



The Open
University

Welcome to the Digital Health and Wellbeing Symposium

in association with
Health and Wellbeing Priority Research Area



Welcome Address:

Professor Regine Hampel,
Associate Dean Research

Faculty of Wellbeing, Education and
Language Studies





Tertius iungens: Connecting the disconnected and other notions that help build ecosystems to support health & agetech innovation

Dr. Josephine McMurray
Lazaridis School of Business & Economics
Wilfrid Laurier University
Canada

Digital Health and Wellbeing Symposium
March 23, 2017



Aging Gracefully across Environments using Technology
to Support Wellness, Engagement, and Long Life



drive

Developing Regional Health Innovation Ecosystems

INTRODUCTIONS

Acknowledgements

Team Leads: Josephine McMurray, Heidi Svestrup



Postdoctoral Fellows: Katherina Kuschel, Heath McNeil





Canada's Technology Triangle



Diverse. Innovative. Entrepreneurial.
Creative. Enterprising.

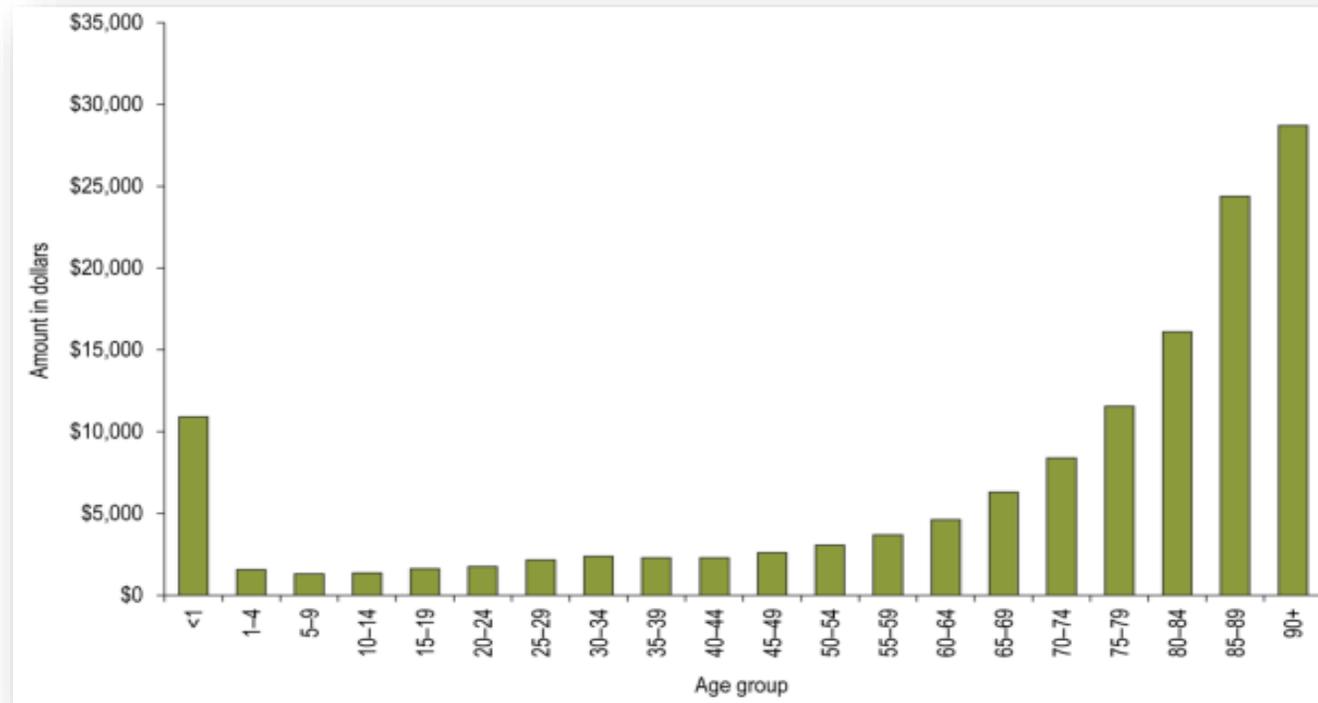




Vision & Context

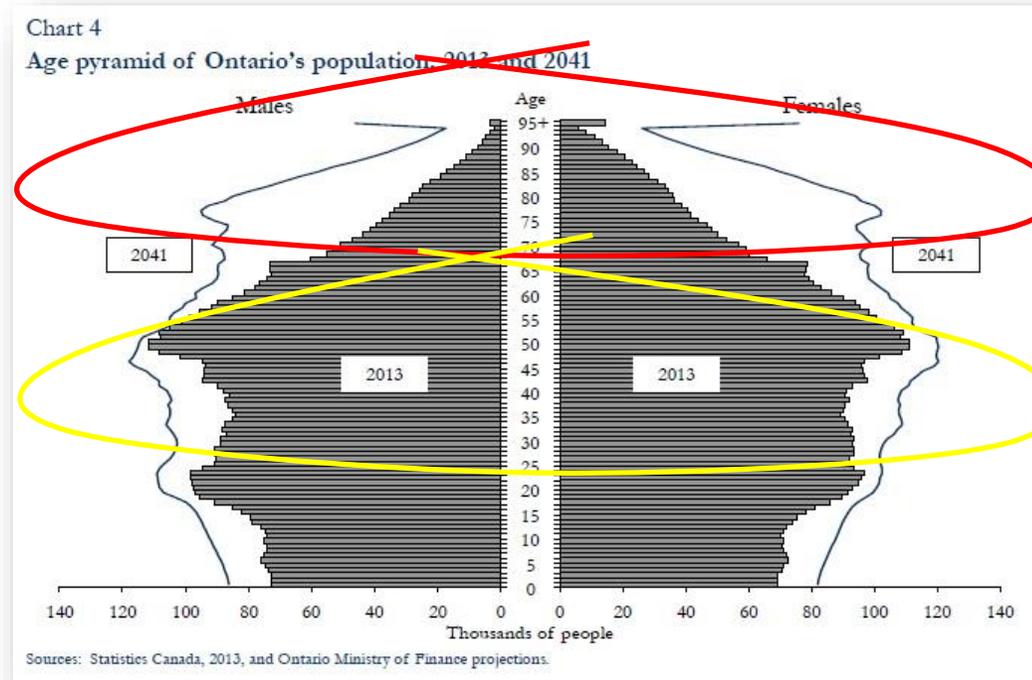


Provincial/territorial government health expenditures per capita by age group, 2013



Source: National Health Expenditure Database, CIHI, 2015

The number of seniors will double, the number of taxpayers and carers won't





AGE-WELL: Aging Gracefully across Environments using Technology to Support Wellness, Engagement, and Long Life

The vision of AGE-WELL is to harness the potential of technology to provide high-quality and sustainable services and solutions to meet the needs of the current and future generations of older adults in Canada.

Technology as a Solution

“ Technology is providing new opportunities to deliver care more efficiently, while enabling increasing numbers of Ontarians to remain more independently at home. ”

“ Advances in technology have and will continue to serve as enablers in meeting the evolving needs of an aging population. ”

Living Longer, Living Well (2012)
Ontario Seniors Strategy

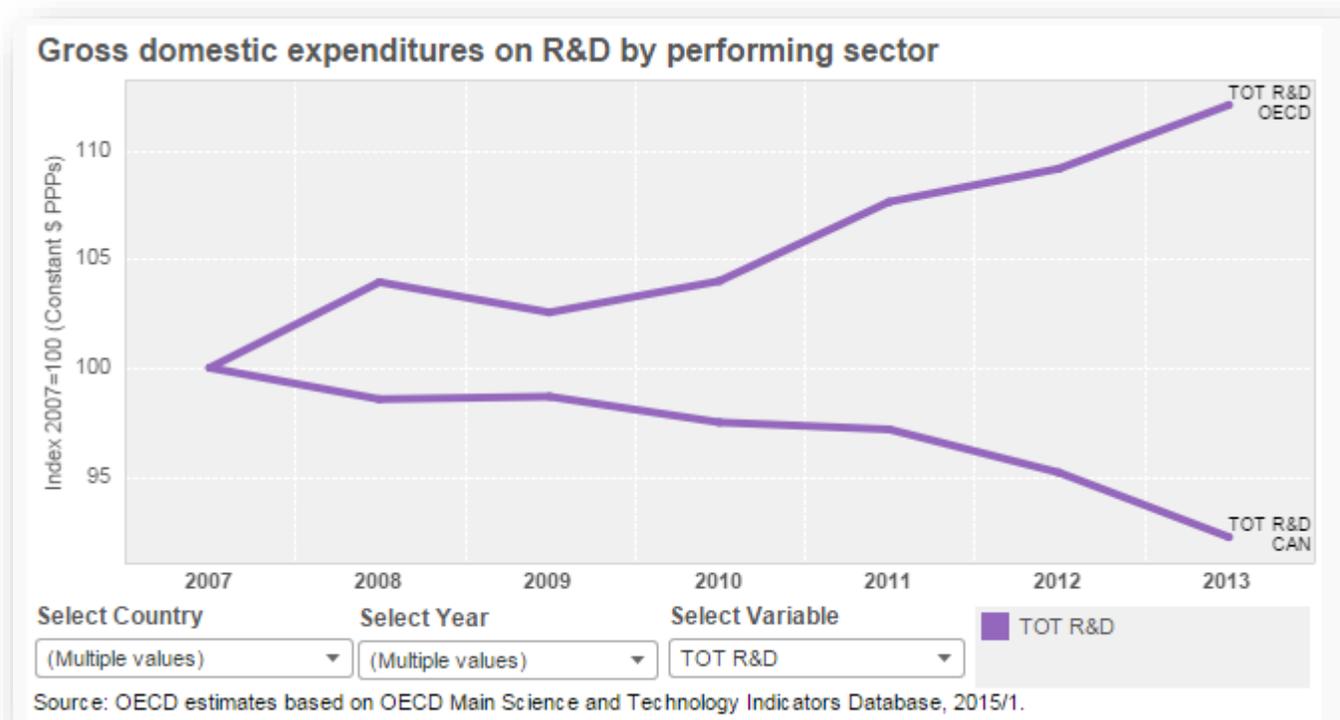
AGEWELL research themes

8 Research themes

1. Understanding the needs of older adults
2. Understanding the needs of caregivers
3. Technology for supporting functional autonomy & independency
4. Technology for active participation in society
5. Technology for reduction and prevention of disease and disability
6. Technology for maintaining good mental and cognitive health
7. Health systems, practice, policy & regulatory
8. Ethical, cultural and social aspects of technology



The “decade of darkness”



What it will take to increase R&D investment from 1.55% of GDP to the OECD average of 2.4% over 5 yrs

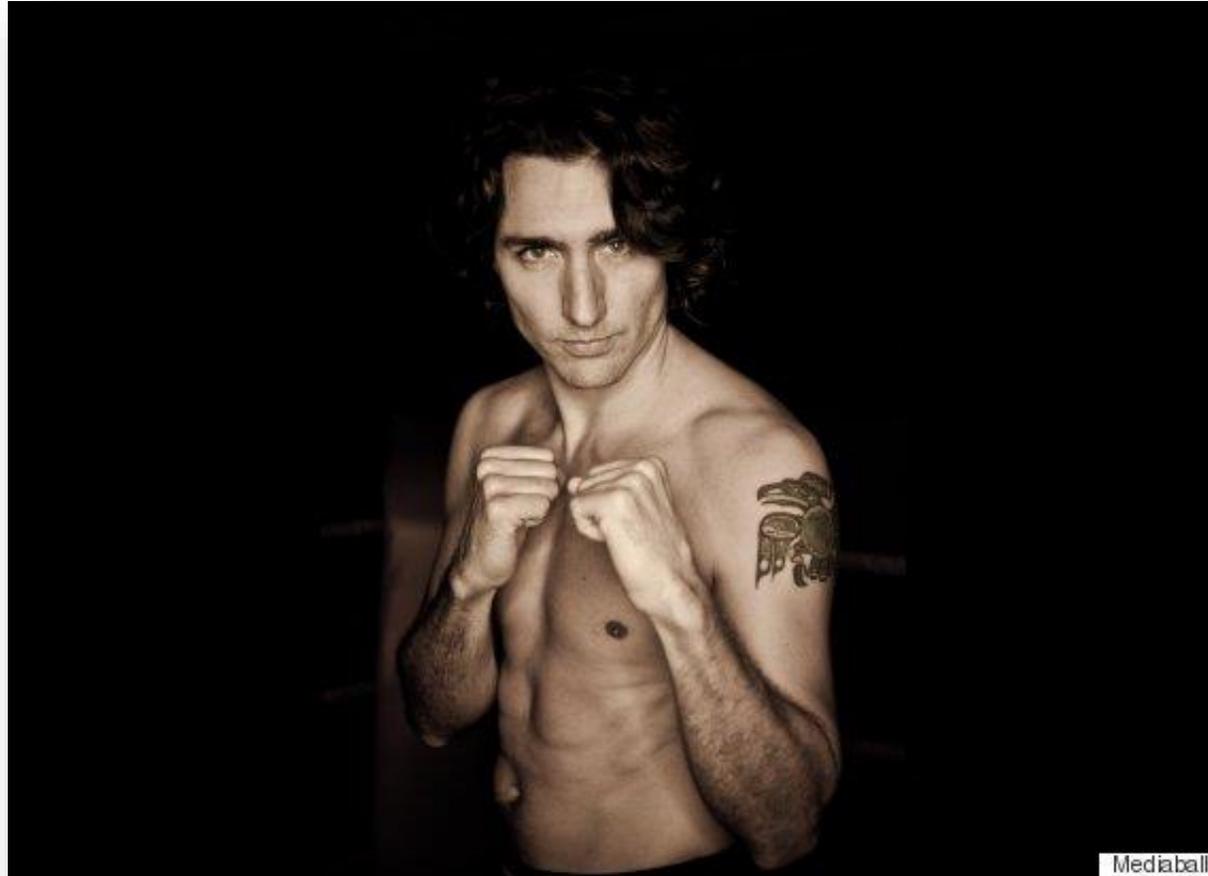
(\$BB)	2014	2015	2016	2017	2018	2019
Canada's GDP	\$1,976	\$2,008	\$2,166	\$2,204	\$2,299	\$2,396
R&D/GDP Ratio	1.55%	1.75%	1.95%	2.15%	2.30%	2.40%
R&D Expend	\$30.68	\$35.4	\$41.07	\$47.39	\$52.9	\$57.5
Base	\$30.68	\$30.68	\$30.68	\$30.68	\$30.68	\$30.68
Incremental Investment	\$0	\$4.54	\$10.47	\$16.79	\$22.3	\$26.9

\$81.8 BB to become average

Incremental R&D required by sector

	Current Share of Total Canadian R&D	Incremental R&D Expenditures
Higher Education	40%	\$32.4B
Private Sector	50%	\$40.5B
Government & NFPs	10%	\$8.1B
Total	100%	\$81B

To find 40.5B in new R&D need to increase export sales by \$1.157B (current exports total \$540B)



Mandate letter to Minister of Innovation, Science, and Economic Development



Dear Mr. Bains:

I am honoured that you have agreed to serve Canadians as Minister of Innovation,
Science and Economic Development

As Minister of Innovation, Science and Economic Development, your overarching goal will be to help Canadian businesses grow, innovate and export so that they can create good quality jobs and wealth for Canadians. You will achieve this goal by working with provinces, territories, municipalities, the post-secondary education system, employers and labour to improve the quality and impact of our programs that support innovation, scientific research and entrepreneurship. You will collaborate with provinces, territories and municipalities to align, where possible, your efforts. I expect you to partner closely with businesses and sectors to support their efforts to increase productivity and innovation. You will work closely with the Minister of International Trade to help Canadian firms compete successfully in export markets.

Mandate letter to Minister of Innovation, Science, and Economic Development

- Develop an Innovation Agenda that includes:
 - expanding effective support for incubators, accelerators, the emerging national network for business innovation and cluster support, and the Industrial Research Assistance Program. These investments will target key growth sectors where Canada has the ability to attract investment or grow export-oriented companies. You will assist the Minister of Finance to ensure tax measures are efficient and encourage innovation, trade and the growth of Canadian businesses; and
 - working with Regional Development Agencies to make strategic investments that build on competitive regional advantages. For those communities that have relied heavily on one sector in the past for economic opportunities, investments that support transition and diversification may be appropriate. Communities that have relied on traditional manufacturing are likely to require specific strategies to support economic growth.



DRIVE



Regional innovation eco/systems research questions

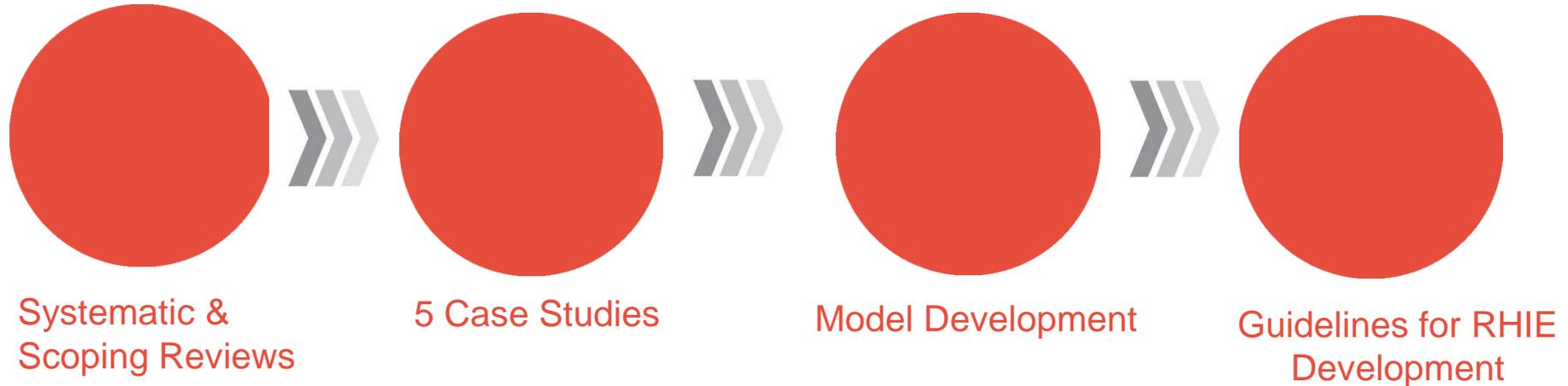
- Is there a common lexicon? Is terminology used to refer to other similar entities and how do they differ from RIEs i.e. network?
- Define a classification schema for RIEs that describes key features and characteristics of each type
- Identify factors positively influencing the successful development of RIEs & the context
- What are the barriers to developing an RIE?

Supplementary Work Grants:

- How are older adults engaged with regional innovation systems
- What is the role of RIEs in support of women techpreneurs
- The role of trust in the adoption and use of intelligent assistive technology that supports older adults ‘ageing in place’

Methods

Translating AGE-WELL research into practice, policy and commercial applications requires strong partnerships and linkages among researchers, policy-makers, practitioners, and industry



We struggle to produce 'Made in Canada' Solutions

- Systemic barriers to knowledge from research being translated into commercially viable products and processes
- Intellectual property generated in Canada being developed and implemented elsewhere (Hall & Bagchi-Sen, 2002)

Regional development as innovation driver

- Regional innovation ecosystems (RIEs) can provide more agile reactions to shifting technology and market conditions (Wolfe, 2009)
- Innovation ecosystems can successfully drive innovation in local areas (Carlsson 2006; Capello 2013; Leydesdorff and Strand 2013; Yusuf 2009; iINNOVAHEALTH 2012; Pyka and Janiszewski 2014)

No one-size-fits-all

- Universities play a key role: “due to the person-embodied nature of knowledge transfer, universities are considered an essential element in regional innovation systems and their presence is critical for stimulating the formation of clusters, especially in knowledge-intensive industries” (Bramwell, Hepburn, and Wolfe 2012, p98).
- There is no “one size fits all” approach as innovation processes are strongly shaped by their specific knowledge base and regional context (Asheim & Coenen, 2005)

RHIE Foundations for Success

- Host of factors, such as trade, per capita incomes, population, culture, economic freedom, property rights, income equality, & tax law
- Some factors are crucial to success (DEEP, 2015)
 - Infrastructure – movement of talent, \$\$, ideas
 - Scale up capacity as important as start up
 - Measurement – data loop = power to improve!
 - R&D pipeline – BERD and GovERD
 - Management talent as crucial as disruptive ideas

Is Health Different?

- Examples of unique factors related to health that may impact innovation ecosystems' success:
 - Silos, and professional tribes (Long, 2013)
 - Conservative economic and risk profiles
 - Open science (for the good of all) vs commercialization (maximum value) (Caulfield, Harmon and Joly, 2011)
 - Lack of innovation support beyond biotech
 - Regulatory
 - Government leadership focussed on diminution not growth



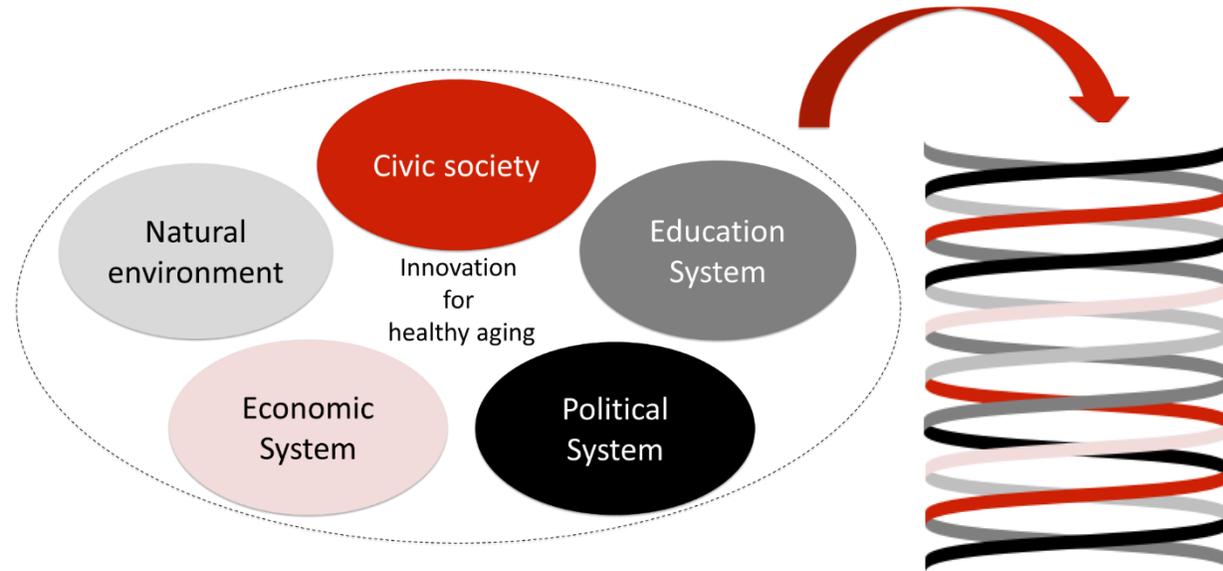
It's all about people

- “Smart money doesn’t understand the vertical”
 - Clear business models
 - Key ecosystem actors – tertius iungens? (Obstfeld, 2009)
 - Pathways for experts

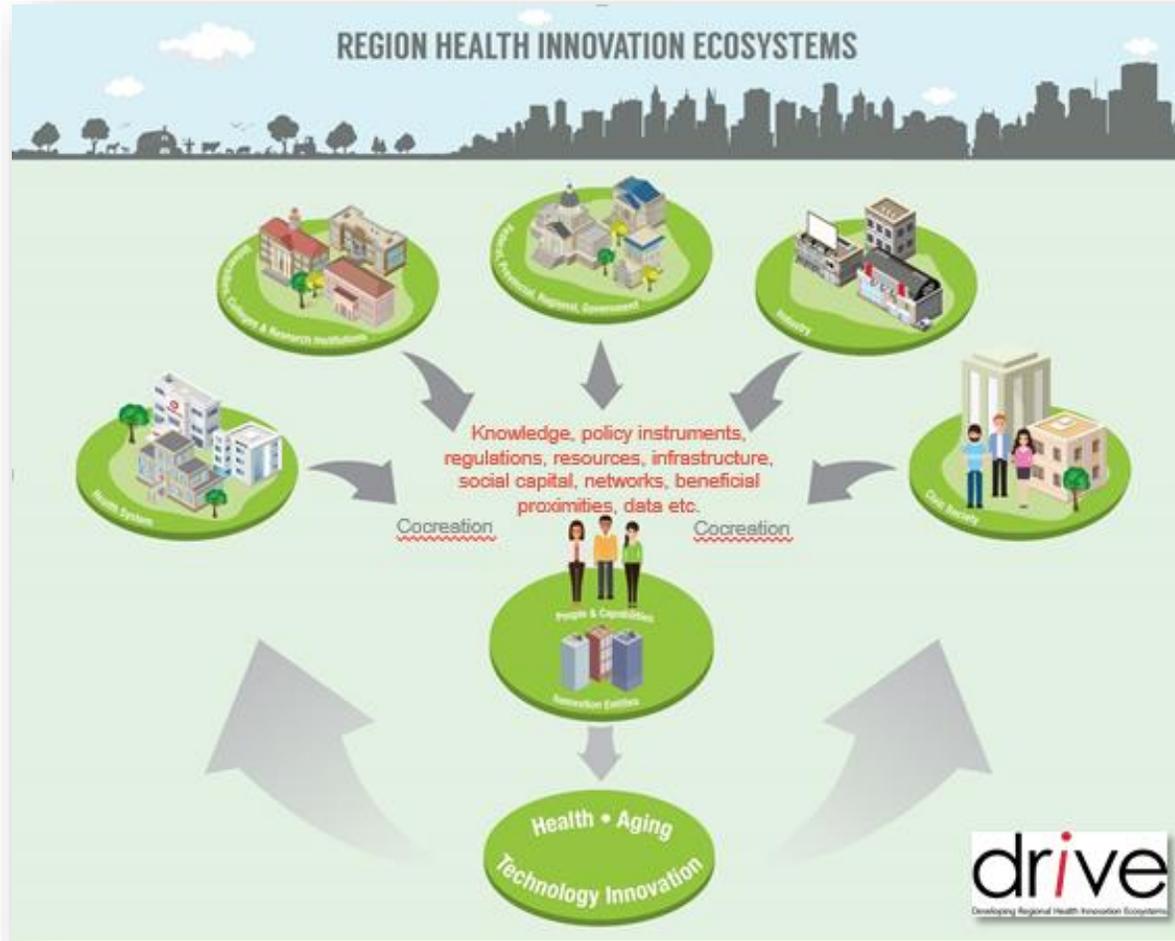
Theoretical Drivers

- Linear models of “demand pull” or “technology push” superceded by evolutionary models of network development (Nelson & Winter, 1982)
- Triple Helix of academy-industry-government key to national innovation strategy in late 20th century (Etzkowitz, 1997)

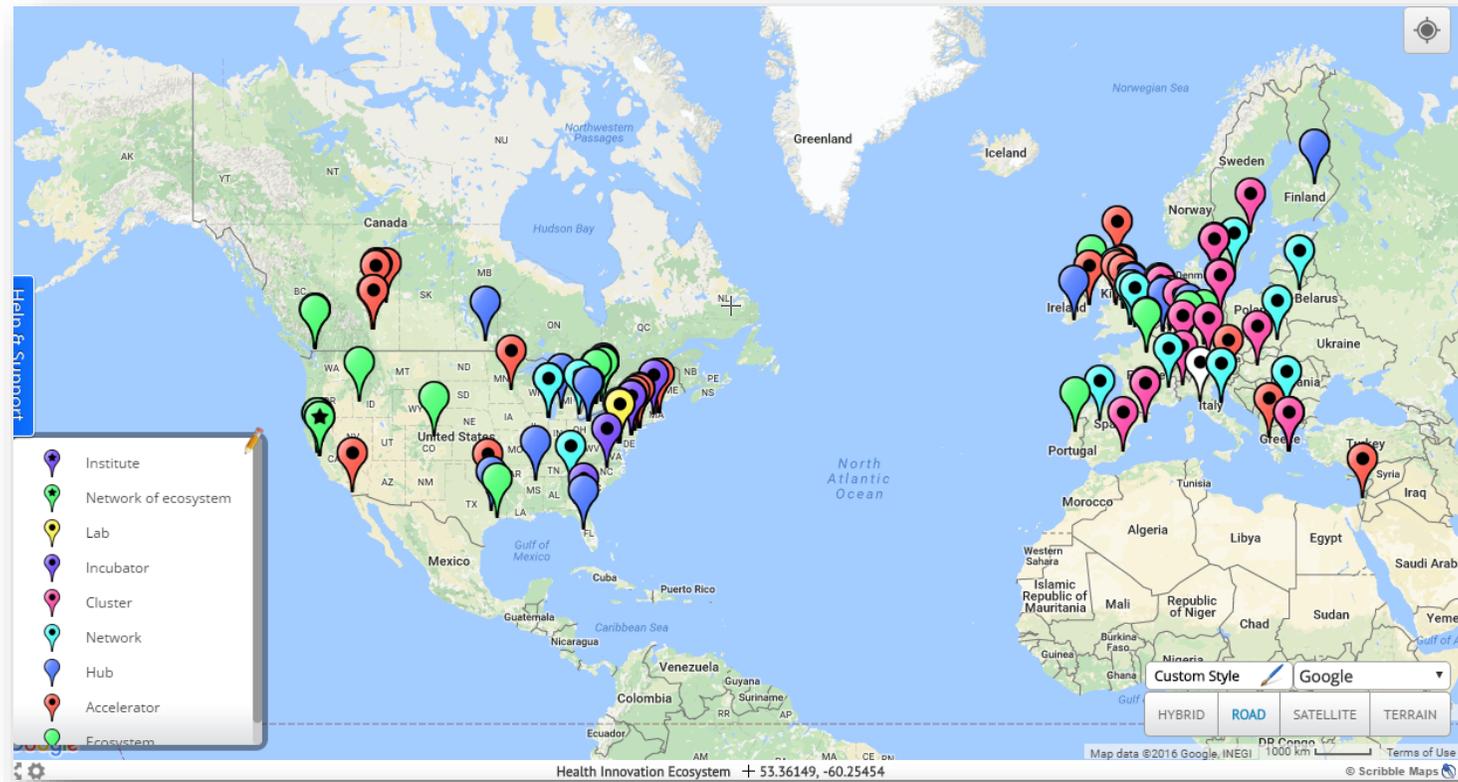
The Quintuple Helix & RHIE's



(Adapted from :Carayannis, Barth & Campbell, 2014; Leydesdorff, 2012)



Mapping the global innovation ecosystem

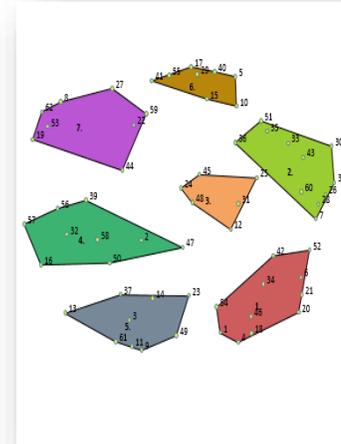


Next Steps

- International case studies of mature RHIEs



- Unlocking the role of elders & caregivers in RHIEs (ECOTECH)



- Model Testing → international survey → replicable foundational model
- Developmental Evaluation → embedded in two emerging agetech-focussed Innovation Hubs → early stage development guidelines

THANK YOU

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drive

Developing Regional Health Innovation Ecosystems

AGEWELL

Aging Gracefully across Environments using Technology
to Support Wellness, Engagement, and Long Life

Questions?



