



Scottish Centre for
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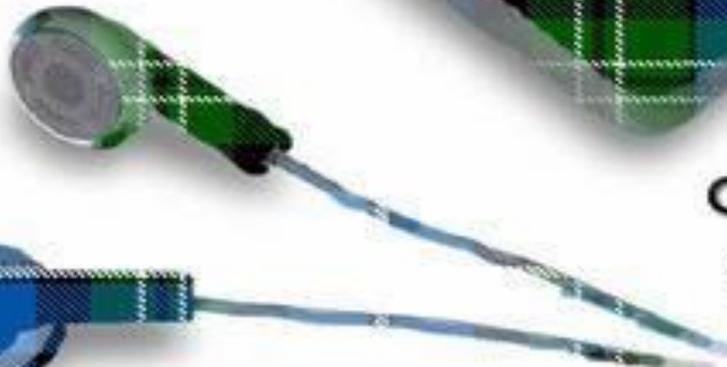
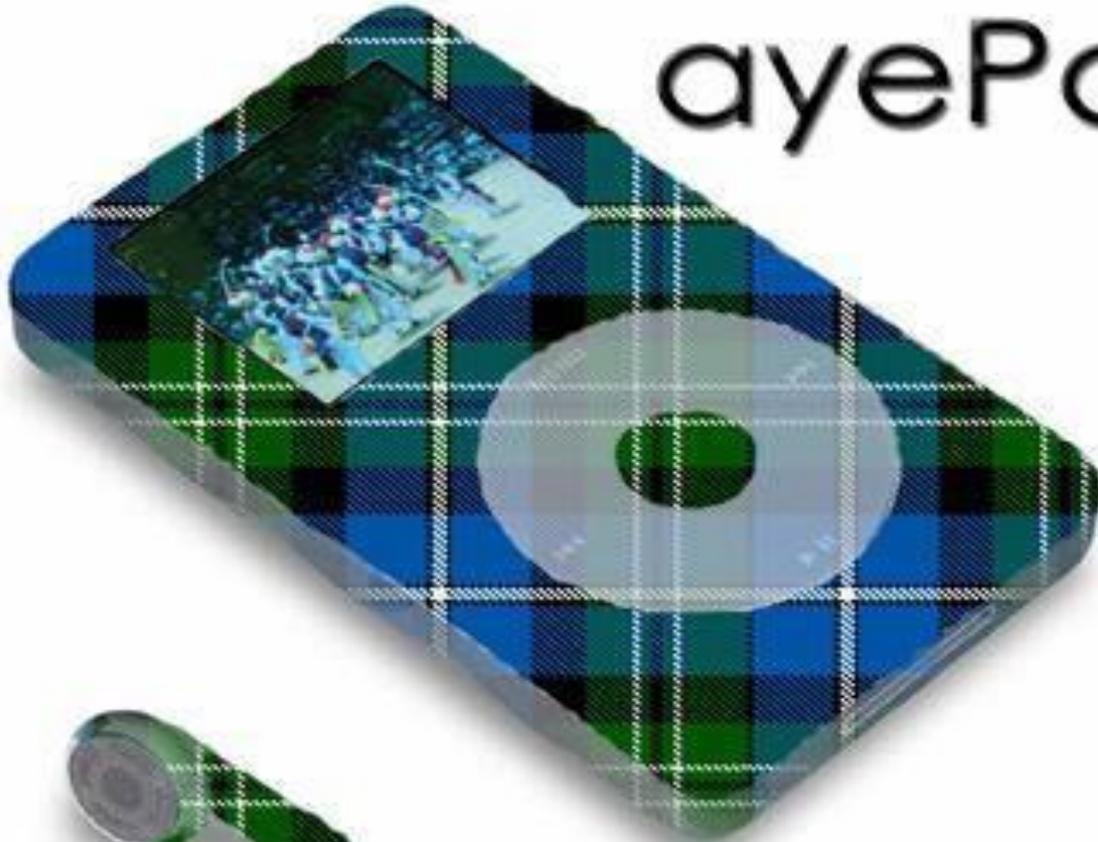




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all yer choons
on wan boax



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Designed healthcare
RARARI
SIGN
Clinical effectiveness

