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My Health My Right – A Provider Perspective

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Health rights are fundamental to our well-being and autonomy. They encompass various aspects, including the right to access healthcare services, the right to make decisions about our own body and treatment options, and the right to privacy and confidentiality regarding our medical information (OHCHR & World Health Organization, 2010).

On behalf of IIHMR Bangalore, I feel honoured that I had a great opportunity to moderate an expert panel discussion to mark the occasion World Health Day, 7th April 2024. The theme My Health My Right for this year aptly focuses on patient rights, empowerment, and patient centricity in care process. We are aware that the latest edition of 'Key Principles of Right to Health' is participation and accountability along with access, availability, affordability, and quality of healthcare (OHCHR & World Health Organization, 2008). Keeping this in mind the panel discussion aimed at understanding the nuances of how the right to health of vulnerable patients and their participation in decision making, as well as provider accountability could be configured during care processes.

Panel of experts included - Dr Chethana. H. S. physician/hospital administrator turned lawyer, Dr Mayur Kaku popularly known as yogic-neurosurgeon, Dr Neema Bhat-Paediatric oncologist, Dr Vikrant Pawar – Critical Care expert and Dr. Pushkar Desai- Consultant Anaesthesiologist. The on-line interactive discussion was tailored for a specific audience comprising of doctors, nurses, hospital managers, and healthcare consultants. This diverse group of professionals plays a crucial role in the healthcare sector, each bringing their unique expertise and perspective to the table.

The first question that arises is what constitutes the right to health in India, a fundamental right that has not been explicitly included among the six fundamental rights. Many of us may not know that right to health in India is not distinctly mentioned in the Constitution but is implied as a fundamental right through Article 21 and Directive Principles of State policy (DPSP), making access to healthcare a fundamental right (Shekhar et al., 2023; Singh, 2023). Dr. Chethana, doctor turned lawyer conveyed that enforcement of the right to health is done through various case laws and judgments, establishing it as an inherent part of the right to life. As health is a state subject, DPSP plays an important role in promoting public health and welfare, including provisions for worker health, maternal health, and a pollution-free environment.

Source: 'World Health Day 2024 - 'My health, my right - PAHO/WHO | Pan American Health Organization

Ensuring access, availability, affordability, and quality can be effectively achieved through initiatives such as health programs, Ayushman Bharat, QCI, NABH, NQAS, etc. but encouraging people to actively participate in their health-related decisions and accountability may require some nudge and equal participation from healthcare providers. This is exercised though informed consent, assent, patient education, counselling, and similar processes.

Addressing this Dr Mayur Kaku, stressed on importance of holistic patient education in making informed decisions about surgery (taking examples from his specialty are of neurosurgery) or any other treatments.

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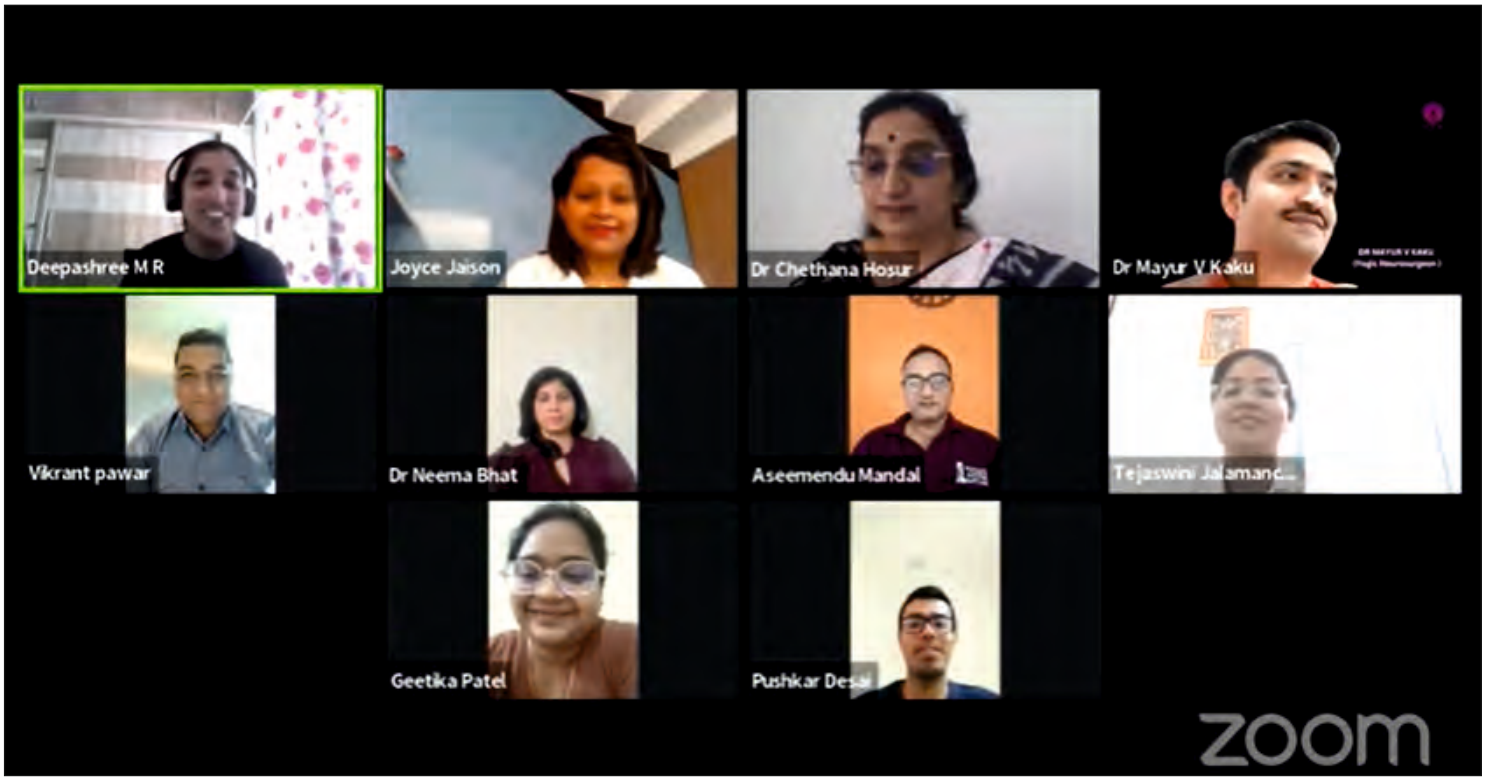

Source: Screen shot taken during panel discussion.

