



Tecnologías para la Salud y el Bienestar

Telemedicine and e-health: challenges and future trends in Europe

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Taiwan, 9th December 2011

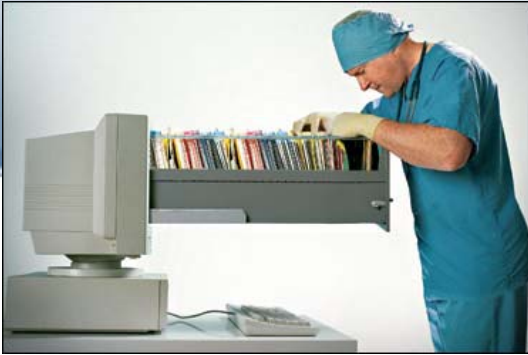


I. Background. The problem, the symptoms, the reasons

Background



Concepts



Telemedicine: Use of ICT to support or provide health care services, independently of location of

Professionals providing the services

Patients receiving the services

Available related information

Requested equipment

Concepts

*eHealth is the use, of digital data—
transmitted, stored and retrieved
electronically—in support of health,
both at the local site and at a distance.”*



Telemedicine and e-health uses

Teleradiology

Telepathology

Triage

Telepsiquiatry

Home Hospitalisation

Chronic conditions management

Disease prevention

Urgencies/emergencies



What's happening?

Noncommunicable diseases are responsible for 86% of deaths and 77% of the disease burden in Europe



Chronic conditions comprise 8 of the top 11 causes of hospital admission in the United Kingdom



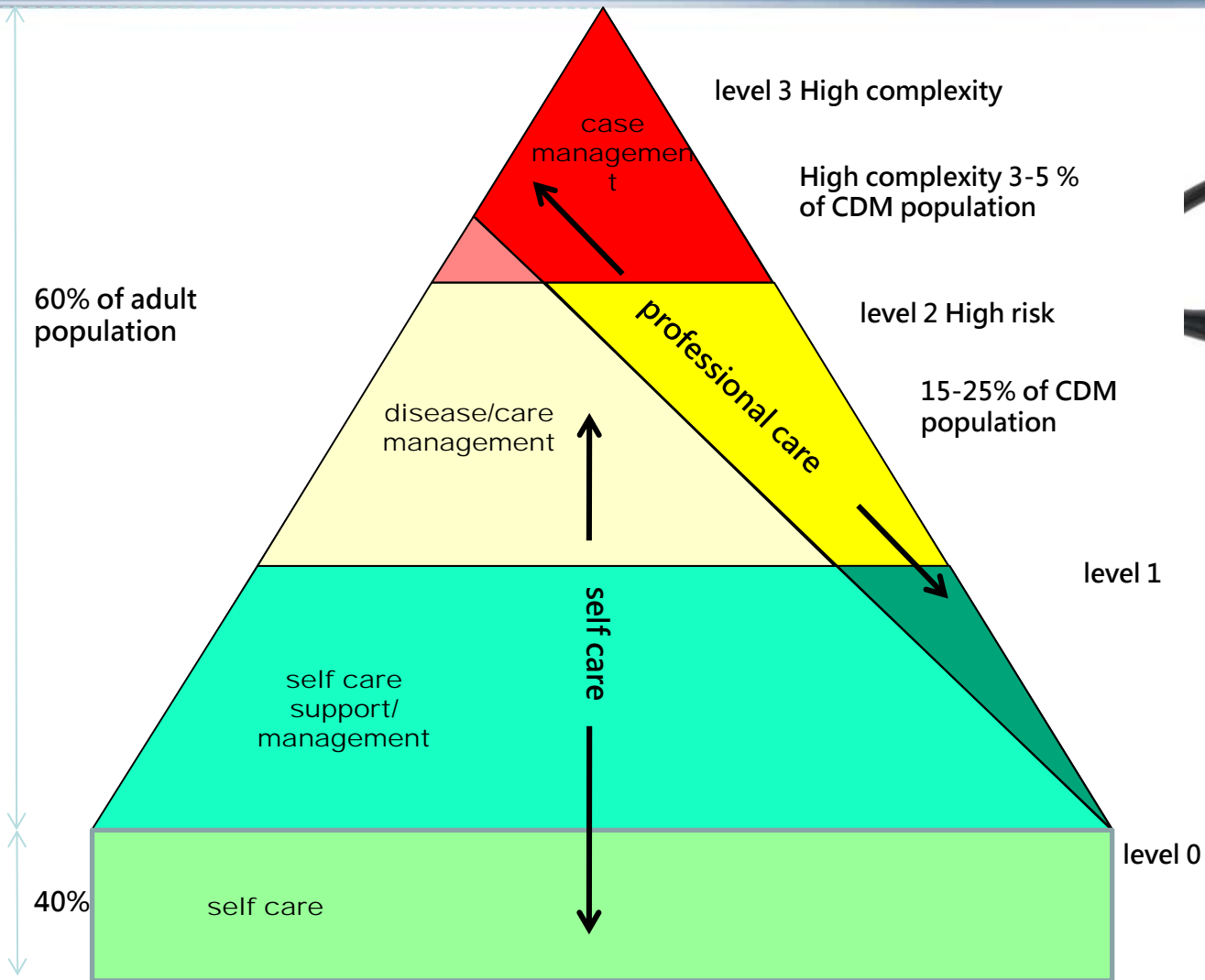
Chronic conditions are estimated to account for 70-80% of health care expenses in Denmark



... 2006
... Promoción de la Salud
... Enfermedades Crónicas y Promoción de la Salud



What's happening?



Kaiser
Permanent
Pyramid

What's happening?

