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IIM AHMEDABAD

INDIAN INSTITUTE OF PUBLIC HEALTH GANDHINAGAR

5th IIMA International Conference on

Advances in Healthcare Management Services

February 14-16, 2020

Centre for Management of Health Services
Indian Institute of Management Ahmedabad

Conference Proceedings

Foreword

It gives me great pleasure to write the foreword for the proceedings of the 5th international conference on "Advance in Healthcare Management Services" (ICAHMS). The conference was organized as a joint endeavor of Center for Management of Health Services (CMHS), IIM Ahmedabad and Indian Institute of Public Health Gandhinagar (IIPHG). Title sponsor of the Conference was Heart Foundation and Research Institute (HFRI). The HFRI Chairperson, Dr. Nitin Sumant Shah was very keen to support by sponsoring and involving in the Conference. The Conference was also supported by NIDHI TBI, IIPHG.

The Conference was spread over three days. Around 100 participants with various healthcare background attended and participated actively. Keynote sessions by Dr. Madan Gopal from NITI Aayog, Dr. Jayanti Ravi from Govt. of Gujarat and Dr. Aravind Srinivasan from Aravind Eye Care were immensely informative. The panel discussions mainly focused on Ethical legal and social issues in healthcare, Crowdsourcing of funds for Medical Expenditure, Violence against Doctors, Expenditure and Innovation in Healthcare industry, Leadership for Public Health and Innovations in Public Health. There were 43 paper presentations by participants.

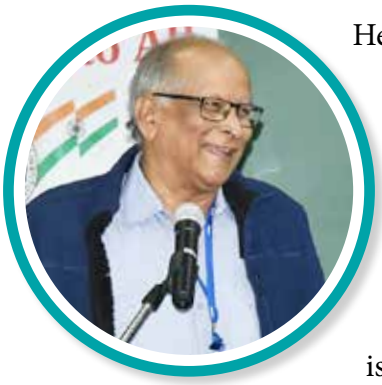
The credit for the success of Conference goes to many individuals for the combined efforts they put together. Proceedings will become a point of reference for further deliberations which may become possible solutions to many challenges and problems discussed.

Rajesh Chandwani
Chairperson, CMHS

Inaugural address by:

Prof. Tathagata Bandyopadhyay

(Dean- faculty IIMA)



Healthcare is mainly based on three key things

- Affordability
- Accessibility
- Quality

Healthcare also needs to understand demand side as well as supply side issue for health service delivery. Gaps between policy making and policy implementation need to be addressed properly.

Introduction by

Prof. Rajesh Chandwani

Chairperson CMHS (IIMA)

Conference is being organized by Centre for Management of Health Services (CMHS), was setup in June 2004 in recognition of IIMA's contributions to the health sector in the past, and felt need to strengthen the management of health sector in the context of socioeconomic developments of our country.

The overall objective of CMHS is to address the managerial challenges in the delivery of health services to respond to the needs of different segments of our population efficiently and effectively, build institutions of excellence in the health sector, and influence health policies and wider environments.

Total 25 faculty members are working on larger issues of public health and research in CMHS. Centre worked with many private hospitals, public hospitals, NGOs, government in various areas like maternal health, Immunization and for the public health aspect, violence against doctors, HIV, prevention for HIV, marginalized group for their identity issues and health. (sex workers) etc.

Introduction by

Prof. Dileep Mavlankar

Director Indian Institute of Public Health Gandhinagar (IIPHG)

IIPHG collaborated with CMHS-IIMA for the conference. Indian Institute of Public Health Gandhinagar(IIPHG) was set up in 2007 by the Public Health Foundation of India (PHFI) and Government of Gujarat as a joint initiative. IIPHG is a pioneer institute in public health education, training, research, and advocacy. The institute has been recognized as first public health university in India (under IIPHG Act, 2015, of Gujarat State). IIPHG has a number of collaboration and MOU for research and projects with organizations / institutes of repute in India and abroad, and with various govt. partners IIPHG offers two years' master programmes titled Master in Public Health & Master in Hospital Administration, other courses and yearly international conferences.

Title Sponsor and NGO Partner,

Dr. Nitin Sumant Shah

Chairman Heart foundation & Research Institute gave a brief introduction

Dr. Nitin Sumant Shah is the Chairman of HFI and was very keen on supporting conference. He is the President for Gujarat Research Society, National Association for Blind, Patron at Public Health Foundation of India. Chairman & Managing Trustee of Heart Foundation and Research center. He is a great philanthropist. He Conducts research work, on life style diseases and supporting various NGOs, academic institutions for health projects. He is also promoting sports, health and wellness activities as well as works on women and child empowerment.

Day 1: KEYNOTE ADDRESS

Speaker: Dr. Madan Gopal

Dr. Madan Gopal at NITI Aayog is a senior consultant and for the past 28 years, he has been working in the area of strengthening health systems in the Indian context, through various means. He briefed regarding the direction which the govt. of India and the state is thinking about where the healthcare system is going to be in the next few years.

NITI Aayog is working for evolving a system for the coming decade because whatever changes happen, they happen over a while. He highlighted the health sector and how it can contribute to economic growth, how it can generate employment, and how it can contribute to poverty alleviation. If life expectancy is improved by 10%, there would be an increase in economic growth by around ½%. If health sector investments are looked at, that is, if we are extending the coverage of crucial health services, we all take pride that we are having a demographic dividend and we are also having a good number of the youth population. He highlighted the importance of robust health care which extends beyond the healthy individual. Indian health care is mainly based on economic growth, employment generation, and poverty alleviation. He added that we are

grabbling with the problem of accessibility as there is a low number of hospital beds, affordability, and accountability. He said that one root cause is fragmentation in the system. System reform can drive both health outcomes and economic benefits. He further spoke about Ayushman Bharat and PMJAY. He mentioned IRDA and how to increase affordability and accountability and talked about patient safety. He concluded the keynote address by emphasizing that we will have to avoid fragmentation and work towards consolidation and at the same time shift our focus to wellness centres.

Panel 1: Ethical Legal and Social Issues (ELSI) in Healthcare IT

Moderator: Prof. Rajesh Chandwani

Panel Members:

- **Dr. Sunil Shroff,** Senior Consultant, Urologist and Transplant Surgeon, Madras Medical Mission, Chennai
- **Dr. Sonal Asthana,** Senior HPB and multiorgan Transplant Surgeon, Aster Hospital, Bangalore
- **Dr. Thanga Prabhu,** Vice President, Cohere Med
- **Dr. Gaur Sunder,** Joint Director (Scientist E) in HPC-Medical and Bioinformatics Applications (HPC-M and BA) Group, Pune (Skype)
- **Mr. Bhudeb Chakravarti,** Director, and CEO at Sense Health Technologies Pvt Ltd.
- **Dr. Balaji Jaganmohan,** Diabetologist, Apollo Sugar, Bangalore
- **Mr. Rajesh Dembla** (Skype)
- **Mr. Arun Patro,** IQVIA
- **Prof. Vijay Pereira,** Khalifa University, UAE

- **Prof. Glenn Muschert,** Khalifa University, UAE
- **Dr. S.M. Kantikar,** Member NCDRC (Skype)
- **Dr. Amit Jotwani,** Onco.com

Health informatics ethics is a combination of medical ethics and information ethics which includes Autonomy, Benevolence Non-Maleficence (not harm), Justice, Respect for information property, Respect for privacy, and Fair representation. Personal health information should be processed fairly and lawfully. It should also be accurate, adequate, relevant, and not excessive in comparison to the purpose that it was collected for. Legal aspects and liability should be taken care such as patient information should be held as securely as possible. Documentation of all privacy policies and implementation should be ensured and patients should be informed about the policies related to their right to health record privacy. All health records generated by the healthcare provider should be held in trust by them on behalf of the patient. Sensitive personal information should be owned by the patients themselves. All health service providers are supposed to ensure the confidentiality of the patients. The patient should have sufficient privilege to inspect their record and restrict access and disclosure of that record. The electronic medical record presents a unique opportunity to be preserved and not destroyed during the lifetime of the person.

Personal data protection bill 2019 talks about data protection authority of India which is going to protect the interests of data principals, prevent misuse of personal data, ensure compliance with the provision of the Act and promote awareness of data protection. In terms of government and regulatory roles, the Government will have the power to obtain any user's non-personal data from companies. The bill mandates that all financial and critical data has to be stored in India and sensitive data has to be stored in India but can be processed outside with consent.

The benefit is for the patient that data can be processed or shared by any entity only after consent. There are safeguards including penalties, introduced to prevent misuse of personal data and all data to be categorized under their heads-general, sensitive, and critical. The Whole principle is that there has to be a consent, however, that processing can be one of the functions of the state.

There should be a necessity to comply with the law or any order of any court or tribunal.

Telemedicine is just one aspect of digital health. It was a technology that was available and was started globally. Telemedicine is basically to provide medicine and healthcare at a remote site using satellite technology.

Digital health has four components:

1. It magnifies the issues related to patient privacy and confidentiality by a huge margin.

2. Jurisdiction and ownership of data.

3. Current measures often ignored ethical issues related to professional conduct and relationship.

4. Informed consent: The right of refusal remains with the patient.

Overarching Principle: Professional judgment of the doctor and the ownership and the responsibility. A progressive guideline should be made based on it.

ICAT: It stands for **In-Clinic Assisted Telemedicine,** where doctors who have relatively good knowledge on the disease and who are in remote areas such as Tier 2 and Tier3 and they will be trained how to assist the patient on that condition and home sample collection will be arranged so that standardized blood tests are done for them and then a video consultation is done with them.

Two important factors that are to be noted in terms of data collection are:

1. If the form of the data is specified which also specifies the transferability from one form to another.

2. Specify the purposes for which the data are collected.

Panel 2: Crowdsourcing of funds for Medical Expenditure (ELSI in Healthcare IT)

Moderator: Prof. Rajesh Chandwani

Panel Members:

- **Dr. Sunil Shroff**
- **Dr. Sonal Asthana**
- **Dr. Thanga Prabhu,**
- **Dr. Gaur Sunder (Skype)**
- **Mr. Bhudeb Chakravarti,**
- **Dr. Balaji Jaganmohan**
- **Mr. Rajesh Dembla (Skype)**
- **Mr. Arun Patro**
- **Prof. Vijay Pereira**
- **Prof. Glenn Muschert**
- **Dr. S.M. Kantikar (Skype),**
- **Dr. Amit Jotwani**
- **Mr. Rohit Chinchanikar, Ketto**

Dr. S.M. Kantikar enlightened on the legal implication of technology, especially telemedicine. The following questions were put forward:

- Concerning the law of legal aspect of medical negligence, how does consultation over telemedicine, say, video consultation, or WhatsApp or prescription over the phone, can be used to provide a suggestion?
- Is video consultancy allowed for people sitting over remote areas?
- Is e-medication delivery and e-pharmacy over the internet allowed?

The basic concept of telemedicine is to manage the patient in remote places. Now, there are a lot of legal issues that erupted right now because of the remote location. Patients who don't want to waste their time in the waiting room, such patients will get help from a doctor's clinic over telemedicine. It is mostly practiced in abroad. Narayana Hrudalaya has started its first project

of telemedicine in Bangalore. Regarding e-pharmacy, many ethical issues have erupted such as some medicines are banned, some medicines are counterfeited, and some are highly-priced. So, in e-medication dispensing, the DGCI has taken up this issue and they have banned at present not to sell medicine on e-prescription or e-transaction. Accessories can be dispensed, but not real medicine, there are certain restrictions, misuse is the main issue, so better as long as e-pharmacy is not advanced in our country, so much deliberation should take a call and adhere to some conclusion.

Medico-legal and ethical issues in telemedicine:

- Issue of confidentiality of the patient
- Maintaining standard of treatment.
- Maintenance of record.
- Professional misconduct.
- Credentials of doctors are not known.
- There are reimbursement issues, licenses, penalties, and liabilities as per various laws.

Crowdfunding is generating small amounts of funds from n number of people. Ketto partnered with more than 150 hospitals in India, works closely with Aster, raised 83 lakhs for six patients in the past eight months.

Process of crowdfunding:

- Get a call from a partnering hospital about a particular case
- Team goes and conducts a photo shoot with the patient.
- Parents are then interviewed, contents are put together and a campaign gets created.

- Once the campaign gets created, Ketto partner with Facebook and Google and campaign is put online and funds end up getting raised.
- Once funds are raised, Ketto transfers it to the partnering hospital.

(12-14 Cr/-month for 50-55 patients).

Crowdfunding is done by Aster for liver transplantation for around 3 and ½ years. They have raised 7-8 crore and funded around 73 children.

A mechanism to ensure that the story is genuine:

Every time Ketto gets a case from Aster, on the campaign, they put a cost estimation letter of the patient. This cost estimation letter will have the entire cost of the patient, what is the cost, treating doctor's name and phone number. If there is an unknown donor out there, and if he comes across the campaign, he can just pick up the phone, call up the doctor and find out whether the patient is true or not.The crowdfunding model is a four-way matching system:

- Crowdfunding.
- Corporate Social responsibility (CSR)
- Patient party
- Hospital

Ketto takes up cases with fatally ill diseases such as cancer, kidney, and liver transplant.

