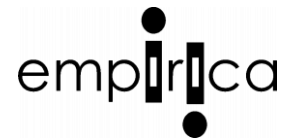


# eHealth Innovation in Support of Integrated Care - the Policy Dimension

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## Epigraph

**“Most people in richer countries and an increasing proportion of those in developing countries can look forward *to long, mostly healthy lives*. This is arguably the most significant achievement of modern civilization.”**

Vaupel, James W. (2010). Biodemography of human ageing. Nature V. 464, 25 March, p. 536

# Outline

- **Evidence-based policy making - some facts**
- **The need for integrated care**
- **Innovation, diffusion, business models**
- **Policy recommendations**

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HEALTH SYSTEMS AND POLICY ANALYSIS

Aimed primarily at policy-makers who want actionable messages, the series addresses questions relating to: whether and why something is an issue, what is known about the likely consequences of adopting particular strategies for addressing the issue and how, taking due account of considerations relating to policy implementation, these strategies can be combined into viable policy options.

Building on the Network's synthesis reports and the Observatory's policy briefs, this series is grounded in a rigorous review and appraisal of the available research evidence and an assessment of its relevance for European contexts. The policy briefs do not aim to provide ideal models or recommended approaches. But, by synthesizing key research evidence and interpreting it for its relevance to policy, the series aims to deliver messages on potential policy options.

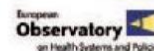
The **Health Evidence Network** (HEN) of the WHO Regional Office for Europe is a trustworthy source of evidence for policy-makers in the 53 Member States in the WHO European Region. HEN provides timely answers to questions on policy issues in public health, health care and health systems through evidence-based reports or policy briefs, summaries or notes, and easy access to evidence and information from a number of web sites, databases and documents on its web site (<http://www.euro.who.int/hen>).

The **European Observatory on Health Systems and Policies** is a partnership that supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of health systems in the European Region. It brings together a wide range of policy-makers, academics and practitioners to analyse trends in health reform, drawing on experience from across Europe to illuminate policy issues. The Observatory's products are available on its web site (<http://www.euro.who.int/observatory>).

POLICY BRIEF

## How can telehealth help in the provision of integrated care?

Karl A Stroetmann, Lutz Kubitschke  
Simon Robinson, Veli Stroetmann  
Kevin Cullen, David McDaid



# Evidence-based policy making - some evidence

# Health policy desiderata unchanged for 60 years

- 1954:** “Comprehensive programs, such as those directed to bring maximum benefit to persons with chronic diseases ..., *require the coordination of the efforts of many individuals and agencies...* The home care program clearly demonstrates the importance of the close integration of clinical, public health, and other services if the need of chronic disease patients are to be met to a reasonable degree.”
- 1964:** “The road ahead for preventive medicine seems clear. It is the *delivery of high quality, personalized* (as opposed to depersonalized) *comprehensive medical care to all.*“

Burney, Leroy E. (1954). Community Organization - An Effective Tool. Am JPublic Health, V. 44-1 (1954), p. 1

Burney, Leroy E., Steiger, William A., Georges, Thomas (1964). Implications for Comprehensive Health Care. The Milbank Memorial Fund Quarterly, Vol. 42, No. 4, Part 1. (Oct., 1964), p. 45

*We need to understand why little has changed.*

## Healthy ageing: trends & costs

**“On the whole, the recent increase in life expectancy has been accompanied by declines in disability and functional limitations at older ages. Over the 20th century as a whole, the rate of improvements in functional limitations has accelerated.”**

Costa, Dora L (2007). The economics and demography of aging. PNAS V. 104, August 14, no. 33 p. 13217

**“Neither the ageing of the population, nor the rise in the incidence of some chronic disease, are principal drivers of cost.”**

