

A COMPLETE HEALTH JOURNAL



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Exclusive
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CHILDHOOD NEUROLOGICAL DISORDERS

A COMPLETE HEALTH
MAGAZINE

Volume VII Issue IV
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A sense of impending doom...

Dear Readers,

Thank you for your continuous support. Double Helical has been making a difference in the lives of the socially and economically disadvantaged groups through raising awareness as well making voluntary contributions in the areas of education, health, human rights and social services. The magazine provides a platform to recognize innovation, people, products and services that are helping to transform the healthcare sector in the country and ushering in affordable, high quality and inclusive healthcare for masses.

In the current issue, we focus on current trends of Covid-19. Today, Covid-19 pandemic has turned into a seemingly unending cross country run with unexpected twists and turns. The current misplaced concerns about the impending fourth wave of Covid-19 in India, is a fallout of lack of robust thought leaders with first hand battle experience in transmission dynamics of communicable diseases. To predict whether we will have a disastrous fourth wave, let us go back to fundamentals of transmission dynamics of communicable diseases which any epidemiologist who has worked at the ground level will know.

As per report, the latest episode of the fourth wave is under progress. It is still unknown to know about unidentified risks of the virus and not possible to find immediate solutions to imagine in advance. The graph of the rise in Covid-19 cases in several states are the concerning matters which is continuously catching the attention of the people. India for the last two years got caught in the cobweb Covid-19 pandemic resulted in chaos; even now the country is facing uncertainty and vulnerability to this epidemic due to newly emerged variants from time to time. Over the past few days, the emergence of new Covid-19 cases accelerating and alarming in India. So- Is this a sign of a fourth wave scare?

India has willy-nilly gone through widespread community transmission rendering vast swathes of its population robustly immune. Studies have established that naturally acquired immunity is 13 to 26 times stronger than vaccine induced immunity. This can be long lasting due to T and memory cells after waning of antibody levels. Basically Memory T cells are antigen-experienced cells that mediate a faster and more potent response upon repeat encounter with antigen. These cells are long-lived and when developed

following an infection can protect against subsequent infections with the same pathogen. Studies from Singapore and Sweden have shown that individuals had cellular immunity against SARS-CoV-2, 17 years after encountering SARS-CoV-1.

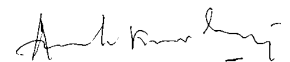
A trotting pace is more suited for a cross country run. While the virus is in its coming up fourth wind, we can take time out to adjust our strategy according to this paradigm shift. Taking stock of the ruins left in the aftermath of the initial impact of this virus can enable us to calibrate our response better.

Apart from this we also highlight the present trends of Autism which has become the new public health challenge on the horizon. We rather than having a disability approach should now start focusing on the capability approach towards the ASD (Autism Spectrum Disorder) child. The mortality data from year 2008 to 2018 on under 5years of age has probably shown a decline; which is definitely praiseworthy. The few clinical endpoints of any ASD children are difficulties with social communication/ interaction and restricted / repetitive behaviours or interests. According to health experts, the ASD can be diagnosed as early as 12-18 months age and is a Neuro developmental disorder. According to the 2020 CDC and 2022 WHO global statistical data, 1 in 44 people and 1 in 100 people are diagnosed with ASD.

The features of Autism Spectrum Disorder are not similar in all individuals and the severity is also not uniform. In child neurology division, we have screened more and more. Children with ASD and their caregivers, as well as siblings have impaired quality of life as compared to typically developing children.

There is more such interesting and thought-provoking stuff to savour in this issue. So, happy reading!

Thanks and regards



Amresh K Tiwary,
Editor-in-Chief



Dr. Alexander Thomas Wins the Waterfalls Global Award

Dr. Alexander Thomas, President of the Association of Healthcare Providers – India (AHPI), has been awarded the Waterfalls Global Award (Healthcare Sector) by the Government of the United Arab Emirates. The award is presented to those who served the health profession with distinction when called upon during times of adversity. Dr. Thomas was recognised for his efforts and contributions in protecting the safety and health of the community during the Covid-19 pandemic. The Waterfalls Global Award Ceremony was held recently at the Qasr Al Bahr Majlis (Sea Palace) in Abu Dhabi, where the winners were presented to His Highness Sheikh Mohammad bin Zayed Al Nahyan, the President of the United Arab Emirates



SHEIKH MOHAMMAD, PRESIDENT OF THE UAE, WITH THE WINNERS OF THE WATERFALLS GLOBAL AWARDS

and the ruler of Abu Dhabi.

The award is part of UAE’s contributions to the global efforts in recognising and appreciating health workers. The first edition of the

Waterfalls Global Award in 2022 honours 15 healthcare professionals around the world for their dedication and commitment to service.

Dr. Thomas is an orthopaedic

surgeon and healthcare policy leader who has served the health sector for 43 years, contributing significantly to the provision of quality healthcare at the grassroots in India. As the Director of the Bangalore Baptist Hospital from 2006-2014, he upgraded the institution into a nationally-awarded multi-speciality Centre of Excellence. He is now the President of AHPI, and advises the Association of National Board Accredited Institutions (ANBAI) and the Consortium of Accredited Healthcare Organisations (CAHO), among others. He played a major role in involving the private sector in establishing Covid-19 testing centres and setting up courses for the training and certification of frontline Covid Warriors with NSDC. He lobbied with the Government and private sector donors to provide funds for families of healthcare workers who died while treating Covid patients. 

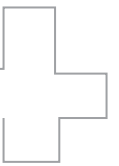


" HONOURS FOR EXCELLENCE "

Double Helical Health Conclave and National Health Awards 2021 organised by Double Helical, a leading national health magazine witnessed a galaxy of eminent persons, who gathered to celebrate the success stories in achieving excellence in delivery of care including showcasing compassion and empathy for patients epitomised by doctors, healthcare institutions, and related organisations This time Double helical paid homage to COVID-19 warriors who laid down their lives in line of duty and gave awards to all those organizations/ individuals who played pivotal role in providing COVID-19 care in difficult time.

BY TEAM DOUBLE HELICAL





Double Helical, India's leading health magazine, successfully organised 'Double Helical Health Conclave and National Health Awards 2021' at India Habitat Centre in New Delhi on 02th of May, 2022. An impressive gathering comprising who's who of the healthcare industry besides distinguished guests and people from different walks of life witnessed the brainstorming Conclave and glittering awards ceremony, organised by the magazine with the support of the Association of Healthcare Providers (AHPI) India and the Consortium of Accredited Hospitals Organization (CAHO).

Double Helical National Health Awards 2021 was preceded by National Health Conclave on "Improving Availability & Affordability of Healthcare for Common Man" where leaders from government, academia, community, industry and international agencies discussed on lasting solutions to enable India reach goal of providing universal health coverage (UHC). The immensely thought-provoking Conclave discussed on how to characterize universal health coverage (UHC) like availability, accessibility,



affordability and acceptability (Quality). According to health experts who were present in scientific seminar, India has roughly 1.5 beds as against WHO norm of 3.5 beds per 1000 population. We therefore need to add more than double the number of beds. Even more important is the accessibility as most of tertiary care beds are confined to Tier-I and some in Tier-II towns, leaving Tier-III and rural areas without adequate tertiary care services and thereby forcing population to travel long distances to avail these services. Affordability

continues to be the area of concern.

The doctors and prominent persons from various fields witnessed the mega awards ceremony organised to encourage the quality work being done in the healthcare sector. The ceremony was graced by renowned gastroenterologist, hepatologist, translational scientist, researcher **Dr Shiv Kumar Sarin, Vice Chancellor, Institute of Liver and Biliary Sciences, New Delhi** as Chief Guest. Other eminent persons present on the occasion included Dr A K Agarwal, Professor of Excellence, Medical



Advisor, Apollo Hospital, New Delhi, & Ex-Dean, Maulana Azad Medical College, Dr Girdhar J Gyani, Director General, Association of Healthcare Providers (AHPI, India), Dr Vijay Agarwal, President, Consortium of Accredited Hospitals Organization (CAHO), Dr Vinay Aggarwal, National Past President, Indian Medical Association, Dr Chandrakant Pandav, Padam Shri Awardee, Former Head of Community Medicine, All India Institute of Medical Sciences, New Delhi, Dr Anoop Misra, Executive Chairman, Fortis C-DOC Hospital for Diabetes and Allied Sciences, Director, and Former Professor (Medicine), AIIMS, New Delhi, Dr Suneela Garg, Advisor ICMR, Professor of Excellence, Community Medicine, Maulana Azad Medical College & Associated Hospitals New Delhi, Dr H S Chhabra, MD, India Spinal Injury Centre, New Delhi, Dr B L Sherwal, Director and Medical Suptd, ABVIMS & Dr RML Hospital New Delhi, Dr P D Rath, Director, Max Super speciality Hospital, New Delhi, Dr Neelam Mohan, Director, Dept of Paediatric Gastroenterology, Hepatology Liver Transplant, Medanta Hospital, Gurugram; Dr Ramesh K Goyal, Vice Chancellor, Delhi

Pharmaceutical Sciences and Research University (DPSRU);, Dr G N Singh, Former Drug Controller General of India, Dr Nimesh G. Desai, Former Director, Institute of Human Behaviour and Allied Sciences (IHBAS), Dr Rajiv Sood, Senior Consultant Urology and Founder Dean, ABVIMS, Ram Manohar Lohia Hospital College, New Delhi, Dr V K Monga, Finance Secretary, IMA National, Dr R K Tuli, Chief Consultant, Holistic Medicine, SOHAM, New Delhi, and Amresh Kumar Tiwary, Editor-in-Chief, Double Helical.

The Award Function was preceded by lighting of the lamp by the esteemed Chief Guest and other dignitaries, and National Anthem and Sarswati Vandana by MRG World School, New Delhi.


Chief Guest Dr Shiv Kumar Sarin, delivered an inspiring speech in which he praised the commitment and hard work of the medical community in the care of ongoing health issues, saying, "Dedicated doctors and healthcare institutions like today's winners are responsible for the enhancement of the glory of medical profession. I would like to extend special thanks to Team Double Helical for joining me in publically celebrating the sheer hard

work and perseverance of the members of India's healthcare community."

Addressing the gathering, Chief Guest, said, "Awards are a way to encourage excellence. This is the reason why Double Helical organizes awards ceremony every year to acknowledge the achievements of deserving doctors and other members of the medical community who have devoted their lives to the service of humanity. The winners of National Health Awards 2021 have not only made their profession proud, but brought accolades to the nation too."

Double Helical Health Awards is a platform that recognises innovation, people, products and services that are helping to transform healthcare sector in the country and ushering in affordable, high quality and inclusive healthcare for patients. It is a mega annual event, keenly-awaited in the country.

Amresh Tiwary, Editor-in-Chief of Double Helical, expressed his gratitude to all the people who contributed to making the event a huge success. "Today's gala awards ceremony recognizes the immense contribution and outstanding achievements of doctors and healthcare institutions in the service of the nation. I thank you all for coming together and making it the definitive event of the healthcare sector," he added.

Double Helical Healthcare Awards 2021 served as a testimony to the hard work of medical fraternity in developing the best healthcare and promoting state-of-the-art diagnostic and treatment facilities. The event aimed to take a look at the macro and micro factors, the current scenario and the way forward for the healthcare sector. This time Double helical paid homage to COVID-19 warriors who laid down their lives in line of duty and gave awards to all those organizations/ individuals who played pivotal role in providing COVID-19 care in difficult time. 