Assessment of new projects
Evaluation of current projects

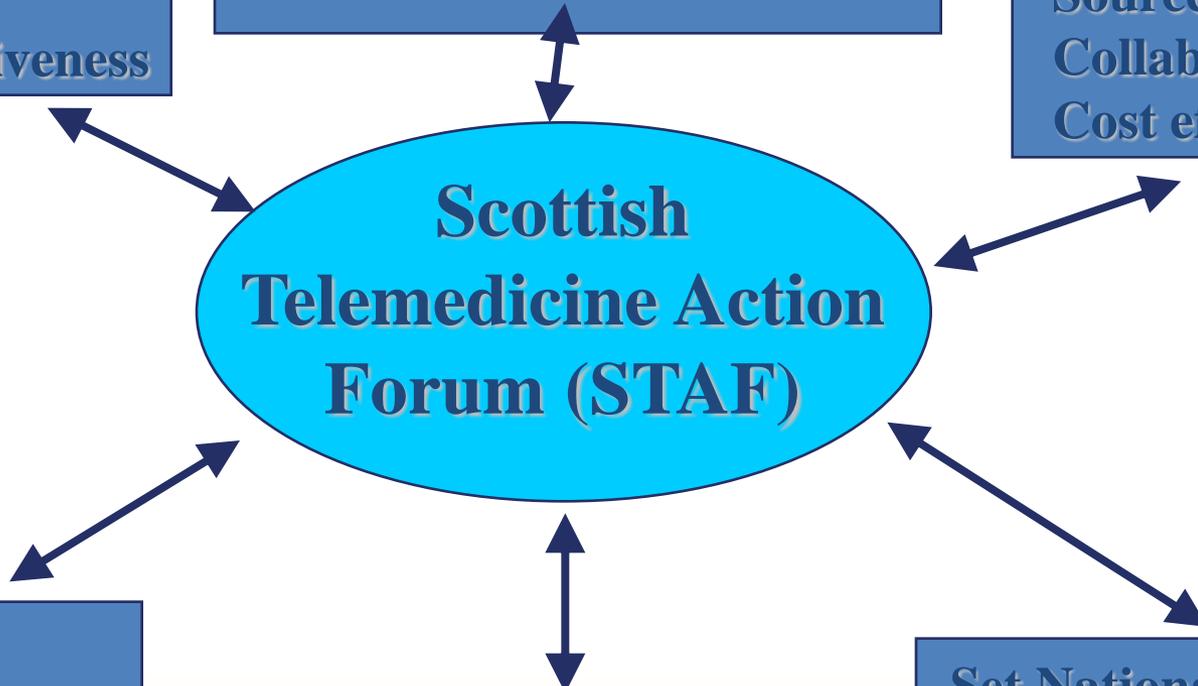
Co-ordination
Source of expertise
Collaboration
Cost efficiency

**Scottish
Telemedicine Action
Forum (STAF)**

Website
Database

Workshops
Symposia
'Sharing of ideas'

Set National Standards
- Clinical
- Technological





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Telehealth in Scotland



- 4 National Programmes:
 - stroke,
 - paediatrics,
 - mental health
 - COPD
- Underpinning activities:
 - Technology standards
 - Workforce development
 - Stakeholder engagement
 - Convergence with telecare





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- National Telehealth & Telecare Programmes established by Scottish Government in 2006
- Parallel programmes but increasingly integrated activity
- SCT joined NHS 24 in April 2009
- Merged in April 2010 into SCTT within NHS 24



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Aim

Provision of rapid access to senior paediatric clinical support for unscheduled care cases by video conferencing, initially for clinicians in rural general hospitals (and selected “no pass” healthcare facilities).



Key Findings

Activity

230 calls from August 2013 until July 2014
approx 4 per week

Confidence: Staff and parents

Consistency

Transfer support

Local knowledge: Capacity and competence.

Medico-legal

Work arounds



Key Findings (cont)

- One RGH withdrew from PuC due to governance issues and practical difficulties in retaining patient's locally.
- Requests for access to PUCs from several hospitals, rural and remote GP practices and SAS



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Key Findings (cont)

Peer Review

5 Clinicians

Rural GP

Paediatric ED Consultant

PICU Consultant

General Paeds Consultant (DGH)

General Paeds Consultant (Tertiary Centre)



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Peer Review

Improved care: 33% (Range 20% to 60%)

Avoided transfer : 25% (Range 15% to 50%)



Future Aim

- Reduce variability of provision of care for children
- Enhance capacity/competence to care for children out with regional centres.
- Increased access to specialist advice.
- **Improve Quality**



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VARIATION



US and UK data show that much of the variation in use of healthcare is accounted for by the willingness and ability of doctors to offer treatment rather than differences in illness or patient preference. Identifying and reducing such variation should be a priority for health providers”