Being a 'yogic neurosurgeon that he is', he emphasized that educating patients on the type of treatment, including the diverse options available from traditional, alternative, and modern medicine systems, empower individuals to take charge of their health, make informed choices, and benefit from a more holistic and personalized approach to healthcare. May be not many hospitals have capacity to provide 'holistic approach or alternate medicine', but most can provide opportunities for 'second opinion', and 'encourage patients to participate actively in treatment choices. Information and communication are key to empowering patients and families.

The panel discussed 'informed consent' as an essential aspect of upholding patient rights and rightly so! This critical process may be seen as routine exercise by healthcare providers, at least in some cases. This simply means that patients have right to information (& further understand) regarding their condition, treatment options, risks, and the freedom to make decisions (Bazzano et al., 2021). This is a shift towards patient-centered care over paternalistic approaches in healthcare delivery, all over the world. In today's digital age, patients are increasingly informed about their medical conditions and this Dr. Google phenomenon provides a kind of medical autonomy for patients albeit its complex effects and consequences. Therefore, it even more imperative that the healthcare providers practice 'informed consent' process even more diligently. It is not anymore, a professional obligation but also a legal and ethical necessity. It is a shared responsibility of doctors, hospitals, and patients or their families.

Dr. Pushkar Desai- Consultant Anaesthesiologist, also discussed at length taking consent which has moved from mere paper signing ritual to video consenting. He explained how video consenting through animated 3D procedural videos enhances patient understanding and connection with healthcare providers, leading to better outcomes. Video consenting is gaining popularity worldwide as an alternative to traditional informed consent processes. Dr. Pushkar sagely responded to an audience concern that a patient would become anxious if we began displaying 3D procedural images by saying that the video might be customised depending on the doctor's judgement. Well, patient-doctor trust and communication is fundamental to all types of consent taking – video or verbal.

Evolution from paternalistic healthcare to patient-centred care, emphasizing the role of healthcare providers as partners in patient care. Healthcare service is 'co-creation' or 'co-production' in service management terminology. Here, one may ask, “how to involve vulnerable patients in medical decision making?' Explaining this complex process, Dr Neema Bhat-Paediatric oncologist said that it is best to involve children and adolescents in the decision-making along with parents. Doctors must explain them in a language that they understand which helps in confidence building. Dr. Neema elaborated on 'Informed Assent', very important while treating children.

Informed assent from paediatric patients become extremely challenging, especially between the ages of 13 to 18, where adolescents are in a tumultuous mental stage, making it challenging for medical providers to

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balance treatment urgency and involving the patient in decision-making in care processes. Adolescents may require multiple sessions to open and participate actively due to their insecurities or fears. Dr Neema Bhat, advised not to take up treatment unless the child is ready for it.

The next topic of discussion revolved around making health decisions on behalf of others. Yes! Here I am talking about the next vulnerable group - patients in critical care and elderly patients. Generally, grown up children of the elderly are involved in the process. A special case of how to deal with children living abroad and the complexities that arise out of that. Video calls have been a good option for physicians to discuss with children living abroad. However, cultural differences impact when and how decisions are made, with Western practices differing from those in India. The Critical Care Physician must navigate through such situations even more carefully. Elaborating on this, Dr Vikrant Pawar – Critical Care Expert, said that there is no open discussion on end-of-life care/situation in India as a common practice, yet. The bottom line is that the healthcare provider must honour the family's wishes while also offering guidance on the rapidly changing (or deteriorating) health conditions of the elderly. Overall patients, their family members and providers have equal responsibility in executing rights to health. It is crucial for both healthcare providers and patients to engage in open communication and consider all aspects of critical care, surgery, or any other treatment options. The 'Do Not Resuscitate' (DNR) order is still not documented legal practice in India. It is verbal communication between the clinician and the patient's relative or caregiver. In 2018, the Supreme Court of India created a process of 'living wills' to allow terminally ill patients, with no hope of a cure, to withhold or withdraw treatment and die with dignity. Its implementation has been slow in general, and the complexities involved make it difficult to operationalize the legal matters.

Taking the discussion forward, the importance of patient autonomy and fundamental rights in healthcare decision-making, including the right to information and refusal of treatment were discussed. Patients have the right to refuse treatment, leading to discussions on living wills, advanced directives, and euthanasia. Legal and ethical considerations surround end-of-life decisions, requiring thorough family discussions and medical evaluations. Advanced Medical Directive (AMD) is a right allowing individuals to decide on their level and manner of care in terminal or incurable conditions, ensuring a meaningful survival beyond mere existence said Dr Chethana. The core takeaways from the panel discussion on "My Health, My Right" is the fundamental importance of individuals having control and authority over their own healthcare decisions. This means everyone should have access to healthcare services regardless of their background or financial status. Secondly, it's about making sure people are fully informed about their health options so they can actively participate in deciding what's best for them. We need to prioritize educating people about their health so they can make well-informed choices. Third, involving patients in decision-making fosters a better rapport between patients and providers. Lastly, though decision during critical care or executing an 'living will' (AMD) is challenging, but such decisions will assist us in purposing dignified death.

