

THE ECONOMICS OF TELEMEDICINE

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**HCIT**
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IT IS GOOD FOR HEALTHCARE

WHY ECONOMICS ?

Economic evaluation serves to identify, measure value and compare the consequences of different courses of actions in terms of both their costs and benefits. Such information will aid authorities when they determine cost-effective resource allocation. Economic evaluation of telemedicine has been comparing the costs of telemedicine to the avoided costs of conventional methods. Telemedicine has in most cases assumed to have no effect on the patients health outcome, but is just a method of providing the same service in a different manner.

Economics: Some Quotes

1. “Despite a large number of telemedicine trials, little information has been published on its economic costs and benefits.”
2. “There is no good evidence that telemedicine is a cost effective means of delivering health care “
3. “telemedicine can be used beneficially from clinical and economic standpoints. The longevity of these programs, however, is not clear, and many may fail to survive beyond initial funding or enthusiasm. “
4. Telemedicine: Cost effective for Villages
5. "At the end of the day, economics is really going to drive everything“

Quoted in
1997

Quoted in
2001 &
2002

Quoted in
2009

Quoted in
2009

1. D Lobley , J Telemed Telecare 1997;3:117-125 doi:10.1258/1357633971930977 © 1997 Royal Society of Medicine Press

2. <http://bmj.bmjournals.com/cgi/content/full/324/7351/1434>

3. <http://www.ahrq.gov/Clinic/epcsums/telemedsum.htm>

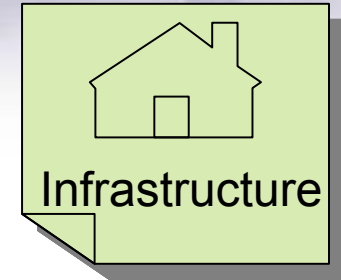
4. <http://www.ehealthonline.org/news/news-details.asp?News=Telemedicine:-Cost-effective-for-Villages&newsid=16064>

HOW MUCH DOES TELEMEDICINE COST?

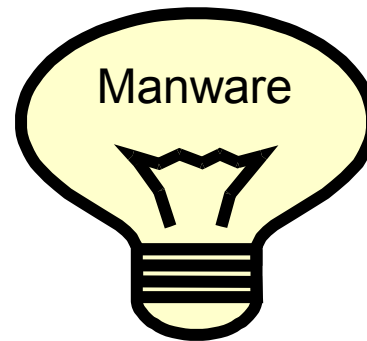
- For most people economics has a lot to do with costs
- No short answer
- Lets look at the inputs



REQUIREMENTS

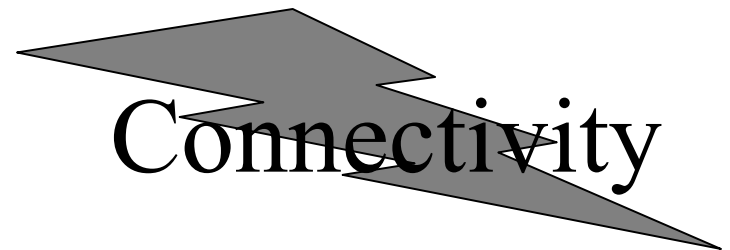


IT Hardware



Software

Med Hardware



Connectivity



Computer



Multimedia



Webcam

IT Hardware



X-Ray Scanner

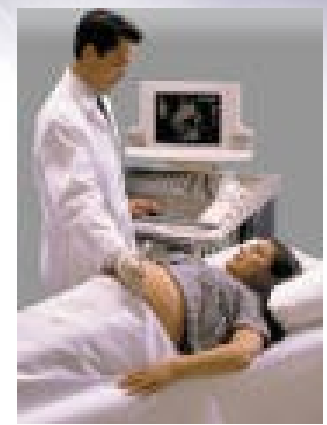
Color VC Monitor



VC Equipment



Capture Card



MEDICAL HARDWARE

MEDICAL EQUIPMENT: INVESTMENT ESTIMATES

•Auroscope	Rs.1500
•Ophthalmoscope	Rs.2500
•Microscope –100X with oil imm	Rs. 14,000
•Portable X-ray machine	Rs. 2,50,000
•Dermatology Camera	Rs. 50,000
•Trans-telephonic ECG	Rs. 50,000
•ECG Module	Rs. 30,000
•Ultra sound	Rs. 5,50,000
•Color Doppler	Rs.20,00,000
•Pulmonary Function Test	Rs. 3,00,000
•CT Scan (Spiral)	Rs.1.5cr to 2 cr
•MRI	Rs.1.5cr to Rs.4 cr

HOW MUCH DOES TELEMEDICINE COST?

- As much(!) as INR 50,000
- As less(!) as INR 5,00,00,000

WE NEED TO UNDERSTAND THAT..

- Telemedicine is now mature
- Technology is no longer a barrier
- Connectivity is a reality in most geographies
- The benefits are proven and real
- Any body can adopt telemedicine ('do it yourself')
- The differentiator ('success or failure') is in the economics

WHAT ARE MY RETURNS ON INVESTMENT ?

