

# Scotland's Healthy Ageing Innovation Cluster

Wednesday 28 April, 1300-1500



Digital Health & Care  
Innovation Centre



Highlands and Islands Enterprise  
Iomairt na Gàidhealtachd 's nan Eilean



Scottish Enterprise



# ON AIR

## Attendee reminder

- We are recording this event and will host it on our HAIC webpage resources so it can be watched on demand at a later date
- If you do not wish to appear on the recording, you should keep your camera and microphone turned off for the duration of the event

# Today's event

Joanne Boyle,

Head of Engagement

Digital Health and Care Innovation Centre(DHI)

# Agenda

- 1300 - Welcome and Introductions
- 1305 - Survey feedback | updates
- 1320 - Update from Dr Andrea McColl, Highlands & Islands Enterprise
- 1335 - Funding opportunities update
- 1400 - Healthy ageing activities and focus from The Alliance Scotland
- 1420 - Current academic research in Scotland on healthy ageing
- 1500 - Close

# Introduction to HAIC video



Digital Health & Care  
Innovation Centre

Transforming great ideas into real solutions

# Survey feedback | Updates

Joanne Boyle, DHI

# Miro Board

- View our HAIC [Miro board](https://miro.com/app/board/o9J_kucWI1M=/)  
([https://miro.com/app/board/o9J\\_kucWI1M=/](https://miro.com/app/board/o9J_kucWI1M=/))
- Part 1
  - Survey Feedback
  - You asked... We did...
- Part 2
  - Agenda items for next meeting
  - HAIC content for website, newsletter and LinkedIn Group

# Update from Highlands & Islands Enterprise

Dr Andrea McColl, Highlands & Islands Enterprise





Highlands and Islands Enterprise  
Iomairt na Gàidhealtachd 's nan Eilean

# Highlands and Islands – update on activities

28 April 2021

Dr Andrea McColl  
Senior Development Manager Life Sciences  
Highlands and Islands Enterprise

## Business To Healthcare – B2Hc

Connecting your business to the NHS and wider health and care sector.

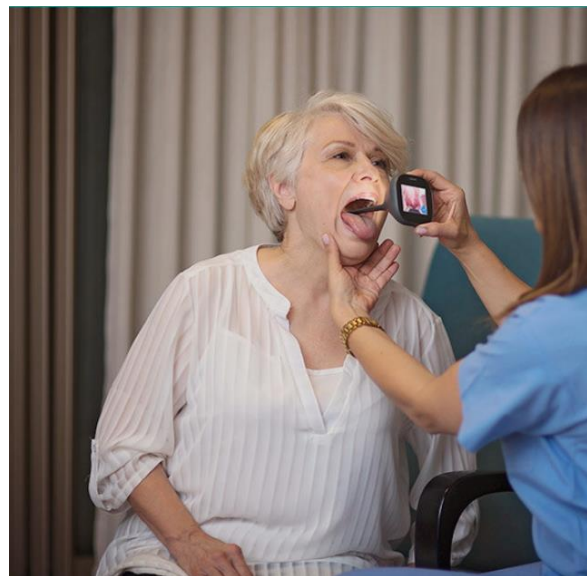
<https://www.hie.co.uk/businessstohealthcare>





 **CorporateHealth**  
Scaling Healthcare Services

TEKIHEALTH   
SOLUTIONS





# Scottish Rural Health Partnership

*'promoting excellence in remote & rural healthcare'*

knowledge exchange – collaboration and innovation – policy

Become a free member:

- Exclusive newsletter with information on innovation and collaboration
- Information on events related to Remote and Rural Health Care
- Be part of a global rural health community and share your voice

Leigh Mair, Development Manager [leigh.mair@uhi.ac.uk](mailto:leigh.mair@uhi.ac.uk)

<https://www.uhi.ac.uk/en/research-enterprise/res-themes/institute-of-health-research-and-innovation/srhp/membership>



# Biennial Conference

**RETHINKING REMOTE**  
Innovative Solutions in Remote Health Care Conference  
Eden Court, Inverness  
23rd – 24th May 2016

In May 2016 Rethinking Remote will highlight innovative solutions in remote healthcare by considering:

- How have diverse remote communities solved healthcare challenges?
- What role might technology play in providing solutions to health locations or communities?
- In what innovative ways can healthcare workers or first responders provide better care in remote locations?
- Can innovation in education and training make a difference to...

**RETHINKING REMOTE 2018**  
Innovative Solutions in Remote and Rural Communities Healthcare Conference  
#isrrh2018

**EDEN COURT, INVERNESS**  
24TH 25TH MAY 2018

**RETHINKING REMOTE 2022**  
**28 – 29 APRIL**  
**Aviemore**

# Rural Health and Wellbeing



Contact:

[Andrea.mccoll@hient.co.uk](mailto:Andrea.mccoll@hient.co.uk)

01463 383016

@hilifesciences

@HIEScotland

@scotruralhealth

@RHW\_UHI



# Funding opportunities update

Joanne Boyle, DHI



# Funding Opportunities

- All our current funding opportunities are available on the HAIC webpage:

<https://www.dhi-scotland.com/innovation/innovation-clusters/healthy-ageing/>

# The Alliance Scotland



**ALLIANCE**  
HEALTH AND SOCIAL CARE  
ALLIANCE SCOTLAND  
people at the centre



**Mandy Andrew**  
Associate Director  
the ALLIANCE

# Objectives

Today's session will seek to:

- Highlight the role of lived experience within work and discussions around Healthy Aging
- Understand key challenge areas to consider as we remobilise following the pandemic
- Demonstrate The ALLIANCE's engagement approaches to ensuring people remain at the centre



# Who we are

The ALLIANCE has three core aims:

- Ensure **people are at the centre**, that their voices, expertise and rights drive policy and sit at the heart of design, delivery and improvement of support and services.
- Support **transformational change**, towards approaches that work with individual and community assets, helping people to stay well, supporting human rights, self management, co-production and independent living.
- **Champion and support the third sector** as a vital strategic and delivery partner and foster better cross-sector understanding and partnership.