60% adults

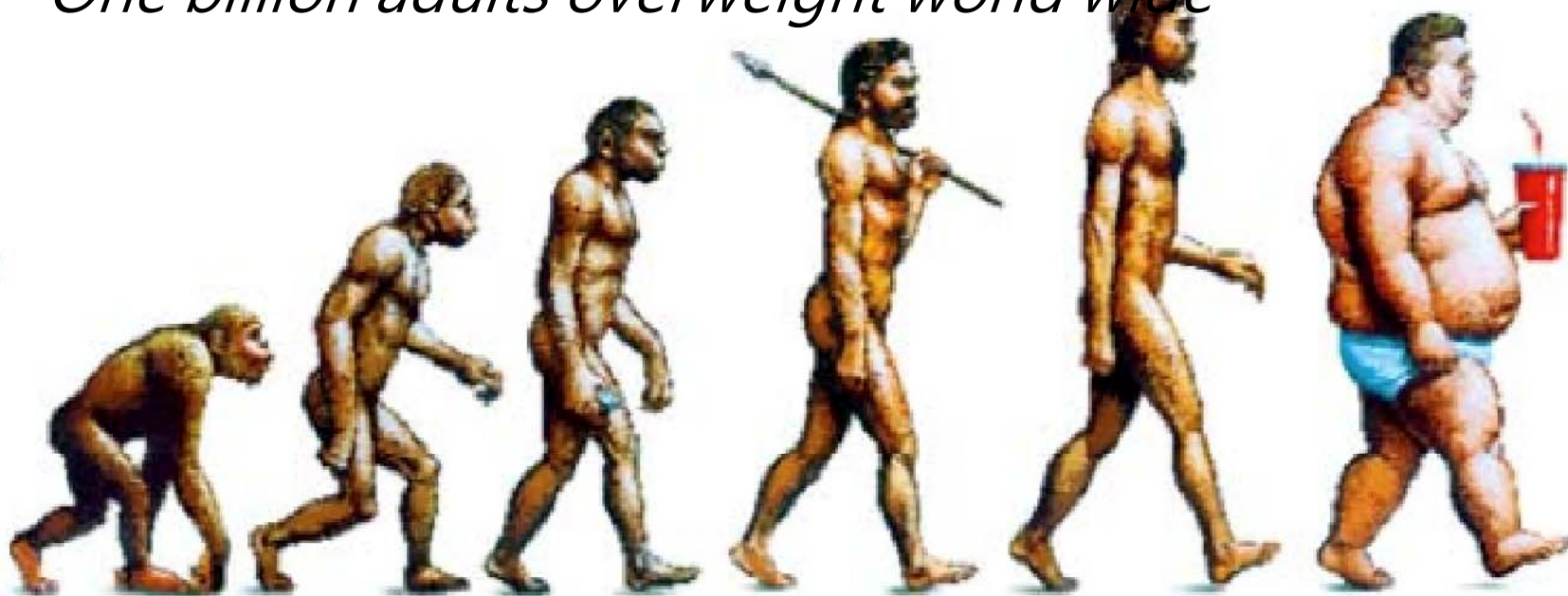


Chronic diseases

What' s happening?

The Economist 2003

One billion adults overweight world wide



5-6 Million Years

30-40 Years



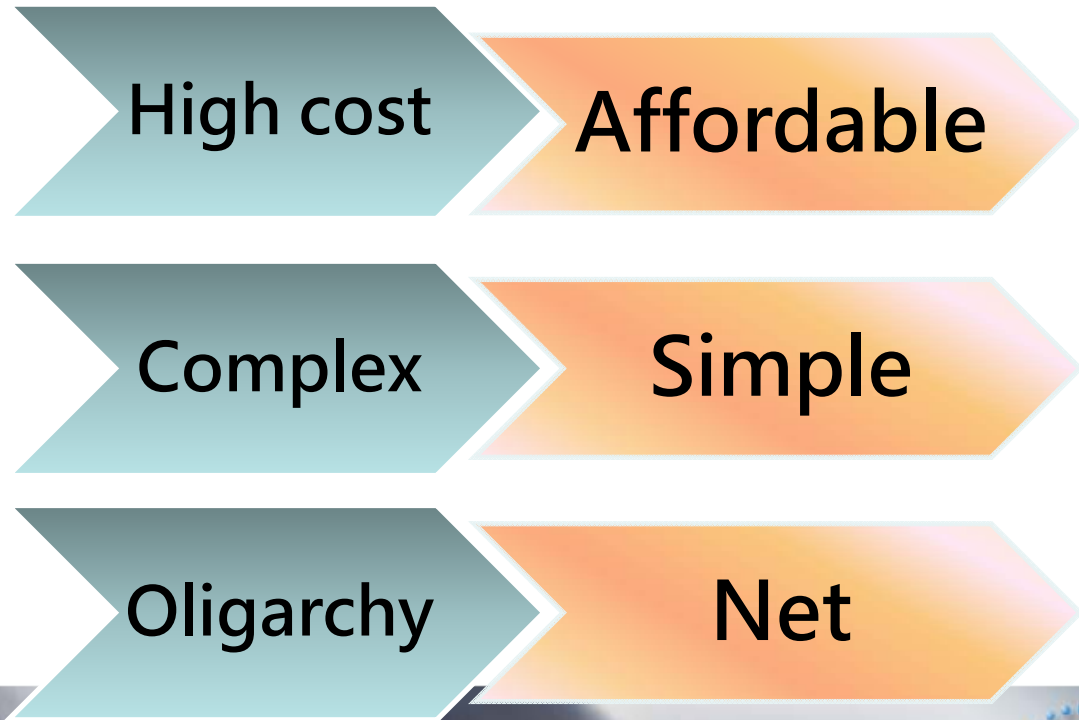
To sum up this point ...

- Definition and uses of e-health and telemedicine
- Mix of problems, symptoms and reasons
 - Unproper problem identification
 - Health system is not sustainable any longer in this way:
 - Chronic conditions management
 - People not concerned about their health (long-term)
 - Wrong Health IT deployments and policies

A man in a green t-shirt and khaki shorts stands with his hands on his hips, looking out over a vast, rocky landscape under a clear blue sky. A large, detailed image of the moon is superimposed in the upper left corner of the sky. The man is standing on a reddish-brown rocky ridge, looking towards the horizon. The sky is a deep blue, and the landscape below is a vast, flat expanse of reddish-brown earth with some sparse vegetation.

II . The challenges. WHO and Europe policies

We need to change... What to do?



What's WHO doing?

❖ 2004

- ❑ e-Health unit
- ❑ eHealth Standardization Coordination Group (eHSCG)

❖ 2005

- ❑ eHealth strategy
- ❑ Creation of Global Observatory for eHealth (GOe)
- ❑ i2010 subgroup on eHealth

What is Europe doing?

- 2004 eHealth Action Plan (eHAP)
 - Elaborate national or regional roadmaps for eHealth
 - Provide leadership to eHealth efforts
 - Interoperability standards for health records and health data messages.
 - Investment
- 2005 the i2010 subgroup on eHealth
 - Advice for eHAP
- 2006 Lead Market Initiative(LMI)

What is Europe doing now?

