eHealth and the consumer
Where will we be in 10 years time?

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AIMS

To provide an overview of trends and directions in patient-facing eHealth…

…specifically to

- Illustrate the relationship between eHealth and Consumer Health Informatics
- Describe key eHealth innovations for patients
- Consider health in the context of the wider digital society
- Profile emerging concepts, technologies and ways of operating, including transfer from other sectors
- Reflect on previous predictions & forecast future directions, whilst flagging unresolved barriers and questions
What do we mean by eHealth?

2003 Multiple definitions (e-business, telemedicine, online patient info), uncertainty about scope & direction

2005 Emphasis on connectivity & change

2009 Broad consensus on the application of networked ICT for organisation & delivery of healthcare, and for research

Integrates many aspects of applied health informatics and telemedicine including newer subtopics like Health 2.0, M-Health, P-Health etc.
eHealth is

- … the combined use of electronic communication and information technology in the health sector. (WHO official definition)

- the organisation and delivery of health services and information using the Internet and related technologies. … also a new way of working, and a commitment for networked thinking, to improve health care locally, regionally, and worldwide by using ICT. (Pagliari et al, 05 building on Eysenbach)

- the use of modern ICT to meet the needs of citizens, patients, healthcare professionals, healthcare providers and policy makers. … eHealth is not a set of products, tools or applications but a range of responses to a set of requirements in the context of improving and transforming healthcare services (Silicon Bridge Research 2009)
“the branch of medical informatics that analyses consumers’ needs for information; studies and implements methods of making information accessible to consumers; and models and integrates consumers’ preferences into medical information systems” (Eysenbach G. Recent Advances: Consumer Health Informatics. BMJ 2000;320:1713–16)

Consumers = Patients and citizens
A Conceptual Map of eHealth

[Described in terms of its applications]

Medical Informatics

E-health

Informing & Supporting Decisions

Supporting Patients/Citizen
- On-line information on health/lifestyle or illness treatments
- Tools for balancing risks/benefits/preferences to aid choices
- Targeted educational interventions
- Personal Health Records & self-management aid
- On-line support networks

Supporting Professionals
- Case-specific diagnostic or treatment advice based on patient data & expert knowledge/evidence
- Automated prompts & reminders for guideline compliance
- Prescribing, screening or reporting + safety alerts
- Electronic guidelines, research reports & CME tools

Supporting Data
- Patient-specific records, supporting care of individuals
- Population-based data, aiding research, policy & planning
- Administrative data, aiding organisational & business processes
- Integrated records, supporting multiple stakeholders
- Medical images

Supporting Records & Systems
- Clinical (e.g., for capturing, displaying, sharing, linking or exchanging patient-specific data or populating decision support)
- Administrative (e.g., for audit, purchasing, billing, tracking service utilisation, etc.)

Supporting Delivering Expertise & Care at a Distance
- Expertise & Knowledge
- Diagnostic or treatment advice from subject experts (e.g., telepathology, teleconsultations)
- Medical conferencing, clinical email
- Mobile access to records, evidence, CDS

Supporting Case
- Patient-provider email, internet consultations
- Remote interventions (e.g., telepsychiatry, telesurgery)
- Home & ambulatory disease monitoring & self-management support

Public Health

- e-Management of clinical trials
- Use of HER data bases for population/molecular research
- GIS for disease surveillance
- Health promotion on WWW

E-learning

Bioinformatics

Systems biology, genomics

Education & Library Sciences

Pervasive eHealth Theme: Networked Digital Information & Communication
“Ready to become partners in their own health, a new breed of empowered, computer-literate consumers is slowly redefining the physician/patient relationship”

eHealth and empowerment

Source: Ferguson T, Inverting the power Pyramid, Consumer Health informatics, Healthcare Forum, 1995
Why is consumer empowerment so important?

The older Generation is Growing
- People are living longer, and not being replaced at the same rate.
- It places a growing strain on healthcare support, in terms of costs and carers.

Costs are Rising
- Already, healthcare costs are rising.
- Patients demand more, live more years of ill health and treatment costs rise.