Day 2: KEYNOTE SESSION

Speaker: Dr. Jayanti Ravi

Principal Secretary, Health & Family Welfare Department, Government of Gujarat

She has championed the Swachch Bharat Mission for Rural Sanitation in the State for two consecutive years. She is currently the Principal, Health, and Family Welfare Department. Her multidisciplinary, innovative, and creative approach to problem-solving has provided results and outcomes that have successfully worked across various sectors.

She mainly talked about a continuum of care, approach, initiatives taken by governments like Ayushman Bharat, and how public health is connected with primary, secondary, and tertiary healthcare. Ayushman Bharat is an attempt to move from sectoral and segmented approach of health service delivery to comprehensive need-based healthcare service. Ayushman Bharat aims to undertake path-breaking interventions to holistically address health (covering prevention, promotion, and ambulatory care), at primary, secondary, and tertiary level.

Ayushman Bharat comprising of two inter-related components, which are:

- Establishment of Health and Wellness Centres
- Pradhan Mantri Jan Arogya Yojana (PM-JAY)

In February 2018, the Government of India announced the creation of 1,50,000 Health and Wellness Centres (HWCs) by transforming existing sub-centers and Primary Health Centres to ensure universal access as the base pillar of Ayushman Bharat. Health and Wellness Centres

(HWCs) based on key-principles with expanded services.

Key – principles (HWCs)

- Enable the delivery of high-quality care that spans health risks and disease conditions through a commensurate expansion in the availability of medicines & diagnostics, use of standard treatment and referral protocols, and advanced technologies including IT systems.
- Instill the culture of a team-based approach to the delivery of quality healthcare encompassing: preventive, promotive, curative, rehabilitative, and palliative care.
- Emphasize health promotion (including through school education and individual-centric awareness).
- Implement appropriate mechanisms for flexible financing, including performance-based incentives and responsive resource allocations.
- Enable the integration of Yoga and AYUSH as appropriate to people's needs.
- Facilitate the use of appropriate technology for improving access to health care advice and treatment initiation, enable reporting and recording, eventually progressing to electronic records for individuals and families.
- Develop strong measurement systems to build accountability for improved performance on measures that matter to people. etc.

Expanded range of services of health and wellness centers includes:

- Care in pregnancy and child-birth.
- Management of Communicable diseases including National Health Programmes
- Screening, Prevention, Control and Management of Non-Communicable diseases
- Care for Common Ophthalmic and ENT problems
- Basic Oral health care
- Elderly and Palliative health care services
- Emergency Medical Services
- Screening and Basic management of Mental health etc.

As an evidence-based initiative, Gujarat Government implemented a "Technology-enabled Community Health Operation" (TeCHO) with an NGO partner call Sewa Rural. Techo is a mobile-based application for frontline health workers, has been instrumental in not only

improving the health of mothers, infants but also elevating the standard of the overall healthcare system of Gujarat, reveals a recent randomized study. This study states that advanced mobile-based application ImTeCHO, implemented by the Government of Gujarat, as job-aid for frontline health workers has helped improve coverage of health services and health outcomes in the state. Gujarat Government health department and National Health Mission gave 11,000 smartphones and data plans to all ANMs in 2018. So far, 5.8 crore citizens, 5.1 lacs pregnant women, and 6.8 lacs infants under the age of one year are enrolled by ANMs in the TeCHO Plus app in Gujarat until February 2019.

Pradhan Mantri Jan Arogya Yojana (PM-JAY): This provides a platform for universal access to banking facilities with at least one basic banking account for every household, financial literacy, and access to credit, insurance, and pension facility. It covers both urban and rural areas. 2545 government hospitals and 740 private hospitals are impanelled with PM-JAY. In Gujarat 73 lacs population enrolled with PMJAY golden card and those who were enrolled with Mukhymantri Amrutam Yojana and MAA Vatsalya scheme can use the services of PM-JAY. Gujarat has the 1st rank in the number of the claim for PM-JAY nationally, round about 11.78 lakh claims recorded and 1842cr worth of treatment given out which shows less out of pocket expenditure as well as increased health-seeking behaviour in the community. Gujarat is also enrolled with Mera Aspataal Yojana in partnership with the Cisco Foundation and taking care of NABH and NABL certification for the hospitals as well as taking feedback from the patient for three criteria namely Cleanliness, staff attitude with patient and quality of services.

Panel 3: Violence against Doctors

A documentary released on Violence against Doctors titled "We are not Gods" which was directed by Mr. Gautam Sonti, a freelance documentary filmmaker.

Dr. RV Asokan: Secretary-General of the Indian Medical Association (IMA). Dr. Asokan is a practicing physician based in Punalur, a small town in Kollam district, Kerala and his wife is a Gynaecologist. He also played the lead in bringing Rs. 100 crore GFATM TB public-private mix project to IMA and served as its National coordinator for six years. He served for two years in Strategy and Technical Advisory Group for TB in WHO (Geneva) and is one of the contributors to international standards for TB care. He served as the National Joint Secretary of IMA hospital board of India for four years and its Chairman for the past four years.

He talked about violence against Doctors. He satiated that it is a very sensitive topic, society just seeing the tip of an iceberg which is violence, but it is very deep all over the country. He and his wife both facing difficulty and facing violence in day to day routine. In the early 90s violence was started from Kerala itself and now it is all over in the country.

Very few records have been found for the violence against doctors. However, the Doctors are facing physical violence as well as social media violence by trolling nowadays

He also gave insights on the paradigm shift from clinical medicine to evidence-based medicine. Because of this doctor-patient report diminished. By calling healthcare providers to the doctors and consumers to the patient medical files became an industry. Advancement of the internet brought information closed and the gap between doctor and patient reduced.

The public sector has the inadequate infrastructure and human resources. The percentage of GDP spend on health was 5.4% which has come down to 1.4%. 4.5% consumed by the private sector and only 1% by the state as well as central government. So, the healthcare industry is the blind spot. For the curative aspects, the public hospital has a long waiting period because of the overburden of the patient and the private sector are running for per capita profit and patient has to suffer between public and private.

And he quoted that "Burden of expectation is the biggest problem of modern medicine" which leads to disappointment.

Dr. Mona Desai: **President of Ahmedabad Medical Association.** She is a practicing Pediatrician and Neonatologist for 28 years and in an area of special interest in Child and Adolescent Counselling.

She also agreed with Dr. Asokan that expectation of the patient form the doctor is very high. Everybody thinks that doctors are god and they can cure anything. She was talking about the life of the medical personnel. Doctors have always been misunderstood by the community, the common person believes that they are paying so they should get 100% results, but there are some diseases in which etiology not known in that case, those who are taking medical services should have to saw patience and have to have faith in doctors.

She told about zero-tolerance policy against the violence that, from the poorest person to the richest person will need a medical doctor in any stage of life. If a doctor will start doing protest many patients will suffer from the illness. The doctor is a normal human being, he is not God.

Dr. Bharat Gadhavi, Regional Director at HCG Group of Hospitals, Gujarat. He spoke about comparing with other countries, medical facilities are still cheaper in India for that private companies are doing so many investments and without investment, the healthcare industry can't modernize. So many old machines are replaced by new technology machines, which is the need of today's competitive world to give desirable treatment and satisfaction to the consumers. As per the government, private hospitals have to pay commercial tax, by the word commercial they indicate that private is running a business and have to pay business tax.

For the violence, he talked about zero-tolerance policy, in that no treatment list will be prepared and those who are doing violence they will not take treatment from any hospitals so that other patient will not suffer. Media also plays a big role to manipulate things without knowing reality so it should be mandatory that media appoints a medical person for advice.

Panel-4: Entrepreneurship and Innovation in Health Technology

- **Mr. Arvind Patel**, Founder, and CMD, Sahajanand Laser Technology Limited
- **Dr. Kamlesh Patel**, Chief Executive Officer (CEO) Nidhi-TBI at IIPHG
- **Prof. Uttama Lahiri**, Professor, IIT Gandhinagar
- **Mr. Vipul Patel**, CIIE
- **Dr. Purav Gandhi**, Founder, Healthark Insights

The approaches towards health technology are very different in the Indian context. As in India, the doctor-patient relationship is very low because of a lack of system technology.

However, the three major aspects which came into focus in terms of health technology are stroke rehabilitation, portable device for patients, and mental health. Further, three different types of

DAY - 3 : KEYNOTE SESSION: 3

Speaker: Dr. Aravind Srinivasan,

Director – Projects Aravind Eye Care

Topic: Building Synergy to Eliminate Needless Blindness – Aravind Eye Care System

Dr. Aravind talked about the genesis of the Arvind Eye Care Hospital, how they started, where they are and What they do, from a perspective of the community. The community comprises everything, the community does not see whether you are government, private, or charity. When any individual from the community has a problem he/she will seek care and where they get care is what they go for, care takes priority than anything else. Whether the organization is private or government is not important, what is important is the effort and willingness of the organization to solve the problem of the community. Aravind Eye is trying to solve the problem of the community and support the community and the ecosystem that they are part of.

36 million people all around the world are blind. Here Blindness does not refer to absolute blindness. It is 50% of vision. 8.8 million people are blind in India. India has done extremely well in the field of eye care by doing about 7 million cataract surgeries in a year while China has done about 1.5 million cataract surgeries a year. 80% of the blindness is treatable which is very significant good news in the healthcare sector. One minute of cataract surgery can restore sight to 5.5 million people and a pair of spectacles can help another 250000 people.

Mushrooming of spectacles, Shops, and online platforms such as lenskart have come primarily because billion people today have to see their cell phones. This way the visual needs have become much more in the last 10 to 15 years than earlier, especially the near vision need has become significantly higher. Vision as an entity has become much more important because all of us thrive with that, in every level of our life we are integrated with our vision.

It is estimated that 300 million people need eye care in India, about 20% of the population. While in Germany about 50% to 55% of the population need eye care because the average age of the country is higher than in India. Eye care is a problem of age. 4.4 million patients were served and 500000 patients were operated by Aravind Eye Hospital in the year 2019.

Dr. Venkataswamy wished to establish an alternate healthcare model that could supplement the efforts of the government and also be self-supporting. Following his retirement at age 58 in 1976, he established the GOVEL Trust under which Aravind Eye Hospital with 11 beds was founded. The vision of the hospital was to eliminate needless blindness by providing compassionate and quality eye care affordable to all. Hospital has multiple set up such as Tertiary care centers, Secondary care centers, Outpatient centers, and Primary care centers.

A day at Aravind:

- 13000 patients examined
- 1650 Surgeries
- 5-6 Outreach camps
- 300 transported to base for surgery
- Classes for 100 residents. 300 technicians and administration.

Aravind Eye Care provides Eye Care Services, Education and Training, Research, Consultancy, and Capacity building and also takes care of Ophthalmic supplies and Equipment. 404 million patients were examined in the year 2018-19, 502536 Surgeries and Lasers were done, 693287 prescription spectacles were dispensed, and out of which 50% of the surgeries were free/ steeply subsidized. With the passing of time paying patients of the hospital is increasing more and it can be considered as an effect of the insurance.

Aravind provides 45% of all Eye care in Tamil Nadu and about 5% in the country. India has comparatively good market conditions in terms of the Eye care sector.

Screening camps are part of their activity and they have 77 vision centers covering 6 million populations.

The major challenge of health care in India is the scarcity of resources. In India, there are about 20000 ophthalmologists for 1.3 billion populations. For reducing the lag time between surgeries one surgeon performs two surgeries at a time and this way doctor can do 7 to 8 surgeries per hour. Aravind has about 480 doctors in a total of 4772 employees.

Aurolab was established in 1992 to address the high cost of ophthalmic supplies which had to be imported. So this is how Aravind goes into manufacturing which makes 3 million lenses a year used in 160 countries. Aravind is expanding its horizons and influence through the training and advocacy with government, by organizing a workshop for an ophthalmologist for the standardization in Eye Hospitals and by bringing manuals and guidelines for the government. Aravind also has Dr. G. Venkataswamy Eye's research institute for clinical and basic scientific research as well as for epidemiology studies and operational research.

In Aravind, 50% of free examinations/surgeries provide community acceptance, economies of scale, efficiency, frugality, and training while 50% of paid examinations/surgeries provide a surplus, outcomes, service quality, and access to technology.

Dr. Aravind concluded his session with the quote "Intelligence and capabilities are not enough. There must be the joy of doing something beautiful." From Dr. G. Venkataswamy.

Questions:

i) In the era of multispecialty how come Aravind can maintain only eye care and not going for product diversification?

   The multispecialty model is the most inefficient model by default because patients have to come as per their timings. There is so much to do in eye care and our successful organization has taken one thing and done it well.

ii) How do you assure quality in such a system for ensuring the successful outcomes and how do you ensure in your staff the sense for a passion that the founder had?

Standardization of care brings quality such as standardizing technology , standardizing the processes. And if 20% of staff subscribe to the passion the organization should be very happy rest of them are workers they are working only for salary, but if 20% are passionate that organization will have passion. When 20% comes down it's a problem. So for Aravind, it's a journey is to keep that 20% always aligned with the passion which is very important to us.

iii) How do you ensure equity between the paying and non-paying patients?

