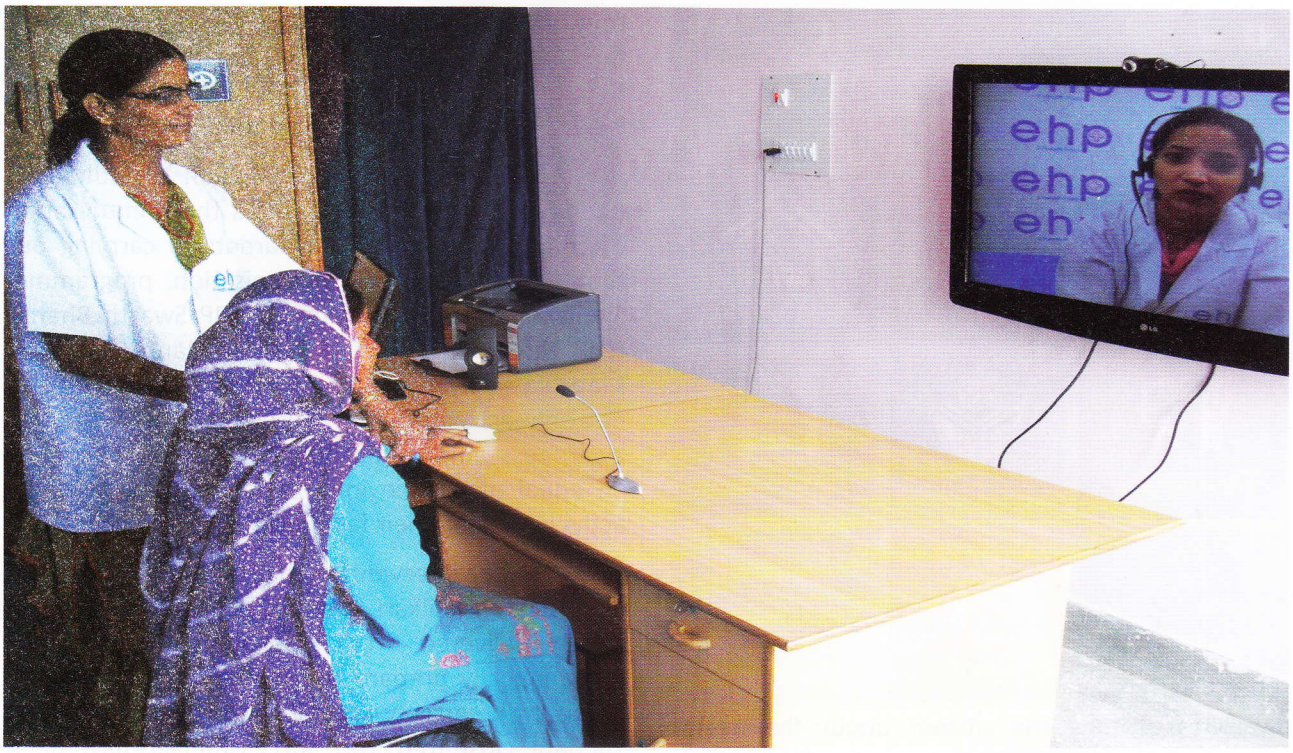


TELE-MEDICINE: A NEW HEALTHCARE OPPORTUNITY

Ayush Mishra

Tele-medicine is used across the world as one of the most powerful public health tools. Countries like USA and South Korea are using it practically since the 1980s. Today, it is effectively practiced even in under-developed countries of Africa such as Zambia (where it was used during the EBOLA outbreak). In India and especially in a small-town rural health perspective, tele-medicine can add much larger value as compared to any other country. African countries have patients but not technology players and even good doctors, developed countries by virtue of being developed have little need, developing countries in SE Asia and LATAM are best positioned to use tele-medicine to their rural health advantage. India is at the top of this dynamics because we have the best doctors in world and best technology innovators.

I was recently watching a heated TV debate on Prime Minister's "Ayushmann Bharat Scheme". Now, in my personal view, this is biggest social reform that our country has witnessed since ages. This scheme is a stepping stone for many things positive in the rural India. This is a step where the Prime Minister and his team deserves a pat on back and commands appreciation from all quarters.

However, during the TV debate, a couple of the political critics gave thumbs down to the scheme stating that rural India doesn't have the infrastructure required. Even if you have money to pay for rural health where do you have the doctors, hospitals, etc?

I am not a political pundit myself but as someone who finds passion in addressing Indian healthcare needs, I started thinking – What if this criticism holds tight in practical world? If this come true, it will be a huge challenge for Ayushmann Scheme in many rural areas.