Digital Health
and Wellbeing Symposium

Open University
Milton Keynes
14th March 2017

Developments in Telehealth: How Consumers will Change the Way that Services are Provided

Telehealth
Quality
Group



dmu.ac.uk
**DE MONTFORT
UNIVERSITY**
LEICESTER

Dr Malcolm J Fisk
malcolm.fisk@dmu.ac.uk



The **Telehealth Quality Group (TQG)** promotes quality standards for telehealth services. It is a EEIG was formed after the TeleSCoPE project (funded by the European Commission) ended. It developed and manages the International Code of Practice for Telehealth Services. Many domains are embraced (including telecare). The TQG recently completed consultancy work on telecare for Pobal (Irish Government agency); and is a partner in the PROGRESSIVE project (below). MF is a TQG Director. See www.telehealth.global

ANEC is the European Consumer Voice on Standardisation. MF represents their interests on CEN (the European standards body) Committees – notably TC449 ‘Quality of Care and Support for Older People’; the ‘Health Services Focus Group’ and TC431 ‘Service Chain for Social Care Alarms’. See www.anec.eu

PROGRESSIVE is the new €0.96m European Commission funded project focused on ‘Standards around ICT for Active and Healthy Ageing’. Foci include age-friendly design, smart homes, interoperability and telehealth; also co-production approaches to standardisation involving older people. An interactive platform will enable searches on standards. MF leads this project for De Montfort University. TQG are partners. See www.progressivestandards.eu

Consumer No 1





Consumer No 1

Consumer
Active and involved
Financially secure
Health literate
Decision-maker
... but not enabled to self-
manage her health?
Survivor
Digitally literate?

Consumer No 2



Consumer No 2

Future consumer
Active and involved
Learning about his health
Future decision-maker
Definitely going to be digitally
literate
Definitely needs to be
enabled self-manage his
health



Perspective on Patients

- **Patients = people = consumers ...**
 - **Technological world**
 - **Increasing digital literacy**
- **Widening access to services and information**
 - smart telephony devices
 - laptops and tablets
 - interactive TV
 - **Changing aspirations**
 - **Changing expectations**
- **Challenging old service frameworks**

Perspective on Patients People

- *People = consumers*
- *Technological world*
- *Increasing digital literacy*
- *Widening access to services and information*
 - *smart telephony devices*
 - *laptops and tablets*
 - *interactive TV*
 - *Changing aspirations*
 - *Changing expectations*
- *Challenging old service frameworks*

Perspective on Demographics

- Ageing population
- Increased numbers of older people with support needs
- Increased numbers of older people without support needs ...
 - living longer healthier lives
 - but often out of the workplace
 - often unnecessarily dependent
- victims of ageist views and 'negative planning'
- Think of 'age-ratios' not 'dependency ratios'

European Retirement Crisis: Chart looks at senior dependency ratios

According to a chart posted by [Economic Policy Journal](#), the projected old-age dependency ratio (number of citizens over 65 as a percentage of citizens between 16 and 64) is becoming a major problem in many European countries. It's a problem, because much like the U.S., these states run a Ponzi scheme style of their respective retirement benefits. In other words, these countries rely on new workers to pay for retired workers' benefits. This is a disaster just waiting to happen.

Economic Collapse News January 11th 2016

If current working patterns continue, the 'old age dependency ratio' (that is, **the number of people over the state pension age for every 1,000 people of working age**) is likely to increase: In 1971 the ratio was 280 per 1,000; in 2009 this ratio increased to 314 per 1,000; by 2032 the ratio will become 349 per 1,000, *even with implementation of higher state pension ages*. Per King's Fund

Perspective on Demographics

- Ageing population
- Increased numbers of older people with support needs
- Increased numbers of older people without support needs ...
 - living longer healthier lives
 - but often out of the workplace
 - often unnecessarily dependent
- victims of ageist views and 'negative planning'
- Think of 'age-ratios' not 'dependency ratios'
- **Increased numbers of younger people with health needs**

Perspective on Clinically Driven Services

- **Saturated with ICT**
- **Driven by need for clinical outcomes (cure, management)**
 - medication and therapy regimes
 - assumption of 'patient' compliance
 - services delivered (a one-way process), not 'provided'
- **Focus on hospitals and secondary (even tertiary) health care**
- under-recognition of public and preventative health agenda
 - insufficient attention to behaviours and lifestyles

Perspective on Politics

- *Focused on doing good for/to (needy) people*
 - *Ageist views ('retired', dependency, lower worth, separation, segregation)*
- *Reluctant to move on pensions and retirement issue; worried about votes!*
- *Worried because of inter-generational rivalries*
- *Trapped by legislation framed in a different era*
- *Pressure from clinicians to maintain status quo*
 - *Pressure from profit-driven 'big pharma'*
- *Failure to adequately recognise all-age agenda*

Perspective on Ethics

- **Accessibility, configurability, usability?**
 - services and technologies
 - access to EHRs / PHRs
 - usage of personal, incl. health data (GDPR applies ... now including genetic and bio-metric data)
 - supporting self-management
 - **Interoperability**
 - services and technologies
 - **Matters of risk and liability**
 - ... more risk-sharing (links with choice)
 - **Reducing costs?** (links with choice)
- ... and now to telehealth

Telehealth is ...



Telehealth is

... the means by which technologies and related services that are concerned with health and wellbeing are accessed by people or provided for them at a distance irrespective of their location

*... a subset of eHealth
... embraces telemedicine
... cf. TSA*

Telehealth is ...



... the means by which technologies and related services that are concerned with health and wellbeing are accessed by people or provided for them at a distance irrespective of their location

Telehealth Quality Group (TQG)

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Telehealth Quality Group (TQG)



The voice of technology
enabled care

... the remote exchange of data between a patient at home and their clinician to assist diagnosis and monitoring typically used to support patients with Long Term Conditions. Among other things it comprises of fixed or mobile home units to measure and monitor temperatures, blood pressure and other vital signs ... for clinical review at a remote location using phone lines or wireless technology

Telecare Services Association (TSA)

Telehealth is ...



... the means by which technologies and related services that are concerned with health and wellbeing are accessed by people or provided for them at a distance irrespective of their location

People (Consumer)
Oriented - Concerned with
Health and Wellbeing

Telehealth Quality Group (TQG)



The voice of technology
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Telehealth is ...



... the means by which technologies and related services that are concerned with health and wellbeing are accessed by people or provided for them at a distance irrespective of their location

People (Consumer) Oriented - Concerned with Health and Wellbeing - Bottom up

Telehealth Quality Group (TQG)



The voice of technology enabled care

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Technology Oriented - Concerned with Clinical Health - Top down

Telecare Services Association (TSA)

Telehealth Service Domains

Health and motivational coaching
Activity, behavioural and lifestyle monitoring
Gait, seizure and falls monitoring
Point of care testing, and support for diagnoses/decision making
Vital signs monitoring
mHealth
Prompting for medication or therapy adherence
Rehabilitation and (re)ablement
Responding to 'events'
Tele-consultation
... and (much) more
Take look at International Code for update
(www.telehealth.global)

Telehealth for Everyone, Everywhere, Anytime



at home



in school



at college



in work



on the move

So, Importantly, Telehealth is not just ...

- *about the ‘delivery’ or top-down management of care*
 - *concerned with clinical and acute conditions*
 - *about vital-signs monitoring*
- *about saving money and avoiding hospital admissions*
 - *about technologies and patients*

Telehealth is ...

- *about empowering people to help manage their own care*
- *about maintaining and changing lifestyles and behaviours*
 - *about better mental health as well as physical health*
- *about public and preventative health (as well as clinical health)*
 - *as relevant to a 26 year old managing her diabetes as it is to an 86 year old being helped with his dementia*

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Telehealth is about people as consumers doing things, accessing products and accessing services in new ways

... reminder of our consumers



... and the technologies

Different Ages, Different Contexts, Different Technologies

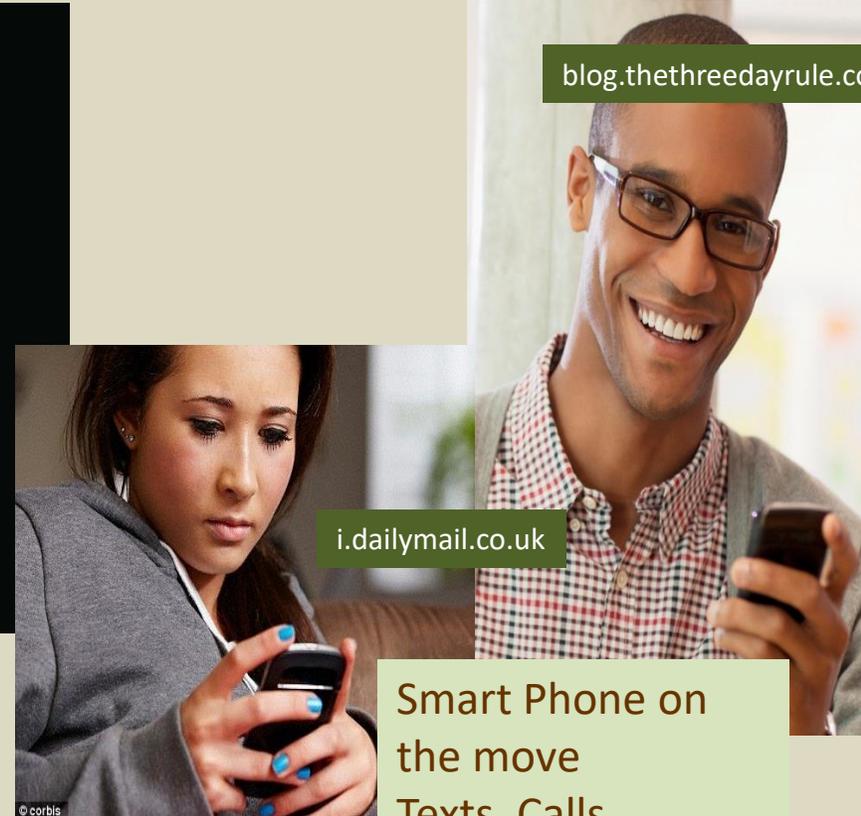
Skype
VoIP

www.katimorton.com

www.ifa-fiv.org



Computer at home
Email



blog.thethreedayrule.com

i.dailymail.co.uk

Smart Phone on
the move
Texts, Calls

... a look at older people as consumers

Telehealth for Older People

- **Particular needs / challenges because of**
greater social isolation (incl. more single households)
poor mobility, frailty, low incomes, poor digital literacy, etc.
depression and multi-morbidity (including dementia)
- **But older people will increasingly show their consumer credentials because ...**
there is increasing digital and health literacy amongst them
(and carers)
they will demand (are demanding) greater consideration of
accessibility and usability
they will 'vote' (are voting) with their savings and incomes
they will be (are being) increasingly engaged in work,
education or training

... a look at younger people as consumers

Telehealth for Younger People

- **Particular needs / challenges because of**
peer pressure (and social media)
social isolation and depression (+ self-harming behaviours)
lifestyle challenges for health (obesity, diabetes)
wish to interact with health services in new ways (new technologies being a clear choice)
- **Younger people will show their consumer credentials because ...**
commonplace usage of texts, emails, Skype, phone, etc.
their 'trust' of the same (and social media) ... less stigma, confidentiality, etc.
convenience of timely communication in relation to need
they see the scope for better (easier) self-management
... helping establish a longer term pattern for service access and usage.

... clinician, h & sc perspective

What does Telehealth mean for Clinicians? (1) ... and Health and Social Care Providers

- We cannot ignore the **clinical perspective**
social care, public health, etc. contributes
- Research **findings for LTCs**
installed equipment, etc.
reduced admissions and more timely discharges
better self-management
but services often add-ons, not embedded as ‘normal’
practice
evidence flawed
- **Emerging issues for new service approaches**
... based on limited experience to date

... more



What does Telehealth mean for Clinicians? (2) ... and Health and Social Care Providers

- **Emerging issues for new service approaches**
 - when and how to use / promote use of different digital technologies*
 - issue of prior direct contact?*
 - fear of not acting promptly (liability, etc.)*
 - increase in workload?*
 - substitution for 'traditional' modes of service provision*
 - challenges for the provider–patient relationship*
(treatment, therapy, collaboration)
 - challenges for systems*
(technical failures, info to PHRs, errors, cyber-crime)
 - consent and confidentiality*

... telehealth response



The Telehealth Response 1

- **Need for new ways of thinking**
reflecting the perspectives set out
inclusive, consumer (people not patient oriented)
- **Need to move forward on basis of ‘what we know’**
not always waiting for trials
accepting ‘evidence’ at lower levels (except for some
clinical interventions).
- **Standards, Protocols, etc. to recognise**
the realities of our ‘new’ digital world of health
people’s aspirations, choices; also ethical imperatives
- **International Code of Practice for Telehealth Services (2017)**
downloadable from the Telehealth Quality Group
(www.telehealth.global)
consumer = people = patient focused (all ages)

... a bit about TQG and International Code

Telehealth
Quality
Group



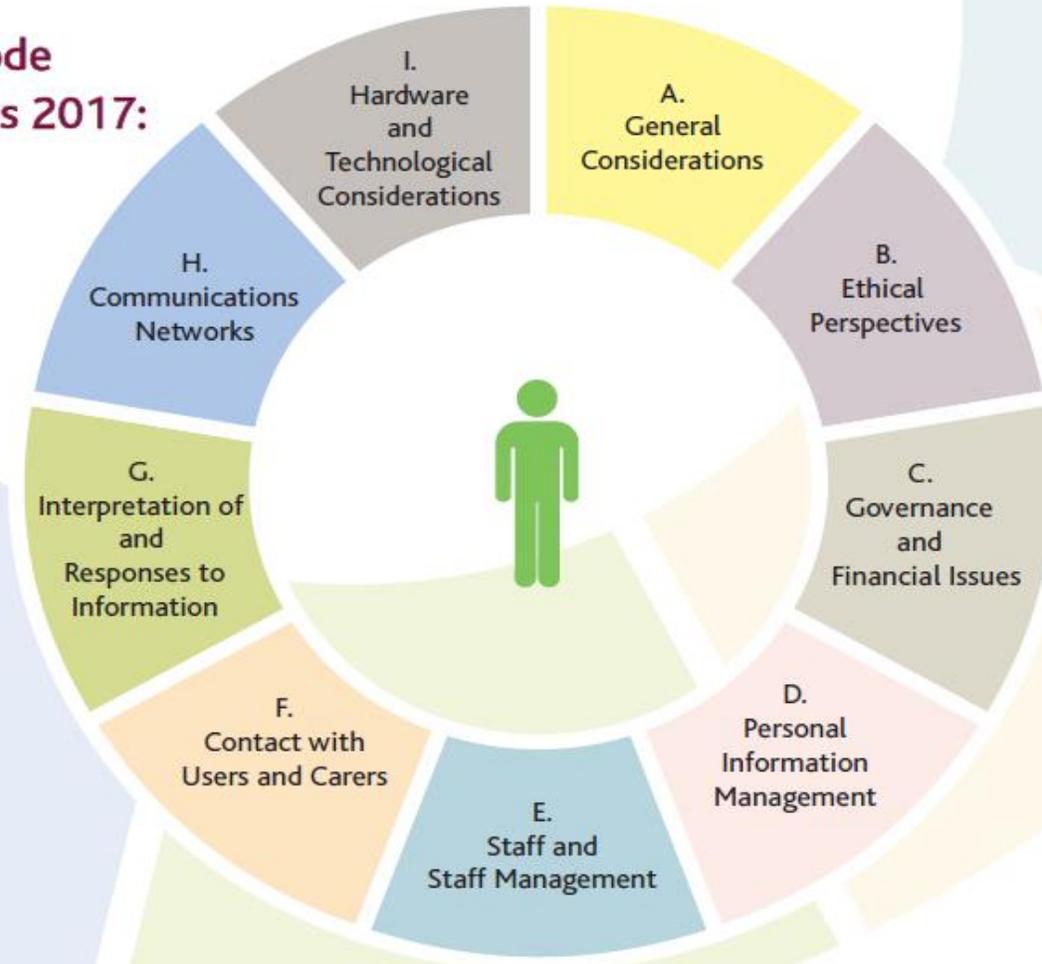
Telehealth Quality Group Members



The International Code of Practice for Telehealth Services 2017

a flexible code that supports service innovation

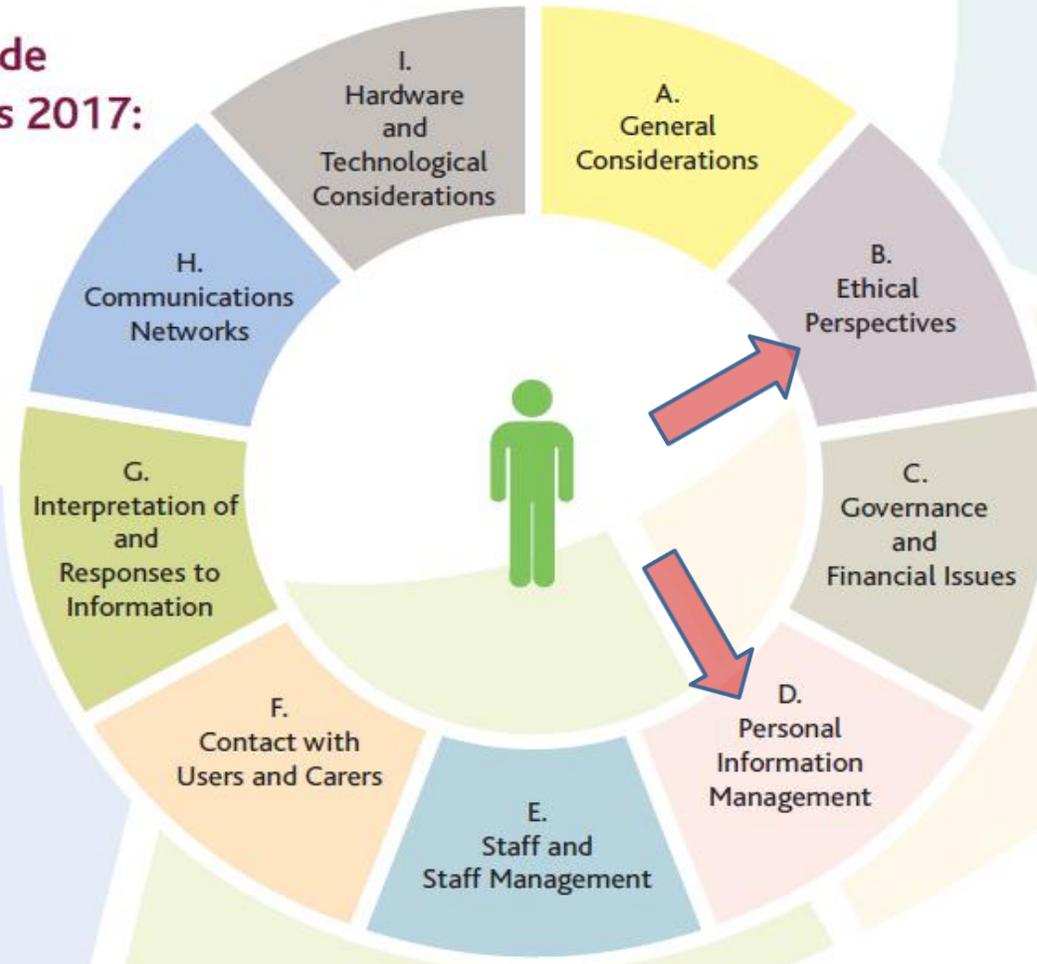
Structure of the International Code of Practice for Telehealth Services 2017:



The International Code of Practice for Telehealth Services 2017

a flexible code that supports service innovation

Structure of the International Code of Practice for Telehealth Services 2017:



The International Code of Practice for Telehealth Services 2017

a flexible code that supports service innovation

Telehealth Service Domains covered by the International Code:

- Vital signs monitoring.
- Telecare and social alarms (PERS)
- Activity and lifestyle monitoring.
- Gait, seizure and falls prediction / management.
- Medication or therapy adherence.
- Tele- and video-consultations.
- Tele-psychiatry.
- Health / motivational coaching and advice.
- Rehabilitation and (re)ablement.
- Mobile health technology systems (e.g. apps).
- Point of care testing and diagnoses.
- Safeguarding and monitoring in care settings.

The International Code of Practice for Telehealth Services 2017

a flexible code that supports service innovation

What it is:

- The international quality benchmark for telehealth services.
- Incorporates International Standard ISO/TS 13131 Quality Planning Guidelines for Telehealth Services. 
- Compatible with
 - European Standard EN 50134-7 Alarm Systems. Social Alarm Systems: Application Guidelines;
 - telehealth-related standards developed in Australia, Canada, France, Germany, the Netherlands, New Zealand, Spain, the United Kingdom and the United States. 
- Fits in with World Health Organisation and European Commission aspirations for telehealth.
- Relevant to people of all ages, in all places, including while travelling.
- Meets the needs of people who access services via mobile or fixed devices.
- Compatible with operational codes and protocols for different aspects of service provision
 - including vital signs monitoring, telecare, PERS, tele- and video-consultations, activity monitoring and mHealth.
- Operates at local and international levels.

The International Code of Practice for Telehealth Services 2017

a flexible code that supports service innovation

Benefits for Users and Service Providers:

- Helps improve service quality.
- Supports self-management and the development of knowledge among users, clients and patients.
- Provides a strategic context that promotes service innovation in responsible ways.
- Reassures users, insurers, and service procurers / commissioners.
- Can be a requirement for government bodies and regulatory agencies.

Certification:

- Services can be certified following self-assessment or external assessment. A rigorous process applies.
- External assessments against requirements of the Code are undertaken by approved bodies such as DNV GL.



<http://dnvglhealthcare.com>



In Conclusion (1)

- **Demographic, political, technological change**
 - **Barriers to overcome**
 - **Standards have a role to play**
- *helping shape telehealth services in ways that relate to people (consumers), not 'top-down' technology approaches*
- **Role for TQG International Code of Practice for Telehealth Services**
 - *responds to the consumer (people) agenda ...*
 - *with a clear ethical basis (around inclusion, empowerment, accessibility, service integration, etc.*

... agendas driven by consumers

In Conclusion (2)

- **Agendas are driven by consumers**
 - with different needs
 - using technologies in different ways
 - **The pictures tell the story! ...**

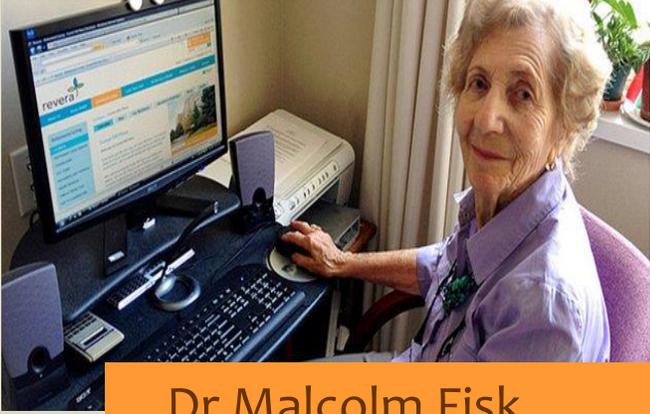


Dr Malcolm Fisk

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Thank You!
Diolch yn Fawr



Telehealth
Quality
Group

Dr Malcolm Fisk malcolm.fisk@dmu.ac.uk



Questions?



11:05 – 11:30
Comfort Break and
Networking



Primary Care in a modern world

Dr Matthew Fay

GP Principal The Willows Medical Practice- Queensbury

GPwSI and Co-Founder Westcliffe Cardiology Service

GP Partner Westcliffe Medical Group



@fatherofhan

Declaration of interests

- The Westcliffe Partnership has received funding from: Abbott, Bayer, Boehringer-Ingelheim, Bristol Myers Squibb, Dawn, INRStar, Medtronic, Oberoi Consulting, Pfizer, Roche, Sanofi-Aventis, Servier.
- An advisor to: Anticoagulation Europe, Arrhythmia Alliance, Heart Valve Voice, National Stroke Association, Syncope Trust
- A trustee of Thrombosis UK and AF Association

What is Westcliffe doing?

Moving to the Bradford Care Collaborative

1. Take all work in the practice to the PMS contract
2. Allow groups of partners to continue their 'private' work as individual partnerships
3. Form a clinical governance board
4. Form a strategic management board
5. Ensure clinicians do what they are trained for
6. Ensure administration has functions many practice (economies of scale)
7. Share clinical expertise across the group
8. A single partnership ensures resource can flow across the structure
9. Localities of practices work to maintain a list based system

Bradford Care Collaborative Membership

Practice Support Unit

Locality 1

Practice

Practice

Practice

Locality 2

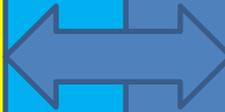
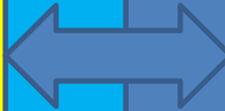
Practice

Practice

Practice

BCC
Sharing
Board

Strategic
Board



Institute of Medicine report:-Objectives Westcliffe

- 1. Design seamless, coordinated care**
 - A large group of clinicians with varied skills support a wide population of over 50K. This allows a more varied work force
- 2. Make effective use of IT, including automating patient records**
 - Use of Smart phone technology for palpitation
 - Use of smart phone technology for blood pressure management
 - Use of web portal for management of dyspepsia
 - Use of booths for case finding of dysrhythmia and hypertension
- 3. Manage knowledge so that it is delivered into patient care**
 - Use of VCS (directly commissioned) to support social prescribing and the PPGs
- 4. Coordinate care across patient conditions, services, and settings over time**
 - This remains a challenge
- 5. Advance the effectiveness of teams**
 - Use of specialist nurse teams in anticoagulation/cardiovascular disease/respiratory disease/complex elderly care.
 - Directly employing pharmacists to do face to face review
- 6. Incorporate measurement of care processes and outcomes into daily practice**
 - All practices receive the dashboard report at the clinical governance board

However...

However...

This endeavors to preserve list based general practice....

...as this is our current contractual model

However...

PULSE

At the heart of
general practice
since 1960



OPINION

General practice is burning, but I refuse to lose all hope - Dr Des Spence



NEWS ↓

VIEWS ↓

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TRAINEE PULSE



HOME → FINANCE AND PRACTICE LIFE NEWS

Stevens: We must consider alternatives to list-based general practice

8 July 2015 | By [Caroline Price](#)



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EMAIL TO A FRIEND



The practice-list based model of general practice could be replaced in future under plans for reorganising primary care, the head of the NHS in England has told a conference of academic GPs.

NHS England chief Simon Stevens said there were benefits of having care planned around defined patient lists, but added the changing needs of the population meant 'other ways of interacting with primary care' were essential.

Although Mr Stevens did not explain what other models could be used, he said a move away from practice lists was 'happening', and asked whether we should 'close our mind' to such changes.

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3



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February 22

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Leon



February 16

Smart and Easy to Use

Wonderfully clever and convenient. Easy to use (even for a non-computer senior) and possibly the ...

Nelson



February 10

Great device

I wasn't too sure about this device at the beginning of my use. The more I used it , the more if fo...

Jonathon



February 10

Fantastic

Easy to use, accurate and has excellent options (3 reading average, etc.)!

Ray

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PainSense is an app developed to promote the self-management of persistent pain. It includes a range of features such as tension alerts, relaxation resources, medication tracking and the use of games to support engagement, goal-setting and adherence.

Short video showing the PainSense apps in use



Please note this video has no sound

RAPID-P : Introduction

Select Language ▼

Many people experience episodes of abdominal pain and indigestion, but if these persist for more than a few days, or include other symptoms, such as problems with swallowing, unplanned weight loss, vomiting or blood in your vomit or stools (causes stools to be dark, and tar-like stools) then it is very important to seek medical attention.

RAPID-P is designed to support early assessment, avoiding delays and to assist in guiding you to a timely and appropriate medical appointment either with your GP or a local NHS specialist.

When to complete the RAPID-P assessment questionnaire:

If you have any of the following symptoms:

- Abdominal pain
- Indigestion / heart burn
- Difficulty swallowing
- Unplanned weight loss
- Vomiting
- Blood in your vomit
- Black, tar-like stools

Completing RAPID-P assessment questionnaire:

The assessment form takes approximately 4-5 minutes to complete.

The information you share is completely confidential. It is only shared with your medical practice if you consent to the completed form being sent to them.

Your details are not saved, stored or shared with any other party.

RAPID-P assessment form will ask you a series of short questions about your symptoms, how long you have been experiencing them, and any medication and treatments you may also be receiving.

Based on your responses, it will immediately assess your completed form and then indicate whether you:

- Need to make a routine appointment with your GP
- Will expect to receive an appointment to be seen by your GP within the next 14 days
- Will receive an appointment to be assessed by a local specialist team within 14 days

You will also have the opportunity to download and print your completed RAPID-P assessment form to take to your GP or medical centre.

