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## Bionic-Technology Inspired Methods for Preventive Healthcare and Research

(Overview of research titled - Ambient Air quality monitoring for Airborne-Allergies and Asthma Diseases vulnerability)



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### The Bionic Technology

Bio-inspired computing encompasses a diverse range of interdisciplinary studies in the fields of computer science, mathematics, and biology that have emerged in recent years. Bio-inspired computing optimization algorithms are a burgeoning approach that draws upon the ideas and inspiration derived from the biological evolution observed in nature. This approach aims to produce novel and resilient strategies for optimization in various domains. In 2017, bio-inspired optimization algorithms gained recognition in the field of machine learning because of their ability to effectively solve complex issues in science and engineering by seeking optimal solutions. Nevertheless, it is important to note that these issues typically exhibit nonlinearity and are subject to multiple nonlinear constraints, hence presenting various challenges such as time restrictions and high dimensionality in the pursuit of attaining the optimal solution. In response to the challenges posed by conventional optimization algorithms, there has been a growing inclination towards the utilization of bio-inspired optimization algorithms. These algorithms offer a potentially effective means of addressing intricate optimization problems [1].

Bionics is a scientific discipline concerned with the development and construction of artificial systems that possess some attributes resembling those found in living organisms. Bionics can be characterized as an interdisciplinary field rather than a specialized science, akin to the field of cybernetics. Bionics and cybernetics are often regarded as two complementary aspects of a shared paradigm.

### About Bionics

The term is represented as Bionics = Bio(logy) + Electro(nics). The academic definition of Bionics is the application of methods and systems found in nature to the



study and design of engineering systems for improving quality and effectiveness. In other words, Bionics or biologically inspired engineering is the application of biological methods and systems found in nature to the study and design of engineering systems.

### Bio-inspired optimization algorithms

The utilisation of artificial intelligence in daily life is more ubiquitous and inescapable. Biomimetic and bio-inspired algorithms for multiparameter optimisation have a prominent position within the expansive domain, finding widespread application across numerous disciplines. Bio-inspired optimisation methods have demonstrated significant versatility and convenience in addressing difficult optimisation challenges. The extensive range of their applicability contributes to their pervasive presence across several disciplines, as they are virtually ubiquitous in all areas of humanity.

The most emerging and well-known techniques, bio-inspired algorithms: Particle swarm optimization (PSO), Genetic Bee Colony (GBC) Algorithm, Fish Swarm Algorithm (FSA), Cat Swarm Optimization (CSO), Firefly Optimisation, Whale Optimization Algorithm (WOA), Artificial Algae Algorithm (AAA), Elephant Search Algorithm (ESA), cuckoo Search Optimization Algorithm (CSOA), Moth flame optimization (MFO), and Grey Wolf Optimization (GWO) algorithm.

**Swarm Intelligence:** “The emergent collective intelligence of groups of simple agents.” Swarm

intelligence refers to the aggregate conduct exhibited by systems that are decentralized and self-organized. A conventional swarm intelligence system is comprised of a collective of uncomplicated agents that possess the ability to communicate with one another, either through direct or indirect means, within their immediate surroundings by exerting influence on their local environment.

### Characteristics of Swarms:

1. Composed of many individuals are having identical Properties (Homogeneous Population)
2. Local interaction is based on simple-rules
3. Self-organization based on the properties (No centralized Control)

Within the field of computer science, the development of metaheuristics aims to create optimization algorithms capable of effectively addressing intricate situations. Metaheuristic optimization algorithms are computational techniques that replicate or draw inspiration from biological behaviors observed in animals or birds. These algorithms are employed to identify the most optimal solution for a given problem. A meta-heuristic refers to a strategic approach employed by heuristics in order to address intricate optimization challenges. In the field of mathematical programming, the term "metaheuristic" is used to describe a computational technique that is employed to explore and locate an optimal solution for an optimization issue. Metaheuristics employ a heuristic function to facilitate the search procedure. Metaheuristics are (roughly) high-level strategies that combining lower-level techniques for exploration and exploitation of the search space.

Exploitation involves choosing the best-known option based on past experiences, while exploration involves trying out new options that may lead to better outcomes in the future. The heuristic search encompasses two main types i.e., blind search and informed search.

Uninformed or blind search strategies refer to approaches that just rely on the given components outlined in the problem statement. The distinction made is solely between states that are considered goal-oriented and those that are not, without the ability to examine the internal composition of a state in order to assess its proximity to the desired objective.

The Informed search strategies incorporate supplementary knowledge beyond the information explicitly provided in the problem statement. The acquisition of supplementary information can be facilitated by employing a computational technique known as a heuristic. The system accepts a state as its input and calculates an estimation of its proximity to the desired goal. By employing a heuristic, a search strategy that has the ability to discern non-goal situations and prioritize those that appear to be more favorable.

Other Model techniques for Searching are Deterministic Search Techniques -A Deterministic Model allows you to calculate a future event exactly, without the involvement of randomness. And Stochastic or Random Search Techniques are the Stochastic Models which have the capacity to handle uncertainties in the applied inputs. Stochastic models possess some inherent randomness - the same set of parameter values and initial conditions will lead to an ensemble of different outputs during the actual environment of the study.

The common representation of Deterministic Modelling Vs Stochastic Modelling is represented below:



Figure 1 - a. Deterministic Modelling

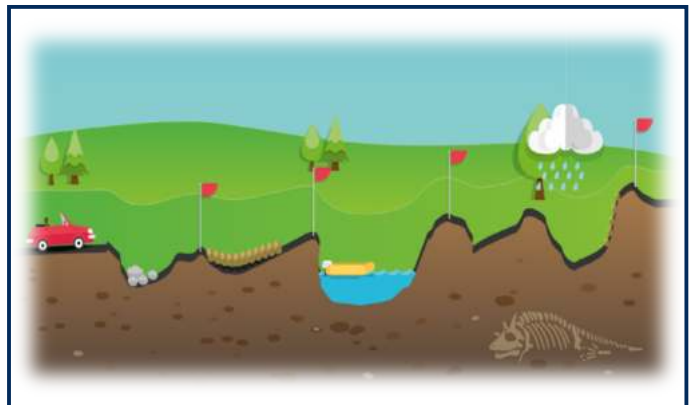


Figure 1 - b. Stochastic Modelling

### Bionic Technology inspired Modeling Algorithms for Preventive Healthcare Systems – an overview of Research Study of Ambient Air quality monitoring for Airborne-Allergies and Asthma Diseases vulnerability.

In this section an overview of various bio-inspired algorithms has been provided, which are actually used for obtaining the best suitable results by identifying the Pollutants availability at the specific time-fame, location so that the individuals living in the proximity may be alerted for Preventive Healthcare or its related analytics. These efforts are highly beneficial for the individuals who are allergic to the airborne and exacerbation of allergic diseases could be reduced on alerting the individual as the air quality of the vicinity will poor or, reached to Moderated so that triggering event of exacerbation of air borne allergies or Asthma could be avoided or prevented.



Environmental factors and air quality (out-door or indoor), play vital role in the spread and cure of respiratory diseases in larger spectrum. Health and environment have tightly coupled connections. Air quality monitoring is the key area associated with living beings that are under exposure of hazardous elements. The air quality monitoring system measures the concentration of hazardous gases and pollutants causing harm to the environment or living beings. The World Health Organization (WHO) in 2006 determined the environmental factors as triggers, accountable for almost 24% of the world's burden of diseases and 23% of all deaths. Approximately, 20% to 30 % of total population suffers with at least one of allergic diseases in India, out of which 15% develop asthma. (WHO-Research 2009).

WHO (2009) reveals, India has an estimated 15-20 million asthmatic with prevalence of between 10% and 15% in 5-11-year-old children.