Awardees of Double Helical National Health Awards 2021

Category 1 Awards for Hospitals

FOR OUTSTANDING WORK IN PROVIDING AFFORDABLE AND QUALITY CARE DURING COVID AND BEYOND

1. Ganga Medical Centre and Hospital, Coimbatore
2. Bhailal Amin General Hospital, Vadodara, Gujarat
3. Shrimad Rajchandra Hospital, Dharampur, Gujarat
4. Justice K S Hedge Chairitable hospital, Mangalore, Karnataka
5. Kauvery Hospital, Salem, Tamilnadu
6. Baby Memorial hospital, Kerala
7. Chettinad Academy of Research and Education, Kelambakk
8. Yenepoya Medical College Hospital, Deralakatte
9. Pushpagiri Vitreo Retina Institute,
10. Raj Hospitals, Jharkhand
11. Dr. Mehta's Hospitals, Chennai
12. Shija Hospitals & Research Institute Pvt. Ltd. Imphal, Manipur.
13. Hajela Hospital, Bhopal, Madhya Pradesh
14. Baptist Hospital, Bangalore
15. Rankers Group of Hospitals, Haridwar, UP
16. Mahatma Gandhi University Medical Sciences & Technology, Jaipur
17. Sehgal Neo Hospital, New Delhi
18. Bhagat Chandra Hospital, New Delhi
19. Shanti Mukund Hospital, New Delhi
20. Yashoda Super Specialty Hospital Kaushambi, Ghazaiabad
21. India Spinal Injuries Centre, New Delhi
22. Ruban Memorial Hospital, Patna
23. GCS Medical College & Hospital, Ahmadabad

24. Kalinga Institutes of Medical Sciences, Bhubaneswar

24. Dr LH Hiranandani Hospital, Mumbai

25. Shri Mata Vaishno Devi Narayana Superspeciality Hospital, Katra



Dr Sanjay Rai, Centre for Community Medicine, AIIMS, New Delhi, receives **"Corona Warrior of the year Award"** for outstanding work in providing safe clinical care with empathy during COVID-19

Awardees of Double Helical National Health Awards 2021

Category 2 Awards for individuals

FOR OUTSTANDING WORK IN PROVIDING SAFE CLINICAL CARE WITH EMPATHY DURING COVID-19

1.	Dr V S Mehta, Paras Hospital, Gurgaon: "Life Time Achievement Award"
2.	Dr Anoop Misra, Fortis Hospital, New Delhi: Excellence in Quality Health Services in Covid-19 Era Award".
3.	Dr Chandrakant Pandav, Padam Shree Awardee, 2021
4.	Dr Sanjay Rai, AIIMS "Corona Warrior of the Year Award".
5.	Dr Rajiv Sood, RML Hospital, New Delhi
6.	Dr Shailendra Patil, Nasik, Maharashtra
7.	Dr Chandrakant Lahariya, Public Health Expert
8.	Dr B L Sherwal, Director and Medical Suptd.ABVIMS and Dr RML Hospital, New Delhi
9.	Dr. Neelam Mohan, Director, Department of Pediatric Gastroenterology, Hepatology & Liver Transplantation, Medanta Hospital, Gurgaon
10.	Dr B R Patil, New Delhi
11.	Dr P D Rath, Max Superspeciality Hospital, Saket, New Delhi
12.	Dr Arun Sharma, India spinal Injury centre, New Delhi



Dr Shishir Narayan, Eye Trust Hospital, Ghaziabad and Associated with Shroff Eye Hospital New Delhi, receives Double Helical National Health Awards 2021 for outstanding work in providing safe clinical care with empathy during COVID-19

13.	Dr A P Setia, Haryana
14.	Dr Piyush Ranjan, Sir Ganga Ram Hospital, New Delhi
15.	Dr V K Monga, Finance Secretary, IMA, New Delhi
16.	Dr Sharad Agarwal, IMA, New Delhi
17.	Dr Manisha Yadav: Best in Quality Health Services during Covid-19
18.	Dr Shishir Narayan: Shroff Eye Hospital
19.	Shikhar Dhawan: "Humanitarian of the Year Award"



Awardees of Double Helical National Health Awards 2021

Category 3 Best in its Respective Field Builders/Developers/Bankers

Best Doctor of the Year Awards 2021

1.	"Best Banker of the Year Award" Ravinder Singh, MD, Credit Suisse
2.	Major Vishal Taneja, MD, Entellus Security and Allied Services Pvt Ltd "Best Manpower Services of Year Awards"
3.	Best Commercial Projects Golden I in Delhi/NCR: Ocean Infra-heights
4.	Best Ultra Luxury Projects: Gulshan Homz
5.	Excellence in Quality Delivering Affordable Homes: Signature Global
6.	Fast Emerging Developers of Affordable Segments: MRG World
7.	Excellence in Mid Segments Quality Homes: Trehan Home Developers
8.	Best Quality Housing Projects: Antriksh India
9.	Best Quality Commercial Project: Bhutani Group
10.	Best PR Services: PR Professional
11.	Fast Emerging PR Services: Ashwani Kumar
12.	Vinayak Kumar, Yolo Health Foundation



Dr B L Sherwal, Director and Medical Suptd. ABVIMS and Dr RML Hospital, New Delhi, receives "Best Doctor of the Year Awards 2021" for outstanding work in providing safe clinical care with empathy during COVID-19

CHILDHOOD NEUROLOGICAL DISORDERS



Anatomically, neurological diseases in children can affect the brain, spine, nerves, neuromuscular junction, or muscles. These illnesses might be the result of a static insult or symptoms of a progressive disorder.....

BY DR.SHEFFALI GULATI/ DR.SONALI SINGH

Life is intriguing in itself, but childhood makes it even more fascinating. During the first five years of life, the body and mind develop at a rapid rate. Brain maturation is maximum in the first two years of life. Any type of brain injury during this period can be devastating. Neurological problems in children can reveal itself in a variety of ways depending on their age. This variation is attributable to the influence of the brain's physiological continuous development. As a result, a patient who has had a perinatal stroke will present differently than a child who

has had a stroke later in life.

Developmental disorders often coexist with core neurological disorders. The common developmental disorders like autism spectrum disorder, intellectual disability, attention deficit hyperactivity disorders, etc can be present alone or in combination with stroke, cerebral palsy, epilepsy, degenerative disorders, etc.

Paediatric neurological disorders contribute in a big way to the global burden of neurological disorders due to the number of years lived with disability In India, the prevalence of paediatric neurological disorders in children (6 months to 2 years) was found to be 27.92 per 1000. Besides

EPILEPSY IS ONE PAEDIATRIC NEUROLOGY DISORDER THAT IS RIDDLED WITH MYTHS AND CARRIES A HIGH LEVEL OF STIGMA. THIS IS ONE DISORDER WHERE TWO-THIRDS OF THE PATIENTS CAN BE TREATED WITH ONE OR A COMBINATION OF TWO APPROPRIATELY CHOSEN ANTI-SEIZURE MEDICATIONS





the physical disability of the child, the economic burden and emotional exhaustion faced by family often goes unnoticed. The caregivers themselves don't realise their emotional burnout. Chronic paediatric neurological disorders require long term care.

Cerebral palsy is a disorder of tone and posture. It is the most common cause of childhood disability. It results from a one-time insult to the developing brain. Neonatal period is the most vulnerable phase. Prematurity, ischemia, hypoxia, infection and several other factors are responsible for this vulnerability. All neonates who required admission at birth and are neonatal intensive care unit (NICU) graduates should be followed up closely for developmental assessment. These children will benefit a lot from early intervention to ensure developmental stimulation. In India, the most common hurdle in the management of children with cerebral palsy is the lack of knowledge among the parents regarding the importance of neuro-rehabilitation. The search for a magical medicine or alternative cure is futile if child is not

provided with physical therapy, occupational therapy, speech therapy, visual rehabilitation, etc.

The emotional and economic burden faced by the caregivers, combined with lack of knowledge and motivation to continue with rehabilitation, leads to doctor shopping. Thus, the crucial period when therapy can lead to maximum improvement, is usually lost in search of an effective medication. Public awareness regarding cerebral palsy is crucial in changing the attitude of caregivers towards the non-pharmacological management of cerebral palsy.

EPILEPSY

Epilepsy is one paediatric neurology disorder that is riddled with myths and carries a high level of stigma. This is one disorder where two-thirds of the patients can be treated with one or a combination of two appropriately chosen anti-seizure medications. And in the remaining third (known as drug resistant epilepsy), newer therapeutic modalities have come up. Despite the

availability of these therapeutic options, most children remain untreated because seizures are perceived by many as a psychiatric illness or supernatural phenomenon. The delay in recognition of seizures as a medical illness, leads to delay in initiation of treatment. Epilepsy does not need lifetime treatment in most of the cases. In maximum cases medications can be tapered and stopped after child is seizure free for two years. Parents hesitate to inform their child's school authority about the child's illness. They fear that revealing the truth about their child's illness may affect the child's education and lead to bullying. Here again the public awareness can bring about a big change in the way children with epilepsy are treated.

PAEDIATRIC STROKE

Paediatric Stroke is another common neurological disorder. It is not as common as strokes in adults. It



Brain Infections can have short term or long-term sequelae, depending upon various agent as well as host factors. These usually present with fever, headache, vomiting, altered mental status, and seizures.





usually presents with weakness of a part of the body. It results due to compromised blood supply to a part of the brain. Resulting ischemia damages the part of the brain. Unlike adults, infection is a common cause of stroke in children. Paediatric stroke protocols are slightly different from adults. Neurorehabilitation has an important role to play in the long-term management of children with stroke. With rehabilitation full function recovery is possible, though variable amount of disability remains in few.

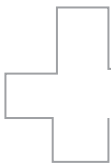
BRAIN INFECTIONS

Brain Infections can have short term or long-term sequelae, depending upon various agent as well as host factors. These usually present with fever, headache, vomiting, altered mental status, and seizures. Early recognition and timely management

are crucial to treat brain infections. Sometimes the infectious organism can be very aggressive and lead to multiple complications. The common infecting organisms are bacteria, virus and tuberculosis. There are few organisms which are endemic to certain parts of India. Infection can be acute or chronic. If the infection is treated adequately without any complications, the patient recovers without any long-term sequelae.

There is another group of neurological disorders classified as autoimmune disorders. The body's immune system protects the body against invading organisms. Sometimes a carbohydrate or peptide sequence of the organism may share similarities with sequences of human tissue. This is known as molecular mimicry. The antibodies produced by body to fight against the foreign antigens may start attacking its own





PROFILE

Professor Sheffali Gulati is presently working at All India Institute of Medical Sciences, New Delhi with part of the team which started first DM Pediatric Neurology Program in South Asia (2004) as Program Director (2008) She has contributed towards establishing Pediatric Neurology programs across India and SAARC countries.

Over 25 years experience Dr Sheffali Gulati has developed Pediatric Neurology in India as a specialty-academics, clinical care, patient empowerment, research, advocacy and public health domains.

She has become first India recipient of National/International awards winner like Sheila Wallace Awardee (ICNA) in 2014, National Award winner for Science & Technology communication in 202, Fellowship Awardee, McGill University in 2006. She became Fellow, Royal College of Pediatrics and Child Health, UK, Fellow, National Academy of Medical Sciences/ Indian Academy of Pediatrics/ International Medical Science Academy.