IMPORTANT

If you have noticed blood in your vomit or blood in your stools (the stools may appear black and tar-like), please seek urgent medical attention; either by calling your GP or dialling 111.

A new paradigm in
palpitations care

Palpitation

palpitation

/pəlˈpɪt(ə)ʃ(ə)n/ 

noun

a noticeably rapid, strong, or irregular heartbeat due to agitation, exertion, or illness.

"the stimulants gave me palpitations"

What does the patient mean?

What does the patient want to know?

What does the patient want to know?

- Is it serious?
- What is it?
- What can be done about it?

What does the patient mean?

Palpitation

palpitation

/pəlˈpɪt(ə)ʃ(ə)n/ 

noun

a noticeably rapid, strong, or irregular heartbeat due to agitation, exertion, or illness.

"the stimulants gave me palpitations"

Weber et al

Am J Med. 1996 Feb;100(2):138-48.

Evaluation and outcomes of patients with palpitations.

Weber BE¹, Kapoor WN.

⊕ **Author information**

Erratum in

Am J Med 1997 Jul;103(1):86.

Abstract

PURPOSE: To determine: (1) the etiologies of palpitations, (2) the usefulness of diagnostic tests in determining the etiologies of palpitations, and (3) the outcomes of patients with palpitations.

PATIENTS AND METHODS: One hundred and ninety consecutive patients presenting with a complaint of palpitations at a university medical center were enrolled in this prospective cohort study. Patients underwent a structured clinical interview and psychiatric screening. The charts were abstracted for results of the physical exam and tests ordered by the primary physician. Assignment of an etiology of palpitations was based on strict adherence to predetermined criteria and achieved by consensus of the two physician investigators. One-year follow-up was obtained in 96% of the patients.

RESULTS: An etiology of palpitations was determined in 84% of the patients. The etiology of palpitations was cardiac in 43%, psychiatric in 31%, miscellaneous in 10%, and unknown in 16%. Forty percent of the etiologies could be determined with the history and physical examination, an electrocardiogram, and/or laboratory data. The 1-year mortality rate was 1.6% (95% confidence interval [CI] 0% to 3.4%) and the 1-year stroke rate was 1.1% (95% CI 0% to 2.6%). Within the first year, 75% of the patients experienced recurrent palpitations. At 1-year follow-up, 89% reported that their health was the same or improved compared to that at enrollment, 19% reported that their work performance was impaired, 12% reported that workdays were missed, and 33% reported accomplishing less than usual work at home.

CONCLUSIONS: The etiology of palpitations can often be diagnosed with a simple initial evaluation. Psychiatric illness accounts for the etiology in nearly one third of all patients. The short-term prognosis of patients with palpitations is excellent with low rates of death and stroke at 1 year, but there is a high rate of recurrence of symptoms and a moderate impact on productivity.

Weber et al

- | | | | |
|--------------------------------|-------|---|--------|
| • Cardiac (43.2%) | • % | • Psychiatric (30.5%) | • % |
| – Atrial Fibrillation | ▪ 10 | – Panic attack or disorder plus anxiety | ▪ 10.5 |
| – Supraventricular tachycardia | ▪ 9.5 | – Panic attack alone | ▪ 8.9 |
| – Premature ventricular beats | ▪ 7.9 | – Panic disorder alone | ▪ 7.4 |
| – Atrial Flutter | ▪ 5.8 | – Anxiety alone | ▪ 3.2 |
| – Premature atrial beats | ▪ 3.2 | – Panic plus anxiety plus somatization | ▪ 0.5 |
| – Ventricular tachycardia | ▪ 2.1 | • Miscellaneous (10%) | |
| – Mitral valve prolapse | ▪ 1.1 | – Medication | ▪ 2.6 |
| – Sick sinus syndrome | ▪ 1.1 | – Thyrotoxicosis | ▪ 2.6 |
| – Pacemaker failure | ▪ 1.1 | – Caffeine | ▪ 1.6 |
| – Aortic insufficiency | ▪ 1.1 | – Cocaine | ▪ 1.1 |
| – Atrial myxoma | ▪ 0.5 | – Anaemia | ▪ 1.1 |
| | | – Amphetamine | ▪ 0.5 |
| | | – Mastocytosis | ▪ 0.5 |
| • Unknown (16.3%) | | | |

Evaluation of Palpitations: Etiology and Diagnostic Methods

Madhuri Yalamanchili, MD, Anand Khurana, MD, and Lynn Smaha, MD, PhD

Generally described as an uncomfortable awareness of one's own heartbeat, palpitations are a common clinical symptom. Even when the word "palpitations" is not specifically used, patients often report that their heart races, skips a beat, or seems at times to stop. The symptom of palpitations does not necessarily mean that an arrhythmia is present; conversely, an arrhythmia can occur without the sensation of palpitations. Most patients with palpitations go to their physician's office for evaluation, not only because the sensation is disagreeable, but also because they fear the symptom may represent serious cardiovas-

ry, specific features of episodes of palpitations should be sought.

Character of the Sensation

Because patients describe palpitations in different ways, determining the specific circumstances surrounding the episodes can help narrow the differential diagnosis, especially when palpitations indicate a cardiac pathology. For example, a feeling of "flip-flopping" in the chest is usually secondary to a premature atrial or ventricular contraction.⁴ Similarly, the sensation that the heart has stopped is secondary to the pause (com-

Table 1. Differential Diagnosis of Palpitations

Cardiac causes	Drug-induced causes	High cardiac output states
Atrial	Alcohol (use or withdrawal)	Anemia
Paroxysmal atrial flutter/fibrillation	Amphetamines	Arteriovenous fistula
Paroxysmal atrial tachycardia	Anticholinergic agents	Beriberi
Premature atrial contractions	β -Blockers (withdrawal)	Fever
Reentry (ie, Wolff-Parkinson-White syndrome)	Caffeine, nicotine	Paget's disease
Sick sinus syndrome (eg, bradycardia-tachycardia syndrome)	Cardiac glycosides	Pregnancy
Sinus tachycardia	Cocaine	Thyrototoxicosis
Atrioventricular node	Epinephrine	Psychiatric causes*
White syndrome)	Ganglionic blockers	Agoraphobia without panic disorder
Ventricular	Nitrates	Dysthymia
Premature ventricular contractions	Structural abnormalities	Generalized anxiety
Ventricular tachycardia/fibrillation	Acute left ventricular failure	Hypochondriasis
Metabolic causes	Aortic aneurysm	Major depression
Hyperthyroidism	Atrial myxoma	Panic disorder
Hypoglycemia	Cardiomegaly	Simple phobia
Hypo/hypercalcemia	Congenital heart disease	Social phobia
Hypo/hyperkalemia	Atrial septal defect	Somatization disorder
Hypo/hypermagnesemia	Patent ductus arteriosus	Other causes
Pheochromocytoma	Ventricular septal defect	Emotional stress
	Mitral valve prolapse	Hyperventilation
	Pacemaker (function or failure)	Idiopathic flushing
	Pericarditis	Mastocytosis
	Prosthetic heart valves	Migraine
	Pulmonary embolism	Postmenopausal period
	Regurgitant valvular lesions	Premenstrual syndrome
		Scombroid fish poisoning
		Strenuous physical activity

History, history, history...

- How long
- How fast
- How often
- Onset / offset
- Triggers
- Circumstances
- Known structural heart disease

Any associated symptoms?

- Dizziness
- Blackout
- Breathlessness
- Chest pain

Family history

- 1st degree relatives
- Sudden (cardiac) death under age of 40
- Fatal drowning /RTA
- Epileptic death
- Family members with inheritable heart disease

What does the doctor want to
know?

What does the doctor want to know?

- Is this going to land me in trouble?
- Is it going to kill the patient ?

Risk stratification

- Skipped beats
 - Thumping beats
 - Short fluttering
 - Slow pounding
- AND
- Normal ECG
- AND
- No FHx
- AND
- No structural heart disease

Low risk
Manage in
Primary Care

- Hx suggests recurrent tachyarrhythmia
 - Palpitations with associated symptoms
- AND / OR
- Abnormal ECG
- AND / OR
- Structural heart disease

Refer to cardiology /
Arrhythmia care
Co-ordinator

- Palpitation during exercise
- Palpitations with syncope / near syncope
- High risk structural heart disease
- FHx of inheritable heart disease
- High degree AV block

Refer to cardiology
with
urgency

Investigations

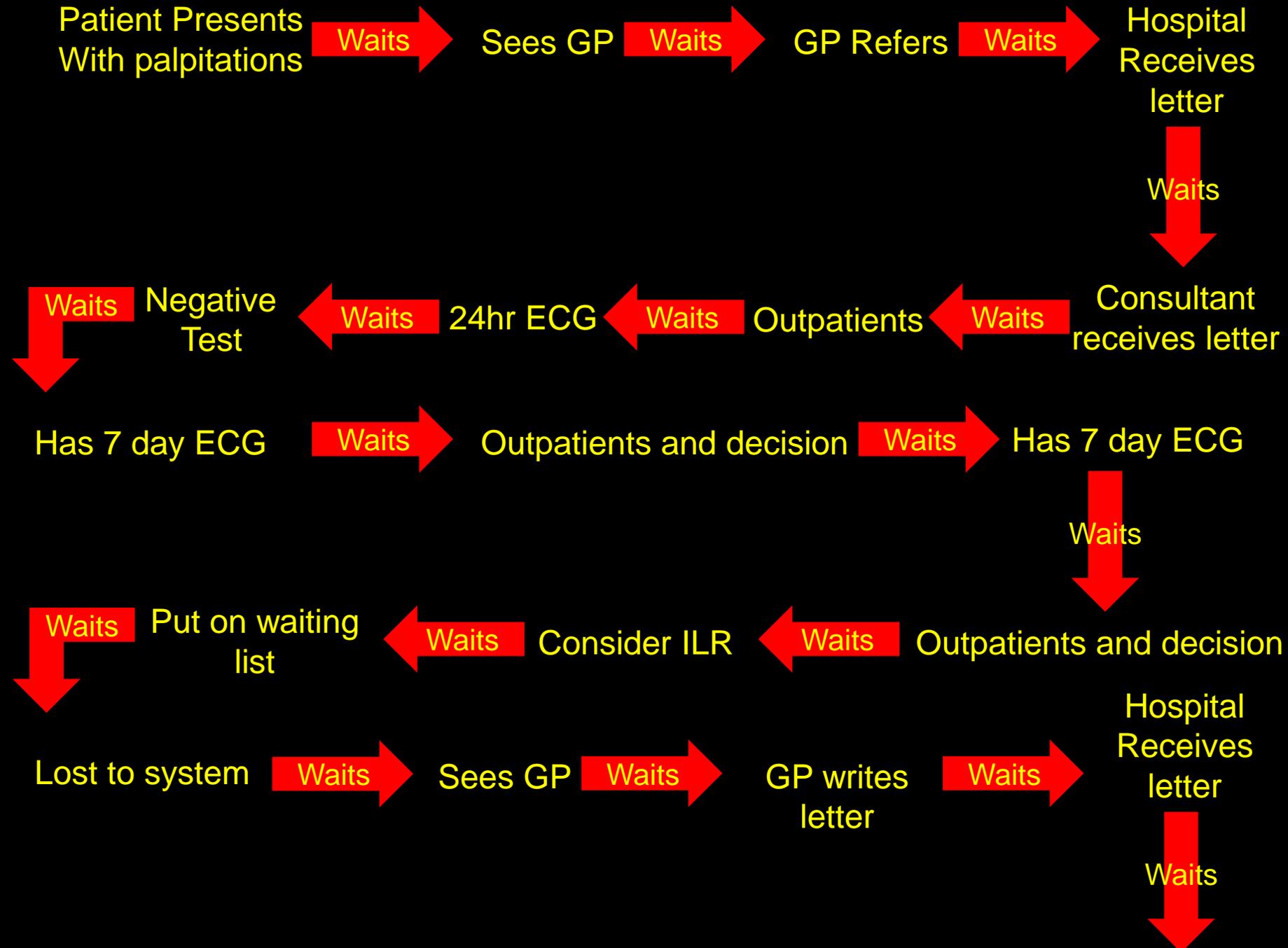
Who is this?



Who is this?

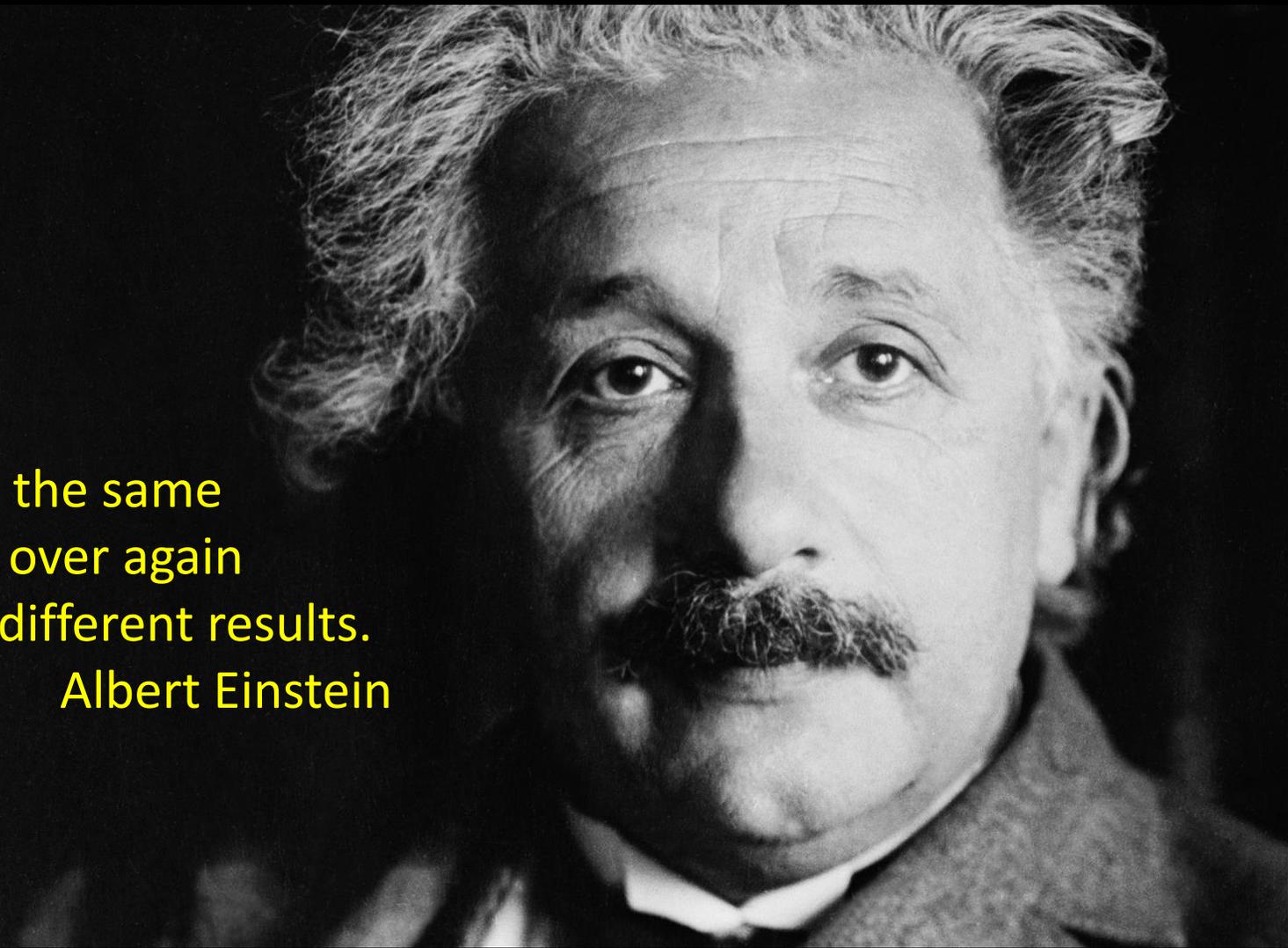


- Willem Einthoven



Insanity: doing the same
thing over and over again
and expecting different results.

Albert Einstein

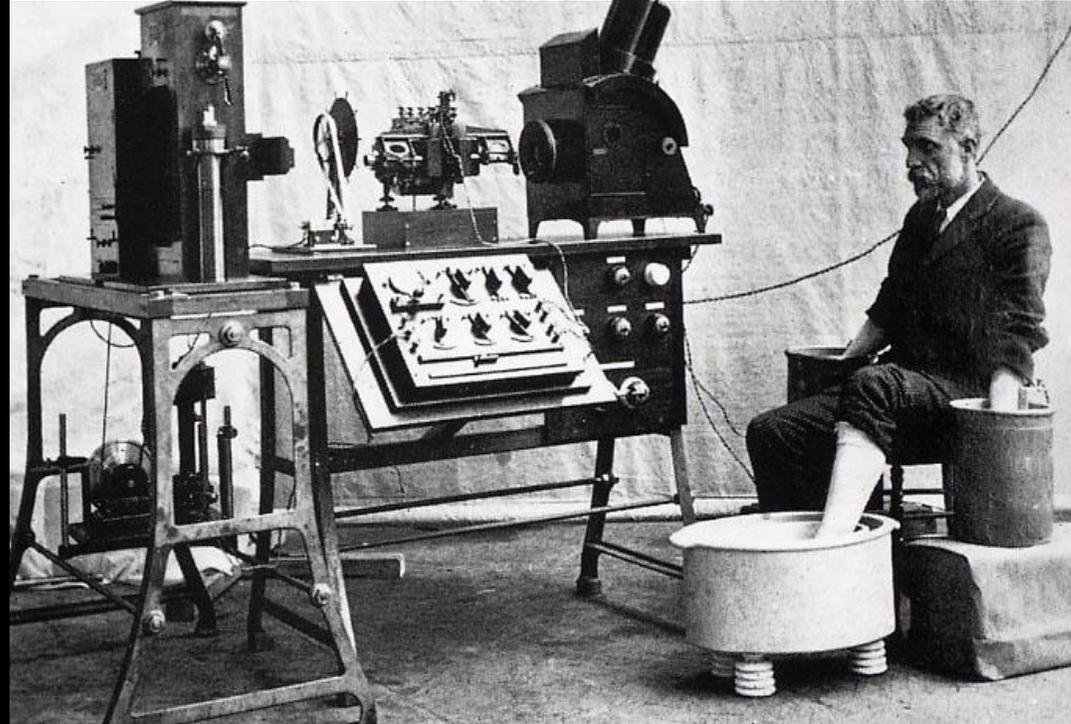


Vignette

- 28yr old female
- Presented age 14 with palpitations
 - Investigated cardiology Poland
 - Anxiety
- Presented age 22 with palpitations
 - Investigated cardiology Leeds
 - Anxiety
- Presented age 28 with palpitations
 - Investigated GPwSI Shipley
 - SVT with subsequent ablation of slow pathway

The history of the ECG

- Augustus Waller – published first human ECG 1887
- Willem Einthoven – created PQRST system 1895, described ECG features of CV disorders



The history of the ECG

- 24hr ECG Invented by Dr. Norman J. Holter 1949
- Initially contained within a 75 pound backpack



Ambulatory ECG Circa 1976

Some evidence

- 24-hour ambulatory electrocardiographic monitoring is unhelpful in the investigation of older persons with recurrent falls

Davison J, Brady S, Kenny RA
Age and Ageing 2005; **34**: 382-6
Prospective case-control study

Methods

- Recruited patients age >64 presenting to A&E with fall, having sustained an additional fall in previous year
- Exclusions – MMSE<24 or >1 previous syncopal episode or medical explanation for fall
- Controls matched for age and sex, no falls in 3 years or any previous syncope

Methods

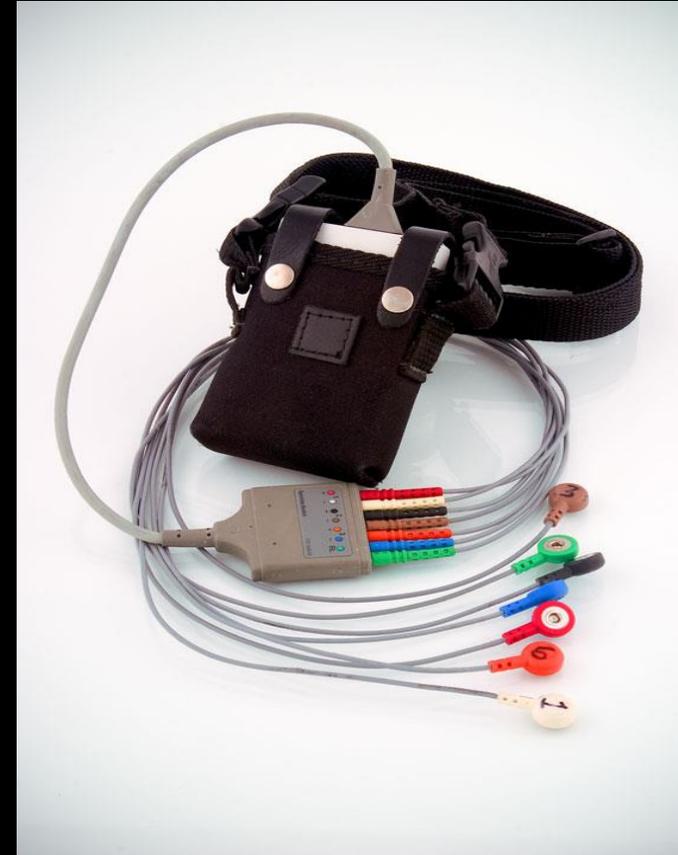
- Both groups fitted with 24-hour monitors
- Instructed in using a symptom diary
- Type and duration of arrhythmia recorded
 - major abnormalities e.g. VT, pauses, HR<30, Mobitz type II or complete heart block
 - minor abnormalities e.g. multiple VEs, paroxysmal SVT, HR 30-39, Mobitz type I, PAF/flutter
- Symptoms and arrhythmias compared

Summary of findings

- No significant difference between groups in prevalence of major or minor ECG abnormalities, or symptoms during recording
- Multiple abnormalities present in older people whether or not they have fallen
- 24-hour ECGs not helpful in investigation of recurrent falls

24-hour tapes

- Non-invasive
- Safe
- Low cost (approx. £70 per tape)
- Beat to beat acquisition
- High fidelity



However...

- There may be intolerance to adhesive, or electrodes may become detached during recording
- Symptoms may not recur during recording
- Incidental abnormalities may be detected, unrelated to the fall

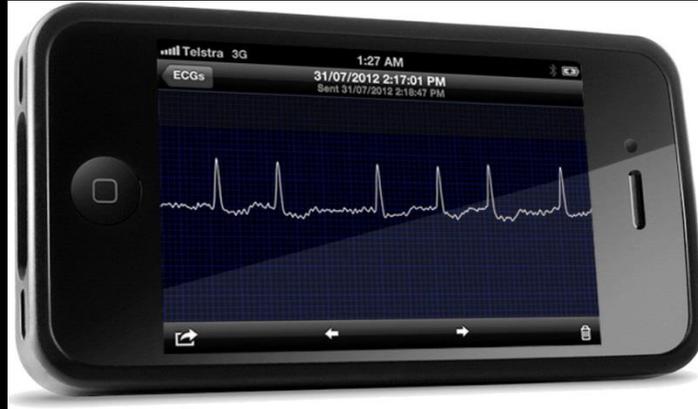
Diagnostic yield

- Results from studies vary widely
- Rhythm-symptom correlation in 4%
- 15% had symptoms but no arrhythmia (helpful in its own way)
- So yield is low, making cost per diagnosis higher (NB yield from history and exam)

Vignette

- 28yr old female
- Presented age 14 with palpitations
 - Investigated cardiology Poland
 - Anxiety
- Presented age 22 with palpitations
 - Investigated cardiology Leeds
 - Anxiety
- Presented age 28 with palpitations
 - Investigated GPwSI Shipley
 - SVT with subsequent ablation of slow pathway

iPhone ECG





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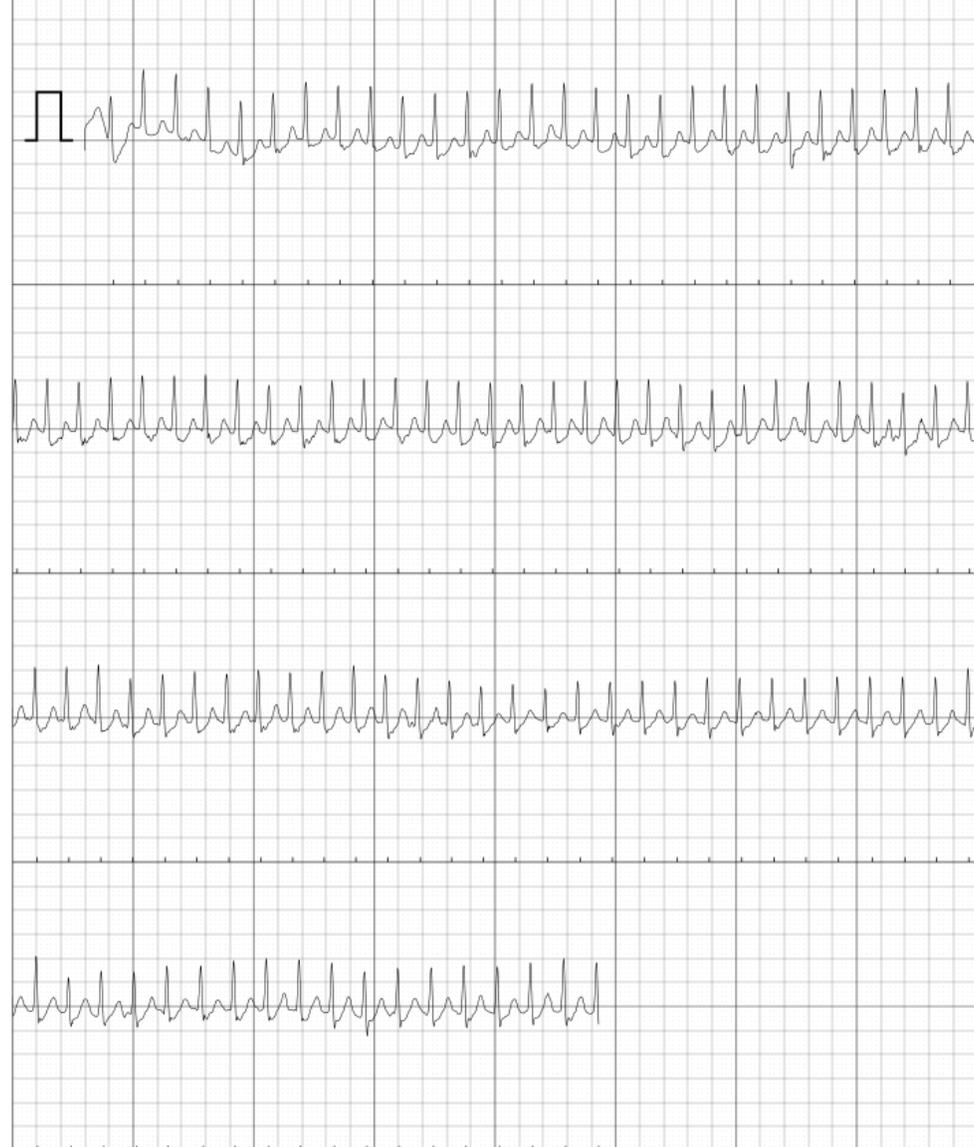


Recorded: Wednesday, 16 April 2014 19:05:55
Heart Rate: 225 bpm Duration: 30s



Recorded by:

Enhanced Filter, Mains filter: 50Hz Scale: 25mm/s, 10mm/mV

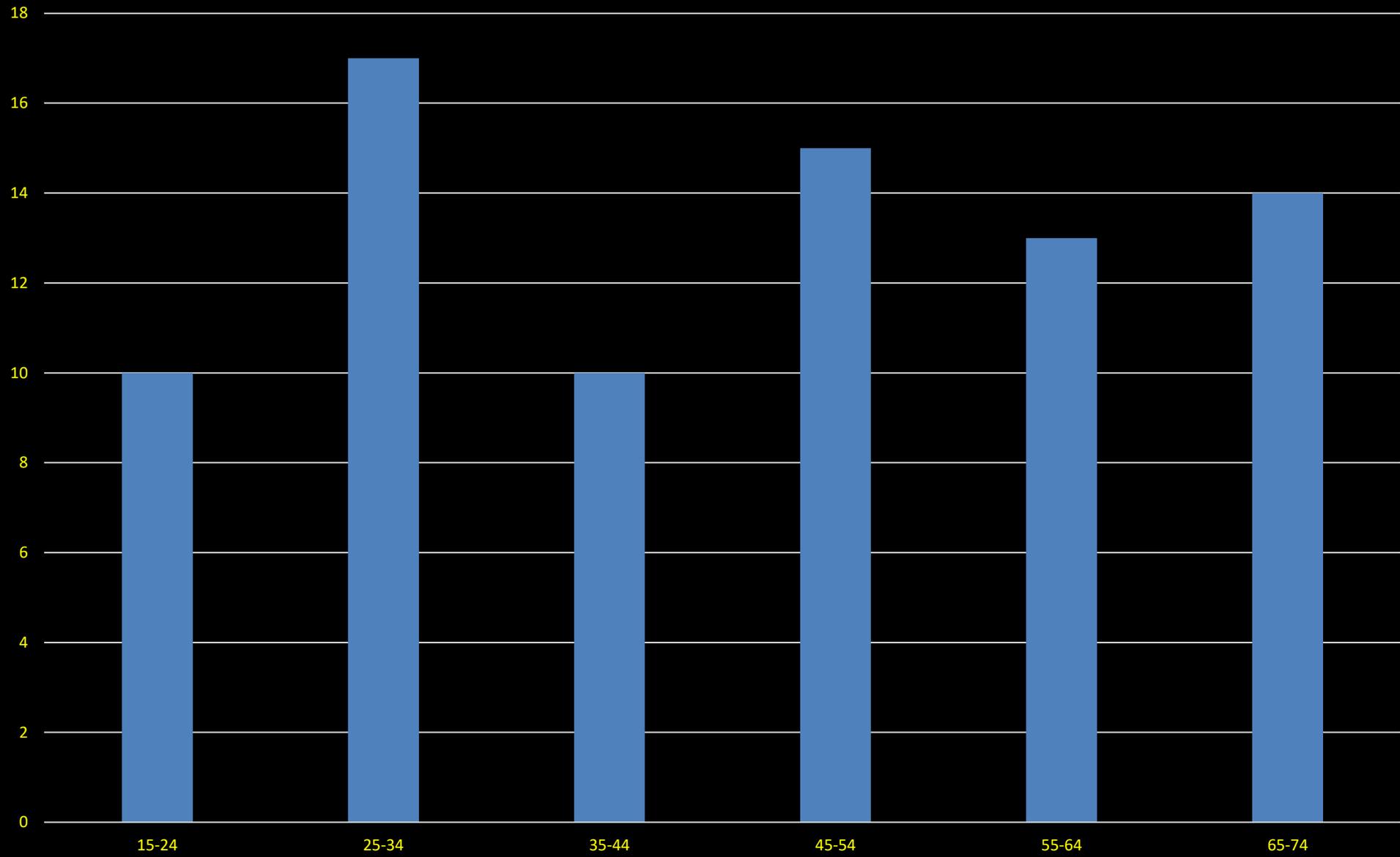


iPhone ECG

AliveCor Series Westcliffe

- Started 2014
- Now over 80 recordings
- Females 54/Males 26
- Age range 16-73yrs
- Indication
 - Palpitations
 - High suspicion AF
 - Syncope