### Ambient Air quality and possible health risks:

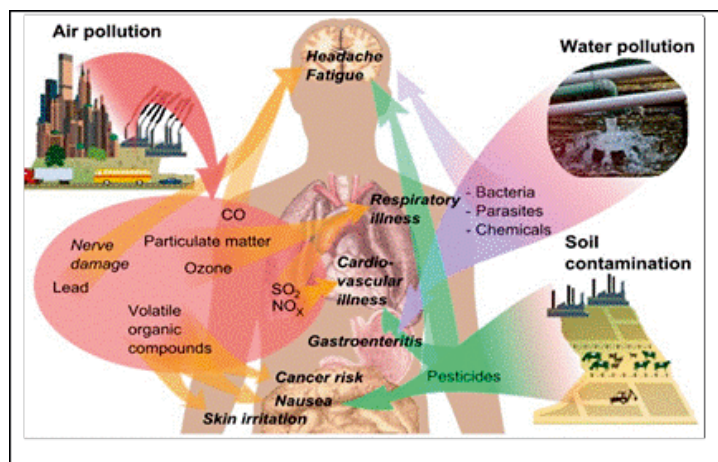


Figure 2. Effects of pollution on human health (World Resources Institute, 2018)

Air Quality Index (AQI), Pollutants and Health Breakpoints- National Air Quality Index (AQI) was launched on 17 October 2014. The related color-coding scheme and categorization of various ranges in the NAQMS are as follows:

### Limitations of National Air Quality Programme:

- The data is fed directly from the analyzers without scrutiny; thus, data may not be utilized for Statutory purpose.
- National air quality stations contain very costly, high-end equipment's, static to location (out-door only) and do not provide guarantee to have adequate coverage to reach at every location for collection of pollutants and their monitoring index. No-coverage and consideration of indoor –pollutants.
- There is no clear definition or AQI have been defined for any assessment of indoor air quality and assessment of pollutants available in the indoor proximity of workplaces or houses.

### Problem Statement

Insite of the National Air quality program, Air quality is major Public Health concern and exacerbating health anxieties amongst the Children (<12 Age) and increase the morbidity-Airborne- Allergies, Asthma as well as affect the health of Children at large-scale [2].

### Research Objectives

- To derive expert systems of real-time-air quality monitoring.
- To design an efficient algorithm for monitoring ambient air quality.
- To implement the Smart e-Health System addressing the airborne and allergies, Asthma
- Measure the model on the performance Matrixes.

AQI Category (Range)↓	→ Categories for the various readings of the pollutant based on the health breakpoints or health impacts							
	PM <sub>10</sub> 24-hr	PM <sub>2.5</sub> 24-hr	NO <sub>2</sub> 24-hr	O <sub>3</sub> 8-hr	CO 8-hr <sub>3</sub> (mg/m <sup>3</sup> )	SO <sub>2</sub> 24-hr	NH <sub>3</sub> 24-hr	Pb 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5 –1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+	1800+	3.5+

## Implementation and results

A sensor-based model for sensing the Realtime air quality has been built and integrated with the data sets of Medical Record, Air, Meteorological/Climate so that impact of all vulnerabilities related to airborne allergies and asthma could be addressed. The system is built using the python programming language and metaheuristics approach of machine learning models like Principal Component Analysis, or PCA, is a dimensionality reduction method that is often used to reduce the dimensionality of large data sets, by transforming a large set of variables like air and its related pollutants, Environmental Variables like relative humidity, absolute humidity, temperature, Particulate Matters etc. into a smaller one that still contains most of the information as well as significant properties of the large set. This is deployed for making the dataset limited and conversant with the required processing power and desired throughput of the system. Similarly, the CAT SWAM Optimization with Firefly Optimization techniques are deployed to getting the optimized solution, which provides the results closed to the actual values so that the relevant preventive health alerts may be provided to the patient- based on the classification of medical records. The Classification was deployed using the Support Vector Machine (SVM) based model of machine learning [2].

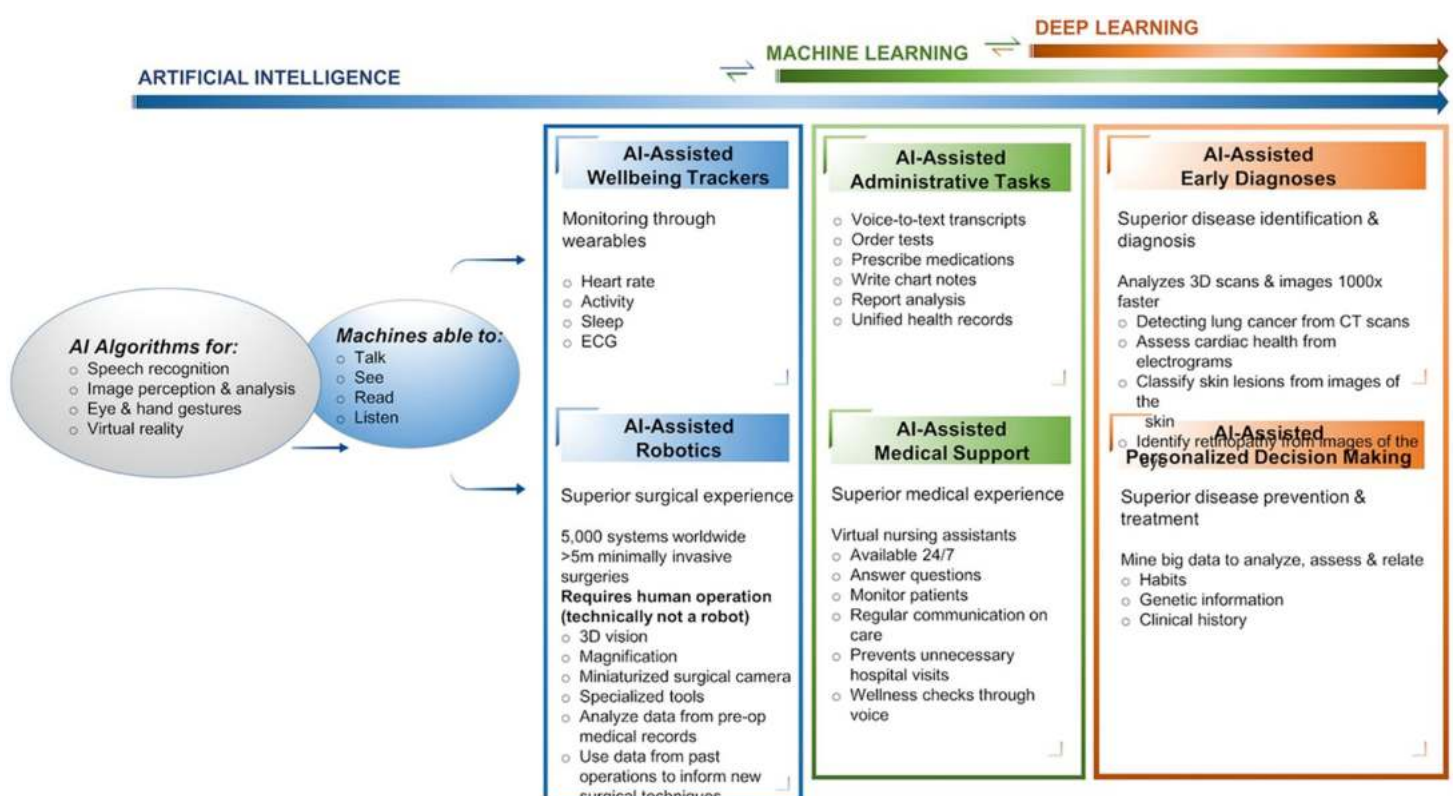
Based on the dataset of Air quality, obtained from the Kaggle for year 2015-2020, the experimental model has been trained and providing 99.9 % of accuracy and more than 95 % of Sensitivity and Specificity.

