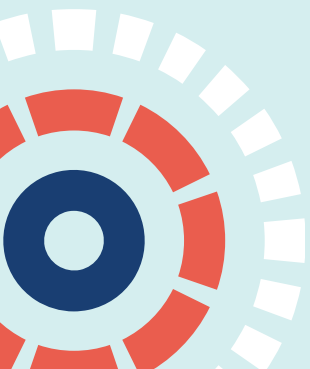
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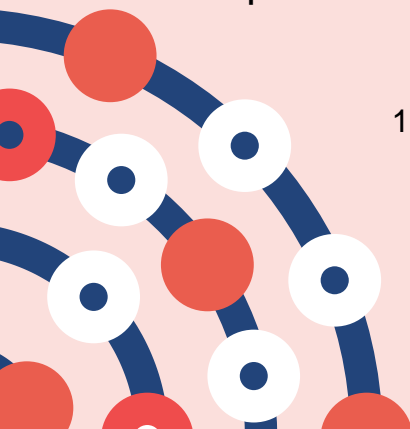
Acknowledgements and disclaimer

Find out more about the Yorkshire and Humber Patient Safety Translational Research Centre

Delivering research to make healthcare safer

Yorkshire and Humber Patient Safety Translational Research Centre

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