AliveCor fitted by Age



AliveCor Series Westcliffe

- Sinus rhythm 30
- Dysrhythmia 35
 - SVT 10
 - Ectopy 8
 - AF 8
 - Atrial Flutter 1
 - Paroxysmal sinus tachycardia 1
 - Symptomatic sinus arrhythmia 1
 - AV disassociation 1
 - Majority detected on first trace

Palpitation

palpitation

/pəlˈpɪt(ə)ʃ(ə)n/ 

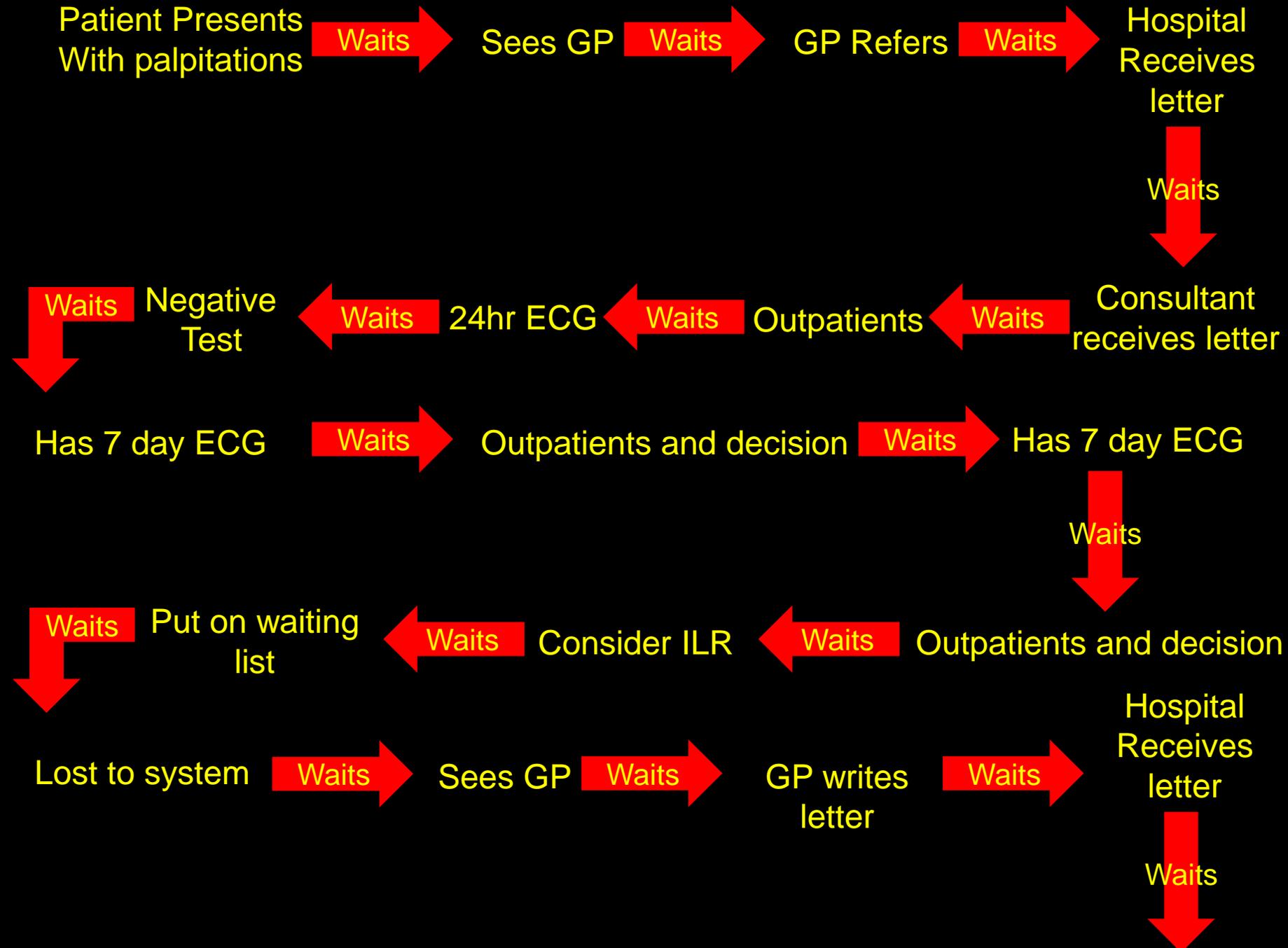
noun

a noticeably rapid, strong, or irregular heartbeat due to agitation, exertion, or illness.

"the stimulants gave me palpitations"

Vignette

- 35yr old female
- Presented age 30 with palpitations
 - Investigated cardiology Bradford
 - Uncertain
- Presented age 35 with palpitations
 - Investigated cardiology GPwSI service Shipley
 - Post traumatic stress due to childhood sexual abuse



Patient Presents
With palpitations



Sees GP



GP
supplies
AliveCor



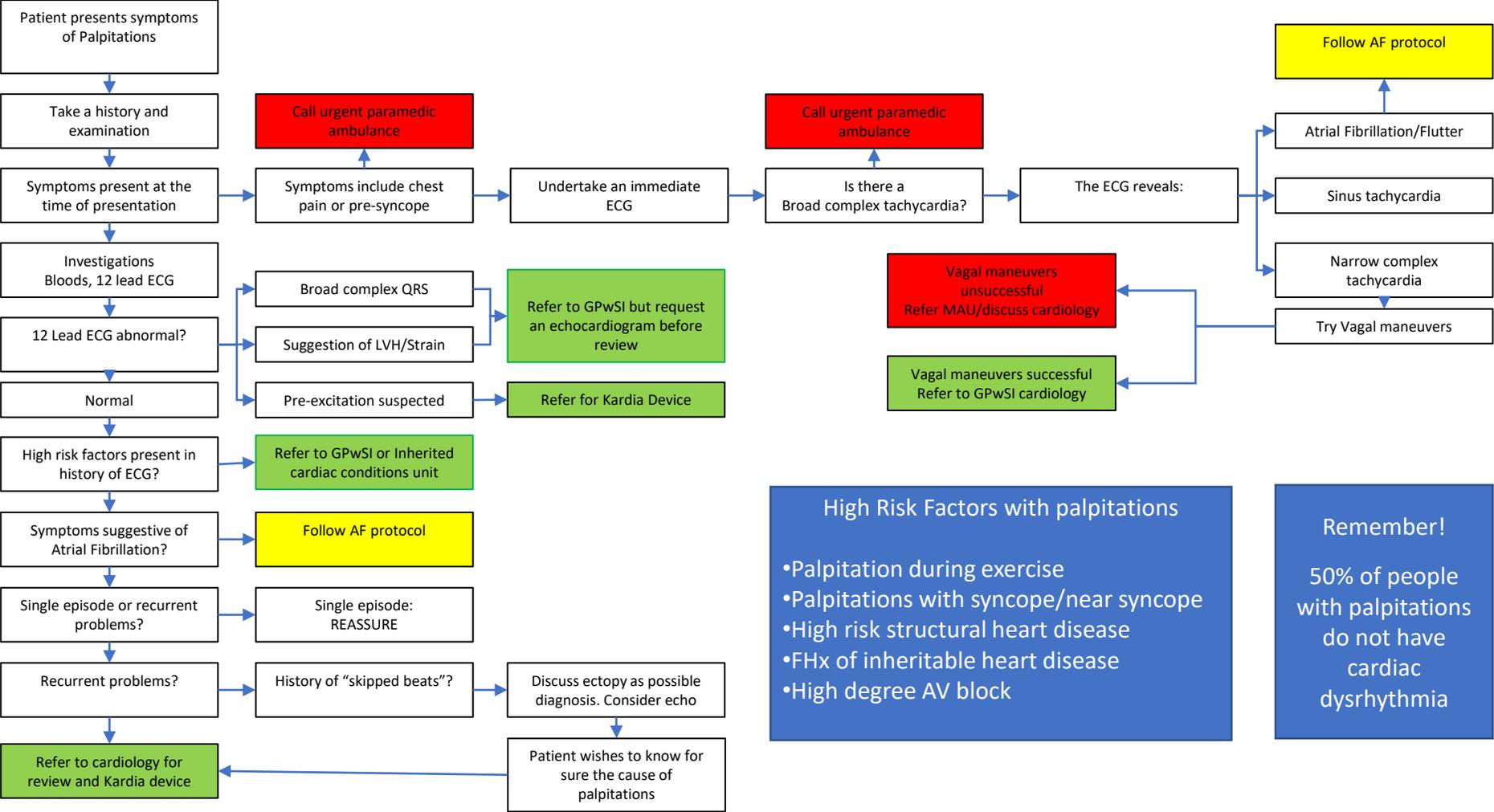
Symptomatic
trace



Advice and
management

Pathway of Care

Pathway for the management of Palpitations in Primary Care



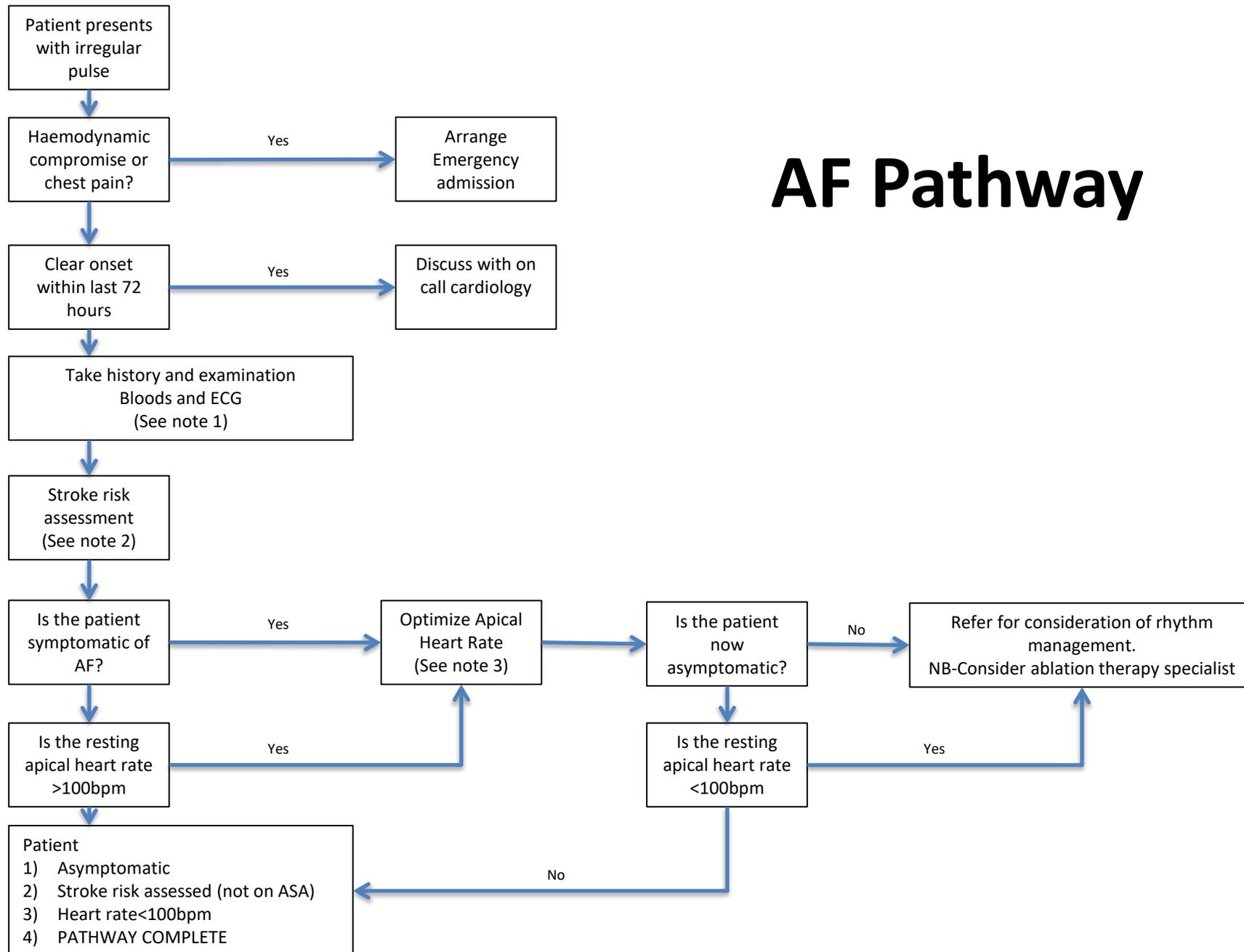
High Risk Factors with palpitations

- Palpitation during exercise
- Palpitations with syncope/near syncope
- High risk structural heart disease
- FHx of inheritable heart disease
- High degree AV block

Remember!

50% of people with palpitations do not have cardiac dysrhythmia

AF Pathway



General Points

Prevalence

- Atrial fibrillation is the commonest sustained arrhythmia with 600,000 cases known of in England giving a prevalence of 1.2% however many consider this to be an under estimation. When considering the prevalence of Atrial Fibrillation age needs to be considered as the condition becomes commoner with age. The SAFE study, looking at methods of screening for Atrial Fibrillation the prevalence of Atrial Fibrillation was found to be over 8% in the over 65yr population.
- The incidence of atrial fibrillation is increasing; this is partly due to the aging population but also due to the success of interventions in heart disease where people are living longer with damaged hearts. Other aetiological factors are also known to be significant such as obesity.

Case Identification

- Work has been done at trying to increase case identification, looking at pulse assessment in seasonal flu vaccination clinics, incidental pulse checks in normal primary care contacts or even performing 6 lead (limb lead only) ECGs. The common factor for success was about the level of population coverage; as long as a large population is screened significant amounts of atrial fibrillation can be found.
- If high-risk groups are reviewed however more significant cases can be found. Audit work around patients with ischaemic strokes who are not found to have atrial fibrillation at the time of presentation, where a 7 day event monitor is fitted is suggestive that 1 in 5 are found to have Paroxysmal Atrial Fibrillation

Aetiology

Atrial fibrillation is associated with a range of causes ranging local cardiac issues to systemic cardiovascular disease and metabolic disturbance and these should be sought. Acute comorbidities such as pneumonic illness and sepsis should be considered with acute presentation.

Common causes include:

- Ischaemic Heart Disease
- Heart Failure
- Hypertension
- Valvular Heart Disease
- Cardiomyopathies
- Atrial Septal Defects
- Acute Infection
- Thyrotoxicosis
- Carcinoma of the Bronchus
- Endurance Athletes
- Electrolyte Imbalance

There are other associated conditions that do not directly cause the arrhythmia but are commonly seen, such as tall stature, long PR interval, metabolic syndromes. The atrial triggers for Atrial Fibrillation may be caused or just aggravated by these factors, however the mechanism is not well understood.

Note 1-Examination & Investigation

History

- When taking the history from a person with atrial fibrillation try to identify symptoms that may suggest the time of onset, this is important, as there is an opportunity for early cardioversion if presenting in the first 48hours. Many people with atrial fibrillation are asymptomatic of the arrhythmia.
- The history should also seek symptoms suggestive of a possible underlying aetiology as outlined above. The history should also look for other cardiovascular illness such as diabetes, ischaemic heart disease or symptoms and signs of Transient Ischaemic Attack. These will aid in stroke risk assessment and the decision to use anti-coagulants. People with atrial fibrillation have a reduced life expectancy so a full cardiovascular risk assessment should be undertaken.

Examination

- If the patient is symptomatic at presentation they should be assessed rapidly for haemodynamic compromise. If acute admission is required. When assessing the cardiac rate assessment at the cardiac apex is required. Signs of heart failure syndrome or murmurs may point to underlying structural heart disease. Pulmonary examination is required to exclude sinister pathology

Investigations-Bloods and basics

- Blood tests should be performed; these should include Full Blood Count to exclude anaemia, Electrolytes, Liver Function Test, Glucose assessment, Thyroid Function Tests and in the over 35 year olds, who have not had a recent cardiovascular risk assessment, cholesterol and lipid assessment. In all patients who are current or previous smokers a Chest Xray may also be requested to exclude a bronchial carcinoma as the underlying cause.

Investigation-ECG

- The 12 lead ECG is mandatory in atrial fibrillation to confirm that the irregular pulse is due to atrial fibrillation rather than just frequent ectopy or other dysrhythmia.
- The absence of P waves and an irregular rhythm signify atrial fibrillation. However the saw-tooth appearance of the baseline may suggest atrial flutter with variable atrioventricular block. In many instances Atrial Flutter can be considered like atrial fibrillation.
- If there is uncertainty about the nature of an ECG then a review of the trace should be arranged

Investigations-Echocardiography

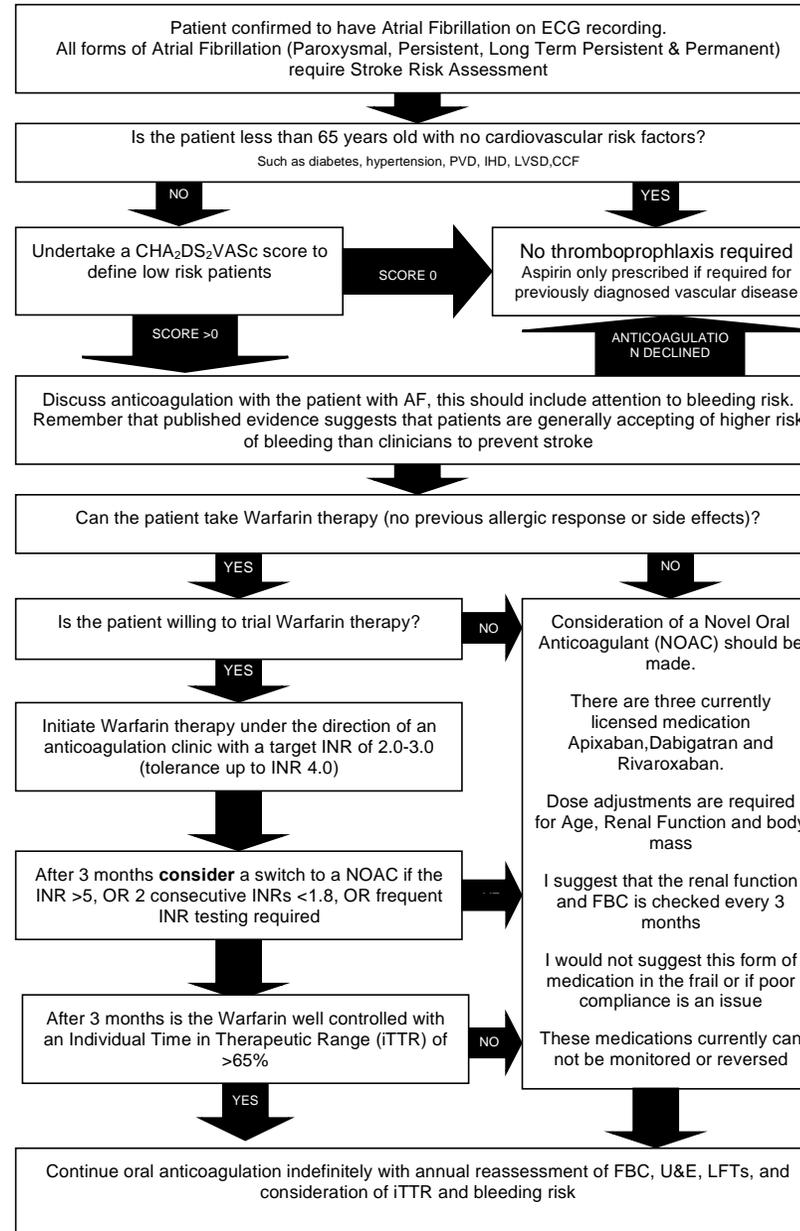
- An echocardiogram should be performed on all new cases of atrial fibrillation to ensure that the clinical examination and inspection of the ECG has not overlooked underlying structural heart disease. If a patient has a rapid ventricular rate it is advisable to use rate-limiting medication prior to the test to ensure the physiologist can obtain adequate images

Investigations-Ambulatory Rhythm Monitoring

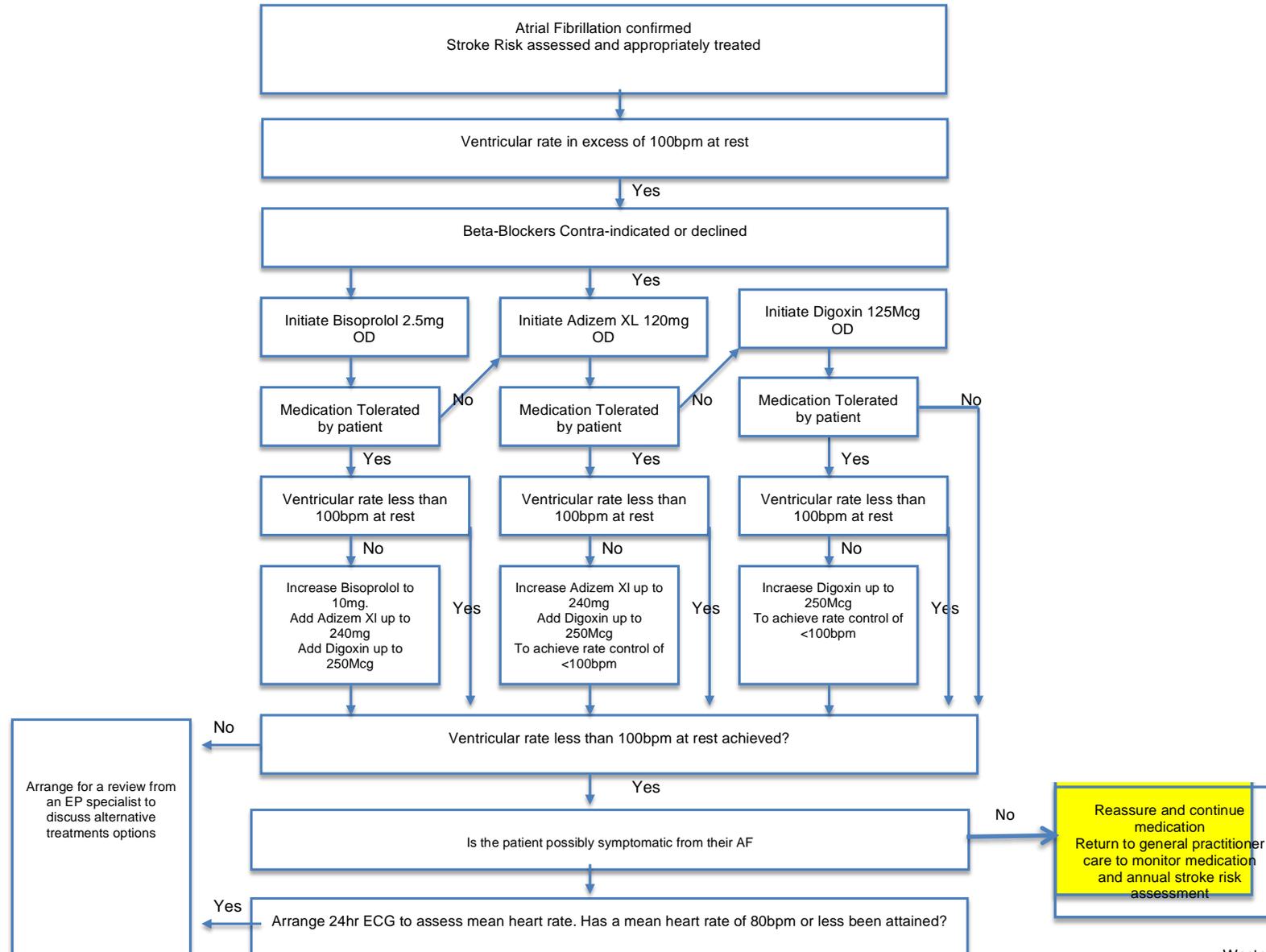
- This may be of value if the clinician suspected atrial fibrillation and the subsequent ECG reveals sinus rhythm.
- This may be of value in symptomatic AF to better understand the nature of the rate control.

Note 2 Stroke Risk Assessment

Management of Stroke Risk and Anticoagulants



Note 3-Rate Control Management



Appendix 1

Contraindications

Contraindications to The Initiation of Oral Anticoagulants & Anti-platelet Agents in Patients with Atrial Fibrillation in Primary Care

As a patient's relative stroke & bleeding risk can change, it is essential that all AF patients are reviewed at **LEAST** annually for a re-assessment of their stroke versus bleeding risk & the anti-thrombotic treatment option of choice.

Contraindications listed below apply to **BOTH** anti-platelet agents (e.g. aspirin, clopidogrel, dipyridamole) & **ALL** oral anticoagulants (e.g. warfarin, phenindione, dabigatran, rivaroxaban) except where indicated.

Absolute Contraindications

- Known large oesophageal varices.
- Significant thrombocytopenia (platelet count $< 50 \times 10^9/L$) – refer to haematologist.
- Within 72 hours of major surgery with risk of severe bleeding – defer & reassess risk postoperatively.
- Previously documented hypersensitivity to either the drug or excipients – consider cardiology opinion.
- Acute clinically significant bleed – defer & re-assess stroke versus bleeding risk within 3 months.
- Decompensated liver disease or deranged baseline clotting screen (INR >1.5) – refer to Gastroenterology / Hepatology. **Contraindication applies to oral anticoagulants only**
- Pregnancy or within 48 hours post partum – seek urgent haematological advice. **Contraindication applies to oral anticoagulants only.**
- Severe renal impairment (GFR $< 30 \text{ mL/min/1.73 m}^2$ or on dialysis). **Contraindication applies to dabigatran only.**

Relative Contraindications

- Previous history intracranial haemorrhage – as some AF patients especially those considered at higher stroke risk (i.e. CHA₂DS₂ score ≥ 3) may not fit from anti-thrombotic therapy, seek the opinion of a stroke specialist.
- Recent major extracranial bleed within the last 6 months where the cause has not been identified or treated – decision for oral anti-thrombotic therapy should be deferred.
- Recent documented peptic ulcer (PU) within last 3 months – decision for oral anti-thrombotic therapy should be deferred until treatment for PU completed. In all cases with history PU give PPI cover whilst on anti-thrombotic.
- Recent history recurrent iatrogenic falls in patient at higher bleeding risk.

A patient at higher bleeding risk is assessed by having 3 or more of the following risk factors:-

- age > 65 years
- previous history bleed or predisposition to bleeding (e.g. diverticulitis)
- uncontrolled hypertension
- severe renal impairment (i.e. serum creatinine $> 200 \mu\text{mol/L}$, GFR $< 30 \text{ mL/min/1.73 m}^2$ or on dialysis)
- acute hepatic impairment (e.g. bilirubin $> 2 \times \text{ULN}$ + LFTS $> 3 \times \text{ULN}$), chronic liver disease (e.g. cirrhosis)
- low platelet count $< 80 \times 10^9/L$ or a thrombocytopenia or anaemia of undiagnosed cause
- on concomitant drugs associated with an increased bleeding risk e.g. SSRIs, oral steroids, NSAIDs, methotrexate or other immune-suppressant agents.

N.B. A risk of falls is not a contraindication to initiating oral anticoagulation. (e.g. a patient with an annual stroke risk of 5% (CHA₂DS₂ score 2-3) would need to fall 295 times for fall risk to outweigh stroke reduction benefit of warfarin).

- Dementia or marked cognitive impairment with poor medicines compliance & no access to carer support.
- Chronic alcohol abuse – especially if associated with binge drinking.

N.B. Poor compliance with any oral anticoagulant agent will reduce benefits but may increase risks associated with use.