She also won Global Genes Awards

in 2022 Financial Advocacy in Rare (FAIR) Patient Impact Grants to Fund Impactful Programs in Rare Disease Communities. She is well for envisioned, conceptualized and heading Centre of excellence and advanced research for Childhood Neurodevelopmental Disorders in 2017, high quality care, high end research, education hub and National registry and National Child Neurology tele-helpline/ consultation.

Dr Gulati has been instrumental in transforming care for children with neurodevelopment disorders across India and her contributions in the field of epilepsy, autism and other neurodevelopment disorders are unmatched

With having more than 368 research publications Dr Gulati has established herself as role model for Neurodevelopment disorders including screening/diagnostic instruments, Drug refractory epilepsy including dietary therapies, Autism spectrum disorders, Cerebral palsy, SLD, and Neuromuscular disorders/ neuro rehabilitation. She has been recognized as scientific associations International Society for Autism Research, global senior leader, Association of Child Neurology, India and founder member (2002).

As Founder Member, Association of Child Neurology, Professor Sheffali Gulati is Coordinator, DM Pediatric Neurology Programme, Faculty In-charge, Centre of Excellence and Advanced Research for Childhood Neurodevelopmental Disorders and Chief, Child Neurology Division; Department of Pediatrics, All India Institute of Medical Sciences, New Delhi

She has also been posted as Indian Academy of Pediatrics, 2021, Executive



She also won Global Genes Awards in 2022 Financial Advocacy in Rare (FAIR) Patient Impact Grants to Fund Impactful Programs in Rare Disease Communities. She is well for envisioned, conceptualized and heading Centre of excellence and advanced research for Childhood Neurodevelopmental Disorders in 2017.

Board Member, Indian Epilepsy Society, 2021, Co-Convenor, Pediatric Epilepsy Subsection, Indian Epilepsy Society 2020, INSAR (International Society for Autism Research) Global Senior Leader For India 2021-2023 and presently President Elect, Association of Child Neurology 2023-2025.



cells. This leads to autoimmune disorders, where one's hyperactive immune system is responsible for the illness. Disorders affecting the brain can be autoimmune encephalitis (grey matter affection) or autoimmune demyelination (white matter affection). Autoimmune disorders can also affect nerves, neuromuscular junction as well as muscles. These disorders require careful evaluation. Medications used to suppress the immunity like steroids, intravenous immunoglobulins are the usual therapeutic options. Sometimes long term immunomodulators may be required.

Another large group of neurological disorders are progressive degenerative diseases. These genetic disorders, usually run in families. They tend to have predilection for certain ethnic groups. Few genetic disorders, especially neurometabolic disorders, have treatment available. Timely identification is crucial to initiate therapy and prevent brain damage. Most of the genetic disorders have no cure. Researchers all over the world are studying newer medications to provide cure for these disorders in near future. As of now, careful screening of high-risk individuals before planning pregnancy, newborn screening for common genetic disorders is available. Genetic counselling of the family with one affected child is very important for family planning.

Paediatric neuromuscular disorders can be genetic or acquired. Few disorders like spinal muscular atrophy (SMA), Duchenne muscular dystrophy (DMD) have seen dramatic changes in their therapeutic approach in last couple of years. Newer medicines like Nusinersen, Risdiplam, Zolgensma have revolutionised the treatment of children with SMA. Steroid has long been the drug of choice for children with DMD, but agents like eteplirsen, viltolarsen etc are the newer promising agents. However, these medications are


out of reach of common people. Supportive care is the most important part of the management of SMA and DMD. Multidisciplinary care of children with neuromuscular disorders is a must. Guillain Barre Syndrome (GBS) is the most common cause of acute flaccid paralysis in children. Intravenous immunoglobulins, steroids, plasma therapy are standard therapeutic options for GBS. Myasthenia Gravis is another disorder with good response to therapy. It affects the neuromuscular junction and usually presents with droopy eyelids.

When we talk about neurological disorders, there are few which are curable, others which are treatable and rest where no definite treatment is available. Children with neurological disorders without a cure, are managed symptomatically. Supportive care is crucial to improve

functional capacity of these children and improve the quality of lives of these children.

Paediatric diseases can be tricky, simply because children cannot explain their symptoms. The account given by the parents and careful examination of a child helps in the diagnosis of the illness. The situation worsened a lot during the last two years, when the health system was overwhelmed with patients suffering with Sars-Cov2 infection. Many modifications in the health services were brought about to provide the best possible care to children who could not attend the hospitals for routine follow ups. Video and teleconsultation services were carried out during the pandemic. These services made a major difference in the management of children with epilepsy. However, covid 19 pandemic also led to various direct as well as indirect neurological complications. Encephalitis and GBS have been reported with covid 19 infections in children.

Post covid, with resumption of regular medical services, a surge has been witnessed in children coming with behavioural issues. Most of the children are facing adjustment issues. Majority of the children with ASD or ADHD had worsening of symptoms over last two years. Very few children with physical disability continued with physiotherapy during the pandemic. Many children with epilepsy discontinued their anti-seizure medications without medical advice.

Thus, paediatric neurological disorders are diverse. Practice guidelines are available for most of the paediatric neurological disorders, which are routinely updated with the availability of new evidences. The pandemic affected the health of children in a number of ways. It led to the disruption of regular paediatric neurology services. 



ANOTHER LARGE GROUP OF NEUROLOGICAL DISORDERS ARE PROGRESSIVE DEGENERATIVE DISEASES. THESE GENETIC DISORDERS, USUALLY RUN IN FAMILIES. THEY TEND TO HAVE PREDILECTION FOR CERTAIN ETHNIC GROUPS. FEW GENETIC DISORDERS, ESPECIALLY NEUROMETABOLIC DISORDERS



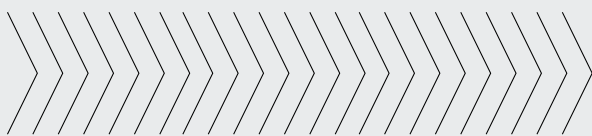
BREAKING THE MAZE OF AUTISM

Autism is the new public health challenge on the horizon. We rather than having a disability approach should now start focusing on the capability approach towards the ASD (Autism Spectrum Disorder) child. The mortality data from year 2008 to 2018 on under 5 years of age has probably shown a decline which is definitely praiseworthy.

The few clinical endpoints of any ASD children are difficulties with social communication/ interaction and restricted /repetitive behaviours or interests.....

BY TEAM DOUBLE HELICAL

With inputs from DR KAKALI PURKAYASTHA / DR GAUTAM KAMILLA / DR SHEFFALI GULATI - Center of Excellence and Advanced Research on Childhood Neurodevelopmental disorders Child Neurology division, Department of Pediatrics, AIIMS, New Delhi





Keeping such brainstorm ideas in mind a public health lecture on Autism Spectrum Disorder (ASD) was organized recently by Media and Protocol Division in collaboration with Center of Excellence & Advanced Research on Childhood Neurodevelopmental disorders, Child Neurology Division, Department of Pediatrics, AIIMS, New Delhi to focus on what is autism, what are the symptoms and how it is diagnosed and what are the associated co-morbidities?

The public health lecture converged on breaking the maze of ASD with special focus on inclusive quality education for all.

The key thrust areas of the Center of Excellence & Advanced Research for Childhood Neurodevelopment

Disorders, proposes to enhance the research and knowledge at diverse levels.

According to health experts, the ASD can be diagnosed as early as 12-18 months age and is a Neuro developmental disorder. According to the 2020 CDC and 2022 WHO global statistical data, 1 in 44 people and 1 in 100 people are diagnosed with ASD.

The features of Autism Spectrum Disorder are not similar in all individuals and the severity is also not uniform. In child neurology division, we have screened more than 1800 ASD patients; of which almost 80% had one or more associated co-morbidities. Children with ASD and their caregivers, as well as siblings have impaired quality of life as compared to typically developing

children. Degree of impairment of quality of life of ASD children and caregiver has strong to moderate negative correlation with severity of autism, their behavioral comorbidities and development quotient. ASD children with hyperactivity and sleep disturbance have more impaired quality of life as compared to their counterparts. Caregivers of ASD children have more parenting stress and degree of parenting stress has strong positive correlation with autism severity. A holistic scrupulous approach is necessary for best outcome.

The various approaches of research being carried out include Artificial intelligence, virtual reality, blood heavy metal levels, quantitative EEG, training modules, weighted compression vest, metagenomics,



No single country ever can claim to handle such a crisis. Some may have excellent infrastructure, some may have pharmaceutical hubs, some may have excellent research institutes

sperm epigenome, polysomnography, developing diagnostic tools, methylation markers, miRNomics, diet based interventions, probiotics, alternative Augmentative Communication, Robotics, Brain Machine Interface, exome sequencing, CGH array and molecular biomarkers leading to improved diagnostic and therapeutic outlook for better clinical implications.

Under the laurels and mentorship of experts the child neurology division has developed specialty in academics, clinical care (laboratory investigations), patient education/awareness, research, advocacy and public health domains.

The public health lecture had highlights and inspirations from multiple experts; including policy makers, educators, skill developers, pediatric neurologists, pediatricians, clinical psychologists, scientists, occupational therapist, physiotherapists and other paramedical experts.

Few of the other highpoints of the public health lectures were launch of

“Parent Advocacy Group” and release of informative pamphlets and booklets for health care professionals, caregivers and patients.

Dr. Randeep Guleria, Director, AIIMS, New Delhi, addressed the public and stated about the ongoing achievements of the institution along with special emphasis on the glories of Child neurology division. He also pointed out the division is being aggressively approaching holistic infrastructure for special need children and their inclusion in the society.

Dr Randeep Guleria also emphasized that there is a need to look at the challenges in both Rural and Urban setting. In the present setting we don't have many trained professionals, who can take care of special need children. One should look forward and educate themselves making the society more acceptable towards the special need children.

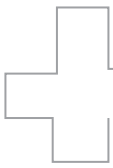
Dr. Arvind Bagga, HOD, Department of Pediatrics, AIIMS, New Delhi emphasized on the need for having public health lectures and the

importance of the pediatrics department and the child neurology division in delivering services to the patients/caretakers and healthcare professionals. He also thanked the participation of the public both Online and offline.

Dr. Subrata Sinha, Dean, Research, AIIMS, New Delhi, mentioned about the value of quality research in AIIMS, which has been boon for exploiting all the therapeutic areas in starting from a molecular level to a medical device. It was also stated the academic clinical trials though conducted in a conservative manner gives us complementary data to serve better in the clinical settings.

According to Dr. Subrata Sinha, the research platforms should be fully utilized for better outcome having high translational values in the clinical settings. One should focus on the maximum potential of the child and give the child all possible available resources. Personalized attention and research would be more beneficial in children with ASD.

Dr. Sheffali Gulati, Professor and



Faculty Incharge, Centre of Excellence & Advanced Research for Childhood Neurodevelopmental Disorders, AIIMS, New Delhi, said, “Autism is the new public health challenge on the horizon. We rather than having a disability approach should now start focusing on the capability approach towards the ASD child. The mortality data from year 2008 to 2018 on under 5years of age has probably shown a decline; which is definitely praiseworthy. The few clinical endpoints of any ASD children are difficulties with social communication/ interaction and restricted /repetitive behaviors or interests. Screening and identification of neurodevelopment disorders and behavioral/ emotional problems encompasses a greater capacity to deal with the developmental disabilities, metabolic disorders, sensory concerns and behavioral and emotional problems. The CDC and WHO data suggestive of increased number of ASD cases are a huge concern. The overall estimated prevalence of any neurodevelopmental disorder (NDD) in age bracket of 2-9

years in India is 12% and ~22% of these have more than one associated NDDs.”