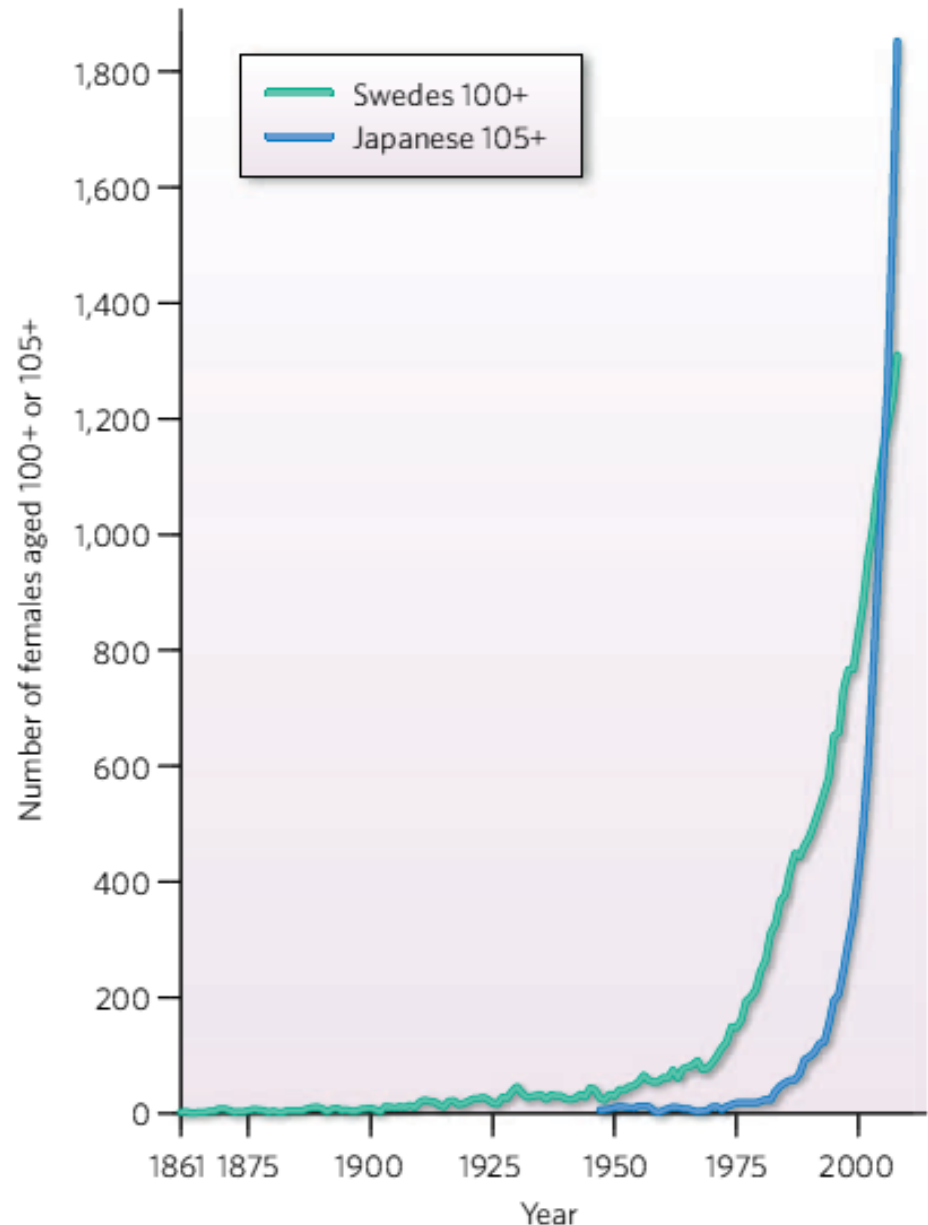
Stroetmann, Karl A. et al. (2010). How can telehealth help in the provision of integrated care? Policy Brief WHO Regional Office for Europe and European Observatory on Health Systems and Policies. Copenhagen: WHO Regional Office for Europe, 2010, p. 2. See also Manton KG. Recent declines in chronic disability in the elderly U.S. population: risk factors and future dynamics. Annual Review of Public Health 2008;29:91-113; Reinhardt UE. Does the aging of the population really drive the demand for health care? Health Affairs (Millwood) 2003;22(6):27-39; Schoeni, R. F., Freedman, V. A., & Martin, L. G. (2008). Why is late life disability declining? The Milbank Quarterly, 86, 47–89.