Appendix 2

NOAC Use

Anticoagulants for prevention of stroke and systemic embolism in NVAF Drug use and dosing based on renal function estimation (CrCl - creatinine clearance ml/min)

CrCl >50 ml/min	Any Anticoagulant - no dose adjustment needed. Apixaban 5mg bd or 2.5mg bd if have 2 of: age ≥ 80 yrs, body weight ≤ 60 kg, serum creatinine ≥ 133 micromol/l
CrCl 30-49 ml/min	Dabigatran 110mg bd if 80 years and over or high risk of bleeding (HAS-BLED ≥3) or on verapamil or amiodarone, otherwise 150mg bd. Rivaroxaban 15mg od. Warfarin INR dependant dose adjustment.
CrCl 15-29 ml/min	Apixaban 2.5mg bd Dabigatran contraindicated . Rivaroxaban 15mg od but caution - plasma concentrations significantly increased (average 1.6 fold) which may increase bleeding risk. Warfarin INR dependant dose adjustment under expert advice and review.
CrCl <15 ml/min	No anticoagulant use recommended in general use, take expert advice

Female ≥60kg* creatinine clearance ml/min (NB do not use if weight lower than 60kg – see below)

serum creatinine	age	40	45	50	55	60	65	70	75	80	85	90	95	100
50		120	114	108	102	96	90	84	78	72	66	60	54	48
60		100	95	90	85	80	75	70	65	60	55	50	45	40
70		86	81	77	73	69	64	60	56	51	47	43	39	34
80		75	71	68	64	60	56	53	49	45	41	38	34	30
90		67	63	60	57	53	50	47	43	40	37	33	30	27
100		60	57	54	51	48	45	42	39	36	33	30	27	24
110		55	52	49	46	44	41	38	35	33	30	27	25	22
120		50	48	45	43	40	38	35	33	30	28	25	23	20
130		46	44	42	39	37	35	32	30	28	25	23	21	18
140		43	41	39	36	34	32	30	28	26	24	21	19	17
150		40	38	36	34	32	30	28	26	24	22	20	18	16
160		38	36	34	32	30	28	26	24	23	21	19	17	15
170		35	34	32	30	28	26	25	23	21	19	18	16	14
180		33	32	30	28	27	25	23	22	20	18	17	15	13
190		32	30	28	27	25	24	22	21	19	17	16	14	13
200		30	29	27	26	24	23	21	20	18	17	15	14	12

Male ≥70kg* creatinine clearance ml/min (NB do not use if weight lower than 70kg – see below)

serum creatinine	age	40	45	50	55	60	65	70	75	80	85	90	95	100
50		168	160	151	143	134	126	118	109	101	92	84	76	67
60		140	133	126	119	112	105	98	91	84	77	70	63	56
70		120	114	108	102	96	90	84	78	72	66	60	54	48
80		105	100	95	89	84	79	74	68	63	58	53	47	42
90		93	89	84	79	75	70	65	61	56	51	47	42	37
100		84	80	76	71	67	63	59	55	50	46	42	38	34
110		76	73	69	65	61	57	53	50	46	42	38	34	31
120		70	67	63	60	56	53	49	46	42	39	35	32	28
130		65	61	58	55	52	48	45	42	39	36	32	29	26
140		60	57	54	51	48	45	42	39	36	33	30	27	24
150		56	53	50	48	45	42	39	36	34	31	28	25	22
160		53	50	47	45	42	39	37	34	32	29	26	24	21
170		49	47	44	42	40	37	35	32	30	27	25	22	20
180		47	44	42	40	37	35	33	30	28	26	23	21	19
190		44	42	40	38	35	33	31	29	27	24	22	20	18
200		42	40	38	36	34	32	29	27	25	23	21	19	17

Absolute creatinine clearance CrCl (Cockcroft & Gault) should be used for dosing decisions, not normalised eGFR especially for older patients and for drugs with narrow therapeutic index.

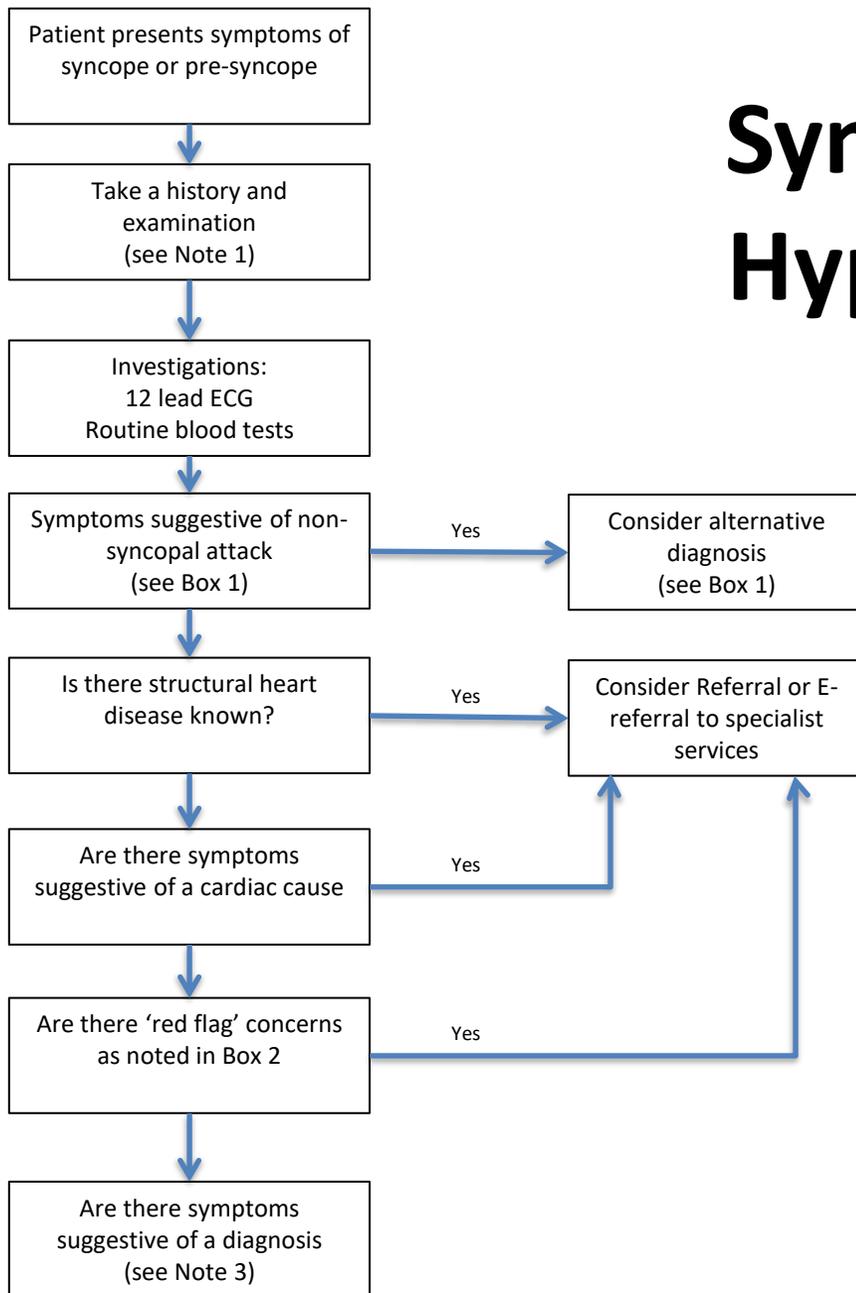
The tables should not be used for patients in acute renal impairment, who are dehydrated or if under the stated weights when CrCl should be calculated individually (manually or on e.g. SystemOne-clinical tools-renal calculations).

$$\text{CrCl} = \frac{[140 - \text{age}(\text{yrs})] \times \text{ideal body weight or actual if less (kg)}}{\text{Serum creatinine (micromol/L)}} \times 1.2 \text{ for males}$$

*average ideal body weight

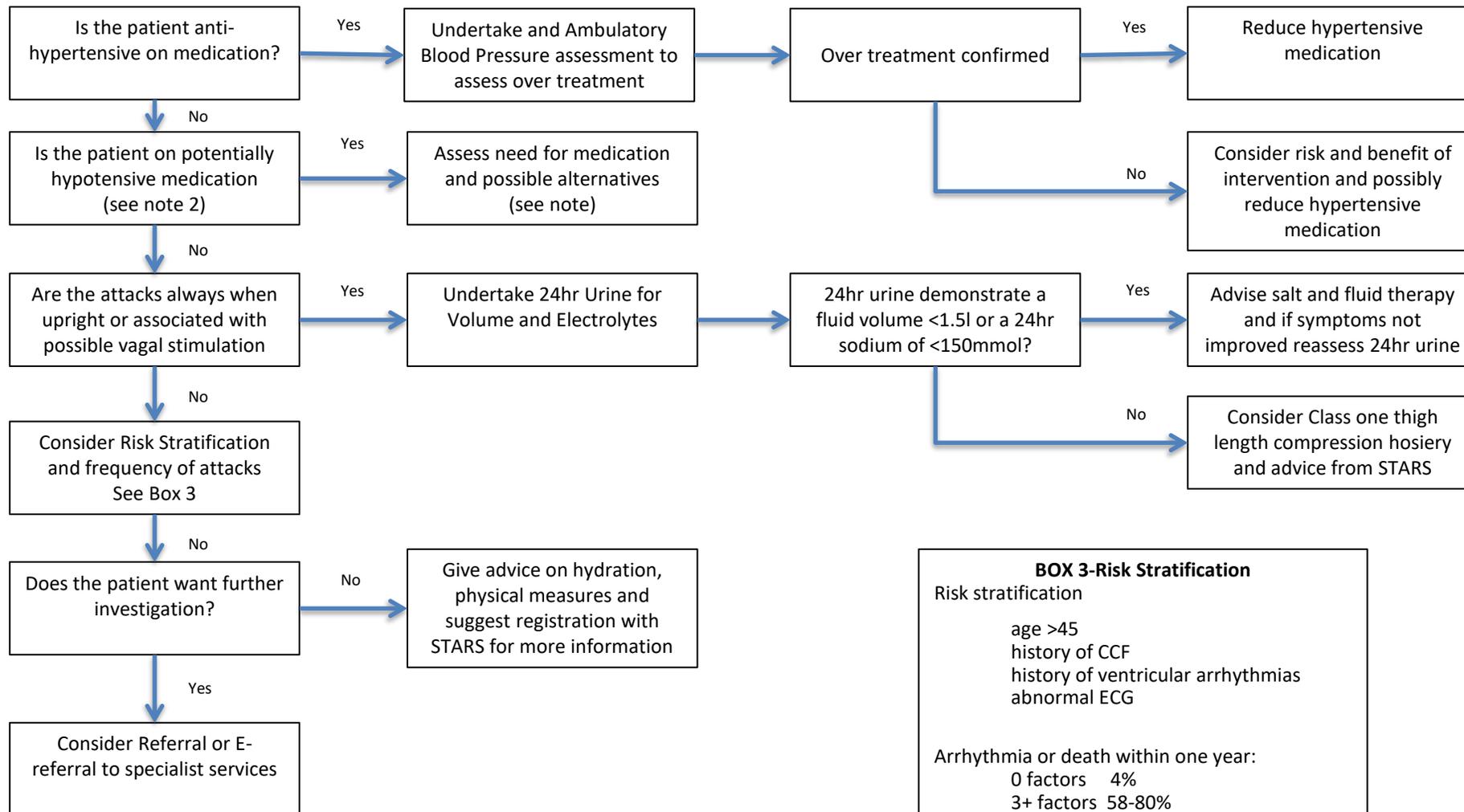


Syncope/Presyncope/ Hypotension Pathway



- BOX 1-Symptoms suggestive of non-syncopal episode**
- Confusion after the attack for more than 5 minutes (seizure)
 - Prolonged (>15 sec) tonic-clonic movement starting at the onset of the attack (seizure)
 - Associated with vertigo, dysarthria, diplopia (TIA)
 - Disorders resembling syncope with intact consciousness e.g. psychogenic “syncope” (somatization disorders)

- BOX 2-Red Flags**
- Suspected/known
 - significant cardiac disease
 - chest pain
 - Cardiac murmur
 - ECG abnormalities suggesting arrhythmias (long QT etc)
 - Syncope during exercise
 - Syncope causing severe injury
 - Family History of sudden death
 - Sudden onset of palpitations in the absence of heart disease
 - Frequent recurrent episodes



BOX 3-Risk Stratification

Risk stratification

- age >45
- history of CCF
- history of ventricular arrhythmias
- abnormal ECG

Arrhythmia or death within one year:

- 0 factors 4%
- 3+ factors 58-80%

Unhelpful Investigations in this situation

- 24hr ECG
- EEG
- CT scan
- MRI

Stars is at:- <http://www.stars.org.uk>

Note 1

- **History:**
 - **Onset**
 - Rapid with/without prodrome
 - Position Action Situation Event Exercise
 - **Prodrome**
 - light headed, visual disturbance, cold nausea, sweating, weakness, dizziness, neck pain, palpitations
 - **Witness**
 - Colour, duration, movements, tongue biting
 - **End of attack**
 - Usually spontaneous complete prompt recovery
 - Post recovery fatigue sometimes. Injury, confusion

Note 2

- **Drugs that can contribute to syncope**
 - Vasodilators
 - nitrates, Calcium Channel Blockers, ACEIs
 - Anti-hypertensives
 - Alpha Blockers, Beta Blockers
 - Prolongation of QT(torsade de pointes)
 - Antiarrhythmic agent : class IA,III
 - Antibiotics : macrolide(erythromycin), bactrim
 - Others :Terfenadine,Tricyclic Antidepressants

General Points

Causes of syncope in the elderly population:

- **Cardiac diseases**
 - *Primary cardiac arrhythmias*
 - Probably the most common cause of syncope in patients with structural heart or vascular disease.
 - An age-related fall in nodal myocytes particularly in the sino-atrial node increases the incidence of atrial fibrillation, heart block and sick sinus syndrome
 - Polypharmacy
 - *Structural cardiovascular diseases—obstruction to left ventricular outflow*
 - *Obstruction to right ventricular outflow*
- **Neurally mediated syncopal syndromes**
 - *Vasovagal syncope*
 - *Situational syncope*
 - *Carotid sinus hypersensitivity*
- **Orthostatic and dysautonomic disturbance of blood pressure control**
- **Postprandial hypotension**
- **Cerebrovascular, neurological, and psychiatric causes**

Drugs predisposing to syncope

- **Vasodilators:** nitrates, Calcium Channel Blockers, ACEIs
- **Antihypertensives :** Alpha Blockers, Beta Blockers
- **Prolongation of QT(torsade de pointes)**
 - Antiarrhythmic agent : class IA,III
 - Antibiotics : macrolide(erythromycin), bactrim
 - Others :Terfenadine,Tricyclic Antidepressants

Differentiating syncope from seizure

Feature	Syncope	Seizure
Aura	Absent	Rarely present
Dizziness prodrome	Sometimes present	Absent
Color at onset of event	Sometimes pale	Sometimes purple
<i>Jerking movements</i>	Infrequent & short-lived	Common & longer-lasting
<i>Pattern of convulsion</i>	Uncoordinated myoclonic jerks & twitches after LOC	GTC movements- coincidence with LOC
<i>Upturning of eyes</i>	Common	Uncommon
<i>Forced conjugate deviation of eyes</i>	Absent	Common
<i>Tongue biting lateral</i>	Absent	Common
<i>Urinary incontinence</i>	Rare	Common
Duration of event	Seconds	Minutes
<i>Disorientation after event</i>	Absent rare	Present common
Increase in CK enzyme	Absent	Present

Orthostatic hypotension:- Non-drug management

- Conservative advice
 - Fluids
 - Take your time
 - Exercise pre stand
 - Salt
 - No Crossed legs
 - Squatting
 - Alcohol
 - Large CHO meals
 - Don't strain at stool
 - Sit to wee
- Graduated compression stockings/tights
- Cognisance of precipitating factors

Orthostatic hypotension:- Refractory Cases

- Caffeine 2 cups in the morning
- Raise head end of bed (RAS activation)
- Specific drugs
 - Fludrocortisone
 - Midodrine
 - NSAIDs
 - SSRIs

Thank you for your attention

matthew.fay@bradford.nhs.uk

 [@fatherofhan](https://twitter.com/fatherofhan)

Questions?





**Supporting mobility of older
people.
Why technology is getting it
wrong.**

Dr Charles Musselwhite

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Twitter: [@charliemuss](https://twitter.com/charliemuss)

Website: www.drcharliemuss.com

- Mobility and connectivity
- Solutions
- Why we get it wrong:
 - Being too wowed
 - Miss the point
 - Miss the essence
 - Viewing old people as a problem or being in deficit
- Conclusion

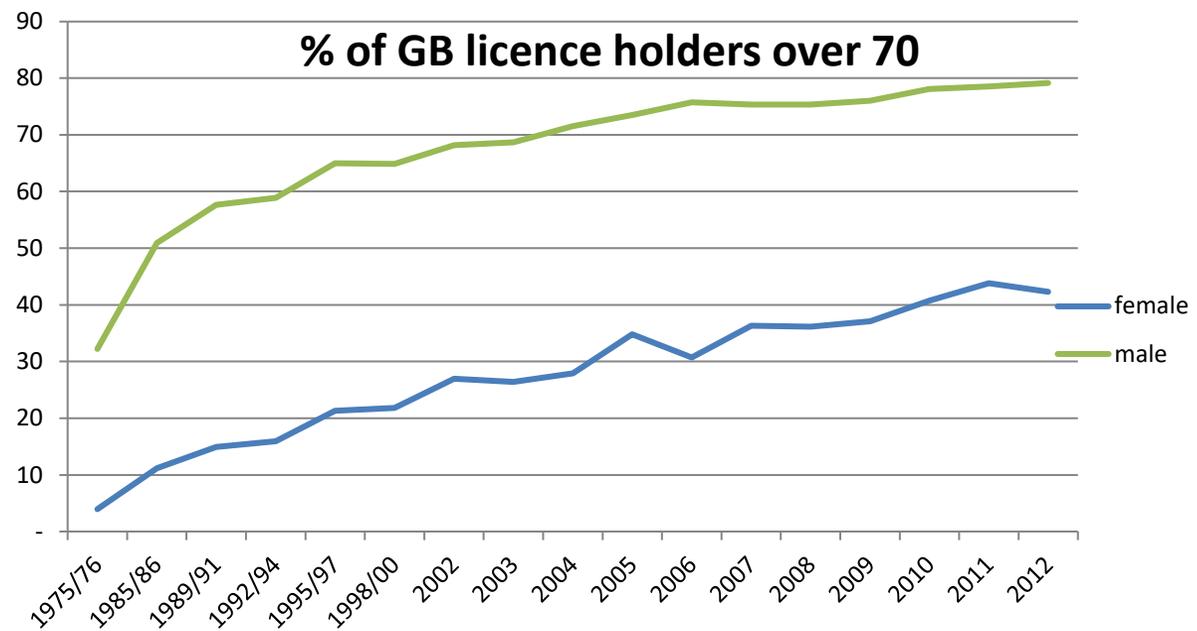




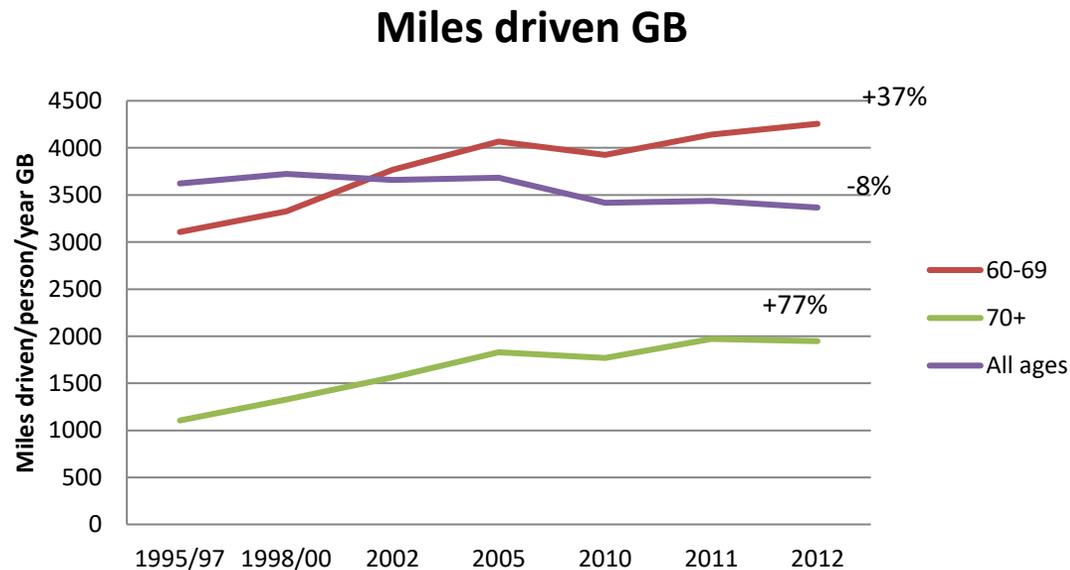
Mobility
&
connectivity



Older people are more healthy and active as a cohort than ever before and as such are also more mobile (Tomassini, 2004).



More miles driven per person



- In 2014 some 4.7 million car drivers were aged 70 and over. This figure is estimated at around 9 million by 2035.
- By 2025 number of older drivers over 85 will double to 1m

- Mobility is important for health and reduced mobility results in:
 - a decrease in wellbeing
 - an increase in depression and related health problems, including feelings of stress, Isolation and
 - increased mortality

(Edwards et al., 2009; Fonda et al., 2001; Hakamies-Blomqvist and Lindeman, 2004; Ling and Mannion, 1995; Marottoli, 2000; Marottoli et al., 1997; Mezuk and Rebok, 2008; Musselwhite and Haddad, 2010; Musselwhite and Shergold, 2013; Peel et al., 2001; Ragland et al., 2005 Windsor et al. 2007; Zieglar and Schwannen. 2013).

A major life event

PRIMARY MOBILITY NEEDS

Practical/utilitarian Needs

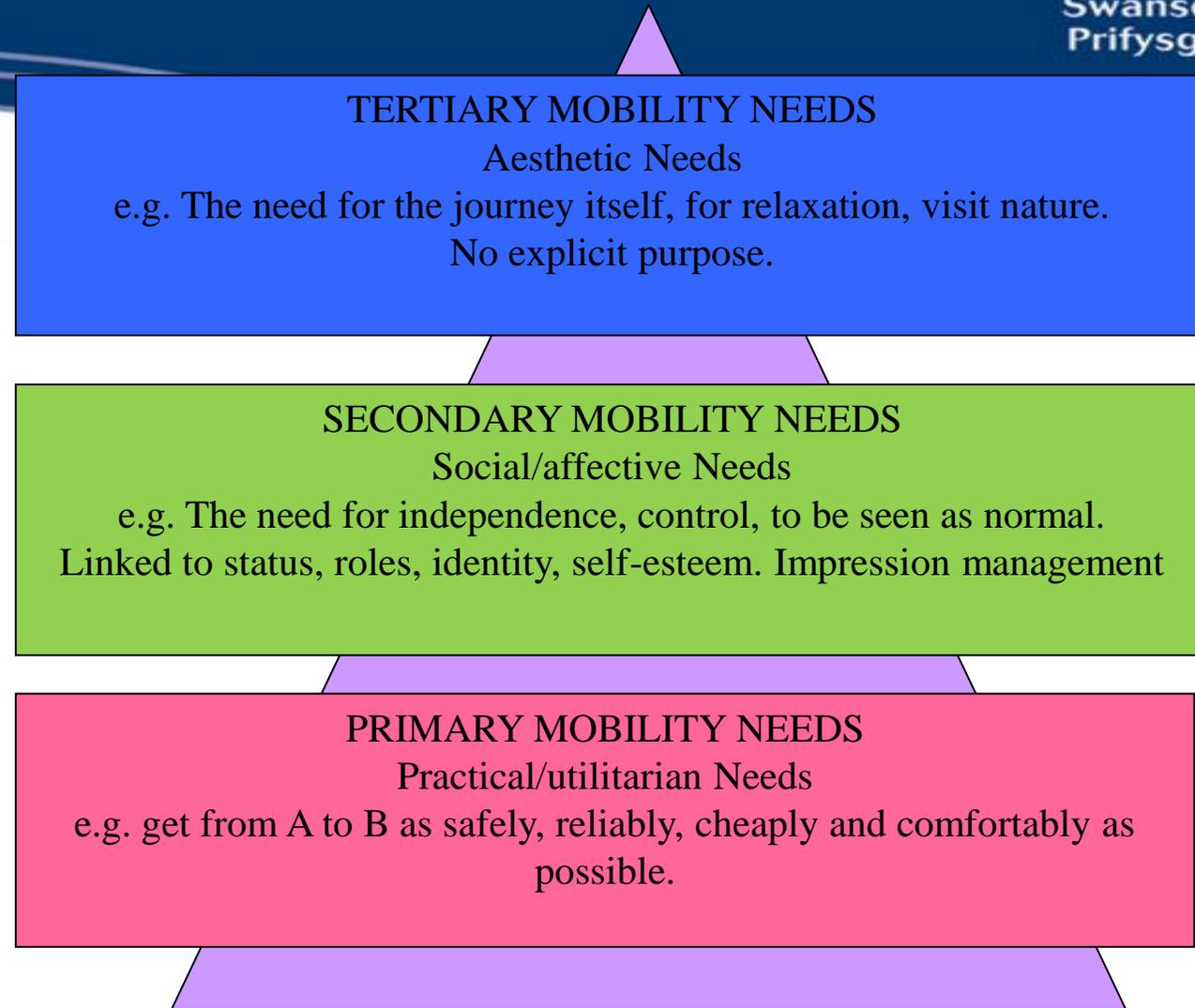
- reduction in out of home activities (Harrison and Ragland, 2003; Marottoli et al., 2000; Rosenbloom, 2001)
- decrease in associated physical and social functioning (Edwards et al., 2009),
- less frequent health care use for checkups and chronic care (Arcury et al., 2005; Mattson, 2010)
- reduced social networks (Mezuk and Rebok 2008) and activities (Marottoli et al., 2000) and

SECONDARY MOBILITY NEEDS

Social/affective Needs

- associated with increased dependency on others (Rosenbloom, 2001),
- norms of using the car (Musselwhite and Haddad, 2010; Zieglar and Schwannen. 2013),
- independence (Adler and Rottunda 2006; Davey 2007; Musselwhite and Haddad, 2010; Siren and Hakamies-Blomqvist 2009) and the view of using the car being associated with being young and healthy (Musselwhite and Haddad, 2010; Musselwhite and Shergold, 2013).

Needs for travel



What would older people like technology to help them with (Soparano et al., 2009)

- **Social isolation** (loneliness, depression, boredom, social exclusion and disruption of patterns of daily living);
- **Mobility inside and outside the home** (challenges to personal mobility in terms of walking in the neighbourhood and use of public transport).
- **Keeping healthy and active** (included physical and mental activity, exercise, good nutrition, daily routines and adherence to medications);
- **Getting access to shops and services**
- **Increase community participation and contribution to local community;**
- **Safety and Security:** (falls, disorientation, control of household equipment);
- **Reduce forgetfulness** (appears to be a challenge to independence for many and concerns, for example, taking medication or finding objects in the house);
- **Accessing information/keeping up to date** (was a crucial issue as well as finding help and tradesmen to do jobs around the home);
- **Quality management of care provision** (is an important issue to ensure that the right amount and right quality of care is delivered in people's homes);

Potential solutions

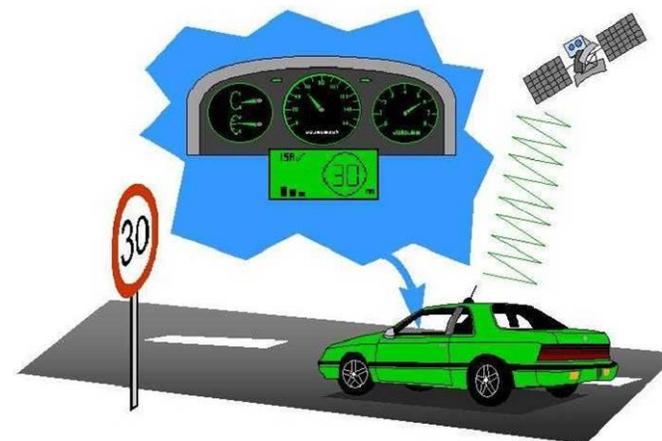
- Replace like for like
 - Technology to support literal mobility
- Substitute
 - Digital mobility instead of literal mobility

- Replace like for like
 - Technology to support literal mobility

Keeping older drivers safe on the roads

Towards driverless or automated vehicles:

- **Informative systems**
 - Head-up displays
 - Prioritise and manage displays
- **Advisory systems**
 - Warning messages
- **Take over systems**
 - Automated vehicle



- Replace like for like
 - Technology to support literal mobility

Supporting pedestrians

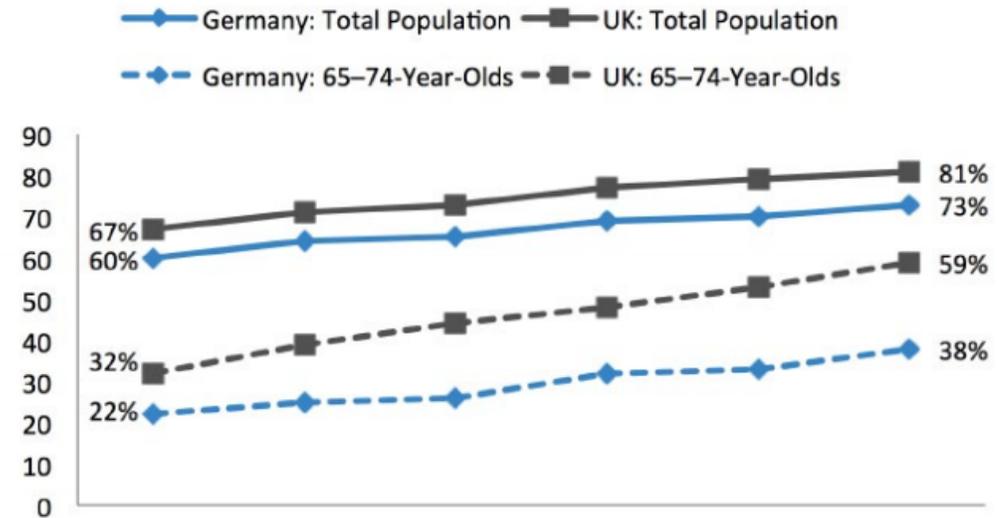


- Substitute
 - Digital mobility instead of literal mobility

Shop online



Figure 16. Germany and the UK: Individuals Who Have Purchased Goods or Services Online in the Past 12 Months, Total Population vs. 65–74-Year-Olds (%)