One and half hour of discussion seemed 'shorter', the discussion on a tough subject of 'My Health My Right' theme was kept lively, and the audience participated actively, posed questions, and said that 'they often tend to practice informed consent taking process routinely'. Many were impressed by the diverse, yet best practices explained by the experts and felt that they understood the importance of patient/family engagement and involvement much more deeply. Audience engagement during My Health My Right' discussion was quite well balanced, and insights from the Q & A imply that clinicians, hospital managers and other healthcare providers need training a variety of areas such as sensitizing, mandatory, hands-on, refresher and open discussions on the topics must be 'on going' feature among providers in healthcare facilities. Patient/family engagement, education and empowerment occupies the centre stage, it is the way to go forward. It is heartening to note that hospitals and providers are taking initiatives in this regard. Specific mention must be made that there is a growing knowledge regarding statutory and ethical obligations, but as always, much more needs to be done for safeguarding patients' well-being, promoting patient-centred care, and advancing equity within healthcare system.

Let us join hands to further 'My Health My Right'

Acknowledgment:

I am immensely grateful to Dr. Usha Manjunath, Director, IIHMR Bangalore, for her valuable inputs and assistance in copy editing the article. Her expertise and guidance have greatly enhanced the quality of the content.

I would also like to extend my gratitude to Ms. Joyce Jaison and Mr. Lambodhar for organizing the enlightening panel discussion. Their efforts in bringing together a diverse group of experts have provided valuable insights and perspectives on the topic at hand.

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ACADEMIC PROGRAM

IIHMR-B INTRODUCES INDIA'S FIRST POST GRADUATE PROGRAM IN DIGITAL HEALTH

The Institute of Health Management Research, Bangalore, is pioneering a groundbreaking initiative in the realm of education by introducing India's first Post Graduate Program in Digital Health. This innovative two-year program, slated to commence in 2024, is strategically crafted to address the burgeoning demand for skilled professionals proficient in Artificial Intelligence (AI) and Data Science within the healthcare domain.

With Industry 4.0 driving transformative changes, the integration of AI and Data Science emerges as a crucial paradigm reshaping healthcare delivery and management. By amalgamating management principles with cuttingedge technologies, the program endeavors to equip aspiring healthcare professionals with the requisite expertise to navigate the complexities of AI and Data Science, fostering a new era of efficiency and effectiveness in healthcare services.

Launching PGDM- Artificial Intelligence (AI) and Data Science Program in IIHMR Bangalore

This pioneering program stands as a testament to the Institute's commitment to bridging the gap between healthcare and technology, thereby bolstering the digital health ecosystem.

Boasting a specialized curriculum meticulously tailored for the healthcare industry, students will delve into a comprehensive learning experience encompassing statistical analysis, mathematical reasoning, and advanced AI concepts. Moreover, the program offers unparalleled opportunities for hands-on experience through real-world projects and internships, providing students with the practical acumen to apply AI and Data Science in healthcare settings effectively. With access to esteemed faculty and professional networks, graduates of this program are poised to embark on promising career paths as healthcare data analysts, AI project managers, and clinical data managers, thus ensuring a seamless transition into the dynamic landscape of healthcare technology.

DIGITAL LEARNING EVENTS

Success Spring Korero

IIHMR Bangalore's Success Spring Korero webinar on successful placements was an insightful event where second-year students took the stage to discuss their journeys to secure coveted positions. Dr. Nehal Gupta and Dr. Sai Keerthana who are placed at Magma HDI General Insurance shared their journey from being astudent to achieving their desirable placement.

Dr. Nekkadapu Tulasi Priya, Dr. Shubhra Singh and Ms. Sneha Deka who are placed at Mediassist Healthcare Services, shared invaluable insights and experiences. Their stories not only inspired their peers but also provided valuable lessons on navigating the competitive job market and excelling in interviews. Dr. Lakshmi Vishwanath, a first-year student at IIHMR Bangalore was the moderator of this session. This session was a testament to IIHMR's commitment to preparing students for successful careers in the healthcare industry.

Master Stroke 16.0

"Master Stroke 16.0" proved to be an enriching installment in IIHMR's webinar series, offering a profound glimpse into building thriving careers within the healthcare domain. The event showcased the invaluable experiences and insights of distinguished alumni who have excelled in their respective fields. Mr. Harish Ramanathan M , Manager of Technology at Karkinos Healthcare, Dr. Isha Maharana, Manager of Consulting at BioQuest Solutions Pvt Limited, and Dr. Madhusha Keshmoni, Senior Software Engineer at Citius Tech, shared their expertise, shedding light on the

healthcare industry and the pathways to success within it. Moderator for the session was first-year student Dr. A.S. Karpaga Raksha. "Master Stroke 16.0" epitomized IIHMR's commitment to nurturing and empowering its students to become future leaders in healthcare.

World Health Day

On April 7th, 2024, a significant webinar commemorating World Health Day took place under the theme "My Health, My Right." Esteemed speakers, including Dr. Mayur Kaku, Dr. Neema Bhat, Dr. Pushkar Desai, Dr. Vikrant Pawar, and Dr. Chethana H, came together to discuss health rights and freedoms.

Their insights shed light on the importance of individuals' rights to access quality healthcare services and make informed decisions about their well-being. Moderating the session was Dr. M. Deepashree R, who skillfully facilitated discussions and ensured that diverse perspectives were heard. This webinar not only raised awareness about health rights but also emphasized the significance of advocating for equitable healthcare access for all.

Navigating the future: Envisioning India's Pharmaceutical Industry in 2047

On April 25th, a thought-provoking webinar titled "Navigating the Future: Envisioning India's Pharmaceutical Industry in 2047" was conducted, tailored specifically for the students at Modern College of Pharmacy, Pune. The session featured Mr. Shamsuzzaman Ansari, a distinguished faculty member specializing in pharmaceutical management at IIHMR Bangalore, as the keynote speaker.