VII R&D Framework Programme

Challenge 5: Towards Sustainable and Personalised Healthcare

Challenge 7: ICT for Independent Living and Inclusion

Personal Health Systems for Monitoring and Point-of-care Diagnostics (60 M€)

Advanced ICT For Risk Assessment And Patient Safety (30 M€)

Virtual Physiological Human (72 M€)

Ict and Ageing (30 M€)

Accessible and Inclusive ICT (43 M€)

What is Europe doing now?

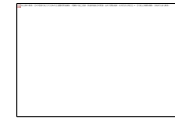
- ✓ Development of an European eHealth Interoperability Framework: epSOS, Hpro card, Calliope, Renewing Health
- ✓ Europe 2020 strategy – Horizon 2020 -> EIP on Active Healthy Ageing (EIP-AHA)

What is Europe doing?

Key projects

□ HPRO card

- Free movement of citizens with health professionals all over Europe



□ The European epSOS (Smart Open Services for European Patients).

- Access to health information
- Electronic health record
 - Patient Summary Report
- ePrescription



What is Europe doing?

Key projects

- ❖ RenewingHealth (REgionNs of Europe WorkINg toGether for HEALTH).
 - Validate and evaluate telemedicine services at large scale
- ❖ Calliope Network
 - Collaborative platform for interoperability in Europe
 - Value makers



What is Europe doing?

Key strategies

- ❖ European Innovation Partnership on Active and Healthy Ageing (EIP AHA)
 - Active and healthy ageing
 - Enable citizens to live longer
 - Joining health, tech, and social policies from basic research till large scale projects going through SME support measures



To sum up this point



Personalized
medicine



Sustainable
care services



Chronic
conditions
management



Real
Interoperability



Active and
Healthy Ageing



Challenges. Policies

III. How IT can help?



HELP

How IT can help?

IT is not the solution.



It is part of the problem!



It is a tool to solve the problem 😊

ICT and Health



ICT as tool to
keep us healthy?



chronic conditions treatment

health promotion and disease prevention

Key elements for chronic conditions management

1. Identify, score and stratify population

2. Planify and coordinate care within all health care levels, using case management methodology

3. Specific guidelines and protocols for each disease

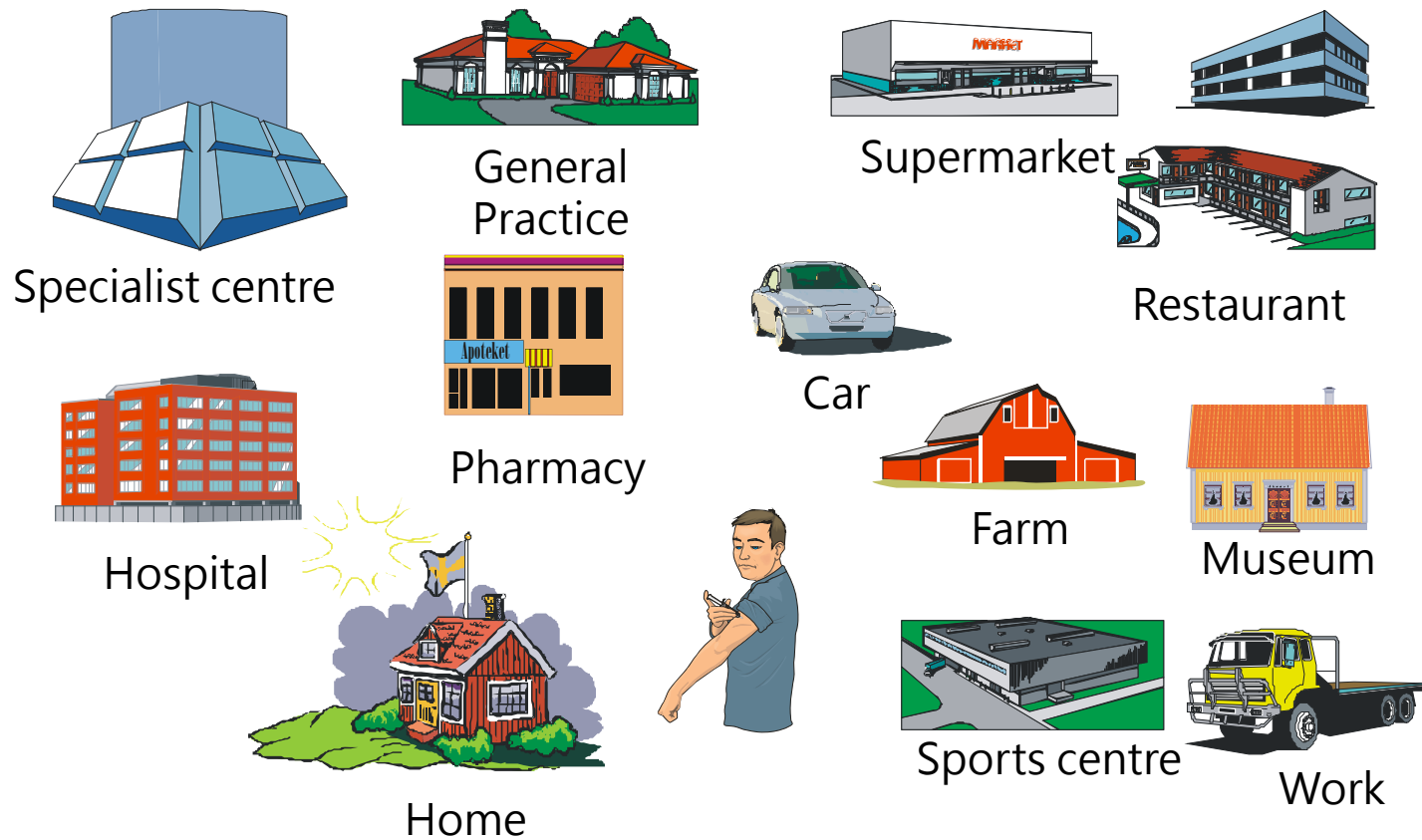
4. Specific educational disease programmes

5. Integrated Information Systems, allowing a predefined Balanced ScoreBoard

6. Align resources and incentives

7. Evaluate and improve quality, cost and service

The ecosystem



Health is cocreated by individuals in interaction with their environment

If we

find

Unre

Integrating the two loops:

Co-producers supporting the healthcare system in achieving the same goal: creating "health"

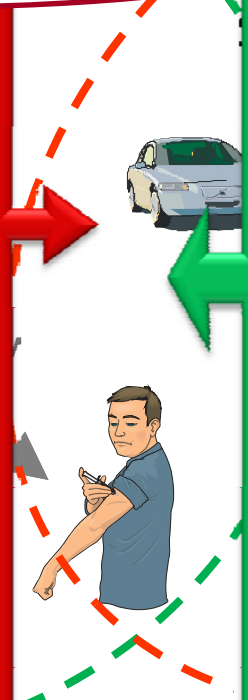
The current way has not worked, we need new ways of thinking to solve the problem

prim...
 health...
 our lives wher...
 Factors contributing to positive or negative health = Life

- ✓ Creating a favourable market for this by changing the " Rules of the Game" . Policy tools including taxation, subsidies, R&D...
- ✓ Making creating wellness / health lucrative
- ✓ Service Providers in this market could create more attractive services to consumers
- ✓ Liability issues, trust issues, validation of value proposition...