The solution to this is extremely simple and practical. The solution is Tele-medicine. India has roughly 550 Million internet users today out of which 210 million users are rural users. A 210M rural population today have access to internet. That makes tele-medicine one of the strongest solutions for India's poor public health infrastructure at rural and small city level.

Now let me share another story. A young college going boy meets a terrible road accident

in a small UP town when his bike is hit by a mad truck. He is taken to a local hospital and undergoes immediate surgery. However, his condition deteriorates, and his parents are told to look towards Delhi in case they want to save their son's life. "Patient ko jaldi se Delhi le jaaye" is what his doctor told his father.

His father, a common man working in a bank, is faced with immense stress and dilemma. He will have to assess

- Where to go in Delhi? How to go?
- How much will be the cost so that money is arranged in advance?
- And most importantly, will my son live if I take him to Delhi?

Fortunately, the family figures out someone who is a relative and a doctor at Apollo Hospitals, Delhi. This is in 2007 so there was not even Practo (a Health App) at the time.

The relative kindly enough connected the patient's father to a very senior surgeon at Apollo Hospitals through a telephone call. The call lasted for just 10-15 mins, but it changed everything for the patient's father. He felt re-energized and re-invigorated. He now knew the right direction and practical next steps. Later, the patient went under surgery in Apollo and lived. However, the patient lost his leg due to the long wait in decision making, when the infection crept in.

Still, the telephone call with the Apollo doctor was instrumental in guiding the patient's family. This is an amazing example of the power of Tele-medicine in smaller cities. Imagine, if at that time there was a tele-medicine clinic in that small UP city which connected that city to biggest doctors in Delhi. The patients would have saved such crucial time in decision making and who knows might have saved him his leg as well. Now, Ayushmann Scheme or a second opinion is just one of the hundred areas that requires Tele-medicine. There are many other.

What tele-medicine does is empower every Indian. With the use of tele-medicine any Indian citizen irrespective of his location can have the access to the best healthcare opinion and treatment as anyone else in the country.

Current status of Tele-medicine :

It will be quite ignorant to say that there is nothing happening in Tele-medicine in the country. Biggest steps have been taken by the government itself through programs such as:

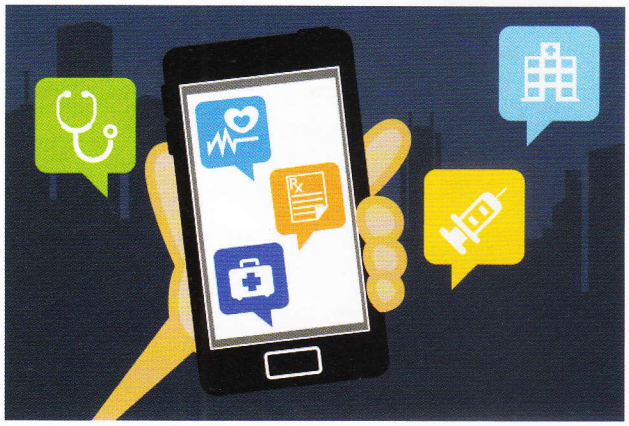
- Accredited Social Health Activists (ASHAs) who are part of the Government of India's (GoI) National Rural Health Mission (NRHM) are using basic tele-health programs for pregnant women and children.
- NEHA and Digital India are using e-health means and programs in their campaigns.
- Ministry of Health & Family Welfare has undertaken various initiatives using Information & Communication Technologies (ICT) for improving efficiency & effectiveness of the public healthcare system.

In India, telemedicine programs find their support in the following:

- Department of Information Technology (DIT);
- Indian Space Research Organization;
- NEC Telemedicine program for North-Eastern states; &
- State governments.

Effective use of Tele Medicine by Hospitals

- The Apollo hospitals were one of the first to set-up a tele-medicine facility in a rural village called Aragonda 16 km from Chitoor (population 5000, Aragonda project) in Andhra Pradesh.
- All India Institute of Medical Sciences (AIIMS), New Delhi.
- Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGIMS) Lucknow.



- Post Graduate Institute of Medical Education and Research (PGIMER) Chandigarh.
- A Coronary Care Unit inaugurated in Siliguri District Hospital, Siliguri, West Bengal.
- Bankura Sammilani Hospital, Bankura, West Bengal inaugurated on 21 July 2001.
- The latest to join in is Medanta Medicity hospital who launched their Medanta E Clinics website for tele-consultation.

If government is promoting and big hospitals are interested in pursuing tele-medicine, then what is the challenge?