# Our Voice

## Whole System Approach to Listening





# Path to Active Ageing

## West Lothian Care Activity Network Olympics

In May 2011, the West Lothian Care Activity Network (CAN) in partnership with the Ageing Well Project, West Lothian Community Health and Care Partnership and Xcite West Lothian, held a pilot inter-care Olympic style event followed by a tea dance. Ten care settings were represented on the day, each with a team of six participants, and the event was attended by almost 200 people.



## Inverclyde Globetrotters

The Inverclyde Globetrotters are a gym-based exercise group who help participants tackle long virtual walks in an enjoyable environment to promote health and wellbeing. The group is particularly aimed at people with cardiovascular disease, other long term conditions and people who are relatively inactive. The members of the group, who are on average, 69 years young, all have fun by staying active by virtually walking around the world (and beyond) without leaving Greenock.



## Otago Strength and Balance Programme

Otago is a strength and balance exercise programme aimed at reducing falls in older people. While it is widely recognised that falls can be a significant threat to the health and independence of older people, there is robust evidence that exercise can reduce falls particularly among frail older people (Yarrow, Skelton et al, 2011).



**ALLIANCE**  
HEALTH AND SOCIAL CARE  
ALLIANCE SCOTLAND  
people at the centre



# Charter of Rights for People with Dementia and their Carers

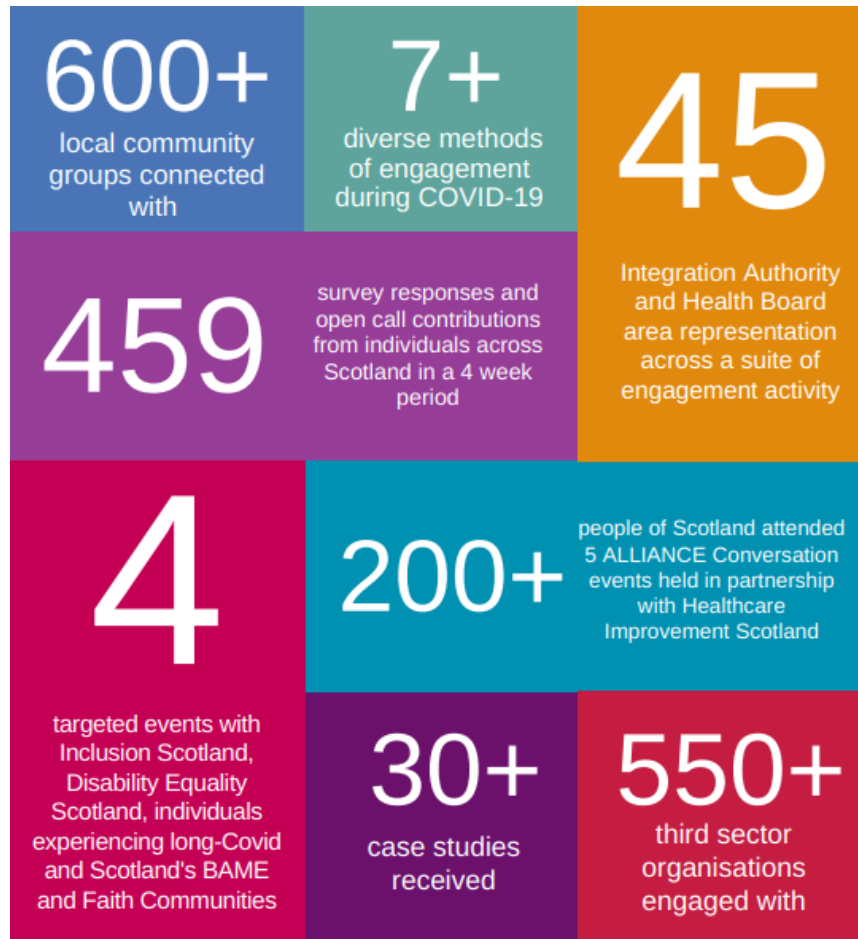


# People at the Centre

“People at the Centre” is a programme funded by Scottish Government that looked to capture people’s health and wellbeing experience of COVID-19, and how people want to access health and care support and services as we respond to, and look beyond COVID-19.



# People at the Centre



# Key emerging themes from the Mobilisation Recovery Group (MRG)

**Value of partnership working and pharmacy services**

**Impact of COVID-19 pandemic on mental health**

**A need for greater access to services which meet unique needs  
Not an equal partner in care**

"The collaborative approach was highly successful and ensured person-centred care continued to lead decision making. As a result of the positive impact of the Community Hub [...]it will become a permanent feature of our Glasgow Hospice services as new levels of normality start to emerge." – Marie Curie



**ALLIANCE**  
HEALTH AND SOCIAL CARE  
ALLIANCE SCOTLAND  
people at the centre

# Key emerging themes from the Mobilisation Recovery Group (MRG)

## Digital, but not as default

“A lot of mental health service users are missing the face to face aspect and there has been an increase in young people requiring services and presenting at the front door”

“There are some concerns around the digital divide and patient confidentiality.”