Through his expertise, Mr. Ansari provided invaluable insights into the future landscape of India's pharmaceutical sector, projecting advancements, challenges, and opportunities that await in the year 2047. Students were offered a unique opportunity to gain foresight into the industry's evolution, empowering them to prepare strategically for their future roles within this dynamic field. This webinar served as a beacon guiding aspiring pharmacists towards a deeper understanding of the industry's trajectory and their potential contributions to its growth and innovation.

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CULTURAL EVENTS

WOMEN'S DAY- EMPOWERING ELEGANCE

March 8,2024

"Here's to strong women. May we know them. May we be them. May we raise them."

With this beautiful sentiment as our guiding light, IIHMR Bangalore celebrated International Women's Day. The colors symbolized the essence of womanhood, portraying strength, resilience, and grace. Dr. Vaidehi's warm greetings set the stage for a day filled with celebration and camaraderie.

As the program commenced, participants eagerly engaged in various in-house games designed to celebrate the spirit of womanhood. From guessing the names of empowered women around the world to lively rounds of musical chairs, the atmosphere was filled with laughter and camaraderie. One of the highlights of the event was the "Guess the Name" challenge, where participants showcased their quick thinking and with Dipan's soulful rendition dedicated to all the beautiful women added a touch of melody to the day.

ALUMNI SPEAK

Dr. KRITIKA SARKAR
Data Analyst
Karkinos Healthcare Private Ltd.
Bangalore

Dr. Kritika Sarkar, a proficient Data Analyst at Karkinos Healthcare Private Limited in Bangalore, generously shared her journey, which serves as a testament to resilience, adaptability, and an unwavering passion for leveraging technology to reshape the landscape of healthcare.

Originally trained as a dentist, Kritika's professional path took a transformative turn as she identified areas for growth in her skill set and embraced opportunities for development. Transitioning seamlessly into roles in hospital administration and public health, she showcased a remarkable ability to navigate change and acquire new competencies.

Motivated by her deep-seated belief in the power of technology to improve healthcare outcomes, Kritika found her calling in healthcare IT. Her expertise in natural language processing (NLP) models and clinical data modeling underscores her commitment to extracting meaningful insights from complex datasets. Armed with tools like Metabases and proficiency in SQL queries, she empowers clinical teams with actionable intelligence derived from intricate data.

Dr. Kritika's journey has been marked by challenges, underscoring the importance of continuous upskilling and adaptability in the ever-evolving healthcare landscape. Her vision for inclusive healthcare accessibility reflects her dedication to societal well-being, drawing inspiration from trailblazers like Devi Shetty and her esteemed role model.

Beyond her professional pursuits, Dr. Kritika finds solace and inspiration in her personal interests. Whether through her passion for music, artistic expression, or immersion in literature, she embodies a holistic approach to life. These pursuits not only bring her joy and relaxation but also serve as pillars of her overall well-being, nurturing her mind, body, and spirit.

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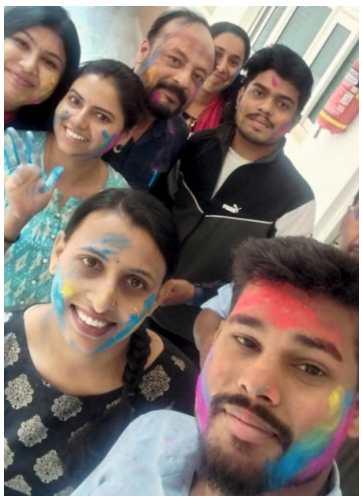
Highlighting the invaluable contributions of women at work, the event honored their dedication and resilience with heartfelt tokens of appreciation. It was a moment to cherish as the winners of the various games were celebrated for their enthusiasm and spirit. In the end, amidst laughter and applause, IIHMR Bangalore came together to honor and celebrate the remarkable women who light up our lives each day.

SPLASH OF JOY: IIHMR-BANGALORE PAINTS HOLI WITH VIBRANT CELEBRATIONS

March 25,2024

The campus at IIHMR- Bangalore was adorned with colors, for the Holi celebrations. Holi, the festival of colors, was celebrated with great fervor and enthusiasm, bringing together students, faculty, and staff in a spirit of joy and unity, creating a festive atmosphere that resonated with laughter and cheer. From traditional Holi games to indulging in festive treats, everyone participated wholeheartedly, spreading happiness and building cherished memories.



Amidst the array of vibrant colors and spirited music, it was a moment of pure joy for everyone who was a part of the celebration. Faces lit up with smiles as people smeared each other with gulal, spreading happiness and cheer. As everyone danced to the beats of traditional Holi songs, the spirit of unity and camaraderie filled the air. It was a beautiful sight to see people from diverse backgrounds coming together to celebrate the essence of togetherness and harmony.

ALUMNI SPEAK

Dr. Kritika emphasizes the importance of seizing every moment and pursuing one's passions wholeheartedly. She encourages students to explore their interests, regardless of their initial career paths, and to focus on developing skills that facilitate confident self-presentation in interviews.

SPREADING HOPE, SAVING LIVES: IIHMR-B'S BLOOD DONATION DRIVE

April 22,2024

IIHMR Bangalore Campus partnered with Narayana Health on April 22, 2024, for a highly successful Blood Donation Drive. This noble endeavor not only saved lives but also underscored the power of community unity and compassion in times of need.

The event aimed to raise awareness about the critical importance of blood donation and inspire voluntary contributions from our campus community. IIHMR extends profound gratitude to Narayana Health for their invaluable support and collaborative spirit, which played a pivotal role in orchestrating this impactful initiative.