% of all individuals (i.e., not just % of Internet users).
Source: Eurostat

- Substitute

- Digital mobility instead of literal mobility



E-health

Carefully track own health

Independence, esp. rural areas, ownership over health

Reduce missed appointments and reduce emergencies



- Substitute
 - Digital mobility instead of literal mobility

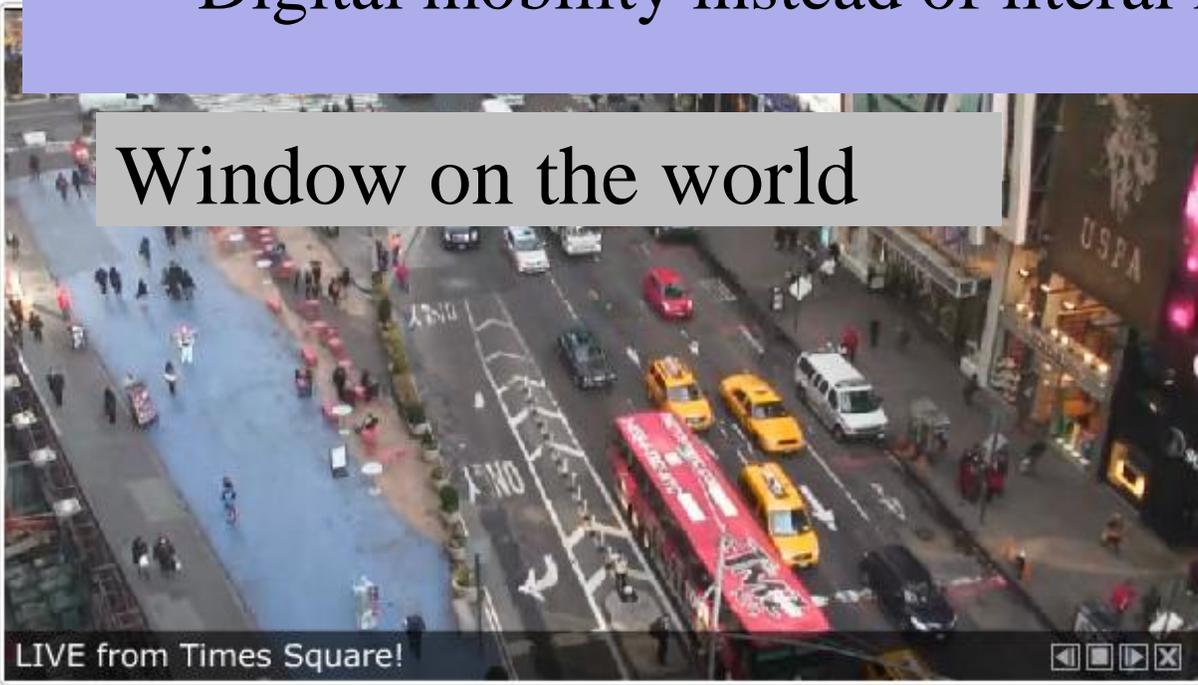


- Facebook big growth in use: 65% over 65s use. But many do not use frequently/give it up
- Twitter: 13% 50-64 year olds; 5% 65+ (compared to 30% 18-29 year olds)

- Substitute
 - Digital mobility instead of literal mobility



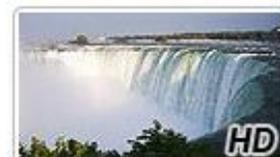
- Substitute
 - Digital mobility instead of literal mobility



Times Square, NYC



TorchCam



Niagara Falls, CAN



Scranton, PA



Anna Maria Island, FL



Belmont, NC



Times Square, NYC



New York, NY



EarthCamTV



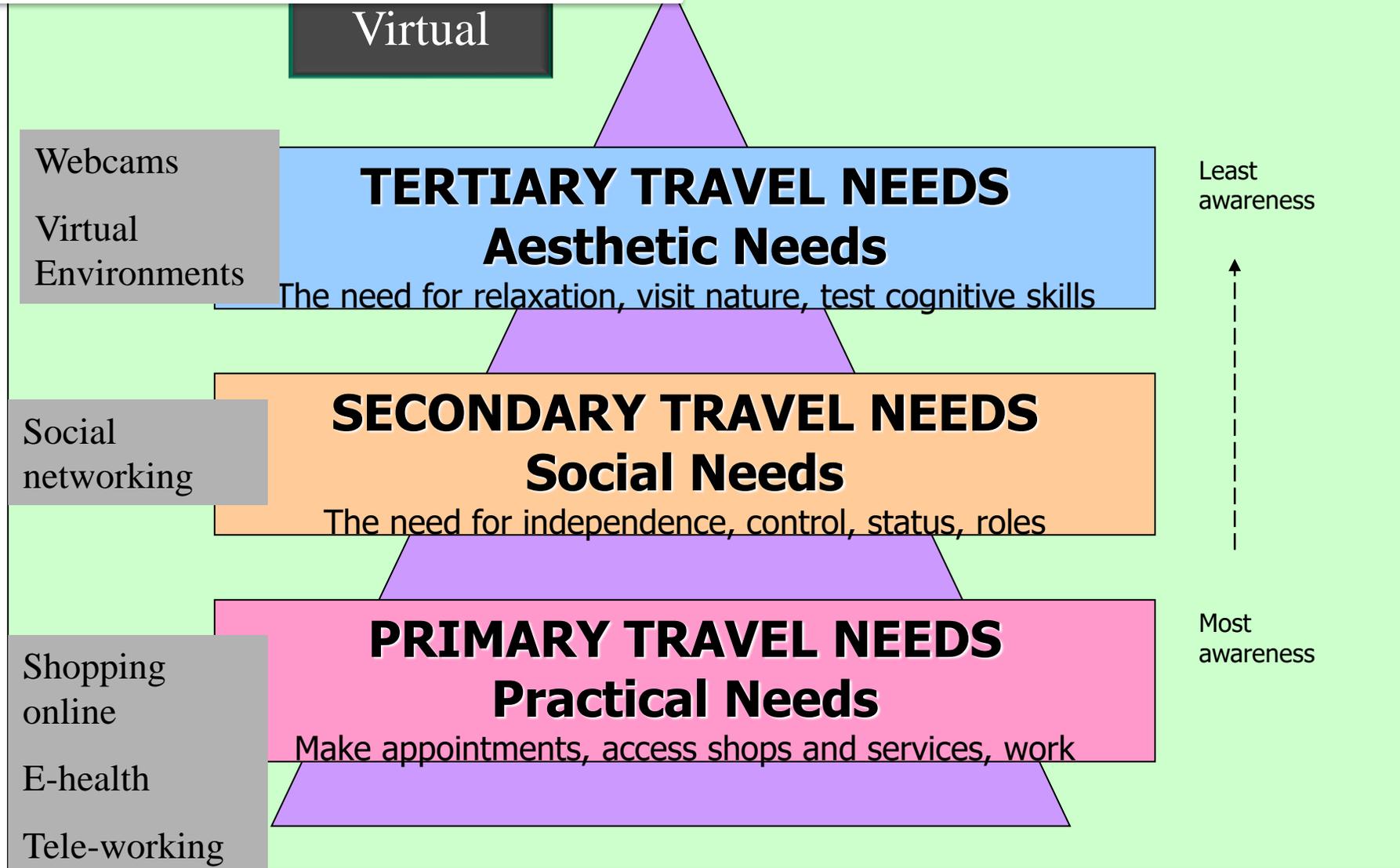
Grand Haven, MI



Sedona, AZ



There are replacements on the
Internet to reduce actual mobility



Potential

Virtual

- Increase in technology and networking
- Increased accessibility
- Increased use – buying, talking, making friends, “visiting”, watching, interacting
- Own time

Challenges

- What is missing from the “virtual” world compared to “reality”?
 - Touch, smell, sense, continuity, impression managed, staged
 - Informal, random, chance meetings
- Equal access?

“I will order stuff on the Internet rather than going to town to buy it, so I don't make that journey and it is just so much simpler on the Internet. Somebody else comes and drives and delivers it to your door (Male 60s).”

“I certainly see more of my grandson because of Skype (Female 60s).”

“If I couldn't get to places..., although I've got a computer, I would stagnate. Because I like the social aspect of things. And I like the different characters you come across and it stimulates your thinking and makes life worthwhile to be able to go out and meet others (Male 70s)”

Parkhurst, G., Galvin, K., Musselwhite, C., Phillips, J., Shergold, I., Todres L. (forthcoming) Beyond Transport: Understanding the Role of Mobilities in Connecting Rural Elders in Civic Society in Hennessey, C., Means, R., Burholt, V., (Eds). *Countryside Connections: Older people, Community and Place in Rural Britain*. Policy Press, Bristol.





Why we're
getting it
wrong



Problem 1: We are wowed by technology

Creates a technocratic society

- Solution looking for a problem
- Study the technology in great detail not how it interacts society

Teleworking:

1993 by 2010: 80% of office workers
would work from home/remotely

Telehubs etc. (AT&T, 1993)

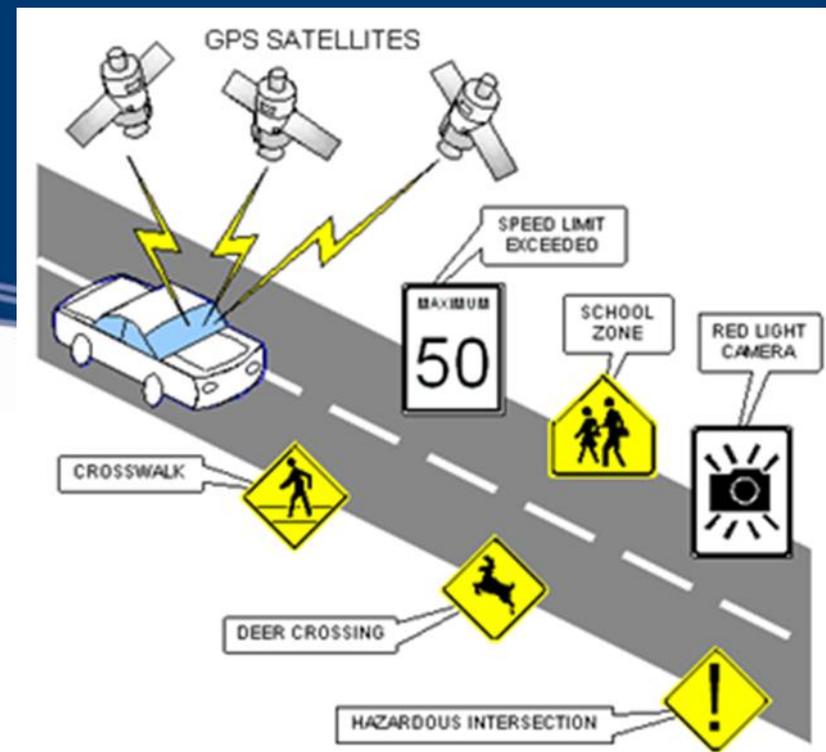
- Remove the need for physical/
literal/ corporeal travel
- Reduce need for workspace
- Did it happen? No?
- Why?
- Technology IS there and IS good
quality.



Advanced vehicle control and safety systems:

Promise we would be in self-driving cars by 2010 (e.g. Navlab, 1996)

- Did it happen?
- No?
- Technology IS there and IS high quality?
 - Been there since second world war
 - Good enough for roads since c.1996
- Why hasn't it happened?



Problem 2: We miss the point

Online shopping: Preferred when done in a group.

AGE UK help sessions (e.g. Come Dine with Us – Tyne & Wear)

AGE Concern, Dorset – Musselwhite (2006)



- Social element of shopping
- Seeing / being in the world
- Random chance encounters

Need to bring it together



Shopping

Journey
Multi-sensory
experience

TERTIARY MOBILITY NEEDS

Aesthetic Needs

The need for the journey itself, for relaxation, visit nature.
No explicit purpose.

Senior-Chatroom.com

Chat

SECONDARY MOBILITY NEEDS

Social/affective Needs

The need for independence, control, to be seen as normal.
Linked to status, roles, identity, self-esteem. Impression management



Buy food

PRIMARY MOBILITY NEEDS

Practical/utilitarian Needs

e.g. get from A to B as safely, reliably, cheaply and comfortably as possible.

Problem 3: We miss the essence

Webcams

Virtual reality

window on the world

- The importance of the (being in) moment
- What is missing? Can it replicated
- Need more research with older people

Problem 4: We think old age is all about being in deficit

- Older people like to play!



Conclusion



- Technology not direct satisfaction
 - often satisfies only one need at a time
 - Could be brought together
 - But not the same as in-person
 - Random, informal – can this really be mimicked?
 - Touch, smell, feel – can technology provide?
- But could give you more
 - Shopping with family on other side of the world
 - Keeping people independent – ageing in place
 - Locus of control with the person
- Essence and importance of literal travel
 - Importance of being co-present
 - Of the informal
 - Of the random
 - Of the ordinary, in order to get at the extraordinary
 - Interaction, mastery, discovery, formulating





- Deficit approach
- Trying to make older people like everyone else, like they're wrong for not being
- Over emphasis on “digital skills” rather than on actual use of technology.
- Need much more involvement of older people in design of technology and how it fits to their lives

Thank you

Mason, M., Sinclair, D. and Berry, C (2012) [Nudge or Compel? Can behavioural economics tackle the digital exclusion of older people?](#) Discussion Paper. International Longevity Centre - UK.

Musselwhite, C. (2011) [Successfully giving up driving for older people.](#) Discussion Paper. International Longevity Centre - UK.

Musselwhite, C. and Haddad, H. (2010). [Mobility, accessibility and quality of later life.](#) *Quality in Ageing and Older Adults.* **11(1)**, 25-37.

Musselwhite, C., Marston, H.R. and Freeman, S. (2016) [From Needy and Dependent to Independent Homo Ludens: Exploring Digital Gaming and Older People](#) *Games and Culture.* 11(1-2) 3-6

Ormerod, M. Newton, R., Philips, J., Musselwhite, C., McGee, S and Russell, R. (2015). [How can transport provision and associated built environment infrastructure be enhanced and developed to support the mobility needs of individuals as they age?](#) Future of an ageing population: evidence review Foresight, Government Office for Science, London, UK.

Parkhurst, G., Galvin, K., Musselwhite, C., Phillips, J., Shergold, I., Todres L. (2014). [Beyond Transport: Understanding the Role of Mobilities in Connecting Rural Elders in Civic Society](#) in Hennesey, C., Means, R., Burholt, V., (Eds). [Countryside Connections: Older people, Community and Place in Rural Britain.](#) Policy Press, Bristol.

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Website: www.drcharliemuss.co.uk

Questions?



12:40 - 13:45
Lunch and Networking



13:50 – 14:45
Panel Discussion





PreventIT

Motivating 60-70 year olds to be more active using smart technology: The PreventIT project.

Dr Lis Boulton
University of Manchester



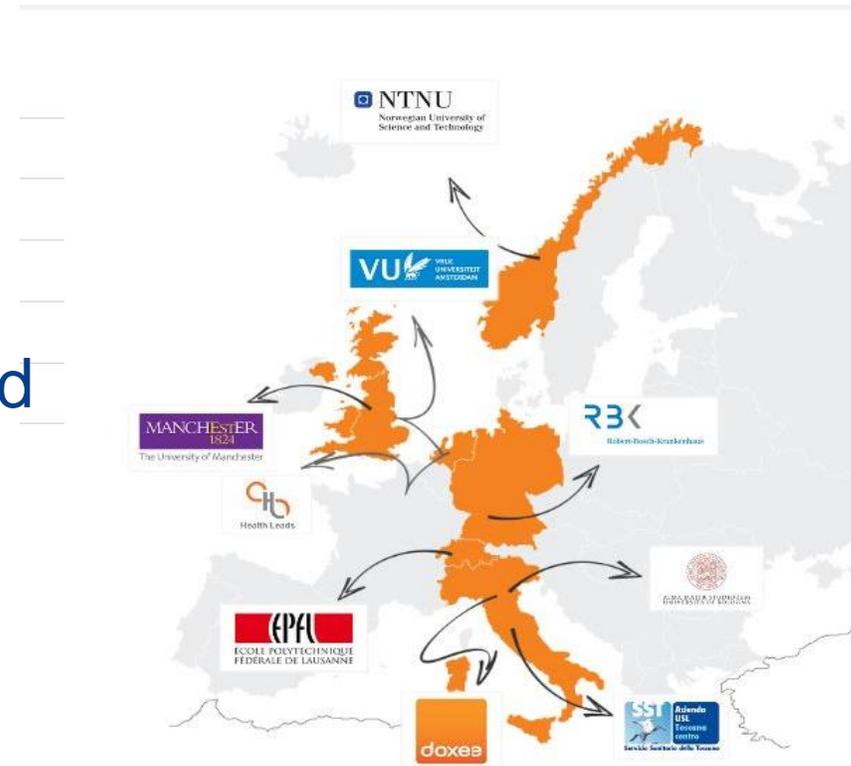


- Horizon 2020 Call PHC-21 ‘Advancing active and healthy ageing with ICT: Early risk detection and intervention.’
- Innovative solutions required to enable people to stay independent for longer.
- Early detection of functional decline and tailored interventions to prevent / reverse decline.
- Approach people before they need health services.
- Focus on recently retired 60-70 years old.
- Develop a **proof of concept** unobtrusive mobile health system for the consumer market.



PreventIT Partners

- Trial development and management.
- Risk profiling and screening.
- Behaviour change theory and implementation.
- Movement science.
- ICT development.
- Software development.
- Longitudinal data.



The LiFE Concept

- Fall prevention intervention for 75+
- Not formal exercise.
- Integration of strength, balance and increased physical activity into daily life.
- Flexible approach, participants find opportunities and use cues to form new habits.
- Conscious process of planning, performance and repetition.
- Positive effects on physical function¹ and better adherence rates than standard home exercise programme.²



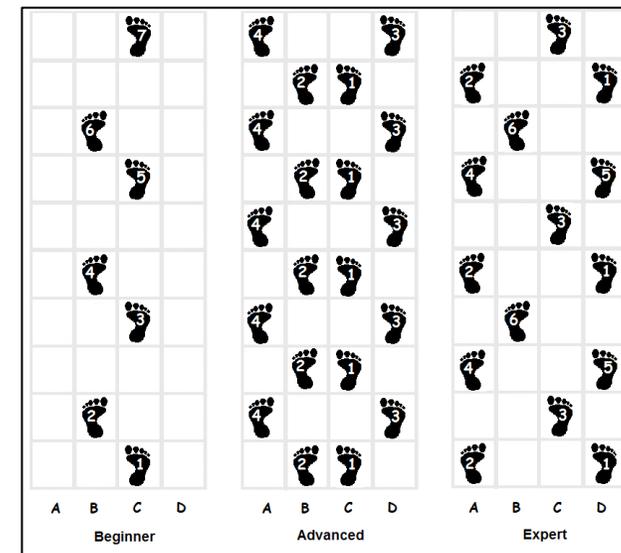
The LiFE Concept

- Many opportunities to improve strength and balance throughout the day.
- Look for opportunities to make life more challenging, not to make it easier!
- Principles: decrease the base of support, load the muscles, move more and sit less.



Adapting and extending LiFE

- aLiFE – more challenging activities.
- Taking the stairs two steps at a time.
- Lunges.
- Agility challenges.
- Cognitive tasks when performing activities.
- Dual tasks – one leg squat.
- Pilot study in Stuttgart, Amsterdam and Trondheim showed high acceptance and feasibility.
- 96.7% would recommend the intervention.



Delivering the adapted LiFE programme

- Two personalised behaviour change interventions based on LiFE concept.
- One paper based - aLiFE.
- One technology enabled - eLiFE.
- Goal setting, detailed planning using situational and environmental cues, reviewing progress with an instructor.
- Aim to find new opportunities and upgrade activities independently.



aLiFE – on paper

Long term goals (in no particular order!)

- | | |
|---|---|
| <input type="checkbox"/> Reduce my medication | <input type="checkbox"/> Feel steady on the bus/tram/train |
| <input type="checkbox"/> Have more energy | <input type="checkbox"/> Improve balance |
| <input type="checkbox"/> Gain a sense of achievement | <input type="checkbox"/> Reduce stiffness |
| <input type="checkbox"/> A sense of wellbeing | <input type="checkbox"/> Improve quality of life |
| <input type="checkbox"/> Feel proud of myself | <input type="checkbox"/> Improve mental health |
| <input type="checkbox"/> Lose weight | <input type="checkbox"/> Relieve stress |
| <input type="checkbox"/> Improve my body image | <input type="checkbox"/> Become fitter |
| <input type="checkbox"/> Tone my muscles | <input type="checkbox"/> Look after myself so I can look after others |
| <input type="checkbox"/> Walk up hills without difficulty | <input type="checkbox"/> Keep going and not seize up |
| <input type="checkbox"/> Maintain good health | <input type="checkbox"/> Maintain fitness |
| <input type="checkbox"/> Maintain independence | <input type="checkbox"/> Be able to carry heavy bags |
| <input type="checkbox"/> Avoid health problems | <input type="checkbox"/> Maintain current lifestyle |
| <input type="checkbox"/> Stay young | <input type="checkbox"/> Improve health and breathing |
| <input type="checkbox"/> Stay strong | <input type="checkbox"/> Improve flexibility and strength |
| <input type="checkbox"/> Become stronger | <input type="checkbox"/> Learn more about my body |
| <input type="checkbox"/> Improve stamina | <input type="checkbox"/> Improve my performance in sport |
| <input type="checkbox"/> Be able to do more at home | <input type="checkbox"/> Walk more often |
| <input type="checkbox"/> Walk longer distances | |



aLiFE – on paper

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Get up						
Morning							
	Lunch						
Afternoon							
	Dinner						
Evening							
	Go to bed						



aLiFE – on paper

LiFE Activity Planner: physical activity. Week starting / /

Physical activity principle	Physical activities	Example of daily tasks. How, when and where?	Tick if done						
Walk more	Walk longer								
	Walk faster								
Reducing sedentariness	Sit less								
	Break up sitting								



Activity counting

aLIFE Activity Counter. Week starting: / /

Activity/Episodes	Day	Count (Episodes)
<i>Tandem stand while brushing teeth</i>	<i>Monday</i>	

Have you had any problems while doing any of the activities in this programme?

If yes, please give details



eLiFE: Developing the PreventIT Application

- Apps, apps and more apps!
- 165,000 health and fitness apps in the App Store and Google Play (September 2015).
- 79,519 Android apps (December 2016).
- Very few evidence-based or linked to theories of behaviour change.
- Cowan et al. (2013) reviewed 127 exercise apps. Lack of theoretical content³.
- Often not developed with older adults in mind.



Why use behaviour change theory?

- Identify how intervention should work and guide development.
- Test our ideas; does it work as it should? What do we need to change?
- Generalise findings from previous work into novel areas.
- Prevent the repetition of previous mistakes.
- Refine and develop the theories themselves.

- App developers are missing a trick!



Developing the motivational strategy

- Literature reviews (e.g. messaging interventions).
- Previous work at the University of Manchester.
- Previous work in the FP7 FARSEEING project.
- Consortium meetings and workshops.
- Feedback from older adults in the aLiFE pilot study.
- Feedback from older adults in the eLiFE pilot study.
- A lot of thinking and talking!



Developing the motivational strategy

- Strong foundations in behaviour change theory and behaviour change techniques.
- Drawn upon Social Cognitive theories⁴, Habit Formation theories⁵ and Michie's Taxonomy of Behaviour Change Techniques⁶.
- All elements of the intervention have been mapped to behaviour change constructs and techniques (independent mapping).
- 1322 motivational messages written for the eLiFE intervention, all mapped to theory and techniques.
- All translated into Dutch, German and Norwegian!
- 10% back-translated into English and checked.



Health Action Process Approach

Remember to take more steps today. You could walk to the shops.

You can make plans to continue activities when you are away from home.

It's normal to have times when you are not so active, you can get back to where you were before!

Regular physical activity reduces the risk of many diseases developing. Keep moving and keep well!



If you are going on holiday, take your walking shoes with you so you can still be active.



Message Mapping

Domain	Action self-efficacy	Action planning	Coping self-efficacy	Coping planning	Recovery self-efficacy	Recovery planning	Outcome expectancies	Social support	Social comparison	Totals
Strength prompts	8	7	11	9	9	10	15	16	15	100
Strength goals	0	0	0	0	0	0	688	0	0	688
Balance prompts	8	7	11	9	9	10	15	10	10	89
Balance goals	0	3	0	0	0	0	59	10	10	82
Physical activity prompts	9	8	10	12	9	10	15	14	12	99
Physical activity goals	0	3	0	0	0	0	74	8	6	91
Sedentary prompts	6	9	9	9	9	8	9	10	10	79
Sedentary goals	8	8	8	8	0	0	42	10	10	94
Totals	39	45	49	47	36	38	917	78	73	1322



Message Mapping

Improved strength	Coping planning	Prompts/ocus; restructuring the physical environment	Could you leave yourself a reminder to do your strength activities? A note on the microwave?	Prompt	92			Kunne det vært en idé å ha en påminnelse til deg selv om å gjøre styrkeaktivitetene? En lapp på mikrobølgeovnen?
Improved strength	Coping planning	Prompts/ocus; restructuring the physical environment	Could you leave yourself a reminder to do your strength activities? A note next to the kettle?	Prompt	94			Kunne det vært en idé å ha en påminnelse til deg selv om å gjøre styrkeaktivitetene? En lapp ved vannkokeren?
Improved strength	Recovery self-efficacy	Verbal persuasion	You can get back on track. You've been doing your strength activities, so you can do them again.	Prompt	96			Du kan komme deg tilbake på rett spor. Du har gjort styrkeaktivitetene dine før, så du kan gjøre dem igjen.
Improved strength	Recovery self-efficacy	Verbal persuasion about capability	Don't worry if you've not been doing so many strength activities, you've done them before and you can do it again.	Prompt	114	Don't worry if you've not been doing so many strength activities, you've done them before and you can do it again!	! Removed	Ikke tenk på det om du ikke har fått gjort så mange styrkeaktiviteter. Du har gjort dem før, og du kan gjøre dem igjen.
Improved strength	Recovery self-efficacy	Verbal persuasion	It's normal to have times when you are not so active, you can get back to where you were before.	Prompt	96	It's normal to have times when you are not so active, you can get back to where you were before!	! Removed	Det er vanlig å ha perioder hvor man er mindre aktiv, du kan komme deg tilbake dit du var før.
Improved strength	Recovery self-efficacy	Verbal persuasion about capability	If you've been ill, it's normal to feel too tired to do your strength activities. Try a little bit today and you'll soon be doing them all again.	Prompt	145			Hvis du har vært syk er det vanlig å føle seg for sliten til å gjøre styrkeaktivitetene. Forsøk å gjøre litt i dag, så vil du snart gjøre dem alle igjen.
Improved strength	Recovery self-efficacy	Verbal persuasion	You will soon have more energy and get back to where you were, just take it one day at a time.	Prompt	94			Du vil snart ha mer energi og være tilbake der du var, bare ta en dag av gangen.
Improved strength	Recovery self-efficacy	Social comparison; verbal	Many other people have times when they are not so active, but they get back to it. You can too!	Prompt	95			Mange andre har perioder hvor de ikke er så aktive, men de kommer tilbake. Det kan også du gjøre!
Improved strength	Recovery self-efficacy	Social comparison; verbal	Retired people are often busy, but you can all fit strength activities into your days.	Prompt	86	Retired people are often busy, but you can all fit strength activities into your days!	! Removed	Pensjonister er ofte opptatte, men dere kan alle gjøre plass til styrkeaktiviteter i hverdagen deres.
Improved strength	Recovery self-efficacy	Verbal persuasion	There have been times when you've overcome difficulties before. You can do it again this time.	Prompt	94	There have been times when you've overcome difficulties before. You can do it again this time!	! Removed	Det har skjedd før at du har taklet en hindring på veien. Du kan gjøre det denne gangen også.
Improved strength	Recovery self-efficacy	Verbal persuasion	Think about how good your strength was in the past, that can be you again. You can take a step towards it	Prompt	113	Think about how good your strength was in the past, that can be you again! You can take a step towards it		Tenk på hvor sterk du var før, det kan bli deg igjen. Du kan ta et steg i retning av det i dag.



The eLiFE system

- Android smartphone – sensors and application
- Android smartwatch – sensors and application for notifications.



Samsung Galaxy J5, 2016



Sony Smartwatch 3

Planning in eLiFE

The image displays five screenshots from the eLiFE mobile application, illustrating the planning interface. The screenshots are arranged in a collage:

- Leftmost screenshot:** A 'Selected Activities' screen with a 'Select Long Term Goals' section. The goals listed are: 'Walk more often', 'Walk longer distances', 'Walk up hills without difficulty', 'Walk a marathon', 'Walk a half marathon', 'Go on a hiking holiday', 'Be fit enough to join a sports club', and 'Improve my performance in sport' (which is checked).
- Top-middle screenshot:** A 'Proposed Activities' screen showing a list of activities: 'Sit to stand (Level:2)', 'Square jumping (Level:1)', 'Square stepping and hopping (Level:1)', 'Stepping and changing direction (Level:2)', and 'Tandem walk'.
- Center screenshot:** A 'Settings' screen for an activity. It shows 'Performance: default', 'Location: Kitchen', and a 'When:' dropdown menu with options: 'Morning', 'Breakfast', 'Lunchtime', 'Afternoon', and 'Teatime'. There are 'Save' and 'Cancel' buttons.
- Top-right screenshot:** A 'Selected Activities' screen showing a list of activities: 'Side to Side Leaning (Level:2)', 'Side to Side Leaning (Level:2)', 'Squatting (Level:3)', and 'Stair climbing (Level:1)'. A context menu is open over the 'Side to Side Leaning (Level:2)' activity, listing actions: 'Accessing cupboards', 'Using a tablet', 'Using the phone', 'Picking something up', 'Cooking', 'Laying the table', and 'Loading/unloading the dishwasher'. There are 'Cancel' and 'Save' buttons.
- Bottom-right screenshot:** A 'Selected Activities' screen showing a list of activities: 'Squatting' (Location: Kitchen, When: Dinner time, Situation: Loading/unloading the door, Difficulty 3), 'Lunging' (Location: Park, When: Morning, Situation: Walking the door, Difficulty 2), and 'Stair climbing (Level:1)'.

