European Centre for Connected Health

Developing a Connected Health and Care Strategy for Northern Ireland Health and Social Care Services

This document sets the scene for the development of a connected health and care strategy for Northern Ireland. The strategy will:

- *set out a vision for the development of connected health and social care services;*
- *identify the priorities for development; and*
- *detail the issues which will need to be addressed to bring the strategy to realisation.*

The development and implementation of such a strategy is important because the outcome will improve care & treatment which patients and clients receive, improve working lives and contribute to the modernisation agendas facing the delivery of health and social care.

This document invites you to participate in the development of this strategy. Please take the time to read it, to discuss it with colleagues and to make your views known. Some questions for you to consider are set out in section 4.3.

Response are requested by Monday 1st December 2008.

1. Introduction

1.1 The population aged over 85 is expected to double over the next 20 years. While this is a consequence of a welcome growth in life expectancy, a range of long term or chronic conditions (such as some cancers) are associated with age and this will result in a growth in morbidity and therefore costs. Accordingly, over the next twenty years there will be significant additional demands on health and social care provision. There is a higher incidence of serious disease in Northern Ireland than in the rest of the UK, some of which is associated with the past effects of economic and social deprivation. The level of morbidity in Northern Ireland is higher than many EU countries and although improvements are being made in some areas, there remains considerable scope for further improvement.

1.2 The age and disease profile of the Northern Ireland population is therefore changing, and this will require change in how the health and social care system responds to future needs. In addition working practices in health and social care are also changing. There is an increasing recognition that better population outcomes can be secured by intervening earlier and more effectively to reduce the incidence of acute illness, particularly in reducing the impact of chronic conditions.

1.3 It is recognised, therefore, that much more can be done in the community and primary care sectors and that more integrated care pathways could be developed promoting earlier intervention and less reliance on the hospital sector, and providing for greater productivity from the use of existing resources. It is also recognised that people need to be empowered to manage their own health and wellbeing and that of their communities.

1.4 When patients and clients require acute interventions, outcomes are improved by ensuring that they have access to the full range of critical and acute care services and larger multi-disciplinary teams with specialist skills. Workforce issues such as the European Working Time Directive and professional training requirements are also change drivers in this process. Improved communication systems both within and across organisational boundaries will be needed to support clinical and social care networks, provide access to specialist advice and sustain high quality local services.

1.5 The DHSSPS recognises that the application of new technology in the Health and Social Care field has a significant role to play in the modernisation of services. Benefits which technological solutions can provide include improved patient client experience through remote monitoring of vital signs, improved service responses, better communication across and between multidisciplinary care teams, improved patient and client access to the information that they require to manage their conditions and the better use of resources. New technology is also playing an increasing role in improving diagnostics and treatment in secondary care and it is increasingly recognised that getting the right information to the right people at the right time, can make a significant contribution to improving patient safety.

1.6 The Minister has indicated that a priority for the Department of Health, Social Services and Public Safety, is to develop a five to seven year strategy for the development of connected health:

> *"it is important that we have a road map for further future developments………Consequently we will be taking forward a strategy, involving all stakeholders, so that we can identify our priorities over the next 5-7 years and identify ways which will streamline the introduction of new technological solutions to health and social care. "*
>
> *Michael McGimpsey*
> *Minister for Health*
> *22nd January 2008*

1.7 This priority is also highlighted under Imperative 1 of the Regional Innovation Strategy Action Plan 2008-2011; 'To establish Northern Ireland as an outward focused & competitive region in the global knowledge economy – with an international reputation for innovation excellence':

> *"working with InvestNI, DETI, and the Universities, DHSSPS' European Centre for Connected Health will develop by March 2009 an agreed strategy for the introduction of new technologies to health and social care to 2012"*
>
> *Regional Innovation Strategy for Northern Ireland Action Plan: 2008-2011*

2. What is meant by connected health and social care?

2.1 At present a number of terms such as 'connected health', 'E-health' and 'telehealth', are used interchangeably in referring to similar concepts. The European Commission has offered the following definition:

> *"E-Health can thus be said to cover the interaction between patients and health service providers, institution-to-institution transmission of data, or peer-to-peer communication between patients and/or health professionals. It can also include health information networks, electronic health records, telemedicine services and personal wearable and portable communicable systems for monitoring and supporting patients."*
>
> *Accelerating the development of the e-health market in Europe*
> *European Commission*

2.2 Connected health and social care includes ‘remote monitoring’, ‘telemedicine’ and ‘telecare’:

Remote Telemonitoring

A clinical practice that involves remotely monitoring patients who are not at the same location as the healthcare provider. In general, a patient will have a number of monitoring devices at home, and these devices will transmit information on people’s vital signs via an IT link to the remote monitoring service provider and if necessary to their healthcare provider. Portable devices are a further development of this technology.

Telemedicine

This is a broader concept than telemonitoring and also includes patient consultations using telecommunications provider to provider services and the role of technology in direct treatment, for example the use of robotics in theatre.

Telecare

Is the term given to the provision of remote care to, for example, older and vulnerable people, or people at risk of falling or who have significant physical disability - providing the care and reassurance needed to allow them to remain living in their own homes. The use of sensors may be part of a package which can provide support for people with illnesses such as dementia, or people at risk of falling. Telecare refers to the idea of enabling people to remain independent in their own homes by providing person-centred reactive technologies to support the individual or their carers.

2.3 Within Northern Ireland, there is the potential to optimise the integrated nature of health and social care planning and delivery and to develop a Connected Health and Care Strategy.

2.4 Connected health and social care means harnessing new technologies to better connect people, clinicians, networks & teams, organisations, providers, service users and their carers. It encompasses prevention, health promotion, diagnostics, treatment and care.

2.5 Appendix 1 sets out high level examples of some connected health and social care solutions.

3. Developing a strategy for connected health and care

3.1 Northern Ireland, like all other health and social care communities in the developed world face a number of strategic challenges. These include:

- Improving quality and safety
- Responding to increasing demands and demographic profiles, including the growing burden of chronic disease
- Improving access and responsiveness
- Improving performance
- Involving people

3.2 The policy and service response to these challenges is to design and implement changes to:

I. Improve health and well-being through, for example, better self management for chronic disease and health promotion

II. Promote independent living through, for example, person centred planning, the provision of appropriate facilities & resources, and support for carers

III. Support early intervention and anticipate and actively prevent crisis through, for example, case management

IV. Support professional and multi-disciplinary networks

V. Streamline and improve the operational delivery of services including, for example, actions to achieve access targets and the development of managed clinical networks

VI. Reduce risks through, for example, the implementation of evidence based practice, initiatives to improve compliance with medications and improved risk management

These policy responses are fully in line with A Healthier Future – A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005 – 2025.

3.3 The intention is to develop a strategy which will:

- set out a vision for the development of connected health and social care services;
- identify the priorities for development; and
- detail the issues which will need to be addressed to bring the strategy to realisation.

It is anticipated that the strategy will provide a firm basis for the future strategic development and, where appropriate, bids for funding.

3.4 In order to ensure that the strategy has a good foundation, it is essential that it is imaginative yet well grounded. To enable this it is essential that its development is firmly rooted in the policy and modernisation agenda being addressed by the health and social care system in Northern Ireland. The strategy will also need to take account of the research expertise within our University sector, anticipated developments in the market place, and will be informed by best practice and learning from across Europe and north America.

3.5 The strategy will seek to assist individuals to live healthy and independent lives, and support health and social care professionals and managers to deliver services which are safe, accessible, effective, efficient and quality assured; it will also take account of the human, financial, IT and organisational resources available to the service.

3.6 Whilst it will give due consideration to IT infrastructure, the focus of the strategy will be on the application of information and communication technologies to the delivery of better care.

3.7 As well as considering the application to Northern Ireland of existing connected health and social care concepts, the strategy will want to take into account intelligence on potential new innovations and developments in the market place.

3.8 A Steering Group and Project Team have been identified to lead the work on developing a strategy and Terms of Reference have been drafted for agreement (see Appendix 2).