**ALLIANCE**  
HEALTH AND SOCIAL CARE  
ALLIANCE SCOTLAND  
people at the centre

# Carer Voices

- Highlighting the importance a 'What Matters to You Approach'
- Sharing the stories of carers and families across Scotland
- Training and development across health and social care



**1200+ Sessions**

**235,500+ People Reached**

**Carer Voices**



# Living Well in Later Life

The ALLIANCE proposes to deliver key actions for healthy ageing and wellbeing in later life:

- A cross party commitment to support the WHO Decade of Healthy Ageing
- Establish a Healthy Ageing Collaborative
- Build a social movement on healthy ageing and a positive narrative on the contribution of older citizens as community assets, and share internationally
- Invest by scaling up evidence informed, community and third sector support to build the five ways to wellbeing into later life: Connect; Be Active; Take Notice; Keep Learning; Give
- Facilitate knowledge exchange with the Centre for Ageing Better and international networks on Healthy Ageing;
- Promote the public health and prevention agenda throughout life



# Thank You

Mandy Andrew  
Associate Director

@mandynetwork

[www.alliance-scotland.org.uk](http://www.alliance-scotland.org.uk)

Email: [mandy.andrew@alliance-scotland.org.uk](mailto:mandy.andrew@alliance-scotland.org.uk)



**ALLIANCE**  
HEALTH AND SOCIAL CARE  
ALLIANCE SCOTLAND  
people at the centre





# Current academic research on healthy ageing



The Open  
University



# Supporting informal carers via an online dancing intervention:

---

## A feasibility/acceptability study

Dr. Rosaria M. Gracia, (WELS) Open University

# THE TEAM

---

- **Jitka Vseteckova** Senior Lecturer Health and Social Care HWSC / Carers Research Group & CABS Research Group & SHDL Research Group. Open University
- **Lee Smith** Reader in Physical Activity and Public Health. Anglia Ruskin University
- **Jo Horne** Staff Tutor in Psychology and Counselling, FASS. Open University
- **Nichola Kentzer** Lecturer in Sport, Exercise & Coaching, ECYS / Carers Research Group. Open University
- **Rosaria Gracia** Fellow of the Higher Education Academy, an Associate Lecturer in FASS, WELS and STEM, and Visiting Researcher (WELS). Open University. *Dance artist and Ethnochoreologist*
- **Martin Penson** Person with lived experience/ Carers Research Group
- **Mike Trott** Research Assistant, Vision and Eye Research Institute. Anglia Ruskin University
- **Louisa Donald** Associate Lecturer and Research Assistant, School of Psychology/Institute for Health Research. University of Bedfordshire
- **Yannis Pappas** Reader in Health Service Organisation and Delivery, Institute for Health Research. University of Bedfordshire





# STUDY BACKGROUND



Regular, sustained exercise has been shown to alleviate these negative health outcomes.

Informal carers often suffer from:

- Loneliness
- Social isolation
- Multiple physical health complications

However, informal carers have reported *several barriers* to being able to participate in such activities, including *being able to access activities*.



## ONLINE DANCE CLASS INTERVENTION:

Online exercise interventions, such as **dancing classes** can promote physical and mental wellbeing.

However, the feasibility and acceptability of an online dance class intervention for informal carers have **not been assessed yet**.



# THE PARTICIPANTS

## DANCE CLASS INTERVENTION PARTICIPANTS

- Recruited through the Brighton & Hove Carer Centre.
- Informal carer.
- Aged 18-65.
- NO existing health issues/injuries that could be worsened by exercise.

SAMPLE  
SIZE:  
6  
per group



## CONTROL PARTICIPANTS

- Recruited through the Cambridge Carer Centre.
- Informal carer.
- Aged 18-65.



The Open  
University

# PARTICIPANT RECRUITMENT

**1**

Carers will be contacted by the Brighton Carer Centre and asked to read an information sheet.

**2**

Participants will be sent a follow-up email asking whether they'd like to take part (15 days after initial contact).

**3**

Participants will be sent a link to the screening questionnaire (the Physical Activity Readiness Questionnaire (PAR Q)).

**4**

Participants who meet the PAR-Q eligibility criteria will be emailed a link taking them to the online questionnaire.

**5**

Participants will consent to take part in the study through the link, starting with the questionnaire.



# STUDY OUTLINE

## DANCE CLASS INTERVENTION PARTICIPANTS

1. Pre-screening questionnaire

The Physical Activity Readiness Questionnaire (PAR Q)

2. Questionnaire (time point 1)

- 1) Demographics information
- 2) The Positive and Negative Affect Schedule (PANAS)
- 3) The International Physical Activity Questionnaire (IPAQ)

3. Pre-intervention introductory interview



4. Six-week dance class intervention



5. Post-intervention semi-structured interview



6. Questionnaire (time point 2)

## CONTROL PARTICIPANTS

1. Questionnaire (time point 1)

2. Questionnaire (time point 2)

(Everything is taking place online)

# THE SIX-WEEK ONLINE DANCE CLASS INTERVENTION

## PART 1 (30 minutes):

- Carried out in a seated position.
- Starts with gentle movements exploring the separation of the upper part and lower part of the body, focus on breathing.
- The session evolves from spinal movements, lengthening the torso and thinking about the relationship between chest and pelvis.
- The final section is dedicated to the legs.