Thanks to the concerted efforts of all involved, a significant number of blood donations were collected, highlighting the remarkable generosity and empathy of our campus community. Each donation possesses the potential to be a lifeline for multiple individuals battling critical health conditions, offering them renewed hope and a chance at recovery.

Twenty-five donors were honored and presented with certificates as tokens of appreciation for their active involvement in this life-saving endeavor. Their unwavering commitment to giving back to society and improving the lives of others serves as a shining example of selflessness and compassion.

By joining forces and rallying behind such worthy causes, we demonstrate our collective resolve and empathy in building a healthier and more empathetic society. IIHMR eagerly anticipates future collaborations and initiatives aimed at making a meaningful difference in the lives of others.

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RESEARCH AND PUBLICATIONS

PROJECT: PROGRESS OF NATIONAL FAMILY HEALTH SURVEY-6 IN TRIPURA

National Family Health Survey provides comprehensive and reliable data on various aspects of population and health, including fertility, maternal and child health, nutrition, and utilization of health services. Since the commencement of NFHS-6 field survey on 10th Feb, 2024 at Tripura, Institute of Health Management Research, Bangalore have made significant strides covering approximately 225 primary sampling units (PSUs) spread across 6 districts (North Tripura, Unakoti, Dhalai, Khowai, Gomati and South Tripura). Our diligent efforts have enabled us to conduct surveys in 6336 households, marking a commendable achievement for our team.

The IIHMR team has coordinated debriefing sessions at the CMO office premises, leveraging our core team members and stationed IIPS JROs, to ensure data quality. This includes spot checks and backchecks, specifically following the completion of each district assessment. It's essential to recognize the significance of NFHS-6 data and the valuable insights it provides into various aspects of public health and demographics. The survey provides insights into demographic trends such as fertility rates, population growth, and migration patterns. This information is invaluable for planning and implementing programs related to family planning, maternal and child health, and population stabilization.

Prof. Amita Mukhopadhyay interacting with the NFHS field team in Tripura

PROJECT: STRENGTHENING 1ST 1000 DAYS AND EARLY CHILDHOOD CARE AND DEVELOPMENT (ECCD) IN URBAN SLUMS OF BANGALORE

International Women's Day: Invest in women, Accelerate progress-Inspire Inclusion

International Women's Day celebration in Mayabazar, on 8th March 2024, marking the day for the vision of empowerment and inspiration. The dance performance by the talented young girls from the creche, insightful perspectives on the significance of Women's Day, highlighting the invaluable contributions of women in our society and the ongoing journey towards gender equality by distinguished guests, distribution of prizes to the winners of various empowering activities including the Empowerment Relay, Balance Challenge, Rangoli Competition, and Balance Balloon. A day that marked the joy, celebration, and acknowledgment of the women who continue to shape our communities and inspire positive change.

Empowering Health, Transforming Lives through Health Camps

As part of the ongoing commitment to Community Welfare and Empowerment, working on an HCLF CSR Project titled “Strengthening 1st1000 days and Early Childhood Care and Development (ECCD) in Urban Slums of Bangalore”, IIHMR, Bangalore in collaboration with One Sight Essilor Luxottica Foundation, The Oxford Dental College and United Medical Center, Bangalore organized a Health Camp at Mayabazar on 3rd March 2024 and at Anandapuram on 10th March 2024.

The health camp aimed to provide specialised healthcare services to the underserved population. The camp covered a range of medical check-ups viz., Paediatric, Gynaecology, Dental, Orthopaedic, and Ophthalmology along with BP and anthropometric measurement. Approximately, 450 individuals from both the communities were screened for varied services in the health camp and Eyeglasses were distributed to a total of 143 beneficiaries.

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Fueling Health, Nourishing Lives: Poshan Pakhwada - Pathway to Wellness

The Institute of Health Management Research (IIHMR), Bangalore, commemorated Poshan Pakhwada by organizing a Workshop on Low-Cost Nutrient Preparation in collaboration with the Nutrition Rehabilitation Centre, Vani Vilasa Hospital, Bengaluru on the 20th and 21st of March 2024.

Ms. Prateeksha, Nutrition Counsellor, NRC bought their expertise and experience in nutrition and meal preparation. They showcased the preparation of a wide array of healthy foods, focusing on ingredients that are affordable and readily available. On 23rd March 2024, activities such as Making My Child Plate/Poshan Mela and Nutrition Game-Snake and Ladder were organized in both communities to spread awareness about the benefits of diet diversity on health, and prevention of malnutrition.

RESEARCH TRAINING

Training on ICMR National Ethical Guidelines and NDCT Rules, 2019

On April 19th, 2024, the Institute of Health Management Research (IIHMR), Bangalore organized a training on the 'ICMR National Ethical Guidelines and NDCT Rules, 2019'. Dr. Jagadish Chinnappa, M. D, Chairman of Pediatrics at Manipal Hospital Group, Bangalore region and Dr. Karuna Ramesh, Basic Medical Scientist, Institutional Review Board, IIHMR-Bangalore were the resource person who provided invaluable insights to IRB members, Faculty and Research Officers of IIHMR, Bangalore. The sessions illuminated the complexities of ethical considerations within medical and health research through engaging case scenarios. It served as a crucial platform for enhancing the ethical acumen of healthcare professionals and researchers, to align their practices, navigate ethical dilemmas and promote ethical research practices in their respective roles.

