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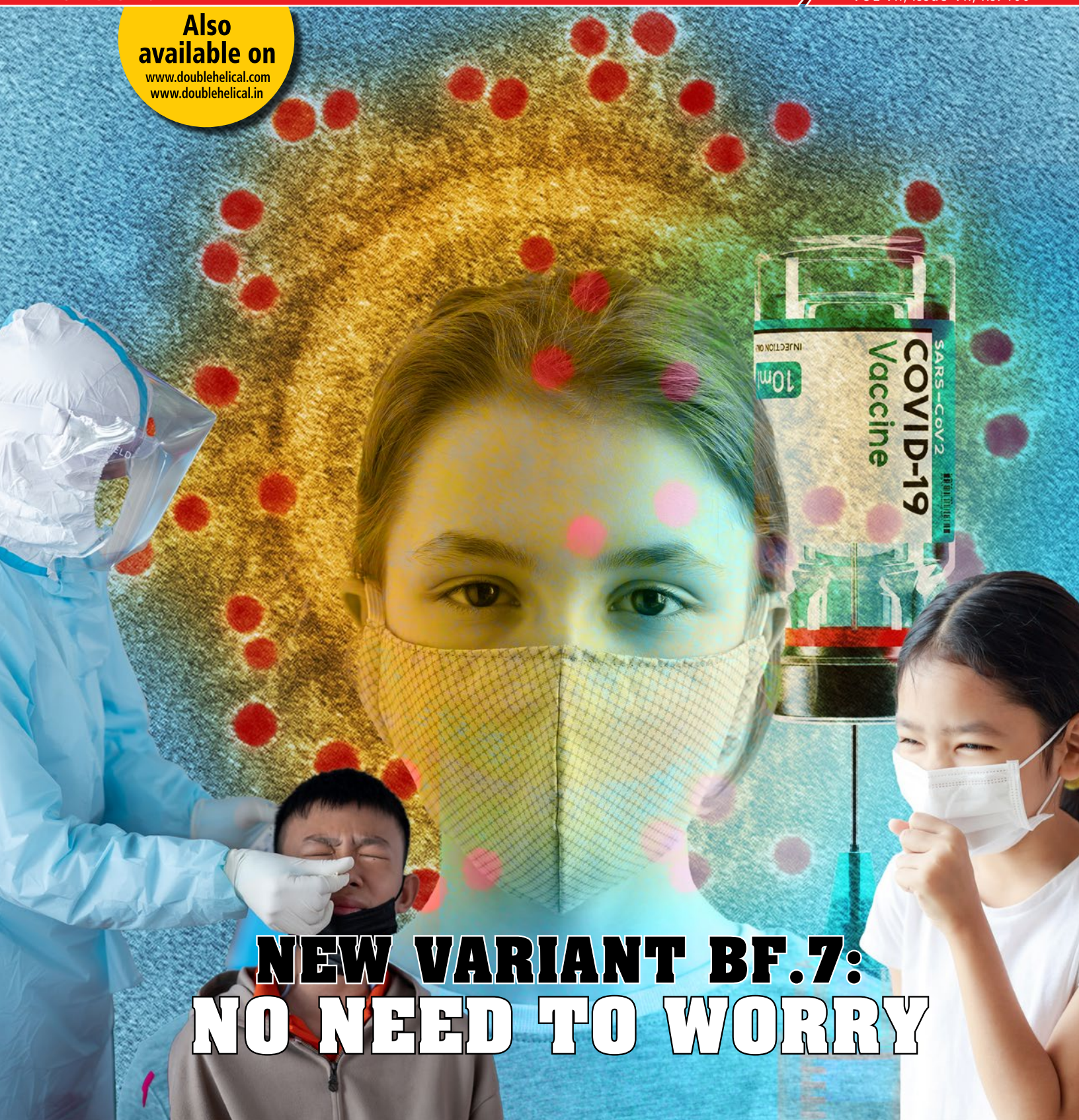

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Are we heading back to the Covid-19 disaster?

Dear Readers,

Wish you a very new happy year. Over the past seven decades, we have witnessed path-breaking changes in terms of innovation, research and development in the medical field. With seminal contribution to the furtherance of medical science, Indian doctors and medical experts have made their country proud in the eyes of the world.

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. As several countries are witnessing a massive corona virus infection surge, many are worried about the fact whether India is likely to see the fourth Covid wave in the coming months.

The issue became more concerning as Omicron BF.7, which is behind the surge in China, has also been detected in India. But India has no need to worry at this point.

As per Ministry of Health and Family Welfare sources, the next four weeks will be crucial as India may see a Covid surge in January. Even if there is a wave, deaths and hospitalization will be very low, the Health Ministry sources said. The government made random corona virus testing mandatory for two per cent of passengers arriving in each international flight.

Prime Minister Narendra Modi and Union Health Minister Mansukh Mandaviya have held meetings to assess the country's preparedness to deal with a fresh surge in cases.

As per experts, next month is going to be very crucial. For international passengers, Air Suvidha portal is likely to be re-introduced for flyers coming in from Japan, China, South Korea, Thailand, and Singapore from next week.

The government had intensified the screening of all passengers who arrived at the four airports in the state immediately after the sudden surge in corona virus cases in China and other countries. Those coming from China, Japan, Hong Kong, Taiwan and South Korea are mandatorily screened for the virus. The government has already activated a mass fever screening system at the Chennai, Madurai, Tiruchirappalli and Coimbatore airports for early detection of the virus.

Amid a spike in COVID-19 cases in some countries, including China and South Korea, the government has sounded an alert and asked States and Union territories to prepare for any eventuality. India has stepped its surveillance and genome sequencing of Covid positive samples. With only 27 per cent of the eligible adult population having taken the precaution dose, government officials have appealed to those due for it to take it.

According to Ministry of Health and Family Welfare, Govt of India, the government is fully prepared to tackle a potential outbreak. Several countries are administering a third and even fourth Covid-19 booster shot but India, where many fully vaccinated individuals have not taken even one, is not there yet, say experts while stressing on the need for a structured and systematic response.

As Covid-19 gets back on the radar with a surge in China and people worry about another wave in India and whether the government should now allow a second booster shot to add to the two-jab protection, some scientists call for a reality check. A fourth shot of a Covid-19 preventive is unwarranted at the moment as most people in the country are yet to receive a third dose and there is no data available on the utility of a second booster for the currently used vaccines.

The lethality of the corona virus was grossly overestimated by the pace by which it killed the tail-enders i.e. the elderly and the vulnerable, in the nursing homes of Europe early in the pandemic. One paper in Lancet put the ball mark at 20%. Such estimates appearing in high impact journals and mathematical models from Imperial College, London predicting doomsday caused panic which was sustained in spite of subsequent studies which established the infection fatality rates to be many times lower.

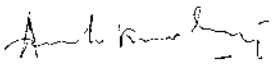
A number of serosurveys few months into the pandemic estimated the global Infection Fatality Rate (IFR) with the original Wuhan virus, to be around 0.3% and lower still in countries of Africa and Asia.

A recent meta-analysis by investigators from Stanford University have found infection fatality rates to be in the range of 0.0003% till the age of 19 years, and even in the old say a 69 year old, the infection fatality rate ranged from 0.03% to 0.07% . The royal heirs have turned into commoners – the novel corona virus is as mild as the other circulating corona viruses which causes common cold and is novel no more. Do we need to panic?

So we can say that the surprising mysteries of Covid-19 are still not yet finished. The rapidly worsening China's Covid situation has raised alarms across the globe. Three years back, China was considered to be the starting point for the inception and spread of viral infections the scariest pandemic the world has ever seen in the history. The story of the pandemics so far is the end is in sight" But, maybe it's a new beginning.

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

Sudden Deaths

India seems to be moving towards becoming world's epicenter for cardiac diseases soon. Data is suggestive of India at a verge of a heartdemic as people increasingly succumb to cardiac diseases regardless of their age. In fact the leading cause for the recent rise in the number of sudden deaths has been cardiac issues. Studies have indicated that India records a higher cardiovascular disease death rate at 272 per 100000 than global average that is 235 per 100000.

According to the World Health Organization, India accounts for one-fifth of 17.7 million deaths due to cardiovascular diseases globally. According to the Indian Heart Association, India accounts for 60% of heart disease burden in the world.

Dr. Jagadish Hiremath, Chairman at AASRA Hospitals says that that with 68 per cent of its population being aged below 35, India is known as a young nation. But the country's young population is now at risk of death due to cardiac issues with an increase in the number of youngsters succumbing to cardiac issues. A multitude of health issues such as obesity, hypertension have been on rise due to lifestyle issues such as stress, excessive workouts to unhealthy food habits and many more. This has resulted in a spike in incidence of cardiac issues and deaths apart from that are leading to these untoward incidents.

Non-communicable diseases now a concern for healthcare experts

The rising threats of non communicable diseases have become a new worry for healthcare experts. It also seems to be the signs of emerging new pandemic. Data on increasing prevalence of NCDs and

About Dr. Jagadish Hiremath

Dr. Jagadish Hiremath, the Chairman at Aasra Hospital is renowned among the public for work towards making best health care available to people regardless of their financial status. After realizing his dream of making healthcare affordable to people from Rural Bangalore, he has now set out to revolutionise the Indian healthcare system by making robotic surgery affordable to all. Dr. Jagadish Hiremath is a pioneer in driving India's progress in digital healthcare. He has already been working on patient pattern recognition and standardization which are key to digital health care. With an aim to achieve near 100% penetration of digital health in every corner of earth including the remote areas, he has created a unique Digital Design Architecture. As an expert in the areas of clinical research, clinical applications of advanced medical technology and AI in medical technology, Dr. Hiremath aspires to bring a contemporary hospital setup that will bring a new leap in the field of healthcare.

deaths due to NCDs are highlighting the need for adoption of healthy lifestyle at mass level without which the future could witness a continued surge in prevalence of NCDs.

Recent data has shown that the prevalence of NCDs such as cardiac diseases, diabetes, cancers and many more is increasing. India bears 60% of the world's cardiac disease burden. Cancer burden which was 26.7 million in the year 2021 is expected to rise to 29.8 in 2025. In addition to it, cancer detection rate in the country is as low as 29%. According to data released by ICMR recently, deaths due to NCDs have increased from 37.9% in 1990 to 61.8% in 2016.

According to Dr. Jagadish Hiremath, Chairman at AASRA Hospitals, increasing incidence of NCDs and deaths due to NCDs can be correlated with the increased adoption of unhealthy lifestyle and lack of physical exercise both of which not only aggravates existing NCDs but also makes healthy individuals prone to NCDs at young age.

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"The Ayush is one of the fastest growing industries"

Hon.'ble Lt. Governor, Vinai Kumar Saxena spoke about Traditional Medicine in a seminar organized by Delhi Pharmaceutical Sciences & Research University, New Delhi, recently.

According to Hon.'ble Lt. Governor, Vinai Kumar Saxena Telemedicine has emerged as one of the mainstays of the health care delivery system worldwide especially after the Covid-19 pandemic. It is reported Traditional medicines are used by about 88% of the member countries. Two main Sustainable . The AYUSH is one of the fastest growing industries that got multiplied

by 7 times from $3 billion to 18 billion. The market size has grown by a CAGR of 15%.