**Obviously, long term *social care* costs are increasing as our societies age. But there exists a large body of evidence indicating that the bulk of *healthcare* expenditure for any one individual is incurred during the last year of life, independent of, or usually even *decreasing with, older age*.**

Zweifel P, Felder S, Werblow A. Population ageing and health care expenditure: New evidence on the ‘red herring’. Geneva Papers on Risk and Insurance: Issues and Practice 2004;29(4):652-666; Brockmann H. Why is less money spent on health care for the elderly than for the rest of the population? Health care rationing in German hospitals. Soc Sci Med 2002;55(4):593-608; Collelo K. End-of-Life Care: Services, Costs, Ethics and Quality of Care. Washington: Congressional Research Service, 2009

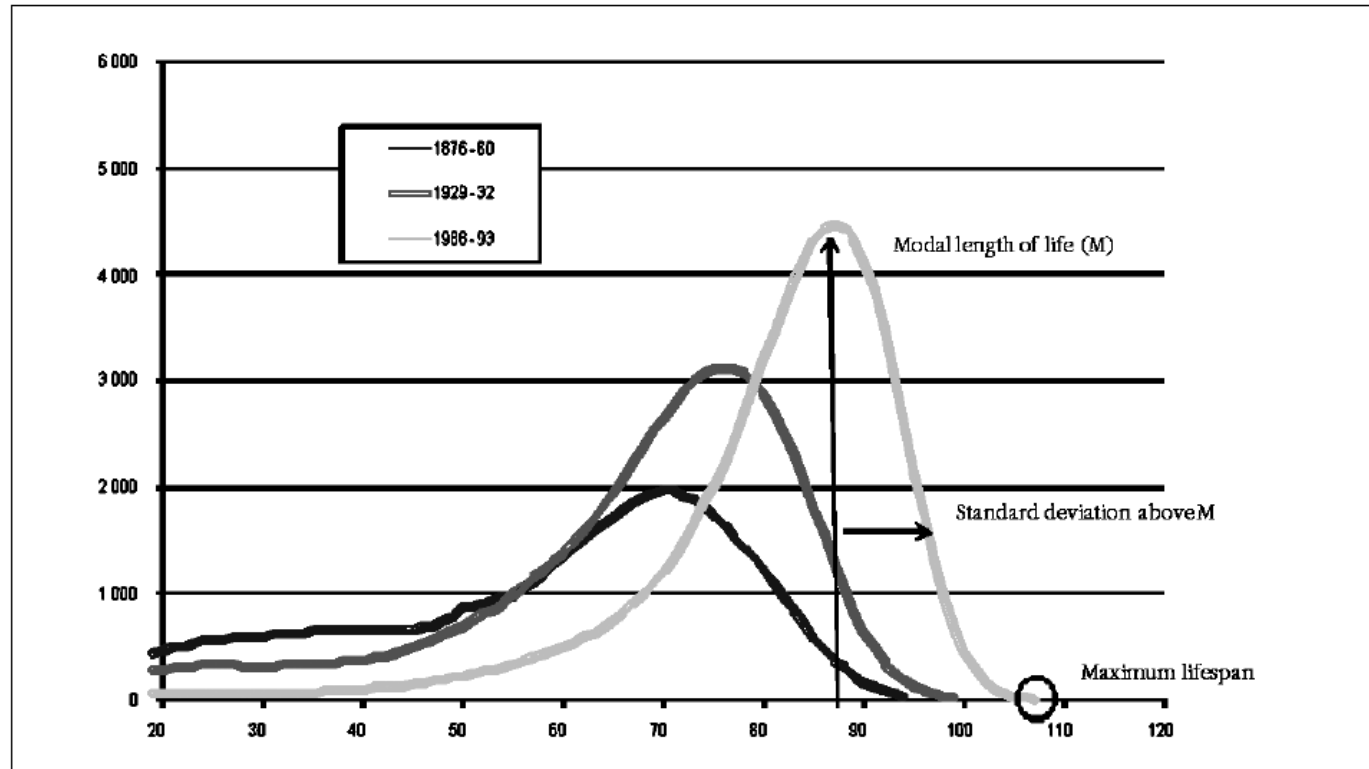
# The emergence of the extremely old

- The numbers of females aged 100+ in Sweden from 1861 to 2008 and aged 105+ in Japan from 1947 to 2007.
- Very old people were rare until roughly half a century ago.
- Since then, the number of Swedish centenarians has risen rapidly, and since 1975 the number of Japanese women 105 or older has climbed almost vertically.



# Between Compression and Shifting Mortality - the Longevity Revolution

Figure 1: Distribution of the ages at death in Switzerland 1876-1880, 1929-1932, 1988-1993



“A compression of mortality is observed, with an increase in the modal length of life, and a decrease in the dispersion of individual life duration around this central value.”

Jean-Marie Robine

. Between Compression and Shifting Mortality - the Longevity Revolution.

In european papers on the new welfare ,No. 9, February 2008 “the counter-ageing society”, pp. 47-53

# The EC goals for “increasing the average number of healthy life years by 2“ till 2020 will be overachieved

- “In the last quarter of this century, older people have made substantive health gains. “

MESTHENEOS et. al. 1999: 155)