At Aravind, both paying and non-paying are provided with the same services. For paying Aravind provides ala carte of services and for free it provides one surgery that goes.

iv) How do you manage doctor attrition in your organization?

Attrition is something that we encourage. The organization will have to get prepared for attrition.

Panel 5: Leadership for Public Health

Panel Members:

- **Dr. Haresh Chandwani, Public Health Specialist, PHFI**
- **Dr. Rakesh Munshi, DHS, MP**
- **Dr. Krishna Reddy, Govt. of AP**
- **Dr. Praveen Bhide, NAIR**
- **Dr. Neha Lal, Sr. GM, GCS**

The accomplishment of vision requires efforts from all team members, one cannot achieve it single-handedly. So managing the team and taking all members along is one of the key areas of

leadership. In terms of resource management, money, materials, and machines can be managed but when it comes to managing the manpower, it's quite challenging because here one needs to work with different emotions.

In the Public sector, people don't care for the output because of the common thinking that nothing is going to change in terms of benefits they are getting, they are going to be paid the same salary whether they will work or not. People are not very open to learning new things and they don't show any interest in upgrading their knowledge too. Bringing people out of their comfort zone is the biggest challenge in the government sector. Leaders in these sectors have to use various strategies according to the strengths and weaknesses of their team for keeping them motivated to work out of their comfort zone.

Human resource available in the country for Healthcare is far below the requirement, especially in case of cancer care where the extraordinary skilled people are required for medical oncology, surgical oncology, and radiation oncology. The country is also facing a large deficiency in terms of trained paramedical staff. By involving and training more and more paramedics can free up the doctor's time and this is how the team of paramedics and one doctor can reduce the time of the surgeries and scope of treatment for more patients will open up.

A railway is a huge form of the network of the service delivery sector. Trained staff with zero percent attrition rate is one of the major strengths of this sector, other strengths of this sector include cost-effectiveness and they provide equitable services to all their beneficiaries. The shortage of medical and paramedical staff is one of the major challenges for railways too. Other challenges of this sector are unavailability of a specialist in rural or small centers as people prefer to provide their services in urban areas at bigger centers. Total job security in this sector leads

to the inertia of chain management which is again a big challenge for a good leader. An ideal leader should set goals for him as well as for his team, proper communication regarding his expectations from his team members, encourage all members to contribute in decision making, providing effective feedback to the people who are working for him and he should know how to be a leader from a doer perspective. In India for such kind of training government has established the National Academy of Indian Railways at Vadodara. In this academy, doctors are trained to improve the effectiveness, patient safety, development of SOPs, improvement in service quality, and proper documentation as in current scenario data analytics plays a very important role.

There are four challenges that every Healthcare organization faces. First is affordability, according to Budget 2020 lot of importance has been given to Ayushman Bharat, and a lot of Private hospitals are joining hands to provide this Pradhan Mantri Jan Arogya Yojana, for the poorest of the poor which will boon the Indian Healthcare industry to cover universally. The second one is accessibility, for which the government is establishing a lot of PPP model medical colleges in India. Challenges regarding human resources and accreditation are also there which needs to be addressed by Healthcare leaders.

Leadership and training aspect can enhance the delivery of services in the healthcare institutions tremendously.

Panel 6: - Innovations in Public Healthcare

Panel Members:

- **Dr. Smit Srivastava** Associate Professor (Cardiology), Pt J N M Medical College & Dr. B R A M Hospital, Raipur
- **Dr. Niharika Barik,** IAS, Secretary- Health
- **Mr. HSD Srinivas,** Head-Health, Tata Trusts
- **Dr. Tikesh Bisen,** Tata Trusts
- **Mr. Amar,** Tata Trusts
- **Mr. Varun Sheth,** Co-Founder & CEO, Ketto
- **Dr. Prashant Deshmukh,** COO CIMS

Various innovations have been done in Chhattisgarh. Decadal population growth is 22.59. The sex ratio is much higher in Chhattisgarh 991 female per 940 males. The literacy rate is little below at the national level. The health indicator shows in terms of MMR in 2001 were 407 (SRS 1999-2001) and now it is 141. IMR was 76 at that point and right now it is 38. Annual parasite incidence (API) for malaria was 16.75 and currently, it is 1.31. Most of the deaths in India are in the Bastar district of Chhattisgarh. Earlier the facilities towards health in Chhattisgarh were not given much attention due to the high vacancy of doctors in a rural area, non-availability of doctors, inequality in healthcare services, PHC almost non-functional. There were only two medical colleges which could produce only 150 students per year. So providing primary healthcare facilities to people the first innovation comes with rural medical assistance (RMA).

RMA is a three years course and they are known as practitioners in alternative medicine. Impact of RMA includes increased OPD, increased IPD, increased availability of primary healthcare services at PHC's, active referral, and follow up services, increased institutional deliveries, and reduction in morbidity and mortality. Community participation and involvement in health services are very low so for the up-gradation of the health sector "Mitanin" became a community health worker. Currently, there are 70,000 Mitanin in Chhattisgarh state.

One Mitanin per habitation average of 300 populations per Mitanni. It's a local community selected by the panchayat. There are three roles of Mitanin as follows:

- Health education
- Linking communities
- Activists to promote

Contributions of Mitanin: Full immunization rate increased from 22% to 49%, breastfeeding initiation, maternal health- women below BMI 18.5 reduced from 44% to 27%, Anemia in women reduced from 63% to 41%, ANC coverage of rural women increased from 23% to 57%, the institutional delivery proportion increased from 14% to 70%. New different interventions by Mitanin includes communicable disease, chronic disease. Rural retention strategy, Chhattisgarh Rural medical Corp (CRMC) creation of a working environment in difficult areas. Mukhymantri Hatt Bazar Clinic Yojana, Slum Swasthya Yojana to get access to quality health service.

Health outcomes in India supply constraint which impacts health system objectives i.e. equality, availability, accessibility, affordability, quality, and safety. Tata trust is working with the government and other areas of the work system. Interventions with focus on 'paediatric cardiology' and other programs also. It works on induction training, HR policy, staff feedback, strong technology support, counseling, etc.

Ketto- crowdfunding is a successful approach in the health sector. Those patients who cannot afford the treatment would require funds. Online fund-raising page created that is shared on social media. Crowdfunding is an effective way to fund healthcare treatment and create social impacts.

Privatization of district hospital impacts the public and private service healthcare. Problems in the government sector, skilled manpower is underpaid. Capacity building is another major step in the health sector.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5th IIMA International Conference on
ADVANCES IN HEALTHCARE MANAGEMENT SERVICES

Paper presentation session - I

ICAHMS/2020/001

A population survey to understand the need for a mobile application for information-based emergency medical referrals and developing such a prototype mobile application

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Background: The emergency medical services of India is highly fragmented. A mobile application for information-based accurate referral of patients in cases of medical emergencies can contribute towards its improvements. This study aimed to conduct a population survey to understand the need for such a mobile application and develop such an application, depending on the results of the survey.

Results: Statistically significant proportion (p<0.05) of both the doctors and the patients as

well as their relatives agreed that such a mobile application can be a solution to the existing referral problems. A mobile application was subsequently developed with several features useful for information-based referrals in medical emergencies. Inference: Application of mHealth in the form of a mobile application for emergency referrals is well-accepted by the people.

Conclusion: Technology-driven approaches to solve problems of healthcare are being increasingly adopted and the developed mobile application has got great potentials to solve the existing referral problems in the emergency medical services of the country.

Keywords: Health, Emergency Medical Services, information-based referrals, mobile applicatio

ICAMHS/2020/003

Public- Private Partnership in JSY- an Avenue to better Maternal Health

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Deficiencies in the public sector health system in providing health services to the population are plenty and studied by many authors globally. One of the reforms undertaken by the state governments of India to address inefficiency and inequity in this sector is formation of Public-Private Partnerships or PPPs. According to UNICEF India, India's maternal mortality rate reduced from 212 deaths per 1 lakh live births in 2007 to 167 deaths in 2013. Some success in this regard can be attributed to key government schemes such as the Janani Shishu Suraksha Karyakaram (JSSK) and Janani Suraksha Yojana (JSY). These schemes empanel hospitals to provide maternity services for women, in exchange for a fixed financial remuneration and also include a financial incentive to the women delivering in the hospitals. It is a noteworthy effort on the part of the government to get maternal mortality under control through attracting pregnant women to health facilities.

DLHS-4 (2012-13) mentions that the percentage of women who received benefits of JSY for institutional deliveries was only 11.6% in urban areas of Maharashtra, and only 2.5% for home deliveries for the same.

The PPP has declined to a great extent in the past few years in the area selected for the study. Hence, this paper focuses on status of this PPP, the perception of relevant stakeholders towards the model, and the facilitators and barriers faced by these stakeholders in initiating, maintaining and carrying forward this partnership.

Methodology: This qualitative study was carried out in a Tier I city in Maharashtra in 2017-18. The two major stakeholders (government officials and currently empanelled hospitals) were interviewed using semi-structured questionnaire with open ended questions (N=7). The data gathered was analysed manually using MS Excel (MS Office 2016) through identification of themes and sub-themes under each respective domain.

Key findings: This study brings out a very important perspective of government officials on mistrust upon the quality of data maintained by the accredited hospitals. The hesitation of empaneled hospitals in maintaining records and supervision of service quality is a challenge perceived by government officials, among others. It was found that despite the challenges prevalent in the system, most hospitals mentioned that their interest in partnering with the government system will improve provided their visibility is enhanced.

Conclusion: Various factors like benefits of PPP, data quality, financial advantages/ disadvantages, guidelines, documentation processes, human resources etc. play a critical role in determining the participation of private sector in a PPP. The PPP remains underutilized, majorly due to unclear guidelines, lack of infrastructure, and unclear communication between the stakeholders.

Keywords: PPP, Maternal health, Public health

ICAMHS/2020/004

Lean Management in Healthcare Services: A Case Study at Sarkhej Community Health Centre, Ahmedabad

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Healthcare is one of the fastest growing sectors in India. India spends about 1.02% of its Gross Domestic Product (GDP) on public health. Out of the total expenditure, effectively about one-third is contributed by the public sector while the remaining is accounted for by the private hospitals. This contribution is low as compared to other developing countries like Brazil, Sri Lanka. The number of urban poor has been increasing due to urbanization but, to address their health-related needs there isn't comparable growth in government supported healthcare services. So, in 2013, the 'National health mission' was started, which comprised of the 'National rural health mission' and the 'National urban health mission'. Ahmedabad has numerous 'urban health centres' and a few 'community health centres' in forty-eight wards of the city, with 3 referral hospitals run by Ahmedabad Municipal Corporation. The paper discusses a pilot survey conducted on 100 patients who visited 'urban health centres in the new west zone of Ahmedabad to identify problems being faced by patients and the utilization of public health service providers in comparison with private health service providers. The Sarkhej community health centre was selected as a case study site, as it has a high daily case registration and an in-patient facility running 24x7. Lean means creating more values for customers with fewer resources. An organization implementing lean would try to reduce

non value-added activities and create an efficient process that has minimum or zero waste. Implementation of lean has observed positive outcomes and improved customer satisfaction. It was decided to apply lean at this community health center with an attempt to improve the processes and efficiently serve the patients. A spaghetti diagram is a visual representation using a continuous flow line tracing the path of an item or activity through a process. The continuous flow line enables process teams to identify redundancies in the work flow and opportunities to expedite process flow. Patient flow mapping is a process which records flow of patient inside the hospital. It starts with once patient comes inside Hospital to get diagnosed, till it leaves the hospital. Spagetti diagram was used to do patient flow mapping at the CHC. A patient survey using a Serval (Service Quality) questionnaire was conducted and helped capture the service receiver's expectation and perception of a service along the five different dimensions called as RATER (Responsiveness, Assurance, Tangibles, Empathy, Reliability). The Medicine window at the CHC is used to distribute medicines free of cost as prescribed by the doctors. 5S is a Lean tool or a method to organize your working space and 3 practices. The paper also discusses the results of the 5S implementation at the Medicine Window at the Sarkhej CHC. The study showed that supporting facilities to hospital consultation can be made efficient with the suitable Lean tools, which can reduce the lead time of each patient. Service delivery efficiency will result in effective patient care and better patient satisfaction.

Keywords: Healthcare Services, Community Health Centre, 5S, Spaghetti diagram

ICAHMS/2020/017

Facilitating Quality of Work Life among Women faculty in Medical Colleges

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Work life balance is not a new concept. There is an inevitable need for a work life balance strategy to reduce stress levels, raise job satisfaction thereby increasing productivity and reducing health care costs for the employer. Some surveys and research work on the concept of work life balance throws evidence on the fact that Indian organizations are trying to enable work life balance through initiatives like flex times, part time work and provision of child care facilities. These initiatives are quite similar to those that are provided in some developed countries. Undoubtedly, this is a promising trend. However, it is not easy to find many references to work life balance policies and issues in Higher Education Sector in India. Work life balance for teaching professional has become one of the greatest challenges in today's world. Teachers need to spend extra hours' every day to be effective and productive in their profession so that they could reach higher levels and face the challenging atmosphere. The increase in work ethics and consumerist culture has grown to greater extent that the value of parenting and home making has deteriorated. Work life balance helps the faculty to be more productive in their work by reducing work stress and effectively carry out personal and

professional commitments. Reviews also indicate that the perception of work life balance is observed to be different across genders. Work based support to women is positively associated to job satisfaction, organizational commitment and career accomplishment. These reviews highlight that there are work life balance issues that need to be addressed. However, there are not many studies oriented at understanding the Work Family Conflict of faculty in professional colleges. It has been proven that organizations supportive of employees can reduce work family conflict. The paper aims at presenting some innovative ideas for creating a positive impact of the work family facilitation and effective stress management of faculty working in Medical colleges.