The AUSH Ministry has implemented several programs to promote TM globally. The goal is that any medical system including Ayurveda must be validated and accepted globally. In addition to International Pharmacopoeia, M-Yoga (Mobile App), International Classification of Diseases-11, Support to research, AYUSH export promotion, provision for training and scholarships to Foreign nationals are some of these schemes..

In collaboration with FSSAI, the AYUSH Ministry has brought Ayurveda Ahara, Ayurveda Food, Ayurveda recipes and Functionla Foods products under the one Umbrella. Development Goals of United Nations in the 2030 agenda have provided a blue print of strategies to improve health. Considering these, WHO Global Centre for TM has been established in Jamnagar Gujarat.

Lt. Governor, Vinai Kumar Saxena, said, "I am happy to note that DPSRU has been working with AYUSH, All India Institute of Ayurveda, DDA-

Biodiversities and Ayurveda Pharma Industry to contribute to the cause of promotion of Traditional Medicines through research and training. The University organized an International Conference in 2018 with IASTAM they could have a liaison with Biodiversities and came out with a product for Covid-19. I wish this get regulatory approval and the University will comply with requirements."

"DPSRU has many collaborative research projects with Ministry of AYUSH, CCRAS, CCRUM, Dabur, Madhavbaug, AIMIL, Multani and various other organizations. We have received a funding of 13.5 lakhs for the project Anti-neuropathic efficacy of RhusTox in rodents. DPSRU has also signed an MOU with All India Institute of Ayurveda," he added.

I am delighted to not that to

promote the teachings and practice of Ayurveda, DPSRU have started B. Pharm (Ayurveda) course in 2021. DPSRU being the first pharmacy university in India and third in the world needs to be destination for education, training and research in pharmaceutical sciences and allied areas and thereby, cater to the health needs of the people at large. However, a lot more needs to be done. A conference on "2nd International Conference on Natural Products and Human Health" organized by DPSRU in collaboration with Deshbandu College of Pharmacy (University of Delhi) is going to be held from November 4-6, 2022. I am sure this conference will be in the line of objectives laid down by WHO and AYUSH.

Ayurveda is an "Open Knowledge System" having the inherent principle of adopting knowledge, assimilation of knowledge, and advancements from time to time. I am sure that the faculty and staff of the University is aware of the the National Education Policy-2020 is being implemented in the country. In relation to this program the University may like to touch upon the ' cross discipline learning between modern and AYUSH systems. Both All India Institute of Ayurveda and DPSRU may come up with vibrat programs for the promotion of AYUSH systems of medicine. Both may create common interface platforms to share ideas, problems, and solutions for the AYUSH scholars with the development of regional incubation centers. The resources being developed may be utilized mutually by these two institutions.

I congratulate the University and All India Institute of Ayurveda for organizing various programs of "Ayurveda Everyday, Ayurveda Everywhere". I am sure after the symposium you will come out with some more strategies for the promotion of Ayurveda.

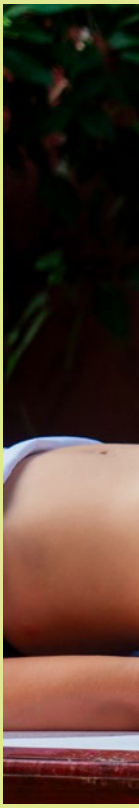
ROLE OF TRADITIONAL MEDICINE

TRADITIONAL MEDICINE (TM) IS CONSIDERED AS ONE OF THE MAINSTAYS OF THE HEALTH-CARE DELIVERY SYSTEM WORLDWIDE.. THE WORLD HEALTH ORGANIZATION (WHO) HAS REPORTED THAT TM IS USED BY AT LEAST 88% (170 OF 194) OF THE MEMBER STATES ACROSS THE WHO REGIONS……...

BY DR RAMESH K GOYAL

This infers an upsurge in the demand for the services of TM globally. To access TM in a way that is secure, respectful, economical, and efficient, many nations worldwide are now realizing the necessity to create comprehensive, approachable systems. In this view, the WHO has farmed "WHO TM Strategy 2014–2023" for assisting health-care experts to create solutions that support a bigger picture of better health and patient autonomy..

The two main objectives of the strategy are to assist member states in trying to maximize the potential contribution of TM in health, wellness, and people-centered health care as well as to promote safety and effectiveness by regulating its goods, practices, and practitioners. It has strategized various objectives such as framing policies to integrate TM within national health-care systems, implementing national TM policies, promoting the safety, efficacy, and quality of TM by providing guidance on regulatory and quality assurance standards, and increasing the availability and affordability of TM, with special emphasis on promoting the use of appropriate TM by practitioners.. The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for strategies to improve health,[and TM can play a crucial role in achieving the goal. Possibly considering all these, the WHO Global Centre for TM has been established at Jamnagar, Gujarat, as part of the WHO's overall TM strategy with a strategic focus to optimize the contribution of TM to global health and sustainable development.



In India, Ayurveda, Yoga and Naturopathy, Unani, Siddha, Sowa-Rigpa, and Homeopathy (AYUSH) are the indigenous TM. Among these, Ayurveda is the most widely practiced system in South Asia and is popular not only in India but also in Nepal, Sri Lanka, Mauritius, Bangladesh, Pakistan, Indonesia, Malaysia, Singapore, and Maldives..

AYUSH: GLOBAL MARKET

The domestic and global demand as well for the AYUSH sector has grown in the recent past. The AYUSH industry continues to be one of the fastest growing sectors of the Indian economy, which has immensely multiplied by six times from $3 billion to $18 billion in the past 7 years.[6] In the past 7 years, the total budget allocation to the Ministry of Ayush (MoA) has increased over four times from Rs. 691 Cr to Rs. 3050 Cr. The market size of the AYUSH industry as a whole has grown by

17% during 2014–2020, with a current turnover of US$ 18.1 billion. On the global platform, there is significant growth in the AYUSH market, which at present accounts for about 2.8%, observing the enormous potential of the AYUSH sector in the world. According to the reports by IMARC (2021), the Ayurveda market is expected to grow by around 15% during 2020–2025.

NEW INITIATIVES: MINISTRY OF AYUSH

According to Narendra Modi, Hon'ble Prime Minister of India Today, when India is moving toward leading the fourth industrial revolution, the role of India's science and people related to this field is very important. In such a situation, the responsibility of people in administration and policymaking increases significantly..

The MoA has been implementing a number of strategies, to promote AYUSH, both domestically and internationally. MoA has worked with the WHO on a variety of projects to promote AYUSH globally, such as creating benchmark documents for Ayurveda training and practice, adding a second module to the TM Chapter of the International Classification of Diseases-11, creating apps such as M-yoga, assisting with the work of the international pharmacopoeia of herbal medicine, and supporting various other research projects at a global platform.

MoA has undertaken a number of initiatives to advance AYUSH systems internationally and ensure their acceptance on a global scale, including bilateral and multilateral negotiations with various nations to begin various steps for trade facilitation, recognition of the AYUSH System, the establishment of a specific Ayush Export Promotion Council to promote the export of AYUSH goods, medicines, and services, establishing international AYUSH institutes, providing scholarships to foreign nationals to pursue AYUSH courses in India, supporting industry and hospitals for participation in international exhibitions, and the deputation of experts to various countries establishing quality standards by working with international agencies.

(The author is Vice Chancellor, Delhi Pharmaceutical Sciences & Research University, New Delhi)

Universal Health Coverage

BY DR POONAM KHETRAPAL SINGH

On occasion of International Universal Health Coverage (UHC) Day, the WHO and its Member States in the South-East Asia Region are highlighting the urgent need for whole-of-government, whole-of-society action to reorient health systems towards quality, accessible, affordable and comprehensive primary health care (PHC), which provides the strongest, most efficient foundation to achieve UHC and health security.

Globally, at least half of all people do not receive health services they need. Over 996 million people spend at least 10% of their household income on health care. In 2017, around 299 million people in the Region faced catastrophic health spending, and an estimated 117 million people in the Region were pushed or further pushed below the purchasing power parity poverty line of US$ 1.90 a day.

Since 2014, the South-East Asia Region has sought to achieve UHC as a Flagship Priority, recognizing that UHC is central to improve population health and well-being and enhance human capital for sustainable social and economic growth. Between 2010 and 2019, the Region increased its UHC service coverage index from 47 to 61. Between 2000 and 2018, the Region reduced out-of-pocket (OOP) spending on health from 50% to 40%, and between 2000 and 2017, reduced the number of households impoverished or further impoverished from OOP spending from 30% to 6%. Since 2014, the density of doctors, nurses and

midwives in the Region has improved by over 30%, with nine countries now above the first WHO threshold of 22.8 health workers per 10 000 population, compared with six in 2014.

Five countries of the Region have already achieved the Sustainable Development Goal targets for under-five and neonatal mortality. Between 2000 and 2020, the Region achieved a 34% decline in TB incidence rates, and by the end of 2020, had met each of the Global Technical Strategy for Malaria milestones for mortality and morbidity. Since 2016, six countries of the Region have eliminated at least one neglected tropical disease, and all countries continue to strengthen PHC services to prevent, detect, control and treat non communicable diseases. This is in accordance with Region-wide efforts to reorient health systems towards quality, accessible, affordable and comprehensive PHC, as per the Region's Strategy for PHC, launched on 12 December 2021, as well as its newly adopted Roadmap on Health Security and Health System Resilience for Emergencies 2023–2027.

> **We have a once-in-a-century opportunity to build the Region and world we want – a Region and world that is healthier, more equitable, resilient, sustainable and health-secure.**

Gaps and challenges nevertheless persist and have been exacerbated by the COVID-19 crisis and other global events. Today, tens of millions more people in the Region have been pushed into extreme poverty, aggravating the social and economic determinants of health, and increasing the risk of catastrophic health spending and foregone care. In some programme areas, health service disruptions have halted and even reversed progress.

Intense macro-fiscal pressures mean that in the recovery from the COVID-19 crisis, there is no guarantee that health will be prioritized. Now more than ever, whole-of-government, whole-of-society action is needed to protect, promote and support health and well-being, recognizing that Health for All will only be achieved if together we are All for Health.

For that, WHO is calling for action in several key areas. First, multispectral action to protect, promote and support health and well-being must be

strengthened, and WHO's health-in-all-policies approach adopted. Across all sectors, and in all settings, decision-makers must be sensitized and empowered to promote health and well-being and help mitigate its social and economic determinants.

Second, social participation must be mainstreamed within health system governance and decision-making. It is imperative that policy makers and health service providers directly engage with the people they serve, including through spaces and mechanisms that are participatory and inclusive, that minimize power asymmetries, and are oriented towards those who are at-risk of or already being left behind.

Third, legal frameworks must be developed and implemented to assist populations to enjoy the Right to Health through UHC. Evidence shows that well-designed legislation that protects and promotes population health increases social participation, and with it, accountability. It can also help ensure that whatever the fiscal outlook, health and well-being is allocated adequate, sustained and reliable public funds.

Fourth, amid the COVID-19 response and recovery, financing for health and well-being generally, and PHC specifically, must be maintained and increased. For this, among other evidence-based strategies, WHO is calling for increased taxation of unhealthy products such as tobacco, alcohol, highly processed food and sugar-sweetened beverages.

We have a once-in-a-century opportunity to build the Region and world we want – a Region and world that is healthier, more equitable, resilient, sustainable and health-secure. Towards that goal, WHO will continue to provide Member States its ongoing and unmitigated support, for a South-East Asia Region in which all people can access quality health services, when and where they need them, without financial hardship.