- “Deterioration, instead of being stretched out, is being postponed: **levels of mortality and other indices of health that used to prevail at age 70 now prevail at age 80, and levels that used to prevail at age 80 now prevail at age 90”**
- “Senescence ... is being **postponed** rather than lengthened”
- “Over the past 170 years ... **the long-term increase in life expectancy ... proceeded at a pace of 2.5 years per decade, or six hours per day”**

Vaupel, James W. (2010). Biodemography of human ageing. Nature V. 464, 25 March, p. 53

- “Life expectancy has increased by more than two years per decade since 1840 in the countries with highest life expectancies and ... **there is no imminent limit to further increases.”**

Oeppen, J. & Vaupel, J. W. Broken limits to life expectancy. Science 296, 1029–1031 (2002):

## More on long-term trends

- “In countries with high life expectancies **most children born since the year 2000 will celebrate their 100th birthday** — in the twenty-second century.”
- “This paper concludes, on the basis of a thorough review of research on mortality, morbidity and disability, **that both survival and health are improving at higher ages.**“

“Christensen, K., Doblhammer, G., Rau, R. & Vaupel, J. W. Ageing populations: the challenges ahead. *Lancet* 374, 1196–1208 (2009)

# The need for integrated care

# What do we mean by Integrated Care (IC)

- An **organisational principle** encompassing continuity of care, shared care and seamless care.
- Professionals from different organisations work together in a **team-oriented** way towards a
  - shared goal,
  - with shared resources to deliver, via an
  - **integrated service delivery process**,
  - **all a person's care requirements**.
- This requires
  - high-quality collaborative working relationships,
  - clarity and commonality of objectives and **care plans**,
  - frequent **communication** among team members,
  - a clear understanding and respect of individual roles and skills within the team,
  - a transparent **incentive** structure.