## PART 2 (30 minutes):

- Dedicated to 'follow the leader' dances, separated into seven songs.
- The first song is always danced in a seated position, to facilitate a good transition between the first and the second part of the class.
- The next five songs are used to explore different parts of the body suggested by the rhythm and dance style.
- The final song before the cool down is free style, so that participants can slow down or have a last moment of high energy.



## FEEDBACK AFTER SESSIONS:

- Gives participants the chance to share their thoughts on the session with the other participants and the dance instructor.
- There will also be a chat box, where participants can provide their feedback in typed-form.
- The dance instructor will be collecting field-notes throughout the duration of the intervention, noting participant engagement and activity levels.





# THE POST-INTERVENTION INTERVIEW

## TOPIC GUIDE:

- Mental health
- Physical health
- Feasibility
- Enjoyment
- Improvements



## Where to next...

### Acceptability/ Feasibility of this intervention

- Health and wellbeing
- Enjoyment
- Improvements
- Advisory Group working collaboratively with the research team



# Current academic research on healthy ageing



University of  
St Andrews



Smart homes for elderly to promote their health and well being

By: Pireh Pirzada | Dr David Harris-Birtill, Dr Gayle Doherty

# Smart homes for elderly to promote their health and well being for independent living



*Health Care*



*Secure*



*Monitored*



*Sensor Technology*



*Predicting Anomalies*



*Independent Life*



*Reduces cost &  
pressure on economy*



*Visualization*



*Personalized profile of  
Activities & SMART*

# Current practice: Pulse Oximetry

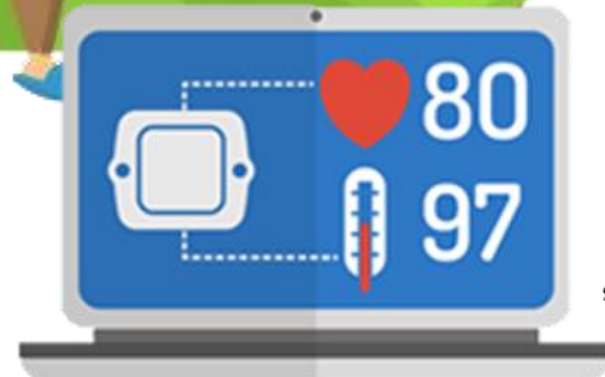
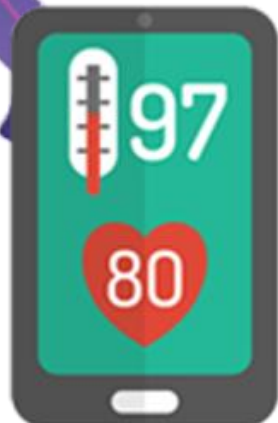
- Heart Rate (less than 40, or more than 130 beats per minute = bad)\*
- Blood Oxygenation level (less than 90% = bad)\*



\* Taenzer et al. "Impact of pulse oximetry surveillance on rescue events and intensive care unit transfers: a before-and-after concurrence study." *Anesthesiology*. 112 (2010): 282-7.

# Remote Pulse Oximetry

Using camera technology to save lives






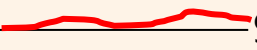








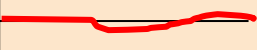




# Remote Pulse Oximetry

Using camera technology to save lives



Person	Heart rate	Oxygen Saturation
	 74	 98
	 65	 99
	 78	 98
	 140	 89
	 86	 97

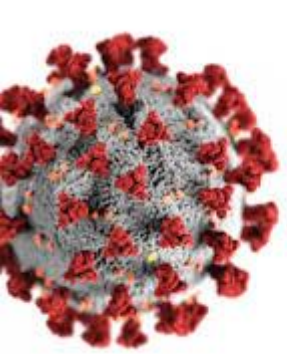




# Key Applications

- Health and wellbeing monitoring for isolated elderly
- Health and wellbeing monitoring for elderly with dementia
- Hospital at home
- Hospitals (A&E triage, ward beds, challenging patients)
- Care homes (step-up/down)
- Psychiatric hospitals