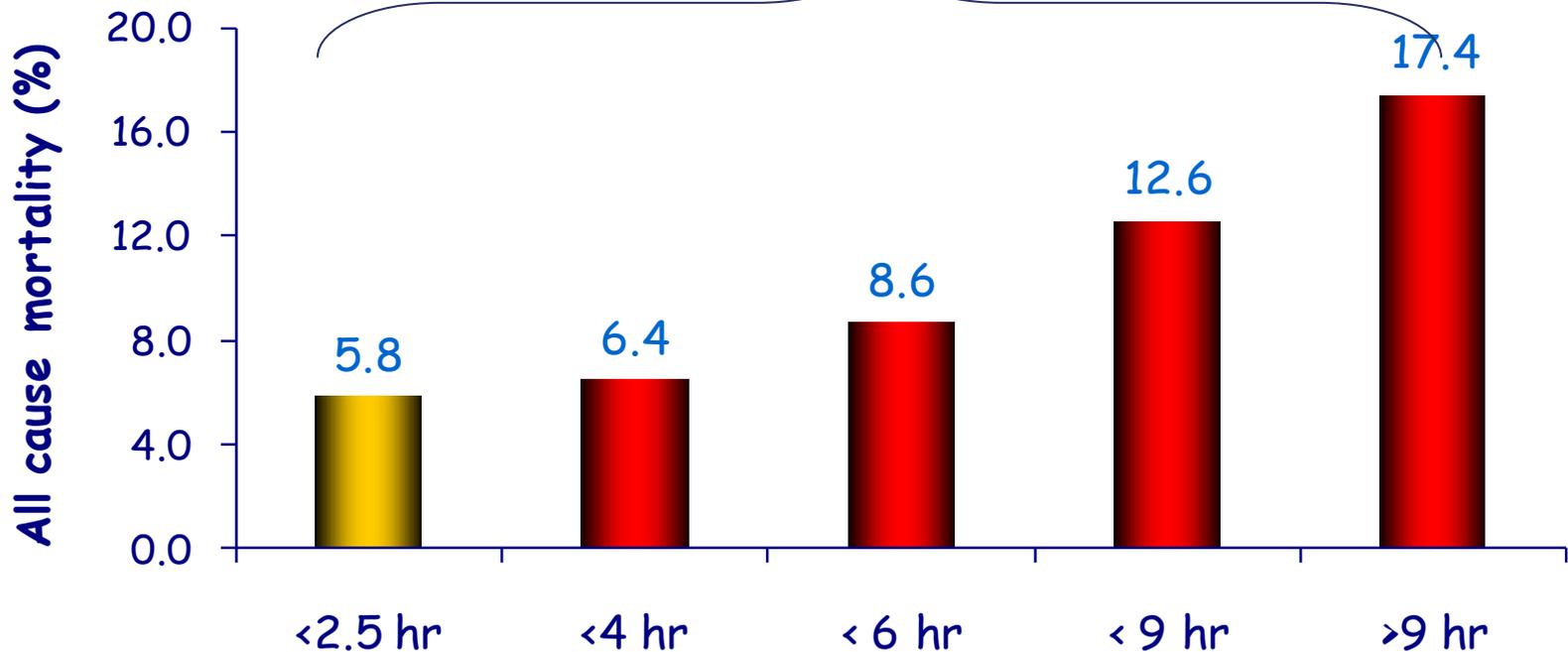
- Time to tackle unwarranted variations in practice. Wennberg JE. BMJ; 2011.



ED Door to medical team time

30-day adjusted mortality

$P < 0.0001$





Dying Well

- 86% public wish to die at home
- 12% of patients actually die at home.
- *“In treating death as a type of illness, our system of technological, life prolonging medical care is failing to meet the needs of patients, who have priorities beyond survival at any cost” Atul Gwande 2015*





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RESEARCH



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**Improving the
management of long term conditions:
the role of
telehealthcare**

Scottish School of Primary Care

GP Clusters **Briefing Paper 6**

5th September 2016



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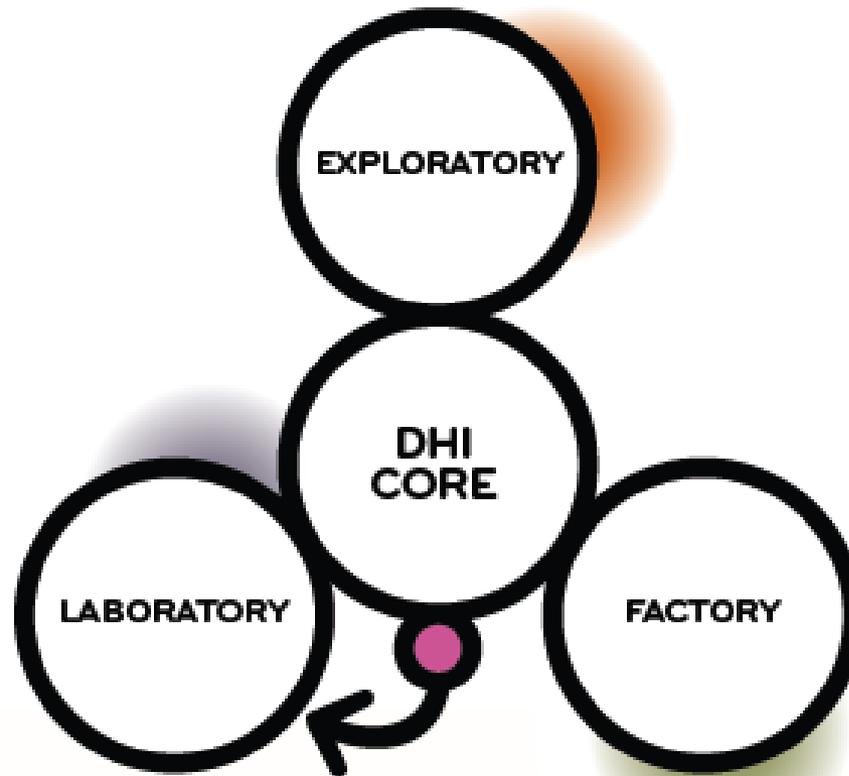


**DIGITAL
HEALTH
INSTITUTE**





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Policy Narrative

Programme for Government

”In line with our overall intention to realise Scotland’s full potential as a leader in digitally enabled public services, targeted investments in digital technologies and data analytics will be central to our continuing evolution of health and care services and shifting the balance from acute care to our community health services.”