According to Dr. Sheffali Gulati, the etiology of the NDDs is still very unclear, but many of the research done, targets the environmental/prenatal factors, epigenetic factors and genetic factors for the disease pathogenesis. The child neurology division has been constantly working for the ASD patients and few of the highlights are:

- AIIMS modified INDT tool based on DSM5 & in consonance with ICD11
- Development and validation of DSM5 based diagnostic tool
- Rastriyabalswashthyakaryakram
- Mobile apps
- DSM-5 diagnostic criteria – use with specifiers & severity level; Gold standard Diagnostic tools: ADOS-2, ADI-R
- E-modules for healthcare professionals
- Technology to guide ASD
- Oral probiotics

supplementation in children with Autism Spectrum disorders (ASDs): a randomized double blind, placebo controlled trial

- Blood heavy metal levels and quantitative EEG correlates in





children with autism

- To explore the association of Molecular, Genetic and Environmental markers in ASD and other Neurodevelopmental Disorders including ADHD and Cerebral Palsy: A cross sectional study
- COMPASS: Communication-focused parent-mediated treatment for ASDs in South Asia trial (Site PI) (University of Manchester and Sangath)
- Development & validation of a scalable mobile platform for screening of developmental neuropsychiatric disorders in low-resource settings START-Screening Tools for Autism Risk using Technology
- Role of Artificial Intelligence (AI) In Autism Spectrum Disorder
- Robot assisted therapy for children with autism spectrum disorder
- Alternative augmentative communication: ASD
- AI based BCI framework



- Machine based learning in ASD
- Start- screening tools: autism risk using technology
- EIRA: eye-tracking assessment for children with ASD
- A PCR&metagenomic approach of gut microbiota
- Research based on stem cell & microglia
- Music therapy
- Research on HRQoL of caregivers of ASD children with various associated factors
- Web- based platform for wider access to remote parts of the country: empowerment of professionals/ parents
- Various Neurodevelopmental disorders; Training material for master trainers in ASD Developmental assessment made simple... checklist... mobile app
- Training of Master Trainers Aug/ Sep 2016, Feb 2017, April 2017, April 2018
- Launch of National Child Neurology Helpline and Tele-

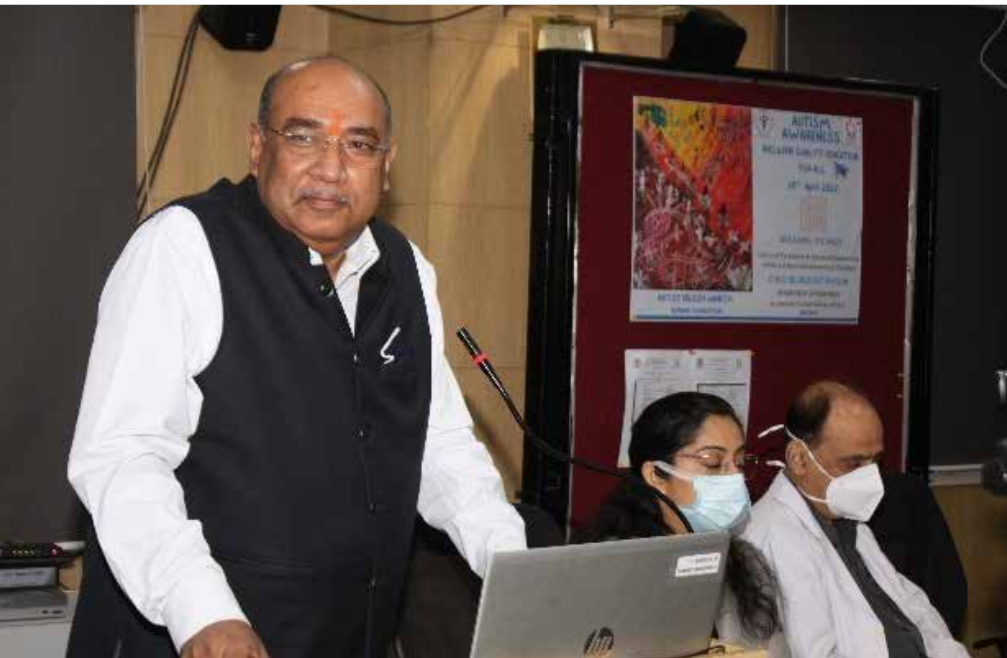
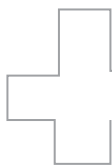
Consultation Services for Childhood Neurodevelopmental Disorders

- Bilingual Learning Resources, patient information material
- With the following years we have been constantly identifying and bridging the gaps through convergence. Autism was recognized as a disability as per GOI in 2016 and the first disability certificate was issued on 28th Apr 2016.

One of the biggest achievement was creation of Center of Excellence and Advanced Research for Childhood Neurodevelopmental Disorders on 1st December, 2017 under the aegis of IIFCL; CSR program. With a humanistic and holistic approach, we are aiming and focusing towards destigmatization, with an equitable outlook towards the children with special need.

PR. Jaishankar, Managing Director, IIFCL praised the commendable work done by child neurology division for the children with special needs. The young





generations at IIFCL are facing neurological/ neurodevelopmental issues with their wards. Environment, social surrounding and lifestyle plays an important role and is important for the children with special needs. IIFCL is an organization is into financing infrastructures including social and medical infrastructures. We are focusing on health and education and are happy to be a part of corporate social responsibility (CSR) supporting Center of excellence (COE) and Advanced Research for Childhood Neurodevelopmental Disorders. CSR believes in supporting the initial platform, so as the results can be fruitful in building a sustainable strategic business model for clinical settings. Budgetary support is very important for sustainable business model, so as the outreach can be available to the economically lower strata children. The support to COE gives lot of impetus to multi-centric approach and clinical trials targeting diagnostic, prognostic and therapeutic challenges. Discussion have been initiated with AIIMS and health ministry to support these sustainable

quality treatment and hybrid model; which can be available to all.

Dr. Shamika Ravi, Vice President, Observer Research Foundation, talked about being in constant touch with child having a high functioning ASD. She mentioned that at the services which are available now is really a boon for children with special need in the community. There is a requirement of robust policies in place to support the various platforms under the COE. Child neurology division is at the forefront for new experimentation and imparting knowledge. **Dr. Shamika Ravi,** said, “It becomes our responsibility to educate the government to enact and implement the law rightfully for the benefits of the people. The interventions have to be continuous and definitely take a longer time than just the monetary investment. The family, sibling and social environment plays a great role in rearing true cost for an ASD family member, it is also reported that 70% of the mothers of ASD children are clinically depressed. As a society, it is our responsibility to extract the best potential of the ASD



child and to give maximum opportunity for developing the same. The maximum load for taking care of the child becomes a responsibility of mother in an Indian society. With the urbanization and the increase in nuclear families, women have been pushed inside the four walls of home and subsequently the rearing and bearing the cost of upbringing the child (Normal/special need) is solely on mother. In India, we do have the policies in place, but the awareness amongst the public is minimal. The funding has to be generous so as the kind of research undertaken under the umbrella of COE can benefit the special need children. Further it is the responsibility of Government, general public to think towards rehabilitation



of special need children. In Bangalore and Chennai, few centers are providing vocational training to ASDs children, so as they can become more and more independent.”

Dr. Prashant Jauhari, Associate Professor, AIIMS, New Delhi, focused on what is autism, what are the symptoms and how it is diagnosed and what are the associated comorbidities? He described the typical onset is before the age of 36 months and the main difficulties faced are qualitative impairment of social interaction, Stereotypical, ritualistic, repetitive, restrictive patterns of interests, behaviors and activities and major defects in language development and other

communication skills. It is important to diagnose the symptoms early and should always see for absence of babbling by 12 months, Gesturing (e.g., pointing, waving bye-bye) by 12 months, Single words by 16 months, two-word spontaneous (not just echolalic) phrases by 24 months or loss of any language or social skills at any age and further to should have a clinical opinion. Additionally, one should look for lack or impaired eye contact, imitation, joint attention gestures, social interest and social play and use of language for social purposes. The diagnosis is purely clinical by the use of tool, DSM, on confirmation Childhood Autism Rating Scale (CARS) is used for severity. He also mentioned few of the salient diagnostic features in social communication domain are impaired ability to initiate or sustain a conversation, echolalia and pronominal reversal (substituting 'I' for "you" or vice-versa), may not be able to understand or use gestures and delayed / absence of proto-declarative pointing. He also mentioned the comorbidities are

psychiatric disorders, intellectual disability, epilepsy, vision/hearing problems, behavioral disorders, feeding disturbances, sleep disturbance, abnormalities of mood, sensory deviance and hyperactivity. He also pointed out that 40 to 80% have sleep problems, difficulty going off to sleep, frequent awakenings and decrease in total sleep time. He also referred to the study conducted by AIIMS regarding sleep problems in ASD children.

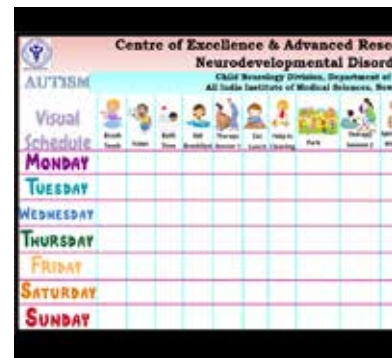
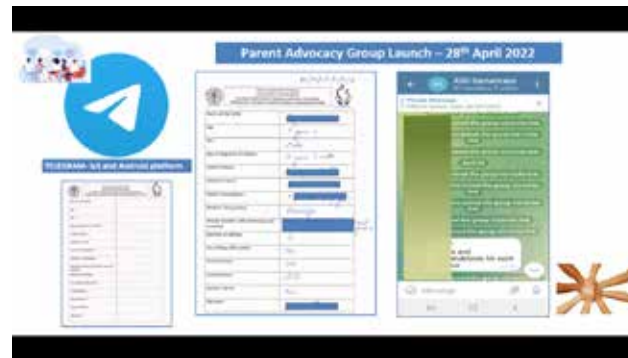
Dr. Prashant Jauhari also stated that the mechanism of Autism is still unknown, various postulates rule out to abnormal connectivity amongst the brain cells called neurons, defect in brain formation in a fetus at the microscopic level, neurotransmitter imbalance and abnormal mirror neurons. He also justified the roles of MRI, EEG, genetics, and heavy-metals in ruling out the diagnosis.

Dr. Biswaroop Chakraborty, Additional Professor, AIIMS, New Delhi, presented all the necessary and critical management endpoints for ASD children. The main persons involved in the management are



Family, Pediatric Neurologist, Clinical Psychologist, Geneticist and Special educator. The Psychological intervention and its principles are Modified Applied Behavior Analysis (ABA), Sensory Integration (SI) and Structured Teaching which helps in Developing Core skill, Reinforcement /Operant conditioning principles. The assessment of risk vs. benefit ratio should be ascertained prior to any supportive/ medical/ proposed treatments like atypical antipsychotics: aripiprazole, risperidone, olanzapine, clozapine (hyperactivity, temper tantrums, aggression, self-injurious behaviour). SSRIs like Fluoxetine are recommended for (anxiety and repetitive behavior); Methylphenidate is recommended for hyperactivity.