 XBOX ONE

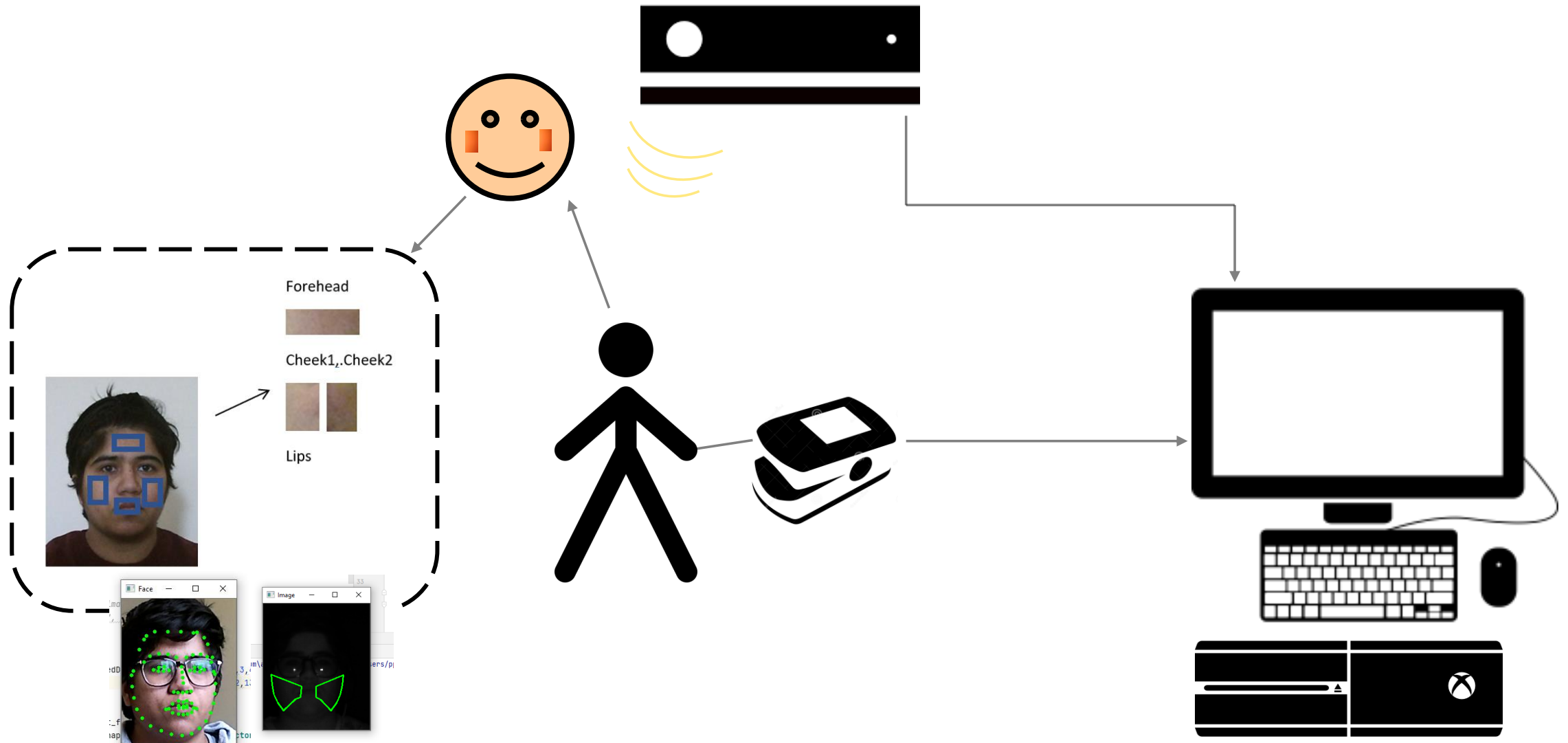


 Windows 10

During the COVID-19 pandemic, World Health Organization (WHO) stated that, elderly are at a higher risk due to this virus and more than **95% of deaths** were among people **aged over 60** and more than **50% of deaths** were among people **aged 80 or above\***.

\* World Health Organisation (2020). Ageing and health. Retrieved June 24, 2020, from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

# Extraction of colour and IR skin reflectance

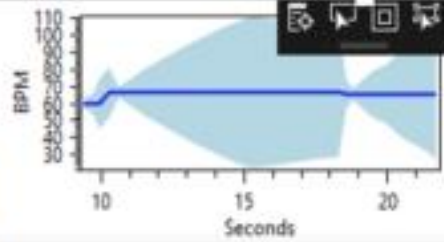




Heart Rate Acquiring

# 65.6

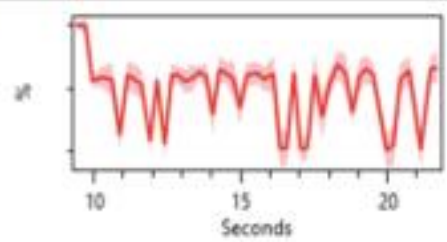
BPM



Oxygen Saturation Acquiring

# 96.6

%



Show History



Microsoft Store

Home Gaming Entertainment Productivity Deals University of St Andrews arpos

This product is installed.

## ARPOS

PirehPirzada • Medical

Share

Automated Remote Pulse Oximeter System Research Study  
Conducted by Pireh Pirzada  
University of St Andrews Research

PEGI 3

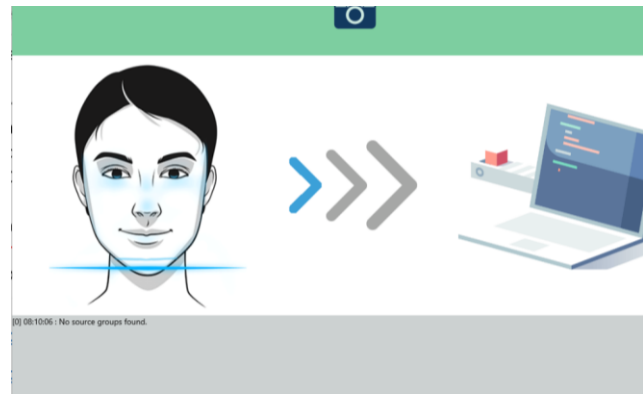
Overview System Requirements Reviews Related