This signifies that Model is identifying the incidence correctly up to 98.9% and also behaving accurately even by passing the multiple random parameters at different timeframes.

## Advantages and limitations of system

The proposed system has been acknowledged as a valuable component of the technology-driven health ecosystem. The design of this system has been Patented through Office of Controller General of Patents, Design & Trademarks, Intellectual Property India, New Delhi vide Design no 3888351 dated 04/09/2023. It offers various benefits, including the generation of enhanced preventative healthcare warnings for individuals residing in notified areas, based on their local environmental conditions. Additionally, the system proves useful in reducing hospital visits, improving cost effectiveness, and alleviating disease burden. It is advisable to ensure the accuracy and inclusivity of data contained in databases, specifically digital health records and the integration of chemical sensors within Microcontroller units, as multiple sources and databases have been employed to establish healthcare outcomes and predictive alerts. Conversely, it is plausible to anticipate the emergence of deceptive results as a consequence of employing such a system. In order to assess the Local Air Quality Index (LAQI) in areas surrounding national public roads, public-assembly locations, and manufacturing facilities where pollution is a significant issue, it is necessary to create specific skewness variables [2].

## Bionic-Technology inspired areas of Healthcare Research [3]





## References

1. Ashraf Darwish, "Bio-inspired computing: Algorithms review, deep analysis, and the scope of applications, *Future Computing and Informatics*", *Journal*, Volume 3, Issue 2, 2018, Pages 231-246, <https://doi.org/10.1016/j.fcij.2018.06.001>.
2. Rahi, P., Sood, S.P., Sharma, S.K. (2022). *Smart eHealth System for Pervasive Healthcare*. In: Singh, P.K., Singh, Y., Chhabra, J.K., Illés, Z., Verma, C. (eds) *Recent Innovations in Computing. Lecture Notes in Electrical Engineering*, vol 855. Springer, Singapore. [https://doi.org/10.1007/978-981-16-8892-8\\_39](https://doi.org/10.1007/978-981-16-8892-8_39).
3. Manero, A, Crawford, KE, Prock-Gibbs, H, Shah, N, Gandhi, D, Coathup, MJ. Improving disease prevention, diagnosis, and treatment using novel bionic technologies. *Bioeng Transl Med*. 2023; 8(1):e10359. doi:[10.1002/btm2.10359](https://doi.org/10.1002/btm2.10359).



## ACADEMIC PROGRAM

### CAHO SAKCON 2023

The second edition of CAHO SAKCON 2023 (CAHO-Student Annual Knowledge Sharing Conference), a national level student conference dedicated to the pursuit of operational excellence in the healthcare sector. The conference was organized by CAHO-SEC in association with IIHMR Bangalore. The conference theme was 'Operational Excellence in Health Care'. The event started with pre-conference workshops at IIHMR on Financial Operations in a Hospital, Clinical Efficiency and Excellence at Ramaiah University and Digital Systems for Facility Management in Hospitals at St. John's National Academy of Health Sciences.

The conference took place at the NIMHANS Centre in Bangalore and commenced with a ceremonious lamp lighting and Ganesh Vandana. Distinguished guests graced the occasion, chief guest Dr. C N Manjunath, Director, Sri Jayadeva Institute of Cardiovascular Science and Research, Bangalore, guest of Honor Dr. M K Ramesh, Vice Chancellor, Rajiv Gandhi University of Health Sciences, Bangalore, and Dr. Vijay Agarwal, President, CAHO and addressed the gathering.

Their insightful thoughts and expertise set the stage for a day focused on enhancing healthcare operations in India. One of the highlights of the event was a stimulating panel discussion featuring prominent figures in the healthcare industry.

The panellists included Mr. Saurabh Gupta, Mr. Srikrishna Seshadri, Mr. Harry Prashant Miranda, Dr. S Prakash, Dr. Sunita Saldanha, Dr. A Nagarsubhramaniam, Dr. Aditya Chinnaswami, Dr. Anjali Kulkarni, Mr. Harsh Tongia, Dr. Lallu Joseph, Dr. Sweta Prabhakar, Ms. Nadira Chaturvedi, and, last but not least, Dr. Anuradha Pichumani. The panel discussion served as an invaluable platform for industry experts to exchange ideas, bestow best practices, and address critical issues within the healthcare sector.

Topics ranged from improving patient care and safety to enhancing the efficiency of healthcare delivery systems. About 700 delegates (students, faculty, managers) from 28 institutions participated in this national conference. Students from IIHMR-B participated in poster as well as paper presentations.

Winners for Paper presentation from IIHMR-B were Dr. Ragini Sharma, Dr Pallab Roy for the topic- "A study to enhance the usage of Electronic Health Record (EHR) among clinicians" under the guidance of Mr. Piyush Kumar (Associate professor) and Dr. Kirti Udayai (Associate professor).





## STUDENT INDUSTRY VISIT

### CDSIMER Field Visit

IIHMR Bangalore first year PGDM students gained invaluable insights at CDSIMER's premier Mortuary Management Hospital. In a unique and enlightening educational endeavour, the students embarked upon a hospital visit to the prestigious CDSIMER in Bangalore. This educational excursion not only broadened the horizons of students but also instilled a profound understanding of the critical roles that mortuary management, anatomy, and surgical procedures play in the healthcare industry.



During the visit, students were exposed to the intricacies of mortuary management, the opportunity to explore the OT further expanded their understanding of healthcare practices, emphasizing the importance of surgical precision and sterile environments. The highlight of the trip was the visit to the anatomy museum, where students had the chance to observe preserved specimens and gain a deeper appreciation for human anatomy.

### BGS Gleneagles Global Hospital visit

Hospital Management students of IIHMR Bangalore visited the Supply Chain Management Department of BGS Gleneagles Global Hospital in Bengaluru, as part of their industry interaction program.



The visit was intended to give the students a practical understanding of how the hospital's health management information system (HMIS) and supply chain management

(SCM) systems work together to ensure the smooth and efficient delivery of healthcare services.

The students were welcomed by Ms. Simpi, the Operations Head, who gave them an overview of the department's operations. She explained that the supply management department is responsible for sourcing, procuring, and managing all of the hospital's supplies, including medicines, medical devices, and equipment. The department also works closely with the hospital's HMIS to ensure that inventory levels are maintained and that supplies are delivered to the right place at the right time. The students were then given a tour of the hospital's warehouse, where they saw how supplies are received, stored, and distributed. The warehouse is equipped with state-of-the-art inventory management systems, which help the department to track the movement of supplies and ensure that they are always available when needed.

The students were also shown how the hospital's HMIS is used to manage the supply chain. The HMIS is integrated with the hospital's supply management system, which allows the department to track the consumption of supplies and generate reports on inventory levels and procurement costs. The HMIS also helps the department to identify and manage stock-outs and to ensure that supplies are always available for patient care.

Overall, the visit was a valuable learning experience for the students. It gave them a firsthand look at how a large hospital manages its supply chain and how it uses technology to improve its efficiency. The students also gained valuable insights into the role of supply chain management in ensuring the quality and availability of healthcare services. Mr. Piyush Kumar, Associate Professor lead the visit and the visit was part of the Material and Equipment Management module.

### Health Field Visit

The 2<sup>nd</sup> Year Health Management students of embarked upon an exciting new adventure on the bright and sunny morning of 7<sup>th</sup> of October 2023. The first stop for the day was the Bengaluru Rural Vaccine Store at Devanahalli. The students had the opportunity to learn about the various Cold Chain points in India, how vaccines are procured, stored, and distributed to CHCs, PHCs, and eventually to the Sub-Centres, and the various equipments used for Cold Chain Management.