According to Dr. Biswaroop Chakraborty, the role of stem cell therapy in autism is still not very clear; it is known that Mesenchymal stem cells hold the greatest promise, but till today no suggestive studies has been reported in pre-clinical experiments. The safety data for the use of stem cells is not available few studies are undertaken in China with umbilical cord stem cells for which



the results are awaited. Dietary modifications are also in practice, where preliminary reports with MCT based and Gluten free diet have shown some encouraging results, for conclusive results clinical trials should be performed. Rapamycin has been reported to show improved behavior in ASD animal models, but proven clinical studies are yet to be reported. The complementary and alternative therapy like Melatonin is recommended for sleep latency, onset and duration problems; B6 and Magnesium is known to improve social and communication skills and repetitive skills. Folic acid is prescribed and may improve expressive and receptive speech, Omega 3 fatty acids may be given for

stereotypies, hyperactivity, Probiotics is recommended if associated GI problems. Exercises and music therapy can be recommended based on the clinical status. Music therapy has shown benefits in behavior, language and in overall autistic symptoms; extensive studies has been done about the type of music, timing, frequency mode of delivery and active individualized music therapy has been found more beneficial.

Dr. Kanij Fatema Monami, Associate Professor, Pediatric Neurology, Bangabandhu Sheikh Mujib Medical University (BSMMU) Dhaka, Bangladesh presented the perspective in Bangladesh and stated that in 2010 there was surge in the



services with the establishment of pediatric neurology division. 15 centers “Sishuvikas Kendra”, tertiary care centers and primary health care centers are dedicated for giving the services to paediatric patients with special needs. The main challenges in an LMIC as Bangladesh are availability of trained professionals, who can take care of children with ASD. In a community survey done for diagnosis of ASD, misdiagnosis was very much evident. Children with Cerebral palsy and ADHD were misdiagnosed as ASD. Early identification is another challenge in LMICs as compared to HICs. In Bangladesh Government has taken initiatives, where financial supports are given to the platforms

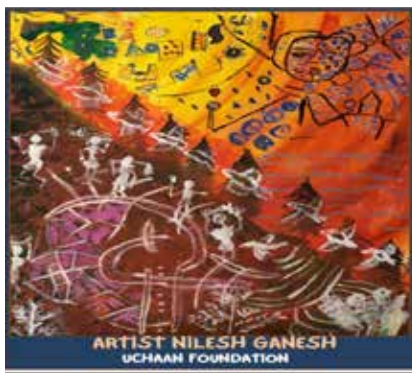
emphasizing is capacity building; has initiated a six-month certificate course for special educators, psychologists, health professionals, who will serve along with the clinical team towards the special need children. Here in Bangladesh, we are persistently doing survey in Urban and Rural populations for early detection of ASD.

U.K. Shukla Programme Director, The National Trust, Department of Empowerment of Persons with Disabilities (Divyangjan), New Delhi, mentioned, a law made and not enforced/ implemented rightly is equal to no existence of law. The recognition of Autism in India in the policies was initiated in year 2016. Four conditions

neurodevelopmental diseases. Till today we don't have any cure and the best approach would be to look forward with the best available interventions. He also mentioned, one should pay attention to day-to-day activities like toilet training, and basic needs, should be the first step towards their independence. Few regulations related to guardianship are made under the authority of district magistrate are in place, but the lacunae lie in the understanding and the approaches of the regulations. For working parents/ special need child there is vikas day care schemes, Samarth, Gaharaunda, Niramaya and Disha are formulated. We have implemented the policies, but have we




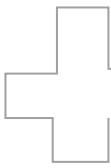
related to not only ASD but also the other Neurodevelopmental disorders. In 2013, two acts have been implemented by government to educate and ensure the well-being of disabled people. Government as a part of social responsibility is also giving monetary support to the disabled people, who are living in poverty. In 2019 special integrated education policy was set up for providing basic education, vocational programs and rehabilitation to children with special need. In BSMMU, genetic testing is regularly done for understanding the pathology of ASD. Two apps have been launched for early screening of ASD and for verbally challenged persons. The other aspect which government is



are focused by the ministry of social justice and empowerment is Autism, cerebral Palsy, Intellectual disability and multiple disabilities. He emphasized that it is very crucial to observe the milestones of any child till two years of age, which can help in early identification of

given special educators in school to undertake these challenges, the regulatory authorities should revisit and think through. The representation received from India on guardianship are varied and the policy makers are still looking forward for the corrections and further implantation.

Till today we do not have any scheme which looks into the integral matter of disability in totality. The national trust along with the other regulatory authorities is looking forward for development of robust schemes. The skills should be developed so as the special need child can think himself/ herself as a participating member rather than burden. The central government employees should enrol their special need child, so as they can avail full pension, as-n-when they are eligible. 



COVID-19: IS IT A SIGN OF FOURTH WAVE?

The latest episode of the fourth wave is under progress. It is still unknown to know about unidentified risks of the virus and not possible to find immediate solutions to imagine in advance. The graph of the rise in Covid cases in several states are the concerning matters which is continuously catching the attention of the people.

BY DR N. K. PRASANNA/ DR S. K. VARSHNEY



India for the last two years got caught in the cobweb Covid-19 pandemic resulted in chaos; even now the country is facing uncertainty and vulnerability to this epidemic due to newly emerged variants from time to time.

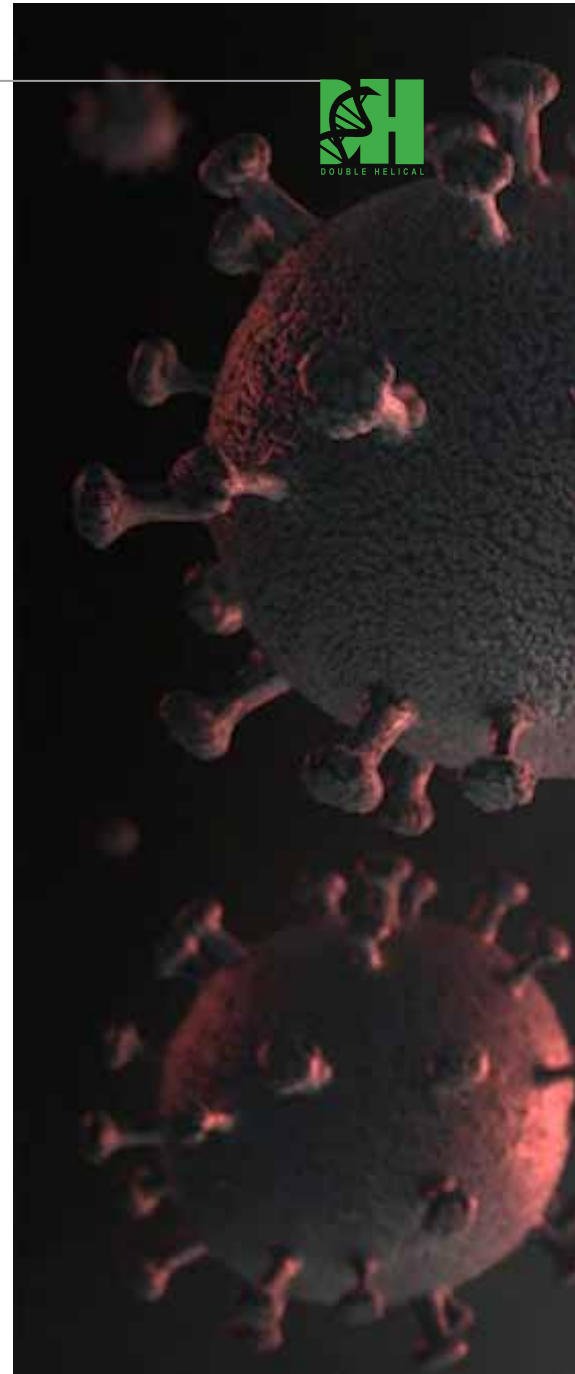
Over the past few days, the emergence of new Covid-19 cases

accelerating and alarming in India. Is this a sign of a fourth wave scare? As a daily number of Covid infections are increasing day by day. But Atmanirbhar India will be ready to face the current situation with our own available resources managing well with minimum mortality in relation to the most advanced

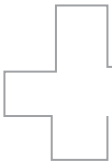
countries of the world.

HOW TROUBLESOME A COVID VARIANT MAY...

Even if the variants of the virus change, people must follow the precautions and take basic protective measures with Covid-19 to reduce the chance of transmission either being infected or in spreading. There is still a shortage of testing centers and some are not efficient up to the mark. Lack of effective surveillance or no public health awareness or infrastructure is the underlying root cause of Covid in







India and lack of knowledge and lack of self-awareness among people continue to impose challenges that results in a profound impact on the lives and livelihoods of people. Health care personnel should be trained in coping with stress, one way we lost many health professionals fighting Covid. Training and educating healthcare professionals helps in understanding the risk of the population through proper Public Health Institutions. Mental health is an undeniable fact that

COVID WAVES, MAY IT BE ONE OR FIVE, CAN BE AVOIDED TO SOME EXTENT BY TAKING PERSONAL CARE AND COVID PRECAUTIONS



BA.4 and BA.5 are the sub-variants of omicron (BA.2) which is dominant worldwide and which caused the third wave in India. Unlike Omicron these variants results in low death and low oxygen requirement. As per a study by Japanese researchers BA.4 and BA.5 cause more lung diseases in hamsters as compared to BA.2.

everyone should give attention to in the present pandemic, resources needed for mental health care should be made available to meet the mental health needs like how to handle stress, depression, anxiety, etc.

PREDICTIONS OF FOURTH COVID WAVE/IMPREGNABLE COVID CASES IN THE COUNTRY:

Ever since the statement passed by the researchers from IIT Kanpur regarding, the fourth wave of the COVID-19

pandemic, there are many speculations going around in media and other platforms. According to the extrapolation obtained by a mathematical model, they say that India will face a fourth wave from 22, June 2022 to October 23, 2022. According to their study, the fourth wave is likely to affect India 936 days after January 30, 2020, when initial data was available. It's prediction is based on Zimbabwe data as the training set, whose predictions were

similar to the actual data. So the prediction was with a 99% confidence interval from their mathematical modeling. Even with their model, they could match the previous COVID waves that hit the country with a duration of time and number of cases as well. The source from which this data has been obtained is also reliable which is a public repository. Hence one cannot rule out the study made by the researchers.

BA.4 and BA.5 are the sub-variants



Health experts have tried the adoption of several new treatment modalities and other therapeutic alternatives are used in the treatment of Covid-19 patients

of omicron (BA.2) which is dominant worldwide and which caused the third wave in India. Unlike Omicron these variants results in low death and low oxygen requirement. As per a study by Japanese researchers BA.4 and BA.5 cause more lung diseases in hamsters as compared to BA.2. This may also have adverse effects on human respiratory system. These sub-variants are known to have higher replication growth. Though the fourth wave is expected to be caused by these variants, there are many cases of omicron. To which care and attention have to be paid.

As studies from foreign countries tells that, vaccines taken for the BA.1 and BA.2 are not significantly effective against these new variants, as mutations can't be neutralized completely by the vaccines taken for the earlier ones. So this issue is alarming and needs the attention of the public. As masses left the COVID protocols and precautions one needs to take, it is at high risk that, one side omicron and on the other hand new variants are prone to affect the health system. COVID waves, may it be one or five, can be avoided to some extent by taking personal care and COVID precautions.