Available on Xbox Series X|S Xbox One PC

### Description

Automated Remote Pulse Oximeter System Research Study  
Conducted by Pireh Pirzada  
University of St Andrews Research

### Screenshots



ARPOS 022 014

University of St Andrews

## ARPOS

AUTOMATED REMOTE PULSE OXIMETRY SYSTEM

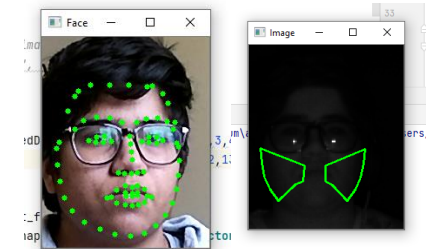
KINECT PREVIEW

Please make sure kinect is connected and you have allowed access to kinect in this application to see the preview.

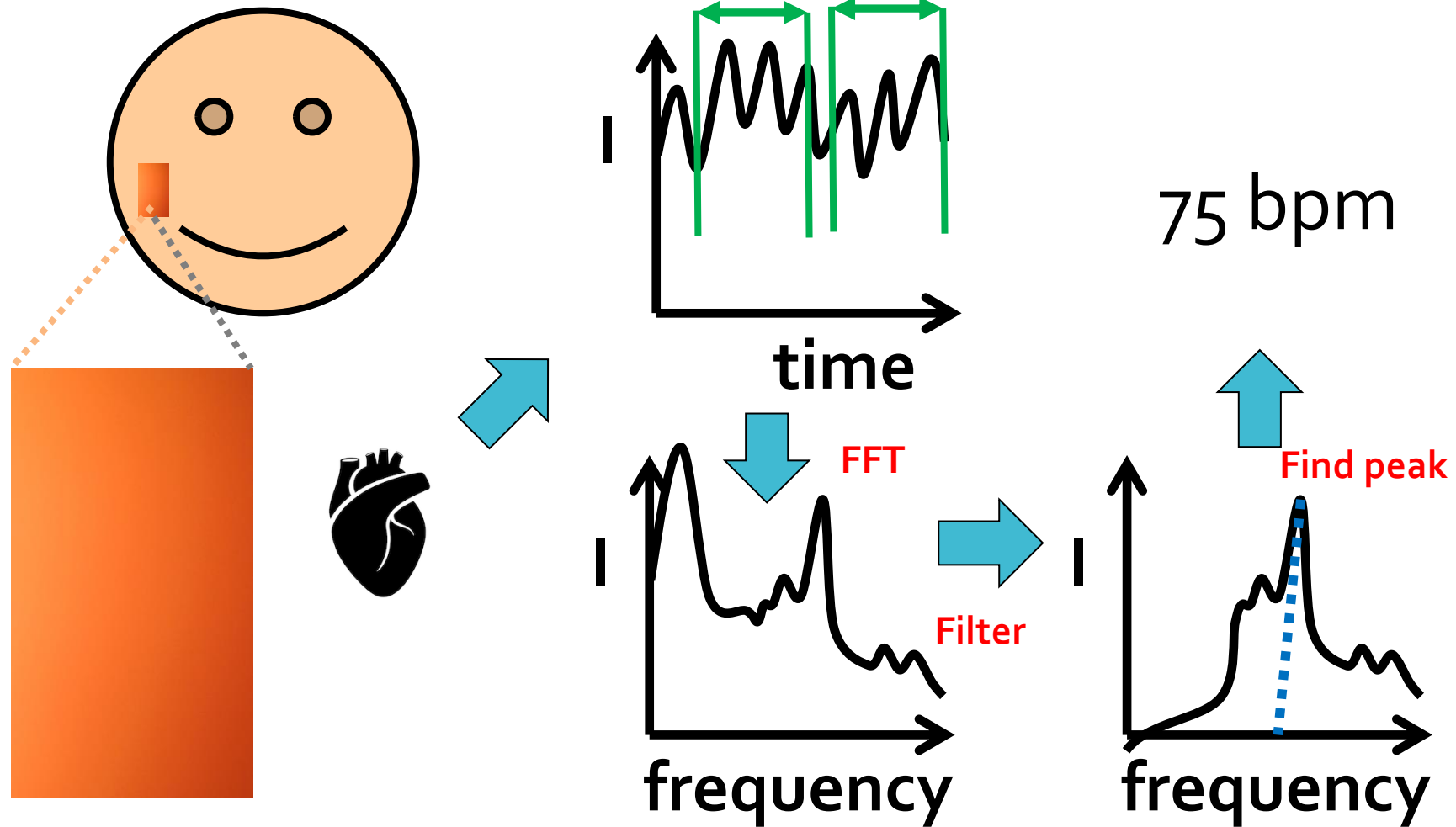
Please make sure you are facing the camera. Once Kinect image is showed on the application, click on "Test Face Detection" to make sure your face is being detected by the application. You can visit the website mentioned below or using QR code for tutorials if you are not sure. <https://ppt2.host.es.st-andrews.ac.uk/web/>  
Once your face has been detected by the application, Start study button will be displayed. Click "Start Study" when you are ready to begin the study.