Denis Protti (2009). Integrated care needs integrated information management and technology. Healthcare Quarterly; 13 Spec No., pp. 24-29

# Evidence for the benefits of IC?

- ✓ A literature review found promising indications that
  - some **models of integrated health and social care** for the elderly can result in
  - improved [medical] **outcomes**,
  - **client satisfaction** and/or
  - **cost savings** or cost-effectiveness

Margaret MacAdam. Frameworks of Integrated Care for the Elderly: A Systematic Review  
Canadian Policy Research Networks - Research Report. Ottawa, April 2008

- ✓ The CIP pilot B project **“Independent”** will confirm this
  - ✓ Results from German networks of doctors and hospitals
    - Knappschaft
    - QuE Nürnberg
    - Süd-Brandenburg
- indicate a **savings** potential of about **10%**

# The role of eHealth for IC

- *eHealth applications will not change the health system*
- **BUT: changes in healthcare delivery and health system collaboration can be facilitated and complemented by eHealth systems and services, like**
  - Streamlined, standardised care processes
  - Integrated care models
  - New types of services like 3<sup>rd</sup> generation tele-services (self-treatment of patients; pattern recognition and prediction require IT support)
  - Collaboration across jurisdictional boundaries, e.g. social and health care

*Note the inherent tension between standardised (evidence-based?) and personalised care*

# Innovation, diffusion, business models

# Conditions for successful IC innovation

- Assure umbrella organisational structures to guide **integration of strategic, managerial and service delivery levels**
- Encourage and support **effective joint/collaborative working**
- Maintain **overall accountability** for service, quality and cost outcomes
- Support **multidisciplinary** case management for effective evaluation and planning of client needs
- Provide a **single entry point** into the health [and social] care system
- Facilitate provider **networks joined together by standardized procedures**, service agreements, joint training, **shared information systems**
- Promote common ownership of **resources**
- Provide for **financial incentives** to promote prevention, rehabilitation and the downward substitution of services, as well as to enable service integration and efficiency

Margaret MacAdam. Frameworks of Integrated Care for the Elderly: A Systematic Review  
Canadian Policy Research Networks - Research Report. Ottawa, April 2008

# Understand major eHealth innovation & diffusion vectors

***Difficulty of eHealth success*** relates to major vectors:

- **Adaptation**: the extent of health service delivery and health system change required (e.g. cross-jurisdictional integrated care)
- **Standardisation** versus personalisation
- **Complexity**: numbers and type of people and organisations impacted (stakeholders: their interests, business cases, veto players)
- Understand the respective **“business” models** of ALL stakeholders involved (private/public; for/no profit; professionals & volunteers)
- Diversity of technology involved & **interoperability** needed
- **Health** (and social care) **system characteristics** (Beveridge, Bismarck; incentives; legal framework; culture of cooperation; ...)

# Understand market specificities and assure intelligent incentives

The healthcare markets differs fundamentally from other markets:

- Establishing **referral relationships** (In other industries, you can build relationships, offer special incentives, and arrange mutually beneficial deals to develop your referral business) may be illegal
- Difficulty to **standardize** and personalize care in parallel
- **Choosing the customer** - In most other industries, you can chose with whom you do business.
- “Perverse market”: **Good services may lead to a reduction in income**
- **Flow of funds** - hospitals and professionals are seldom paid by their customer
- **Negotiating price** - Reimbursement not based on a price schedule hospitals and professionals can control

***Only intelligent reimbursement systems (like graded capitation rather than fee for service systems) will provide the “right” incentives for efficient, ICT-facilitated integrated care***

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# Policy recommendations

# Understand critical success factors

- **As no single element of integrated models of care has been shown to be effective **in and of itself**, we need to better understand the critical factors of models that are successful in achieving at least one or more outcome measure improvement (medical, patient satisfaction, efficiency)**
- **These may include**
  - **Multidisciplinary care management**
  - **Access to a range of health and social services**
  - **Active involvement of physicians**
  - **Decision tools**
  - **Common assessment and care planning instruments**
  - **Integrated data systems**

Margaret MacAdam. Frameworks of Integrated Care for the Elderly: A Systematic Review  
Canadian Policy Research Networks - Research Report. Ottawa, April 2008