- $ROI = [(Payback - Investment)/Investment]*100$
- Your **payback** is actually the total amount of money earned from your **investment** in your company. Investment relates to the amount of resources put into generating the given payback

The Economics of Telemedicine



Unhappy person:
Morally, socially,
financially

Happy Person:
Morally, socially,
financially

...It all starts with the Goal(s) one has in mind



HOW DO I LEVERAGE TELEMEDICINE ECONOMICS POSITIVELY ?



GOALS

- Political Gain
- Improved Quality of Care
- Business Profits

KEY CONSIDERATIONS (VISIBLE)

Improvement in...

- Quality of care
- Patient safety
- Patient satisfaction
- Practitioner productivity
- Practitioner satisfaction
- Financial return
- Process

KEY CONSIDERATIONS (UNSEEN)

- Political needs
- Social needs
- End User Indulgence
- Staff Indulgence
- Inter/intra departmental politics

KEY COSTS FACTORS (VISIBLE)

- Hardware
- Software
- Connectivity
- Manware
- Training
- Operational management
- Support

KEY COSTS FACTORS (UNSEEN)

- Lobbying
- Publicity
- Hidden manpower costs
- Hidden Infrastructure costs
- Hidden Connectivity costs
- Changes in core assumptions
- Misuse
- Damage
- Disuse
- Obsolescence

GOALS

- Political Gain
- Improve Quality of Care
- Business Profits

EXAMPLE: POLITICAL GAIN

- Invest Rs 25 lakhs in TM center in one's constituency before elections
 - Win elections
 - TM center stagnates but money was from the govt so it has been written off
 - The MLA is in for 5 years
 - Economics of TM center = Positive!
-

EXAMPLE IMPROVE QUALITY OF CARE

- Govt pays for the TM center setup in a village and maint for 5 years
 - A pvt hospital group supports it by providing consultations
 - Patients gain by improved quality of care
 - Govt gains by good publicity
 - Pvt hospital gains by publicity and increase in-patient admissions through TM center
 - 5 years later TM center stagnates after govt support stops
 - Has it made a profit – No
 - Has it been good for the economy of its village for those 5 years - Yes
-

EXAMPLE BUSINESS PROFITS

Create a business plan that makes TM make money – and you do not have to push it ... there will be a thousand entrepreneurs pulling it to the furthest nooks of the country to earn a profit.

‘Greed’ is a very powerful driver, when used in the right context

Innovate and look at the big picture

- **Technology model**
- **Implementation model**
- **Business model**

Innovate with Technology

An X-ray digitizer using low cost components, does away with the need for use of an expensive flatbed X-Ray scanner leading to a saving of almost Rs 1,00,000 per clinic.



Adopt Low cost solutions

Adopt innovative solutions

Prisons in USA, instead of spending \$200 to \$1000 to transport the prisoner to an outside facility, make a high tech appointment with the doctor, enabling the patient to see a specialist via telemedicine.

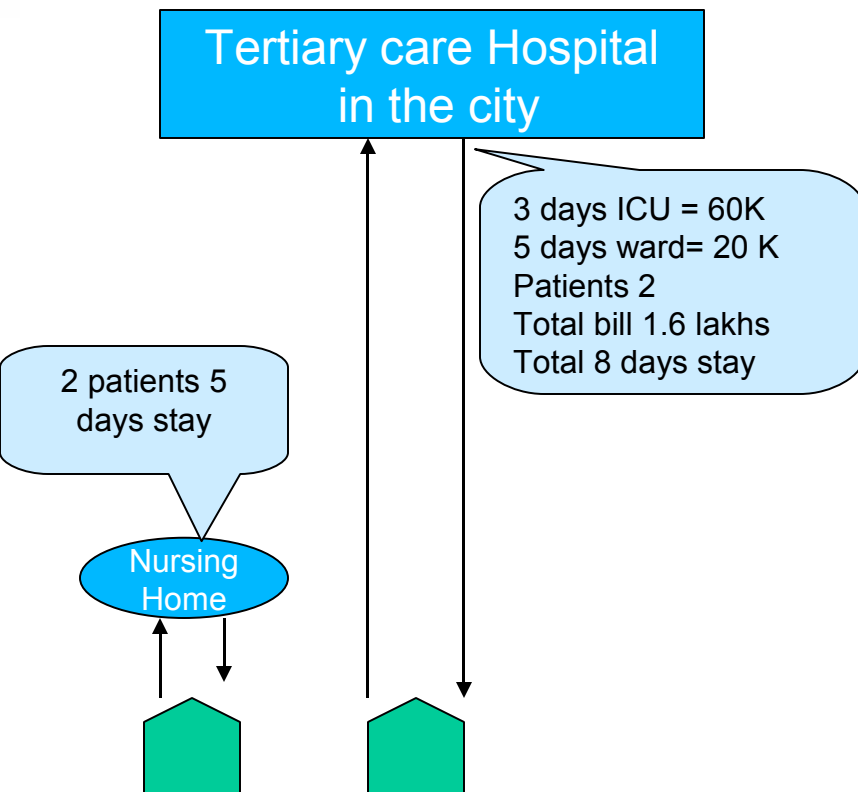
Episodes like this happen every day. Because people in jail have a constitutional right to quality health care, Texas, Ohio and most other states are relying on new medical technology and taking other steps, such as requiring inmate co-payments, to ease the cost burden on their taxpayers.