WILL IT BE OVER?

Initially, we are not aware of the risk involved with Covid-19, just like any other country. With a series of failures, with many obstacles and corrections, we find a way of trying for vaccines and basic management of Covid 19, and we continued to chase success. Now it is unknown at this time what we will do after, we are still in the grip of an epidemic and we need to focus on curbing the spread of the virus and saving people's lives said Poonam Khetalpal, regional director of the (WHO). One should not ignore the lessons learned from previous episodes of Covid-19, one storm after the other. The emergence of new viruses will make them tend to come and will continuously adapt to humans. In this order, many medical experts warn increase the risk of acute infections may rise, while at the same time there is the chance of causing less disease severity with fewer deaths. However, it is not clear what turn the corona will take in the future? What does it hold in store? How long it will take? What are the potential outcomes? These all are unanswered questions. We don't know when these unanswered questions remain answered.






VACCINE SHIELDS: PROTECTION FROM VIRUS

Health experts have tried the adoption of several new treatment modalities and other therapeutic alternatives are used in the treatment of Covid-19 patients. These include Remdesivir, plasma therapy, 2-DG developed by DRDO , and more recently Molnupiravir. However, there is no specific drug to treat this disease. Simple medications such as Paracetamol, Azithromycin, certain AYUSH-approved formulations, etc are given/taken depending on the symptoms from street corner medical shops be played a major role in the management of the third wave with less hospitalization and least mortality in comparison to the world. Indian population gained confidence better than other Governments that is Atmanirbhar Bharat with the support of dynamic Prime Minister of India Narendra Modi.

CONCLUSION:

Taking care of transitional change is everyone’s responsibility. It is a societal approach and governance challenge. Timely action of assistance in a dignified manner and long-term actions are required for resilience building. Complete involvement at the grass root level is required supported by all Government and Non-Government Institutions of both the Central and State

Governments of India. Since preparedness has no shortcuts in terms of safety. So Effective and efficient policy framework is required both at the institutional and community levels to ensure integrity is implemented. Focus on early warnings and timely communication is required to reduce the impact of risk disasters during these unprecedented times which ensures public trust and also reduces the unintended consequences to some extent. It’s not like we will wait until the last minute.

We should bring an inclusive approach in preparing policies and guidelines with practical strategies. Reviewing and reviving public health policies and development of world-class Public Health infrastructure, in terms multilateral measures are the need of the hour not in paper alone but also in implementation. Our policies do not remain as just documented we should be brought into visible in implementation, then only it will face devastating crisis present and future possible with careful attention with transparency. 

(The authors are Scientist at CSIR-National Institute of Science Communication and Policy Research New Delhi/ Head, International Cooperation, Department of Science and Technology, New Delhi.)





MAPPING THE PATH OF THE PANDEMIC

The current misplaced concerns about the impending fourth wave of Covid-19 in India, is a fallout of lack of robust thought leaders with firsthand battle experience in transmission dynamics of communicable diseases. To predict whether we will have a disastrous fourth wave, let us go back to fundamentals of transmission dynamics of communicable diseases which any epidemiologist who has worked at the ground level will know.

BY DR AMITAV BANERJEE





What about India? Will we have a fourth wave?

India has willy-nilly gone through widespread community transmission rendering vast swathes of its population robustly immune. Studies have established that naturally acquired immunity is 13 to 26 times stronger than vaccine induced immunity. This can be long lasting due to T and memory cells after waning of antibody levels. Studies from Singapore and Sweden have shown that individuals had cellular immunity against SARS-CoV-2, 17 years after encountering SARS-CoV-1.

What explains the episodic spike in cases in major metropolitan cities like, Delhi, Mumbai, etc? Does it signal an imminent fourth wave? Metropolises and big cities the world over are business, tourist and educational hubs. The high level of population

movement due to this disturbs the immunological equilibrium from time to time resulting in surges which are of no consequence.

The phenomenon can be compared to a deck of cards. Shuffling or adding new cards could disturb the arrangement. In the past, people lived in relatively closed communities with less number of people entering or going out. These communities were like an un-shuffled deck of cards. Closed communities also attain herd immunities faster.

On the positive side, most migrants are young and healthy so most infections will be asymptomatic or mild and hardly of any consequence. At this stage of the pandemic we should stop focusing on number of cases and positivity rates and monitor hospital admissions and deaths in the young and healthy rather than the elderly or people with co-morbidities most of whom die “with the virus”

rather than “due to the virus.”

It can be understood that tropical diseases, particularly the communicable diseases, should have been the forte of Indian doctors. Post independence they should have come into their own dictating strategies for communicable disease control at the global level. Alas this was not to be, as the profession continued to imitate their erstwhile masters, the present lot of whom having little firsthand experience in tropical medicine and infectious diseases.

The history of the rise and fall of tropical medicine is closely linked with the fortunes of the British Empire. The health of its sailors and soldiers played a major role in establish British Imperialism throughout the world. James Lind, a British Naval Surgeon in 1747, discovered that consumption of lime prevented scurvy, the bane of sailors. Adding lemon and oranges to the rations of British sailors, which



Dr Amitav Banerjee



On land, the British in the process of expanding their colonial dominion in India and many developing countries laid great emphasis on tropical medicine and communicable diseases during the 17th and 18th centuries.



earned them the nickname of “limey,” changed the course of world history. British sailors sailed far and wide laying the foundations of the British Empire.

On land, the British in the process of expanding their colonial dominion

in India and many developing countries laid great emphasis on tropical medicine and communicable diseases during the 17th and 18th centuries. Tropical medicine, including study of communicable diseases, evolved as a by-product of the British Raj. The

discipline was fallout of the exploitation by the colonial rulers who wanted to safeguard the health of the British personnel occupying distant lands.

During the 19th century, when the British Empire was fast expanding, Joseph Chamberlain, Secretary of State for these colonies, emphasised training of British doctors in communicable diseases occurring among the “servants of the Raj.” Chamberlain visualised that without conquering disease “constructive Imperialism” will not be possible. He believed that tropical medicine was vital for British economic and social dominance - to the extent of it being a colonial science.

Sir Ronald Ross’s research on transmission of malaria in 1897, work for which was done in India, and which earned the India born researcher a Noble and a knighthood, further gave a fillip to research in tropical medicine in India. Chamberlain remarked, “The man who shall successfully grapple with this foe of humanity and find the cure for malaria, for the fever



desolating our colonies and shall make the colonies liveable for white men will do more for the world, more for the British Empire, than the man who adds a new province to the wide Dominion of the Queen.”

With the downfall of the British Empire after the Second World War, the importance given to infectious diseases declined. Better standards of living in the West eliminated these diseases in their native country. And since the rulers did not occupy foreign lands, research in tropical medicine and infectious diseases lost its pride of place which was at its peak during the British Raj.

The colonial rulers played a game of chess, in which the control of communicable diseases was important to conserve their chessmen on the board. Once the game was over with

the fall of the British Raj, they lost interest.

However, Sir Patrick Manson, author of the classic, “Manson’s Tropical Diseases,” said, “The tropical practitioner enjoys opportunities for original research and discovery far superior in novelty and interest to those at the command of his fellow inquirer in the well worked field of European and American research.”

Had Indian researchers followed this legacy, we would have been at the forefront in planning strategies in the fight against the present Covid-19 pandemic. On the contrary, Indian researchers and policy makers followed the West in this pandemic. The blind led the blind. Pandemic operations on war footing calls for experienced leadership of

high calibre on par with that required for military campaigns. Military campaigns have potential for immense harm if not executed smartly. Same with pandemic strategies have gone awry.

Kurt von Hammerskin-Equord, a German general and a staunch opponent of Hitler and the Nazis, gave a classification of military leadership styles. “I distinguish four types. They are clever, hardworking, stupid, and lazy officers. Usually two characteristics are combined. Some are clever and hardworking: their place is the general staff in planning. The next ones are stupid and lazy; they make up 90 percent of every army and are suited to routine duties. Anyone who is both clever and lazy is qualified for the highest leadership duties, because he possesses the mental

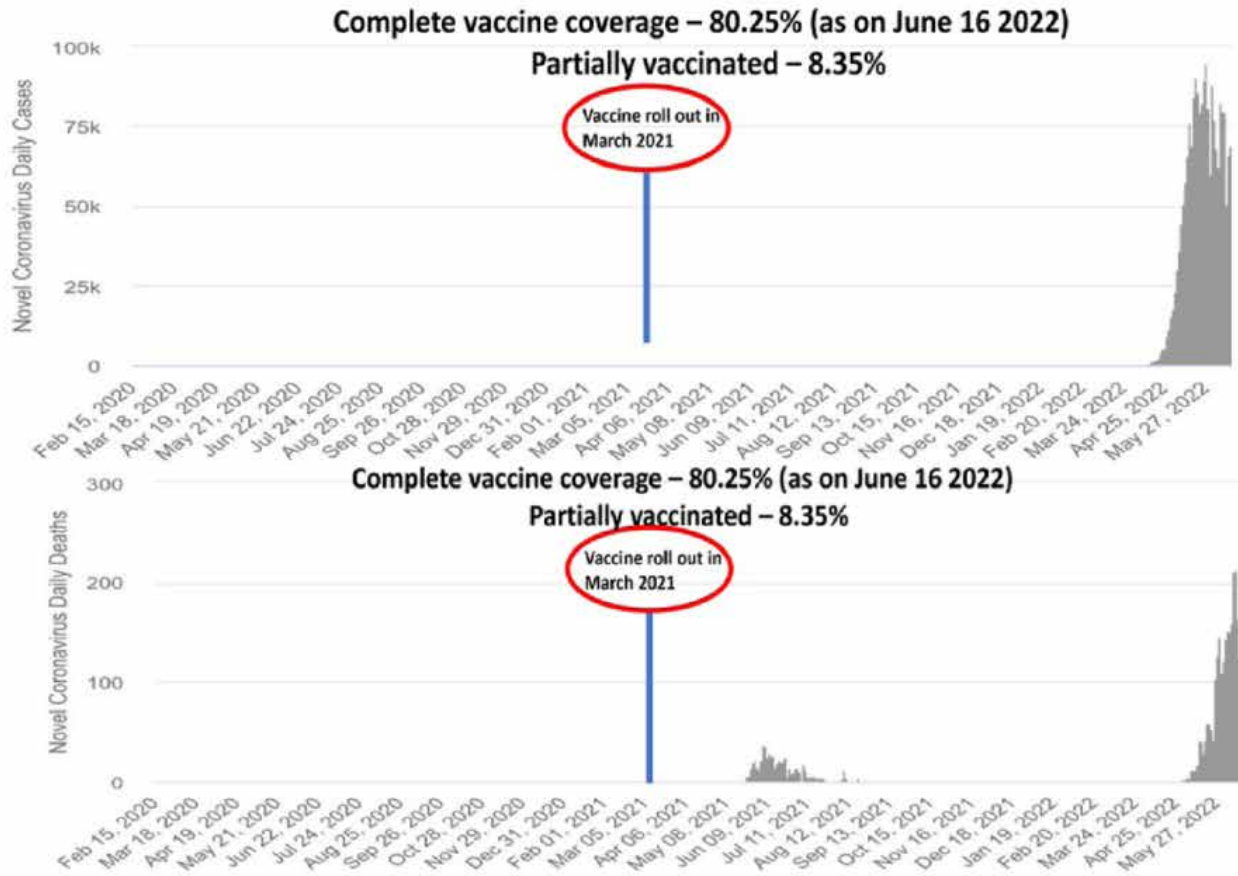


FIGURE:
GRAPH SHOWING TAIWAN WHICH DID VERY WELL IN THE BEGINNING HAVING HIGH INCIDENCE CURRENTLY IN SPITE OF HIGH VACCINATION COVERAGE.

clarity and strength of nerve necessary for difficult decisions. One must beware of anyone who is both stupid and hardworking; he must not be entrusted with any responsibility because he will always cause damage.”