UK Demographics

2014 (predicted) 2008 Actual
- over 65s > than under 16s

2050
- Four times as many needing care
- At four times the current cost
- While the number available to do the caring decline
- patient portals;
- putting electronic health records online;
- etrials: using the web and etechnologies for clinical trials;
- public (e-)health, population health technologies, surveillance;
- Health information on the web: Supply and Demand;
- Next-generation Internet health applications;
- semantic web applications and search engine technologies;
- psychobehavioral interventions on the Internet;
- evaluation and methodological issues in ehealth;
- web-based medical education;
- health communication on the internet;
- Internet for disease prevention;
- ehealth for chronic diseases;
- online pharmacies;
- usability and human factors on the web;
- telehealth and medical practice using IP technologies;
- health-e body weight: ehealth technologies for healthy eating and active lifestyle;
- cancer and the Internet (cancer-track kindly sponsored by the U.S. National Cancer Institute)
- web-assisted tobacco interventions.
- Internet based publishing and peer-review;
Key areas and directions

- Online health & Web 2.0
- Personal health records
- Remote and mobile health
- Self-care & wellness
- Personalised health
Online Health

8 in 10 internet users go online for health information (Pew, 2009)
Diabetes Daily Care®
As low as $24.95/bottle

- Unique, Natural Formula, which Safely and Effectively
  Improves Sugar Metabolism in Type 1, Type 2, Hyperglycemia, Syndrome X and Pre-Diabetes.
- Combines Alpha Lipoc Acid, Chromax® and Vanadium
  with the extracts of Cinnamon Bark, Banaba Leaf, Fenugreek, Gymnema Sylvestre and Momordica.

Order Online
or Call Toll FREE: 1-877-965-2140

Diabetes is the Fastest Growing Disease in the World Today!
According to the Centers for Disease Control:

- Diabetes is an epidemic.
- 17 million Americans have diabetes . . .
  with 5.9 million completely unaware that they even have the disease.
- Diabetes is the 5th leading cause of death in the United States . . .
  with over 200,000 deaths each year from diabetes-related complications.
- Among U.S. adults, diagnosed diabetes increased 49% from 1990 to 2000.
  Similar increases are expected in the next decade and beyond.

What is Diabetes?
In the simplest terms . . . diabetes mellitus (commonly referred to as just "diabetes") is a blood sugar
disease . . . a disease in which the body either does not produce or does not properly utilize insulin.
Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily
Editors' picks

Say goodbye to family doctors
22 Sep 2009: Dr Crippen: Abolishing practice boundaries means goodbye to family doctors

Smoking bans may reduce heart attacks by more than a third
21 Sep 2009: The number of heart attacks has fallen steeply in countries where bans on smoking in public places have been introduced

Three more E. coli cases at Surrey farm take total to 67
21 Sep 2009: Health Protection Agency says it expects people to continue coming forward with symptoms due to incubation period

Libel reform will stay on the fringe

Sharp reminder

What lessons can the UK learn from the US mass vaccination programme for swine flu in 1976, asks Peter Waugh

Saving's the best

Greater efficiency is the key to unlocking resources for the NHS, says Chris Ham

19 comments
Interactive websites

Health

Heart attack and defence

Avoiding flu
Reduce your risk of catching a nasty virus over the winter months

Dandruff trouble?
Ideas on why your scalp might be flaky and ways you can treat it

Surgery struggles
Tips on taking frightening or anxious children to the doctors

What you'll find in bbc.co.uk/health
- TV and radio
  - ONE life, City Hospital, Secret Life of the Manic Depressive...
- External links
  - Read our policy...
- Mobile service
- Healthy living
  - Big Challenge, Your weight, Nutrition, Fitness, Health at work, Complementary medicine, Travel
The gap between availability and usefulness

- Internet is second most trusted source of information after a personal doctor
- Most people go to Google before respected sources such as NLH
- Most don’t check the provenance of information
  (Source: Pew research)

- Information and illness rates are both rising
- New methods are necessary to plug the information-knowledge gap
Fake Internet Drugs Risk Lives And Fund Terrorism, Warns Journal Editor

ScienceDaily (Jan. 28, 2009) — People who buy fake internet drugs could be risking their lives and supporting terrorism, according to an editorial in the February issue of NJCP, the International Journal of Clinical Practice.

Editor-in-Chief Dr Graham Jackson, a UK-based Consultant Cardiologist, has called for greater public awareness of the dangers and consequences of the counterfeit drugs market, which is expected to be worth £50 billion by 2010.