Dr. Karuna Ramesh interacting with participants

Dr. Jagadish Chinnappa conducting the training session

Group photo-Participants

IIHMR Bangalore IRB Team

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FACULTY PUBLICATIONS

Application of Scrum framework and Low Code No Code platform for development and implementation of In-patient electronic visitor management system to optimise hospital operations

Authors: Dr Akash Prabhune, Mr Sachin S Bhat , Dr Kalaivani S, Mr. Arun Senthilkumar, Mr Mathan Babu

Abstract:

This study focuses on the development of an Electronic Visitor Management System for small-scale hospitals, utilizing an Agile-based Scrum Framework and a Low No-Code (Low Code No Code) platform. The primary aim is to address the challenges of managing crowds and footfalls in hospital in-patient departments (IPD) efficiently. The methodology employed for this project involved the use of the mHealth agile framework, combining clinical product development stages with agile development. A Scrum team was formed, and a comprehensive project timeline was established, with a series of sprints, each with its specific goals and associated product backlog items. The development tools utilized included the Zoho Low Code No Code platform, SQL database, and Android Studio for publishing the application. Results from each sprint are discussed, ranging from defining the project scope to releasing the successful application. The study emphasizes the importance of user consultation for enhancing the User Interface (UI) and User Experience (UX) of the application. Feedback from stakeholders and end-users played a crucial role in refining the product. Overall, this study showcases the successful development of an Electronic Visitor Management System for hospitals, highlighting the role of technology and healthcare professionals in digital health initiatives, reducing development time and costs.

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Enhancing Accessibility to Primary Healthcare Centres through the Development and Validation of a Machine Learning-based Gravity Model: Strengthening Public Health Coverage

Authors: Dr Akash Prabhune, Mr Vinay R Srihari, Ms Ananya Biswas Bidrohi, Ms Ashitha Reddy, Ms Aishwarya Mallawaram

Abstract:

This paper introduces a novel approach, a Machine Learning-based Gravity Model, to address this issue by predicting and mitigating disparities in healthcare access based on geographical location, population distribution, transportation infrastructure, and healthcare workforce availability. The research focuses on the Chikkaballapur district in Karnataka, Southern India, as a proof of concept. The methodology involves developing an optimization model for healthcare facility locations by analyzing the geospatial and demographic characteristics of the district. The goal is to maximize accessibility to primary health units while minimizing the burden on these healthcare facilities. To achieve this, the study considers various factors from the demand side (village population, literacy rates, agricultural and non-agricultural workers, OPD and IPD data, among others), supply side (healthcare staff), and distance and travel (including travel friction). Composite indexes are constructed to represent demand, supply, and travel factors, contributing to the overall accessibility and burden calculations. The study classifies villages based on their accessibility scores, separating them into categories of poor, average, and high accessibility. Similarly, Primary Health Centers (PHCs) are classified as underutilized, average, or overutilized based on their burden scores. Using these classifications, the paper presents case scenarios and a rule-based algorithm to recommend actions, such as upgrading or downgrading PHCs and building new ones, aimed at improving accessibility and addressing burden disparities. In conclusion, the Gravity-Based Optimization Model offers a promising solution to the complex challenge of healthcare accessibility and facility optimization in India.

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Optimizing Medication Access in Public Healthcare Centers: A Machine Learning Stochastic Model for Inventory Management and Demand Forecasting in Primary Health Services

Authors: Mr Sachin S Bhat; Mr Vinay R Srihari; Akash Prabhune; Dr Subodh S Satheesh; Ms Ananya Biswas Bidrohi

Abstract:

This article discusses the critical issue of inefficient inventory management and demand forecasting in public healthcare systems, highlighting the significant impact of this problem on patient care and healthcare costs. It introduces a novel approach that leverages machine learning and advanced forecasting techniques to address this challenge. The methodology involves mapping the supply chain, data collection, preprocessing, regression analysis, and the creation of three forecasting models: Projective, Causal, and Stochastic. The results of regression analysis identify key factors affecting stockouts, while the forecasting models predict drug demand and supply requirements. The integration of inventory cost optimization models further enhances the precision of stock requirement forecasts. These models offer a promising solution to improve medication access, reduce stockouts, and optimize resource allocation in primary healthcare services, ultimately leading to more efficient and equitable healthcare delivery in the public sector.

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Improving Manpower Allocation at Primary Healthcare Facilities: Development and Validation of a Machine Learning Quadratic Model to Strengthen Public Health Service Availability

Authors: Mr Sachin S Bhat, Mr Vinay R Srihari, Dr Akash Prabhune, Ms Ananya Biswas Bidrohi, Ms Aishwarya Mallawaram

Abstract:

The paper addresses the critical issue of human resource shortages in healthcare, particularly in developing countries like India. It emphasizes the importance of adequate and well-distributed health professionals for achieving desirable health outcomes. The focus is on quadratic modelling as a tool for optimal planning in healthcare systems, considering the composition and distribution of health personnel. The methodology involves creating a comprehensive unit optimization framework using a Demand Index, Supply Index, and Distance Matrix to derive a Site Suitability Index. The Demand Index integrates demographic, mortality, and footfall data, while the Supply Index considers medical, para-medical, and non-medical staff weights. A Gravity model is employed for accessibility scoring, and a three-by-three matrix is used for rule-based classification. The quadratic optimization model aims to maximize human resource allocation based on physical accessibility, minimizing the cost of deviation from desired healthcare standards. Data mining and cleaning involve secondary data from various sources, subjected to screening using geographical and population data. Results include a Gravity model-derived Baseline Accessibility and Burden Index, categorizing villages and PHCs. The quadratic optimization model allocates resources according to IPHS standards, using a weekly timetable for staff sharing to address shortages. The model successfully optimizes human resource allocation based on demand burden and accessibility, presenting a systematic approach to address healthcare workforce challenges.

DOI: 10.1109/IITCEE59897.2024.10467473

Malnutrition among under-five children in Nepal: A focus on socioeconomic status and maternal BMI

Authors: Dr. Jyoti Vijay, Mr Kamalesh Kumar Patel

Abstract:

Malnutrition stands as the primary contributor to morbidity and mortality in children under the age of five. Nepal, situated in South Asia and classified as a low-income country, grapples with a significant malnutrition challenge. The elevated rates of malnutrition in Nepal are further compounded by its unfavorable socio-economic conditions, limited access to healthcare, poor maternal nutritional status, food insecurity, poor hygienic conditions, and geographical challenges.