They also learned about the various challenges involved in Cold Chain Management in rural India, such as lack of infrastructure and Human Resource. They also learned about the different modes of transportation used to transport vaccines, such as refrigerated trucks and cold boxes. Students observed how vaccines are stored at the Bengaluru Rural Vaccine Store, and they learned about the different temperature and humidity requirements for different types of vaccines. The field trip was a valuable learning experience for the students, and it gave them a better understanding of the critical role that Cold Chain Management plays in ensuring public health.

The next stop of this fascinating adventure was to the Karnataka State Medical Supplies Corporation Limited (KSMSCL). KSMSCL is a nodal agency for procurement of drugs, consumables, and equipment for health institutions under the Department of Health & Family Welfare Services in Karnataka. At KSMSCL, the students learned about the different steps involved in the medical supplies procurement process, from need assessment to purchase order (PO). They also learned about the various factors that are considered when selecting suppliers, such as price, quality, and delivery time. The students learned about the different types of warehouses used for storing medical supplies, and they also learned about the various inventory management practices followed by KSMSCL. The students also learned about the E-Aushada software system, which is used by KSMSCL to manage the entire medical supplies procurement and distribution process. They also learned about how the E-Aushada system helps to optimize the procurement cycle and reduce costs.

The students found their visit to KSMSCL to be very informative and insightful. They gained a better understanding of the challenges and complexities involved in medical supplies procurement, and they also learned about the various best practices that are being followed by KSMSCL to ensure efficient and effective procurement and distribution of medical supplies. The students got the opportunity of meeting the MD of KSMSCL and shared their experience. The visit was arranged as part of Logistics and Supply Chain Management module, coordinated by the faculties Mr. Gowthamghosh B. and Dr. Rajeshwari.

### World Coffee Conference 2023

#### *Theme: Sustainability through Circular Economy and Regenerative Agriculture*

Sustainability is one of the critical concerns in the coffee industry. Various challenges impact sustainability in the coffee sector such as climate change, increasing cost of production, and volatile prices. The goal of WCC 2023 is to address these challenges and exchange ideas and knowledge regarding the circular economy and regenerative agricultural practices.

The keynote speakers and leaders will emphasize the best practices and technologies to promote regenerative agriculture and farmers' well-being & prosperity while ensuring compliance with the changing regulatory framework and financial durability. Many exhibits were put up by manufacturers, brewers, coffee farming agencies, and retailers showcasing their unique processes and their own brands of coffee. There were also displays by startups propagating sustainability through innovations like bio-degradable coffee lids in place of plastic lids, and reusable brass filters instead of single-use filters.



Dr. Jyotivijay, Assistant Professor IIHMR Bangalore, was invited to attend the exhibition at the WCC 2023. Second year students Dr. Shivani Dattani, Ms. Chuki, Dr. Ragini Sharma, Dr. Anjali, Dr. Sandeep Patil, Dr. Aroma Ganguly, Ms. Harshita, Dr. Supriya, Ms. Sheyashee, Mr. Harish and Mr. Soumalya attended the exhibition as well.

### Organ donation seminar

Rotary Club's Organ Donation awareness session sheds light on lifesaving opportunities. On October 9th, Mr. Lal Goel, founder of Rotary Club of Organ Donation International organized an enlightening session on organ donation at the Institute of Health Management Research, Bangalore (IIHMRB) campus. The session emphasized the idea that while a person may not be a God, but they possess the incredible power to save lives through organ donation, either posthumously or while alive by encouraging individuals to consider this selfless act that can make a profound difference in the lives of those in need. This event serves as a reminder of the remarkable gift of life that organ donation offers to both donors and recipients. During the session, attendees were educated about the criteria and processes for registering as organ donors.





## Special session on Brain Stroke

The Institute of Health Management Research, Bangalore (IIHMRB), organized a significant awareness session on brain stroke, featuring the expertise of Dr. Sarath Kumar G G, Clinical Advisor & Sr. Consultant Neuroimaging and Interventional Radiology, Apollo Hospitals on October 20th. The session shed light on the critical nature of brain strokes and their profound impact on both individuals and their families.



*Brain Stroke: Types, Causes, Symptoms, Prevention and Treatment awareness session by Dr. Sarath Kumar G G*

Dr. Sarath discussed the causes, symptoms, prevention, and treatment options related to brain strokes. He emphasized the crucial "4.5 golden hours" following a stroke, during which timely medical intervention can make a significant difference in an individual's recovery. The session helped in enhancing awareness and understanding of brain strokes, ensuring that the community is well-informed about the importance of early intervention and treatment.

## Mental Health Day

IIHMRB Commemorates World Mental Health Day, Advocates for Open Dialogue and Support



On the 10th of October, the Institute of Health Management Research, Bangalore (IIHMRB), marked World Mental Health Day with a crucial message: Mental health is not an illness but a condition that requires attention and understanding which also served as a platform to emphasize the importance of breaking the stigma surrounding mental health issues and encouraging open discussions. The primary motive of this event was to create widespread awareness about the significance of mental well-being. Mental health concerns are often ignored or stigmatized, and it is imperative to change this narrative. The institute aimed to foster an environment in which its community could come together, share experiences, and extend support to one another in their journey toward mental well-being.

## STUDENT CLUB ACTIVITIES

### Literary Club

Students from literary club showcased an evening filled with laughter, witty wordplay, and some madly entertaining advertisements that made the audience ROFL-ing (Rolling On the Floor Literally) through the "MAD ADD SHOW" under the theme healthcare. The students actively participated and paraded their talent. Various topics under healthcare were taken up and displayed. Winners for the competition were as follows:



*First Prize: Ms. Indira, Ms. Shailaja, Mr. Soham, Ms. Yukti, Ms. Sreelakshmi and Ms. Vandana*



*Second Prize: Dr. Sherin, Mr. Vamsi, Mr. Siva Sai, Ms. Varshini, Ms. Samruddhi*



*Third Prize: Ms. Subha, Dr. Srikar, Dr. Ramu, Ms. Sameeksha, Mr. Dheeraj, Ms. Harshitha*



## Community Engagement Club

For the month of September, the club organized “Food for the community-Food fest”. The activity laid emphasis on fostering a deep sense of connection within the community and food. Various food stalls, games and even art showcases were part of the fest which was set up by the students from IIHMR-B. The event was successful in actively engaging people. The funds raised throughout the initiative were collected and will be utilized for further club-driven activities.



## Entrepreneur Club (E-Cell)

The e-cell committee of IIHMR-B organized “VENTURE VIBES” as a club driven activity for the month of September. The event was comprised of various in-house competitions such as Logo designing, Fast and Curious, Picture Prompt, Idea through my lens, Mashup Mania and Case Challenge. The team also had attractive cash prize up to 5000/-.