Business Model

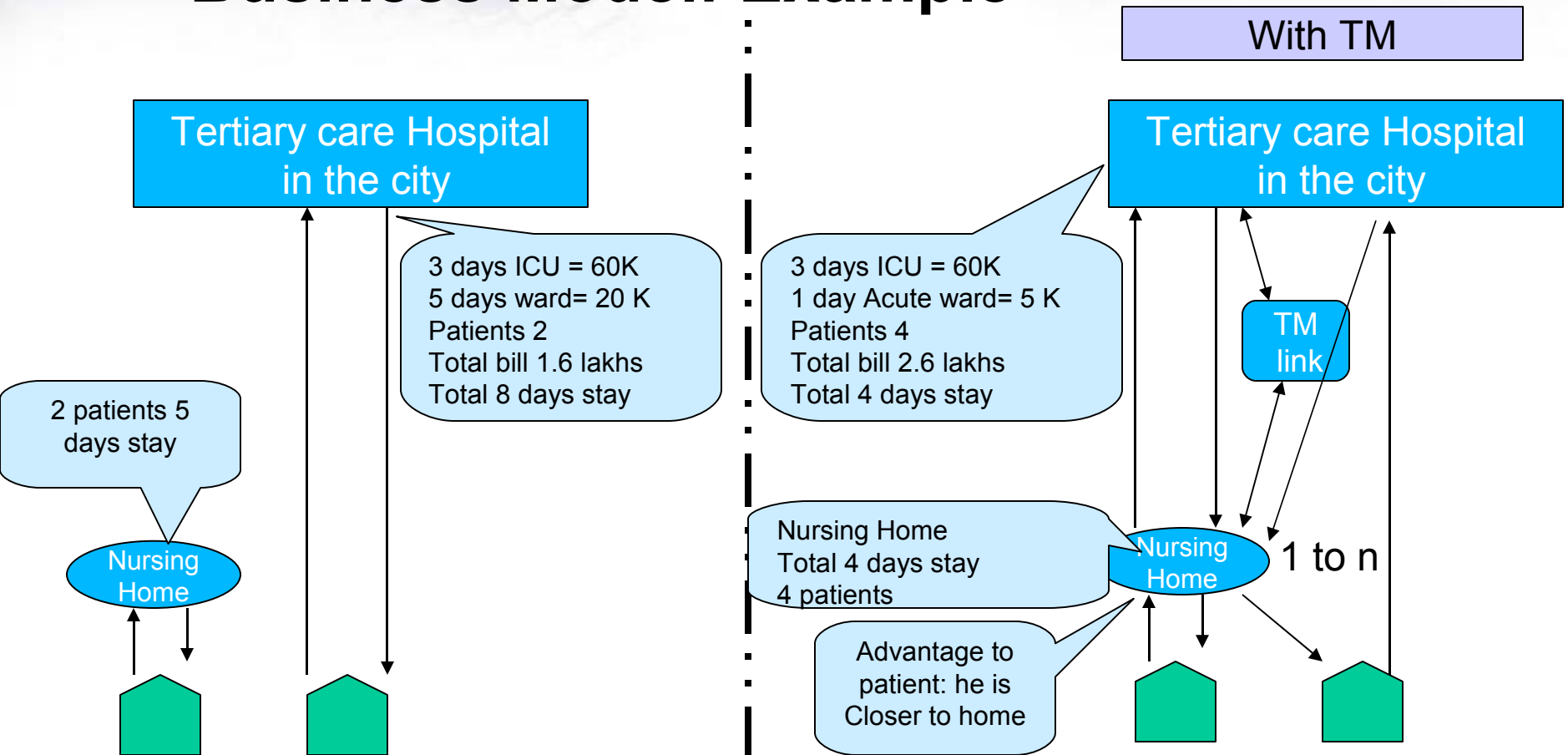
- Lower cost of ownership
- Use SaaS
- Encourage Entrepreneur models
- Must be a Win-Win
- Support with Bank loans
- Encourage self support models even in govt projects
- Use available infrastructure to pipe Ehealth services
- Provide a bouquet of services with value adds
- Provide 'turnkey' services
- Extend 'hand holding period'

CREATING A SUCCESSFUL BUSINESS PLAN

Business Model: Example



Business Model: Example



SUMMARY

- Telemedicine is mature, practical and doable
- Telemedicine is a profit driver but not easily profitable on its own
- Be clear about your goal then strategise
- Do a thorough study of the economics of your telemedicine requirement
- Use professional assistance
- Once a business plan has been approved execute it ASAP before the equations change

Thank You

Q&A

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