

## **A STUDY ON IMPLEMENTATION OF HEALTH TECHNOLOGY ASSESSMENT & TECHNOLOGY AS PRINCIPAL CATALYST FOR HEALTH CARE SECTOR**

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### **ABSTRACT**

Medical treatment has made astonishing advances over the years. But the packaging and delivery of that treatment are often inefficient, ineffective, and consumer unfriendly. Health Insurance is of great importance to make quality healthcare affordable to masses at large. However, health insurance industry in India is at its beginning stage as compared to developed countries. Around 70% of India's healthcare expenditure is financed out-of-pocket with only 15% of Indian population covered by health related insurance schemes. This limits the capacity of Indians to spend on healthcare particularly in lower and middle income groups which comprises around 95% of the population.

Healthcare typically comprises of the largest allocation in the budget of most countries. Managing the healthcare is a complex undertaking. All countries provide healthcare through hospitals and other organizations to their citizens. The current goals of the healthcare system are the delivery of high quality care, while containing cost due to growing demand, advances in costly technologies, and an aging population.

The costs of the healthcare systems are increasing at a rate faster than inflation most countries are unable to sustain this level of financial support. Secondly the quality of healthcare has been raised with some evidence that overall quality of healthcare has been declining. Thirdly about patient safety seems to have got better and room for improvement. Costs are out of control with some suggestion that 50% of the cost in healthcare is the result of waste and inefficiencies.

The study focuses on the Health Treatment Analysis. The objective of HTA is to aid in the development of safe, effective, health policies that are patient focused and seek to achieve best value as defined by decision makers. HTA is a broad concept which can be used for a variety of sub functions in healthcare: for example, in reviewing a drug it may include efficacy, safety, real world effectiveness, and the likely social, legal, ethical and political impact of using the drug. In some countries there is a formal requirement for economic evaluations (that is, cost effectiveness assessments) to be part of HTA in order to guide reimbursement and access decisions.

HTA may look at the impact of a technology on an individual patient, on a group of similar patients, on the healthcare system as a whole, or on all of these. If the concept of healthcare innovation can be clarified, then it may become easier for health policymakers and practitioners to evaluate, adopt and procure services in ways that realistically recognize, encourage and give priority to truly valuable healthcare innovations.

**KEYWORDS:** Healthcare Innovation, Innovation Process, Health Technical Assessment. Medical Device, Health Information Report

## **INTRODUCTION**

### **Introduction & Background of the Study**

The majority of the Indian population is unable to access high quality healthcare provided by the players as a result of high costs. The opportunity remains huge for insurance providers entering into the Indian healthcare market. Even though only 10% of the Indian population today has health insurance coverage, this industry is expected to face tremendous growth over the next few years as a result of several private players that have entered into the market.

## **REVIEW OF LITERATURE**

Research has documented lot of variation in hospital inpatient lengths of stay, visits to specialists, procedures, testing and costs — not only by different geographic areas of the United States, but also from hospital to hospital in the same town. This variation has no apparent impact on the health of the populations being treated.

Limited evidence on which treatments and procedures are most effective, limited evidence on how to inform providers about the effectiveness of different treatments, and failures to detect and reduce errors further contribute to gaps in the quality and efficiency of care. These issues are particularly relevant to lower-income, and to members of diverse ethnic and demographic groups who often face great disparities in health and health care.

## **BACKGROUND OF THE STUDY**

Many patients often do not receive medically necessary care; others receive care that may be unnecessary, or even harmful. Research has documented tremendous variation in hospital inpatient lengths of stay, visits to specialists, procedures and testing, and costs - not only by different geographic areas, but also from hospital to hospital in the same town.

### **Factor Limiting the Growth of Health Insurance**

- Low awareness is one of the factors that inhibit the purchase of health insurance.
- Lack of understanding of product features, lack of transparency regarding exclusions relating to pre-existing conditions/diseases, and limited or no portability between insurers, products or from group to individual cover.
- Complexity in claims procedures and settlement and the apprehension of non-settlement are high on the list of customer concerns.