Harmful ingredients found in counterfeit medicines include arsenic, boric acid, leaded road paint, floor and shoe polish, talcum powder, chalk and brick dust and nickel” he points out.

“In one scheme, Americans buying fake Viagra on the internet were actually helping to fund Middle East terrorism, unknowingly jeopardising the lives of men and women serving in their own armed forces.”

The UK's Medicines and Healthcare products Regulatory Agency estimates that nearly 62 per cent of the prescription

Baby stem cell collection
The experts in stem cell cord blood collection & storage.
www.Cells4Life.co.uk

Want to Save More Money?
Create Your Own Solar Energy For Home, Save More Than 80% on Bills!
SolarPower.AllenReviews.com

Support for FP7 proposal
Find partners and support for your FP7 proposal.
www.ternas.ch

Free Family Tree
Your tree up in seconds. No software required.
www.myheritage.com

98% Thyroid Disease Cured
100% Natural Herbs, with TGA, GMP, SGS.
Thousands of recovery cases!
www.greenlife-herbal.com

Related Stories
Fake Popup Warnings Fool Internet Users Even After Repeated Mistakes [Sep. 23, 2006] — Most Internet users are unable to distinguish genuine forum warning messages from false ones — even
Maximising quality of information
- Promotion of trusted sites (e.g. Patient UK)
- Patient education (e.g. BMJ guidelines)

Managing volume and relevance of information
- **Semantic web**
  - Context, rather than key word, - driven
  - Can support natural language queries
  - But slow development due to labour required to apply ontologies
  - In future, standards for health information provision may require this effort
Harnessing the ‘social’ to aid

- Information sharing
- Solution building
- Comfort giving
Sharing others’ experiences

“True stories are not the best medicine, but they are nutritious and sustaining. They feed the mind with information and the heart with hope and strength.”

Philip Pullman

Welcome

Healthtalkonline, an award-winning charity website, lets you share in other people’s experiences of health and illness. You can watch or listen to videos of the interviews, read about people’s experiences and find reliable information about conditions.
Online therapy & behaviour change interventions

Living Life to the Full
...helping you to help yourself

Website Features

Living Life to The Full is packed with features to help you manage your access to this Life Skills Course. The following summary will help you understand how the course is presented.

Public Access:

"My Living Life": This area is your home page and is shown after you login and after you have completed the first set of mood questions.

The "My Living Life" area allows you to follow your progress through the course and access all areas of the website such as the Forum, Live Chats (now monthly) and tools to monitor your mood.

Within the "My Living Life" area you can view "Modules you have started", "Modules you have completed" and also future modules under the "We recommend you now try the following module(s)" section. The "My Living Life" area also records where you got to in a particular module. This means if you want to stop and continue a module at a later date, then you dont have to start from the beginning again.
Next Conference: Health 2.0 Meets Ix

We're delighted to announce that the next Health 2.0 Conference will be a collaboration with the Center for Ix Therapy. We've been chatting with Josh Seidman about the integration of Health 2.0 and Information Therapy for several years. We have been thrilled to work with Ici Hawkins from Ix Center, who took over event management for Fall 2007. It suddenly made sense to put the two together for one great conference.

And that conference will be April 22-23, 2009 at the Boston Park Plaza Hotel.


- Health 2.0 & Ix vs. Traditional health care
- Knowledge creation: Expert vs Wiki
Health 2.0

- Use of online tools for social networking, content sharing and content generation
- e.g. Blogs, Wikis, flickr, MySpace, twitter, YouTube, Wikipedia
- Draws on the ‘wisdom of the crowds’, as well as expert user communities
- Potential to
  - generate new knowledge or evidence
  - challenge existing healthcare systems and create new delivery models (e.g. through patient reviews of doctors, hospitals, services)
Building knowledge collaboratively…

National Health Service
From Wikipedia, the free encyclopedia

The National Health Service (NHS) is the name commonly used to refer to the four publicly funded healthcare systems of the United Kingdom, collectively or individually, although only the health service in England uses the name 'National Health Service' without further qualification. The publicly-funded healthcare organisation in Northern Ireland does not use the term 'National Health Service', but is still commonly referred to as the 'NHS'. Each system operates independently, and is funded by, and politically accountable to the relevant devolved government of Scotland (Scottish Government), Wales (Welsh Assembly Government) and Northern Ireland (Northern Ireland Executive), and to the UK government for England.

