NST | Norwegian Centre for Telemedicine
UNIVERSITY HOSPITAL OF NORTH NORWAY
WHO Collaborating Centre for Telemedicine

Adoption of telemedicine
From pilot stage to routine delivery

Paolo Zanaboni and Richard Wootton

Nasjonalt senter for samhandling og telemedisin (NST)
Universitetssykehuset Nord-Norge (UNN)

Introduction

Teknologi: bremsekloss eller frigjørende?

Telemedisin: fiasko eller fremtid?


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Fiasko eller fremtid?
Nard Schreurs
03.09.2012 kl 07:00
Epost
HELSELEDER: Norsk telemedisin har knapt nådd ut av Nord-Norge. Det er en skandale, skriver Nard Schreurs.


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- Rart og veldig synd
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Helseregionene utenom Helse Nord har fått lite telemedisinsk drahjelp av NST gjennom årene.


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Telemedisin - En norsk fiasko?
Nard Schreurs
03.09.2012 kl 07:00
Epost
Nasjonalt senter for telemedisin i Tromsø har over 200 ansatte. Likevel er ikke telemedisin spesielt utbredt i det norske helsevesenet. Hvorfor?

Introduction

What is telemedicine?

- Literally: "*medicine delivered at a distance*"
- Definition: "***the use of*** *advanced telecommunication technologies to exchange health information and provide health care services across geographic, time, social, and cultural barriers*"

Is telemedicine a technology?

- Telemedicine is not only about **technology**
- Telemedicine is an **alternative method** to the conventional face-to-face evaluations
- Renewed processes due to the interaction of the technology with the activities of the **health professionals**

Introduction

Adoption of telemedicine:

- many applications have been tested in small-scale studies, but almost no applications reached large-scale adoption
- successful applications are run by **telemedicine champions** and funded on an ad hoc basis, but many **health professionals** are often adverse or indifferent
- telemedicine is not part of everyday clinical routines

Todays challenges:

- to achieve a better understanding of the adoption of telemedicine
- to assist policy makers and health professionals to move telemedicine **from pilot stage to routine delivery**

Telemedicine applications

Teleradiology:

- the only widespread telemedicine application that has reached **full adoption**

Why is teleradiology widespread?

- diagnostic accuracy
- cost savings for the hospitals
- compelling advantages for patients
- specific reimbursement
- regulation issues addressed
- merging with PACS/RIS

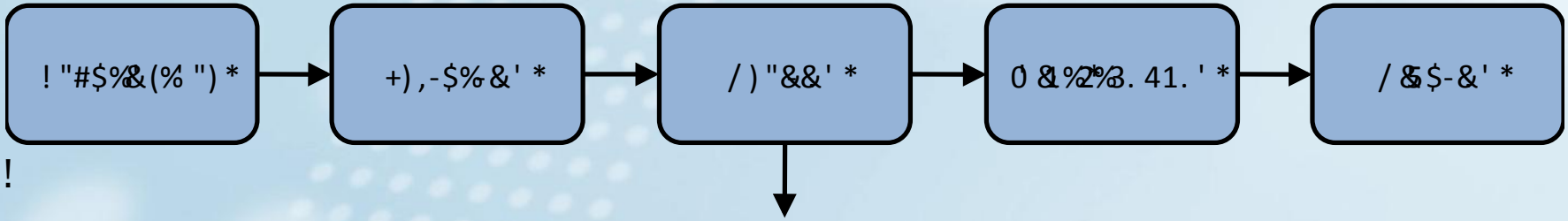
Why are most telemedicine applications in early adoption?

The adoption of technology

Adoption:

- *"the decision of potential users to make full use of an innovation as the best course of action available"*
- an innovation is fully adopted when the majority of potential users employ it