### **From the Point of Insurers**

- Insufficient or inaccurate data on consumer profile and disease patterns is a major constraint in product pricing and the development of new products
- Complaints arising from mis-selling or poor servicing by agents and third party administrators, and the lack of regulation and accreditation of healthcare providers are some of the other issues that constrain insurers.
- Excessive claims, often compounded by fraudulent claims, are another big challenge for insurers.

## OBJECTIVES OF THE STUDY

The inflationary pressure on medical costs, the lack of accreditation or grading of healthcare providers sets back the ability to assess costs accurately. Malpractice by third-party administrators, often in relation to cashless settlements, are reportedly contributing to fraudulent claims thus causing a loss of confidence in the insurance system, particularly on the part of independent healthcare providers.

- To study the challenges faced by the senior citizens.
- To know about Health Treatment Analysis is helping the stakeholders
- Uses in adopting the Health Treatment Analysis.

Demand for health insurance has been growing at a rate of 25 percent per year, driven by rapidly increasing costs of health care and the expanding middle class, further it explains that, no one in the industry is taking responsibility to develop knowledge and awareness of health insurance among the public nor is specific expertise in health insurance being developed within the private sector, an expertise that is essential to dealing effectively with providers of health care services.

## RESEARCH METHODOLOGY

**Data Collection:** Structured questionnaire was used to collect the primary data from the Senior citizens and the secondary data was collected from journals and earlier research reports. .

**Sampling Design:** Data collected from 45 senior citizens who are diabetic, heart patient cluster group between 60 to 95 years from Bangalore. The respondents were selected based on the convenient sampling. The Methodology used is experimental and Empirical as well as conceptual research.

## ANALYSIS AND INTERPRETATION

**Opportunity Recognition:** Opportunity recognition, which means, that a concept is always on the lookout or searching for opportunity and is ready to exploit it in the best interest.

### To Study the Challenges Faced by the Senior Citizens

- To study this concept, a sample size of 10 insurance providers is considered out of 27 companies operating in India in the health sector.

**Table 1: Entry Age (Company –Wise)**

Name of the Company	Minimum Age in Years	Max Age in Years	Renewal upto Years
Apollo Munich Health Insurance (Standard)	5	65	100
Bajaj Allianz (Health Guard)	18	65	80
Bharti AXA (Smart Health Optimum)	5	55	65
Cholamandalam MS. (Basic Health cover plans)	18	55	69
Future Generali (Health Suraksha-Basic Plan)	5	45	70
National Insurance (Medi-claim Policy)	18	59	80
New India Assurance (Mediclaim)	5	80	100
Oriental Insurance (Mediclaim policy)	18	45	55

Table 1: Contd.,

Star Health & Allied Ins. (Medi Classic)	0.42	65	80
United Insurance(Platinum)	0.25	35	80
<b>Average</b>	<b>9.27</b>	<b>56.9</b>	<b>77.9</b>

**Inference:** All the companies are prepared to offer the health cover to the people at the younger age bracket and not in the advanced age. Senior citizens who actually are in need of the health insurance are not covered.

**Challenge No 2:** Senior citizens are not having affordability to pay the premium though the policy cover is available up to a certain age limit.

Table 2

## Data Analysis – with respect to objectives

2/4

Table No. 29 – 3b) Premium Collected Age Wise per Lakh (cont...)

Name of the company	Age Cover – per Lakh									
	17	25	30	35	40	45	50	55	60	65
Future Generally (Health Surksha Basic Plan)	1239	1239	1468	1468	1542	1542	2508	2508	4154	4154
National Insurance (Medi claim Policy)	1157	1157	1519	1519	2043	2043	3487	3487	4611	4611
New India Assurance (Mediclaim)	1401	1401	1401	1401	1671	2090	2978	3441	3993	4467

## Data Analysis – with respect to objectives

3/4

Table No. 29 – 3b) Premium Collected Age Wise per Lakh (cont...)