Taken together, the NHS was the third largest employer in the entire world in 2009, employing more than one in twenty employed people in the United Kingdom.[1]

Contents [hide]
1 History
2 Divisions
3 References
4 External links

History

Main article: History of the National Health Service

Originally, three services (for England and Wales, Scotland and Northern Ireland) were established by separate pieces of legislation and began operating on 5 July 1946. The Department of Health had responsibility for the NHS in England and Wales, the Scottish Office had responsibility for the NHS in Scotland and the Government of Northern Ireland had responsibility for public health in Northern Ireland.

Following the creation of a Welsh Office in 1964, responsibility for public health services in Wales was transferred to it from the Department of Health in 1969.[2] In turn, responsibility for NHS Wales and NHS Scotland transferred
Have a Story to Tell? Had a medical error?

This blog is about patient safety, medical malpractice, staying healthy, and preventing future errors. Help & empower someone else. Teach a lesson, Bear witness, Build our community - Email us or call 781-444-5525.

Frustrated with a health problem?

Need an ally in your health crisis? Call 781-444-5525, or learn more.

SATURDAY, SEPTEMBER 19, 2009

Visiting Hours Are NOT Over: Innovative Patient/Family Council Hospitals in Massachusetts

In my role as President of the Consumer Health Quality Council, I had the privilege of participating in a training session for Massachusetts hospitals yesterday on starting their patient/family advisory councils. These speakers mentioned specific improvements in partnering with patients that their councils have already inspired:

Susan Shaw of Children’s Hospital of Boston described many changes, e.g., the welcoming patient guide, the redesign of
Welcome to NHS Choices blogs

NHS blogs

- Arthritis
- Asthma
- Birth to five
- COPD
- Diabetes
- Heart conditions
- Kidney
- Mental health
- Pregnancy
- Prostate

- Carers Direct
- NHS Choices talk

Featured

Mia (left) wrote about her pregnancy for us and is now blogging about little Luca in birth to five.

In the asthma blog, LindsayTJ is in a quandary over whether to have the seasonal and swine flu vaccinations. Meanwhile arthritis blogger Adelia is amused at one side effect of her new treatment.

Whats new

From the Mental health blog

Self harm

I said last time I blogged on here that I'd write a little about self-harm (even as a writer I'm unsure whether to hyphenate that or not). So here goes. When I was first depressed, several years ago, I had no compulsion to hurt myself person...
Realtime results for asthma

**soulassassin547**: Asthma attack nearly incapacitated me. Ventolin is the savior. half a minute ago from web · Reply · View Tweet

**guideasthma**: Does Weather Affect Your Asthma? Take the poll and leave a comment #asthma #health #weather http://bit.ly/F37C5 (expand) less than a minute ago from bit.ly · Reply · View Tweet

**travors**: Once or twice a year asthma likes to pop along and play bloody murder with my sleeping habits :/ 1 minute ago from TweetDeck · Reply · View Tweet

**JExpMed**: I posted 2 photos on Facebook in the album "Suspected asthma mutation leaves mice gasping": http://bit.ly/18hoCS (expand) 5 minutes ago from Facebook · Reply · View Tweet

**ronasmy**: RT @L_Hawkins: RT @OzoneSky: Office Ozone and Skin Oils interact to irritate Lungs http://tinyurl.com/mr4q0z (expand) #asthma #twittematics 13 minutes ago from TweetDeck · Reply · View Tweet

**isaiah**: Surprse health insurance cancelation ironically matched with Jonas' first asthma attacks for the fall. This is getting ridiculous. 14 minutes ago from Tweetie · Reply · View Tweet
A recent view of Health 2.0

Telehealthcare and Mobile Health

...freedom, enablement, communication, integration...
- Remote patient care
  - Telehealth
  - Telemedicine
  - Telecare
  - Telemonitoring
  - Supported self-care
  - Tele…. etc.
  - eHealth
  - Assistive technologies
  - Mobile healthcare
  - Remote care
  - Smart homes
  - Etc…
What seemed so far away ...
Is a reality

Home monitoring, supported by videoconference
Video booths in the Highlands
email & SMS consulting
Home Healthcare Applications, Technologies, and Services

- **e-Health**
  - Online Health Self-Education
  - Online Patient-Doctor Consultation
  - Online Monitoring Daily Routines of Loved Ones

- **Telemedicine**
  - Vital Signs Collection and Remote Reporting
  - Behavior and Wellness Self-Management
  - Video Monitoring for Special Needs

- **Geriatric Care Monitoring**
  - Sensor Technology to Detect Seniors' Unusual Moves
  - Care Alerts Sent to Caregivers, Relatives and Friends via Mobile Phone, IM, Beepers, email, etc.