Keywords: Work to Family Conflict, Family to Work Conflict, Stress Management, Job Engagement

ICAHMS/2020/026

Health Expenditures, Health Infrastructure and Health Status in SAARC Countries – A Panel Data Analysis

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The present study explores the differential effects of a number of health expenditure components and health infrastructure and socio-economic indicators on health outcomes in the SAARC region. The study uses panel data from seven SAARC countries from 1993-2012. Random effects panel regression (Generalized Least Square) was applied to estimate the effects of health expenditure and infrastructure on health outcomes. Results found differential effect public, private and out of pocket health expenditure on different health outcomes. While out of pocket expenditure was found to be the biggest influencer of life expectancy, death rate and instances of tuberculosis; public expenditure was found to be influential for IMR. Results also indicated a significant role of health infrastructure and socio economic variables such as literacy on health outcomes.

Keywords: Health care expenditure; health infrastructure; health outcomes; panel regression; SAARC

ICAHMS/2020/046

Prevalence of Workplace Bullying in Indian Healthcare Organisations: Empirical Evidence

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Objective: To empirically determine prevalence of workplace bullying among resident doctors in Indian Healthcare organisations. This study also aims to identify potential sources of bullying behaviour among targeted population.

Research Methodology: A cross-sectional study was conducted among resident doctors comprising both Junior Resident Doctors (JRs) and Senior Resident Doctors (SRs) from varied clinical departments of selected Indian Healthcare organisations. NAQ-R scale was used to determine prevalence of bullying behaviour among Indian resident doctors. Respondents were also asked to indicate potential sources of bullying behaviour at their current organisation. The data analysis was undertaken using Statistical Package for the Social Sciences (SPSS). The study findings were reported as frequencies and percentages.

Findings: Based on NAQ-R cut-off criterion, out of total 636 participating resident doctors,12.3 percent (n=78) reported being severely bullied at work, 51.4 percent (n=327) reported to be occasionally bullied at work and rest 36.3 percent (n=231) reported to be never exposed to bullying behaviour at work. Most reported perpetrator of bullying behaviour among Indian resident doctors were supervisors (40.4 percent, n=257) and patients (34.7 percent, n=221) while other participants reported seniors, co-workers and nurse staff as potential sources of workplace bullying.

Research Limitations: A cross-sectional design, use of self-reported questionnaire data and examining prevalence of bullying with a gender-blind perspective are some limitations of this study.

Practical Implications: This study is one of the rarest attempt to empirically determine prevalence of the biggest challenge faced by human resource for health i.e. workplace bullying among resident doctors in Indian Healthcare organisations.

Social Implications: Taking stern actions against perpetrators and introducing anti-bullying policies may help to combat bullying in Indian Healthcare sector.

Managerial Implications: Awareness programmes about bullying be initiated by hospital management by introducing programmes like Stopit and crafting an affable working environment in Indian Healthcare organisations by introducing a zero tolerance policy to limit atrocities against doctors.

Originality/Value: This is first study to empirically test prevalence of an austere workplace stressor i.e. workplace bullying among resident doctors in Indian context and add knowledge to extant literature by highlighting atrocities against Indian doctors. Keywords: Workplace Bullying, Healthcare Organisations, Resident Doctors, India

Paper presentation session - II

ICAHMS/2020/002

Catastrophic Healthcare Expenditure among households of Waghodia, Vadodara

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Background: Despite large investment in central and state sponsored health insurance schemes and other government health facilities, out of pocket expenditure and catastrophic healthcare expenditure remain high. It is very important to consider whether provision of free services will reduce out of pocket expenditure or not. So present study was conducted with the aim to assess OOPE and CHE among households along with factors affecting it. Material & Method: A cross-sectional study conducted to identifying the out-of-pocket expenditure on health care in terms of OPD and IPD care among rural area of 181 households of Waghodia, Vadodara. The study was done in period of July to November 2019.

Results: Data was collected from total 181 households including 940 individuals. 67 (37%) household had history of hospitalization, 41 (22.7%) acute, 28 (15.5%) chronic and 45 (24.9%) had acute plus chronic conditions in last one year. Out of 181 households, 29 (16%) utilized public health care, 150 (82.9%) utilized private treatment facilities and 2 (1.1%) family avoided using any of them. According to

preference, 43 (23.8%) households preferred public facility while 107 (59.1%) large number of households preferred private. Out of 181 households, average expenditure for IP care was 46832.04 INR and average expenditure for OP care was 9290.19 INR for pharmacy, lab and investigations etc. Excluding OPD visit fees. Average user fees for OPD visits was 770.11 per household. 136 (75.1%) households did not have any type of health insurance coverage. It was found that 15 (22.4%) of household had catastrophic health expenditure. Conclusion: Our study shows that the out of pocket expenditure was more in case of IP care as compared to OP care. OPD visit fees expenditure was highest in case of acute on chronic disease presentation in last one year. In study sample, people utilized private health sector more due to no waiting time, safety and quality factors. Borrow for health, avoid line of treatment and change in health care provider due to cost factor was higher in case of upper lower and lower socioeconomic classes.

Keywords: Catastrophic Healthcare Expenditure, Community Experience in Healthcare Sector, Out of Pocket Expenditure on Healthcare

ICAHMS/2020/033

A low cost public health model to bring down tobacco use in the community: School based tobacco health hazards awareness program: Our Mumbai experience

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An `Epidemiological Transition` in the disease burden in our country, with a rise in Non-Communicable Diseases, (NCDs) to 55%in 2016, has been observed. In addition to the treatment, prevention of NCDs needs urgent consideration. Tobacco use is one of the preventable risk factors for NCDs. The predominant form of tobacco use in our country is smokeless tobacco. There is no school-based tobacco hazards awareness program in our country. `Prevent Addictions through Children`s Education (P.A.C.E) Group, Pune(NGO), to create awareness about health hazards of various addictive substances- for school and college students, by conducting programs, from 2011, with the help of a specially prepared DVD.

Objective: This modified program was started in Mumbai in 2014 to create awareness, specifically about tobacco health hazards- of smoking and smokeless tobacco products, among standard 8-10 school students.

Methods: Private and government aided private secondary schools in Mumbai were contacted. The program consists of an audiovisual presentation about ill-effects of tobacco-smoking and smokeless forms, a ``NO TOBACCO PLEDGE``-that the students will be proud to remain tobacco free for the rest of their lives and a question and answer session, where the student's queries were addressed. The program was conducted for -boys and girls.

Results: Study period: Jan 2014 to Dec 2019, 11,175 students-boys and girls from various parts of Mumbai have benefitted so far. The school principals, teachers have found the program to be very effective and appreciated the program. A preliminary analysis of this program was done in low socio-economic area schools in Pune and Mumbai and its effectiveness was also assessed in a rural school, near Mumbai.

Conclusions :This unique Programme has helped to create awareness about health hazards of smoking and smokeless tobacco. Children can spread knowledge in the society as ``messengers of anti-tobacco knowledge``, an important means for giving anti-tobacco message especially to women. It needs consideration as a policy initiative for systematic nationwide dissemination as a part of the school curriculum.

Key Words: tobacco; addiction; awareness; school programs: India

ICAHMS/2020/030

Role of Village Council Development Committee in the Provision of Primary Health Care Services: A Study of Kokrajhar District, Bodoland Territorial Council, Assam, India

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Panchayati Raj Institution (PRIs) is the lowest and nearest congested contact authority with the community at the grassroots level. It can also involve in decision making policy, decentralized planning so which is also can promote and maintain the balance of population health at the primary level. In this way, the Village Council Development Committee (VCDC) is one of the Local Government Body in tribal-dominated areas under the six schedule areas of Indian Constitution so called Bodoland Territorial Council (BTC). The VCDC is functioning under the Bodoland Territorial Council (BTC) Administration since 10th Feb, 2003 in Assam, India. Based on the Literature review, this research area is very dearth in studies, and there is no proper research has been done so far especially in BTC by any researcher in terms of Local Government in the provision of Primary Health Care Services at the grass root level. So, the study was to understand role of VCDC in the provision of Primary Health Care Services. The study is explorative because it would explore the role of VCDC in the provision of primary health care services especially in one of the backward district of BTC, Assam. It is the Qualitative method of Study by using both the primary and secondary data. The findings could be seen that there are still no proper guidelines from the BTC or State authority for Functioning the VCDC, even the bill called ' Village Council Act, 2012' has been passed from the BTC Assembly but the state authority has not been approved it. Still no answer what is the reason behind it. This may lead the system in Corruption, weak in Health Governance, and so on. Basically, this paper will have focuses more in connection with the Primary Health Services by the Local Government Body or Local Level Institutions.

Keywords: Bodoland Territorial Council, Primary Health Care Service, Village Council Development Committee and Health Governance.

ICAMHS/2020/005

Why there are conflicts in patients and medical staff communication in the multispecialty hospital environment?

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Purpose: One of the most critical aspect of Patient engagement is communication between patients and medical staff. Several conflicts have been reported in the patient-medical staff communication. The patients report weak and failed communication due to the interruptions, anger either from the doctors or patients, lengthy arguments and disagreement with the patients. As a result, more patients are reporting anxiety, fear, degraded healthcare outcomes, complaints and dissatisfaction with the doctors leading to poor customer ratings of the hospitals. Alternatively, doctors also find it difficult to communicate with the patients. Hence, the purpose of the current research is to seek the answer to the research question: Why there are conflicts in patients and medical staff communication in the multispecialty hospital environment?

Design, methodology and approach :Qualitative case study approach has been implemented. In-depth interviews of thirteen doctors, twelve patients, thirteen nurses, ten paramedics and eight helpdesk staff were conducted along with the fourteen hours of non-participant observation in the ICUs and secondary data analysis of more than 600 pages of the relevant documents from the official websites of the sample hospitals. The grounded theory was applied to reveal the themes of conflicts in patient- medical staff communication.

Findings : The research un-covered four themes: 'disagreeing on treatment approach', 'listening and speaking problems', 'managing rigid and aggressive patients' and 'miss-understanding the patients.' In other words, conflicts in communication between patients and the medical staff occurs due to disagreement on the treatment approach that medical staff suggests to the patients. Patients and medical staff are not aligned on specific line of treatment leading to the conflict and arguments. Secondly, the conflict occurs due to speaking and listening problems that occurs as a result of physical, social, mental and psychological barriers in communication between patients and medical staff. Thirdly, the conflict happens when patients behave rigidly and becomes aggressive with the medical staff. Finally, conflict also occurs due to medical staff not able to understand the patients appropriately. Out of these four themes, 'disagreeing on treatment approach' and 'mis-understanding the patients' are found to be unique. Practical implications. The research presents the clear and concise implementable implications and distinctive ways in which the conflicts in communication between patients and medical staff can be reduced, patients can cooperate with the medical staff, work mutually,

improve communication and strengthen the overall healthcare experience and outcomes. Each theme is mapped with the learning specific to the patients, doctors, nurses, paramedics, helpdesk, hospital administration and for the healthcare policy makers. The identified themes suggest the importance of the contribution of patients, entire medical staff and the hospital administration in improving the communication with the patients to develop improved patient healthcare consequences. The evaluation of the themes may help hospitals to reduce the conflicts, improve patient-medical staff collaboration, and integrate the findings to design and implement the appropriate policies and the framework.

Keywords: Conflict, patient communication, case study, hospital

ICAMHS/2020/007

Language Barrier: A crucial roadblock for successful adoption of telemedicine in India

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Providing adequate healthcare facilities to its people forms the basis of any country's economic growth. Initiatives like Ayushman Bharat and Pradhan Mantri Jan Arogya Yojana (PMJAY) has galvanized healthcare outreach in India. However there still persists a rural-urban divide where more than 60% population resides in rural areas who are deprived of primary healthcare and access to well trained and qualified doctors. To bridge this gap, technology like telemedicine, which is an amalgamation of information technology, communication and healthcare was implemented to connect a doctor and patient at distant locations. It faces certain challenges like cost containment, lack of infrastructure and training, accuracy but the most neglected roadblock for successful adoption and management of telemedicine is the language barrier. In a country which is diverse in language and culture; it becomes elemental to develop a user compatible technology which is easy to comprehend. An initial primary research was done with 200 participants in tier 2 and tier 3 cities in Maharashtra to understand perception of telemedicine as a technology, language preference & white space analysis. A precise interdependence of language preference was seen for successful adoption and understanding of the technology along with quality perception of the service. This article focuses on language barrier towards successful adoption and management of telemedicine in India, user preference by primary research and credible solutions to tackle this issue.