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Policy Narrative – Health & Social Care Delivery Plan (December 2016)

- Identifies that “*Digital technology is key to transforming health and social care services so that care can become more person-centred. Empowering people to more actively manage their own health means changing and investing in new technologies and services...*”



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Our Technology Strategies – A Journey from 2008



Seizing the Opportunity:
Telecare Strategy
2008-2010



Telecare to 2012
An Action Plan for Scotland



A National Telehealth and Telecare
Delivery Plan for Scotland to 2015
Driving Improvement, Integration and Innovation

SUPPORTING & EMPOWERING SCOTLAND'S
CITIZENS



An Interim National Action Plan for Technology Enabled
Care
August 2016

Scottish Centre for Telehealth Strategic
Framework
2010 - 2012



eHealth Strategy 2008 - 2011

June 2008



eHealth Strategy
2011 - 2017



eHealth Strategy 2014 - 2017



Scotland's Digital Health and Care Strategy
2017-2020





Technology Enabled Care

For the purposes of this programme Technology-Enabled Care is defined as:

where the quality of cost-effective care and support to improve outcomes for individuals in home or community settings is enhanced through the application of technology as an integral part of the care and support process.

- Including, but not limited to, the use of telecare, telehealth, video conferencing and mobile health & wellbeing.





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Technology-Enabled Care Programme Launched in late 2014

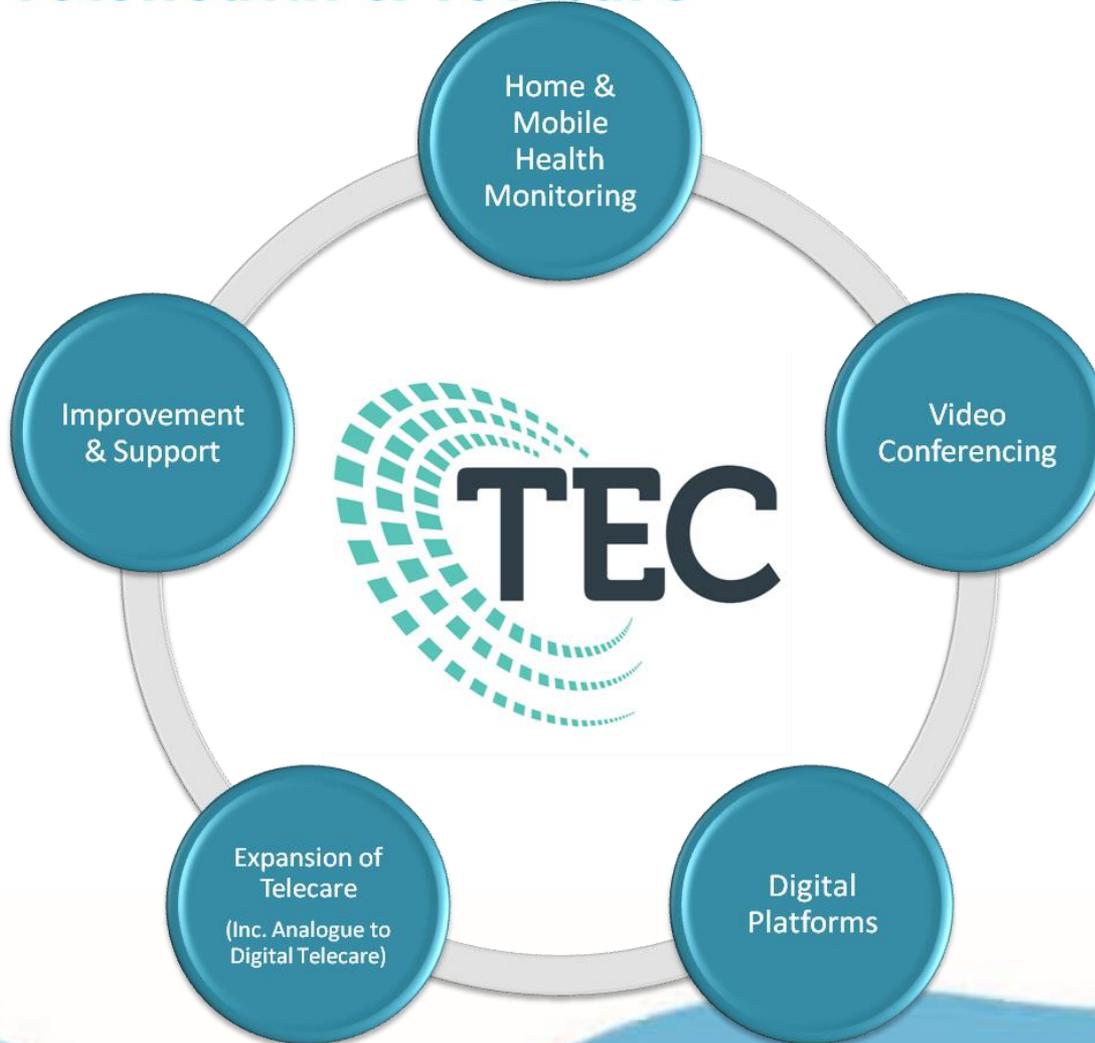
- Designed to significantly extend the numbers of people directly benefiting from technology enabled care and support in Scotland:
- Benefits from an additional **£24 million over three years** from 2015/16 with requirement to evidence positive, cost effective outcomes
- Demonstrate how technology enabled care contributes to supporting people to live well at home, avoiding unnecessary hospital admissions, reduces length of stay and prevents delayed discharges from hospitals in all locations across Scotland.
- **5 Key Workstreams** identified for funding and national support