...for services,
 shortages of resources

- ✓ Strict rules to assure safety and create trust
- ✓ Structures do not sufficiently support personalized primary prevention (system triggered for acute care)
- ✓ Difficult to conduct business for prevention service providers



To sum up this point



RFID

- Localisation
- Tracking
- Management



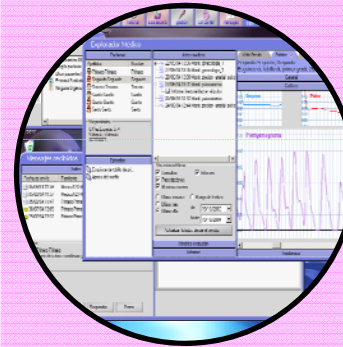
SENSORS

- Medical parameters
- Virtual sensors
- Data processing
- ...



INTERNET 2.0 Communities

- Experts
- Experts-patients
- Patients



ELECTRONIC HEALTH RECORD

- Public and private sector
- HL7, openEHR, ...



AMBIENT INTELLIGENCE

- Integration
- Interoperability
- Home, work, car and family
- Profiling

← ICT applied to health – Building an ecosystem →

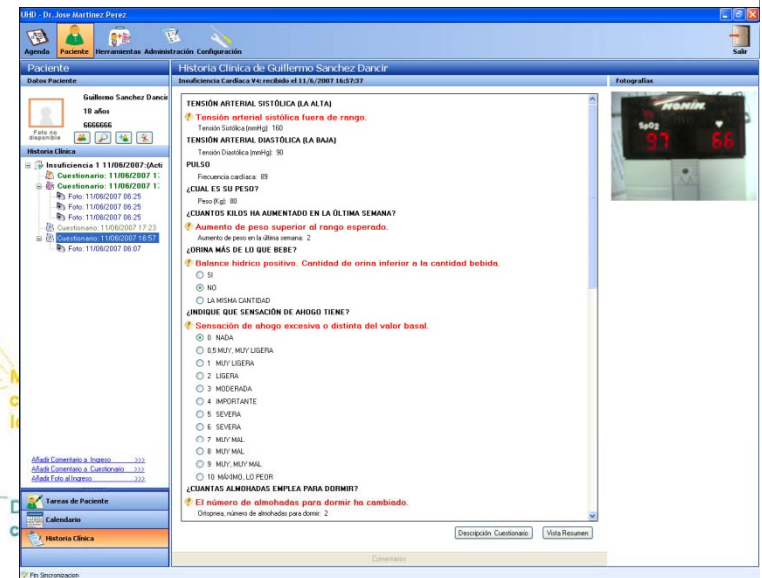
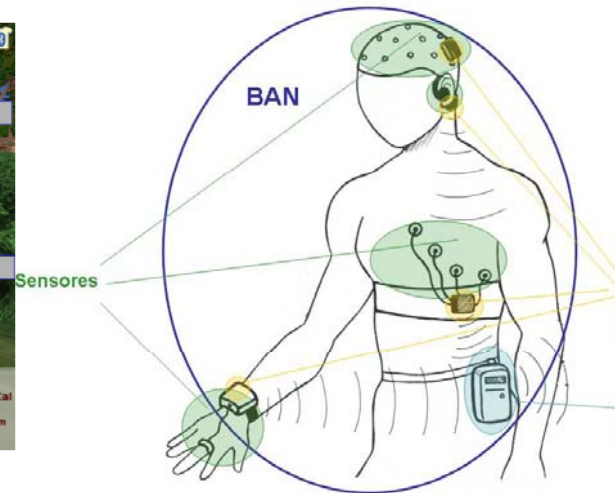


IV. Best practices and lessons learnt

Best practices and resources

- EPSOS – interoperability <http://www.epsos.eu/>
- RENEWING HEALTH – chronic conditions
<http://www.renewinghealth.eu/>
- PREVE – prevention
<http://www.eservices4life.org/Preve/>
- ePRACTICE - best practices
<http://www.epractice.eu/>
- HEIDI – health indicators
http://ec.europa.eu/health/indicators/indicators/index_en.htm

The practical side



Lessons learnt – extend good practices

Copy good practices without budget raise

+ 2-3 years expectancy life

Raise 10% budget with no change

+2-3 months expectancy life

Directions for ICT research in disease prevention



BUSINESS
MODELS IN ICT
ENABLED
PRIMARY
PREVENTION



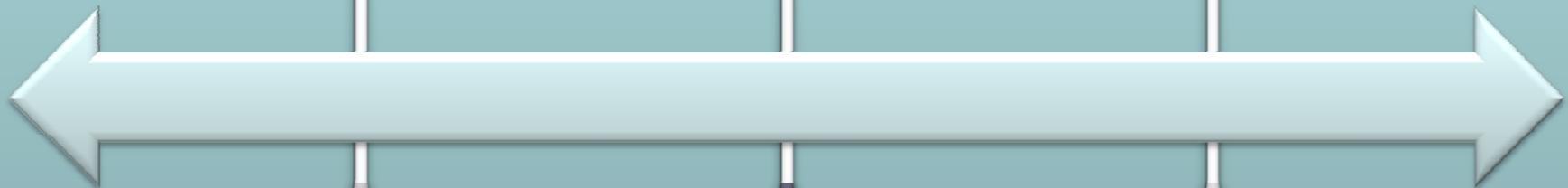
: PERSONAL
HEALTH SYSTEMS
IN
UNCONTROLLED
ENVIRONMENTS