Keywords: Telemedicine, Health Professionals, IDSP, ONCONET

ICAMHS/2020/008

A study of overall visual impairment and risk factors for diabetic retinopathy at tertiary care hospital.

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Background :National Program for Control of Blindness & Visual Impairment as a complete centrally sponsored Programme with the goal of reducing the prevalence of blindness from 1.4% to 0.3% by the year 2020 still it reached to 1%. Epidemiological data from India suggests the prevalence of DR is 18% in the urban and 10.4% in the rural India.

Aims and Objectives: 1) To document the burden of different causes of visual impairment among beneficiaries of National Programme for Control of Blindness and Visual Impairment 2) To evaluate the prevalence of Diabetic Retinopathy among patients of tertiary care hospital 3) To study the risk factors of Diabetic Retinopathy among patients of tertiary care hospital

Material and Methods :A cross-sectional study was carried out comprising of two components: Desk review for different causes of visual impairment and Diabetic Retinopathy patients the primary data were collected with Desk Reviewed patients with significant findings of Ocular disorders/diseases, Visual Impairment and Blindness and Diabetic Retinopathy data were collected by Semi-structured interview in a period of August to October 2019.

Results :The overall diseases burden causing Blindness and Visual impairment are evaluated with Visual acuity in both eyes. Among them 1316 were diagnosed with Ocular disorders/diseases; 209 had Blindness and 2397 had Visual impairment (total=2144; considering both eyes as individual). Highest Visual impairment was found in 62.75% due to uncorrected refractive error and highest blindness in 27.3% due to Cataract among the total study participants. The prevalence of Diabetic retinopathy was nearly 5%. Majority (56.5%) had DR followed by DR associated with maculopathy (31.3%). Majority of the participants were above 50 years' age and had low level of literacy. The prevalence of Diabetic retinopathy found more in male than female gender; had HbA1c level more than 6.5%. Majority (95.2%) are able to maintain work life and almost half (51.6%) participants admitted having stressed due to work.

Conclusion: Highest Visual impairment was found due to uncorrected refractive errors among the study participants which can be easily corrected. Highest Blindness was found due to Cataract among the study participants. There was lack of awareness regarding Diabetes and its effect on eyes (Retinopathy) among the study participants. Poor physical activity habits among study participants indicated intensifying the awareness for life-style changes. Work-life balance seemed adequate.

Keywords: Visual Impairment, Blindness, Diabetic Retinopathy, Risk factor

ICAMHS/2020/009

A Study on Quality Management in Emergency Department of NGO Based Multispecialty Hospital

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It is the term like & quot; The Golden Hour and Platinum Ten Minutes & quot; that typify the importance of Emergency Medical Services. As compared to developed countries with the proper emergency system in place, there is no single system which could play a major role in managing emergency services in India. Recent trend suggests trauma continues to be one of the major causes of death in India. In this context, the hospital' s emergency department services and its quality are very important. The exploratory study was conducted in a 150 bedded charitable multispecialty hospital of kachchh district of Gujarat using Donbedian model (structure, process, and outcome) to understand the real scenario of quality of emergency services provided by the hospital in rural India.

The study suggests the significant gap in the structural elements in terms of physical infrastructure like insufficiency of space, triage and waiting area, improper location of the department, and privacy of the patient. Manpower problems like availability of consultants, no definite credentials and privileges of staff and equipment problems like maintenance. Motivation study of staff using Herzberg criteria shows lack of motivation in staff. The process elements like triage, referrals, patient safety, hand hygiene, safe medication, communication and documentation also show poor compliance with the standards and hospital' protocols. However, admission protocols and outcomes like timeliness of treatment, utilization trend, patient satisfaction, investigation turnaround time; revisit in 72 hours are up to the mark in the study on the contrary poor compliance to structure and process elements that require further study.

Keywords: Quality of services, Donbedian model, charitable hospital, gap in structure process and outcome

Paper presentation session – III

ICAHMS/2020/027

Relationship of Service Quality and Organisation Performance with effect of Market Orientation in Hospitals in Punjab

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Since quite some time, quality management has been in the league of the methods to enrich and enhance organisational performance. In this paper, the authors have made an attempt to make a research model applicable in hospitals of Punjab and to find out a relationship between Service Quality and hospital's organisational performance with the mediation of Market Orientation. The article refers to the findings from literature review regarding Service Quality and market orientation. We have used adapted scales for the constructs of Service Quality, market orientation and organisation performance. All the hospitals are keen to improve their performance. This can have been done through enhancement in service quality and ultimately increase in performance. This article tries to establish a positive relation between a second order service quality construct and its relation with organisational performance of hospitals in Punjab taking mediation of market orientation. The paper has been framed with a belief that it may provide benefit to academicians and managers to dig out a relationship between Service Quality and hospital performance.

Keywords: Service Quality, Market orientation, Hospital performance.

ICAHMS/2020/040

Shifting boundaries in healthcare HRM: A Qualitative Perspective

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Being a supplementary study, this study examines the causes of the outcomes of the previous research work carried out as an assignment of Post-Doctoral fellowship program. That research work was aimed at exploring the nature of HR roles using Ulrich's (1997) four roles typology (i.e. Strategic Partner, Employee champion, Administrative expert and Change Agent) in healthcare units operating in India. Furthermore, it aims to assess the impact of these HR roles on HR effectiveness using Huselid (1997) measures of HR effectiveness (Technical and Strategic effectiveness) in healthcare sector empirically. The opinions, arguments, point of views and a thorough review of the relevant research work contained in that study helps in deriving of a conceptual research model and formulation of research hypotheses. In addition to that, those research models presumed a strong favourable relationship between HR roles and HR effectiveness dimensions. Nevertheless, the structural models for Administrative Expert role as well as Employee Champion role did not strongly hold up the stated relationships statistically. These HR roles were found to be adversely affecting HR effectiveness dimensions. To validate the empirical findings, to discover the causes for such relationships and to posit qualitative narratives for the presumed relationships, the researchers began with this research void, reviewed the relevant and largely the recent literature, defined qualitative research design, and undertook all other steps required in a qualitative research. The data were collected through semi-structured telephonic interviews which were, later on, analyzed using Nvivo 10.0 software. In the end, this study presents some lucid but crisp findings along with an elaboration of various conclusions.

Keywords: Healthcare management, Hospital administration, HR effectiveness, HRM, HR roles, Qualitative Analysis.

ICAHMS/2020/036

Redefining the value proposition of medical tourism industry: A case of Delhi-NCR

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India has emerged as a prominent medical tourism hub, yet the dynamics in the regional and global landscape are creating a complex balance of opportunities and risks for the Indian stakeholders. Taking Delhi NCR as the case, this study aims to analyse the key driving factors for

the Indian medical tourism industry and the issues that Indian stakeholders should address in crafting a winning strategy. A qualitative research design was adopted, and data was collected from practitioners and senior representatives of the hospital management. The study presents the assessment of the Indian medical tourism industry and the scope of opportunity for Indian players.

Keywords: Medical tourism, Destination competitiveness, Drivers, Opportunities, India

CAHMS/2020/025

Value Stream Mapping of the Admission Process in A Tertiary Care Hospital

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With the increasing emphasis on application of concepts of lean management in the hospitals across the world is gaining popularity as lean healthcare. Value Stream Mapping is the elementary tool that allows such implementations. The VSM model is particularly designed for hospitals and healthcare settings that have direct influence on the admission of patients and their time of their treatment.

This paper presents a case study of a tertiary care hospital of India where the 'Lean transformation-VSM' of the 'Patient-admission' process is administered for the reduction of time taken by the admission process. The non-value added (NVA) time was identified and tried to nullify. Efforts were made to reduce the admission of the patient for making the process smoother and faster when compared to the existing process in the hospital.

Paper presentation session – IV

ICAHMS/2020/012

Advances in Health Care Management-Perspective Through Ergonomics

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The history of hospitals has stretched over 2500 years and over the years the sector has evolved ranging from the inpatient to the outpatient, to its working environment and other aspects. Numerous tasks are being performed simultaneously each minute in order to revive the patient successfully using the modern technologies available till date. The progression of restorative medications was caused by evolving thoughts, yet additionally by changing practices and innovative potential outcomes. Advancements in science and innovation opened up new types of treatment. Ergonomics in straightforward words can be characterized as the investigation of muscular movements of an individual not just for moving patients from the stretcher in ambulance to their particular compartments which exclusively relies on the seriousness of the case and its cause, moreover, ergonomics serves to be a significant factor for the different other supporting staff in the medicinal crew to cite some examples they can be named as the assistant, Insurance Agents, staff on duty and so forth., this not only is restricted to the medical fraternity alone but at every known working environment. Ergonomics (from the Greek ἔργον, meaning "work", and νόμος, meaning "natural law") has been into its existence since the late 1857, which has been into constant upgradation to provide in-numerous benefits in the various sectors of the medical history. The various sectors which have been immensely into benefit with the proper usage of ergonomics include the information technology department, the strategic management department, the human resource department and the finance department. The question which surely runs into the minds of many is why ergonomics? The answer to this lies within the working environment of every individual hired into, to quote The Cognitive Ergonomics which simplifies the study of human behaviour to that of the work place one is hired into. i.e. for e.g. if receptionist is to feed multiple records of the same patient into the same file, then it may be a tiring task, but if the

same thing is to be done with the help of some technological instrument, then the work might be much easier and be done at a faster pace than before. Ergonomics not just aides in the rearrangements of the working plans or the examples in the workplace yet additionally helps in the business cost reduction as far as a few medical advantages and business substitution cost, which helps in accomplishing the ideal outcomes at a lot quicker pace, at that point at which they have been focused for. In the cutting-edge time, each inventive thought has served to be of more prominent advantage not exclusively to an individual yet the association all in all. The term ergonomics has been a heap establishment in the accompanying three significant classes i.e. Physical Ergonomics i.e. study of the human anatomy, Cognitive Ergonomics i.e. study of the cognitive functions of the human anatomy and the Organizational Ergonomics that deals with the optimization of socio-technical terms.

Key Words: Healthcare, Cognitive Ergonomics, Physical Ergonomics, Socio-Organizational Ergonomics.

ICAHMS/2020/021

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Ontology of Cyber environment of Enhanced Surveillance System for Vector-Borne Disease Control in India

Surveillance is critical for the elimination of vector-borne diseases (VBD). Transmission events of vector-borne diseases take place in a dynamic, interconnected, and complex system. For an effective early warning, surveillance and control of vectors and the diseases they transmit, interactions between multiple disciplines and responsible health and environmental authorities are often needed. The key goal in developing the surveillance system, therefore, is to ensure that it is robust, systematic, and effective for improving data availability, and use in decision-making for the elimination of the diseases. In this paper, our objective is to take a methods-based approach and present a unified framework of public health and medical entomology by envisioning surveillance informatics for vector-borne diseases as an ontology- based system. The framework is an abstract conceptualization to systematize the description of a complex

system of vector-borne disease surveillance. The ontology contributes towards providing pathways that systematically analyze and prioritize the functions of the cyber environment by combining the categories to form natural language statements of the cyber- environment requirement. The findings highlight that irrespective of whether a VBD is endemic or not, the pathways: a) assess disease burden or threat, b) continue to assess disease trends, c) undertake real-time decision for action and geographically determined outcomes, and d) be amenable to multi-organizational set-up inherent to VBD management. On a larger scale, the integrative framework enables data harmonization, analytics and visualization towards effective management and knowledge generation on VBD surveillance.

Keywords: Feedback, Active surveillance, decision analysis, informatics

ICAHMS/2020/014

The Vacuum in India's Institution-Based Healthcare Guidelines: An Ontology

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Managing the growth of healthcare in the context of efficient and effective outcomes depends to a large extent on understanding and interpreting the delivery of healthcare by institutions. Earlier, medical consultations involved reaching out to the nearest individual practitioner who was familiar with the medical history of the entire family perhaps, and treated a wide range of ailments with the available medicine. The new model is that of a monolithic institution – a heterogeneous group of specialists, nurses and para-medical staff, trained to deliver medical care. There is a vacuum in the guidelines for institution-based healthcare in India. The ones for individual-based healthcare continue to be applied despite the shift in paradigm from the individual to the institution-based healthcare, and their misfit. The guidelines are inadequate. The guidelines-vacuum affects the performance of the institutions adversely and consequently the healthcare outcomes of the recipients.