3.9 The intention is to engage with appropriate stakeholders and conduct research, to enable the production of a preliminary consultative document by the end of **December 2008**. This preliminary consultative document will inform a more intense period of engagement with relevant stakeholders thereby enabling the production of a final strategy document by the end of **March 2009**.

4. Your contribution to developing the strategy

4.1 To enable the aims of the strategy and its terms of reference to be achieved, it is essential that the strategy be developed in an inclusive and transparent manner. Its development will require close collaboration with Departmental policy makers; professionals within the health and social care system; appropriate representative bodies; and other relevant stakeholders. In addition, through engagement with appropriate bodies, arrangements will be identified through which consumer views may influence the direction and subsequent implementation of the strategy.

4.2 At this stage, we want to canvass a wide range of views and opinions on the issues and priorities which the strategy should seek to address. This is being done by:

- meeting with individuals and groups of individuals as appropriate. We are arranging to meet with a range of individuals and organisations and would be happy to meet with others upon request
- giving stakeholders the opportunity to make a written submission (see below)
- convening a series of regional and stakeholder workshops (details to follow)

4.3 <u>Making a written submission</u>

We would like to invite you to give us your professional and/or organisational perspective on the contribution which connected health may offer to the strategic challenges and policy/service response to those challenges set out above in sections 3.1 and 3.2. You may wish to consider framing your response in line with the grid set out in Appendix 3.

We would be interested to gain your views on:

I. Specific proposals or suggestions as to where connected health may best assist with service modernisation

II. Where you feel the priorities lie, either in terms of themes or specific proposals which will have the greatest impact on health outcomes

III. Innovative connected health and care developments which you feel the strategy should take cognisance of

IV. How best we should support the development and timely implementation of new innovations for the benefit of patients and clients

V. What you feel are the barriers and opportunities which need to be considered in developing and implementing connected health and care solutions

We would invite you to make submissions at the latest by **Monday 1st December 2008**.

They should be forwarded to **Eddie Ritson, Director of Strategic Development, Arthur House, 41 Arthur Street, Belfast, BT1 4GB. Email: eddie.ritson@eu-cch.org**

Appendix 1

European Centre for Connected Health

Developing a Connected Health and Care Strategy for Northern Ireland Health and Social Care Services

Examples of Connected Health and Social Care Solutions

eHealth/Connected Health Solutions could potentially be applied to a broad range of Clinical and Social Care areas. Examples include:

1. Remote telemonitoring - A clinical practice that involves remotely monitoring patients who are not at the same location as the healthcare provider. In general, a patient will have a number of monitoring devices at home, and these devices will transmit information on people's vital signs via the telephone to the remote monitoring service provider and if necessary to their healthcare provider. This can be used for several clinical conditions which may require the recording of clinical parameters eg. Heart failure, COPD, Diabetes, high risk pregnancy, mental health chronic disease management, palliative care, asthma and hypertension to name a few.

2. Patient consultations – using telecommunications to provide medical data, which may include audio, still or live images, between a patient and a healthcare professional for use in rendering a diagnosis and treatment plan. This might originate from a remote clinic to a healthcare professional's office using a direct transmission link or may include communicating over the web.

3. Medical and other healthcare professional education – Provides continuing education credits for healthcare professionals and education seminars for targeted groups in remote locations via for eg. the use of live videoconferencing. An on line connected health resource could be established.

4. Healthcare professional and patient access to medical and health information – can include the use of the internet for healthcare professionals to obtain specialised health information and on line discussion groups to provide peer to peer support.

5. Acute Neurology – Provision of real- time videoconferencing for patients with acute neurological symptoms including stroke. This could enable patients either attending out patient clinics or inpatients in smaller hospitals or even GP practices to have input from a specialist who is remote to the patient who can offer advice on diagnosis and treatment.

6. Acute Stroke – Provision of real- time videoconferencing which would allow a stroke specialist to advise on thrombolysis to be given to a patient who is at a remote hospital.

7. Independent living – This is aided by the use of monitoring devices which can be worn by patients or sensors placed in their home which will trigger alerts which may indicate that the patient is in distress. Such clinical conditions include dementia, epilepsy, mental health conditions and chronic disease.