Winners are as follows:

### Logo Designing



*First prize: Dr. Radhika Rath, Ms. Sudipta, Ms. Tamalika*



*Second prize: Mr. Gokulkannan, Dr. Arshiya, Dr. Vishakha Vatsa and Ms. Gayathri Satheesh, Mr. Chingme Abraham Keishing, Dr. Sarat.S*

## Fast and Curious



*First Prize: Dr. Anjali, Dr. Ragini, Mr. Shriram S*



*Second Prize: Dr Lakshmi Viswanath, Dr Saraswathi S Nair, Mr. Suhas G*



*Third Prize: Dr. Ganga N Mathad, Dr. Mansi Shukla, Ms. Neha Sharma*

## Picture prompt



*First Prize: Dr. Ramu, Dr. Dheeraj, Ms. Aanchal V*



*Second Prize: Ms. Karbari Priyanka and Dr. Vaidehi Pathak*



*Third Prize: Mr. Aman Jiaswal, Mr. Sudarshan Bhat, Mr. Joydeep*



## Ideas through my lens



*First Prize: Mr. Shibashis, Mr. Yash Somwanshi, Mr. Dipan, Mr. Sanjay*

## Mashup Mania



*First Prize: Ms. Swati Negi and Ms. Shreyada*



*Second Prize: Dr. Purvi Deshmukh and Ms. Ashlin Rachel George*

## Case challenge



*First Prize: Dr. Chaithanya, Ms. Ashwini, Ms. Sneha, Ms. Adhira, Ms. Rashmi*



*Second Prize: Ms. Subha Rasappan, Dr. Srikar Kolipaka, Mr. Srijit, Ms. Komal Gupta, Ms. Vijayalakshmi*



*Third Prize: Dr. Neha Pradhan, Dr. Tishura Arunagiry, Mr. Ebin Yohannan, Mr. Akshaye Khanna, Mr. Rohit*

## Management club activity: "Navratri Mélange"

For the Friday club activity, the Management Club brought together the spirit of Navratri and the world of Human Resources in an ingenious way. The event focused on equating maa Durga's navroop with the qualities exhibited by the HR Manager. The club organized 3 activities keeping the theme under the spotlight. First competition (Magazine designing) Cover to cover clash laid emphasis on HR luminaries followed by Verbaquick (Extempore) where candidates were given topics which primarily focused on Innovation & HR. The crown jewel of the event which captured the audience's attention was the Navroop Dance Competition where participants were asked to depict any one roop of maa durga and relate it with qualities of the HR in the field of work.

Winners are as follows:

## Cover to cover clash



*First prize: Boardroom visionaries- Dr. Sherin Reddy, Ms. Karbari Priyanka, Dr. Radhika Rathi, Ms. Sudipta*



*Second Prize: Ms. Subha, Ms. Vijayalakshmi, Ms. Sameeksha*



*Third prize: Dr. Vishakha, Ms. Kshitija, Ms. Jahnavi, Mr. Gokul*

## Verbaquick



*First Prize:  
Dr. Ragini Sharma*



*Second Prize:  
Mr. Sandeep Patil*



*Third Prize:  
Ms. Ashlin Rachel George*



## Navroop



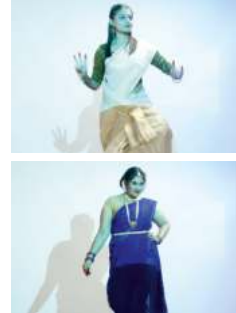
*First Prize: Dr. Vaidehi Pathak and Dr.A.S.Karpaga Raksha*



*Third Prize: Dr. Purvi Deshmukh & Dr. Lakshmi*



*Second Prize: Ms. Subha and Ms. Vijayalakshmi*



## STUDENTS' ACHIEVEMENTS

### MADRAS MANAGEMENT ASSOCIATION

#### The Big Debate

The Madras Management Association, Chennai, organized “The Big Debate” on the topic “Artificial Intelligence: Will it replace human labor or increase productivity?”

The event was open to all management colleges. Each team required two speakers, one for and one against. 2 teams comprising of Dr. Ragini Sharma, Dr. Sandeep Patil, Mr. Shriram, and Ms. Subha R, represented IIHMR Bangalore in the competition.



21 teams and 42 debaters put their points forward to support their views. After an engaging day of debates and rebuttals, the winners were announced.

Dr Ragini Sharma was awarded the 2nd Prize with a cash reward.

#### Paper Presentation

The Madras Management Association, Chennai invited papers on the theme “Innovate for a better tomorrow”. Mr. Shriram, and Ms. Subha R participated and won the 1st prize Out of 30 teams for their paper on “Revolutionizing Healthcare: Bridging Gaps with Responsible Innovation”.



#### Chanakya: The mastermind

Madras Management Association conducted “Chanakya - The mastermind “. Out of 6000 participants from all over India, Ms. Subha from 2nd year got selected as one of the top 10 finalist after facing 6 preliminary rounds.





## GRAND HEALTH INNOVATION CHALLENGE

Pioneering the future of transparency of transactions of PM-JAY funds, to ensure that every healthcare rupee reaches the place it is intended to reach.

Health IT Specialization students Dr Chaithanya V N, Ashwini Basappa Bijjur and Dr Rashmi Muley presented their bootstrapped startup idea "SamarthDhan" a blockchain-enabled analytical platform for fraud detection across HCX for ABDM under the guidance of faculty Dr. Akash Prabhune and Dr. Pankaj Rahi. The team won the second prize (Cash Prize of Rs 10,000) at IIHMR University 3rd Grand Health Innovation Challenge.

Dr. Dr. Shivani Dattani, Dr. Sandeep, and Ms. Chukis' innovative AR/VR startup idea, "Virtual Guru" for surgeon training, clinched the third prize.



## CULTURAL EVENTS

### TEACHERS' DAY

The Teachers' Day celebrations at IIHMR Bangalore was an intimate yet heartwarming affair, initiated with a warm welcome by Dr. Purvi, Ms. Shubha, and Ms. Shailaja Kushwaha to all the attendees. The celebrations commenced on a musical note with a delightful melody mashup performed by the 2nd-year students, captivating everyone's hearts. The enthusiasm soared as professors took part in a spirited "flip the bottle" challenge. Winners were rewarded, while the losers faced a spicy penalty of mirchi, adding an element of humor to the event. The merriment continued with a fun quiz session for both academic and non-academic staff members.



The entertainment reached new heights with a hilarious yet graceful dance performance by the 1st-year boys, leaving the audience in splits. A unique game of "Chinese whisper" followed, where teams had to guess and pass on what they heard to the next person, creating waves of laughter throughout the gathering. Dr. Ragini Sharma touched everyone's hearts with her heartfelt poem dedicated to the teachers, evoking a sense of admiration and gratitude. The program culminated in style with a dazzling Ramp walk featuring all the staff members and unforgettable dance performances by the staff, leaving a lasting memory of a day filled with joy, appreciation, and camaraderie.

### GANESH CHATURTHI

The Ganesh Chaturthi celebrations this year at IIHMR Bangalore on September 20th was truly a memorable one. This festival celebrates Ganesha as the God of New Beginnings and the Remover of Obstacles as well as the god of wisdom and intelligence.





With immense joy, we welcomed Lord Ganesha into our midst. The event was graced by esteemed guests from our organization, adding to the auspiciousness of the occasion. The priest Initiated the Pooja with the sacred Ganesh mantra, instilling a deep sense of devotion in all of us. As one harmonious voice, we sang in honor of Bappa. The Pooja concluded with the distribution of Modak prasadam, bringing sweetness to all our hearts. What made this celebration truly special was the way students and staff came together, creating a warm, homely atmosphere. As we bid farewell to Bappa on the same evening, we sang, danced, and made promises for his return next year, cherishing the blessings and unity this festival brings.

### NAVARATRI 2023

IIHMR Bangalore witnessed the joyous Navaratri celebrations and it's dandiya night on 18<sup>th</sup> of October.

We were honored to have Mr. Sushmit Jain, Chief Guest from IIHMR University Jaipur, grace the occasion. The festivities kicked off with a mesmerizing performance by the first-year students, depicting the epic Ramayana legend, leaving everyone in awe.

Dr. Usha Manjunath, Director IIHMR Bangalore, addressed the gathering with a motivating speech, emphasizing the triumph of good over evil. The event escalated as the second-year students wowed the audience with a captivating welcome dance performance dedicated to Devi Maa Durga. Dr. Amita Mukhopadhyay's solo Rabindra Sangeet performance left everyone spellbound. The highlight of the evening was a sensational Dunuchi dance performance by Prof. Dr. Deepashree, Dr. Rajeshwari, Dr. Jyotivijay, along with the first and second year students.