Website QR Code

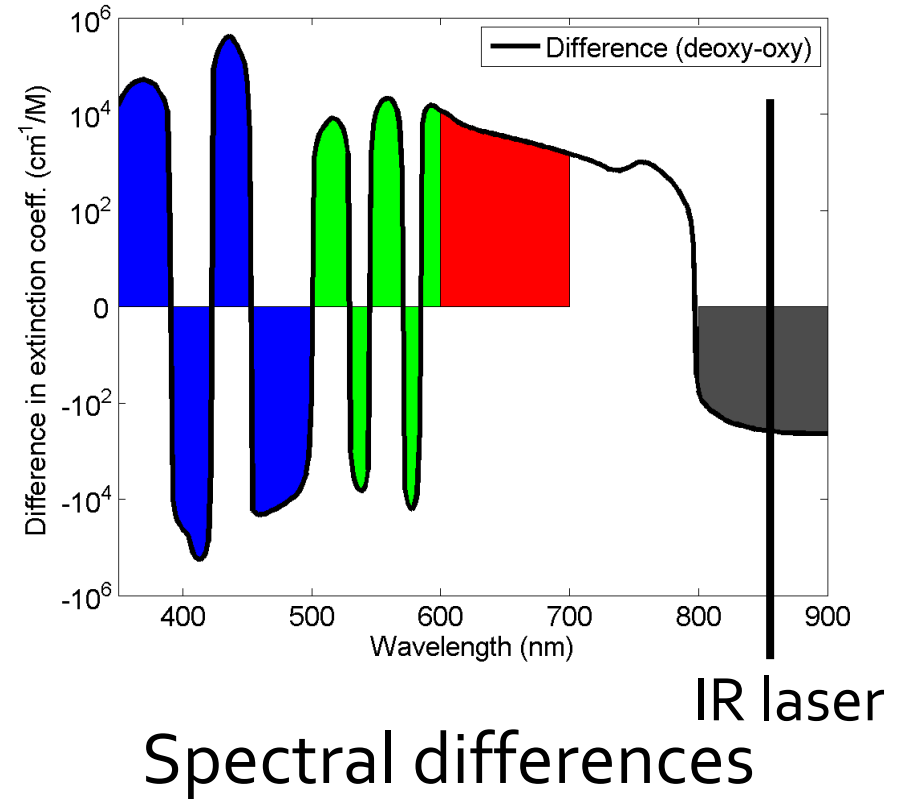
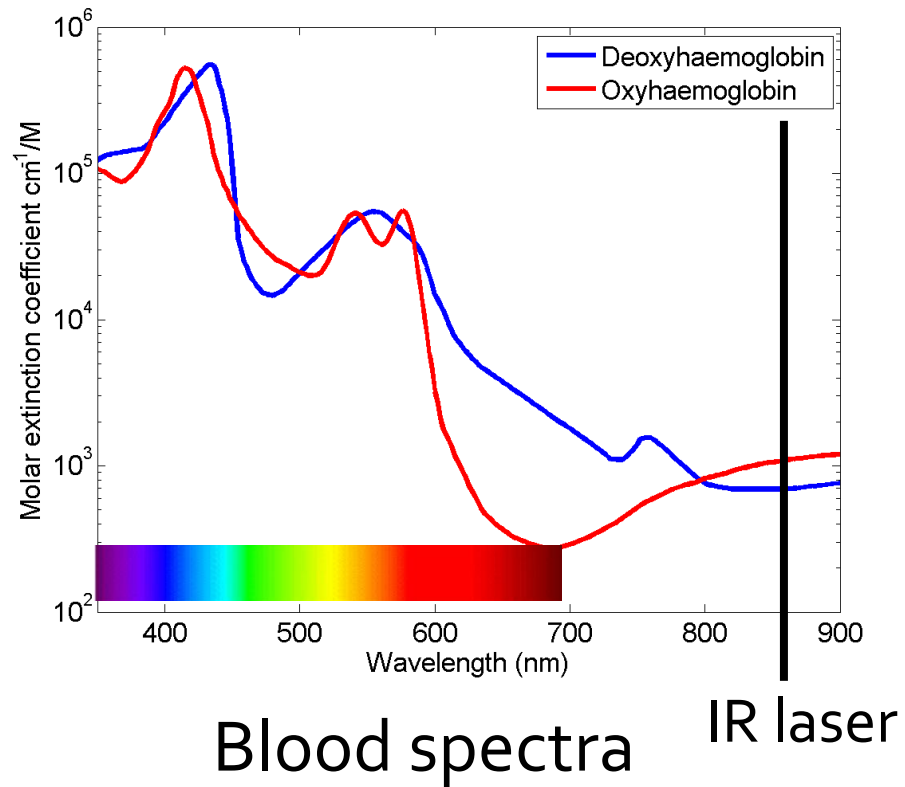
Start Study