The consequences of mortality and illness associated with malnutrition directly undermine human capital and economic productivity. The main aim of the study is to determine the risk factors associated with stunting, underweight and wasting among under five children in Nepal. Nepal Demographic and Health Survey 2016 (NDHS) data was used for the study. The outcome measures were stunting, underweight and wasting. Predictor variables were categorized as mother, child and household related factors. The association between malnutrition and predictor variables were assessed by multivariate logistic regression using Stata 16.0 software and odds ratio (OR) with 95% confidence interval was reported.

A total of 2381 children under five years were included in this study for analysis. The magnitude of stunting (36%) was higher than underweight (27%) and wasting (10%) among under five children. Children from middle and rich households were 49% (OR = 0.51; 95%CI = 0.37–0.71) and 47% (OR = 0.53; 95%CI = 0.36–0.74) less risk of being stunted than children from poorest households. The odds of a child to be stunted was 1.6 times higher in those children living with 3–4 children than children with 1–2 children in their families (OR = 1.6; 95%CI = 1.24–2.07). Mother's BMI in category of normal (OR = 0.56; 95%CI 0.42–0.75) and overweight (OR = 0.30; 95%CI = 0.19–0.47) and larger birth spacing (OR = 0.53; 95%CI 0.36–0.74) were significantly associated with underweight and stunting among children, respectively.

In Nepal, the problem of malnutrition among under five children is still high (36% of stunting and 10% of wasting). The study suggests that target-based approach and interventions should be administered for children from socio-economically deprived areas. Strategies should focus on preconceptions and the mother's nutritional status.

DOI: https://doi.org/10.1016/j.cegh.2024.101571

The Patient's Perspective on the Functioning of the Primary Healthcare Centres in Bangalore, India: An Illustrated Guide

Authors: R Bangalore Sathyananda, A Krumeich, Dr Usha Manjunath, A de Rijk and CP van Schayck

Abstract:

India's healthcare system is, for a large part, organized around a vast network of Primary Healthcare Centres (PHCs) that form the pillar on which the public healthcare sector functions. The World Health Organization (WHO) has emphasized the important role that PHCs play in strengthening community health and the provision of healthcare. Although a few studies have assessed specific elements of services offered by PHCs, only a few have studied the patients' perspectives on the functioning and performance of PHCs in the Indian

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context. A qualitative research methodology was employed to explore the opinions of 188 patients attending one of three PHCs in Bengaluru (India), using in-depth interviews and thematic analysis. Results showed that patients assessed PHC based on the nine themes that broadly can be classified into components of the center, and that of the personnel. The patients valued the behavioural aspects of the personnel during service delivery and should be configured into the PHC performance.

DOI: https://doi.org/10.1177/23743735241246730

FACULTY ACCOLADES

Dr. Pankaj Rahi, Associate Professor participated as Scientific Review Committee Member for the following International Conferences:

- IEEE 6th Parul International Conference on Engineering and Technology (PiCET-2024) held during 3-4, March 2024
- International Conference on Sustainable Advanced Computing (ICSAC) - 2024 held during 22-23, March 2024 at CHRIST University Bangalore

BOOK CHAPTER

Globalization and the Digital Healthcare Industry: Opportunities and Challenges

Authors: Mr. Piyush Kumar, Dr. Kirti Udayai, Dr. Pankaj Rahi

Abstract:

Globalization has changed digital healthcare by removing geographical barriers. Telemedicine and virtual platforms can democratize healthcare for marginalized people. Global healthcare data exchange allows research, data-driven decisions, and personalized medicine. Data security, patient privacy, and regulatory harmonization remain issues. Finding a balance between innovation and patient safety is crucial. Globalization is transforming digital healthcare in many ways. This book chapter endeavors to undertake a thorough critical analysis, delving into the profound implications of globalization on the digital healthcare industry. Its overarching goal is to illuminate the multifaceted spectrum of opportunities and challenges that this dynamic interplay brings forth, with far-reaching implications for healthcare providers, policymakers, and stakeholders on a global scale.

DOI: https://doi.org/10.4018/979-8-3693-0928-5.ch007

CENTRE FOR LEARNING & DEVELOPMENT

Application of Qualitative Research in Nutrition

IIHMR Bangalore, in collaboration with the Department of Food Science & Nutrition, Mount Carmel College, Autonomous, Bengaluru, organized a two-day workshop on the "Application of Qualitative Research in Nutrition" at IIHMR Bangalore campus from March 15th to 16th, 2024. The event witnessed enthusiastic participation from MSc Nutrition students. The workshop delved into the application of qualitative research in nutrition, offering profound insights into qualitative methods of data collection and analysis. Participants engaged in enlightening discussions, hands-on session on interview and group discussion methods, and sessions led by the faculty from IIHMR Bangalore Dr. Usha Manjunath, Professor, Dr. Sarala R, Associate Professor, Dr. Jyoti Vijay, Assistant Professor and Dr. Akash Prabhune, Assistant Professor. Furthermore, participants had the opportunity to practice qualitative data analysis and interpretation using Nvivo software. The workshop also focused on the case study approach and manuscript and report writing, providing attendees with a deep dive into these essential aspects of qualitative research.

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Training of Community Level Stakeholders Under National Jal Jeevan Mission (NJJM) in Kodagu District

The Key Resource Centre (KRC) at Institute of Health Management Research, Bangalore has conducted a non-residential training programme for the community level stakeholders of Kodagu district. These stakeholders include plumber, waterman, VWSC and PRI members. A total of 232 participants were trained in five taluks of the district. The main objective of the program is to facilitate participants to gain insights, enhance their knowledge, develop skills, and create awareness on in planning and implementation of NJJM. The topics covered under this training were Jal Jeevan Mission objectives, Effective Construction Oversight of water supply infrastructure, Securing Water Sources: Quality & Sustainability, Decentralized management of drinking water systems and field visit.