# Respect European diversity

- **National and regional frameworks**, in particular with respect to
  - financing and organisation,
  - systemic development,
  - professionalisation
- **professional cultures**, basic societal values (family ethics),
- **political and health system approaches**
  - Visions
  - Strategies
  - Structures
  - procedures and outputs of health and social care

*Integrated care 'by law' will certainly not suffice, and market mechanisms are less likely to improve joint working and the development of shared visions*

Kai Leichsenring (2004). Developing integrated health and social care services for older persons in Europe. In: International Journal of Integrated Care, Vol. 4 (3), pp. 1-15

# At the same time, assure greater equality among EU citizens

There is strong evidence that

**“individuals with lower socio-economic status have more health problems, face more disability problems and live shorter than those with a more privileged socio-economic position”**

- AVENDANO, M., ARO, A. and J. MACKENBACH (2005): Socio-Economic Disparities in Physical Health in 10 European Countries. In: SHARE: Health Ageing and Retirement in Europe. First Results from the Survey of Health, Ageing and Retirement in Europe, Mannheim, p. 89..

# Understand appropriate evaluation approaches

- **Evidence-based medicine** seeks to reduce variability in medical decision making
- **Evidence-based design** seeks to facilitate individual behavior to make sound choices (qualitative & quantitative methods)
- **Socio-economic** based approaches seek to:
  - Understand **incentives** and disincentives (benefits and costs, risks) at individual, group, and societal levels
  - Analyse **complex** socio-technical systems and relationships (go beyond single variables)
  - Address **what works** and doesn't work
  - Establish a sound **“business” case for all** (industry, health services, individuals [doctors, nurses, patients, volunteers, ...], no-profit organisations, NGOs, ...)

*Guide evaluation by the specific information needs of the respective stakeholders & their “business” case*

## Final note

**The proof is not in pilots – they are the exceptions to the rule –, but in better understanding what motivates and hinders *all* stakeholders involved in *routine service innovations*, what their information needs are, and what supports scaling up and out (diffusion) of successful eHealth innovations**

# Acknowledgement

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**Neither the *European Commission* nor any person acting on behalf of the Commission is responsible for the use which might be made of the information presented.**

**The views expressed in this presentation are solely those of the author, and do not necessarily reflect those of the European Commission.**

# Thank you for your attention!

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# European Innovation Partnership in the field of active and healthy ageing

- “The aims of the innovation partnership are, by 2020, to enable our citizens to live longer independently in good health by **increasing the average number of healthy life years by 2**, and, in achieving this target,
- to improve the **sustainability and efficiency** of our social and healthcare systems, and
- to create an **EU and global market for innovative products and services** with new opportunities for EU business.

Europe 2020 Flagship Initiative - Innovation Union. Brussels, 6.10.2010, COM(2010) 546 final, p. 40

## Meet market and stakeholder needs

- **genetic factors have a modest role in determining how long individuals live.**
- **The progress being made in lengthening lifespans and postponing senescence is entirely due to medical and public-health efforts,**
- **rising standards of living, better education, healthier nutrition and more salubrious lifestyles**
- **Vaupel, p. 536**

- **Allocational efficiency: First implement and use what is already known and proven**
- **Political wishes (Andalucia)**
- **Dialectic tension: growth/market creation, jobs in healthcare versus cost containment**

- **The various silos live quite happily nebeneinander**
- **We need to change the incentive and reimbursement system!**
- **NGOs, freelancers**
- **Voluntary carers, supports, need their type of incentives, understand their motivation, need training programmes**
- **Communication, skills & capacity building**
- **Gratifications (material and immaterial)**
- **What motivates the formal carer**
- **Users: need for their parents to pacify their conscience**
- **What do they really buy??**
- **Feelings, prestige, internet resource consumptions, (different types of utilities, benefits perceived, ...)**