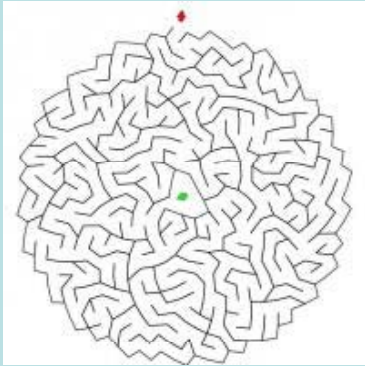
USER-ADAPTIVE
SOFTWARE
SYSTEMS



BEHAVIOUR
CHANGE
SUPPORT
SYSTEMS AND
PERSUASIVE
TECHNOLOGIES



Lessons learnt – New rules



No simple answer in a living real environment

Time to market is being shorter

New business models are being more global and complex

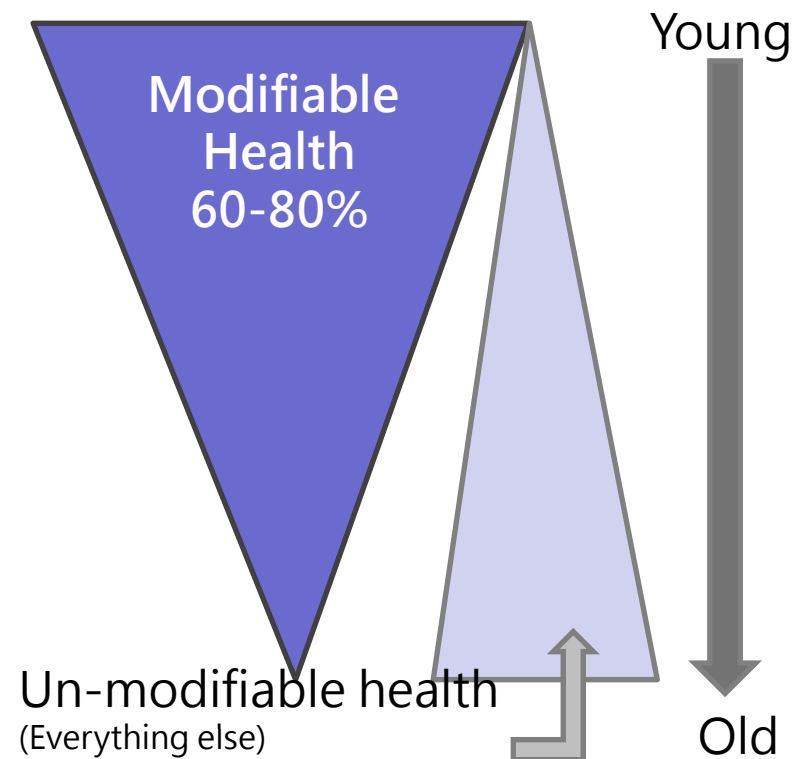
Lessons learnt -Segmentation approach

Sync up the biological space with the digital space

Old segmentation models:

- Newborns
- Pediatrics
- Adult care
- Wellness
- Chronic disease
- Elder care
- End of life care

New segmentation models: Digitize units of high yield health contributors that span age, gender, and diagnostic category ...