- **Smart Technology for Medical Needs**
  - "Smart" pill bottles provide reminders & records of medicine intake.
Telehealth/telecare are converging

LTC Patient

Questionnaire

• Are you well
• How many pillows
• Medication

Telecare sensors

Biometric devices

Communication device

Telecare

Responder

Monitoring Service

Telehealth

Monitoring / coaching

Clinical Provider
Mobile eHealth (M-Health)

- Related to telehealth...
- Use of networked, wireless & mobile communications for supporting health monitoring, decision making and care (+ remote data collection & education)
- Wireless networks are increasing...
- Mobile telephones are almost ubiquitous ...
- Small, low-power sensors could, potentially, be embedded in almost anything: furniture, vehicles, wearable devices, clothes ...
- Mobile phones or PDAs with wireless networking may act as gateways that process, store, and transfer measured parameters to clinicians for further analysis or diagnosis. (Bardram, et al Pervasive Computing in Healthcare 2006. )
- BUT lack of a comprehensive model, knowledge base, and published data on health benefits poses significant barriers.
We all live in a ‘Connected World’

- **Users** are rapidly adopting new habits
- More **powerful** and **enabled devices** will be available
- Digital **contents** will continue **growing** and will be fully **stored**
- New **services** will flourish

3.75 billion worldwide subscribers at end-2008

Mobile communications are used by more than 80% of the European population

(Source: Mike Short O₂, CfHEP eHealth Masterclass, Sept 09)
Applications related to the individual, located everywhere

- GPS location monitoring
- Fall alarms
- Vital signs monitoring via on-body sensors
- Medication reminders
- SMS pharmacy location

Enabling self-care for Haemophilia patients, sharing medical data with a PDA-based monitoring & management system.
From device to record...
Telehealth has great potential to improve access to care but its adoption in routine health care has been slow. The lack of clarity about the value of telehealth implementations (is) one reason …for this slow adoption.

Cusack CM et al. The value proposition in the widespread use of telehealth Journal of Telemedicine and Telecare 2008
There is evidence that, when combined with proper organisation, leadership and skills, telemedicine and innovative Information and Communication Technologies (ICT) can help to address some of the societal challenges to Europe’s healthcare systems. Its benefits range over different levels, from individual patients, through healthcare systems as a whole and to the wider European economy.

Telemedicine for the benefit of patients, healthcare systems and society
EUROPEAN COMMISSION STAFF WORKING PAPER
SEC(2009)943 final
June 2009
Gartner’s 2009 assessment of telemedicine on the innovations ‘Hype Cycle’

- Teledermatology
- Telecardiology
- Home Health Monitoring (Wired)
- Videoconferencing
- Telehealth Kiosks
- Mobile Health Monitoring
- Continua

Off the Hype Cycle:
- Teleradiology
- Call centers
Personal Health Records & Patient Portals

...helping people to manage themselves...
Emerging digital technologies designed to help people “access, manage and share their health information, and that of others for whom they are authorized, in a private, secure and confidential environment”.[1]

Vary in degree to which record is controlled by the patient or health care provider, inclusion of additional information and communications tools, and delivery media (e.g. personal computers, waiting room kiosks, internet).[2]


**Patient accessible EHR.** Pt can **view** provider’s EHR in the clinical setting or via internet **portal** (a.k.a. Record Access) or **hold** copy (e.g. on USB)

**Patient generated record.** Pt **compiles** own or family record on PC or online (may manually input or selectively import provider-originated information)

**Integrated online PHR.** Multifunctional hybrid for pts to **manage** and **interact** with their EHR (e.g. view provider EHR, input own readings). May integrate other online health facilities e.g. e-booking, email, education, behaviour change interventions.

**Telehealth enabled PHR** – Real time data feeds from remote monitoring equipment (potentially wearable/implanted). Shared multifunctional PHR. Potential for active decision support & supported self-management.