Name of the company	Age Cover – per Lakh									
	17	25	30	35	40	45	50	55	60	65
Oriental Insurance (Mediclaim policy)	1300	1445	1445	1445	1727	1727	2699	2699	3842	5731
Star Health & Allied Ins. (Medi Classic)	1324	1324	1324	1324	1489	1489	2699	2699	3309	3309
United India Insurance(P latinum)	1156	1156	1373	1445	1572	1730	2587	2587	3586	3930
<b>Average Premium Collected</b>	<b>1361.8</b>	<b>1397.8</b>	<b>1516.6</b>	<b>1523.8</b>	<b>1916.9</b>	<b>2116.9</b>	<b>3278.7</b>	<b>3380.1</b>	<b>4603.1</b>	<b>5225.8</b>

### Inference

Different insurance companies are collecting different premium amount per lakh of health insurance coverage.

- The Premium chargeable is lower at the younger age having a good earning capacity and escalates in the advanced age when the earning capacity is reduced.
- When the health cover is an absolute requirement in the advanced age, the increased premium is burdensome.

### Challenge No 3

Availability of maximum cover under health insurance policy, but the same is not affordable.

**Table 3**

Data Analysis – with respect to objectives		
		1/2
<b>3c - Minimum and Maximum health cover (in Rs)(Contd..)</b>		
Name	Minimum Coverage	Maximum Coverage
Apollo Health Insurance (Standard)	1,00,000	10,00,000
Bajaj Allianz (Health Guard)	1,00,000	10,00,000
Bharti AXA (Smart Health Optimum)	50,000	5,00,000
Cholamandalam MS. (Basic Health cover plans)	50,000	10,00,000
Future General (Health Suraksha-Basic Plan)	2,00,000	10,00,000
National Insurance (Mediclaim Policy)	50,000	5,00,000
New India Assurance (Mediclaim)	50,000	5,00,000
Oriental Insurance (Mediclaim policy)	1,00,000	5,00,000
Star Health & Allied Ins. (Medi Classic)	50,000	10,00,000
United Insurance(Platinum)	50,000	5,00,000

### Inference

There are certain insurance cover which is technically available, but not economically affordable. Senior citizens can have a cover up to a maximum of Rs 10,00,000/- which in the present day cost is decent policy, but the policy holders has to spend about shell out Rs. 96,500 maximum, which is not affordable by many. One more obstacle by way of a challenge is that even if the senior citizen is able to afford the premium there is an uncertainty of continuation of the cover after 65 years.

**Table 4: Showing the People who are Aged between 60 to 90 Years and above and Their Health Status who are Diabetic and Who Have the Associated Problems**

Diseases	No of Patients	%age
Heart problem	18	36
Kidney disease	6	12
Eye problems	9	18
Arthrities	12	24
Storke	3	6
Foot amputation	2	4
<b>Total</b>	<b>50</b>	<b>100</b>

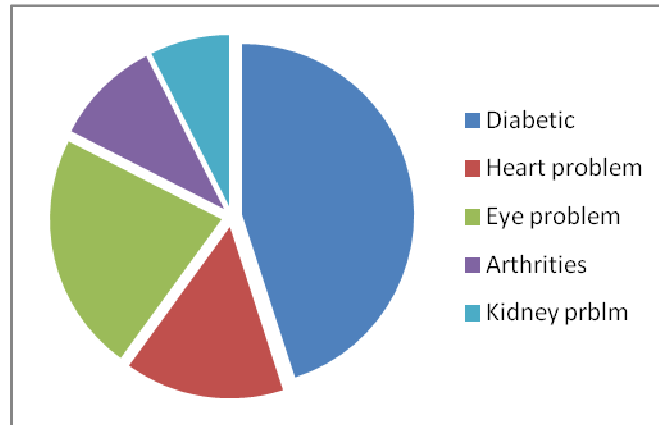


Figure 1

**Inference**

Diabetic is one of the most common non communicable disease worldwide. Diabetes mellitus is a metabolic disorder which is characterized by elevated blood glucose levels. Diabetes effects the other parts of the body and the patients will be undergoing treatment for the connected diseases and sometimes the patients has to undergo multiple surgeries. Treating these patients is difficult and complicated. So these kind of situation Health treatment analysis will help the doctors, insurance companies and the patients to take the decision.