The evening continued with a series of remarkable performances, including soulful singing by a second year student, energetic Dandiya by first-year students, and a captivating Navroop Devi performance by the second-year students. The event concluded with a high-energy Dandiya night with exclusive DJ, where everyone danced with joy until they couldn't dance anymore. The evening wasn't just about performances; it was also a culinary delight, with delicious Chhole Puri and Gulabjamun satisfying our taste buds. Our stomachs and hearts were full, and the memories of this wonderful celebration will stay with us forever.

6

## ALUMNI SPEAK

Embarking on an  
Enriching Healthcare Journey...

**Dr. RAJAT K MAHOBIA**

Senior Consultant,  
Healthcare Advisory,  
Pricewaterhouse Cooper (PwC)

Dr. Rajat's journey started with a Bachelor's in Dental Surgery (BDS) from CDSH, College of Dental Science and Hospital, Indore, MP. After a few years of practice, he pursued a PGDM from IIHMR Bangalore, and graduated in 2018. He started working with the NHM, Govt of Gujarat as a State Project Officer for Non-Communicable Diseases. After a few years, He joined JHPIEGO, posted in Varanasi, UP, as a Program Officer, at the Health & Wellness Centers. Followed by which, he joined John Snow International, New Delhi and was deputed as the Ministry of Health & Family Welfare, Govt. of India, working on the COVID-19 vaccine supply chain at the National level.

He added that Transitioning to the realm of public health was akin to embarking on an exhilarating voyage, driven by his profound fascination for community health and an unquenchable thirst to engage with the expansive horizons of healthcare. This transformative journey gained momentum at IIHMR Bangalore, a crucible of possibilities that beckoned him to explore multifaceted domains. Here, he delved into the intricate tapestry of Non-Communicable diseases, immersed himself in the dynamics of Diabetes, Hypertension, Geriatric care and Cancer programs, and ventured into the uncharted territories of COVID vaccinations, weaving together a rich mosaic of experiences that forever changed his professional trajectory.

Speaking further about the most challenging projects, he says one of the most challenging and rewarding projects he had handled was the National COVID Vaccination program. It involved intense work during the pandemic, coordinating efforts to ensure vaccines were available across the Nation, often working round the clock.

He further added that public health has provided him with diverse opportunities and the ability to contribute positively to a larger community, which he might not have experienced through clinical practice.

Cont...



## ALUMNI SPEAK

When asked about stress management he said, Stress management involves accepting the ups and downs, maintaining mental stability, and effective time management.

Dr Rajat enjoys travelling, which aligns well with the field of public health. It provides valuable ground-level experiences and insights into the healthcare system. And when he was asked about his favourite place, Varanasi was one of his favourite places.

The conversation also highlighted the importance of continuous learning, cross-learning, strong listening skills, and stepping out of your comfort zone. Public health and Health IT integration is vital, focusing on simplifying technology for practical use at grassroots levels.

In conclusion, he added that the realm of public health has presented him with a myriad of opportunities and empowered him with the capacity to make positive contributions to a broader community—an aspect that might not have been encountered within the confines of clinical practice.



## RESEARCH AND PUBLICATIONS

### Strengthening 1st 1000 Days and Early Childhood Care and Development in Urban Slums of Bangalore

This program focuses on underprivileged communities living in the urban slums of Bangalore in strengthening 1st 1000 days and Early Childhood Care and Development (ECCD). The program aims are to 1) identify the gap and strengthen the 1st 1000 days for improved Maternal Child Health outcomes. 2) To enroll 25 children aged 6 months to 3 years in each creche, to provide nutritious food and support in the overall development (Cognitive, Language, Physical, Social, and Emotional) of the child 3) Health Literacy to parents of ECCD beneficiaries and community on 1st 1000 days viz., child growth and development, IYCF, Early Childhood Education, Food and Nutrition, WASH, Immunization, Family Planning, etc. and also to improve demand to seek healthcare from public health facilities/FLWs.

#### Impact of the study:

- Overall improvement in the nutritional and health status of ECCD children
- Improved KAP among parents, pregnant women,

lactating mothers, and their spouses on 1st 1000 days, ECCD and other nutritional-related issues

- Improved health-seeking behaviour and health status among pregnant women and lactating mothers
- Increased father's involvement in childcare and development.





## Gap analysis and Entry level NABH accreditation

Mithra Multi-speciality Hospital is built by a team of professionals. The hospital believes in minimally invasive treatment with minimum patient discomfort. All the various services and specializations are provided, keeping in mind the important component of patient – affordability while getting the best medical care. MITHRA Multi Speciality Hospital along with its team of highly experienced doctors has a simple motto – Dedicated to serving all with love, care, and compassion.



IIHMR Bangalore provides consultancy services with the objective of strengthening hospital processes in adherence with quality standards, capacity building of staff on QMS, and developing appropriate supervisory and monitoring mechanisms.

## 360-degree Assessment of the Ability and Quality of Community Health Officers for management of Common Health Conditions – Development of a Tool for Evaluation

Objectives of the study are to a) develop a standardized tool to objectively assess the quality of CHOs for the management of common health conditions across Health Wellness Centres (HWCs) and b) pilot and validate an ability assessment aptitude tool for Community Health Workers (CHOs) for various functions at HWCs.

**Methodology:** Input, processes, and output framework will guide the development of the assessment tools. Data collection methods include observations, record reviews, and Personal Interviews with Patients, CHOs, ASHAs, and Medical Officers.

Each study instrument would be assigned across thematic areas of General Infrastructure, Statutory Compliances, Clinical Quality and Documentation, Safety, Training, Inventory Management, and Clinical Governance. A scoring criterion would be developed to quantitatively score the response on an ordinal scale enabling a composite index of quality and ability through 360-degree assessment.

## POSHAN MAA: Empowering Women and Ensuring Proper Nutrition

'Poshan Maa' was observed through a series of community engagement initiatives in urban slum areas. These programs featured diverse activities, including eco-friendly craft pot decoration using food grains, rangoli decoration, all centered around the theme of 'Empowering Women and Ensuring Proper Nutrition'. Additionally, there were engaging elements such as quiz competitions, a POSHAN Rally to raise awareness about the significance of proper nutrition, demonstrations on nutritional and low-cost food preparation, as well as various games. These activities collectively aimed to educate participants about the importance of balanced diets and micro nutrients. In total, 267 beneficiaries were reached through this program.





## National Family Health Survey-6, Tripura

The Ministry of Health & Family Welfare, Government of India has launched the second phase of the sixth round of the National Family Health Survey, popularly known as NFHS-6, with the specific goal of providing essential data on health and family welfare needed by the Central and State Governments and other stakeholders for policy formulation and also acquiring information on important emerging health and family welfare issues. The International Institute for Population Sciences (IIPS) Mumbai, a Deemed University and an Autonomous Organization of the Ministry of Health & Family Welfare, Government of India, is the nodal agency for conducting the survey on behalf of the Ministry. The Indian Institute of Health Management Research (IIHMR) has been assigned as a field agency to conduct the survey in the entire Tripura. IIHMR took up the fieldwork in two stages. The first stage of fieldwork consists of mapping and listing of households in selected sample village(s)/urban block(s). This will serve as a frame for the selection of households for collecting information in prescribed survey schedules and in the second phase (main survey) across Tripura State.