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Five priorities for the TEC Programme

- Extending the use of **home health monitoring**
- Expanding use of **video conferencing** across all health and social care sectors, as well as growing its use for clinical/practitioner consultations
- Building on the emerging national **digital platforms** to enable direct access to advice and assistance
- Expanding the take up of **Telecare** with focus on prevention, points of transitions in care and dementia
- Exploring the scope and benefits of switching from analogue to **digital**



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Benefits & Impacts of HMHM

Citizen



- Prevents unplanned and unnecessary admissions to hospital
- More informed and educated about their condition
- Gain greater confidence and capacity to manage their own health on a daily basis
- Better inform care givers about their care needs and symptoms

Professional



- Provides early warning of deteriorations in patients conditions and informs decisions about early intervention
- Delivers advice & support at the right time, right place and complements existing care services.





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United4Health

- CIP PSP Project funded by European Commission €10M
- 34 Partners
- 14 Regions
- 8 Deployment Sites
- 4 Clinical Conditions



Background

Project Aim:

- to evaluate the large-scale deployment of selected innovative healthcare services already trialed under the RENEWING HEALTH project to manage long term conditions

Evaluation Objectives:

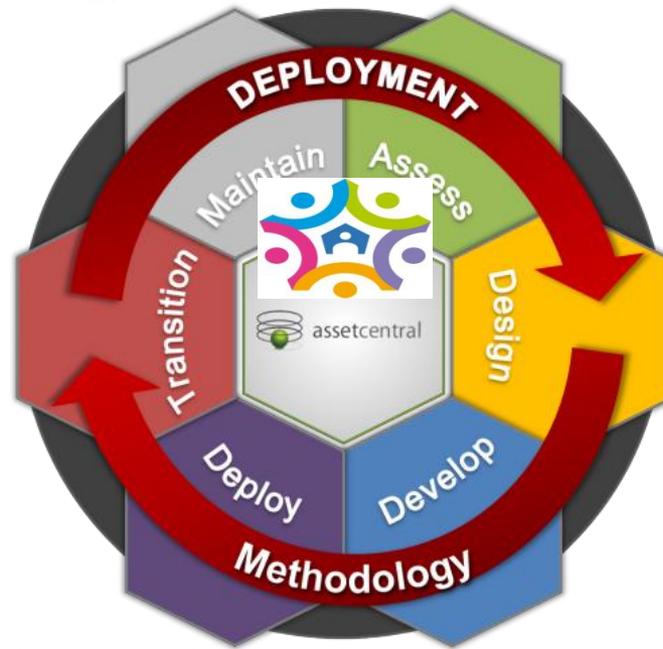
- Increase the current evidence base of the benefits that telehealth services for chronic disease management may provide in routine care
- Validate and strengthen the evidence for these telehealth solutions, especially on economic and organisational outcomes



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U4H was NOT a clinical trial,

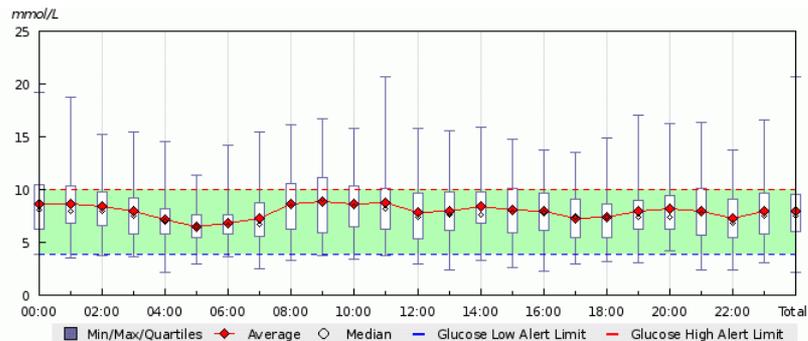


it's a study of deployment



Methods

- Observational study design
- Home glucose monitoring
- Currently multiple devices; own ecosystems; cumbersome
- Connected glucose monitoring



	morning	lunch	snack	dinner	Before Bed
1	266	193	268	104	225
2	394	215	286	212	232
3	151	252		92	133
4	117	95		132	190
5	142	201		216	120
6	167	162		159	232
7	227	239		22	169
8	193	245		235	99
9	198	242		130	190
10	112	111	112	324	247
11	104	246		219	304
12	86	271		204	211
13	94	171		269	104



Conclusions

- Tele-monitoring in Diabetes can be deployed at scale
- Significant HbA1c reduction
- Fewer face to face GP/Diabetologist contacts
- Lower hospital admission rates



Disease population

- 1-2% of adult population has CHF; 10% of over 70's
- Leading cause of hospitalisation
- Direct cost of CHF management varies between 1-3% of total healthcare costs
- Disease prevalence projected to increase by about 46% in the next 15-20 years