[NB. Categories are not mutually exclusive]
2. Start tracking a medical history and learn about your conditions

You can create and save a Google Health profile using your free Google Account. You can enter as little information as allergies. Click the Reference links to read about symptoms, causes, and treatments. You can even click

3. Import your medical records
Some PHR suppliers emphasise device connectivity

Use devices and gadgets with HealthVault
Upload data to your online health record

HealthVault Connection Center works with many types of health and fitness devices, including heart rate monitors, glucometers, blood pressure monitors and more. With it, you can use your computer to upload data from these devices – or from a gadget for Windows Sidebar that helps you track your weight – to your HealthVault record, where you can share it or use it on other health sites.

Get started

How to use a health device with HealthVault
To see if your device works with HealthVault, check the device directory.

If it does, here’s how to enable it to upload data to HealthVault:

Get a free HealthVault account
If you don’t already have one, creating one is easy and free. After you sign in, you will be asked to grant permission to upload data to a record in your HealthVault account.
According to Manhattan Research, a healthcare market research company, personal health records (PHR) are slowly becoming more popular in the U.S., but concerns about privacy and a lack of understanding, as well as doubts about the efficiency of PHRs are holding back widespread adoption. Only about 7 million adults in the U.S. actually use PHRs. Especially those without serious illnesses often don’t see the need for using electronic health records.

Microsoft’s HealthVault (our review), Google Health, and WebMD all offer interesting and consumer friendly services, but they have not been able to gain significant traction in the marketplace, even though there is compelling evidence that electronic records can reduce the chance of medical errors significantly.

What is Holding People Back?

According to Erika S. Fishman, Manhattan Research's Director of Research, besides privacy concerns, one of the biggest hurdles to overcome for the adoption of PHR is a lack of motivation among Americans to use these records unless faced with life threatening illnesses.

Meredith Abreu-Ross, Manhattan Research's VP of Research, also doesn't expect to see PHRs to take off this year. As she points out, its hard to see what would motivate patients to curate their own health records.
PHR in the UK

- e-record access not yet widespread but emerging rapidly
- NHS to provide access to SCR and ECSR
- US-style PHR portals will eventually develop (HealthSpace; EMIS-Access etc. heading that way…)
- Evidence base (impacts, users, risks) not well established
- Consumer demand will shape innovations
- New BMA/RCGP guidelines on RA soon to be released
P-Health

...personalisation, choice...
“Personalised-Health”
“Personal health systems”

- New concept relating to the widening economy of digital products and services for patients.
- Choice agenda
- Overlap with PHR, M-Health and Telehealth
PHS definition

- Personal Health Systems (PHS) assist in the provision of continuous, quality controlled, and personalized health services to empowered individuals regardless of location. They consist of:
  - Ambient and/or body (wearable, portable or implantable) devices, which acquire, monitor and communicate physiological parameters and other health related context of an individual (e.g., vital body signs, biochemical markers, activity, emotional and social state, environment);
  - Intelligent processing of the acquired information and coupling of it with expert biomedical knowledge to derive important new insights about individual’s health status;
  - Active feedback based on such new insights, either from health professionals or directly from the devices to the individuals, assisting in diagnosis, treatment and rehabilitation as well as in disease prevention and lifestyle management.

Codagone 2009
Choice: Continua Health Alliance

“Our Mission is to establish an eco-system of interoperable personal health systems that empower people & organizations to better manage their health and wellness”

Over 210 members
■ Advanced research in micro and nano sensors.
■ Wearable and implantable systems.
■ Technological trends in ICT solutions for patient self management.
■ Health and life management and personalised interactions.
■ Business vision and experiences.
■ Implementation viability.
Trends 1:
Integrating ‘lifestyle’
- Change in emphasis from illness- to wellness.
- Market drivers for elective lifestyle products and self-diagnostics.
- Integration of gaming technology and concepts into fitness and health tools.
Connected Health Vision: “A connected eco-system with efficient remote care delivery & an engaged public, resulting in better health outcomes”
## The ‘Wellness’ agenda