*Figure 1 : IIHMR Team with Prof.Hemkothang Lhungdim from IIPS Mumbai*

Mapping Listing training was conducted in Shahid Bhagat Singh Youth Hostel, Agartala Tripura from 13-18 September 2023. A total of 58 field investigators (male) were trained for the Tripura State and formed 16 teams for mapping listing operations. The fieldwork for mapping and listing in the State of Tripura was started on 20 September 2023. In this survey, a total of 384 PSUs across the 8 districts of Tripura will be covered. Till date, we have successfully completed mapping listing work in Tripura-West, Sepahijala, South-Tripura and Gomuti districts and covered 210 primary sampling Units (PSUs) out of the 384 PSUs in Tripura. Mapping listing operations are in progress in the Khowai and Dhalai districts of Tripura state. Prof.Hemkothang Lhungdim from IIPS Mumbai addressed the IIHMR team and interacted with the Mappers & Listers.







## Training Programs by IIHMR Bangalore

IIHMR Bangalore has a dedicated training wing which aims to provide support to students and working professionals so that they are may be able to extensively learn about the Healthcare industry. Short term training programmes and workshop are constructed by the institute on modules like effective hospital management, healthcare leadership and customized training for hospital and healthcare organizations to improve the skill set of working professionals.

### Training/Workshop Organized:

IIHMR Bangalore organized an Executive Program in Managing Digital and Connected Health (MDCH) from 8<sup>th</sup> September to 10<sup>th</sup> September 2023.

### Project Management & Big Data Driven Technologies

International Workshop on Project Management & Big-Data Driven Technologies for Intelligent System of Industry IIHMR Bangalore campus is going to organize 4 days' workshop on "Project Management & Big Data Driven Technologies". It will be conducted from 29<sup>th</sup> Nov 2023 to 2<sup>nd</sup> Dec 2023. This workshop will help to gain knowledge about various Big Data analytics and their respective platforms.

Course Coordinator will be Mr Andrew Titus Manuel (Training officer). Program in-charge will be Dr Pankaj Rahi (Associate Professor, Health Information Technology Management, IIHMR Bangalore), Dr Piyush Kumar (Associate Professor & Associate Dean, Trainings IIHMR Bangalore), Dr Gyan Kashyap (Assistant Professor, IIHMR Bangalore)

### Workshop on Health Data Analytics

IIHMR Bangalore campus will organize 2 days online interactive workshop on "Health Data Analytics" in collaboration with HealthTechX, a leading digital health and health informatics coaching platform at IIHMR Bangalore. It will be conducted on 4<sup>th</sup>-5<sup>th</sup> November 2023.

This will aim to provide an exceptional learning experience and equip participants with the skills necessary to thrive in the rapidly evolving world of Health Data analytics. Key resource persons will be Dr Amit Thakker (Strategic Project Leader and System Thinker, Toronto, Canada) and Mr Niladri Neel Majumder (Senior Leader - Virtual Care, Provincial Health Services Authority, Vancouver British Columbia, Canada)

## CERTIFICATE COURSES

**Name of Course:** Wellness and Medical Tourism

**Date:** Started on 5<sup>th</sup> August 2023 (2.5 months)

### Program Highlights:

This course provides live online classes with certificate of completion. It will also provide interaction with industry experts.

### Program Director and Coordinator:

Dr. Kirti Udayai, Dr. Piyush Kumar

### Name of Course:

Hospital Quality and Patient Safety (HQPS)

**Date:** Started on 25<sup>th</sup> August 2023 (3 Months)

### Program Highlights:

This course provides healthcare practitioners and others an orientation to the knowledge and skills needed to lead patient safety and quality improvement initiatives at micro and macro levels.

### Program Director and Coordinator:

Dr. Usha Manjunath, Dr. Deepashree M R

### Name of Course:

Nutrition And Health (CCNH) – Cohort 3

**Date:** Will be Start in December 2023 (6 months)

### Program Highlights:

Interactive five days' workshop at University of Mysore. Skill development (Hands on exercise on Anthroplus & Anthroplus software). Development of IEC materials. Weekly live interaction with experts.

### Program Director and Coordinator:

Dr Asna Urooj, Dr Usha Manjunath, Dr Jyoti Vijay





### **Manipal completes Kolkata's AMRI Hospitals acquisition**

Temasek-backed Manipal Health Enterprises Ltd has acquired an 84% stake in Emami Group's AMRI Hospitals for around ₹2,300 crore, a person in the know said. As part of the deal, Manipal will pick up an equity stake as well as assume a portion of AMRI's debt.

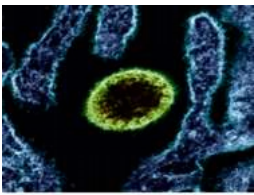
Read more at : <https://www.livemint.com/companies/news/manipal-acquires-84-stake-in-amri-for-2-300-crore-11695235412264.html>



### **The Evolution of Machine Learning In TB Diagnostics: Unlocking Patterns and Insights**

At a staggering rate of 188 people per every 100,000, India has a lot to do. Thankfully, tuberculosis is both preventable and curable, especially if it is detected early enough and treated in good time. With emerging machine learning algorithms, TB diagnosis seems to have taken a new dimension with computer-aided diagnostics (CAD) measures now taking centre stage in many climes.

Read more at : <https://health.economictimes.indiatimes.com/news/diagnostics/the-evolution-of-machine-learning-in-tb-diagnostics-unlocking-patterns-and-insights/103885021>



### **Nipah virus outbreak: what scientists know so far**

In the southern Indian state of Kerala, the bat-borne Nipah virus has infected six people — two of whom have died — since it emerged in late August. More than 700 people, including health-care workers, have been tested for infection over the past week. State authorities have closed some schools, offices and public-transport networks.

Read more at : <https://www.nature.com/articles/d41586-023-02967-x>

### **Dr Mansukh Mandaviya launches National Policy on Research & Develop and innovation in Pharma-Medtech sector in India**

Accentuating the benefits of the scheme, Dr Mandaviya noted the scheme will focus on transforming India into a high-volume, high-value player in the global market of pharmaceuticals, meeting the quality, accessibility, and affordability goals.

Read more at : <https://health.economictimes.indiatimes.com/news/policy/dr-mansukh-mandaviya-launches-national-policy-on-research-development-and-innovation-in-pharma-medtech-sector-in-india/103959580>



### **PETA India Offers Free Simulation Software to India's Pharmacology Educators**

Following initiatives by PETA India, forward-thinking scientists, and others, the Medical Council of India (now the National Medical Commission) and Pharmacy Council of India forbade the use of animals to train undergraduate medical and pharmacy students, favouring non-animal techniques instead. The University Grant Commission also banned the use of animal dissection in life sciences and zoology courses.

Read more at : <https://health.economictimes.indiatimes.com/news/policy/peta-india-offers-free-simulation-software-to-indias-pharmacology-educators/104055417>

### **National Medical Commission gets WFME recognition, Indian medical graduates can now practise abroad**

The National Medical Commission (NMC), India, has been being awarded the coveted World Federation for Medical Education (WFME) Recognition Status for a tenure of 10 years, said a press release from the Union Health Ministry.

Read more at : <https://health.economictimes.indiatimes.com/news/industry/national-medical-commission-gets-wfme-recognition-indian-medical-graduates-can-now-practise-abroad/103823341>





This Photo by iStockphoto Author is licensed

## Why predictive models for proactive heart health management are crucial amid rising heart disease burden in India?

This is a matter of utmost importance because what we currently see is only the tip of the iceberg. One of the most challenging aspects of heart disease is its silent progression; often, individuals are unaware of its presence until it reaches an advanced and irreversible stage.

Read more at : <https://health.economictimes.indiatimes.com/news/industry/why-predictive-models-for-proactive-heart-health-management-are-crucial-amid-rising-heart-disease-burden-in-india/104046244>



## Lack of insurance cover cuts off a very vast majority of people seeking mental health care: Vidit Bahri, Sukoon

Mental health in India is currently going through a revolution. Revolution happening on the online side, there is a revolution of mindsets and revolution happening for the inpatient side of things as well. In India, where it's still deemed as a taboo to talk about mental health and get help for it, is fast changing from denial to acceptance and then seeking care.