Conclusions

- Large-scale deployment of telemonitoring for CHF is feasible
- Patient safety was not compromised
- A positive impact in CHF patients' health
- A reduction in the use of expensive hospital services
- Improved continuity of care



Chronic Obstructive Pulmonary Disease

- Mortality rising and predicted to be 3rd commonest cause of death by 2020¹
- 2nd commonest cause of hospital admission in England²
- 15-35% readmitted within 30 days³
- >30% mortality within 12 months³

1. *Lancet*. 1997;349(9064):1498
2. *Department of Health, An Outcomes Strategy for COPD and Asthma, 2011*
3. *Eur Respir J*. 2016;47(1):113





Telemonitoring and COPD (RCTs)

- TM for COPD has been associated with reduced emergency admissions and other healthcare contacts, but trials have been small, heterogeneous and of variable quality
- Largest RCT (Whole Systems Demonstrator) suggested a reduction in mortality by 7-10%, but was not deemed cost-effective, costing over £120,000 per QALY¹
- Another large RCT (TeleScot): n=200 per arm: no convincing clinical benefits when added to current optimal treatments²
- The same also seems to be true of the first available results from Renewing Health³

1. *BMJ* 2012;344:e3874

2. *BMJ* 2013;347:f6070

3. *J Telemed telecare* 2013



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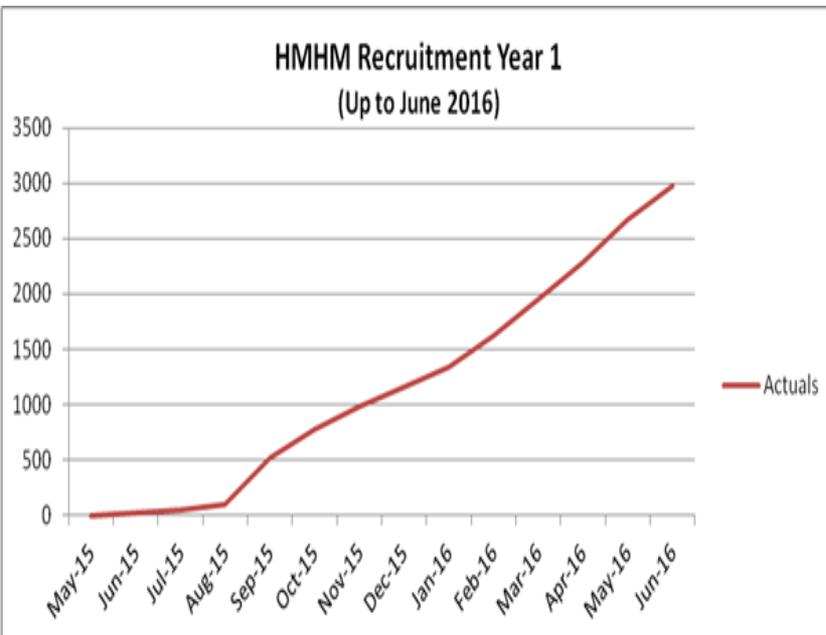




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- ✓ 100% increase in the number of people receiving home health monitoring; **Achieved, 3,000 citizens benefiting from HMHM as part of their routine care**
- ✓ A clinically and cost effective scalable service model for home health monitoring; **Achieved**



100 GP practices are engaged in HMHM initiatives - and the number continues to rise.
40 HMHM champions and change agents are promoting adoption across Scotland
30 services in nine TEC partners are using **HMHM** to manage various conditions eg heart failure, COPD, diabetes, Hypertension, Preventative Weight management / Smoking cessation support Wound Management, Mental health services





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Expansion of National VC Infrastructure

Objectives:

- Integrate VC services across Health & Social Care
- Extend services into 3rd and independent sectors
- Extend services into citizens homes
- Increase the number of VC enabled clinical and care consultations



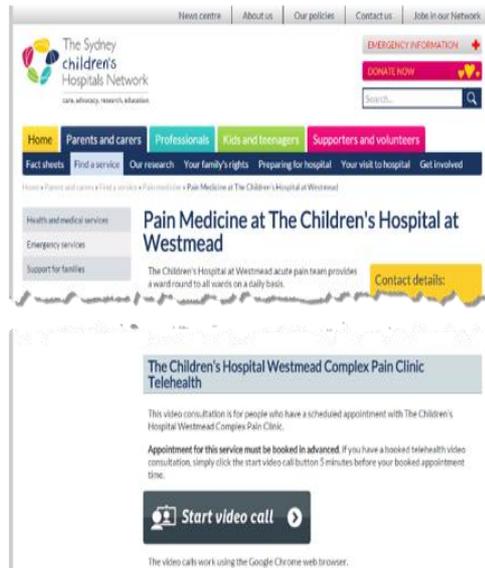


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Provision of Video Clinics

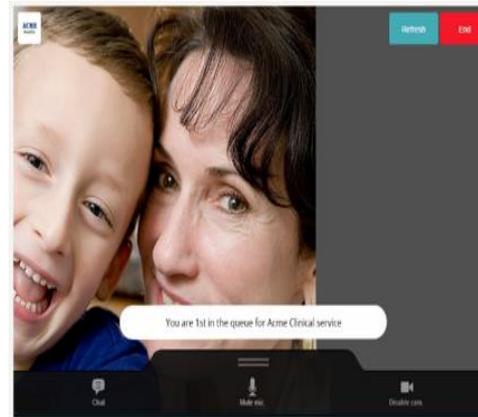


Patient opens health service website in browser, clicks **Start video call** button