<table>
<thead>
<tr>
<th>Wellness and Health Market</th>
<th>Market Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Wellness Market</strong></td>
<td>Wellness is “innovations in products and services to maintain a healthy state through preventative healthcare to avoid crises”</td>
</tr>
<tr>
<td><strong>Performance Management</strong></td>
<td>Where an individual seeks a higher state of fitness and health by setting personal objectives and following a rigorous programme of exercise and diet.</td>
</tr>
<tr>
<td><strong>Lifestyle Management</strong></td>
<td>Lifestyle management promotes personalised care by the individual, who is proactive and responsible for his or her own health in first instance. Lifestyle products and services help the individual manage this situation.</td>
</tr>
<tr>
<td><strong>Disease Management</strong></td>
<td>Concept of reducing healthcare costs and/or improving quality of life for individuals with chronic conditions by preventing or minimising the effects of a disease through early diagnosis and integrative care.</td>
</tr>
<tr>
<td><strong>Post Event Home Care</strong></td>
<td>This covers services and products available to a patient post treatment to facilitate speedy return to full physical and mental health</td>
</tr>
<tr>
<td><strong>Independent Living</strong></td>
<td>Looks at promoting social care and social connectivity within the home. It looks at how the convergence in technology can increase an individual’s ability to remain in contact with family, friends, careers (social and health) &amp; community, whilst maintaining independence according to their level of mobility and health.</td>
</tr>
</tbody>
</table>

Scottish Enterprise 2009
http://www.innovationcentre.org/wellness/
Health is lifestyle

WHAT IS Wii Fit?
Wii Fit combines fun and fitness in one product. It can change how you exercise, how you balance, and even how you move.

How will it move you?

BODY TEST

TRAINING

WiiFit.Plus

SELECT ONE OF FOUR TRAINING MODES

YOGA

BALANCE GAMES

STRENGTH TRAINING

AEROBICS
A Wii can repair brain damage

Headway Shropshire

Game guys ... Peter Jewitt and Philip Mitchell
Wii puts 10 in hospital a week

By EMMA MORTON
Health and Science Editor
Published: 20 Dec 2008

TEN people a week in Britain are hospitalised from playing Wii games.

The growing toll has prompted NHS doctors to warn of the dangers.

Wii-itis sufferers usually have excruciating pain in the right shoulder or knee.

Injuries ... Sarah Harding should make sure she warms up before playing

**RELATED STORIES**

Uni boffins to study Wii fitness
RESEARCH projects to find out if Wii helps primary kids shed excess weight
Trends 2: Integrating media
Increasingly integrated home computing & entertainment, coupled with interoperable and wireless devices, offers potential for ambient telehealth presence with seamless delivery of health & lifestyle infotainment.
Trends 3: Integrating the citizen & their services
Personal Health Records are evolving to integrate new data streams (e.g. from telehealth) and online services.

...The integration of strategies for telehealth and telecare, will be followed by those for housing etc, as boundaries blur...

Gradually e-health will be integrated into more generic portals for citizens, incorporating other data and services...
- Voluntary online account, recording entitlements & transactions with local authorities
- Secure access to local services e.g. council tax
- Can view own account
- Facilitates searching across public sector websites, removing need to understand organisational boundaries
- Applicants checked against NHSCR to provide unique reference number

(Citizen Account Update, General Register Office for Scotland 2009)

- Diabetes is the first NHS service to be integrated
  Clinician submits patient request to SCI-DC (national diabetes clinical system), which passes it to Citizens Account service
Welcome

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In eu elit vitae felis condimentum blandit. In volapu non justo hendrerit posuere. Fringilla eis el et, lorem ipsum dolor sit amet, consectetur adipiscing elit.

Topics

Business and Trade
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Community life and leisure
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Council and Government
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Education and Learning
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Housing
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Jobs and Careers
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Planning and the environment
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Public order, Justice and Rights
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Social care and Health
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Transport and Roads
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Who are you?

Young People
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Parents
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Older people
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Life events

Moving home
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Child going to school
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Registering a birth or death
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Changing employment
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Biometric-enabled ID cards may eventually enable access to multiple services & data sources, from anywhere…

…provided issues of security and public acceptability can be resolved…
My data, my key, my choice
Trends 4: Wider coverage, smaller gizmos
- More discreet monitoring tools will aid seamless integration into daily living
- Increasingly mobile health monitoring systems
  - easier roaming ability
  - more wearables
  - wireless **Body Area Network**
  - spray-on ‘speckled computing’
- Cheap, widespread wireless broadband will enable more on-demand (pull) web services
- Intelligent RSS will ‘push’ tailored information to users
Spray-on diagnostic computer developed by Scottish scientists

Manish Kanaujia | Apr 10 2007

To analyze patients condition in complete manner, Scottish scientists have developed a computer dubbed ‘speckled computing’ that can be sprayed on the subjects and sizes not more than a match stick head.