(The author is WHO Regional Director for South-East Asia)

NEW VARIANT BF.7: NO NEED TO WORRY

AS SEVERAL COUNTRIES ARE WITNESSING A MASSIVE CORONAVIRUS INFECTION SURGE, MANY ARE WORRIED ABOUT THE FACT WHETHER INDIA IS LIKELY TO SEE THE FOURTH COVID WAVE IN THE COMING MONTHS. THE ISSUE BECAME MORE CONCERNING AS OMICRON BF.7, WHICH IS BEHIND THE SURGE IN CHINA, HAS ALSO BEEN DETECTED IN INDIA. BUT INDIA HAS NO NEED TO WORRY AT THIS POINT...

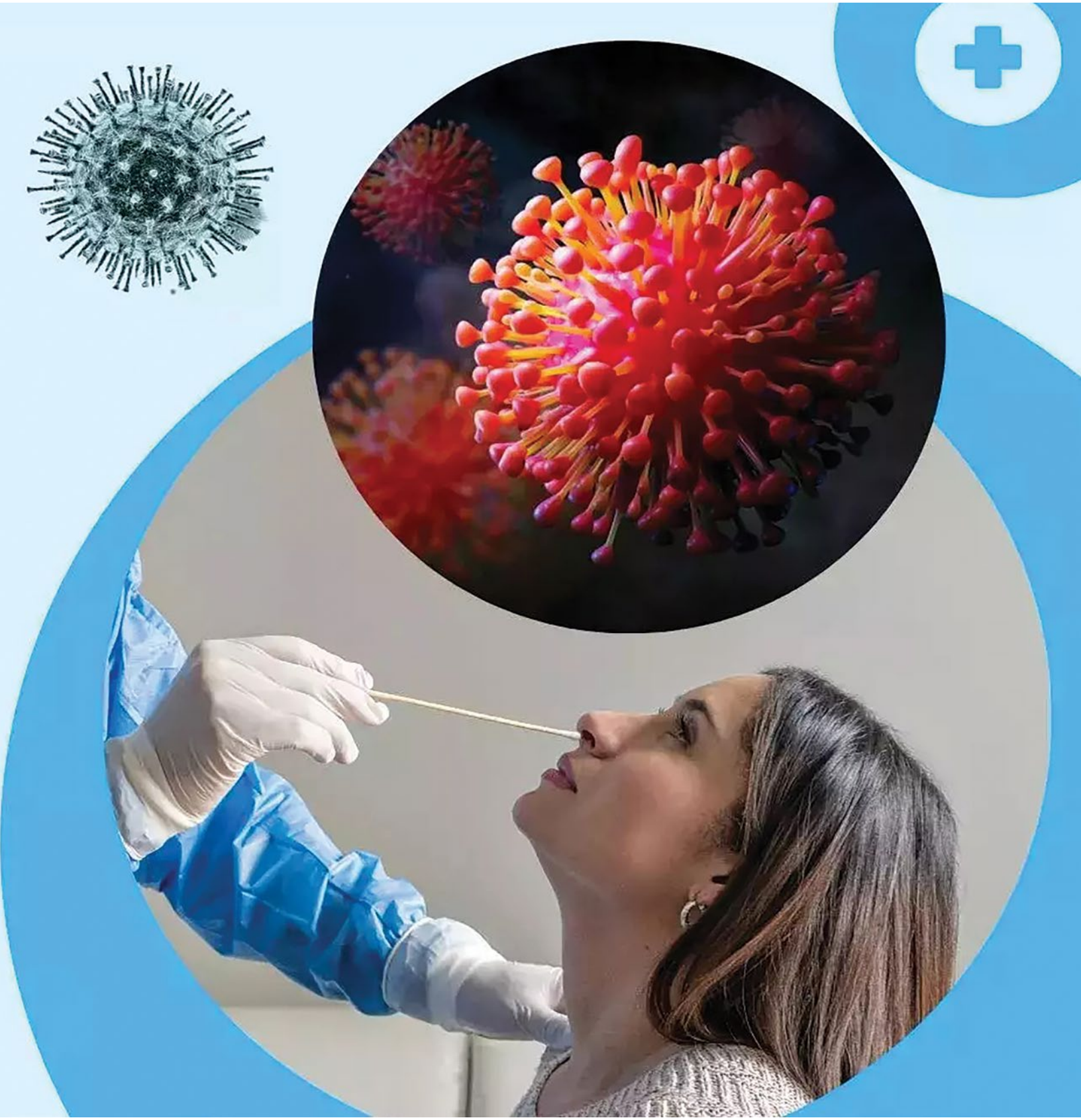
BY ABHIGYAN/ABHINAV

As per Ministry of Health and Family Welfare sources, the next few weeks will be crucial as India may see a Covid surge in January. Even if there is a wave, deaths and hospitalization will be very low, the Health Ministry sources said. The government made random corona virus testing mandatory for two per cent of passengers arriving in each international flight.

Prime Minister Narendra Modi and Health Minister Mansukh Mandaviya have held meetings to assess the country's preparedness to deal with a fresh surge in cases.

The government is not considering banning international flights, said sources. As per experts, next month is going to be very crucial. For international passengers, Air Suvidha portal is likely to be re-introduced for flyers coming in from Japan, China, South Korea, Thailand, and Singapore from next week.

The government had intensified the screening of all passengers who arrived at the four airports in the state



immediately after the sudden surge in corona virus cases in China and other countries. Those coming from China, Japan, Hong Kong, Taiwan and South Korea are mandatorily screened for the virus. The government has already activated a mass fever screening system at the Chennai, Madurai, Tiruchirappalli and Coimbatore airports for early detection of the virus.

Mansukh Mandviya, Health Minister, Ministry of Health and Family Welfare, Govt of India, assured that the government is fully prepared to tackle a potential outbreak. Several countries are administering a third and even fourth Covid-19 booster shot but India, where many fully vaccinated individuals have not taken even one, is not there yet, say experts while stressing on the need for a structured and systematic response.

According to Manindra Agrawal, Professor, IIT Kanpur and also part of the IIT sutra Covid-19 model, the 'short-term future does not look good but there is no cause for alarm in India. The percentage of the naturally immune (immunity acquired via the previous infection) population in China was less than 5% in October-end and less than 20% in November-end. At present, less than 60% of the population has natural immunity.

Dr A K Agarwal, Medical Advisior(Clinical Research), Apollo Hospital and Former Dean, Maulana Azad Medical College, New Delhi, said, "The rising cases of Covid-19 may stop only when nearly entire population acquires natural immunity. Our analysis of Omicron wave across countries had shown that natural immunity provides strong protection against infection by

any variant. It has been observed that the countries with a high level of natural immunity have not seen a significant rise in case numbers. In China, due to its

zero-Covid-19 policy, as we observe, natural immunity did not develop at all."

According to **Dr Suneela Garg, Chair, advisory Committee, National Institute of Health and Family Welfare, Member, Lancet Commission and Former Director Professor, Department of Community Medicine, Maulana Azad Medical College**, New Delhi, if we talk about especially for China, Japan, America etc... this is the worst time for them -- little natural immunity and little restrictions on movements. More than 2 years since cases were first reported, the COVID-19 pandemic remains an acute global emergency. Many governments face uncertainties about how to prioritize at a time when the pandemic appears to be in transition but when the risk of emergence of new variants and future surges remains real.

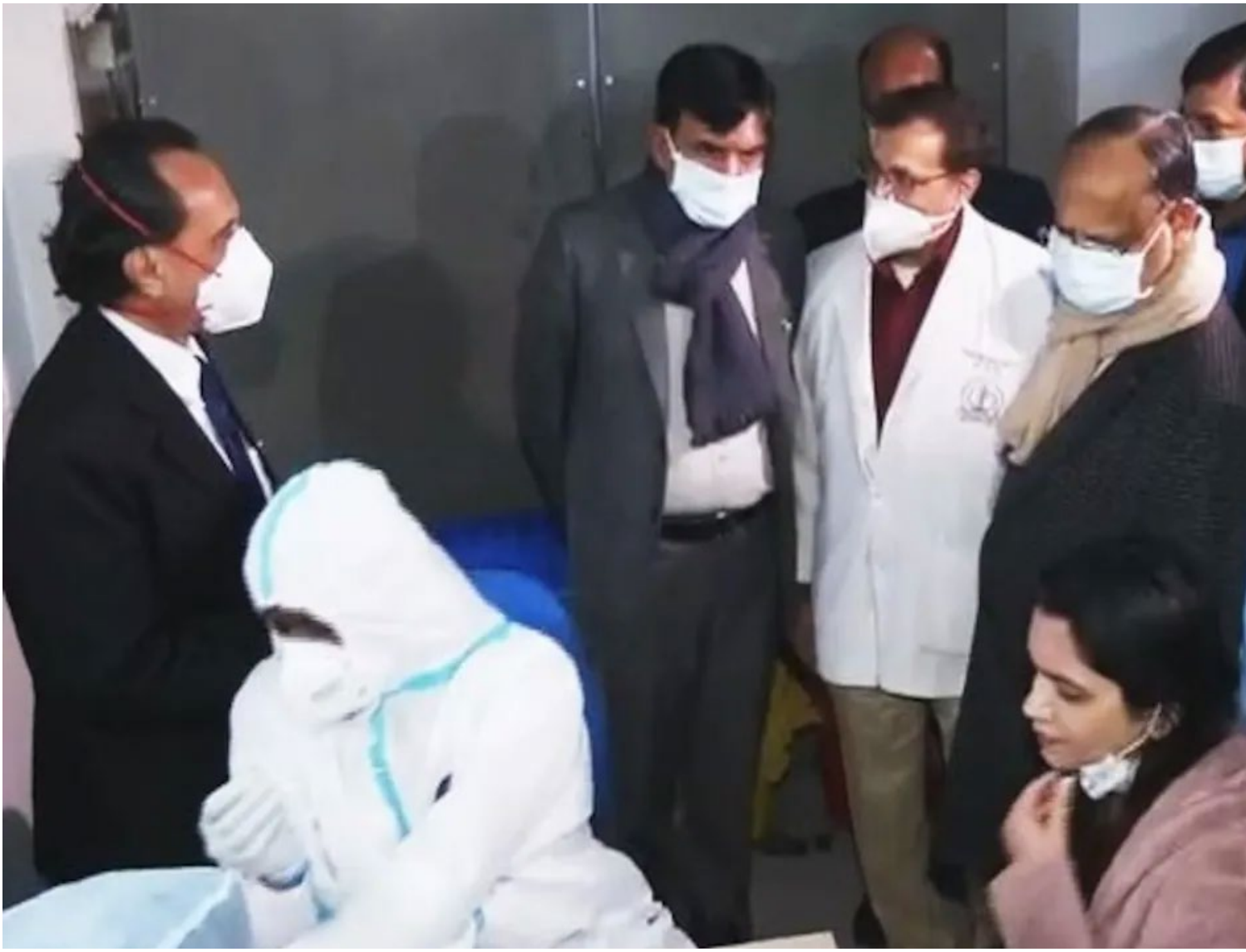
"To assist national and global efforts to end the COVID-19 emergency worldwide, WHO updated the COVID-19 Global Preparedness, Readiness and Response plan in 2022 and outlined two strategic objectives. First, reduce the

circulation of the virus by protecting individuals, especially vulnerable individuals at risk of severe disease or occupational exposure to the virus. Second, prevent, diagnose and treat COVID-19 to reduce deaths, disease and long-term consequences. These combined strategies can save lives and livelihoods," Dr Suneela Garg, said.