(Patient does not require a login account, room ID, or password)

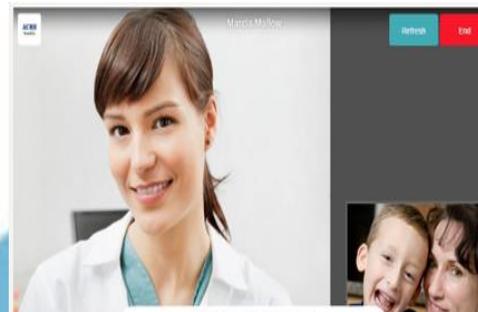
Patient directed to own, private, video consulting room...



Clinician views waiting room queue in web browser



Clinician joins patient's video consulting room



EXPANDING & EXTENDING DIGITAL PLATFORMS

Background

- **Creating a national digital platform framework**, learning from, and potentially building on, national initiatives such as Living it Up and ALISS to expand supported self-management information, products and services for Scottish citizens

Anticipated Outcomes

- LiU expanded to further two geographical areas, increased usage to 80,000 people
- Quicker adoption/deployment, reduced duplication of effort
- Clarity on connectivity and information standards



TEC Example - EXPANDING & EXTENDING DIGITAL PLATFORMS

LIVING IT UP (LiU) - www.livingitup.org.uk

I'D LIKE THE **KNOW HOW** TO GET MORE OUT OF LIFE

There's a digital service full of ideas to keep you happier, healthier and safer

Everyone can benefit from having a little more know-how. And now there's a digital service for the over 50s where you can get and share local information for a happier, healthier lifestyle.

LIVING IT UP
 THE KNOW HOW TO FEEL GOOD

Join in at livingitup.org.uk
 f /LivingitupScotland @Livingitup_Scot

SHINE WHAT ARE YOU GOOD AT?
LIVING IT UP

DISCOVER WHAT'S AVAILABLE FOR YOU LOCALLY
LIVING IT UP

FLOURISH WHAT KEEPS YOU WELL?
LIVING IT UP

CONNECT WHO WOULD YOU LIKE TO TALK TO?
LIVING IT UP



Expansion of Telecare

Although telecare is now well established across Scotland with approximately 160,000 people in receipt of telecare, considerable variation still exists across areas.

The Programme is looking to address through its national focused work, the patchy adoption of telecare to ensure this is a routine response to facilitate early discharge from hospital, prevent admission and support people with conditions such as dementia to maximise independence and provide support to carers.

Raising awareness

Dementia (including
GPS)

Falls

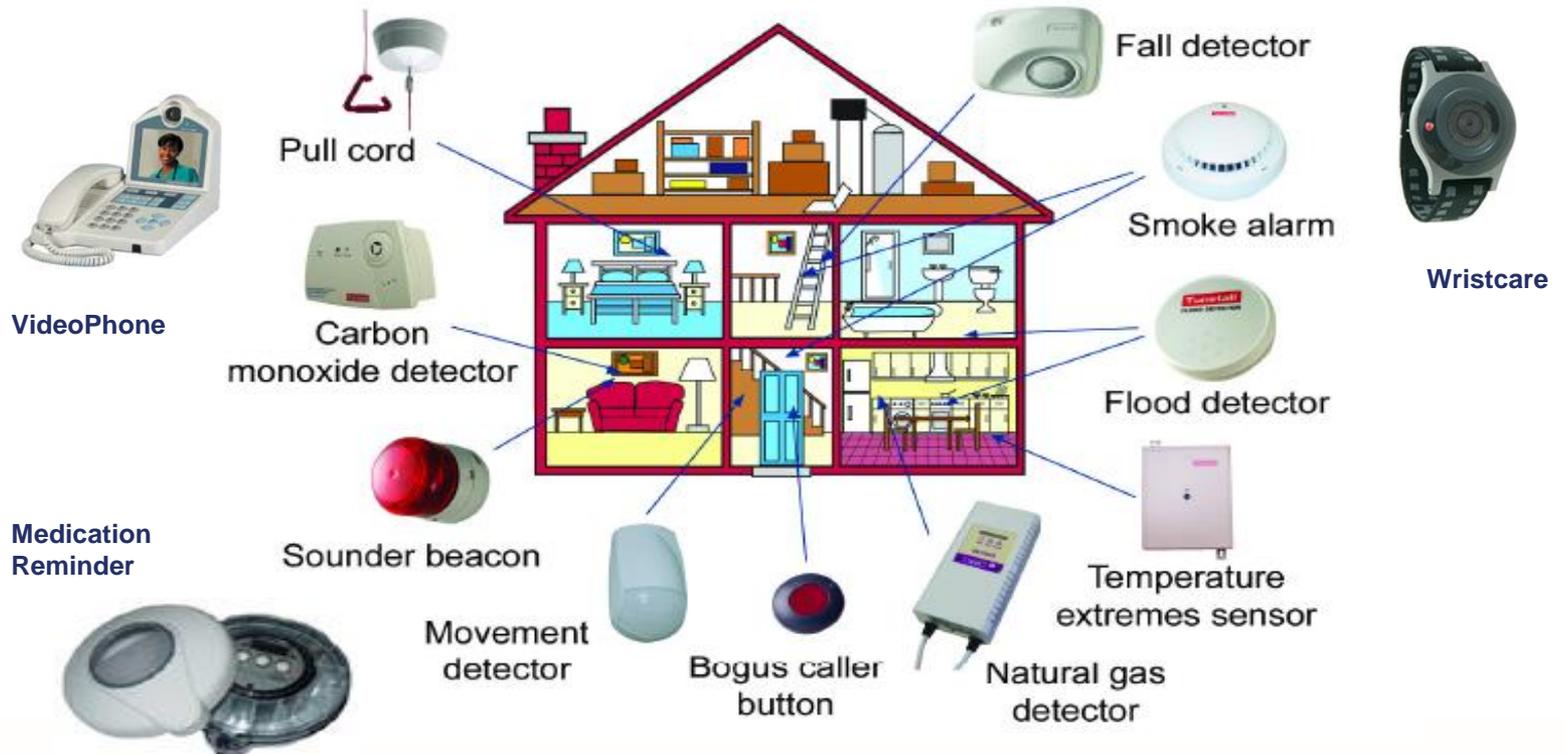
Prevention of
admission/anticipatory
care