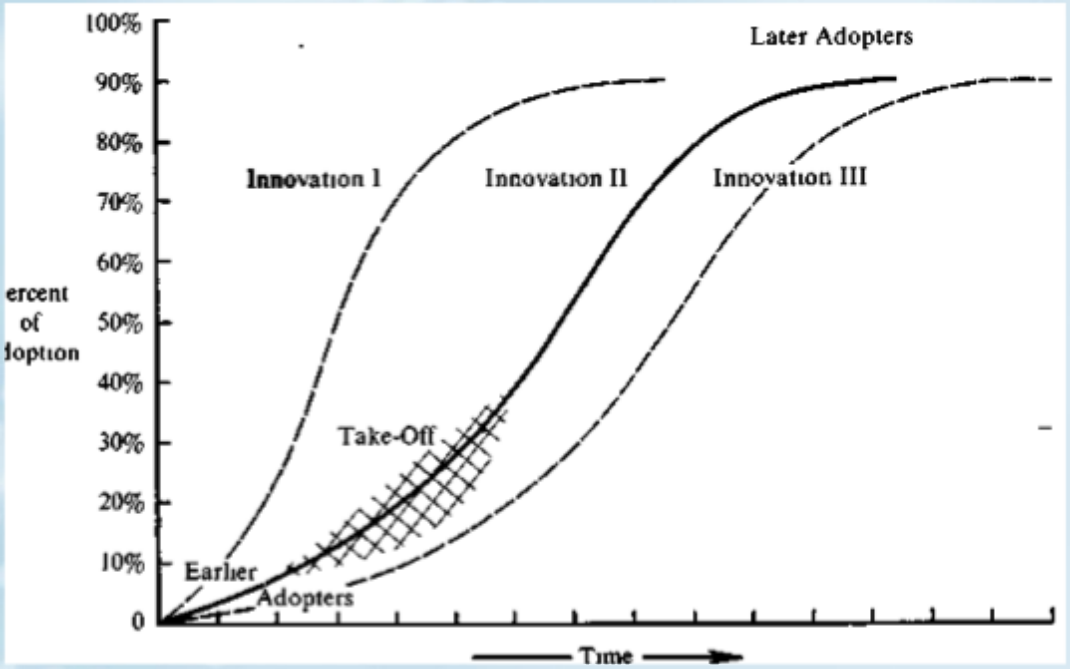
The process of adoption:



The adoption of technology

The rate of adoption:

- percentage of the members of a system to adopt an innovation
- represented through an **S-shaped logistic curve**



(Rogers, 1983)

The adoption of health technologies

Adoption of five health technologies* spread widely into US hospitals from 1953 to 1974 (Russel, 1977):

- the adoption followed the S-shaped logistic growth curve
- the rate of adoption was **different** for the five technologies
- when a technology was **attractive**, hospitals were as quick to adopt as industry

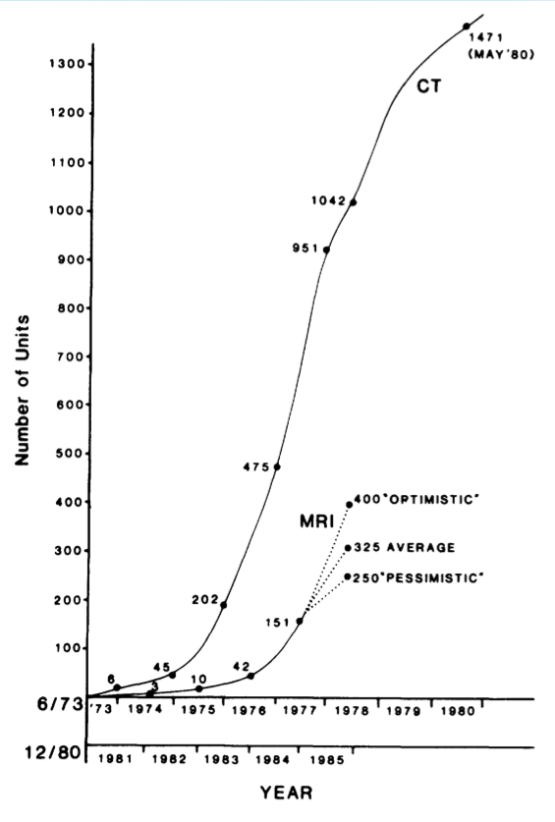
What factors mean that one technology is adopted more quickly than another?

* Postoperative recovery room, intensive care unit, respiratory therapy department, diagnostic radioisotope facilities, and electroencephalograph

The adoption of health technologies

Adoption of CT and MRI over the first four years of availability in the US (Hillman and Schwartz, 1985):

- the adoption of both CT and MRI was very rapid
- substantial improvement in diagnostic capability and safety compared to existing imaging technologies



Why was MRI adopted more slowly?

- lower **relative advantage**
- major technological uncertainty
- higher costs
- governmental regulation