To provide actionable approaches to meeting these objectives, WHO has produced six short policy briefs that are based on previously published technical guidance? They outline essential actions that national and sub-national policy makers can implement for Covid-19 testing, clinical management of Covid-19, reaching Covid-19 vaccination targets, maintaining infection prevention and control measures for Covid-19 in health care facilities, building trust through risk communication and community engagement and managing the Covid-19 infodemic.

WHO Member States are in different situations with regard to Covid-19due to a number of factors such as population-level immunity, public trust and access to vaccines and therapeutics. These policy briefs will provide the basis for an agile response as countries continue to confront the pandemic while consolidating the foundation for a stronger public health infrastructure and strengthening the global architecture for health emergency preparedness, response and resilience.

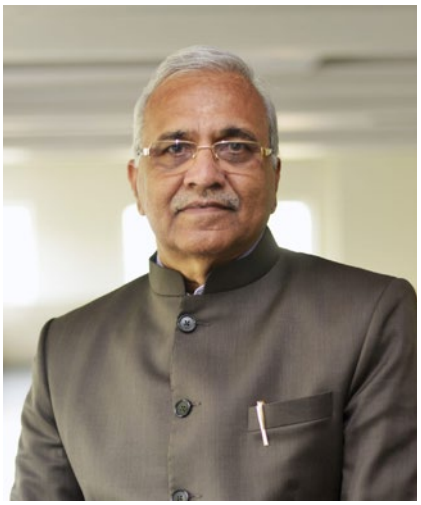
Amid a spike in COVID-19 cases in some countries, including China and



South Korea, the government has sounded an alert and asked states and Union territories to prepare for any eventuality. India has stepped its surveillance and genome sequencing of Covid positive samples. With only 27 per cent of the eligible adult population having taken the precaution dose, government officials have appealed to those due for it to take it.

Mansukh Mandviya, Health Minister, Ministry of Health and Family Welfare, Govt of India, assured that the government is fully prepared to tackle a potential outbreak. Several countries are administering a third and even fourth Covid-19 booster shot but India, where many fully vaccinated individuals have not taken even one, is not there yet, say experts while stressing on the need for a structured and systematic response.

Dr Girdhar gyani, Director General, Association of Healthcare Providers India, said, "As Covid-19 gets back on the radar with a surge in China and people worry about another wave in India and whether the government should now allow a second booster shot to add to the two-jab



> **China has been witnessing thousands of cases daily in the last few weeks. The Indian situation, with widespread actual infection in addition to vaccination, is quite different.**

protection, some scientists call for a reality check. A fourth shot of a Covid-19 preventive is unwarranted at the moment as most people in the country are yet to receive a third dose and there is no data available on the utility of a second booster for the currently used vaccines."

"Undoubtedly situation in India where a large number of people have been exposed to the virus and also been vaccinated is quite different. There is no reason to expect that the Chinese situation, which is specifically shaped by the zero-Covid policies that the country implemented for almost three years, will predict anything in India." Dr Girdhar Gyani, added.

Dr Vinay Aggarwal, Past National President, Indian Medical association, said, "China has been witnessing thousands of cases daily in the last few weeks. The Indian situation, with widespread actual infection in addition to vaccination, is quite different. Countries such as the US and UK are administering third and fourth booster doses to fully vaccinated individuals as well as extra shots to the immune compromised who did not have a strong immune response from their initial doses. We have urged Union Health Minister Mansukh Mandaviya to consider the fourth dose for healthcare workers and frontline workers. Because healthcare professionals are more exposed to a larger number of corona virus infected patients resulting in cumulative accumulation of larger volume of viral load and repeated exposure to the virus."

According to government data, about 22.35 crore boosters or precaution doses have been administered, which is 27 per cent of the total population eligible for boosters. That leaves the vast majority still without boosters. Besides, Pfizer-BioNTech and Moderna, the manufacturers of two of the most widely used Covid vaccinations, have developed updated vaccines that more effectively protect against the newer Omicron variant.

In India, the currently used vaccines, including Covishield, Covaxin and the recently launched nasal vaccine, iNCOVACC, are designed from Wuhan strain of the SARS-CoV-2 vaccine and do not have Omicron-specific virus components in them. According to experts, the number of daily cases should be monitored; people landing at the airport should be initially tested randomly and routinely tested if cases increase. Getting sequencing done on a subset of RT-PCR positive samples at the very least is essential since the variant prevalent in China, BF.7, is rarely identified in India.

There is no evidence yet to indicate any major nationwide 'wave' of severe Covid-19 illness. Both the government and society have failed in continuing to recognize that the pandemic is still ongoing and needs a long-term systematic public health-oriented and structured response. So there is need of focus on to provide enough infrastructure and money to carry out surveillance and set up a robust routine surveillance machinery for the country to monitor any and every infectious disease.

INDIA'S MOVE TO VACCINATE CHILDREN AGAINST COVID-19 IS "UNSCIENTIFIC"

The current trend of Covid-19, in terms of speculation over rise and fall in cases from time to time, is a common phenomenon when an infectious disease transitions from pandemic to endemic phase.

According to Dr Sanjay K Rai, Senior epidemiologist, Department of Community Medicine, AIIMS, New Delhi, India already witnessed a very devastating second wave of Covid infections which was very unfortunate. The global evidence shows that natural infection provides better and longer protection against COVID-19. Also, there has been high vaccination coverage. Hence, a severe wave in the future is unlikely until a new mutant variant is capable of invading the existing natural immunity and causing severe disease.

Dr Sanjay K Rai, said, "In view to Govt of India's move to vaccinate children against Covid-19 is "unscientific" and not yield any additional benefit. My claim on above statement is based on data from countries that have already implemented vaccination for children should be analyzed before executing the plan in India."

Dr Sanjay Rai, becomes very popular over social media by reacting over Prime Minister Narendra Modi's concern over vaccination against Covid-19 for children in the 15 to 18 age group. In his words, "I am a great fan of PM Modi for his selfless service to nation and taking right decisions at right time. But I am completely disappointed with his unscientific decision on children vaccination,"

"I am a great fan of PM Modi for his selfless service to nation and taking right decisions at right time. But I am completely disappointed with his unscientific decision on children vaccination,"

According to Dr Sanjay Rai, there should be a clear-cut objective of any intervention. The objective is to either prevent corona virus infection or severity or death. But according to whatever knowledge we have about vaccines, they are unable to make a significant dent in the infection. In some countries, people are getting infected even after taking booster shots. In the case of children the severity of infection is very low and according to data available in the public domain, only two deaths per million populations have been reported. Few countries, including the US, started vaccinating children four-five months ago. The data of these countries should be analyzed before initiating Covid vaccination for children.

PROFILE

Dr. Sanjay K Rai is currently Professor at Centre for Community Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi, India. He is also Editor of prestigious WHO-South East Asia Journal of Public Health.

Dr. Rai has played a vital role in promoting public health leadership during COVID-19 pandemic. As President of the Indian Public Health Association; he founded a joint COVID-19 taskforce with eminent public health experts belonging to various public health associations of India e.g., Indian Association of Preventive of Social Medicine (IAPSM), Indian Association of Epidemiologist (IAE) and IPHA. The main objective of the joint taskforce was to advise the Government of India regarding the containment of COVID-19 in India. In this regard, four consecutive statements were produced and sent to the government including the honorable Prime Minister of India. The statements were vital in creating awareness regarding the epidemiology, control measures; use of vaccines, etc. to contain covid-19 in India.

He also provided inputs during an interaction with the Prime Minister of India. Awareness generation and educating both lay people as well as health professionals through print and electronic media was his special forte. In fact, he is one of the most recognizable faces in the digital media. He also played a very important role in development of vaccine against COVID-19 in India. His contribution as Principal Investigator of vaccine safety (phase 1 & 2), and effectiveness (Phase 3) trial at AIIMS, New Delhi, helped timely release of COVAXINTM vaccine nationally as well as globally.

Prof. Rai has to his credit over 175 publications and is a regular reviewer of many major national and international journals. He has been involved in more than 40 research projects. Prof. Rai has many awards and honours to his name including "Dr J. E. Park Memorial Oration" of Indian Public Health Association (IPHA), and has also been conferred "Fellowship" of IPHA.

He is member of many technical/ expert groups constituted by Government of India, Indian Counsil of Medical Research (ICMR), and International Clinical Epidemiology Network (INCLEN) and has contributed in many national health programmes e.g., National AIDS Control Programme, National Health Mission, Revised National Tuberculosis Control Progrmme etc.

Prof. Rai is also working in the area of HIV / AIDS and has been providing technical support to National AIDS Control Organization (NACO), Ministry of Health & Family Welfare. He is member of many technical resource groups of NACO. Prof. Rai is also focal person for NACO designated National Institute for HIV Surveillance at AIIMS, New Delhi, to monitor and support, HIV Sentinel Surveillance in India.

He was involved in research on human influenza disease burden in India, and also one of the largest influenza vaccine effectiveness trial studies in collaboration with Centre for Disease Control, Atlanta, and University of Alabama, USA. He is the current (2019-23) National President of Indian Public Health Association (IPHA).

"Dr. Rai has played a vital role in promoting public health leadership during COVID-19 pandemic. As President of the Indian Public Health Association; he founded a joint COVID-19 taskforce with eminent public health experts belonging to various public health associations of India e.g., Indian Association of Preventive of Social Medicine

Childhood Epilepsy

The most common neurological disorders....

Epilepsy is one of the most common childhood neurological disorders. It is characterised by recurrent episodes of seizures, which may have a long-term impact on the child's overall health and development...

BY DR SHEFFALI GULATI / DR GAUTAM KAMILA

Dr Sheffali Gulati

The incidence of epilepsy differs between developed and developing countries. In Western countries, new cases per year are estimated to be 33.3–82/100,000, in contrast to the maximum incidence of 187/100,000 estimated in developing countries.

In common parlance epilepsy is a disorder in which nerve cell activity in the brain is disturbed, causing seizures. Epilepsy may occur as a result of a genetic disorder or an acquired brain injury, such as a trauma or stroke.

Abnormal brain development or brain injuries, infection, inflammation, or specific gene mutations can all lead to seizures. The common symptoms of epilepsy includes Staring, Jerking movements of the arms and legs, Stiffening of the body, Loss of consciousness, breathing problems or stopping breathing, loss of bowel or bladder control and falling suddenly for no apparent reason, especially when associated with loss of consciousness.

Recent studies have shown that the maximum incidence occurs in the first year of age with a rate of 102/100,000 cases per year, just like the age range from 1 to 12 in children from 11 to 17 years old incidence is 21–24/100,000 cases. Previous studies suggest that the total incidence of epilepsy is constant from 25 years, showing a slight increase in males .In Italy, epilepsy incidence is 48.35/100,000 new cases per year and it is comparable with data recorded in the other industrialized countries. The peak of incidence occurs in children younger than 15 years old (50.14/100,000 new cases per year) and especially in the first year of life with an incidence of 92.8/100,000 new cases per year. The brain in children is more susceptible to seizures as well as refractory to the consequences of an acute attack.

WHAT ARE SEIZURES?

