

UK Age Research Forum

Potential of Technology in the Self
Management of Long Term Conditions

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Sheffield
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SMART
Self Management



The University Of Sheffield.

SMART Consortium



Sheffield Hallam University

Sheffield Hallam University: project management & expertise in stroke rehabilitation

University of Ulster: health informatics

University of Essex: computer engineering

University of Bath: medical physics & expertise in pain management

University of Sheffield: technical management, medical physics and expertise in chronic heart disease

Stroke Association: access to stroke patients



EPSRC

Engineering and Physical Sciences
Research Council

Why self management?

“as long as the acute care model dominates health care systems, health care expenditures will continue to escalate, but improvements in populations’ health status will not.”

World Health Organisation, 2002

Why self management?

A new health care delivery model based on preventative and person-centred health systems. This new model can only be achieved through the proper use of ICT, in combination with appropriate organisational changes and skills.

European Commission, 2006

Why technology for self management and rehabilitation?

- NHS Plan (2000): New funding models, payment by results, reduced length of stay
- Our Health, Our Care, Our Say (2006): Self management for long term conditions using technological innovations
- Innovations for Health (2007): Use of medical devices
- Darzi Review (final report, 2008): Personalised care, choice and personal control

SMART2 Project: Self Management supported by Assistive, Rehabilitation and Telecare technologies

- For people with one of three long term conditions; stroke, chronic pain, chronic heart disease
- Creation of a home based personalised self management system out of commonly encountered technologies
- Users (therapists, end users and carers) centrally involved to inform prototype design and function

Project commenced January 2008 for 4 years

8% with severe
disabling pain

Extent of
need is
significant!

Personalised
therapy system

Chronic Pain

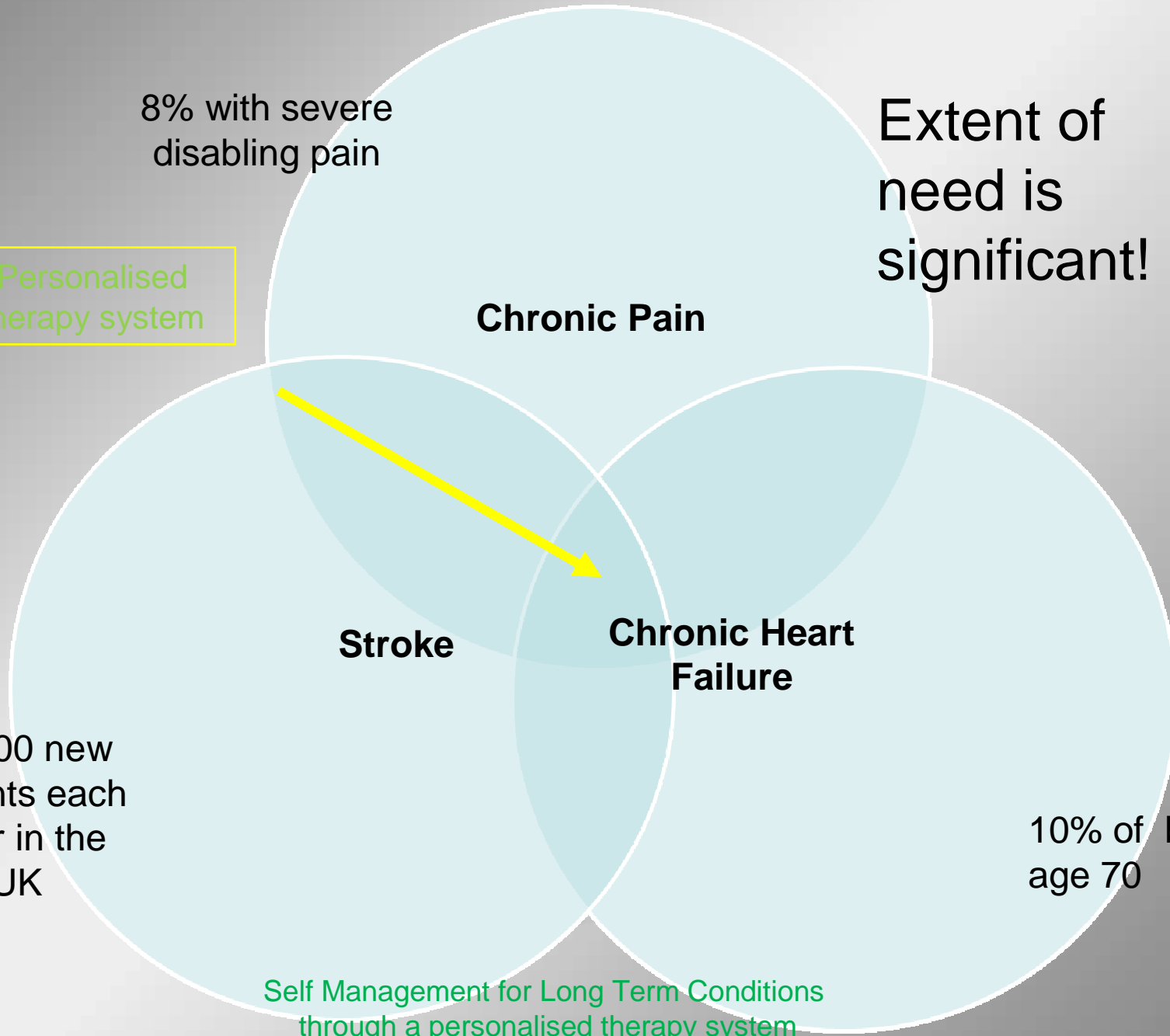
Stroke

**Chronic Heart
Failure**

10,000 new
patients each
Year in the
UK

10% of by
age 70

Self Management for Long Term Conditions
through a personalised therapy system





How might in-home technology assist someone following a stroke?

Someone like Mary.....



Mary's Story

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technologies provided to Mary

- Telecare and lifestyle monitoring; community alarm and sensors in the home
- Smart trainers with sensors to correct balance
- Smart bracelet to correct tendency to flex arm
- Mobile phone with GPS

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Other technologies that Mary might have in her home



<http://www.thesmartconsortium.org>

What about people with other long term conditions?

Coming soon at:

<http://www.thesmartconsortium.org>

Albert's story - self management of chronic heart assisted by technology

David's story - self management of chronic pain assisted by technology

Features of the SMART2 self management system

- It will be configured to be intelligent so that user data can be interpreted and messages given to the user without human intervention
- It will be tailored to the therapeutic needs of the individual as would a traditional plan of rehabilitation or enablement
- The ultimate aim will be to assist users to achieve the goals that they identify for themselves

Usability issues: we know that any device should be

- Compact, simple to operate and maintain
- Useable, preferably without the assistance of the carer
- Complement the contribution of health professionals
- Capable of giving encouraging feedback even when progress is slow

Challenges for people with a long term condition and their carers

- Confidence using technology
- Need for digital connectivity
- Embedding of technology into the physical space and established routines

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Challenges for health professionals

- Organisational infrastructure and support
- Confidence using technology
- Implications of remote as opposed to "hands on" care e.g. data literacy versus clinical reasoning

Increasing levels of technological sophistication will make the unimaginable common place in the future

But what is the potential of technology in the promotion of behavioural change?

Self Management