WorkforceDevelopment





Monitoring: Home Care



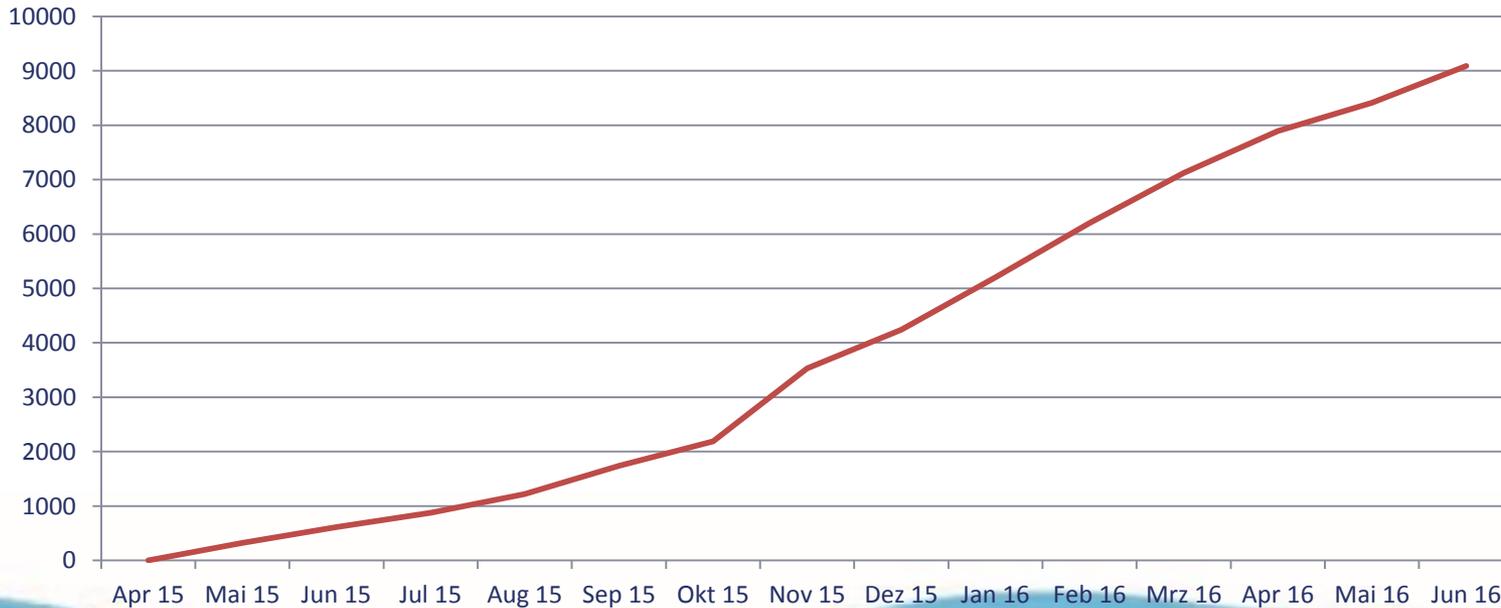


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Expansion of Telecare

Telecare Year 1 Recruitment –
April 2015 to June 2016



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Analogue to Digital Telecare



*“A Telecare solution is considered to be Digital if it carries information **end-to-end**, from sensor / monitor, to the Alarm Receiving Centre agent’s workstation / telephone in a digital form **without any conversion occurring**. In technical terms, this means that data will be carried end-to-end using Internet Protocol (IP) format.”*

- No Scottish Public Bodies’ full telecare services currently meet the definition of Digital.
- Some examples of Digital Telecare – but small scale and standalone.
- Recognised need to modernise as underlying telephony infrastructure goes digital – opportunity to develop broader technologies and services







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