Seizures are defined as a transient occurrence of signs and symptoms due to the abnormal, excessive, or synchronous neuronal activity in the brain characterized by abrupt and involuntary skeletal muscles activity. There is a clear onset and remission in a seizure. Status epilepticus (SE) results either from the failure of the mechanisms responsible for termination of seizure or from the initiation of a mechanism, which leads to abnormally, prolonged seizures (for a time period of 5 min or more). It is a condition, which can have long-term consequences (especially if its duration is more than 30 min) including

neuronal death, neuronal injury, and alteration of neuronal network, depending on the type and duration of seizures. Febrile seizures are defined as seizures which occur in children aged between 1 month and 6 years with temperature rise over 38 °C and without signs of infectious disease of the central nervous system (CNS).

In 2014 the International League Against Epilepsy (ILAE) Task Force proposed the operational (practical) clinical definition of epilepsy, intended as a disease of the brain defined by any of the following conditions:

1. At least two unprovoked (or reflex) seizures occurring greater than 24 h apart.
2. One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 years.
3. From 2015 to 2017, the concepts, definition, and classification of seizures, epilepsy, and status epilepticus, were revised by the ILAE Task Force.

HOW DO WE INVESTIGATE A CHILD PRESENTING WITH SEIZURE?

When a child presents with seizures, a diagnosis is made by the physician, after working through several critical steps, excluding, however, any possibility of seizure mimics. Wherever possible, an etiology of the individual's epilepsy should be sought for. The most common causes of status epilepticus in children are fever and infections of the CNS. Other causes include hyponatremia, accidental ingestion of toxic agents, abnormalities of the CNS, genetic and metabolic disorders (phenylketonuria, hypocalcemia, hypoglycemia, hypomagnesemia).

The pathophysiological course of status epilepticus in children depends on the absence of anatomical abnormalities and pre-existing predisposing conditions of CNS.There is a strong correlation between seizures in children and positive family history, high temperature, mental disability, delayed discharge from NICU or premature birth, etc.

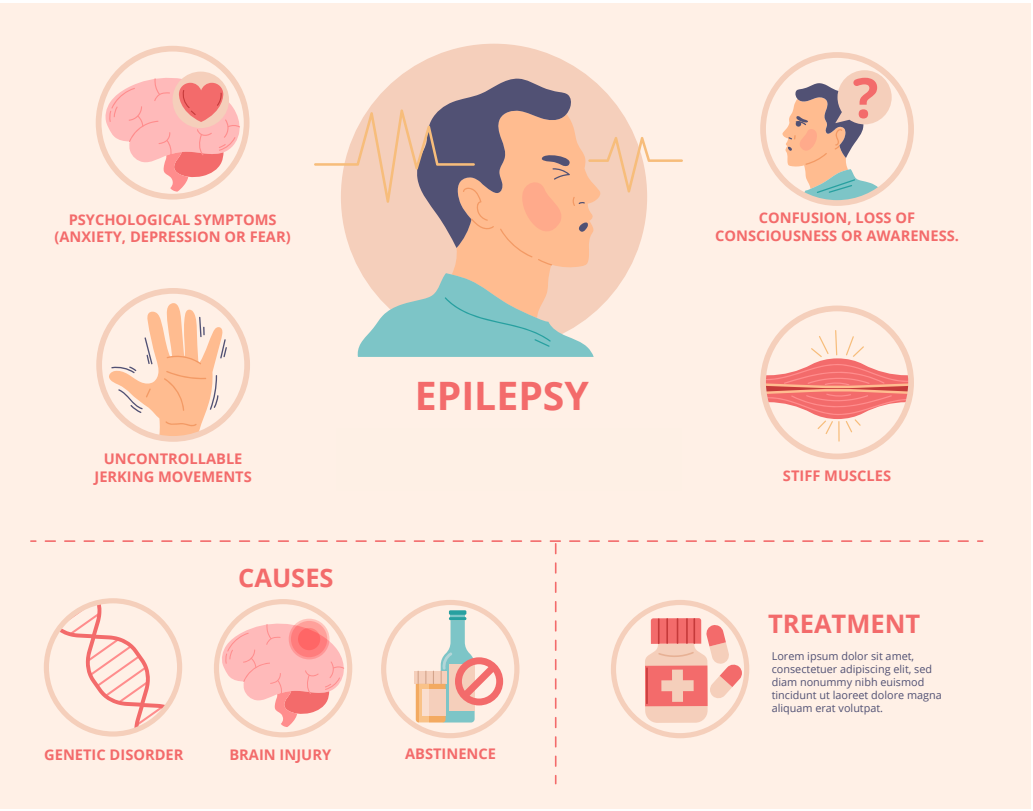
WHAT IS THE RISK OF RECURRENCE OF SEIZURES IN CHILDREN?

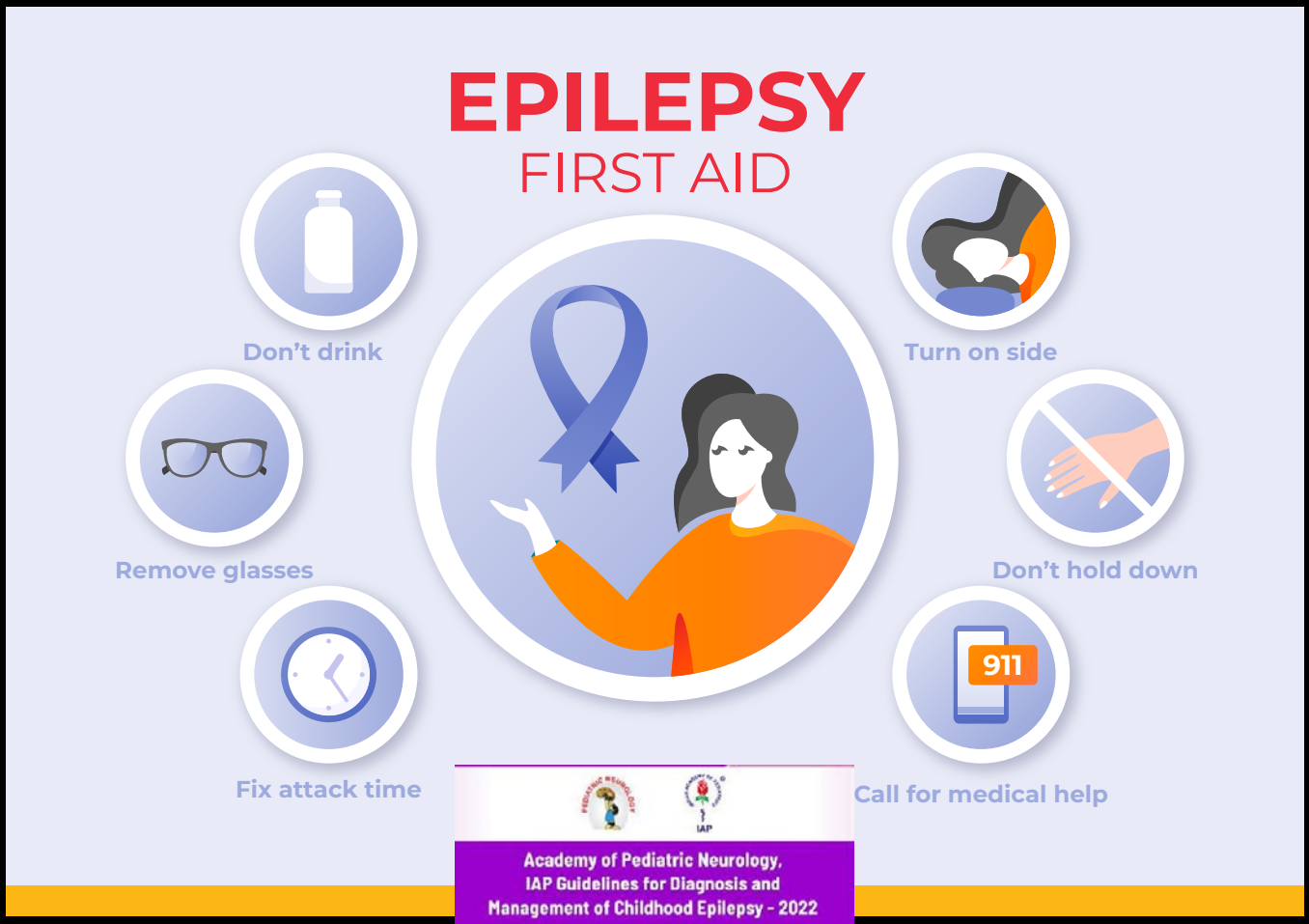
There is an increased probability of recurrence of seizures in 30% of children with first episode of seizures. The risks factors of recurrent febrile seizures include: small age, duration of first episode of seizures, low temperature during the first episode, positive family history for febrile seizures in a first degree relative, short timeframe from temperature elevation and seizure onset. Children with any of the above risk factors show greater than 70% probability of recurrence of seizure; in contrast patients with none of them have less than 20% probability of recurrence of seizure.

HOW DOES SEIZURE HAPPEN?

The exact mechanism of seizure onset is not clearly elucidated yet. There are two possible mechanisms which include - either a deficit of neuronal inhibition or an excess of excitatory stimuli. It has been hypothesised that the onset of seizures depends on a deficit in the neuronal inhibition, in particular ý-Aminobutyric acid (GABA) deficit, the most important neurotransmitter of CNS; alternatively it depends on the alteration of the GABA function which determines prolonged and high intensity stimulation. Glutamate receptors, the most important excitatory receptor of CNS, are also involved in seizure physiopathology.

Preliminary studies in children have confirmed the hypothesis that inflammatory mediators like IL-1 could cause an increase in neuronal stimulation and the onset of febrile seizures,but its clinical and pathological meaning is still unclear. Viral infections are considered to be involved in the pathogenesis of seizures and studies have shown that

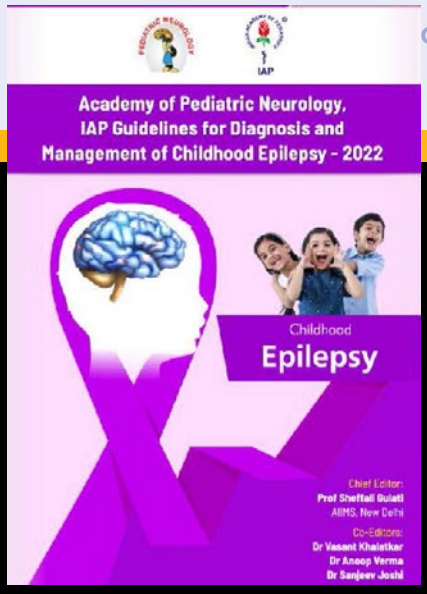




HHV-6 (Human herpes virus-6) and Rubivirus could be found in 20% of patients affected by febrile seizures for the first time.

HOW TO MANAGE A SEIZURE IN A CHILD?

American Association of Pediatrics (AAP) guidelines on management of febrile seizures suggest not performing diagnostic tests routinely, including lumbar puncture, except if it is necessary based on the state of the condition. A lumbar puncture is firmly recommended in all patients under one-year age that present temperature and seizures. Neuroimaging is advised during the first clinical presentation of seizures and in clinical conditions that could increase the risk of complications. Computerised Tomography (CT) of brain without



contrast media is the first test recommended to diagnose traumatic injury to head, hemorrhagic stroke, neurocysticercosis, etc., while a contrast enhanced CT Brain is done to confirm suspected diagnosis of brain tumors or CNS infections. EEG should be considered in all cases of status epilepticus. Etiological evaluation for the cause of seizure should run in parallel with the management of seizures.