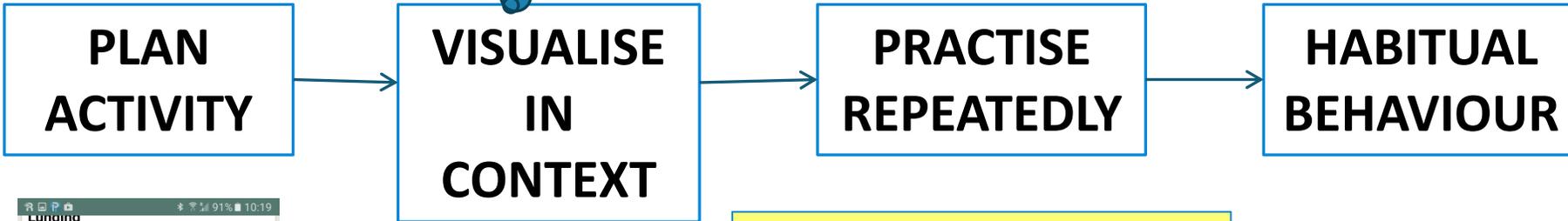
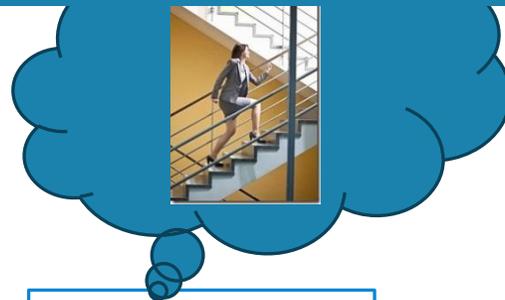


Habit Formation Theory

- What is a habit?
- *‘Behavioural patterns enacted automatically in response to a situation in which the behaviour has been performed repeatedly and consistently in the past.’*
(Lally & Gardner, 2013)
- Habits can be formed by repetition of a behaviour in an unvarying context.

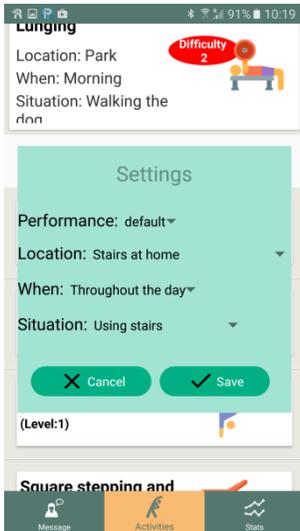


Establishing Habits



“You're an active person now and you won't stop easily!”

“Remember to do your strength activities today. Regular practice keeps you strong.”

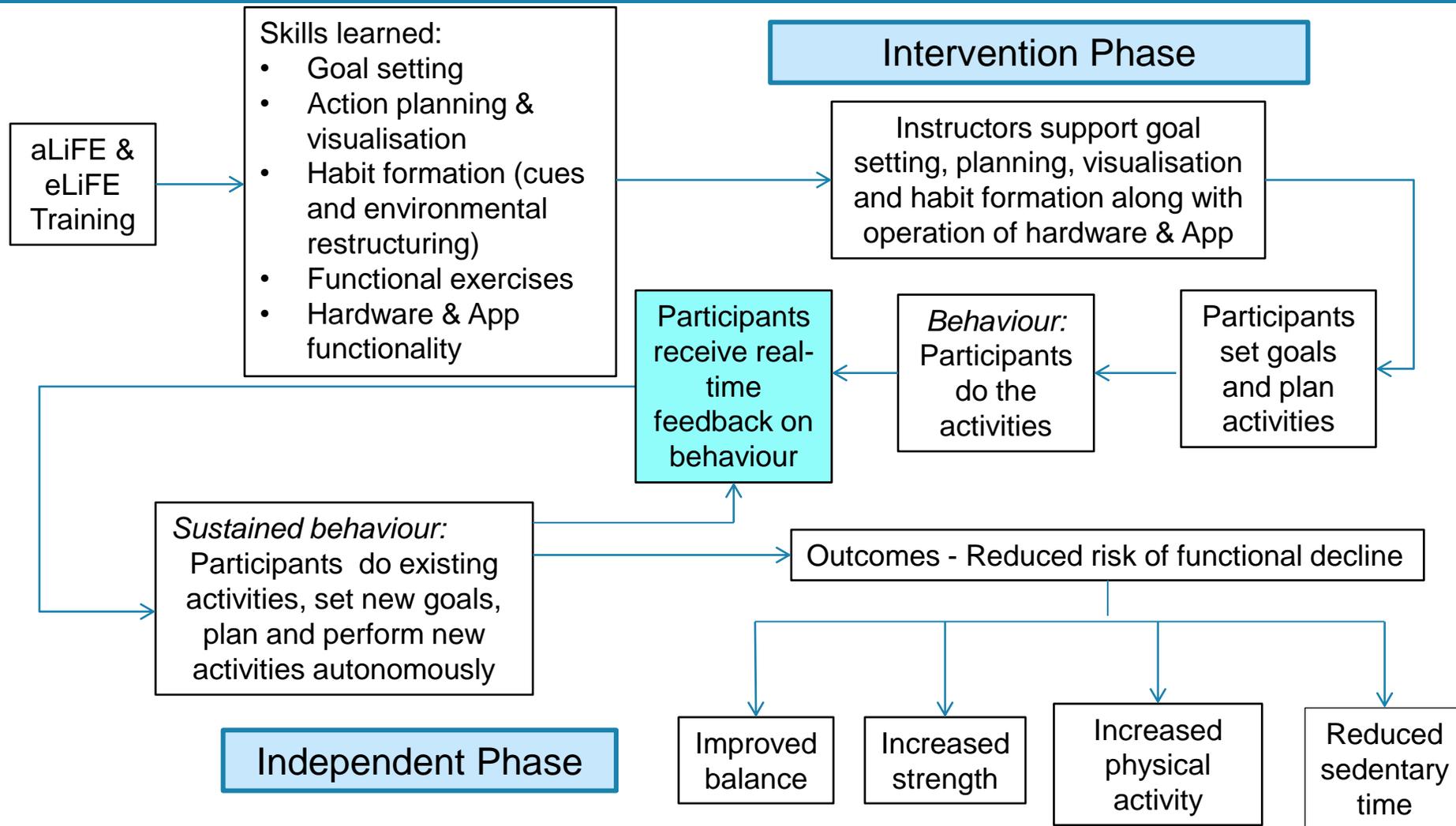


25 Behaviour Change Techniques

- Goal setting (outcome term).
- Goal setting (which activities and how often?).
- Set graded tasks.
- Prompt review of behavioural goals.
- Prompt review of outcome goals.
- Provide feedback on behaviour.
- Prompt self-monitoring of behaviour.
- Prompt behavioural outcome monitoring.
- Provide feedback on behavioural outcome.
- Prompt practice (building habits or routines)
- Use of follow-up prompts.
- Facilitate social support.
- Demonstrate the benefits of the behaviour.
- Use prompts / cues.
- Mental restructuring.



The eLiFE Behavioural Model – how will the intervention work?

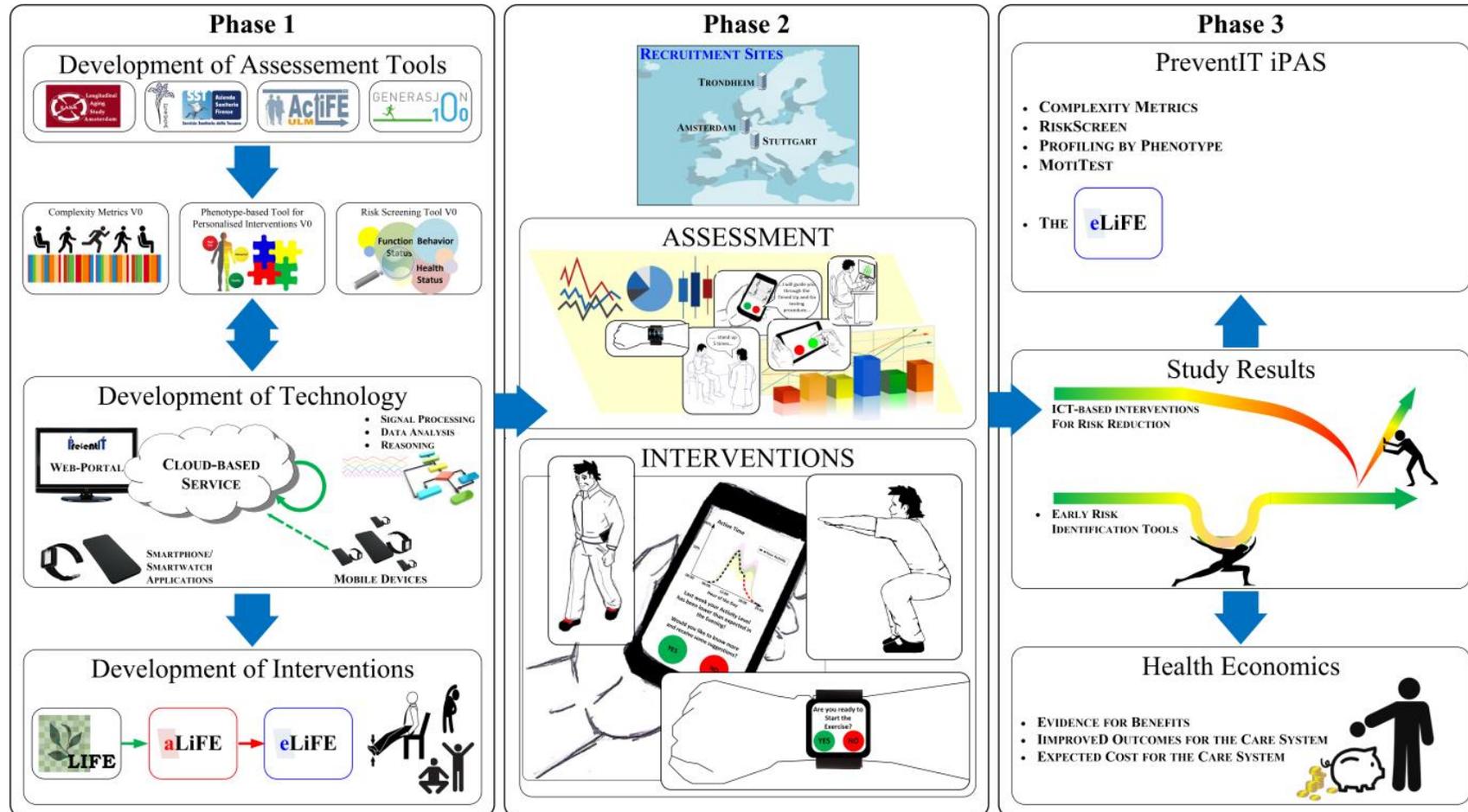


Assessing Motivational Elements

- Questionnaires.
- Focus groups.
- Motivational Assessment Tool – bespoke to see if there is a relationship between stated motivations and actual (& self-reported) behaviour.
- EARS questionnaire on adherence.



How far have we got?

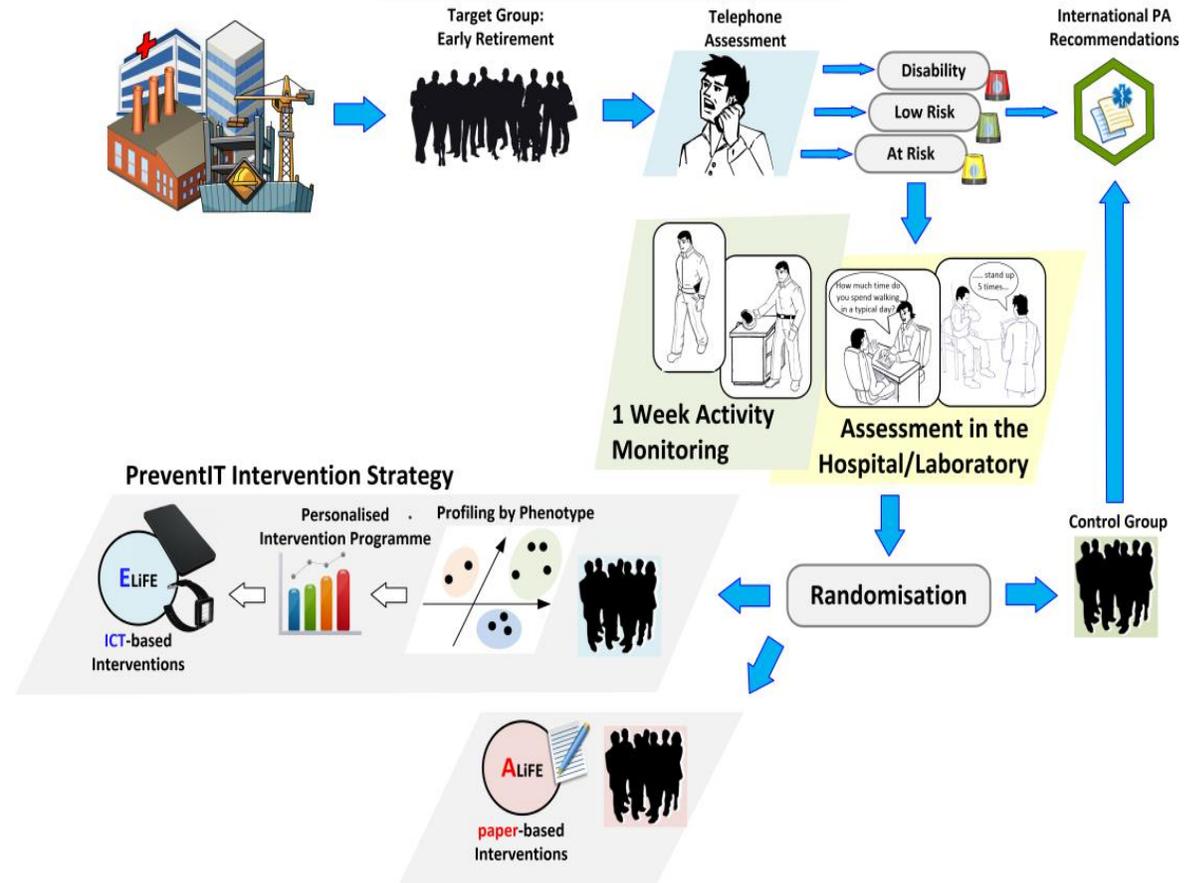
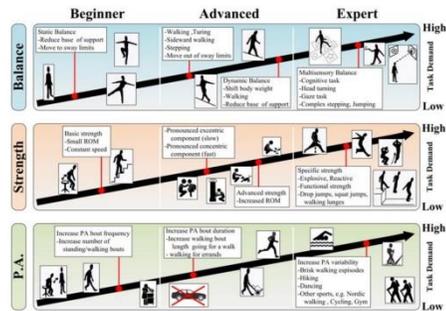


What's next?

Pilot 1
aLiFE

Pilot 2
eLiFE

Feasibility RCT



PreventIT Online



<https://www.youtube.com/watch?v=upAfGHbNvdU>



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6. Michie, S. et al. (2013). The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions. *Annals of Behavioral Medicine*, 46(1), pp. 81-95. doi: 10.1007/s12160-013-9486-6.





PreventIT

Thank you for listening.

Any questions?

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www.preventit.eu



eLiFE Pilot Study

- 14 participants used the app for 4 weeks.
- Fix the bugs!
- Clearer links between planned activities and the outcomes of increased strength, improved balance, increased physical activity, reduced sedentary time.
- Control over delivery of messages.
- Limit repetition in messages, as far as possible!

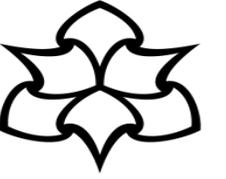


Questions?



15:15 – 15:30
Comfort Break and
Networking

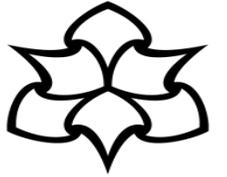




Using technology to reduce social isolation

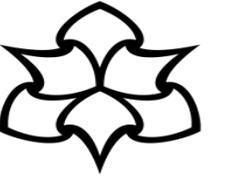
Professor Josie Tetley
Dr Emma-Reetta Koivunen

Ageing and Long Term Conditions Group
Faculty of Health, Psychology & Social Care
Manchester Metropolitan University



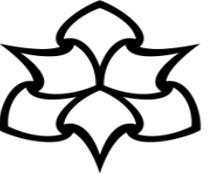
Social isolation among older people with long term health conditions and their carers

- Increased isolation is likely to lead to a loss of sense of self, greater carer burden and can produce other significant health conditions, with associated healthcare costs, secondary to a sedentary lifestyle.
- 8 out of 10 carers reported feeling lonely or socially isolated because of their caring role (Carers UK 2014).
- 40% of people living with **dementia** in UK reported feeling lonely (Alzheimer's Society 2014b).
- Restricted mobility after a **stroke**, risk of falls and loss of confidence contribute to social isolation in over a third of people after stroke, in addition to poorer mental and physical health (Ferreira et al., 2015).



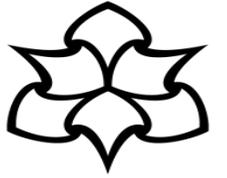
Stroke and dementia in UK

- 850 000 people live with **dementia**
 - Over 500 000 live in the community (Alzheimer's Society 2014a).
- The annual cost of dementia care is estimated to be £26.3 billion
 - £11.6 billion is contributed by the work of unpaid carers (Alzheimer's Society 2014a).
- Estimated 1.2 million **stroke** survivors in UK (Stroke Association 2015)
- The annual health and social care costs of stroke is estimated to exceed £5 billion
 - Informal health care is estimated to cost over £2.42billion
 - Lost productivity as a direct cost result of disabilities brought about by a stroke is estimated £1.33billion



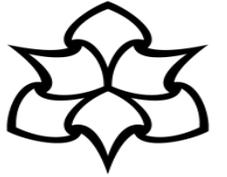
Challenges in going out in the community

- Walking has various health benefits, is free and accessible to many
- Challenges for people living with dementia and their carers
 - Confusion or memory problems
 - Increased carer stress, can hasten admission into long-term care.
 - Only about half of people living with dementia in UK go out daily (Alzheimer's Society 2014b).
 - The estimated police costs of missing person enquiries attributable to dementia range between £22.1 and £40.3 million per year (Alzheimer's Society 2014a).
- Challenges for stroke survivors
 - Over half have some problems with walking, particularly in the community (Bohannon, 1991; Ferreira, 2015)
 - Common problems include decreased speed and loss of symmetry (evenness) of walking (Bohannon, 1991 and others)
 - Challenges to stability and balance



Greater Manchester Academic Health Science Network funded research: Assistive Technology Reducing Social Isolation to support recovery, health and wellbeing

- Project 1: Haptics in stroke rehabilitation
- Manchester Metropolitan University
 - Prof Josie Tetley (Nursing),
 - Dr Rachel Stockley (Physiotherapy)
 - Dr Sue Caton
- Partners: Open University & Lucid Innovation
- Project 2: Dementia wearables
- Manchester Metropolitan University
 - Prof Josie Tetley, Dr Emma Koivunen, Donna Davenport (Nursing),
 - Dr Jenny Fisher (Social Care & Social Work),
 - Dr Matthew Sullivan (Science & the Environment)
- Partner: KMS Solutions Ltd

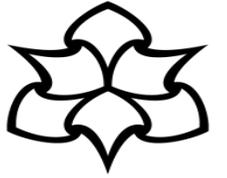


Project 1: Haptics in stroke rehabilitation

The equipment: Haptic bracelets

- Cueing has proven benefit to the walking ability of people after stroke
 - BUT: audio cues are not useful in community settings
- The haptic bracelets provide a rhythmical sensory 'cue' by vibration
 - Thought to use entrainment processes in the brain – following and reproducing a rhythm
 - This could facilitate more even weight bearing when walking producing increased symmetry or evenness
- Worn next to the skin so are discreet
- Can be used in any environment as not affected by noise

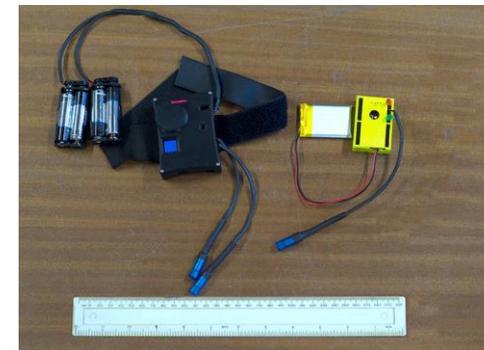


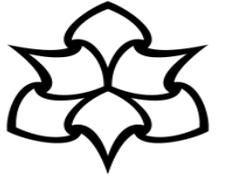


Project 1: Haptics in stroke rehabilitation

The equipment: Haptic bracelets

- A haptic cueing device may help stroke survivors to improve their walking in community settings
 - Restores rhythm and symmetry of walking
 - Need a system that is acceptable to stroke survivors
- Potential to increase ability to being mobile in community, with reduction of social isolation





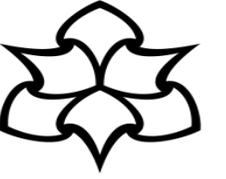
Project 1: Haptics in stroke rehabilitation

Aims

- To produce a haptic bracelet that,
 - Is fit for purpose
 - Can be used by therapists as an adjunct to rehabilitation
 - Is acceptable to people after stroke
- And indicate its effectiveness

Methodology

- Focus groups
 - Stroke survivors input into the design to make to it fit for purpose and wearable
- Gather the views of physiotherapists about what functionality they want the device to have to help with rehabilitation
- Test the prototype in a small group of stroke survivors to see the effect on walking and acceptability

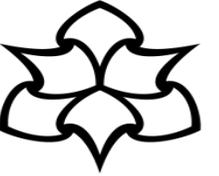


Project 1: Haptics in stroke rehabilitation

Participants views on the ‘product’

People hoped the product would provide them with:

- More confidence and make them feel safer when walking
- Greater ability to take bigger strides rather than little steps.
- A way to combat the silly mistakes participants reported making due to tiredness.
- Reduced pain (knees, hips)



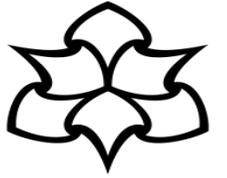
Project 1: Haptics in stroke rehabilitation

Participant views - why does this matter

‘I particularly wobble and I am a bit unsure about losing my balance if I have to climb stairs, just the fact that you are taking one foot off the floor makes me feel totally unstable unless I’m holding onto something’.

‘Balance again is the thing and it takes a lot of your confidence away of course when you are not sure of turning round quickly or crossing the road’.

‘I’d like to be able to just walk in a straight line rather than be dragged about as somebody who appears to have had a drink or something because then when you try to correct yourself sometimes that’s when you feel like you are going to stumble and get tied in knot’.

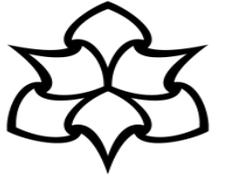


Project 2: Dementia & wearables

The equipment: wristbands (KMS Solutions)

- Simple-to-use wristband and smartphone application that enable
 - A person living with dementia to contact a carer if they are outside alone and require assistance, or
 - A carer can contact or locate the person living with dementia if they are concerned of their whereabouts.
- The wristband connects the wearer to the carer with one button

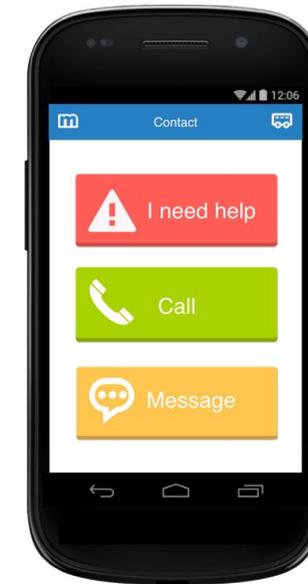
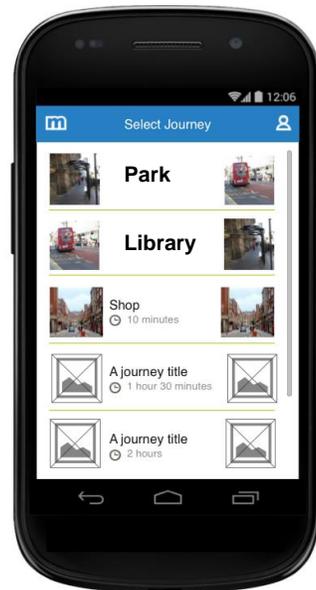


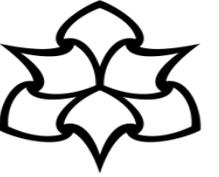


Project 2: Dementia & wearables

The equipment: smartphone app (KMS Solutions)

- Journeys can be saved on the application and the wearer will receive guidance when they are out;
- The carer will be alerted if the wearer goes off route – and when they arrive to their destination;
- The device also has a simple to use call and text function





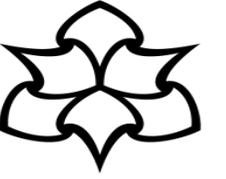
Project 2: Dementia & wearables

Aims

- To assess the potential acceptability and usability of the devices
- To test the use of the devices in everyday life contexts
- To evaluate impact of the devices to reducing social isolation and improving health outcomes
- To produce case studies to share learning

Methodology

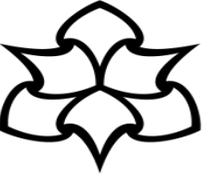
- Focus groups
- Technology testing in everyday lives of people living with dementia
- Data collection about use experiences in daily life through interviews and participant observation
- Data collection about the device use from the platform and with use diaries



Project 2: Dementia & wearables

Initial findings from focus groups - on equipment

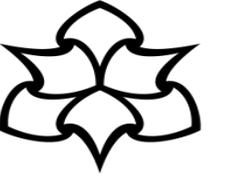
- Research participants have been very positive about the technology
- *“I want one of these” (Female carer)*
- Wristband more interesting than smartphone – familiar technology
- *“Well it’s very similar to the one I have got anyway, so yes” (Female, living with dementia)*



Project 2: Dementia & wearables

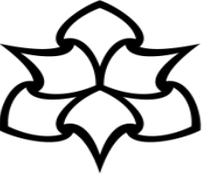
Initial findings from focus groups on tracking

- Focus on how the technology can help with safety and independence – no one in current sample has been concerned of ethics of tracking
- *“I know people say it takes your liberty away. It doesn’t, I am sorry I would be very happy walking around with a thing on my wrist if I get lost that’s not my liberty, that’s security for me. I would be very happy with that, yes, yes very happy with that.”
(Female, living with dementia)*



Technology ageing and social isolation

- Our research shows that technology can really make a difference
- The reality of implementation is complicated
- There is a need to link up existing and new developments (Herbert v GPRS)
- How can we make this better?
- There is no one solution



Thank you for listening – any questions?

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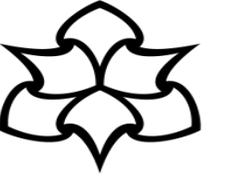


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 @emmantro

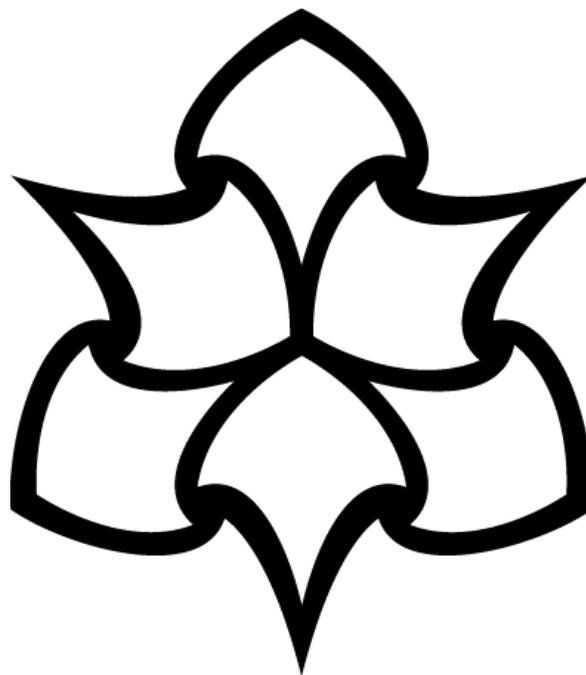
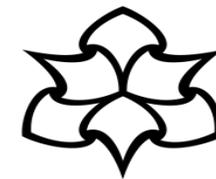


Ageing and Long Term Conditions Group
Faculty of Health, Psychology & Social Care  @ALTMU



References

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Questions?