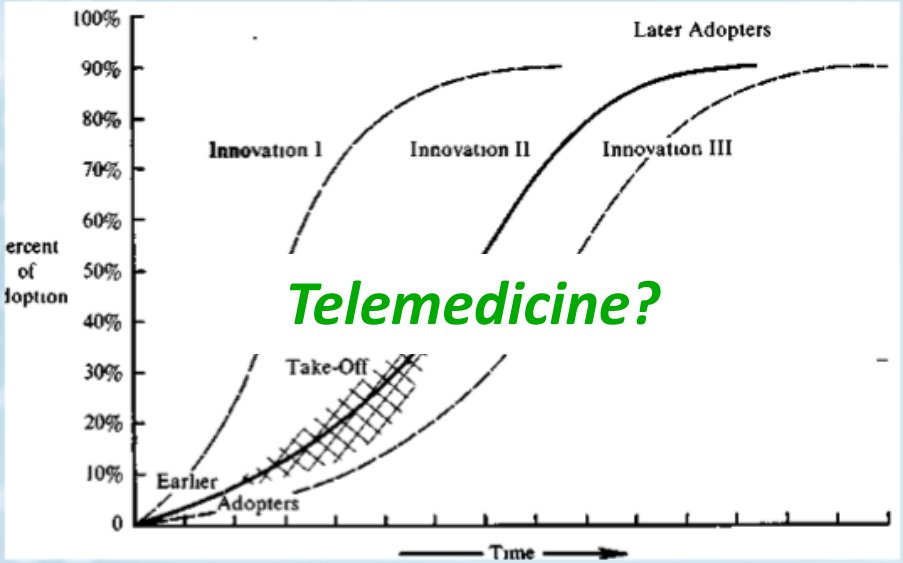
H: Advantages for users are the crucial determinant of the speed of adoption of technology in healthcare

The adoption of telemedicine

Evidence from literature:

- very little quantitative information about the adoption of telemedicine
- it is hard to draw conclusions about widespread adoption
  - telemedicine can be considered as a "**fact-free zone**"

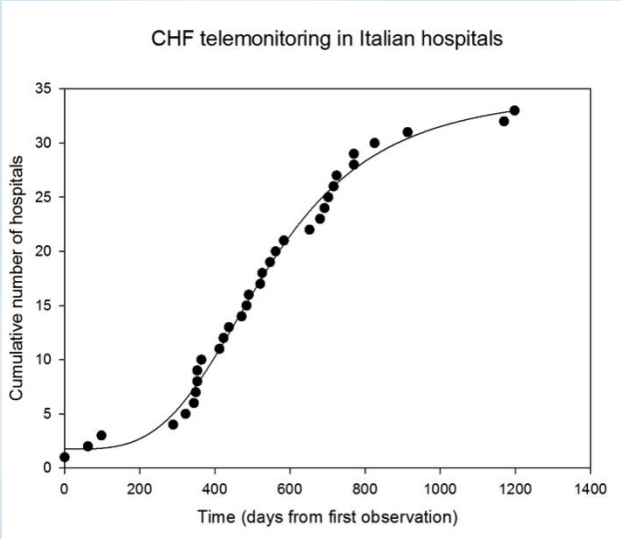
Does telemedicine follows an S-shaped logistic growth curve like other health technologies?



The adoption of telemedicine

Data from a telemonitoring service for patients with heart failure:

- started in 2006
- currently in routine use
- adoption decision on a voluntary basis
- 33 hospitals adopted the service over 4 years



H: The adoption of telemedicine is similar to that of other health technologies and follows an S-shaped logistic growth curve

Factors in the adoption of telemedicine

Relative advantage:

- the degree to which a technology is **perceived to be better than the alternatives**
- the most important factor for the adoption of technology **(Rogers, 1983)**
- advantages:
  - to society
  - to users (health professionals)

Evidence in telemedicine - Advantages to society

Evidence:

- clinical effectiveness
- cost-effectiveness
- requirement for the introduction of a new drug or treatment
- needed to evaluate the advantages of telemedicine applications to society
- needed to convince **health professionals**, **hospital managers** and **policy makers** about implementation

Although there is evidence of the cost-effectiveness of telemedicine in certain situations, its widespread adoption has not occurred

H: Evidence of cost-effectiveness is a necessary but not sufficient condition for the widespread adoption of telemedicine

Personal incentives - Advantages to users

Different decisions:

- the decision to make telemedicine possible in a healthcare system
  - decision made at **organisational or governmental level**

- the decision to employ it in practice
  - made by **health professionals**, and patients
  - additional effort and technical expertise
  - there must be some **personal advantage to the user** in addition to the general advantages to society

H: Personal incentives for the health professionals involved in service provision are needed for the widespread adoption of telemedicine to occur

Some examples

Teleradiology

VAKe (Videobasert akuttmedisinsk konferanse)

Conclusions

Er teknologi bremsekloss eller frigjørende?

- Technology is an **enabling factor** the provision of telemedicine services

Telemedisin: fiasko eller fremtid?

- The **success** of telemedicine and its wide adoption into the routine clinical practice will be reached by:
  - producing scientific evidence of **cost-effectiveness**
  - providing **incentives** to to health professionals:
    - financial incentives (e.g. reimbursement)
    - professional incentives (e.g. efficiency, training)

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Thank you for your kind attention

Paolo Zanaboni

Nasjonalt senter for samhandling og telemedisin (NST)

Universitetssykehuset Nord-Norge (UNN)

Email: paolo.zanaboni@telemed.no