A tele-medicine delivery is a 3-stakeholder process:

- **Stakeholder 1:** The hospitals or doctors sitting (generally) in a big city and offering their services to patients via tele-medicine to rural patients.
- **Stakeholder 2:** The technology provider or tele-medicine facilitator who provides the platform and technology to connect doctors in big cities to patients in small cities.
- **Stakeholder 3:** The patients/a small clinic/ primary care centre based in rural areas who wish to receive tele-medicine services from big hospitals/doctors sitting in big cities.

The biggest challenge and hence also the opportunity lie with the Stakeholder 2: Technology platform/facilitator. Without the facilitator there is no tele-medicine. Currently, there is a lack of "Independent facilitators".

We need to understand this from an operations and practicality standpoint. Apollo hospitals or Medanta or any other are the care providers. It is unfair that we expect them only to be the facilitator also. It is extremely unfortunate that hospitals must lead from the front and be their own facilitators in tele-medicine area. Imagine, you are a company that specializes in making tea but because there is no-one who makes cups you are forced to make cups also. This is unfair and digressing for the tea makers who now must focus on something they shouldn't. Some government programs did support these hospitals with providing technology for them via ISRO and other sources but again Government is not the one who should be making cups for tea as well.

Ideal Facilitators:

It must be the private players, technology start-ups, private inventors and investors. It is a huge business opportunity and the private sector must take charge so that hospitals can focus on what they do best – Care for Health. There are private players who work in tele-medicine domain, but they are mainly focused on creating devices that enable tele-medicine. Few companies who are prominent in this space includes Neurosynaptic, Cardiotrack, etc.

In the past few years, few companies have taken up the challenge of creating a network of tele-medicine facilities across rural India. Private players such as Glocal Health, Tattvan E Clinics and a few others are working towards this direction but there are miles to go before this becomes the national phenomenon as it deserves to be.

Is Tele-medicine quality comparable to face to face connect?

Many of the historical tele-medicine debates have touched upon the effectiveness and quality of a tele-medicine consultation. My 2 cents on the argument are as below.

For argument sake, a friendly conversation between 2 friends is always the most enriching human experience but did that stop from Facebook to happen. Did Facebook not add value to a friendly conversation? The point is that this is the world we are living in and we are living in for good with rapidly changing technology.

Now, most people would argue that a Facebook conversation doesn't require a technical skill-set but a healthcare conversation between doctor and patient require much higher amount of sophistication. I absolutely agree with this. Let me present few technologies that are available in India today for enabling a tele-consultation.

When Apollo set-up a tele-medicine facility in a rural village in Andhra few years back, they were just using a webcam and a telephone line. Something like a skype call where the doctor was just able to see and speak with the patient without any kind of examination. However today, things have changed massively. In today's tele-medicine consult between a rural patient and a doctor sitting in Delhi, the doctor can:

- See and talk with patient in real time.
- Take "Real Time" vitals such as, 12 channel ECG, Pulse oximeter. Height and weight. Blood Pressure.
- Glucose level for Diabetes and other chronic patients.
- ENT camera.
- Fetal Doppler for pregnant women.
- Thermometer to measure temperature.
- Optical reader for eye patients.
- Spirometer.
- And an electronic stethoscope where the doctor can hear the real time auscultation voice of a patient heartbeat sitting thousands of miles away.
- Many kinds of blood tests, etc.
- The patient doesn't need to keep track of their prescription, the tele-medicine software does it for them.
- Some solutions even use Artificial Intelligence to predict patient's health based on all vitals which helps the consulting physician understand the patient better.

Not only tele-consult, we have practical technology to do even tele-pathology and tele-radiology. There are a few who are doing it as well.

The Business of Tele-Medicine:

Currently in India, tele-medicine revenue comes majorly from the companies who makes these devices for tele-medicine. Only a handful of private companies are facilitating tele-medicine in rural and small cities. However, the opportunity is huge to say the least. An average of 30-35% of admissions in big city hospitals come from small cities and villages from nearby areas. This is a huge number. It effectively means that each year millions of Indians travel to far of cities from home for better healthcare requirements.

This is a huge opportunity for any private player to invest in the system. A country as big as India offers a playground for healthcare visionaries to experiment, fail and create a solution that works.

Imagine, a solution where we can reduce the travel and hassle of these millions of Indians each year and save time and money for them. A solution where they can get access to these state of art hospitals from their own homes. A person in a small Indian village as empowered in healthcare as any person living in New Delhi. That is the power of Tele-medicine.

Conclusion:

Tele-medicine is used across the world as one of the most powerful public health tools. Countries like USA and South Korea are using it practically since the 1980s. Today, it is effectively practiced even in under-developed countries of Africa such as Zambia (where it was used during the EBOLA outbreak).

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