Lessons learnt – Crowd data

Device Interface

XHR Interface

Community Data Commons



Secure PHR



Wireless
Ultra Low Power
Ultra low cost



Source: Brigitte Piniewski, 2011 PeaceHealth Laboratories

"A book no household should be without."
—SARAH CLIFTON

THE EMPOWERED PATIENT

HOW TO
Get the Right
Diagnosis

Buy the
Cheapest
Drugs

Beat Your
Insurance
Company

AND
Get the Best
Medical Care
Every Time

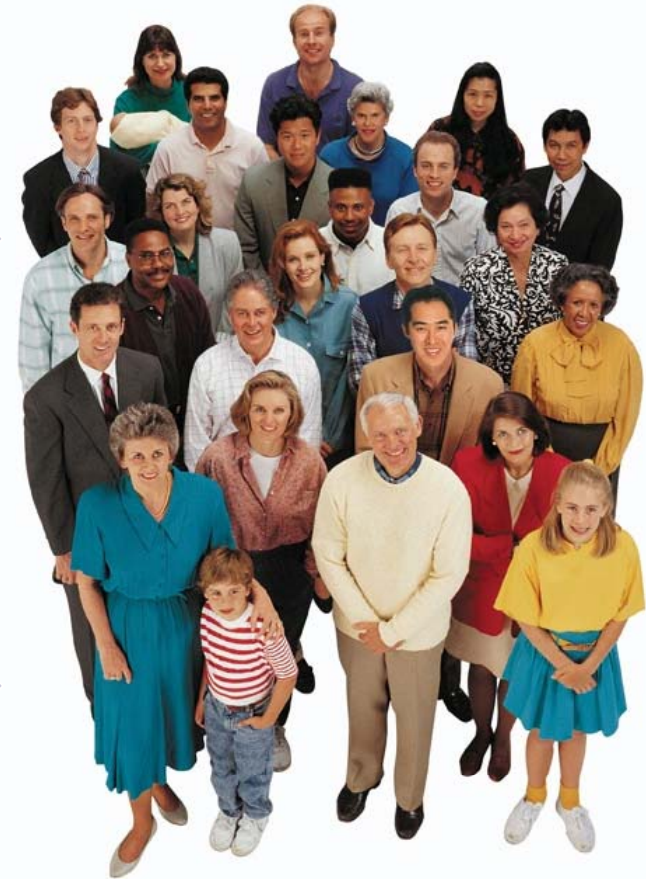
ELIZABETH COHEN

ENR SENIOR MEDICAL CORRESPONDENT

IV.b. The
empowered
patient

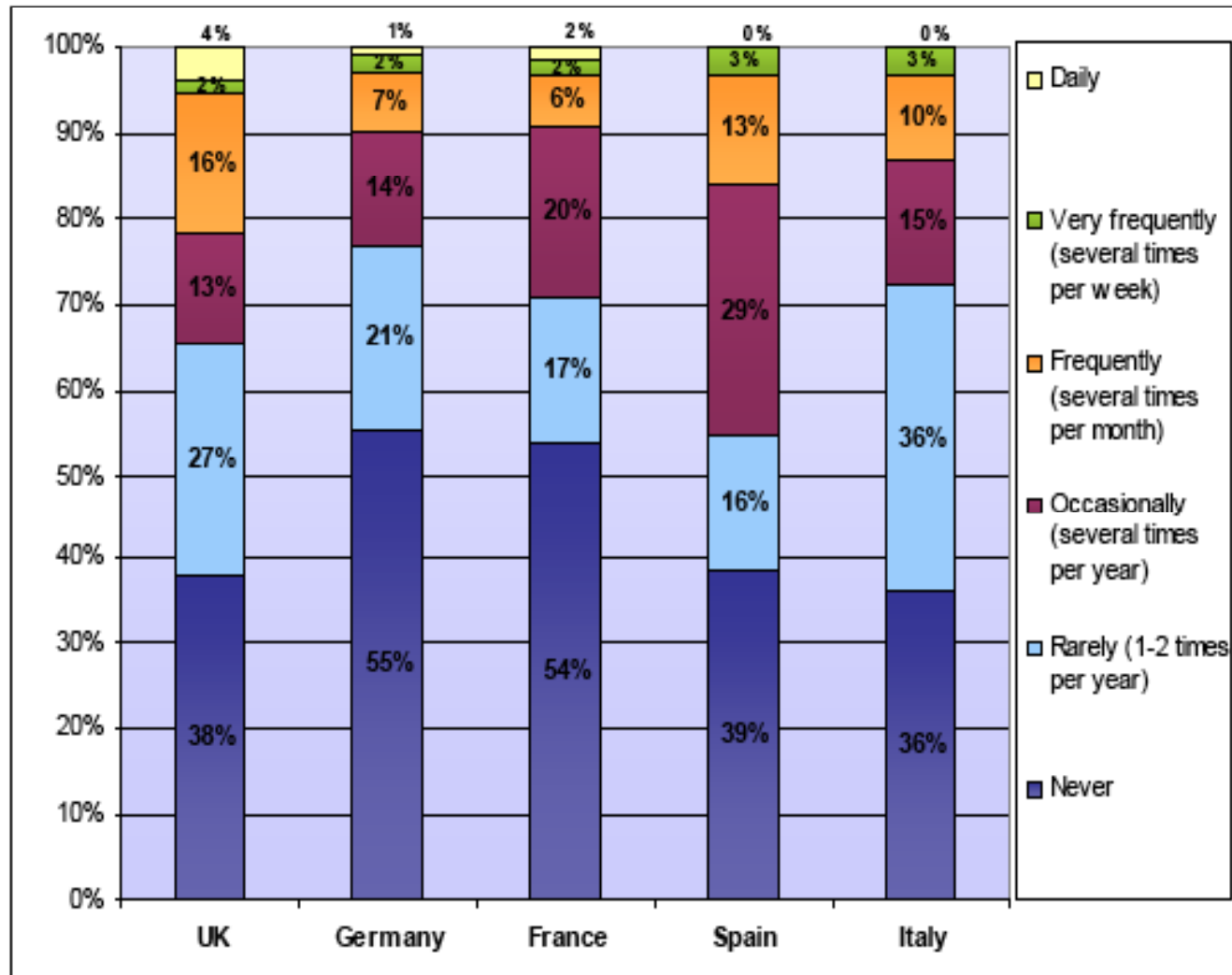
62% Internet users in USA (73 millones) have been on-line looking for health related information last year

Spain, 52' 5% people older than 16, have been looking for health information in Internet
#2



- 1 Llic D. The Role of the Internet on Patient Knowledge Management, Decision-Making. Telemedicine and e-Health. 2010 ; 16(6): 664-669.
- 2 INE. Encuesta sobre Equipamiento y Uso de Tecnologías de la Información y Comunicación en los hogares 2010 Resultados nacionales. Utilización de productos TIC por las personas Servicios de Internet usados por motivos particulares en los últimos 3 meses por características demográficas y naturaleza del servicio.Web .Disponible en <http://www.webcitation.org/5tOIBlaUM>

Question 1: responses by EU Market (HCP responses only)



But few GPs are using social networks to discuss about health

1. How often do you engage in health-related discussions via online social networks?



Spanish hospitals in Internet



49% own web
6% Facebook
3,5% Twitter

63 hospitals
8% social
networks

Distribución de nº de hospitales por tipo de web

Accede al listado filtrado desde cada una de las cantidades


387

71




27



47


1



9


28

788
Total Hospitales

Change in the relationship model





Google™



E-patient



Social networks

E-patient

The cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.(WHO. Health promotion glossary, 1998)

Magazine.

equipped

enabled

empowered

engaged



Redes sociales



Salupedia

Temas de Salupedia

- Asuntos Sociales y Familia
- Enfermedades o problemas de salud
- Pruebas - Procedimientos Diagnósticos
- Salud y Tecnología
- Tratamientos y Consejos
- Vida Sana y Prevención de la Enfermedad

- Presentación
- Qué es Salupedia
- Tour
- Preguntas frecuentes
- Contacto
- Prensa

PUBLICIDAD



Garantiza la seguridad clínica, trazabilidad y localización de pacientes

salupedia, información segura para sus pacientes.

Inicio
 + Actual + Visto + Votado + Comentado

Nº de enlaces: 546



La alimentación en los enfermos de Parkinson

La enfermedad de Parkinson conlleva una serie de alteraciones (temblor, rigidez muscular, depresión, ansiedad, estreñimiento) así como fluctuaciones del estado clínico que pueden ...

http://www.aep-taray.org/...

20/10/2011 48 2 0.0 0.0

Me gusta Sé el primero de tus amigos al que le guste esto. Twitter 2 +1 0

Bienvenido Vicente Traver



- Agregar Enlace
- Mis enlaces
- Mi Perfil
- Mis enlaces favoritos
- Busquedas web
- Administrar Alertas

Desconectar

Ver la captura



Los niños y la publicidad de alimentos

Información escrita por las Doctoras Ana Martínez Rubio, Soledad Jurado Mateos y Elena Castro Sánchez para FAMPED, donde reflexionan sobre el poder de la publicidad dirigida a ni...

http://www.famped.es/... Cache Gráfica

19/10/2011 21 0 0.0 0.0

Me gusta Sé el primero de tus amigos al que le guste esto. Twitter 3 +1 0

Ver la captura



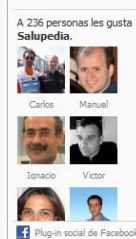
Los antibióticos

Información ofrecida por A. Hernández y M. Quiles para FAMPED, donde nos cuentan qué son los antibióticos, para qué y para qué no sirven, y cuáles son las...

Facebook



A 236 personas les gusta Salupedia.



Plug-in social de Facebook

ve better every day.