GOALS OF MANAGEMENT IN STATUS EPILEPTICUS

The main goal in management during Status Epilepticus is to stop seizures before neural cells are irreversibly damaged. Thus, early and prompt management of seizures is important to prevent irreversible damage to the neurons.

The first approach in a child presenting with status epilepticus or seizures, should focus on airway management and adequate ventilation and circulation. It is important to safeguard patients from injuries caused by involuntary motor activities. It is also important to place the patient in a lateral position to prevent

American Association of Pediatrics (AAP) guidelines on management of febrile seizures suggest not performing diagnostic tests routinely, including lumbar puncture, except if it is necessary based on the state of the condition.

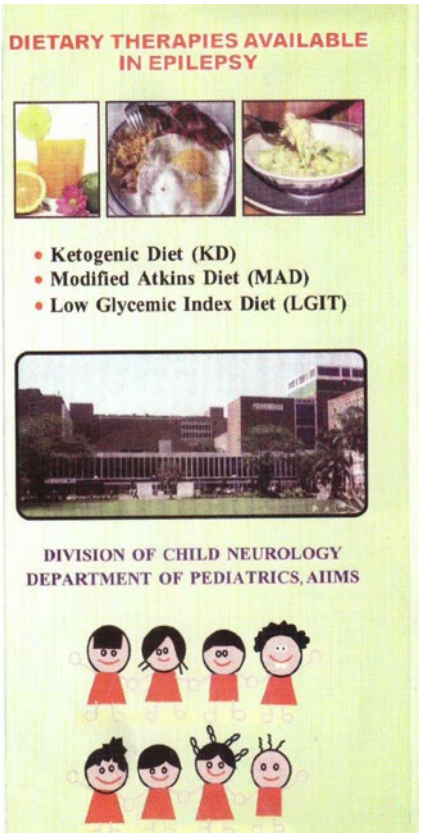
aspiration and position a peripheral venous catheter. Vital signs (heart rate, blood pressure, oxygen saturation, and temperature) need to be monitored. A rapid blood test should be done to recognize hypoglycemia, which is a common cause of seizures in children .

Benzodiazepines are considered the first choice in the initial treatment of seizures and SE in pre-hospital emergency care. They increase inhibition of GABA receptors, have a rapid onset and are effective in 79% of patients in status epilepticus . Barbiturates increase inhibition of GABA receptors.

Phenobarbital and Phenytoin are considered second-class drugs to treat seizures and SE, and they are usually administrated when benzodiazepines fail. Side effects are: sedation, respiratory depression, and hypotension. So, airway management and cardiovascular treatment should be considered as priority. Valproic acid is important in refractory SE.

WHAT ARE POINTS ABOUT WHICH THE PARENTS NEED TO BE COUNSELLED?

Parental counselling sessions must be an essential part of the management of first seizure in children in order to allay parental fears, negative reactions, and apprehensions of stigma or social taboo. The main focus of discussion with parents may include the chances of its recurrence, home management of seizure, need for AEDs, possible adverse effects of AED, duration of AED therapy, role of investigations techniques such as MRI brain and EEG, and based on the etiology explanation of overall outcome of seizure. Domiciliary management of seizure must focus on emphasis of recovery position during active seizure and use of rescue medication such as intranasal midazolam (0.2 mg/kg; maximum: 10 mg) in case of prolonged seizure (>3-5 min). In addition, parents must be counselled to maintain strict compliance with medications, need to administer medications by correct measurement (using syringe for mL) and to report to treating physician in case of any adverse event or seizure recurrence. In this regard, it will be useful to give these instructions as a patient information sheet.

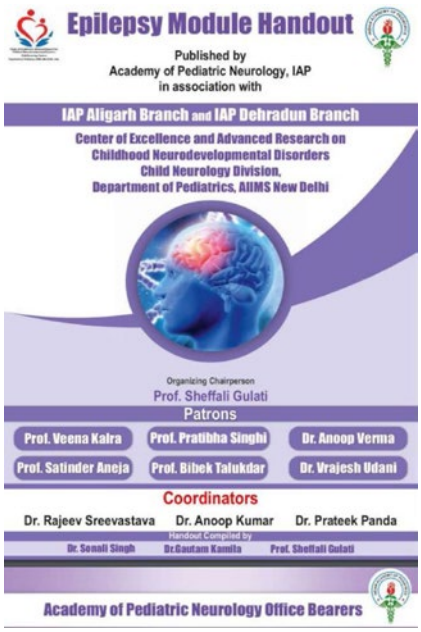


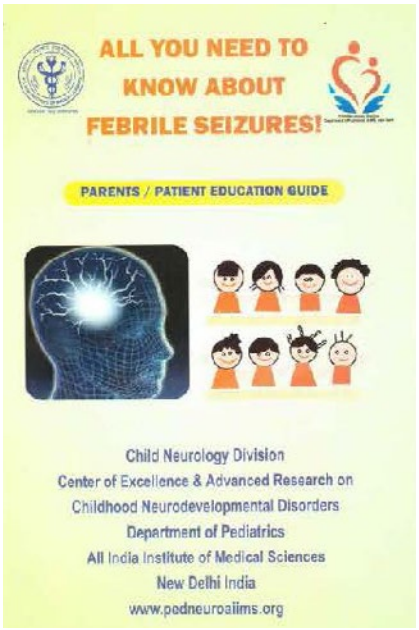
WHAT IS THE MORTALITY RATE IN CHILDREN WITH EPILEPSY?

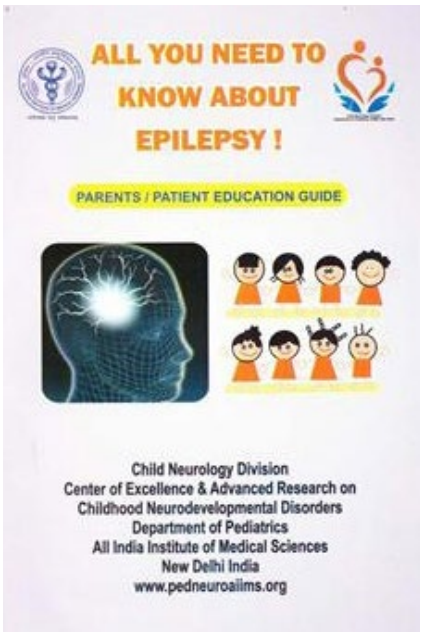
The mortality rate in people affected by epilepsy is 2–4 times higher than the rest of the population, and 5–10 times higher in children [19]. Early death risk in children without neurological comorbidity is similar to the general population and lots of deaths are not related to seizures themselves but to the neurological pre-existing disability. Sudden unexpected death in epilepsy (SUDEP) represents the most common cause of death related to epilepsy in children. Global mortality rates are between 2.7 and 6.9 death per 1000 children every year; SUDEP related mortality in children is about 1.1–2 cases/10,000 children per year.

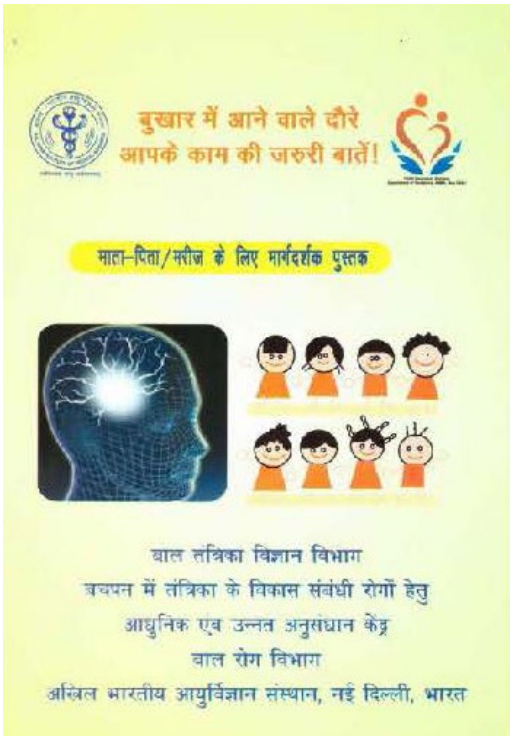
KEY MESSAGES

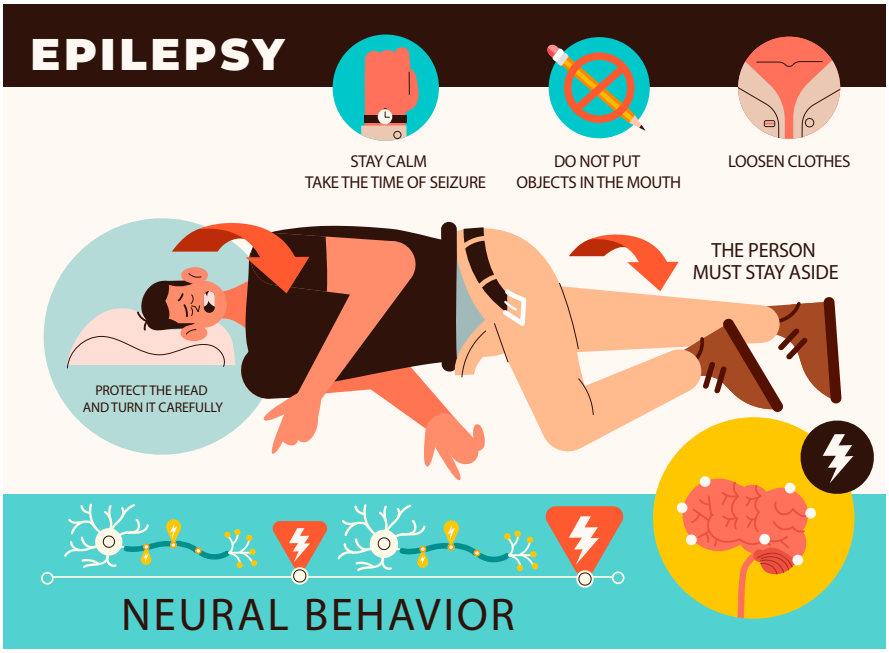
- Childhood seizures and status epilepticusrequire early and effective treatment.
- Long term outcomes are better in

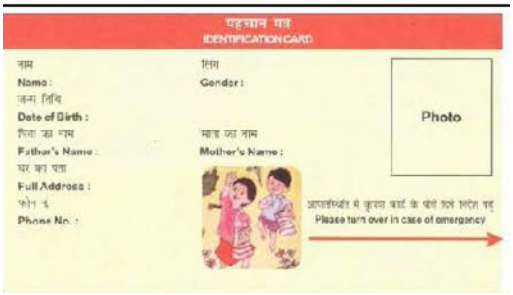


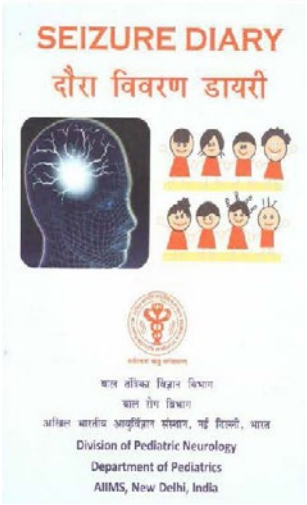


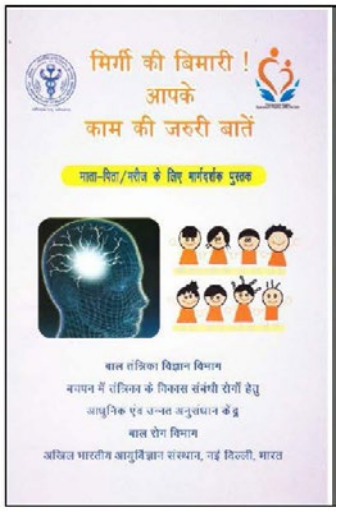


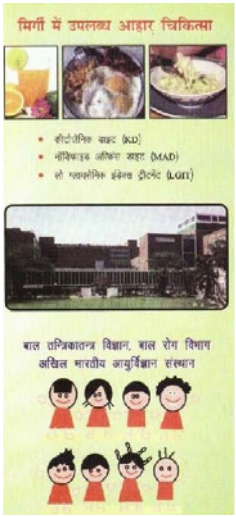












children with epilepsy, if anti-seizure medicationsare initiated early.