Keywords: Healthcare Guidelines, Provider, Recipient, Outcome

ICAHMS/2020/016

Christian Medical College and Hospital: Serving with Sense of Calling

Author: **Puja Jain**

The case is a teaching case which discusses in detail the factors which have motivated the doctors to work with Christian Medical College and Hospital, Ludhiana, which has a history of around 125 years. The case discusses some of the measures that are taken by the hospital for under privileged patients. It is also facing certain challenges. At the end, the case poses questions for the students to discuss in the class. The case study can be useful in teaching certain HR /OB concepts and practices in the class, especially in the context of healthcare industry

ICAHMS/2020/019

Technology Based Solutions in Government Healthcare Centres, Tiruchirappalli

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Technology Based Solutions (TBS) have become an inevitable source which is not only ruling humanity but also healthcare sector. Healthcare has also started to provide technology based treatment to cure the patients to lead a healthy life. Here, the researcher is aiming at exploring on technology based solutions done in Government health sector. Perhaps, the main objective of this study is to investigate technology based solutions for Tuberculosis and HIV being practiced at K.A.P. Visvanathan Government Medical College and Mahatma Gandhi Memorial Government hospital in Tiruchirappalli city, Tamil Nadu, India. The total sample for this study is 60 comprising of Doctors, Medical College Professors, Office Assistants and Beneficiaries (patients). Focusing on real time polymerase chain reaction test (Real time PCR test) and viral load test (VLT), the researcher has collected data through a questionnaire. The researcher has applied SPSS for analysis purpose and arrived at the following findings. Chi-square analysis was used to analyze the significant relationship between the variables. The high sensitivity of the viral load assay strictly proved that the physicians ought to watch every stage of the HIV patients through proper monitoring. Its evidence is found in the Records and Registers that nearly 4500 HIV patients have so for been benefitted by this technology. CBNAAT had been helpful for physicians to diagnose and initiate correct treatment as well for TB patients. As

of now 20000 patients have been cured by this technology. These two data obtained from beneficiaries of the respective departments in the record from January 2019 to November 2019.

Keywords: TBS, Real time PCR, VLT, Health-care centre

ICAHMS/2020/037

Qualitative study on maternal death review in urban slums of Ahmedabad

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Introduction: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy is known as maternal death. Irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. A maternal death review provides an opportunity to heath care providers and community members to learn from an event. The purpose of a maternal death review is to improve the quality of safe motherhood programs to prevent maternal morbidity & mortality

Objectives: The objective of the study is to assess delays, cause, and its contributing factors related to maternal deaths in urban slums of Ahmedabad

Method: A cross-sectional study design was used for conducting maternal death review in two urban slums; Behrampura and Vasana located in Ahmedabad district of Gujarat state. Data were collected by Standard WHO (World Health Organization) Community-based Verbal Autopsy Questionnaire in the community by interviewing family members, relatives' neighbours or any other care provider of dead Mother to understand the medical and non- medical factors related to death.

Results: Population of 20,000 people in 2 slums of Ahmedabad total 4000 households were surveyed, total 14 maternal deaths were identified in the study, most common causative factors of maternal death were post- partum hemorrhage (43%), followed by sepsis, Eclampsia, jaundice, convulsion and others.

Conclusion: More quality research is needed to identify innovative ways that can reduce maternal mortality and which can identify specific causes of maternal death.

Keywords: Maternal death, verbal autopsy, 3 delay model

Paper presentation session – V

ICAHMS/2020/022

Usage of new infection control e-portal – A Case study of tertiary level oncology hospital in eastern India

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Background: Hospital spend a huge amount of money to buy new infection control videos but minimum number of views on those videos in intranet facility along with high incidence rate of needle stick injury among staff, contaminated HCAI sample, increased biomedical waste amount and high pressure to maintain updated standard practices made the management think in a way which can solve all these problems and upgrade the quality par. Addressing these above loop holes with an innovation also can result better standard practice compliance.

Principle result: Developing and implementing an infection control e-portal for major stakeholders (staff, patient and caregiver) which can be accessed from outside of hospital, will solve all kinds of problem. The policy information approach in context of infection control and prevention get converted from lengthy function oriented to simplified job profile oriented. The specific needs of each job profile addressed minutely.

Conclusion: Training modules have developed based on workforce category and subcategories. Apart from that portal also offers IC modules for patient and care giver to get the idea of Infections. A list is prepared for each specified job profile having list of things they supposed to do and don't. NABH standard guidelines also added in each relevant training module to enhance the quality par. A 24×7 contact details also provide if any hospital staff committed any work related injury during job hours. For assessment of effectiveness of this training module more than 130 close ended qualitative questionnaires prepared; 10 questions per each job profile.

Key words: e-portal, Infection prevention & control, quality management

ICAHMS/2020/023

An Analysis of Factors Affecting Hospital Management – A Literature Review

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The following is a review paper on diverse issues in Hospital management. Hospitals plays an important role in the Healthcare system of the world. It is where all diverse industries such as pharmaceutical, medical device, hospital finance, human resources, etc work together to give better quality of care to patients. But over the years, due to increasing. But over the years, due to increasing demand to sustain profits and simultaneously give better quality care to patients is becoming a challenging task on daily basis. As challenges increases every day, there is evolvement of technology and innovative strategies to sustain the profitability and effective functioning of the hospital. Though some of the hospitals utilise them, majority do not change their business strategies to meet the demands.

Keywords: Hospital finance, Human resource in Hospital, Health economy challenges, Healthcare Informatics

ICAMHS/2020/024

Hospitals on Park Road

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The case follows the inquiries about the Indian For-profit Hospital Sector by a protagonist. We try to veil the identities of the two hospitals with 'the hospital on the Park Road' and 'the other hospital on the Park Road'. The former hosts the protagonist. It is the conversation between the protagonist and the health manager of this hospital which forms the core of the case. They contrast and compare the strategies of both hospitals with respect to growth models, expansion models (geographical expansion and Mergers & Acquisitions and horizontal and

vertical integration), physician engagement and operations. The protagonist visits 'the other Hospital on the Park Road' to get a balanced perspective on this discussion. The case invites the reader to think about the different levels of competition firms in Indian hospital industry face and hint at the rise of new-gen online players heralding this sector. The case motivates the students to think about the real issues and the practical difficulties faced by the private sector. The case attempts to develop a clear typology contrasting and cross comparing the Fortis Model and Apollo Model which you can further bring out through your own anecdotes.

ICAHMS/2020/028

Influence of Hospital Facility Design on Inpatient Experience

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Background: For the past several years, researchers have been very much interested in the area of patient experience. A deep understanding of facility design factors is essential in order to improve inpatient experience

Purpose. The main purpose of the research was to measure the influence of factors of facility design on inpatient experience. Methods. The research process consisted of mainly three main phases. During first phase the current literature is systematically reviewed to identify the factors of Facility design. In the second phase a focus group interview executed with inpatients and family members to determine key aspects of facility design and in third phase a questionnaire survey with 36 items are conducted among 291 inpatients staying in single private rooms to measure the factors of facility design on inpatient experience.

Results/Conclusion. Reveals the perceptions of inpatients on the facility design of hospital by adding evidences to the existing literature and confirms that the dimensions of facility design (aesthetics, spatial design and interior design) do influence on inpatient experience.

Keywords: Inpatient Experience, Facility Design, Healthcare, Spatial Design

ICAHMS/2020/029

Brand Image to Loyalty: Assessing The Mediating Role of Patient Satisfaction in Healthcare Sector Using Adanco

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In India, many new hospitals are mushrooming in the recent years. To excel in this competitive era, hospitals need to create the necessary niche in the healthcare sector. Patients have become more literate, sophisticated and informed, and expect satisfaction in terms of the quality provided. Hence, this study aims to investigate the relationship among Brand Image (BI), Patient Satisfaction (PS) and Loyalty and the mediating role of Patient Satisfaction in the relationship. The study aims to (1) evaluate the relationship between Brand Image - Patient Satisfaction; Patient Satisfaction – Loyalty and Brand Image – Loyalty, (2) assess the mediating role of Patient Satisfaction between Brand Image and Loyalty, (3) assess the significance of socio-demographic characteristics of patients in determining Brand Image, Patient Satisfaction and Loyalty.

Keywords: Brand Image, Patient Satisfaction, Loyalty, Healthcare.

ICAHMS/2020/020

Medical Innovation and Health Expenditure Before and After Health Reform: A Correlational Study

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OBJECTIVES: This study explores the relationship between a group of medical innovations and a set of health care expenditure variables before the introduction of health reform and after.

METHODS: We assessed two groups of data taken from the databases of the World Intellectual Property Organization and the Organization for Economic Co-operation and Development (OECD) for the periods of 2000–2010 (before health reform) and 2011–2019 (after health reform). The numerous of patent and publications in context to biotechnology, pharmaceuticals and medical technology was considered indicators of medical innovation. The total public health expenditure, health expenditure per capita, and health expenditure as a share of GDP

were considered indicators of health care expenditure. Our dataset included OECD countries that introduced health care reforms between 2010 and 2015. Canonical correlation analysis was used to measure the degree of association.

RESULTS: This study shows that, there is a positive correlation (strong) between medical innovation and health care expenditure before (rc, b = 0.91; p < 0.001) and after (rc, a = 0.94; p < 0.001) health reforms were introduced. Additionally, the degree of this correlation is higher after the health reform period (2011–2019) than before (2000–2010).

CONCLUSIONS: Enhanced and Improved communication channels between societies increase international co-operation, and cost–benefit analysis of medical innovation may help in continuing to improve medical innovation and health care accessibility. We hope that our observations promote the understanding of the relationship and balance between medical innovation and health care expenditure in India or developing countries while fostering an incentive atmosphere for health reforms.

Highlights

- Positive linkage observed between medical innovation and health expenditures?
- Significant positive link is stronger in time periods after health reform than before?
- Reformist environment moderates the interrelationship between variable groups of medical innovation and health expenditures?

Key Words: Medical Innovation, Health Expenditures, Health Reform, Canonic Correlation Analysis

Paper presentation session – VI

ICAHMS/2020/039

Comparison between use of Home Based Diet and NRC Dietary Protocol for Nutrition Rehabilitation in Hospital

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Objective: To compare nutritional outcomes between different nutritional rehabilitation programs—a private hospital that used a diet based on locally available foods and government hospitals using the NRC dietary protocol for management of SAM. Outcome variables: Weight gain (g/kg/day) and WHZ score during discharge

Findings: The authors found the highest improvement in weight gain (g/kg/day) among children in the private hospital though over a shorter duration of stay and higher improvement in WHZ-score in the rural hospitals at the time of discharge. WHZ- admission score and duration of stay were significant predictors of outcome variables in different hospitals. In addition to nutritional outcomes, the paper also observes differences in nature of programs I respective hospitals.

Conclusion: Duration of stay in the Hospital matters, and it is important that the private and district hospitals retain patients for a longer duration to ensure better improvement in weight for height Z scores at the time of discharge.

Keywords: nutrition rehabilitation, malnutrition, weight gain, NRC

ICAHMS/2020/041

Understanding Dynamics of Service Flexibility for Improved Customer Experience and Satisfaction: Evidence from Public Healthcare Sector in India

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Recent research has extensively examined how service provisions rather than goods are fundamental to economic exchange and advocated transforming the entire firm orientation to a concern with services (Gronroos and Gummerus, 2014; Brozovic, Nordin and Kindstrom, 2016). Scholars and practitioners in the field of services marketing garnered this evolving logic and the corresponding shifts into the co-creation of value and relationships. In the prevalence of fluctuating demand and highly uncertain environment, there is a need to redirect the service provisions and marketing strategy by adjusting them for the changing customer requirements as well as the distinguishing characteristics of services. Therefore, multiple dimensions of flexibility are required as an inbuilt mechanism in service provisioning to create experiential value and maximum customer satisfaction. Flexibility is referred to as the ability to adjust capacity and deliver customized services rapidly (Saurez, Cusumano and Fine, 1996).

In management literature, flexibility has been observed as a multidimensional concept, which reflects the abilities to cope with environmental uncertainties and increased responsiveness (Badri, Davis and Davis, 2000; Lu et al., 2017; Sushil, 2017). Early attempts on flexibility led to the identification of fundamental ideas, exploring the functional areas, utilization in the decision-making process, and providing resiliency of policies (Wilson, 1911; Phi and Kappa, 1947; Massie, 1958; Fleming, 1978). A broad body of knowledge on flexibility has been accumulated in the manufacturing sector during the 1980s (Browne et al. 1984; Carter, 1986; Cox, 1989; Gerwin, 1987; Schonberger, 1982; Swamidass & Newell, 1987) and examined its correlations with financial performance parameters as well as non-financial market-based measures like customer satisfaction and loyalty. Over the years, several approaches on flexibility have typically involved trying to investigate the major elements of flexibility, metrics of flexibility, and its performance outcomes (Sethi and Sethi, 1990; Gupta and Somers, 1992; Koste and Malhotra, 1999; Buzacott and Mandelbaum, 2008). Combe (2012) opine that flexibility in service lexicon is under-researched and emphasizes identifying the fruitful regions in which flexibility can be pursued. Under the uncertainties of a high order and scarcity of resources, the execution of flexibility across the delivery system is helpful, some argue essential, in addressing various contingencies (Butler and Ewald, 2000; Golden and Powell, 2000). Several authors (e.g., Combe, 2012; Slack, 2005) have criticized existing flexibility literature for being overly focused on the manufacturing-based models. The service delivery systems in general and healthcare, in particular, are arguably faced with similar challenges to develop the capabilities to exhibit flexibility.