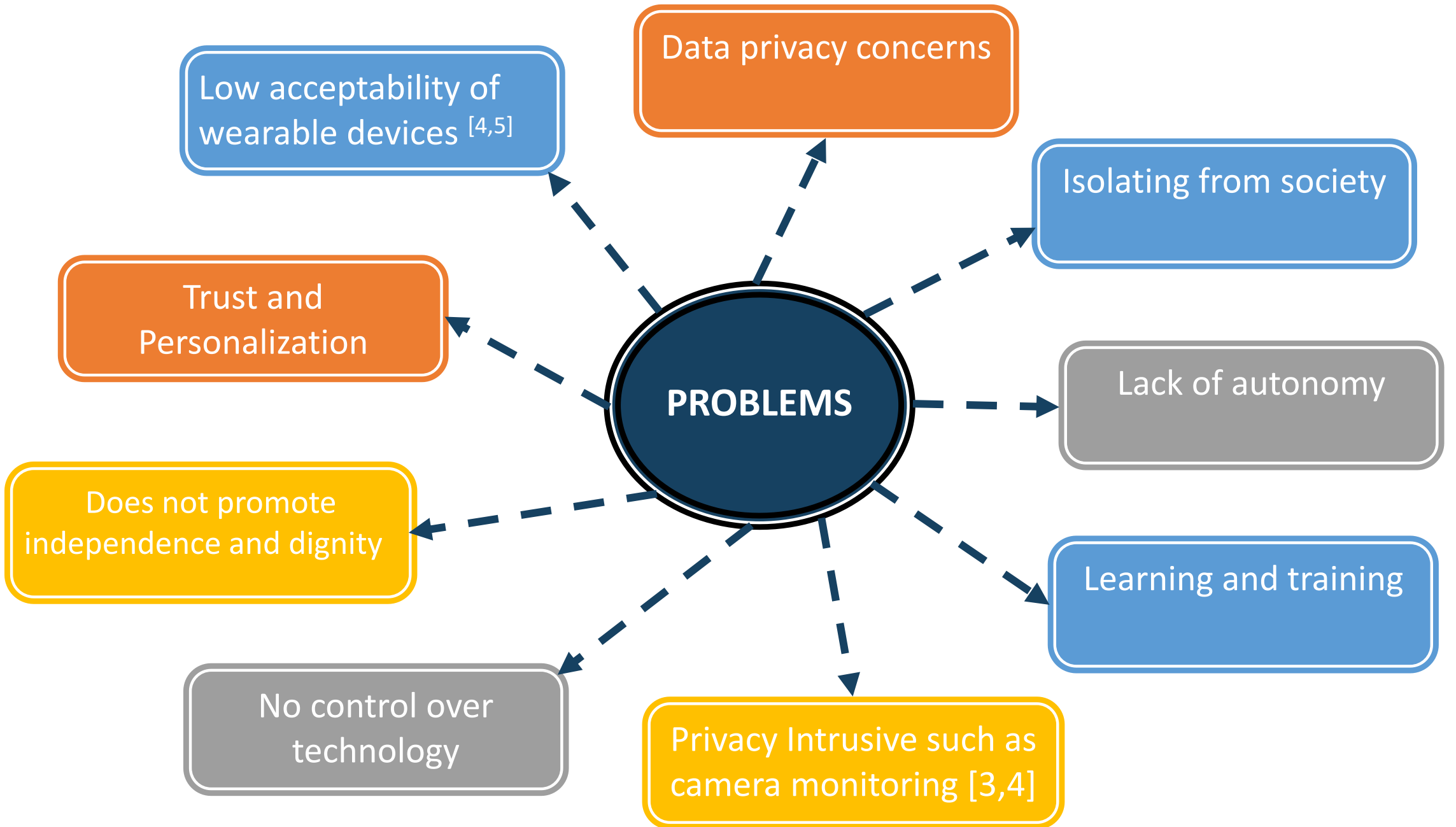
# Video analysis of heartbeat



# Blood oxygenation









**KINECT™**



# THANK YOU



# Q & A

**Pireh Pirzada**  
**St Andrews HCI Research Group**  
Researcher (PhD)  
School Of Computer Science  
Jack Cole  
The University of St Andrews

Mobile: +44 (0)7508 118593  
Email: [pp62@st-andrews.ac.uk](mailto:pp62@st-andrews.ac.uk)

**Dr David Harris-Birtill**  
School of Computer Science

**Dr Gayle Doherty**  
School of Neuroscience and Psychology



University of  
St Andrews

beyond medics

# Final comments

Joanne Boyle, DHI

# Final comments

- We will upload all of today's presentations and the video recording to the HAIC webpage, once it has been reviewed and edited
- Access the Miro board
  - [https://miro.com/app/board/o9J\\_kucWI1M=/](https://miro.com/app/board/o9J_kucWI1M=/)
  - Add potential agenda items/ topics
  - Suggest any topics you would like to blog about

# Final comments

- Save the date for our next HAIC meeting
  - **Wednesday 30 June 2021, 1000-1200**
  - **Confirmed speakers**
    - Prof Brendan McCormack, Queen Margaret University, Edinburgh
    - Layla Robinson, University of Edinburgh
    - Julia Glenn Design and Innovation Lead Health Ageing Industry Strategy Challenge Fund
  - **More information will be released as we finalise the programme**
  - **[Book your place now](#)**
  - **<https://www.eventbrite.co.uk/e/healthy-ageing-innovation-cluster-june-2021-event-tickets-150069031513>**

# Join our digital health and care network

- Scan the QR code →

Or

- Enter:

[www.dhi-scotland.com/join-our-network](http://www.dhi-scotland.com/join-our-network)





# Visit our HAIC webpage

- Scan the QR code →

Or

- Enter:

[www.dhi-scotland.com/innovation/innovation-clusters/healthy-ageing/](http://www.dhi-scotland.com/innovation/innovation-clusters/healthy-ageing/)



# Join our private LinkedIn HAIC Group

- Scan the QR code →

Or

- Enter:

[www.linkedin.com/groups/12496744/](https://www.linkedin.com/groups/12496744/)