- Domiciliary care is very important and parents of children with epilepsy need to be educated about it.
- Parents and children need to be counselled regarding the do's and don'ts, that needs to be followed in children suffering with epilepsy.

For further information, parents may log on to **www.pedneuroaiims.org** and click on the "Parents Corner" Tab to know more about Childhood Epilepsy in children, Febrile Seizures and domiciliary care of seizures at home.

An Epilepsy Module Handout was released in March 2022, in collaboration with Academy of Pediatric Neurology, Indian Academy of Pediatrics (IAP) and IAP Aligarh and Dehradun branches, containing the summary of webinars of various childhood epilepsies. You can scan the QR code given below to gain access to the various You Tube links, of the various webinars.

YouTube Videos on Epilepsy Modules

Epilepsy Modules Handout

The revised guideline on the management of Childhood Epilepsy was launched in September 2022, at Srinagar, in collaboration with the Academy of Pediatric Neurology, Indian Acdemy of Pediatrics.

(The authors are from Centre of Excellence and Advanced Research for Childhood Neurodevelopment Disorders, Child Neurology Division, Department of Pediatrics, AIIMS, New Delhi)

COVID-19

CURRENT CONCERNS

THE CURRENT SCENARIO OF COVID-19 IN ALL OVER THE WORLD IS LIKE FIX EYES ON THE BALL AND THIS BOUNCER WILL PASS BY HARMLESSLY...

BY DR AMITAV BANERJEE

In response to reports of Covid-19 surge in many countries, particularly China & Japan, the Ministry of Health and Family Welfare, Government of India, issued fresh guidelines reiterating the fivefold strategy of test-track-treat-vaccinate and Covid Appropriate Behaviour, which supposedly controlled the covid-19 situation in the country in the past. An added advisory recommends genomic surveillance for emerging variants of concern. The government also decided to re-introduce random testing of International passengers at airports.

It is always prudent to err on the side of safety. Having said this, we should not remove our eyes from the ball and also constantly monitor the pitch.

First let us keep our eyes on the ball and judge its pace. In relation to the pandemic the ball is the novel corona virus and its pace is the lethality. The lethality of the corona virus was grossly overestimated by the pace by which it killed the tail-enders i.e. the elderly and the vulnerable, in the nursing homes of Europe early in the pandemic. One paper in Lancet put the ball mark at 20%. Such estimates appearing in high impact journals and mathematical models from Imperial College, London predicting doomsday caused panic which was sustained in spite of subsequent studies which established the infection fatality rates to be many times lower.

A number of serosurveys few months into the pandemic estimated the global Infection Fatality Rate (IFR) with the original Wuhan virus, to be around 0.3% and lower still in countries of Africa and Asia.

THE PACE OF THE BALL HAS SLOWED CONSIDERABLY DUE TO LOSS OF SHINE AND LOSS OF GRASS ON THE PITCH!

As the pandemic progressed, the pace of the ball, i.e. the IFR has gone down steeply, due to many factors like mutation to less virulent strains (Omicron), and increasing population level immunity particularly after natural infections which

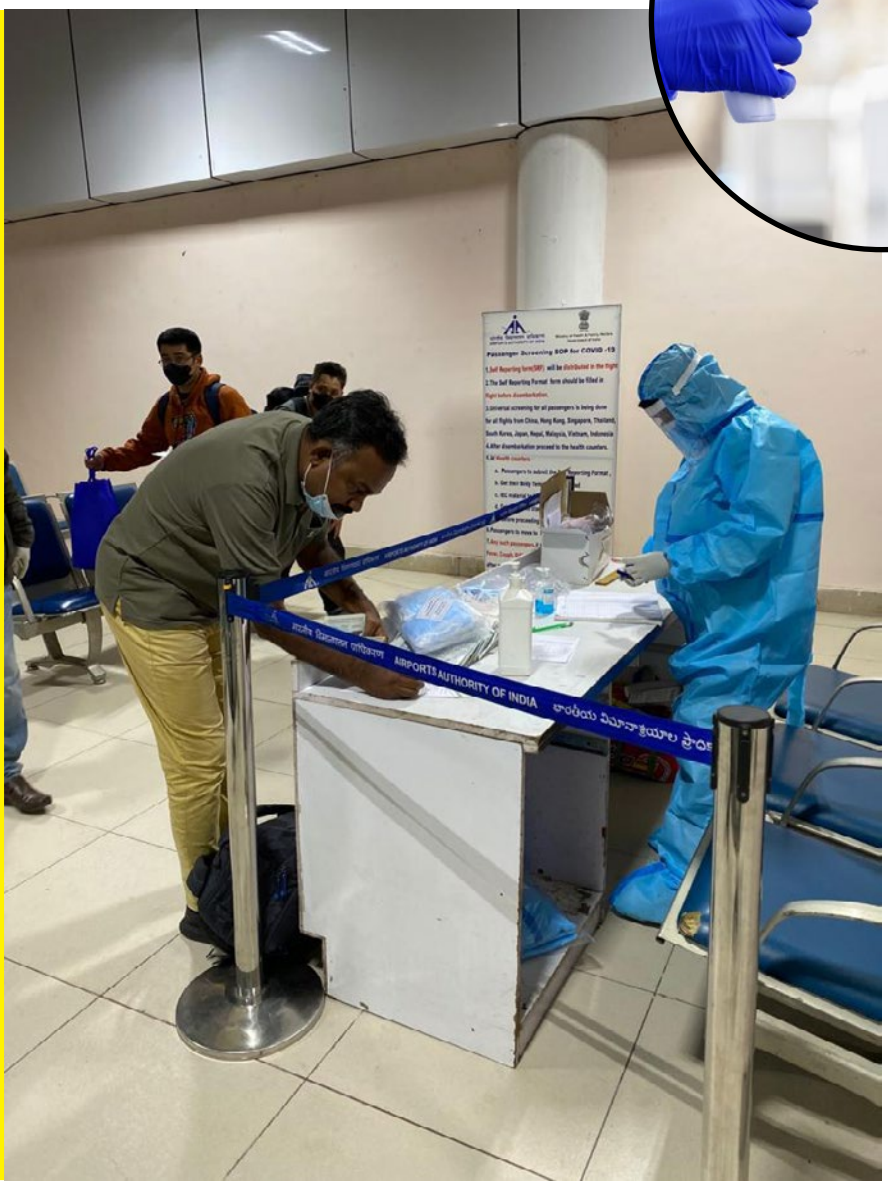
confers 13 times more robust immunity compared to vaccine.

A recent meta-analysis by investigators from Stanford University have found infection fatality rates to be in the range of 0.0003% till the age of 19 years, and even in the old say a 69 year old, the infection fatality rate ranged from 0.03% to 0.07% . The royal heirs have turned into commoners – the novel corona virus is as mild as the other circulating corona viruses which causes common cold and is novel no more. Do we need to panic?

DO WE RUN AFTER THE BALL AFTER IT HAS CROSSED THE BOUNDARY LINE?

Our country is an ocean of people living and working in very crowded conditions. Almost all have recovered from natural infection. Even in the earlier phase of the pandemic the "test, trace, isolate" did not save many runs. Only a miniscule fraction of infections could be detected by this costly strategy. We have data to support this statement. In June 2021, serosurvey by the Indian Council of Medical Research (ICMR), revealed that 67.7% of Indian had antibodies, a marker of past infections. From this we can estimate that a staggering 92 crores people had had covid-19 whether they experienced symptoms or not. At this point of time according to official records only 3 crores cases were detected by the "test, track, isolate, treat" strategy.

The vaccination cover of our population was 5% in June. From this we can infer that by the intensive testing and tracing efforts we detected 4% of cases while we missing 96%. Is it worth the effort to



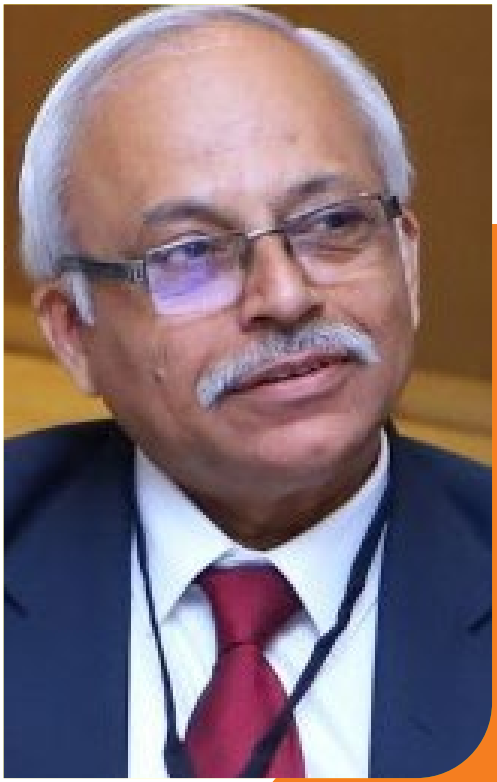
Brain Infections can have short term or long-term sequelae, depending upon various agent as well as host factors. These usually present with fever, headache, vomiting, altered mental status, and seizures.

go for this strategy at the fag end of the pandemic when the virus has become so much milder? But for the fear of the term "corona" like that associated with "Gabbar Singh" in "Sholay" for all practical purposes we are chasing a common cold – Gabbar Singh has lost his hands and has aged as well! Fear him no more. Similarly, we should debate whether genomic surveillance would yield any information which would guide policy. The "new variant" suspected to be circulating in China and supposedly a threat to other countries has been identified in over 90 countries, including India where it was detected in July 2022! Testing passengers at airports and other such measures would be like closing the stable door after the horse has bolted.

JO DAR GAYA, SAMJHO WOH MAR GAYA! (THE ONE WHO PANICS, CONSIDER HIM DEAD!)

This filmy dialogue from "Sholay" may appear trite and trivial. On a serious note, a paper published by Centre for Disease Control (CDC), Atlanta, showed that among 540, 667 adults hospitalized with Covid-19, anxiety and fear-related disorders were the highest risk factors after obesity leading to severe disease and death. We cannot forget the Indian experience during the second wave when panic fueled by irresponsible media resulted in a medical stampede contributing to many deaths by overwhelming our health services.

A vicious cycle of panic-unavailability of beds-panic may have been responsible for many deaths during the second wave if we follow this paper from CDC. Against this background, we should check the 24 x 7 media hype which can again generate similar panic and adversely affect the health of our people. While it is understandable that the Centre has issued the present guidelines as a



BY DR AMITAV BANERJEE

precautionary measure, the media should not read too much into it and convert molehills into mountains.