Unfortunately, in this pandemic, we have had hardworking but clueless medical leadership from the West. Their efforts, as well as those of their imitators, caused immense collateral harm besides fracturing society due to closure of businesses, educational institutions and isolating people.

The current misplaced concerns about the impending fourth wave of Covid-19 in India, is a fallout of this lack of robust thought leaders with firsthand battle experience in transmission dynamics of communicable diseases.

To predict whether we will have a disastrous fourth wave, let us go back

to fundamentals of transmission dynamics of communicable diseases which any epidemiologist who has worked at the ground level will know. Of course these nuances will elude the “mouse-click epidemiologists” generating fancy mathematical models with incomplete inputs.

When an infection enters a virgin population, it has the potential to

spread like a forest fire if not stamped out in the beginning. Resource intensive measures such as contact tracing, testing of asymptomatic and isolation are important to prevent the establishment of community transmission. These measures were destined to fail for a highly contagious respiratory virus. In fact, countries which did well in the beginning to check infections and spread of community transmission are currently having very high levels of infections and deaths in spite of of mass vaccination, for e.g. Taiwan. 

(The author is a former epidemiologist who led the Mobile Epidemic Team of the Indian Armed Forces and currently, Professor and Head, Community Medicine, Dr DY Patil Medical College, Pune)



EXCLUSIVE - HEALTH INITIATIVE





SHIKHAR DHAWAN
FOUNDATION

Shikhar Dhawan Foundation Rises Up With Health Care Initiatives



Shikhar Dhawan Foundation in a very short span since getting started in February 2022, has put up the right foot forward with its campaigns and initiatives for the people. The very first initiative in association with **Doctors For You** focused on building the capacity of government hospitals in Uttarakhand by setting up a CT Scan Machine at B.D. Pandey Hospital in Nainital and a Covid Command Centre at DM Office, Haldwani. It was virtually inaugurated on the 15th of April, 2022, by the

Uttarakhand Health Minister Dr. Dhan Singh Rawat. This is the first CT Scan Machine at the hospital and the local community which earlier had to travel to other places for the scan will immensely benefit from this help. This initiative gave an important message that together, Government and Civil Societies can create this positive change for the upliftment of communities.

The foundation has organized two Blood Donation Camps so far. The 1st Blood Donation Camp was organized in association with The Lodhi, New

Delhi, Guru Nanak Dev Blood Bank, and Lions Club International, on the 23rd of March 2022 at The Lodhi Hotel, New Delhi, and the 2nd one in association with Guru Nanak Dev Charitable Blood Centre and Delhivery at IGI Airport Hub on the 27th of May, 2022.

Shikhar Dhawan quotes on this - “Our focus was also on creating awareness amongst people and community on their responsibility towards blood donation. Our objective is to convert more and more people to donate blood. And that’s what our



In another initiative, Shikhar Dhawan Foundation is working in the area of cancer care along with The Cuddles Foundation to help children win over cancer with proper nutrition.

foundation plans to do ahead as we will regularly do such blood donation drives across Delhi and mobilize people towards this responsibility. In terms of this too, India must become self-sufficient.”

In another initiative, Shikhar Dhawan Foundation is working in the area of cancer care along with The Cuddles Foundation to help children

win over cancer with proper nutrition. Children who are malnourished cannot tolerate chemotherapy and also the treatment puts them at risk of infections. Those malnourished are at higher risks, thus increasing mortality. Chemotherapy in malnourished children reacts different and can be toxic. This is the challenge that Shikhar Dhawan Foundation & Cuddles Foundation, both nonprofit, seeks to address.

In a country where 50,000 children are diagnosed with cancer every year, several challenges stand in the way of being cured. Through this campaign, the Shikhar Dhawan Foundation aims to beat the cancer disease among children with access to the path to better recovery and good health. In the future as well, The Shikhar Dhawan Foundation will equip the partnering organizations and children who are cancer patients with all possible supplies of medication and food supplies.

Shikhar Dhawan Foundation and Doctors For You also came together to provide support for Free Patient Transport Vehicle at Safdarjung Hospital. A six-seater Golf cart was





donated & handed over to Safdarjung Hospital in presence of Medical Superintendent Dr. S V Arya, Addl MS Dr. RK Wadhwa, OIC transport, and the CSR team. The free transport service will serve the patients and their families to travel inside the premises. This type of transport is particularly helpful in the case of hospitals with large campuses serving poor people. Patients are required to visit various centers located at far-off places inside the campus and there is typically no other means. Also, where other means are possible they charge exorbitant prices. This free service will help a lot of needy patients and their families.

Most recently, the Shikhar Dhawan Foundation and Doctors For You came together to launch the campaign “Plug The Gap” to solve the last mile problem





of cancer patients in reaching out to hospitals and successfully completing the cancer treatments.

A lot of cancer patients are eligible for financial support for treatment but due to their inability to afford the indirect expenses such as travel, accommodation, etc, they fail to receive the treatment or have to leave the treatment midway. This problem is faced by many people on a big scale and it leads to a low successful recovery rate for cancer patients. This initiative will plug this gap by providing the required support and connecting patients to hospitals. Also along with that, the campaign will provide further support for medications, chemotherapy support, surgery sponsorship, and financial support for diagnosis.


There are a few more health-related initiatives in the pipeline –

1. SDF X Maatri Campaign to bring a revolutionary healthcare innovation for all the mothers and children to be. The vision of this campaign is to bring empathy and build an eco-system of collaboration in the field of Health

Care which benefits both the caregivers and the care-receivers. This campaign will work around care solutions such as mother coaching and mentorship to guide new moms and special moms; psychological guidance and counseling; guidance from gynecologists and pediatricians.

2. SDF X Lensbus collaborating to organize a community-based free Eye Checkup Camp for the vulnerable and marginalized communities. Lensbus is a free eye screening Mobile van

Service. The sole intention is to make basic ophthalmic facilities available to the neediest people deprived of eye care facilities. This campaign will target the problems of awareness, availability, and affordability, which often results in low uptake of eye care treatment in marginalized communities. This campaign will serve underprivileged kids, old age homes, slums, orphanages, etc.

• 3. SDF will be organizing a campaign around the distribution of Assistive Devices across India in which about 200 assistive sticks and wheelchairs will be distributed to the children with disability. Often, disability and economic poverty come together to create larger challenges for people with disability. Especially children in their learning and playing age miss the most of support. Through this campaign, we aim to address this exact problem and contribute to the empowerment of children with disability. 

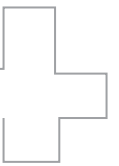
THE SHIKHAR DHAWAN FOUNDATION AND DOCTORS FOR YOU CAME TOGETHER TO LAUNCH THE CAMPAIGN “PLUG THE GAP” TO SOLVE THE LAST MILE PROBLEM OF CANCER PATIENTS INREACHING OUT TO HOSPITALS AND SUCCESSFULLY COMPLETING THE CANCER TREATMENTS





STRENGTHENING **H**OSPITAL **P**REPAREDNESS

BY UPASANA ARORA



services. However, what has emerged clearly is that, in times of emergencies, the delivery of healthcare, for example – most of the hospitals in Delhi NCR were not adequately prepared to effectively respond to the COVID-19 outbreak. Current efforts to strengthen hospital preparedness should prioritize challenges related to handling the surge capacity, critical care for COVID-19 patients, and staff welfare & protection. However, many super specialty hospitals like Max, Fortis, Apollo Yashoda and many more aimed to assess the readiness of hospitals in that geographic domain to timely respond to the COVID-19 outbreak. But our Yashoda Super Specialty Hospital in Kaushambi of Delhi/NCR region has done well in terms of hospital preparedness that prioritize challenges related to handling the surge capacity, critical care for COVID-19 patients.

FUNCTIONING ROLE OF HOSPITAL IN PANDEMIC:

As COVID-19 has shown us, keeping healthcare facilities functioning during a crisis can be a challenge as it is a life and death issue, and it takes an entire organization of dedicated professionals working together to be successful. While hospitals around the world are struggling to fight the COVID-19 pandemic with limited or unavailable supplies and equipment, some are forced to become creative and find new ways to continue care delivery and, at the same time, protect the staff. Fortunately, Yashoda Super Specialty Hospital has made tremendously significant progress in better understanding of this viral disease, the ability to combat it, and the efforts to recover the patients suffering with it.

Consider that as recently as in previous years and months – few

The COVID-19 pandemic continues to overwhelm the healthcare systems across the globe. The coronavirus is not only a health crisis of immense proportion – it is also an imminent restructuring of the entire global economic order.

HOSPITAL ADMINISTRATION:

In almost all countries, crisis-response efforts are in full motion. A large array of public-health interventions has been deployed. Healthcare systems are, explicitly, on a war footing to increase their capacity of beds, supplies, and trained workers. Efforts are underway to alleviate shortages of

much-needed medical supplies.

The COVID-19 pandemic has created a multitude of acute challenges for health care delivery organizations, including inadequate capacity, supply shortages, the need for care redesign, and financial loss. Complexity science views health care delivery organizations as complex adaptive systems that operate in highly complex and unpredictable environments. The perspective assumes that much of organizational life is unknowable, uncertain, or unpredictable and thus cannot be standardized and controlled.

No one predicted the outbreak of a pandemic so rapidly, to the extent that it would upend global healthcare

people, other than a limited group of health care professionals and infectious disease experts, had even heard of the novel coronavirus. From the very beginning, this has been a perplexing and challenging medical mystery, presenting far more questions than answers.

Even for those who have followed this public health crisis from its earliest days, little information or understanding of the disease was available. For example, the team of specialized, qualified, experienced & highly skilled doctors of Yashoda Super Specialty Hospital in the Kaushambi area of the NCR has treated more cases of COVID than any other hospital in that region; it has become clear that it is not just a respiratory ailment but can affect many organ systems, including the kidneys and heart, and can also cause serious vascular complications.

Although initially, many of doctors





Super specialty hospitals like Max, Fortis, Apollo Yashoda and many more aimed to assess the readiness of hospitals in that geographic domain to timely respond to the COVID-19 outbreak. But our Yashoda Super Specialty Hospital in Kaushambi of Delhi/NCR region

at Yashoda Super Specialty Hospital believed that children were not significantly affected by the COVID-19 virus, subsequent reports from across the United States of America and countries of the Europe Union illustrated some insights that a few young COVID-19 patients were found to have Pediatric Multisystem Inflammatory Syndrome or PMIS. These cases exhibited clinical features similar to Kawasaki Disease, a rare inflammatory disease primarily affecting young children, which causes blood vessels to become inflamed or swollen throughout the body.