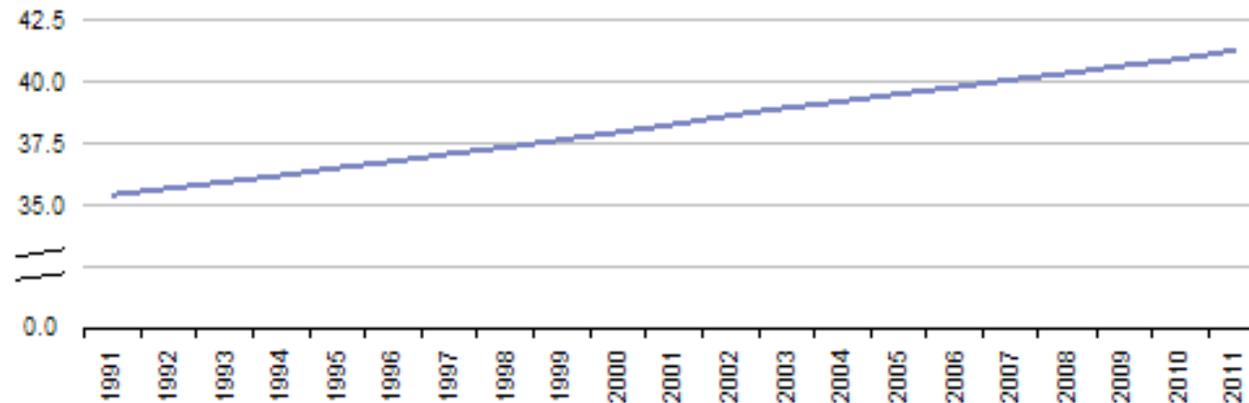


DISCOVER
SKILLS FOR CARERS

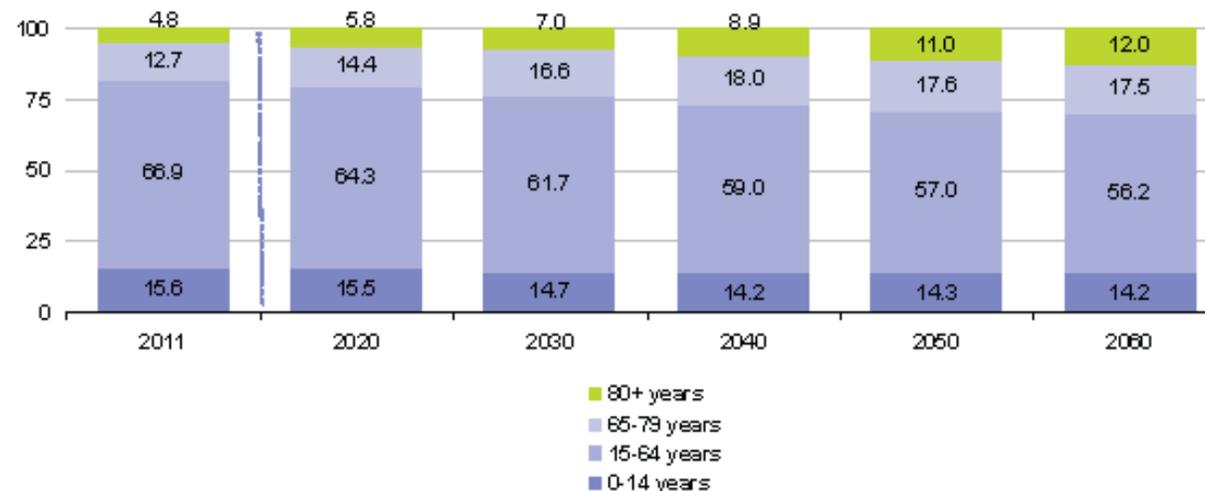
Enhancing quality of life of carers through innovative
ehealth technologies

*Dr Verina Waights,
The Open University*

Increasing age of EU population



(1) Excluding French overseas departments before 1998; 2009-2011, provisional.
Source: Eurostat (online data code: demo_pjanind)



(1) 2011, provisional; 2020-2060 data are projections (EUROPOP2010 convergence scenario).
Source: Eurostat (online data codes: demo_pjanind and proj_10c2150p)

Financial constraints on care



- By 2025 ratio of working age people to retirees will fall from 4:1 to 2:1*
- Costs of pensions and long-term care will rise by between 4 – 8% of GDP*
- Impact
 - Cuts in care provision, benefits /allowances
 - By 2020 estimated 2 million vacancies in health/social care**
 - Family carers expected to take on more complex care
 - **2025 estimated need for additional 20 million family carers across the EU***
 - **Increase in migrant workers**

*(eurostats, 2009, **ICT and ageing 2012)

Care across the EU



- ❑ Over 100 million people across the EU care for family member, partner or friend*
 - 90% of informal carers are related to care recipient
- ❑ Increasing ageing profile and increasing population living with long-term illness will lead to increased demand for quality care*
- ❑ Across EU 80% of family carers are women**, but number of women able to take on caring roles is likely to decrease due to
 - women moving into paid work to support households
 - Increase in retirement age for women
- ❑ In older age groups (65+) both men and women provide labour intensive care ***

*(Eurostats 2009), **(Eurocarers 2015), ***(Hoffman & Rodrigues 2010)

Family carers

- ❑ Carers are not defined by gender, age, race, ethnicity, culture or economic grouping
- ❑ Long standing physical and mental health problems, e.g. back pain, stress, anxiety , depression*
 - Health problems more prevalent when care exceeds 20 hours per week
- ❑ Likely to be financially less well off or living in poverty
 - 60% of participants in DISCOVER are not in paid employment
 - across EU 42% of carers are in the lowest income percentile** (Eurocarers 2015)
- ❑ Likely to be socially isolated due to caring role



Digital by default



- ❑ Many initiatives see digital technologies as a way of improving healthcare
 - ❑ ICT and Telemedicine in Europe estimated to improve healthcare efficiency by 20%
- ❑ Telehealth and telecare initiatives are on the rise
- ❑ More public services accessible online
- ❑ Online GP appointments, prescriptions
- ❑ Health information
- ❑ Consumer products and services – online cost savings, increased choice

Solutions

- Telemonitoring
- Text messaging e.g. Florence (70 health care authorities, 22,000 service users)
- Video links to service user homes

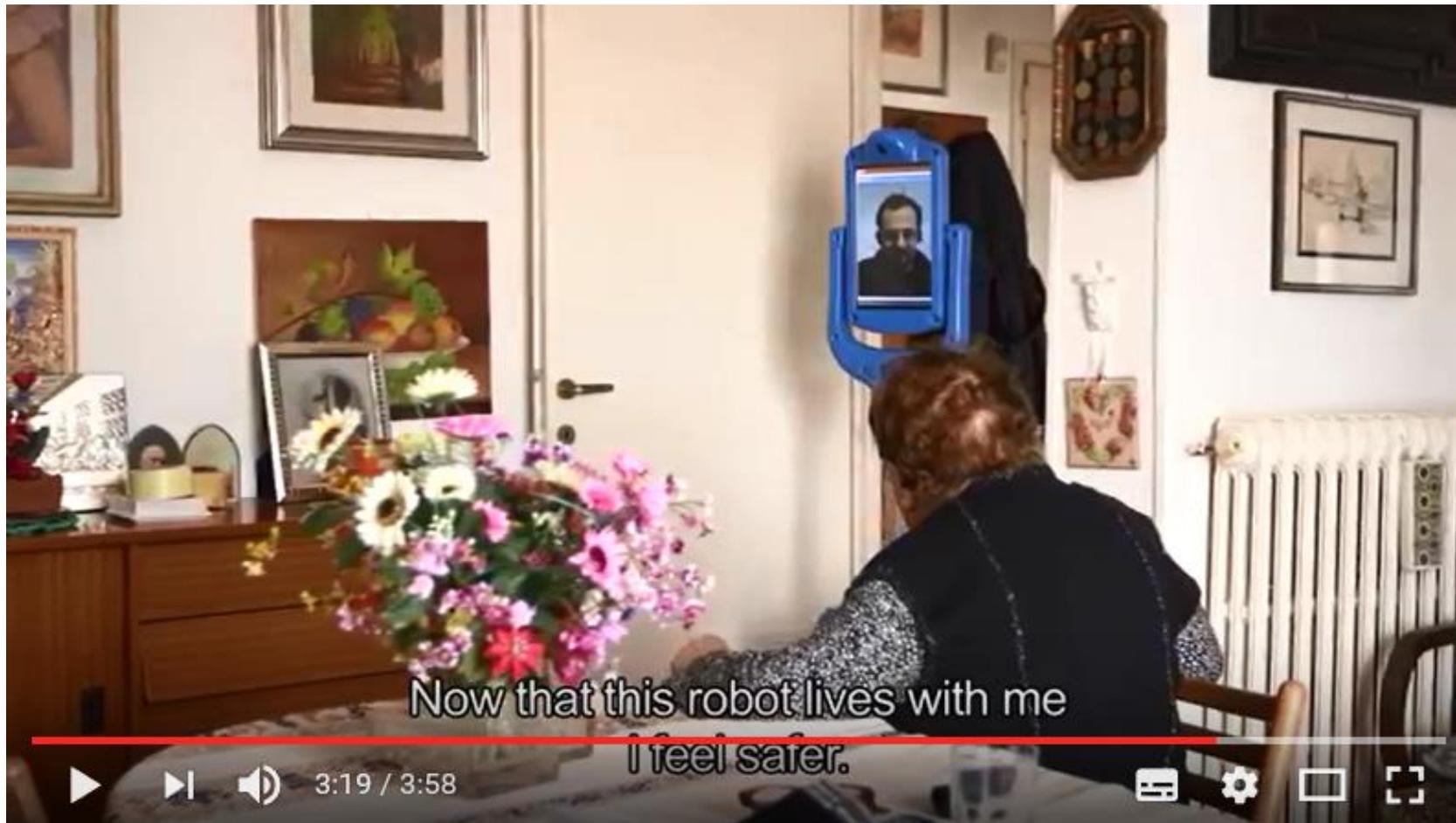
UC Davis Health System Clinical Telehealth Program



Future Solutions!



Nonna Lea and Mr Robin



<https://www.youtube.com/watch?v=9pTPrA9nH6E#t=37>

Telehealth and Telecare



- ❑ 43% of carers were not aware of technology solutions to support them*
- ❑ 7 in 10 people use technology for banking, shopping, communications and leisure, but only 3 in 10 use it to help them care**
 - 80% of respondents did not know what telecare was
 - 61% would use online information, alarms, sensors and health monitoring equipment
 - 57% would book hospital appointments or organise care services online
- ❑ DISCOVER: over 80% of carers were not aware of technology solutions to support them
- ❑ Projects demonstrating best practice mainly telehealth and care e.g ACTION (Sweden), Emergency alarm (Hungary), Cuidadoras en red (Spain).
- ❑ Interest in using robotics: expensive so likely to be in care homes not older people's own homes

*Carers UK (2013) *State of Caring report*, ** Carers UK (2013) *Potential for Change*

Being online



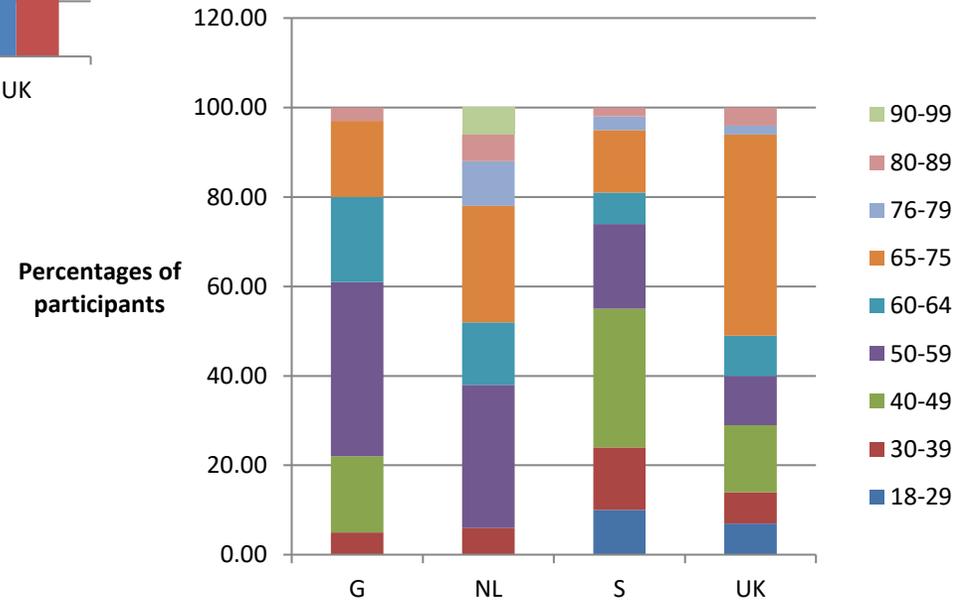
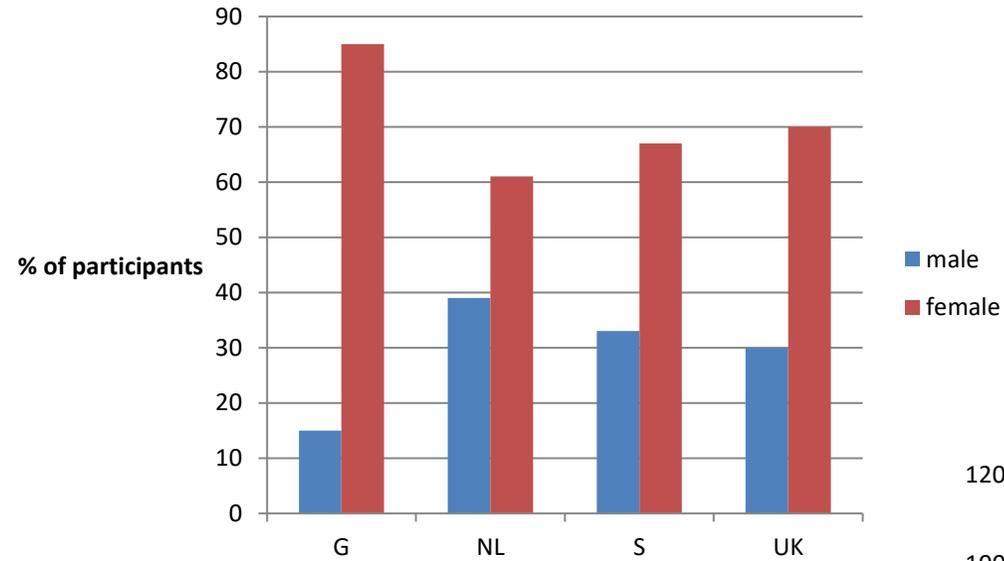
- ❑ 30% of Europeans have never used the internet, mainly older adults/people living with disabilities
- ❑ Adults not online felt less able to learn new skills
- ❑ Older people using the internet
 - Felt more in control
 - Hardly ever felt isolated or lonely
 - 78% felt the internet had improved their lives
 - 42% felt the world would not be the same without it
 - 23% felt it enhanced relationships
- ❑ Online carers in the UK report internet saves time (70%), saves money (40%) and reduces feeling of isolation (42%)
- ❑ DISCOVER: 90% of carers think computers could make their life easier and 27% think they enable more time for each other (Greece, Netherlands, Spain, UK)
- ❑ Use of tablets by people aged 65-74 increased from 5-17% (2012-2013)

DISCOVER



- Partners: Greece (1), Spain (2), Holland (1), UK (3), and Ireland (1).

Family carers



Attitudes towards computers

Statement	Carers who agree or strongly agree		Carers who disagree or strongly disagree	
	Family carers	Employed carers	Family carers	Employed carers
Computers are too difficult to use	17	13	50	63
Computers are too expensive	44	37	22	23
Using the internet will result in identity theft and fraud	17	16	30	42
Computers are useful	70	90	7	2
Computers have the possibility to make my life easier	51	89	17	3
Using the internet will enable me to access information	56	95	20	0
I feel worried about computers	36	7	34	58
I cannot afford a broadband connection	35	13	38	60
Computers can help people to have more time for each other	56	34	17	26

The Skills Zone

ABOUT SURVEY SERVICES WHATS NEW MY MAP



Using the Web Connecting For Care Enhancing Care Skills Making Your Skills Count

Click one of the above buttons to browse skills activities by topic area

Brain Games

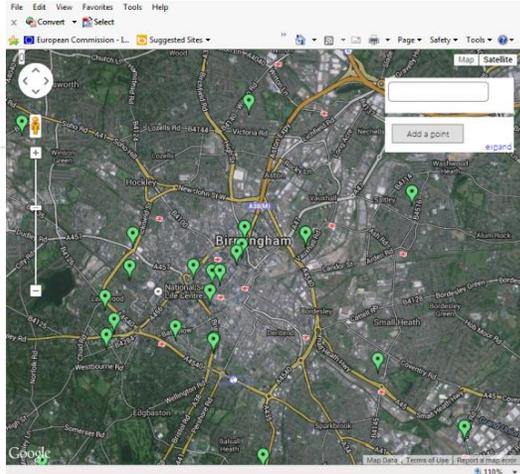
Click above for a list of all brain games



Choose a topic from the icons below.

Digital Skills	Dementia	COPD
Assistive Technologies	Heart Disease	Finance
Diabetes	Stroke	Moving & Handling
Communication Skills	Brain Games	

Local and National Services



My map of local services



Επιλέξτε την εικόνα για να συνδεθείτε με το χάρτη

Τελευταία τροποποίηση: Monday, 27 October 2014, 5:17 PM

Skills Zone

cal services

Links to local services

ital Health Older Adult Carers Finance Misc NHS



national organisations

The busy carer - learning through quick reads and videos

Step 3: If you make a mistake in your typing, there's always a remedy.

To delete a letter, place your cursor (mouse pointer) just after the letter and click. Then press **Backspace** briefly. (Always press briefly – otherwise, you'll get repeated deletions, spaces, letters or whatever.) Or place your cursor just before the letter, click and press **Delete**.

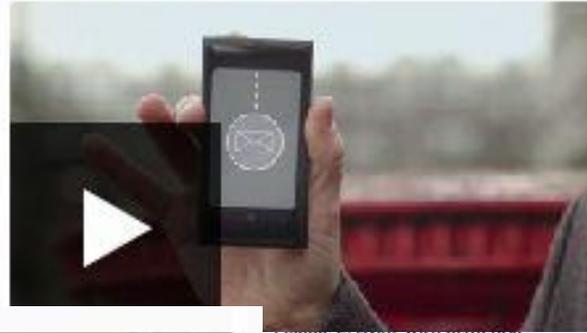
stephen



stephen



How do I get email?



Estimated time required: 20-30 minutes

Home Help Tools

Section Four: The person with dementia as an individual

Choose a section

Every person with dementia is still a person and cannot be defined simply by their dementia. It is important to recognise that each person with dementia is different from every other person with dementia.

Knowing a person's strengths, needs, preferences and difficulties will enable us to provide the support that the person needs.



"I have always said, when you've met one person with Alzheimer's Disease, you've met one person with Alzheimer's Disease."
Lorentus, 2001

When you are ready, move to the next section where we'll look at how dementia can impact on those closest to them.

Over to You [Take Notes](#)

Do you know about the strengths and abilities of people with dementia that you support?

How can you enable people with dementia to use their abilities to the full?

Hear text Turn on Text Only Credits

Previous page 7/7 Next

Understanding Dementia

Εισαγωγή

Ο ασθενής ξεχνάει συχνά πού βάζει τα γυαλιά του, τα κλειδιά του, το βιβλιάριο υγείας ή τη τράπεζας. Ξεχνάει πού πάρκαρε το αυτοκίνητο, λεπτομέρειες από μια συζήτηση, κάποια από τα ψώνια που έπρεπε να αγοράσει, ένα ραντεβού, ένα τηλεφώνημα που έπρεπε να κάνει.



Υποδεικνύουμε τα λάθη και τις παραλείψεις.

Βοηθούμε να θυμηθεί αυτό που χρειάζεται

Κάνουμε επανειλημμένα ερωτήσεις τεστ

Βοηθούμε να θυμηθεί αυτό που χρειάζεται

Βοηθούμε να θυμηθεί αυτό που χρειάζεται π.χ. πού άφησε το αυτοκίνητο, ζητώντας να θυμηθεί από πού πέρασε αφού το άφησε μέχρι να φθάσει στο σπίτι. Του προτείνουμε να κρατάει μια ατζέντα με όλα τα ραντεβού και τις δουλειές που έχει να κάνει, χωρίς να τον προσβάλλουμε, και λέγοντας ότι το ίδιο θα κάνουμε και εμείς για τις δικές μας δουλειές.

ΚΥΡΙΑΚΗ	ΔΕΥΤΕΡΑ	ΤΡΙΤΗ	ΤΕΤΑΡΤΗ	ΠΕΜΠΤΗ	ΠΑΡΑΣΚΕΥΗ	ΣΑΒΒΑΤΟ
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

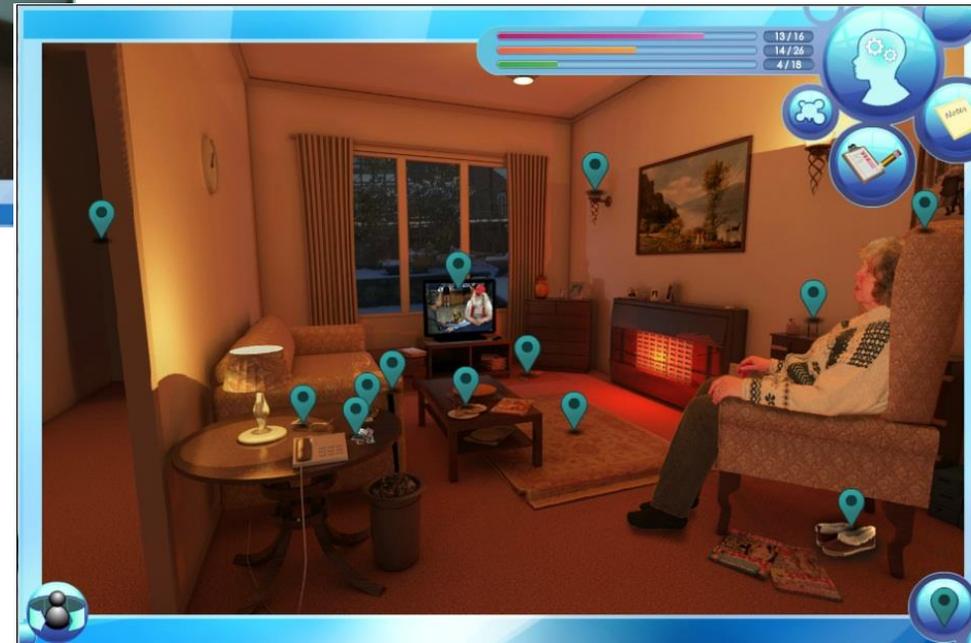
Ο ασθενής μας μπορεί να ξεχνάει να βάλει αλάτι ή άλλα

συστατικά στο φαγητό, να ξεχνάει ονόματα διασήμων ανθρώπων ή μακρινών γνωστών, να ψάχνει να βρει κάποιες λέξεις την ώρα της συζήτησης, να ξεχνάει την ημερομηνία ή την μέρα και να μην μπορεί να τα θυμηθεί με κανένα τρόπο. Μην το παίρνετε προσωπικά αν ξεχνάει γενέθλια, επετείους ή ανθρώπους. Δυσκολεύεται να κατανοήσει υπονοούμενα και το χιούμορ. Τι ενέργειες κάνουμε;

Δίνετε λίστα με τα ψώνια γραμμένα για να μην ξεχάσει.

Υποδεικνύουμε τα λάθη

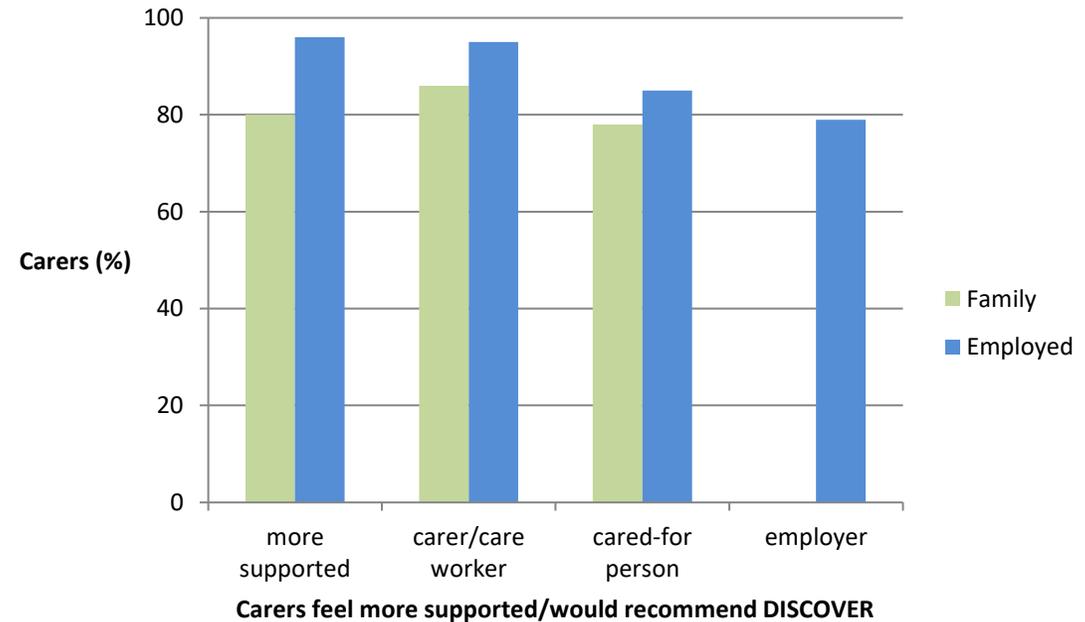
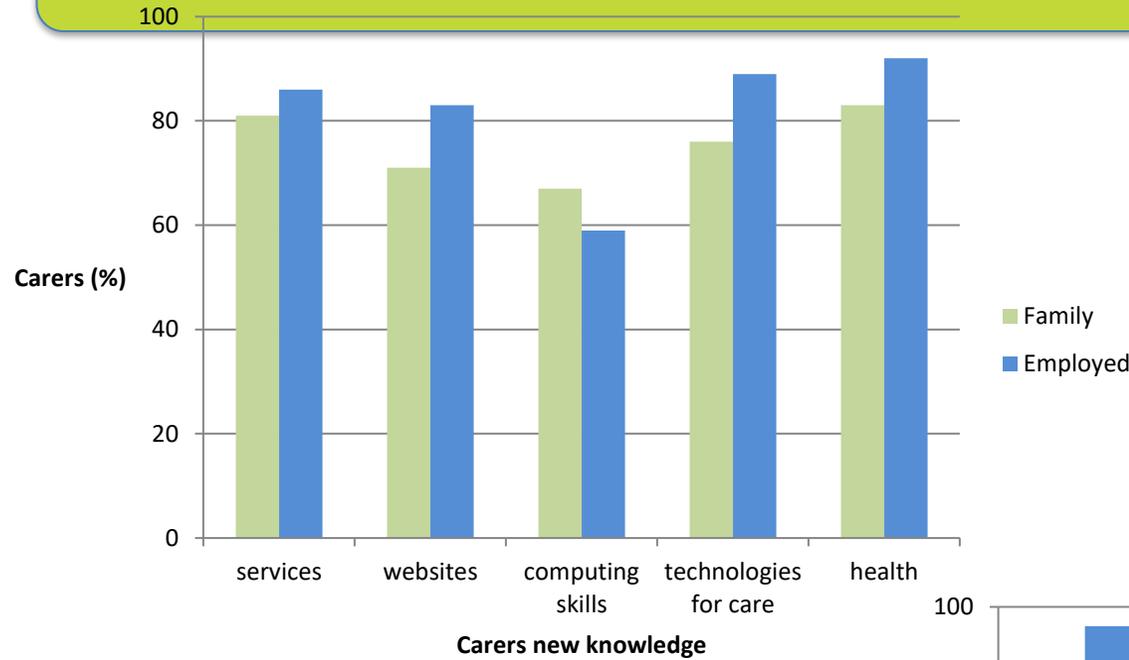
Reducing the risk of falls



Findings: knowledge and recommendations



DISCOVER
SKILLS FOR CARERS



technologies aiding independence



'[I] didn't know about automatic pill boxes and think this would be a great idea for my mother. Currently my sister is making sure she takes her pills on time'.

Female carer, Spain

'When you have epilepsy it's really dangerous if you have a fit in your sleep... she {my mum} won't wear her medical bracelet because she can't stand things on her wrist and round her neck so the full sensors are out... but the one under the bed seems like a really good fit for her. To be honest I never even heard about it'.

Young adult carer, UK

Preventing falls



'I have learned to help her do specific exercises to prevent another fall'

Man caring for his mother-in-law, UK

'I found the falls scenario interesting and have changed the living space of the older person that I care for to protect them.'

Female carer, Greece

'What to do yourself when you fall. Not to panic and do what you have to do (phone for help etc)'

94 yr old male reciprocal carer/cared for person, Netherlands

Coping with challenging behaviour



'Dementia was an 'unknown terrain for us' ...I not only know more about dementia through DISCOVER but now understand the 'change of behaviour that goes with that'

Female carer caring for mother in law, Netherlands

'[I wanted to know] how to better for the care person because Alzheimer is difficult to understand. Sometimes I became angry even I know it's not his fault. Now I can do this'.

Female carer for father, Spain

'I have changed the way I talk with my son [who has had a stroke]'.

Female carer, Spain

Findings -wellbeing

Statement Over the last two weeks...	Carers who felt this all or most of the time		Carers who felt this only some of the time or never	
	Family carers	Employed carers	Family carers	Employed carers
I have felt cheerful and in good spirits	44%	48%	26%	1%
I have felt calm and relaxed	44%	43%	12%	8%
I have felt active and vigorous	39%	58%	13%	1%
I woke up feeling fresh and rested	25%	26%	21%	1%
My daily life has been filled with things that interest me	35%	59%	17%	3%

Improved well-being



Less stressed

'I have found that being internet literate has been brilliant because of getting the shopping delivered because now my spine has gone, even pushing a trolley round is terrible.'

Carer looking after husband living with stroke, UK

Active minds

'It [playing brain games] keeps your brain active doesn't it that's why I do crosswords that's how I keep my brain active, I won't touch the maths side of it, I see numbers and I think I'm not touching that because I know I'm hopeless at it.'

Male carer looking after daughter with special needs, UK

Stakeholders' perspectives



It is an amazing concept, bringing it [Services etc] all together

Carer outreach worker, UK

Generally, there was a better understanding of health conditions, but simultaneously there was an improvement of carers' knowledge about the use of technologies

Psychologist at Care Home, Greece

Caregivers who participated present generally a consistent positive feedback having also pointed out during consultations what they have learned with DISCOVER.

Psychiatrist at a Memory clinic, Spain

Benefit for Cared-for people



- **Pre DISCOVER**
 - Less than 25% of carers felt the people they cared for would benefit from developing their digital skills
- **Post DISCOVER**
 - 85% of carers would recommend Discover

Challenges 1



- Enhancing digital skills of family carers, cared-for people, professional carers
- Raising awareness of opportunities arising from telehealth, telecare and being online
- Overcoming fear of computers
 - Difficult to use
 - Risk of identity theft and fraud
 - Lack of technical support
- Overcoming 'stigma'
 - devices identify you as old
 - Loss of Privacy
 - Feeling under surveillance
- Response to Crisis – lack of joined-up information

Challenges 2



- Mismatch between older people and technologies
- Need for seamless linking between professional carers, family carers and services
- Little provision for care home residents to use digital devices
- Empower carers: Eurocarers, CarersUK
- Increase support for carers
 - Benefits and respite care insufficient by themselves
 - One stop shop for information, access to services, online communities
- **Influence policy makers**
- **Inform health professionals**
- **Co-design with carers and older people**

Using DISCOVER



Questions?



Closing Remarks

We welcome
your comments:
[healthwellbeing@open.ac.uk](https://twitter.com/healthwellbeing@open.ac.uk)

Thank you for attending,
have a safe journey home.