The scientists indulged in the process of development of this tiny computer believes that by spraying the computers directly on subjects helps to carry out different tests at the same time via wireless networks that functions robotically for example, it enables doctors to get essential information about your heart rate, oxygen levels, muscle movements, pulse rate etc.
Trends 5:
More freedom of choice
- eMail consulting will become widespread, as the benefits become clear and new business process models evolve
- Workplace eHealth interventions will increase
- Tailored service packages & P-Health will develop
  - reflecting an increasingly decentralised market for services and peripherals
Issues to watch

- The business case for patient-centred eHealth is still unsubstantiated by evidence
  - Procurement of evaluative research will fill this gap
  - Darwinian pressures will shape the eHealth market and there are likely to be many failures
- User acceptance of data sharing and utility/risk trade-offs is largely unknown
  - SHIP project exploring this...
- Greater emphasis on user requirements will improve the value and ‘fit’ of innovations, supporting p-health
- The global market for patient-facing services is likely to increase and how this will affect the UK consumer is unknown…
Were our 2005 predictions right?

- Tailored systems and interactive personal health records enabling shared patient management and self-care for chronic diseases will make an impact.
- eHealth integration into care processes will be constrained by levels of systems interoperability, but increasing standardisation will reduce this.
- Increasing bandwidth, personal computing capability & new generation internet will enable web-access to powerful eHealth applications such as multimedia imaging, previously available only in research settings or fixed locations.
- Trends towards increased IT/web capability & consumer empowerment will raise expectations for alternative modes of health care access (e.g. email consulting). This has the potential to exacerbate health inequalities but Digital TV & other emerging trends may help.
- Improvements in storage capacity, data warehousing & data mining will facilitate comprehensive integrated EHR and their use for patient care (including integration with CDSS), research & policy.
- Key technologies supporting the development of eHealth practice and research are Wireless Computing, Grid Computing, Broadband & DTV. Screen resolution enhancements will facilitate high quality digital imaging & virtual reality simulations.

Broadly, yes, but illustrates how long it can take to translate vision into reality… New trends have also emerged...

(Pagliari et al eHealth SDO 2005 Report)
Conclusions

- As more interactive, consumer-facing applications appear, patients will play a more active role both in their own health management and in the shaping of services.

- The shift of responsibility (and power) from institution to individual has huge implications for healthcare systems worldwide.

- A key trend is towards integration (of services, technologies, media, data, knowledge, communities…).

- Changes in the organisation & funding of care will both influence and be influenced by patient-centred innovations.

- The NHS is well placed to respond to the challenges of consumer eHealth, and has committed major investment to new telehealth services, portals, patient information and methods of choice.

- Expect big changes, for the better, over the next 10 years…
  - …but also expect failures, as important questions over change management, value demonstration, social and ethicolegal implications, safety and quality, remain unanswered….
Sixteen eHealth Projects Across Scotland Will Share of £1.6 Million Funding

Tuesday, 24 February 2009

eHealth investment totalling £1.6 million - including funding from the NHS's major IT contractor - was announced today by Health Secretary Nicola Sturgeon. Speaking at the first annual Scottish Telehealth and Telecare conference, Ms Sturgeon unveiled details of projects extending the use of electronic technology in the NHS, including:

- Touch screens in the homes of hundreds of patients with chronic conditions in Lothian, allowing them to be monitored from home
- Online scanning allowing patients in Orkney to be diagnosed remotely, avoiding lengthy trips to hospital
- New software in Glasgow transmitting patients’ records directly to consulting rooms

Ms Sturgeon said: “Telehealthcare technologies and eHealth have huge potential to benefit patients, by harnessing all that technology can offer to make care quicker, safer and closer to home. It also allows more efficient working and better support for our health and care staff.

“In eHealth, our joint investment in 16 pilot projects will help patients in hospital and at home. At the West of Scotland Heart and Lung Centre, for example, they’re replacing cardiac databases with the latest systems to improve patient safety.

“Together with NHS Lothian, we’re also rolling out Scotland’s biggest telehome monitoring system. Four hundred people living with conditions like heart failure or chronic lung disease will have touch screens to monitor their vital signs from home, helping them avoid repeated