Similarly, dermatologists of Yashoda Super Specialty Hospital revealed that some of their patients who were later diagnosed with COVID-19, had



symptoms that could be due to vasculitis, including frostbite like pain, small itchy eczema-like lesions on their extremities and reddened patches of skin. This includes facilitating the development of tests, both diagnostic and serologic, supporting the advance of treatments and vaccines for the disease, and working to ensure those healthcare workers and others have the Personal Protective Equipment (PPE) and other necessary medical products needed to combat it.

ROLE OF HOSPITAL IN SOCIETY HEALTHCARE:

Since day one of this pandemic emergency, Yashoda Super Specialty Hospital's focus in addressing these challenges has been to meet all the

YASHODA SUPER SPECIALTY HOSPITAL REVEALED THAT SOME OF THEIR PATIENTS WHO WERE LATER DIAGNOSED WITH COVID-19

needs for speed. To facilitate the development of new treatments and effective tests and to make sure they have adequate supplies of essential medical equipment such as ventilators, they have redoubled their efforts to employ regulatory flexibility and streamlined processes wherever needed and appropriate, without compromising the science working behind it.

The principle underlying this – that their decisions must not only be informed by the most rigorous data and best science, but also that the evidence on which they base their continuing review is regularly refreshed and expanded through new experiences and opportunities – is a basic approach of medical science.

They have also learned that common sense public health measures such as the wearing of masks, social distancing, hand-washing, protection of the vulnerable, and avoidance of large indoor gatherings particularly in bars, do help stop the spread and mitigate community outbreaks; this is the country's path forward. The emerging data also continues to confirm the disproportionate impact of this viral disease on various



AS COVID-19 HAS SHOWN US, KEEPING HEALTHCARE FACILITIES FUNCTIONING DURING A CRISIS CAN BE A CHALLENGE AS IT IS A LIFE AND DEATH ISSUE, AND IT TAKES AN ENTIRE ORGANIZATION OF DEDICATED PROFESSIONALS WORKING TOGETHER TO BE SUCCESSFUL



communities based on age, ethnicity, and race.

ROLE OF HOSPITAL IN THE UPLIFTMENT OF SOCIETY:


As Yashoda Super Specialty Hospital have done since the beginning of the pandemic, they will continue to balance the pressing need for access to diagnostic and antibody tests with their help to ensure that available tests are accurate and reliable. This same / similar approach applies to

almost all the potential treatments for COVID-19.

These infection control measures may be viewed by some as excessive, especially since they surpass traditional droplet and airborne isolation procedures used for other respiratory pathogens. In addition to providing high levels of personal protective equipment for the care of COVID-19 patients, Yashoda Super Specialty Hospital rigorously adheres to robust policies, processes, and organizational structures

that reflect a wartime mentality that is shared throughout society toward combating this national crisis. It is working closely with partners throughout the government, academia, and drug – vaccine developers to explore, expedite, and facilitate the development of products, and provide guidance along with the much necessary technical assistance to drug manufacturers to speed up the clinical trials.

Only a little over two years into the pandemic, Yashoda Super Specialty Hospital has already made some crucial progress in tackling it head-on. Yet with cases continuing to rise, it is evident that further action is needed for our country to chart a course for recovery. Their goal is to provide us with the information and understanding we need to ensure that patients receive the support, attention and treatment they deserve.

In a nutshell, hospitals play a very crucial and complementary role in the upliftment of the society by making contributions not only towards providing recovery-based treatment for individuals, but also ensuring the endowment of benefits of the healthcare system. 

(The authors is Director, Yashoda Super Specialty Hospitals, Kaushambi Ghaziabad, India)



EXCLUSIVE - YOGA AND MENTAL HEALTH



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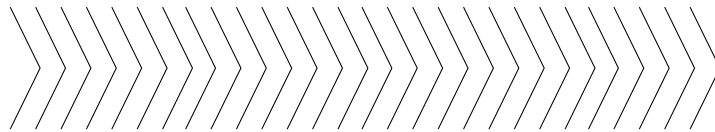
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YOGA AND MENTAL HEALTH

Today mental health issues like stress, anxiety and depression are increasing in severity especially number in youth in higher educational institutes pose a serious challenge or a threat to their well-being...

**BY PROF (DR) HARVINDER POPLI/
DR. GEETA AGGARWAL**



According to World Health Organization (WHO), mental health disorders are also one of the leading causes of disability worldwide. For example- Stress which is a process in which environmental demands exceed the adaptive capacity of an organism, resulting in psychological and biological changes that may place persons at risk for disease like anxiety or depression.

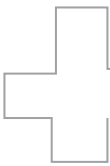
And if talk about Anxiety, this is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioral components, which combine to create an unpleasant feeling that is typically associated with uneasiness, fear, or worry.

While depression includes persistent sad, anxious or “empty” feelings, feelings of hopelessness, feelings of guilt, worthlessness and/or helplessness, irritability, restlessness, and loss of interest in activities or hobbies. In recent years, stress, depression and anxiety have affected college students at alarming rates. Improving adolescent mental well-being remains a challenge for most societies as it not only affect their health but also their academic achievements at different points of time.

Treatment resistant mental disorders do not adequately respond to the typical treatment i.e. anti-depressants, antianxiety etc. Further due to the adverse effects of drugs in the treatment of stress, anxiety and depression, and in some cases their lack of effectiveness; researchers seek non-pharmacological and non-invasive treatment for these disorders.

Yoga has been around for centuries and combines stretching,



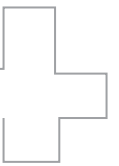


YOGA HAS BEEN AROUND FOR CENTURIES AND COMBINES STRETCHING, STRENGTHENING, COMPRESSION OF INTERNAL ORGANS, DEEP BREATHING, AND MEDITATION

strengthening, compression of internal organs, deep breathing, and meditation. Yoga's greatest aim is to create compassion within and a deep sense of unity and oneness with all forms of life. Yoga is an individual activity that has social implications. Those who regularly participate in yoga typically interact with the world in calmer and more reasonable ways. More positive social interactions and relationships are one of the ripple effects of individual yoga practice. Accessible or complementary yoga classes offer low income people the opportunity to experience the benefits of inner peace and healthier body. When practices such as yoga are accessible to all, larger effects are possible. Without overstating the impacts, potential consequences of large scale population mental well-being initiatives such as this are less violence in society, less addiction, greater ability to be authentic with one and others.

Recent research findings have demonstrated effect of yoga for many conditions, including multiple sclerosis,





asthma, irritable bowel syndrome, lymphoma, hypertension, drug addiction, osteoarthritis, and mental health issues. The researchers suggest that yoga as an intellectual and mental exercise and can improve the psychological conditions for monitoring and managing stress and negative emotions, increase positive emotions, and help mental balance. However, despite the popularity and the positive psychological and physiological effects of yoga, it is not widely studied to find how much it really prevents and treats mental disorders and still wider and more rigorous studies would be needed to test the validity of the yoga in mental health.

According to health experts, regular practice of yoga will surely help students achieve a better life, physically, mentally and spiritually as well. Practicing of Yoga develops strength and balance as well as inner peace. All



yoga styles create a feeling of lightness, ease and relaxation. Regular Yoga practice by young generation can have a positive impact on mental health. Validated research can prove impact of yoga for management of stress, anxiety, mild to major depression in students of higher academic institutions.

Delhi Pharmaceutical Sciences & Research University (DPSRU) has also set up Yoga and Fitness Centre in the university. It has been made part of curriculum and various research projects have been designed and submitted by the university in the field of Yoga.

The purpose of International Yoga Day is to promote yoga and endeavor towards making it a part and habit of everyone's daily routine. Since its inception in the year 2015, June 21st is celebrated as The International Day of Yoga all over the world. This idea was proposed by Prime Minister, Narendra Modi who said, "Yoga is an invaluable gift of India's ancient tradition. It embodies unity of mind and body; thought and action; restraint and fulfilment; harmony between man and

nature; a holistic approach to health and well-being. It is not about exercise, but to discover the sense of oneness with yourself, the world and the nature. By changing our lifestyle and creating consciousness, it can help in well being."

Yoga is the part of healthcare system and is connected to pharmaceutical, physiotherapy and sports courses. Yoga is a scientific way of living healthy and increasing life expectancy. It keeps the physician away and helps various parts of the body perform their functions smoothly in proper coordination. Various research projects have been submitted by the university in the field of Yoga.

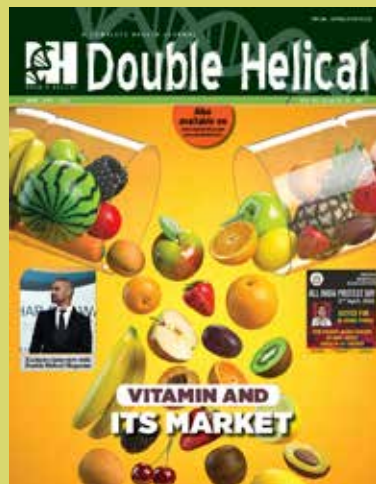
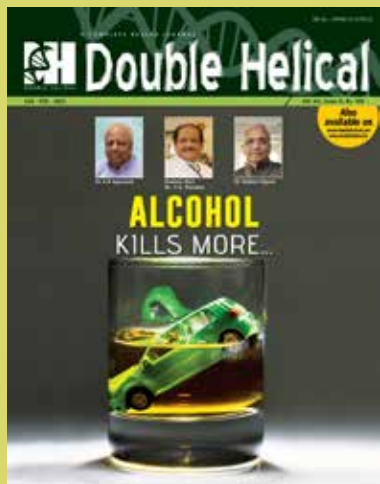
S-VYASA is an internationally recognized yoga and Ayurveda university and research institution renowned for its traditional treatments and science-backed yoga practices. They are being supported by the Union Ministry of Ayush.

RESET TECH Global Pvt Ltd and S-VYASA collectively launch a movement called - Disease Free India (Rog Mukta Bharat). They have recently introduced a health app called Aayu at

the hands of Karnataka CM Basavaraj Bommai. It will provide a holistic approach for treatment and consultation on lifestyle and mental health issues. The aim of the app is to effectively provide users with personalized wellness solutions and offer doctor consultations based on an individual's personal history and monitor their progress enabling them to accelerate their healing and recovery.

While modern medicine works to address and control the symptoms of lifestyle diseases such as diabetes, Yoga and naturopathy have the potential to address their root causes and help repair the body by restoring its natural harmony with the environment. Looking at the market opportunity and mandate, a lot of startups are emerging with modern-day technology, and are now changing the way consumers practice yoga by cutting out the need to go to a studio altogether, bringing the yoga experts to the home in the form of live or on-demand streaming. Therapeutic health solutions to mental health issues are using natural, sustainable and traditional methods of yoga and

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According to health experts, regular practice of yoga will surely help students achieve a better life, physically, mentally and spiritually as well



meditation which will be more effective and ensure long-term care and cure.

As a solution especially as an accessible, acceptable, and affordable practice to mental health issues, Yoga is gaining popularity day by day. People are turning to yoga for mental health improvement. It has been observed that around 15-25% population is suffering from depression, in which around 10% of people are suffering from mild depression, and for that 10% of people don't need any medication. So, here yoga comes into play. We need to synergize the efforts of all Yoga Institutions in the world toward this objective of bringing mental peace, health, harmony, and love between countries and communities. The International Day of Yoga on June 21st is the most needed mandate for setting the imbalances right in the world today. 

(The authors are from Delhi Pharmaceutical Sciences & Research University, New Delhi)



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