eHealth Economics: The Need For Standardized Metrics And Frameworks

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What is the Global Health Problem?

Money
The Global Health Problem: Money

- Developed world – rising health costs, ageing population, chronic disease.

- Developing world – poverty and low health budgets, scarce human resources, lack of infrastructure, need for improved access.
Telemedicine - A Possible Solution?

Well you said you wanted a simple, cheap solution!
What Is It Going To Cost?

Developed countries spend 2 – 2.5% of their health budget on health ICT.

USA ~$55 per person

Africa ~$0.25 - $1.00?
Developing World: Decision Makers

- Limited resources – financial and human
- Need to be able to make an informed choice
  - DHIS
  - EMR
  - Web portal
  - Telemedicine
eHealth Economics

Aim:

Review the literature on the economics of eHealth – comparisons of solutions

Identify frameworks for economic evaluation of eHealth
eHealth Economics

Searches of:

Pubmed, CINAHL and Econlit on eHealth OR telemedicine OR telehealth OR remote care

AND

Cost OR cost benefit OR cost benefit analysis OR economics
Results

• 2,174 papers from databases, reports and grey literature reviewed
• No literature on comparisons of different eHealth solutions
• Paucity of data on methodologies and frameworks
• Absence of standardised metrics
eHealth Economics

“eHealth has not assigned a high priority to measuring or dealing with economic and productivity factors.”

“Economic evaluations of telemedicine, however, remain rare, and few of those conducted accounted for the wide range of costs and benefits.”
Why is it that the economics of eHealth has been poorly researched?

Complexity of eHealth?

Many different stakeholders?

Health outcomes difficult to quantify in $?

Inappropriate evaluation models?
Conflicting Results

“As currently implemented, hospital computing might modestly improve process measures of quality but does not reduce administrative or overall costs.”

vs

“The potential value of the VA’s (Veterans Affairs) health IT investments is estimated at $3.09 billion in cumulative benefits net of investment cost.”
Why Are There Such Disparate Views On The Benefits Of eHealth?

- Limited data
- Small sample sizes
- Poor evaluation tools
- Long time to breakeven point
- Technology and costs change
Perspective

Patient
Provider
Tax payer
Employer
Insurer

A benefit to one is often a cost to another

Tend to report only what suits
Frameworks

“... a lack of data about the economics of telemedicine and a lack of a coherent framework for analysis.”

- eHealth
- Health information exchanges
- Computerised physician order entry systems
- Personal health records
Some Issues

“In the health sector there is often no measure of performance analogous to profits for private sector firms…”
Some Issues

“While a non-healthcare business selecting its investments in ICTs might consider only financial return on investment, healthcare is a sector that places an unusual emphasis on non-financial goals ....”

“...there is considerable variation in how and what outputs are produced, and what mix of inputs are used to produce them.”
## Some methods used in eHealth economic evaluation

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Timing of Assessment

Planning
Implementation
Operation

Plan economic evaluation from outset
Break-even point 3 – 13 years
HIT Reviews

2 systematic reviews – 2006 (257 papers)

Most data from 4 – 6 projects designed to meet specific local needs
HIT Reviews

“In summary, we identified no study or collection of studies – outside of those from a handful of HIT leadership institutions – that would allow a reader to make a determination whether the study’s reported benefit was generalizable.”
Telemedicine Reviews

2 Systematic reviews 2009 (33 papers)

“...the majority of the economic evaluations reviewed were not in accordance with standard evaluation techniques....”
Telemedicine Reviews

“...a [telemedicine] service may be highly clinically and cost effective in one context but highly ineffective when transferred to another context in which accessibility and quality of local services are far higher.”
eHealth Impact Study – Context Adaptive Framework

Look at the issues from different perspectives taking into account the positive and negative impact on all possible stakeholders, healthcare provider organizations, providers, patients, third party payer and citizens
eHealth Impact Study – Context Adaptive Framework

• Identify the scope and borders of the service using the eHealth application

• Define the relevant eHealth service, and corresponding utilization

• Estimate costs

• Estimate the benefits
Reflection

Have you evaluated the economics of your health activity?

If so, how?

From whose perspective?

How did you measure quality of life?

How long did it take to show a return on investment?
The Goal

We need to be able to give informed advice to policy makers (in Africa) about the relative economic benefits of different eHealth solutions.