**Table 5: Showing the Inflation Cost on Each of the Disease Ailment**

<b>Healthcare inflation (Market rates)</b>			
PROCEDURES	2012	2007	CHNG (%)
Maternity - Cesarean	42,000	29,000	45
Maternity - Normal	26,000	18,000	44
Cataract	24,000	16,000	50
Angiography	22,000	14,000	57
CABG (Coronary Artery Bypass Graft)	2,35,000	1,65,000	42
Appendectomy	42,000	28,000	50
Heamorrhoidectomy (Piles)	35,000	21,000	67
Cholecystectomy (Gall Bladder Removal)	52,000	32,000	63
TURP (Prostate Surgery)	62,000	37,000	68
Angioplasty (PTCA) with 2 stents	2,45,000	1,55,000	58

*All figures in Rs if not mentioned otherwise; Source: Medimanage Insurance Broking*

The senior citizens with diabetes will be prey to all the kinds of complications like kidney problem, eye problem, heart and other complications and the treatment for these is very complicated and expensive which cannot be affordable.

**Medical Inflation**

A health insurance report published by the Insurance Regulatory and Development Authority (IRDA) of India published in 2011 says the average claim in case of major diseases was Rs. 1,34,550 in 2009-10 compared to Rs. 98,101 in 2007-08, a compounded annual growth rate of 17 per cent. Notably, the average claim paid in 2009-10 was just Rs. 23,000.

**Introduction to the New Concept of Health Technology:** Health technology is the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems developed to solve a health problem and improve quality of life. It is used synonymously with health-care technology.

HTA may assess evidence from a range of sources, for example:

- Systematic reviews of clinical trials;
- Economic evaluations;
- Assessments of implications for healthcare services
- Evidence from users of the technology.

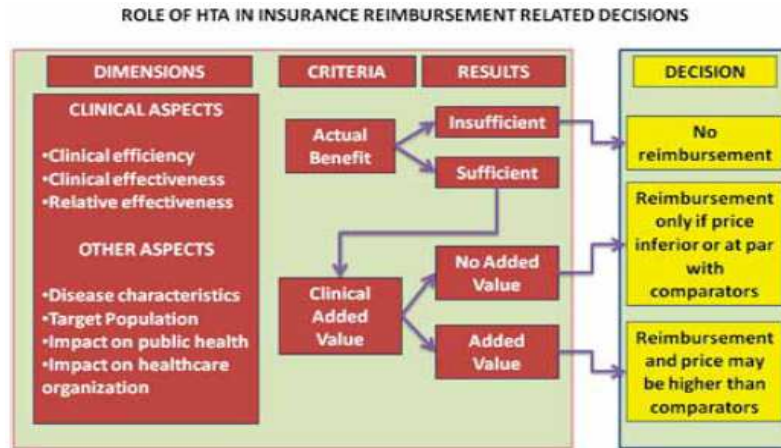
HTA may also use modeling, where specific assumptions are used to make an estimate or ‘best guess’ to predict, for example, the cost of using a technology in a certain setting. HTA is to aid in the development of safe, effective, health policies that are patient focused and seek to achieve best value as defined by decision makers.

### **Purposes of HTA**

Stakeholder agencies in countries where HTA is established as a decision making tool, may use it for the following decisions:

- Regulatory agencies such as FDA -(Food and Drug Administration) or DCGI (Drug Controller General of India) about whether to permit the commercial use (e.g., marketing) of a drug, device or other technology
- Implementation of technologies and whether it should be included in health benefits plans or disease management programs and reimbursement procedure.
- Clinicians and patients about the appropriate use of healthcare interventions for a particular patient’s clinical needs.
- The role of a technology in clinical protocols or practice guidelines
- Hospitals, health care networks, group purchasing organizations, and other healthcare organizations about decisions regarding technology acquisition and management
- Standards-setting organizations for health technology and healthcare delivery regarding the manufacture, use, quality of care, and other aspects of healthcare technologies
- Government health department officials about undertaking public health programs (e.g., vaccination, screening, and environmental protection programs)
- Regulators concerning technological innovation, research and development, regulation, payment and delivery of healthcare.
- Healthcare product companies for product development and marketing decisions
- Investors and companies like venture capital funding and other transactions concerning healthcare product and service companies

HTA is used differently across countries. In some countries, such as England and Wales, it is used to guide decisions about whether treatments and other technologies should be available on the National Health Service, based on a judgment of whether they provide value for money. In other countries the focus may be less on value for money and more on evidence of effectiveness and cost effectiveness.



**Figure 2**

**Ref:** adopted from IRDA journal

The assessment process & the assessment is used vary from organisation to Organisation. Although the process varies, it is generally acknowledged that four core components are considered in a health technology assessment:

- The existing medical need which is not already being met
- The clinical process or treatment option which addresses that need
- The evidence of effectiveness of the technology being considered and the interpretation of the evidence
- Value for money of the technology (although this may not always be considered)

### Methods in Health Technology Assessment

The opportunities and challenges arising from health related technology is optimizing decision processes, recognizing the value of innovation, healing with uncertainty, and producing and coordinating HTA.

### The Economic Dimensions May Include

- Cost benefit analysis, cost-utility analysis
- Cost effectiveness analysis
- Cost-minimization analysis
- Budget impact analysis and other forms of economic assessments.

Quality-Adjusted Life Years (QALYs) and Disability-Adjusted Life Years (DALYs), as used in cost-utility analyses, are often seen as the hallmarks of HTA, but in many situations budget impact is much more important and useful for decision-makers.



## STATUS OF HTA IN INDIA

In India, currently there is no formal national HTA program, although there have been isolated attempts by a few groups in this direction. In a major step, as part of a memorandum of understanding (MoU) agreed between the two countries i.e., India and UK at the World Health Assembly in Geneva, NICE (National Institute for Health and Care Excellence, UK) will lend its expertise. NICE is acknowledged as one of the world's leaders in HTA – the analysis of the economic value of healthcare products.

India is also in the process of developing health technology assessment board. Pilots are planned to develop technical and institutional capacities, engagement with the health service providers as a key stakeholder, joint awareness raising and policy advocacy through global donors.

HTAi (Health Technology Assessment International), which has memorandum of understanding with WHO for capacity building of low and middle income countries on HTA, has formed a Developing Countries Special Interest Group, which was formally launched at the 2008 HTAi Annual Meeting at Montreal, Canada. It is currently chaired by Dr Joseph Mathews from Post Graduate Institute of Medical Education & Research, Chandigarh, India.

### HTA Need, Relevance and Capacity in India

The various public health programs and insurance schemes that are increasing the government's role as purchaser and payer of healthcare services, coupled with the rising risk pool, means that there is now a greater need and relevance to adapt HTA to India.

**There are Three Important Areas with Respect to HTA:** The pharmaceutical sector, Medical devices and Technology and Health Insurance. There is now a greater need and relevance to adapt HTA to India. in widely differing health systems so as to avoid unnecessary duplication of effort). Thus there is much to be learnt from existing efforts, which could facilitate the adoption of HTA in a country as varied as India.

However, the lack of sufficient capacity to produce systematic review of literature, economic evaluation, research challenges in performing HTA

## SUGGESTION AND CONCLUSIONS

This is the appropriate time for this work to begin than this current stage of the development of India's health system. It is also vital to involve from the start the producers and regulators of health technologies, and the large user or payer groups such as insurance agencies. It is important that HTA takes account of the needs of the people who will be most affected by its recommendations: patients, their caregivers and the public. While participating in a HTA can be time consuming and challenging, it is a real opportunity to influence the delivery of healthcare. Patient and public input can help determine whether a new treatment is made available.

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