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HEALTHCARE NEWS

A guide to 'preventing' public health misinformation

A new Lancet paper suggests interventions that can build resilience, manage information ecosystems and prevent infodemics beyond merely "reacting to misinformation or disinformation" crises. Some public health emergencies strike with suddenness, others fester slowly. Pandemics trigger lockdowns; influenza flu activates demand for antivirals; floods prompt advisories on communicable diseases.

Read more at : "A guide to preventing public health misinformation - The Hindu

Health-tech firm ZS unveils data science's role in personalised treatments and streamlined trials

Data science helps enable the early identification of individuals at high risk for specific conditions such as cancer or heart disease by sifting through data sources like Electronic Medical Records (EMR), Electronic Health Records (EHR), Electronic Patient Records (EPR), transactional and biometric data, genetic information, etc. and analysing it for diagnoses, biomarker discovery and disease subtyping.

Read more at : Health-tech firm ZS unveils data science's role in personalised treatments and streamlined trials (cnbctv18.com)

ICMR to expand its clinical trial network to provide solutions for health issues

The ICMR established INTENT, a network of medical colleges and research institute, with an overarching goal of providing evidence-based, and culturally sensitive solutions to health issues of national priorities by conducting large, decisive, regulation compliant clinical trials.

Read more https://health.economictimes.indiatimes.com/news/policy/icmr-to-expand-its-clinical-trial-network-to-provide-solutions-for-health-issues/109649234

Apollo Health to open 70 new diagnostic labs, to double down on clinic network

Apollo Health offers a comprehensive range of diagnostic services, from basic tests to specialised and super-specialised genetic testing. With over 100 labs currently, Apollo Health plans to add approximately 70 more labs in the next 12 to 18 months.

Read more at : Apollo Health to open 70 new diagnostic labs, to double down on clinic network - BusinessToday

Fortis Group launches AI-powered mental healthcare app

'Adayu', a free app, has been launched by Adayu Mindfulness, a Fortis Healthcare Group company, in collaboration with deep-tech company United We Care to address critical needs of mental healthcare.

Read more at : Fortis Group launches AI-powered mental healthcare app - Hindustan Times

Tech-savvy healthcare: India's home grown digital platforms transform its Immunization programmes

"It's as easy as hiring a cab," smiles Aarti Devi, a 43-year-old nurse, as she deftly manages vaccine logistics for thousands, using her smartphone. With just a few taps, Aarti schedules vaccine supplies for the next quarter for Sanoora, a village in Jammu & Kashmir — an impressive feat considering it involves nearly tens of thousands of entries. This is the new reality for healthcare workers across India, who are leveraging technology to efficiently deliver

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vaccines to 27 million newborns and 30 million pregnant women annually.

Read more at : 'Tech-savvy healthcare: Indias home grown digital platforms transform its Immunization programmes | United Nations Development Programme (undp.org)

Wipro-GE Healthcare to invest Rs 8K crore to 'Make in India for the World'

Wipro GE Healthcare, a leading medical technology, diagnostics, and digital solutions innovator, aims to increase localisation in manufacturing in the country from 50 per cent currently to 70–80 per cent.This initiative comes alongside an announcement made on Tuesday regarding a fresh investment of Rs 8,000 crore in the next five years to bolster its focus not only on 'Make in India' but also on 'Make in India for the World'.

Read more at : https://www.business-standard.com/companies/news/wipro-ge-healthcare-scaling-local-going-global-with-rs-8k-cr-investment-124032600999_1.html

Piramal Group arm invests Rs 110 cr in Biodeal Pharma

The Piramal Group on Monday announced a Rs 110-crore investment into Biodeal Pharmaceuticals The contract development and manufacturing company will deploy the funds infused by Piramal Alternatives for improving its infrastructure and capacities, technology upgrade and a nutraceuticals manufacturing facility, as per an official statement.

Read more at: https://health.economictimes.indiatimes.com/news/pharma/pharma-industry/piramal-group-arm-invests-rs-110-cr-in-biodeal-pharma/109125363

Qure.ai and Project Data Sphere combine Big Pharma Insights with Deep AI to drive cancer care forward

Qure.ai, a leader in artificial intelligence (AI) solutions for medical imaging, and Project Data Sphere, a nonprofit initiative of the CEO Roundtable on Cancer, have partnered to augment tumour assessments using AI-enabled solutions for clinical trials and cancer care. The collaboration aims to increase efficiency and consistency in evaluating the effectiveness of cancer treatments.

Read more at : https://www.pharmabiz.com/ArticleDetails.aspx?aid=165835&sid=2

CitiusTech Named a Leader and a Star Performer in Everest Group's Payer Digital Services PEAK Matrix® Assessment 2023

The report analyzed 32 leading healthcare IT service providers on capabilities in healthcare payer digital services and market impact. It focused on payer digital services market size and growth, digital services themes for healthcare payers, assessment of the service providers on several capabilities and market success-related dimensions, and Everest Group's independent remarks on service providers.

Read more at :https://www.ptinews.com/story/business/citiustech-named-a-leader-and-a-star-performer-in-everest-group-s-payer-digital-services-peak-matrix-assessment-2023/1037886

Predictive analytics in healthcare: Forecasting diseases & outcomes with AI

Predictive analytics is taking the world by storm, and is now one of the most widely used applications of artificial intelligence and machine learning in the business world. But nowhere else is its application more useful than in the healthcare domain, and especially in its booming subdomain of prevention.

Read more at : Predictive analytics in healthcare: Forecasting diseases & outcomes with AI - Express Healthcare

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