Novel challenges of new and emerging digital health technologies

# Introduction

\*The paper in the context of the workshops.

\*The motivation for the workshops.

\*Briefly introduce theory.

\*The topic of this paper.

# Method

[The wording heavily borrows from (Michie et al., 2017)] A national, expert, consensus-building one-day workshop was held in xmonthx 2020 in Leeds, UK to provide a robust academic appraisal of the evidence base and subject-matter expertise relating to novel patient-safety challenges of new and emerging health information technologies. The workshop was the first in a series led by the National Institute for Health Research Patient Safety Translational Research Centres from Yorkshire and Humber, and Greater Manchester, UK; The proposal for the workshop is available at xlink to proposalx. The xN\_participantsx participants were selected to include those who develop, evaluate and use health information technologies and their data for both research and practical purposes. Participants included xList of roles represented by attendeesx.

## The primary deliverable from this workshop was…

The primary deliverable from this workshop was a publication that begins to define the field of safety informatics and serves as a platform for future research and development.

# What might be the new and emerging technologies?

## According to Price’s Hypecycle

(Price, 2018, 2019, 2020)

\*Describe the Price’s Hypecycle.

\*Briefly provide examples of new and emerging technologies and their trajectories.

## According to literature predictions

\*Describe the forecasts of the literature.

# What might be the challenges associated with these emerging technologies?

## Continuing challenges

### No testing before implementation

\*Define the problem.

\*History of problem.

\*Novel manifestations?

### No safety case

\*Define the problem.

\*History of problem.

\*Novel manifestations?

### Digital inequality

\*Define the problem.

\*History of problem.

\*Novel manifestations?

### Interoperability

\*Defining the problem, e.g. (Benson & Grieve, 2016).

\*History of problem.

\*Novel manifestations?

## Novel challenges

### Commercial providers

* Sony mSafety Watch
* Amazon.care
* Apple’s AC Wellness
* Mail-order prescription
* Facebook Preventive Health Tool
* IBM Watson Health

### A.I. safety

### Calibration drift / Dynamic modelling

\*Talk about how pre-learned is out of data very quickly

\*Talk about David Jenkins’ work

### Aging population

# Potential solutions

## Safety cases

\*Ibrahim’s work

## Design standards / charter

## Interoperability

\*The HL7 FHIR standard created by HL7 International (Health Level Seven International, 2020) is a standard for exchanging EHRs (Saripalle et al., 2019). Houta et al. (2019) provide an example use of HL7 FHIR standard for epilepsy data.

\*Roehrs and colleagues suggest a distributed architecture to integrate EHRs (Roehrs et al., 2019, 2017), which also makes use of blockchain approaches (Roehrs, 2019)

## Lessons from open science

# Discussion

## COVID-19 pandemic

\*Driver to remote functionality including:

* Remote monitoring
* Remote testing
* Remote imaging
* Robotic care
* Personal preventive medicine

# Conclusion