Search this site Search Help | Crisis

ire Your Experience »

1 Patients Like You »

rn From Others »

n Now (It's free!)

Foros para cuidadores familiares

No espere a ver una mancha negra

Identifíquese

Infoelder

le los cuidadores familiares sus experiencias y consejos sobre ayudas a la dependencia de las personas.

Experta del Foro de Familiares:

María Dolores Marín
 "Me motiva escuchar a las personas y estar a su lado. Ayudar es lo que más feliz me hace"

Últimos comentarios en Foros para cuidadores familiares:

- Alzheimer: Que mal llevo esto**
 Hola Terel! Como hoy tengo mal día busco recetas mágicas en la red!, me doy cuenta que no...
- Testimonios de un Cuidador de Alzheimer**
 Sila dijo: se me olvidaba decirte que en esta dirección de la fundación de la...
- ROBAR Y MALTRATAR PSICOLÓGICAMENTE A UNA MADRE DE 79 AÑOS Y AL ZHEIMER**
 Puedes comentar el tema en los Servicios Sociales de tu Ayuntamiento, díles que tu madre puede...
- Algunas Residencias Concertadas**
 Hola Carmela: Te agradezco mucho tu mensaje, pero yo si creo que todavía podemos...
- Algunas B...**
 pues si ad... hayan "pe... aprovecha... humanos...

¿Necesita ayuda?

Regístrate gratis y encuéntrala

CONSULTA - MÉDICA

Las consultas en SL se realizan con una previa. Para ello, envía un correo a: atmuaa123@hotmail.com

Indica el nombre de tu avatar, y el horario que tienes disponible. recibirás una respuesta como mucho en 24-48h.

REVISTA



El observatorio permanente de las TIC en salud

Detalles del centro

HOSPITAL GENERAL UNIVERSITARIO DE VALENCIA

- Localización
- Recursos
- Webs asociadas
- Gráficas estadísticas
- Otras webs

Dirección: Av

Municipio: Va

Código Postal:

Funcionalidad:

Patrimonio: D

Finalidad: GE

Búsqueda

Encuentra provincias

Geolocalización

Compara el hospital

Recursos

Accede a de camas diagnóstico

Estadísticas

Análisis de cada h

Distribución de nº de por tipo de web

Accede al listado filtrado desde cada una de las cantidades

432

Fecha última actualización: 17/10/2011 09:50:20

Avisos legales

Política de Priv

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YouTube

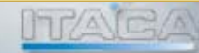


Selecciona web



+1 0 Tweetear 2 Me gusta

Si desea aportar más información o corregir cualquier dato de este centro, rellene el siguiente formulario



¿ What to do?

Share



Learn

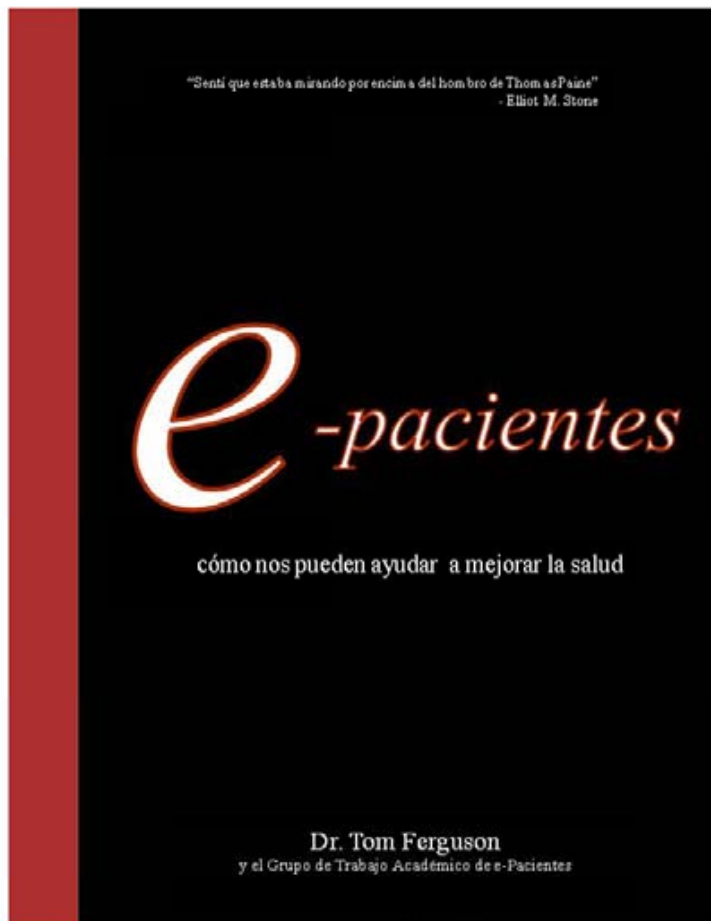
Hear


Data

Information

Knowledge

Web as source of knowledge



Patient Opinion  **this is our NHS... let's make it better**

[Login](#)

[Home](#) [Your story](#) [Find stories](#) [Find services](#) [Help](#) [About](#) [Blog](#)

Your story can change the NHS

[Tell](#) people what happened
[See](#) what others are saying
[Find out](#) how patients are changing the NHS

Latest Patient Opinions

“ Struggling to get an appointment for my 1yr old son ”
16 hours ago
jadesam on NHS Kirklees

“ My new knee ”
17 hours ago
Wombat on Barborough NHS Treatment Centre

“ The most outstanding care i have ever had was at Ward 78 ”

Your story

Patients, service users, carers, relatives, friends, staff. **This is for everyone...**

Services near you

Find stories about health services near your postcode

Your postcode

Find services for...(optional)

e.g. **diabetes** or **eyes**

Virtual communities of patients

The image displays a virtual world interface, likely Second Life, showing a 3D environment with a large, arched structure and several avatars. The interface includes a browser window displaying the TuDiabetes website, which features a search bar, a sign-in button, and a community ad for Tuanalyze. The browser window also shows a search bar with the text "Search TuDiabetes" and a "Sign In" button. The website content includes "Our Programs", "Donate", and a "Welcome to TuDiabetes" message with "Join or Sign In" buttons. Below this, there are social media icons and a "community ads" section featuring a "Tuanalyze" advertisement. The advertisement text reads: "Track, share and compare your diabetes data, while supporting academic research!". The browser window also shows a "Ustream" logo on the right side. At the bottom of the browser window, there is a status bar with the text "Ahora: 26°C", "mié: 30°C", and "jue: 31°C".