Partly, this gap has been filled by focusing on the valuation of flexibility in services (Aranda, 2003; Correa & Gianesi, 1994; Harvey et al. 1997), linkages of manufacturing flexibility to services

(Eric and Thomas, 2004; Powers and Jack, 2008), dymythyfying flexibility concepts in services (Butler, Leong and Everette, 1996; Butler and Ewald, 2000; Sushil, 2001) and performance outcomes of flexibility in services (Jack and Powers, 2006; Nair, Nicolae and Narasimhan, 2013; Vredenburg and Bell, 2014). Scholars have also implicitly contributed in services flexibility by advocating non-standardization in the process and suggesting adaptations to individual circumstances for value creation (Gronroos and Helle, 2010; Brozovic, Ravald and Nordin, 2015). Explicit contributions remain positioned within the goods perspective as adjustments in product delivery and corrections in the volume of production (Cousens, Szwejczewski, & Sweeney, 2009; Lovelock & Gummesson, 2004). Despite the evolving paradigm of flexibility in marketing, empirical studies that focus on identifying the dimensions of flexibility in services and its crucial link with customers are still scarce. Moreover, recent perspectives on service as value creation suggest that the interrelationship between flexibility and service provider come across in a rather fragmented manner (Gronroos and Ravald, 2010; Heinonen, Standvik and Voima, 2013). The extant literature nevertheless does not explicate the dynamics of flexibility and the process mechanisms of providers to understand the customer idiosyncrasies. Given the need of further knowledge about service provisioning in the rapidly changing environment and dynamic interaction with customers, further investigation into dimensions of flexibility and their role in creating experiential value, and hence customer satisfaction is justified.

Resource-based view (RBV) argues that organizations exhibit flexibility and become sustainable through treatment of resources as central consideration (Barney, 1991; Bhardwaz, 2000). The skills and competencies of the organization utilize the resources which undergo an action to create value for the customers. The acquisition and utilization of valuable resources provide an infrastructure to develop the capabilities which generate operational flexibility and deliver reliable services (Amit and Schoemaker, 1993). The ability of the delivery system to adjust the infrastructure in the changing environment to meet customer demand is referred to as internal flexibility (Jin and Oriaku, 2013). Upton (1994) asserts that internal flexibility nurtures the service capacity and provides robustness to the delivery system by which customer-pleasing capabilities are selected and built. Internal flexibility provides processes and mechanisms that enable the organizations to achieve the desired levels of customer-facing capabilities. Yet, it is unclear what constitutes internal flexibility.

Prahlad and Hamel (1990) contend that service operations should focus on developing capabilities by which superior services are generated and delivered to create customer value propositions. In service delivery context, the capabilities which create value for the consumers and enhance service experience are called as market-focused flexibility (Johnson et al., 2003). Rajshekhar et al. (2005) posit that market-focused flexibility represents the capability of adaptation to the changes to customize the services, and hence closely related to customers. The flexible capabilities allow customization of services and understanding the customers' context facilitating the service delivery systems that are locally adaptive and globally robust. Therefore, the customers can access the services with ease and efficiency and hence, experience the value. Still, there is limited research to examine whether internal flexibility strengthens the mechanism of market-focused flexibility to enhance the customer experience and satisfaction.

The current study attempts to address four research gaps in the extant flexibility literature.

First, we explore the multidimensional view of flexibility and identify the specific dimensions of flexibility in services. Second, we examine how the service delivery systems acquire and utilize the valuable resources to tackle the conditions of uncertain requirements, nurture the service capacity, and attempt to deliver customized services. We provide a unique classification mechanism of flexibility in services regarding internal flexibility and market-focused flexibility and investigate how internal flexibility influences market-focused flexibility. Third, improved service experience and customer satisfaction are achieved by executing market-focused flexibility in the form of numerous adaptation techniques and customized delivery (Logman, 2008; Verdu, Miguel, & Hernandez, 2015; Zhang, 2005), we argue that market-focused flexibility generates the market responsiveness in several divergent ways. Accordingly, we further investigate how customer value creation and satisfaction is affected by different dimensions of market-focused flexible capabilities. Finally, the essence of value creation is related to what customers want service providers to do for them (Vargo and Lusch, 2004; Kowalkowski, 2011), the theoretical gap remains to accentuate the role of customers as co-creator of value while consumption in the flexible delivery environment. Consequently, we present dyadic evidence to gauge the effects of flexibility in service provisioning on customer satisfaction.

Study Context: Public Healthcare in India

The study context was selected as Indian public healthcare for the following reasons. First, healthcare is one the fastest growing sectors within the service economy. According to the World Bank (2015), the rapidly increasing healthcare industry of India is the country's one of the largest sectors, and public healthcare remains a dominant force. Second, public healthcare in India has particularly been challenged to deliver effective services to the community under resource constraints. Third, similar to the other emerging healthcare market, Indian public healthcare organizations have put forth remarkable efforts to increase the quality of experience. Fourth, the government has emphasized the technology-based service operations in public healthcare which has changed the dominant ways of service provisioning and consumption in the last decade (NSSO, 2015). Technology possesses capabilities to cope with uncertain demands and allows to exhibit flexibility.

Research Design

The study employs multi-method and multi-source data to fit the phenomena of flexibility in a public healthcare setting in India. The study first utilized a multi-level case study to extricate the dynamics of flexibility across the service delivery systems. The qualitative data analysis was done using NVIVO 10 software (Welsh, 2002). Thematic analysis was employed to analyze the findings during the qualitative case study. The findings contribute to the dimensions of internal flexibility and market-focused flexibility and provide an integrative framework of internal flexibility, market-focused flexibility, and patient satisfaction. It was further intended to examine the proposed model. To do so, we conducted a survey of healthcare professionals in three major public healthcare organizations in India, and the total of 390 valid responses was gathered. The results of structural equation modelling using Smart PLS V3 reveal that internal flexibility as a second order factor has a positive influence on the dimensions of market-focused flexibility, which in turn positively influences patient satisfaction. Furthermore, the model was also validated through a dyadic study, and we have shown that patient satisfaction

is affected by the possession of flexible capabilities.

Results and Discussions

Healthcare delivery system faces various uncertainties; a failure to sufficiently considering these can have negative consequences for the organization. Flexibility provides a response mechanism to the uncertainties. This study attempts to extricate the dynamics of service flexibility and provides a comprehensive framework in the context of Indian public healthcare, which organizations seek and technology can enable. It is argued that the technology-based service operations are helpful in dealing with uncertainties and contribute to a framework of flexible systems management that amplifies the consumption experience.

The current study provides a framework of service flexibility in the context of public healthcare in India. The concepts and dimensions of flexibility in the healthcare delivery system have been proposed based upon three distinctive elements of flexibility: range, mobility, and uniformity. The framework developed in the study classifies the dimensions of flexibility in terms of internal flexibility and market-focused flexibility. The constituents of internal flexibility include equipment flexibility, employee flexibility, material handling flexibility and auxiliary flexibility. The dimensions of market-focused flexibility are volume flexibility, clinical-mix flexibility, service convenience flexibility and patient recovery flexibility.

It is found that the precise mechanisms of internal flexibility does not directly influence customer value creation, rather facilitate value creation. Hence, the adjustments in service capacity made by providers are not visualized by customers. However, the internal flexibility develops the customer visualized flexible capabilities and which are directly linked with them in terms of customized delivery and adaptations to various circumstances.

The customers (patients) experience value-in-use and thus, the dimensions of market-focused flexibility improve their consumption experience through a diversified set of customized service delivery.

Implications for Theory:

The present study makes an attempt to investigate several dimensions of flexibility in service operations. This research addresses the gap in the literature that was documented in recent studies (e.g., Brozovic, Nordin, & Kindström, 2016; Combe, 2012) to explore the dimensionality of flexibility in service. The existing service literature have implicitly portrayed the notions of flexibility (Gummesson & Gronroos, 2012; Vargo & Lusch, 2008; Verdu-Jover et al., 2004). Our study delineate several kinds of flexibility in service in order to create value to the customers. Previous studies have mentioned that technology enables flexibility in service operations (Bitner, Brown and Meuter, 2000; Nair, Nicolae and Narasimhan, 2013). Our study further explains the role of technological capabilities in execution of multitude of flexibility at various levels of service operations. The study contributes to the extant literature on RBV (Barney, 1991) by identifying the specific dimensions of flexibility in the context of public healthcare. Consistent with previous studies, (Amit & Schoemaker, 1993; Day, 2000) the findings of the current study support that organizations utilize the valuable resources to develop the flexible capabilities.

The findings strengthen the linkage between operations strategy and marketing by providing insight into how operational flexibility enhances the customer experience. Furthermore, the study is a first step to classify the dimensions of flexibility in service operations in terms of internal flexibility and market-focused flexibility and explains how achieving internal flexibility supports the genesis of market-focused flexibility. Prior studies (e.g., Cousens, Szwejczewski, & Sweeney, 2009; Toni & Tonchia, 2005) merely make mention that the service providers must adjust its processes in order to create value to the customers. This study illustrates several adjustments of service capacity (e.g., equipment, employee, materials and acquiring external resources) that constitute internal flexibility. Previous research have shown that employee flexibility directly affects value creation (Beltran-Martin and Roca-Puig, 2013; Vredenburg and Bell, 2014; Tuan, 2016). Our study explain that employee flexibility is an internal form of flexibility which is not directly visualized by customers. Customers value the manifestation of employee flexibility in terms of their capability to provide customized services (service offerings, convenient delivery and complaint handling).

Moreover, our study goes beyond the established framework (Johnson et al., 2003; Javalgi et al., 2005) in proposing an integrative framework of internal flexibility, market-focused flexibility, and the impact of market responsiveness to the patients in several divergent ways. The study supports the recent perspectives on service as value creation (e.g., Gronroos & Gummerus, 2014; Lusch & Vargo, 2010) and contends that the dimensions of flexibility increases the responsiveness towards customers and creates experiential value. The findings of our studies are also consistent with the previous studies on flexibility and performance outcomes (Powers and Jack, 2008; Nair, Nicolae and Narasimhan, 2013) by establishing a linkage between flexible capabilities and customer experience and satisfaction.

Implications for practice

The findings of this study have several implications of interest to healthcare practitioners and policymakers. The proposed framework could be used in practice-oriented research to develop flexible strategies for transforming the consumption experience in public healthcare domain. Implying the results, public healthcare organizations must invest in technological capabilities to attain flexible operation of services. The framework can be used by healthcare practitioners and policymakers to support their further development regarding the design of care and provisioning of services. In a healthcare setting, marketing strategists and planners develop internal competence to respond to the need of patients. The use of efficient and multi-tasking equipment, efficiency in material handling and human resource practices (e.g., staffing and training, handling multiple tasks, ability to work with multiple equipment) can help to instigate flexibility as an organizational culture. The proactive arrangements and inter-organizational relations play an important role in providing auxiliary services to the patients. While dealing with complex conditions of the patient, the network of physicians and second opinion helps the hospital to improve patient care. This allows the rapid mobilization of medical experts from external organizations for treatment, diagnosis, and follow-up. Volume flexibility and clinical-mix flexibility supports the service delivery systems to achieve mass customization through the ability to serve a high volume and providing a range of service offerings. This study suggests that the administrators may selectively deploy and manage the service convenience

flexibility strategies and more focus can be given on the different aspects of convenience for better responsiveness and hence, increased patient satisfaction. Appropriate management of PRF is critical to the success of service delivery system. Healthcare organizations with high PRF can update the information on services and solve the patient complaint. This increases the responsiveness towards patients and hence attempts to reduce the dissatisfaction.

The elements of flexibility as well as several dimensions of provider flexibility are mutually inter-connected. Additionally, value formation occurs in cumulated reality and ecosystem of customers. Thus, the model presented in the study in combination with table may serve as guiding tool for marketing managers how the various kinds of flexibilities can be achieved in order to develop value propositions. Furthermore, service providers have the opportunity to inform and train how to appropriately capture and experience value.

Customer experience has emerged as a strategy to help providers retaining satisfaction of patients in the long-term and become sustainable. It is important for public healthcare organizations to develop flexible capabilities consistent with value for patients. This study has outlined a healthcare flexibility strategy to meet a critical national need for personalized care and transforming the consumption experience in public healthcare domain. With an informed understanding of both patient's need and expectations and the capabilities to deliver, the public healthcare system will be better able to help the patients achieving enhanced quality and experience of care. Public health policies that facilitate flexibility and that allow customized service solutions to emerge at various levels of delivery will generate best possible healthcare outcomes for the community.

Limitations and Future Research

Although the study assimilates the mechanisms of flexibility and its linkage with customer satisfaction, future studies should investigate the framework with more samples of organizations in another healthcare market to enhance the understanding on how market forces matters under different uncertainties and market characteristics. The customer's perspectives were also not included in developing the flexibility framework. Although, the framework was validated through the survey of patient satisfaction. It is urged to examine the framework by including customer data in future studies.

Evidence suggests that the concept of customer experience of care and customer profiles in healthcare, particularly in public healthcare, are different than their counterparts in private organizations as well other service sectors (e.g., restaurants, tourism, and airlines). Therefore, the other complex parameters in public healthcare domain remain unexplored which needs further investigation.

Finally, it is acknowledged that the complexity of healthcare service operations and the increased emphasis on experience quality, the contextual influences of the intensity of competition with private players, and demographic variables (e.g., age, tenure) may affect the relationships established in the study. Hence, the study also provides a direction to examine the complementary effects of the said variables in order to provide a better understanding of the framework so that increased service experience is achieved especially in emerging economy like India.