Read more at : <https://health.economictimes.indiatimes.com/news/industry/lack-of-insurance-cover-cuts-off-a-very-vast-majority-of-people-seeking-mental-health-care-vidit-bahri-sukoon/103822075>

## Mylab introduces MyNeoShield for newborn screening

The Pune-based company claims that this device is set to transform the landscape of new-born healthcare by making screening faster, more accessible, and more affordable, ultimately saving lives and preventing lifelong illnesses. The device supports all the seven tests done for New-born screening globally.

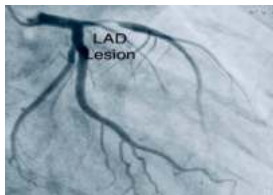
Read more at : <https://health.economictimes.indiatimes.com/news/diagnostics/mylab-introduces-myneoshield-for-newborn-screening/103989743>



## India taking steps to eliminate trans-fatty acids from national food supplies: WHO

India's target of reaching 75 million people with hypertension and diabetes under standard care by 2025 is the largest cover of non-communicable diseases (NCDs) for primary health care in the world, as per a statement released by the WHO.

Read more at : <https://health.economictimes.indiatimes.com/news/industry/india-taking-steps-to-eliminate-trans-fatty-acids-from-national-food-supplies-who/104017140>



## Abbott launches new vascular imaging platform in India

Unlike traditional imaging methods such as conventional angiography, the intra-vascular imaging software uses near-infrared light to provide high-definition, precise imaging from within a blood vessel, allowing physicians to capture information from even the most complex patient anatomy.

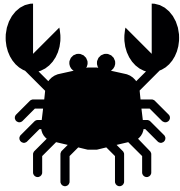
Read more at : <https://health.economictimes.indiatimes.com/news/medical-devices/abbott-launches-new-vascular-imaging-platform-in-india/104492985>



## NPPA fixes retail price of 29 new drugs, exempts two drugs from DPCO, 2013

The National Pharmaceutical Pricing Authority (NPPA) has fixed the retail price of 29 new drugs under the provisions of Drugs (Prices Control) Order, 2013 for fixing retail price of a new drug for existing manufacturers of scheduled formulations. The Authority considered 30 applications seeking retail price fixation of 30 new drugs in its latest meeting and approved the prices for 29 drugs, while differing fixation of price for one formulation observing that necessary clarifications are required from the company before finalising the price.

Read more at : <http://pharmabiz.com/NewsDetails.aspx?aid=163159&sid=1>



## ICMR to begin research to accelerate screening, early diagnosis and treatment of cancer at district level

The Indian Council of Medical Research (ICMR) has invited expression of interest (EOI) from Indian scientists and researchers to accelerate screening, early diagnosis and treatment of cancer at the district level. This is aimed to improve coverage and quality of cancer screening through the existing healthcare system using accepted and validated methods. It will engage non-specialist physicians and other health care workers within a supportive healthcare system for screening of cancer and pre-cancerous conditions. It will also ensure that all screen positive people are linked to facilities for early diagnosis and treatment.

Read more at : <http://pharmabiz.com/NewsDetails.aspx?aid=162978&sid=1>



## 17th Edition of FICCI HEAL 2023 centred around 'Healthcare METAmorphosis' to be held on Oct 26-27 in New Delhi

India's apex industry chamber, Federation of Indian Chambers of Commerce & Industry (FICCI) is all set to host the 17th Edition of its annual healthcare conference – FICCI HEAL 2023 on October 26 & 27, 2023 at FICCI Federation House, New Delhi. The event has been supported by the Ministry of Health & Family Welfare (MoHFW) and NITI Aayog, Government of India. With

the overarching theme of 'Healthcare METAmorphosis', the conference will delve into the strategies and opportunities for the evolution of the healthcare industry in the coming years. Besides, it will serve as a platform for sharing and learning among all the stakeholders, both national and international. Read more at : <http://pharmabiz.com/NewsDetails.aspx?aid=162895&sid=2>

## India, Taiwan join hands to create next generation HealthTech

India and Taiwan have embarked on a new collaboration to develop and promote innovative solutions for the health tech sector. The International Trade Administration, Govt of Taiwan and Commerce Development Research Institute (CDRI) as executing arm of the Taiwan Government have partnered with EMPI Institutions and its Atal Incubation Centre-EMPI as India partner to organize a series of B2B meets and strategic partnerships between Indian and Taiwanese health tech companies.

Read more at : <http://pharmabiz.com/NewsDetails.aspx?aid=162913&sid=2>



## Glenmark launches triple drug formulation for type 2 diabetes patients in India

Glenmark's Zita portfolio of medicines has been benefiting around 1.75 million Type 2 diabetic patients annually, in India. On Wednesday announced that it has launched in India the first triple-drug fixed-dose combination (FDC) of the widely-used Teneligliptin with Dapagliflozin and Metformin.

Read more at : [Glenmark launches triple drug formulation for type 2 diabetes patients in India - Pharma News | The Financial Express](#)



## Tata Capital invests in dialysis chain based in Mumbai

The funding is done through Tata Capital Healthcare Fund II (TCHF II), the healthcare focused private equity fund of Tata Capital. About 90% of the funding will be for growth and 10% will provide exit to certain angel investors. Founded by nephrologists Jatin Kothari and Viswanath Billa, AKC has raised funds from founders and angel investors.

Read more at :

<https://economictimes.indiatimes.com/industry/healthcare/biotech/healthcare/tata-capital-invests-in-dialysis-chain-based-in-mumbai/articleshow/104324316.cms>



## Karnataka to deploy AI-based lung cancer screening technology

In a latest technology deployment in the health-tech sector, the Karnataka government has entered into a partnership with global pharma major AstraZeneca Pharma, to deploy Artificial Intelligence (AI) based lung cancer screening technology in the state

Read more at : <https://government.economictimes.indiatimes.com/news/healthcare/health-tech-karnataka-to-deploy-ai-based-lung-cancer-screening-technology/104385602>



## Upskill medicos with AI, Quantum, other emerging tech to meet the changing requirements of patient care: Minister

“India is recognised as the vaccination hub of the world having produced DNA Covid Vaccine and the world's first intra-nasal covid vaccine. India has also indigenously developed the vaccine called CERVAVAC which prevents cervical cancer.”

Read more at : <https://government.economictimes.indiatimes.com/news/healthcare/upskill-medicos-with-ai-quantum-other-emerging-tech-to-meet-the-changing-requirements-of-patient-care-minister/104258971>

## Army Hospital (R&R) conducts 50 bilateral simultaneous cochlear implants in 18 months

The Department of Ear, Nose & Throat (ENT) at Army Hospital (R&R), in Delhi, has conducted 50 bilateral simultaneous cochlear implants in the last 18 months, becoming the only government hospital across the country to accomplish these many successful implants.

Read more at : <https://government.economictimes.indiatimes.com/news/healthcare/army-hospital-rr-conducts-50-bilateral-simultaneous-cochlear-implants-in-18-months/104156097>



## Healthcare Cyber Risk Assessment: IIM Lucknow's model to mitigate cybersecurity risk

The increasing complexity and sensitivity of data in healthcare organisations have heightened their susceptibility to cyberattacks, especially as the healthcare sector's reliance on digital data has grown during the Covid-19 pandemic.

Read more at :

<https://government.economictimes.indiatimes.com/news/healthcare/healthcare-cyber-risk-assessment-iim-lucknows-model-to-mitigate-cybersecurity-risk/104047170>



## Dr Mansukh Mandaviya launches National Policy on Research & Development and Innovation in Pharma-MedTech Sector in India

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Read more at :

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