ON TEMA

Esta sección esta pensada para que propongan temas de salud

¿Qué resultados se han conseguido hasta el presente con el tratamiento psicosocial en los pacientes con trastorno

<http://www.tudiabetes.org/>

MaryLou Little commented on Bill's group 'Hypoglycemic Experiences'

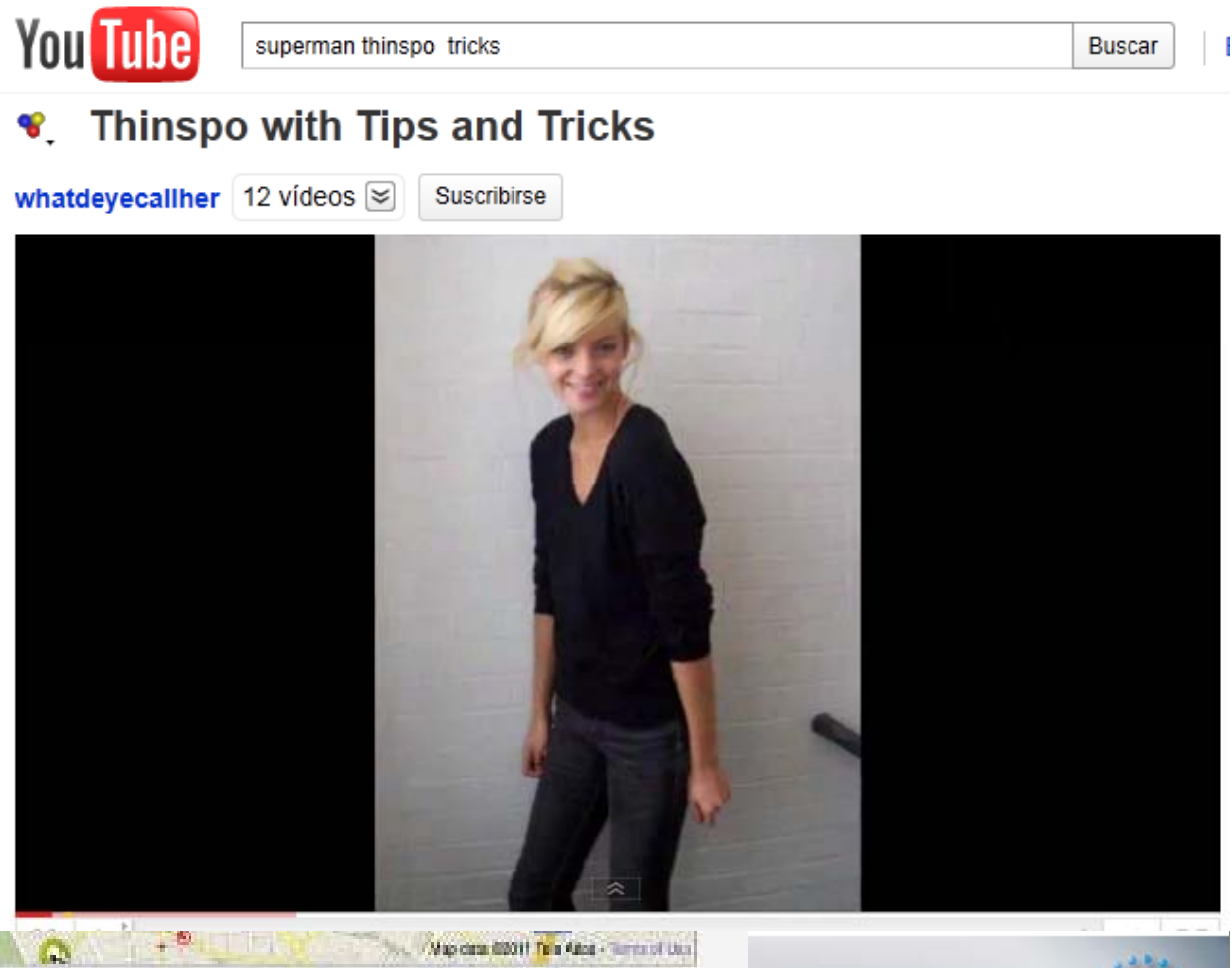
Started by Suru, PhD in General Diabetes Topics and P1E-Diabetes. Last reply by MyBustedPancreas 18 minutes ago.

2 Replies 0 Likes

Ahora: 26°C mié: 30°C jue: 31°C

Privacy and ethical barriers

Tobacco 2.0



¿ future is closer than we believe...?



10 future trends or not so future... (I)

1. Health care system will not be based on diagnosis or pathology. The person will decide based on accurate information.

2. Internet based strategies for follow up and better compliance of advices and treatments will be created.

3. Standards will be used at global level for clinical data exchange with full integrity guarantee.

4. Systems will be really user friendly to be used by all.

5. Quality of health information on Internet will be guaranteed.

10 future trends or not so future ... (II)

6. The medical staff will prescribe links.

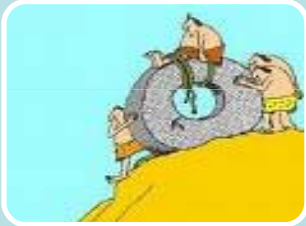
7. Public strategies for health improvement will take into consideration virtual networks of patients.

8. Care processes will be approached in an integral way.

9. Virtual communities will be a common meeting point for the patients.

10. A new culture will appear on the net: from information towards interaction.

To sum up and discuss



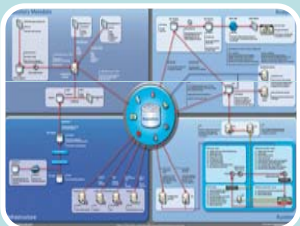
There is no unique recipe to deploy successfully telemedicine systems as they need to be based in the specific needs of each area (user need driven vs technology driven) without reinventing the wheel at any stage.



All the stakeholders needs to be involved since the beginning with a clear roadmap and a win-win schema



Be careful with maintenance and sustainability



A proper selection of architecture and standards are key to guarantee scalability and interoperability

To sum up and discuss



pHealth will happen. No other way. The question is when. A new model of health care is required for an integral management of the chronic conditions



Please, keep in mind that R&D projects, standardisations, EHR, ethical aspects,... are only TOOLS



Health 2.0 is already here and aligned with Personal Health Systems



Synergies among all the biomedical engineering disciplines are key to succeed with this challenge