8. Eating Disorders - Numerous forms of technology are being developed to extend or enhance the delivery of treatment to eating disorder patients. There are various technological approaches to treatment delivery including CD-Rom, handheld computers and computerised CBT.

9. Mental Health – Emerging technologies provide the means to overcome geographical distances that often hinder access to care. Health technology can now offer powerful tools to improve care in this area by providing improved access to mental health care especially in many rural, remote, and underserved areas. By using computers and video cameras, sending e-mail reminders, transmitting results by telephone, and assisting health care provider follow-up, underserved, rural, and remote communities could offer significantly improve care for individuals of all ages.

10. Dermatology- As a visual specialty dermatology is an ideal candidate to capitalize on the unprecedented rate of technological

evolution that has occurred over the last decade. Additionally, with the expensive digital cameras of the 1990s incorporated into the cell phones of 2008 and with much improved access to email available within the health sector, many opportunities remain to develop innovative methods to facilitate communication between doctors and patients. 2 such technologies are store-and-forward technology and live interactive technology. The former is time and place independent, while the latter operates in real time via a video-conferencing link but bypasses geographical boundaries.

11. Radiology - teleradiology of radiological patient images, such as x-rays,CT's, and MRI's, from one location to another for the purposes of interpretation and/or consultation. Teleradiology improves patient care by allowing Radiologists to provide services without actually having to be at the location of the patient. This is particularly key when a sub specialist such as a MRI Radiologist, Neuroradiologist, Pediatric Radiologist, or Musculoskeletal Radiologist is needed as these professionals are generally only located in large hospital sites.

12. Minor injury clinics – The use of real-time video conferencing can aid the diagnosis and treatment of a patient who is remote to the specialist who is providing advise on the diagnosis and treatment. This is beneficial to both the pateint and the healthcare professional.

13. Implantable cardiac devices and ambulatory monitoring – provides the ability to monitor the patient remotely and collate information on the patients condition.

14.Electronic care record – Provision of an electronic care record which holds patients details and which may be accessed by different healthcare providers who are caring for the patient.

15. Virtual Reality - Virtual Reality may be used as a medical training tool to offer an additional means to teach surgeons in training or other speciality doctors in training. The goal is to decrease the amount of time required to train with real patients and to improve the quality of the medical treatment.

Within a virtual operating room the student will be able to practice the technical skills, the procedures and the theoretical background of operations and diseases.

16. Sensory Disability - Digital information generally is not inherently visual, auditory, or tactile. It can however be expressed in any of those forms with appropriate programming. This allows previously inaccessible tasks to become possible and practical for individuals with disabilities, for example, a blind person using a CD-ROM-based encyclopedia on a computer equipped with synthetic speech output.

17. Medicines Compliance - The impact of not taking medication correctly or skipping doses can lead to big problems. One of the newest breakthroughs, often referred to as "smart" packaging, promises to revolutionize compliance packaging. It is packaging-identification technology called Radio Frequency Identification (RFID). These "smart tags" provide a viable means of medical-packaging traceability. This new generation of packaging technology - blending the access capabilities and the data storage of a smart silicon computer chip with the power of a radio-frequency signal - can provide a real time picture of medication inventory and helps manufacturers, suppliers and health providers track medications through the supply chain. In years to come, it may provide individual solutions at the unit of use level by replacing or complementing bar code technology. RFID may, through additional product regimen tracking, help ensure patient safety and compliance.

Appendix 2

European Centre for Connected Health

Developing a Connected Health and Care Strategy for Northern Ireland Health and Social Care Services

Draft Terms of Reference

To engage with appropriate stakeholders within and external to Northern Ireland health and social care services and conduct appropriate research, to develop a comprehensive 5-7 year strategy for the development of connected health and social care services

Particularly, the strategy should set out:

i. Responding to changing health and social care needs including managing chronic disease

ii. Other drivers for change

iii. The evidence base for connected health & social care

iv. A vision for the contribution of technology to the delivery of health and social care services

v. Information on developments elsewhere

vi. An outline of where Northern Ireland is now in relation to both infrastructure and to the application of technology to services

vii. The barriers to adopting connected health solutions

viii. Where 'the gap' should be closed in relation to infrastructure, to the application of technology to services, and addressing barriers

ix. How innovation should be encouraged and embedded in the health and social care system

x. What needs to be done to make things happen

xi. An action plan and priorities

Project Structure

Development of the strategy will be overseen by a Steering Group comprising of:

- Andrew Hamilton, Interim Chief Executive, ECCH (Chair)
- Dr. Miriam McCarthy, Deputy Secretary – Health Care Policy, DHSSPS
- Linda Brown, Deputy Secretary – Social Care Policy, DHSSPS
- Hugh Mullen, Director of Performance & Provider Development, Service Delivery Unit, DHSSPS
- Prof. Bernie Hannigan, Chief Scientific Officer and Head of Research and Development Office, DHSSPS
- Dr Liz Mitchell, Deputy Chief Medical Officer, DHSSPS
- Health & Social Care Trust Chief Executive (to be confirmed)
- Health & Social Services Board Chief Executive (to be confirmed)
- Eddie Ritson, Programme Director for Strategic Development, ECCH

A Project Team will be formed to undertake the work required to develop the strategy. It will comprise of:

- Eddie Ritson, Programme Director for Strategic Development, ECCH (Chair)
- Dr Hubert Curran, Clinical Lead, ECCH (or deputy)
- Frances O'Hara, ECCH
- Dr June Irvine, ECCH
- Mark Eustace, ICT Project Director, DHSSPS
- Marian Corrigan, Asst. Director Social Services, SHSSB
- Trust nominee(s), to be confirmed

Appendix 3 Connected Health: Where it makes a difference

	Quality & Safety	Management of Demographic Change	Access & Responsiveness	Improving Performance	Involving Peopl
1. Improving Health – **Self management** – **Health promotion** – **Engagement infrastructure** – **Information for people**	Assistance with medicines compliance- reminder messages to mobiles Automatic drug dispensers Remote monitoring of blood pressure trends for patients with hypertension	Access for service users to information about how to better manage conditions, supporting life style change. Access to support networks > via internet, community portal	Information to public about how and where to access services . Consideration of on-line patients information service Improved access for hard to reach groups helping to address health inequalties	More effective and targeted provision of self management and health promotion messages to service users and families	Direct access to personal and family electronic health ca record could lead t more "engaged " population
2. Support for independent living, carers	Telecare approaches to manage / reduce risks for vulnerable adults involving assistive technology- using alerts and alarms and connections to carers, and other technology to support independent living	Integrated telecare and telehealth approaches – remote monitoring of chronic disease Assistive technology to support people with dementia and their carers	Use of alerts and alarms (eg fall alerts) could lead to more timely response to emergencies or help avert crises	More effective case load management of at risk population	Service users and their carers more actively engaged in managing their own health
3. Early intervention	Remote monitoring of vital signs could provide greater re-assurance to	Remote monitoring of vital signs could help reduce utilisation of	More timely access to services when needed	Remote monitoring will provide for more effective case load	

	service users and carers providing more timely and better targeted interventions In some cases this could be facilitated through direct video links between patient and clinicians supporting earlier discharge	services by providing information to help identify when an early intervention is necessary		management of at risk population	
4. Supporting professional & multi-disciplinary networks	High quality video links between institutions , community facilities and other agencies could support case conferences and clinical, multidisciplinary networks and improve communication. Better more comprehensive information (ECR, Remote monitoring trends etc) will lead to better decisions	Better communication systems could facilitate early discharge planning and more effective management of service users in the community			
5. Streamlining operational delivery across primary, community and secondary care sectors	Technological links between ambulance service and receiving hospitals/clinicians Clinician to clinician access to remote expert opinion (eg for minor injury units or for other specialist services		Remote provision of patient assessment and consultation services could improve access to rurally dispersed populations or to people with restricted mobility or to the prison population	Access to ECR. Reduced need for multiple input of patients specific data. Use of automated systems to text/email people appointment reminders.	

	needed on a 24/7 basis Access to ECR				
6. Reducing Risks – **Medicine management/ compliance** – **Implementation of evidence based medicine** – **Improved risk management**	Improved access to best practice advice Technogical support to improve medicines compliance				