ICAHMS/2020/043

Barriers in utilization of Maternal and Child Healthcare Services among Tribal population in Maharashtra: Perspectives from the Health Service Providers

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Background:

Antenatal care (ANC) and Post-partum care (PNC) are two of the most crucial aspects of Maternal and Child Health which further can prevent the risks of Infant mortality rate and Maternal Mortality rate. In India the Maternal and Child Health scenario has been improved a lot in last few decades. However, the scenario amongst the scheduled tribes has not changed much compared to the NFHS 2 and 3. It has been observed that, mostly of the tribal populations in India have low health indicators on comparison to the general population, SCs and OBCs. (NFHS 4, 2015-16) Most of the Tribal women are suffering from anemia, the percentage of receiving at least 4 ante natal care check-ups from a skilled health care professional are persistently low amongst the tribal women. Also, the percentage of tribal women utilized any post-natal check-ups from skilled health providers, for themselves and their children are also very low. (NFHS 4, 2015-16). A study in the tribal areas of Maharashtra suggests that, a large number of mothers had reported that, they never felt the need of utilizing the PNC services after delivery. The same study also had shown that a significant number of women had no awareness about PNC services or not informed about PNC services by the health worker. (Bhaisare & Khakase, 2014)

The problem of low utilization of ante-natal care and post-natal care among tribal are very much persistent through decades. Mostly of the tribal people lacks of proper knowledge about ante natal care, post-partum care, exclusive breastfeeding practices and immunization. Besides, ethnocentric indigenous norms about ante-natal care and post-natal care, breastfeeding (i.e. discarding the colostrum, or not feeding the new born honey etc. other than breast milk) creates nutritional deficiency among the Infant and Young Child feeding practices and further those results into child mortality amongst the Indian tribes. Years after years many report have shown a dreadful picture of higher child mortality rate, low maternal and child health indicators, high IMR, MMR, postnatal mortality rate among the tribal population (Begum et.al, 2017). It has been found that the problem of underutilization of health services is deep-rooted in the socio-economic and cultural background of the health seekers. Not only they are basically unaware of the services available but also there are no motivating forces to help or guide them to use maternal care services (Negi, 2010).

On other hand language barriers, lack of proper community-responsive skillsets to serve the tribal people, lack of resources and technology, difficult geographical terrains, inadequate resources and technology, sometimes create barriers among the health service providers to serve. (Altman et.al. 2018)

The article examines various structural and institutional challenges faced by the public health service providers, along with that the article focuses on identifying key socio-economic and cultural barriers towards utilization of maternal and child health care services among the tribal communities of Nandurbar district, Maharashtra as per the health service providers' perspective.

Maharashtra accounts for 10.06 percent of the tribal population in the country and has the second largest tribal population. (Census 2011). The recent data from NFHS 4 data also shows a significantly low percentage of tribal women in Maharashtra went for the institutional delivery and a meager percentage of tribal women went for the post-partum care from a health facility.

The tribal predominated district Nandurbar (more than eighty percent of the population are tribal in Nandurbar) in north Maharashtra has the lowest Human Development Index (HDI) of 0.604. and there are two most backward blocks which has been identified by UNDP due to the lowest Health Index(HI), Standard of Living Index (SOLI) and Educational Index(EI). These two blocks are Akkalkuwa (HDI 0.308 and HI 0.293) and Akrani (HDI 0.26 and HI 0.166). Recent data had also shown that, Nandurbar has the lowest percentage of the usage of four of more ANC services by the mothers (53%), lowest rate of institutional delivery (56%) and also lowest rate in receiving PNC from trained Medical Personnel within 2 days of delivery (53.3%), which is quite an alarming data. (NFHS 4). The Infant Mortality rate and the maternal mortality rate are also higher in these two blocks, due to the lower access and utilization of Maternal and Child health care services. The Maternal Mortality Rate is still 100 per 1, 00,000 in Nandurbar, which is far above from the Maharashtra and India. (The Indian Express 2019).

Research Questions:

Despite various programs conducted by the government as part of Information, Education & Communication (IEC) activities on maternal and child health, there continues to be low utilization of ANC and PNC services by tribal people. There many studies which focuses upon the health services users' perspectives (here the tribals people), however there are very limited studies which explores perspectives of health service providers who are working in the tribal areas. A study conducted in Ghana with the Health services providers who are serving the person's with physical disabilities suggests that, understanding health service providers' perspectives can help in development of area specific interventions to improve healthcare delivery. (Ebenezer et. al. 2019). Hence, this study tries to track these factors from the perspective of the public health service providers who are working in aforementioned blocks of Nandurbar district, Maharashtra. The article explores answers to the below mentioned research questions. These research questions are being incorporated as open ended questions in the interview guide. These questions are as follows:

- What are attitudes and level of acceptance of the Tribal people towards the Public Health care service providers?
- What are the key factors associated behind the low utilization of ANC and PNC services by the tribals?
- What kind of challenges are faced by the Public Health Service Providers while serving in these areas?
- Are there any needs for skill development of the Public Health Service Providers serving specifically in the tribal areas which can improve the service delivery system?

Materials and Methods:

This study is based upon qualitative data. In-depth interviews with the block level medical officers ANMs, and ASHAs from both of the study blocks; i.e. Akkalkuwa and Akrani of Nandurbar district Maharashtra A total number of 7 in depth-interviews were conducted. Along with that the field notes collected through participant observation method by the researcher was also taken into account.

The nature of the data collected was audio-recordings and each of the interviews was carefully transcribed, after repeated validation and triangulation of the data. The audio-tape recordings were transcribed word by word without changing the structure of sentences. Additional comments/gestures made by the participants, as well as expressions during the interviews were recorded separately with each transcribed data record. The initial audio-recordings were in Hindi, which was translated and transcribed.

The data was analysed by thematic analysis approach. Therefore, the findings of this study are based upon the aforementioned research questions which are the key themes for the thematic analysis of the data collected for this study purpose.

Findings and Conclusion:

Four key thematic areas have been identified which are: 1) Socio-cultural barriers (which explains factors like illiteracy and ignorance among the tribal people, ethnocentric behavioural aspects among the tribal people related to maternal and child health care, negative attitude towards utilizing the public health services among the gatekeepers within the family, i.e. mother-in-laws, husbands etc.); 2) Geographical and Institutional barriers (which explains barriers related to lack of all-weather commutable roads which thwarts the health service delivery system and prevents the tribal people from utilizing health services, inadequate number of staffs, medical officers etc.) 3) Barriers related to the lack of community responsive skillsets among the ANMs , ASHAs etc. . (which explains that, since most of the health personnel in these blocks are from non-tribal communities therefore, sometime lack of community –responsive strategies and skills hinders the health awareness generation activities) and 4) Barriers related to the absence of proper reinforcements (i.e. proper staff quarters, etc.) for the health service providers who works in these difficult tribal areas, which often demotivates the health personnel and force them to leave the job.

Therefore, these issues needed to be addressed in a way by implementing some micro-level

area-specific intervention programmes which could bridge the gap between the health service providers and health service users create a community responsive health service delivery system which could encourage the tribal people to utilize Maternal and child health services.

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Health Care in India-Legislative Measures (With respect to a proposed legislation)

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In majority of the countries, quality of care provided by the health care delivery system has come into sharp focus. Since quality is a crucial factor in health care, initiatives to address quality of health care have become worldwide phenomena. Many countries are exploring various means and methods to improve the quality of health care services. In India the quality of services provided to the population by both public and private sectors remains largely an unaddressed issue. The current structure of the healthcare delivery system does not provide enough incentives for improvement in efficiency. Mechanisms used in other countries to produce greater efficiency, accountability, and more responsible governance in hospitals are not yet deployed in India

State Policy strives to provide a welfare State with socialist patterns of society. It enjoins the State to make the "improvement of public health" a primary responsibility. Furthermore, Articles 38,42,43 and 47 of the Constitution provide for promotion of health of individuals as well as health care.

The various legislations for health care in India are –

1. The Bombay Nursing Homes Act 1949
2. The Bombay Nursing Home Registration Act (Amendment) 2006
3. The Bombay Nursing Home Registration Rules 2006
4. The Clinical Establishments Act – 2010 the government is showing enthusiastic approach objective of the Act. It is expected that in the coming years each and every clinical establishment in India will he systemizes equipped with all the basic minimum standard of medical care so that the healthcare in India will be an appreciable revolution.
5. The Maharashtra clinical Establishments (Registration and Regulation) Bill 2014.

The Maharashtra clinical Establishments (Registration and Regulation) Bill 2014. Draft is tabled in the Maharashtra legislative Assembly. The Act in the Preamble clearly states the need for such an act where it says that it is very necessary to provide for the registration and

regulation of clinical establishments, to secure the rights of the patients and also the health care providers. This act intends to secure the rights of the patient as well as the health care providers.

India is already outshining itself in the global strata of pharmaceutical market. It is apparently a boon above that for the fact that India is expected to witness a tremendous improvement in its public health as the Government is showing enthusiastic approach towards striving at the objective of the Clinical Establishments (Registration and Regulation) Act, 2010. With the implementation of the diligently drafted standards through this Act, it is expected that in the coming years each and every clinical establishment in India will be systematized and stringently compelled equipped with all the basic minimum standard of medical care and hence, the scenario of healthcare section in India is expected to grow through a tremendously appreciable revolution.

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Cost analysis of the Mobile medical unit program in Andhra Pradesh: A Micro costing study protocol

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Introduction: Provisioning primary healthcare through mobile medical units is an innovative way to reach rural and vulnerable populations. With 277 mobile medical units, the Andhra Pradesh mobile medical unit program is one of the most extensive health outreach programs in rural India. However, India lacks reliable cost estimates for the health services delivered through mobile medical platforms. This study aims to estimate the unit cost of providing primary care services through mobile medical units in rural and tribal areas of Andhra Pradesh.

Method and Analysis: We will undertake a cost analysis of 12 mobile medical units (6 rural; 6 Tribal). We will use the activity-based micro-costing technique from the health system perspective. Cost estimation A bottom-up approach will be used for cost estimation. Standardises tools will capture data on activities and resources and costs. Capital investments and recurrent costs will be measured and evaluated. Median Unit costs along with 95% confidence intervals, will be reported. Sensitivity analysis will assess the cost estimate uncertainties and other cost assumptions.

Ethics and Dissemination: Piramal Swasthya Management Research Institute & 39; s ethics committee approved the study (PSMRI/2019/10). The findings will be disseminated through conference presentations, publications in peer-reviewed journals and advocacy with the national and state governments. This study will provide first-hand comprehensive cost estimates of the Mobile medical unit in India.

Strengths and limitations of this study

- This protocol contributes to the evidence regarding cost- analysis of healthcare service delivery through mobile medical units in the Indian setting?
- This replicable protocol can assist in designing cost analysis for similar mobile, community-based public health interventions?
- The study design will contribute to our understanding of fiscal space for investments in healthcare service delivery through innovative platforms like mobile medical units?
- Costing studies on service delivery through mobile medical units in other regions using this method may require piloting and modification, keeping contextual factors in mind?
- An economic evaluation study might be able to shed better light on both cost and effectiveness?

Key Words: Cost analysis, Mobile Medical Unit, Micro-costing study, Bottom-up approach costing.

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Medical Management during Disasters: Lessons Learnt from Uttara hand Flash floods (June 2013)

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Hilly State of Uttarakhand witnessed a massive calamity because of cloudburst followed by flash floods in June 2013.The impact of the disaster was unfathomable for the local populace as well as for the pilgrims taking Chardham Yatra. Officially ,169 people died and 4021 people were reported to be missing (presumed dead later on). This author along with a small medical team was amongst the first batch of responders and was deployed on one of the worst affected axis. Continuous rainfall, biting cold and non- availability of food, water, shelter and clothes aggravated the already peril conditions and thus contributed towards a significant number of casualties. The medical team, by overcoming the initial hurdles of disturbed communication and poor connectivity, successfully managed around 4300 patients and evacuated them to Base camps. The clientele load included debilitated and weak people of advanced age and women, children and young people who were on pilgrimage and also the local population from the nearby villages. The Team established a mobile Medical Aid Post in Uttarkashi district and effectively carried out Triage, provided urgent resuscitation and treatment and safely evacuated casualties backwards, later on to be transferred by air to Dehradun. The disease profile encompassed Upper Respiratory Tract infections, Fever, Gastroenteritis, Conjunctivitis, Jaundice, Malaria, fungal infections and blunt and sharp trauma cases. However, the biggest challenge was to cater to the medicine requirement of old-age people suffering from non-communicable diseases such as Hypertension and Diabetes who were in possession of

limited stock of their routine medications. Missing any dose by these patients would have been of fatal consequences. Also maintaining high hygiene and sanitation levels in the camps was desideratum to contain cross-infections. Better coordination, smooth cooperation among stakeholders and capacity building of the local people are the key takeaway from the Humanitarian Assistance and Disaster Relief Mission which has been termed as Operation Sahayata.

Key words: Disaster, cloudburst, Mobile Aid Post


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