DO WE KEEP GIVING REPEATED OVERS TO A BOWLER WHO IS NOT TAKING ANY WICKETS?

A fast bowler may make an impact when the ball is new and the pitch has grass. As the ball loses shine and the pitch breaks the same bowler will be less effective. On the contrary he may give away valuable runs. Similarly data from all over the world is indicating that Covid-19 vaccines lose impact at population level very rapidly. The figure below gives the data of trends of cases and deaths in Japan **[Fig 1, Fig 2]**, one of the countries facing surge in Covid-19 cases (as usual, there is no data from China which would suggest a crisis there!).

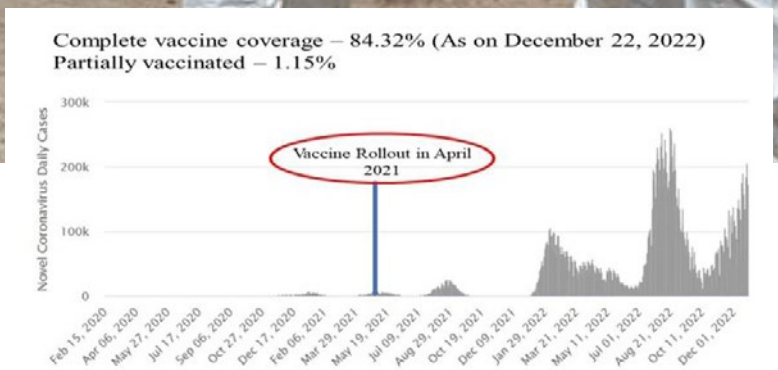


FIGURE -1: TREND OF CASES IN JAPAN BEFORE AND AFTER VACCINATION ROLL OUT.

It is obvious from the above figures that both the cases and the deaths due to covid-19 have spiked in Japan after the mass vaccination roll out. Even with over 80% vaccination coverage and boosters Japan is facing a surge. Similar phenomena have been seen from Singapore, South Korea, Taiwan, Malaysia, Sri Lanka and other countries with very high vaccination cover. In fact some virologists have also expressed concerns that selection pressure due to mass vaccination during a pandemic can trigger evolution of mutant strains.

It is well known that new variants like Omicron and its sub variants evade vaccine induced immunity. So why persist with mass vaccination and advisory for boosters which are made from older variants.

The grass on the pitch – countries like China which had very harsh restrictive measures still have lot of grass on the pitch which will let the ball rip through, i.e. virgin population who have not been exposed to the natural virus. The present surge therefore is to be expected and it will come down as fast as it goes up.

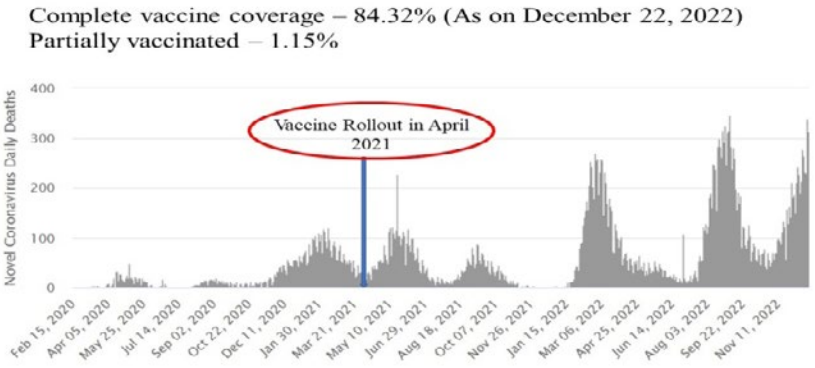


FIGURE 2: TRENDS OF DEATH DUE TO COVID-19 IN JAPAN BEFORE AND AFTER VACCINE ROLL OUT

> **The present surge therefore is to be expected and it will come down as fast as it goes up. Countries like India where majority of the population has acquired immunity after recovery from natural infection have no cause for worry. Not only will the grassless pitch not encounter a wave there will not even be a ripple.**

Countries like India where majority of the population has acquired immunity after recovery from natural infection have no cause for worry. Not only will the grassless pitch not encounter a wave there will not even be a ripple.

DO WE TRY TO DISMISS A BATSMAN WHO IS NOT MAKING IN RUNS?

As mentioned a recent meta-analysis has estimated the lethality of the virus at 0.0003% in young people and 0.03% to 0.07% in people who are 69 years old. We do not try to dismiss a batsman who is not scoring runs in limited over cricket. Can a resource constrained country like India afford to go all out to dismiss the corona virus which has lost all sheen after incarnation as Omicron.

THE STRATEGY BASED ON EVIDENCE – SHIELD THE TAIL-ENDERS

A good captain shields the tail-enders from fast as well as slow bowlers, spin can be tricky! Similarly strategy should be to shield the vulnerable with co-morbidities and the frail elderly by looking after their overall health and vaccination on recommendation of their personal physicians.

CONCLUSION

The centre should review their guidelines after a week or ten days and withdraw them if there is not even a ripple, which is most likely. The accumulated and current evidence does not support any of the recommendations in the guidelines and will be resource intensive and generate undue panic in the population due to media hype.

(The author is Clinical Epidemiologist and currently Professor and Head, Community Medicine at DY Patil Medical College, Pune.)

The Twists and turns of the COVID-19

Dr N. K. Prasanna

Dr S. K. Varshney

The surprising mysteries of Covid-19 are still not yet finished. The rapidly worsening China's Covid situation has raised alarms across the globe. Three years back, China was considered to be the starting point for the inception and spread of viral infections the scariest pandemic the world has ever seen in the history. The story of the pandemics so far is the end is in sight" But, maybe it's a new beginning.

China has once again become a source of worry. Countries including India increased their timely surveillance. The unstable turbulent situation in China needs to be closely monitored by global governments. The most crucial question at this time is whether the threat that is emerging in China is a localized issue or if it could have global repercussions.

COVID-19 DISASTER: HOW PREPARED ARE WE?

No matter whatever the situation is, everyone should be ready to handle the toughest situation. Preparation makes all the difference. It actually has the power to save the lives. Countries can come together to face this disastrous situation together. Disasters can be scary, but being ready is the only way to be less afraid! So, how dire is the ongoing situation in China witnessed right now? We have no idea. A few weeks ago, based on the current trajectory, China's public health experts had anticipated that 800 million individuals might possibly catch the corona virus during the coming months. Some experts disagree with this estimate and think that China's entire population may be in danger, and that risk is increasing faster than ever.

MADE IN INDIA NASAL VACCINE:

According to the information obtained, the Drug Controller General of India (DCGI) has given emergency permission to use of iNCOVACC, a two drop medication developed by Bharat Biotech, as a booster dose for the Covid-19 illness which was available on the Cowin platform. The inclusion of intranasal Covid vaccine comes due to amid surge in Covid cases in China and other countries. This booster dose is referred to as "Five Arms." After six months, those who have already received two doses of the Covaxin/ Covishield vaccine can take this drop medicine vaccine as a booster dose, according to the current approval. It was developed by Bharat Biotech in partnership with Washington

ARE WE HEADING BACK TO THE COVID-19 DISASTER? COVID-19: BACK TO THE BASIC.....

THE NEW INCOVACC, A TWO DROP MEDICATION DEVELOPED BY BHARAT BIOTECH, AS A BOOSTER DOSE FOR THE COVID-19 ILLNESS.....

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

OVER THE PAST THREE YEARS, THE CHINESE GOVERNMENT HAS COMPLETELY INSULATED THEIR PEOPLE FROM CORONAVIRUS BY IMPOSING STRICT RESTRICTIONS, THROUGH QUARANTINE AND ALL.

"Tedros Adhanom Ghebreyesus, Director, WHO, had earlier conveyed optimism that the episode of the medical crisis may be resolved in the next year. Furthermore, the COVID Public Health Emergency of International Concern (PHEIC) classification could be withdrawn by the United Nations

University in St. Louis, in the US. DCGI has given permission for People above the age of 18 are permitted to take this vaccine in our nation.

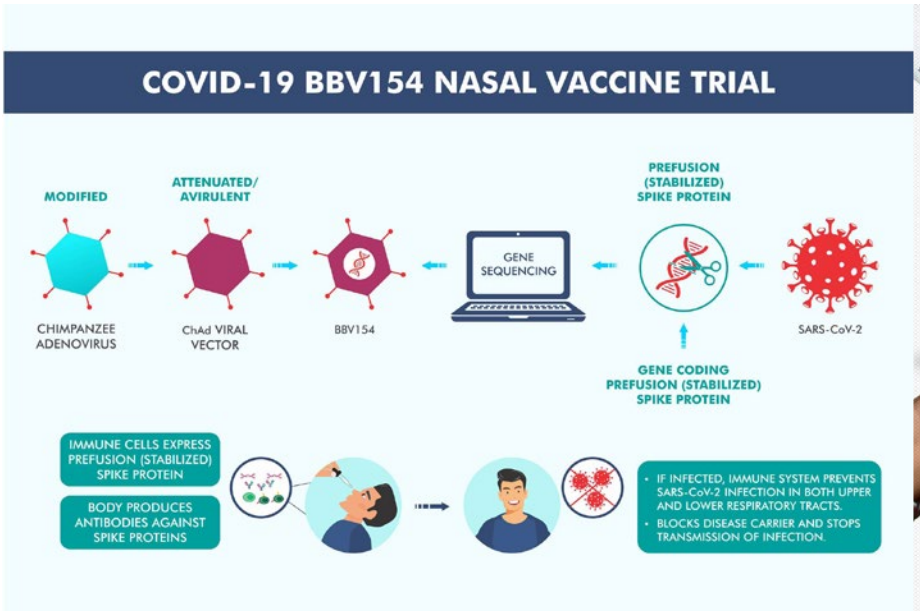
WHAT IS R0 AND HOW THE DISEASE IS TRANSMITTED:

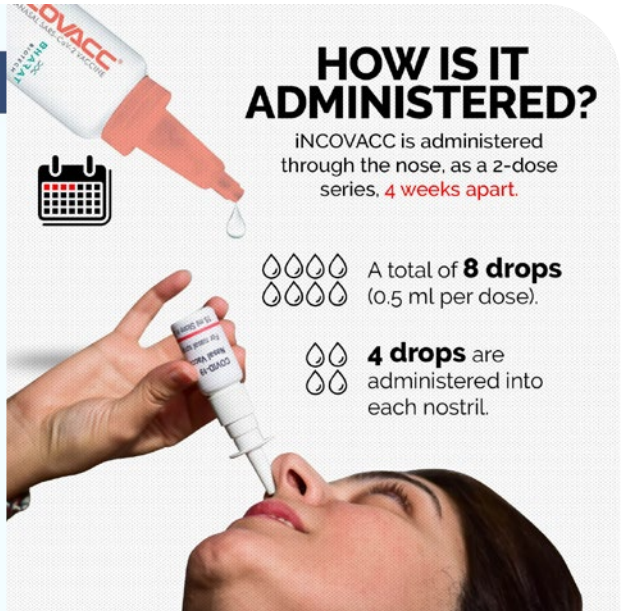
The mathematical figure'R0' (pronounced "R-naught") the reproduction number (r) represents the transmissibility of a disease which illustrates how quickly an infection is spreading. It is known as the basic reproduction number also known as the basic reproduction ratio or rate which is an epidemiological metric used to measure the transmissibility of infectious agents. When R0>1, it implies that the cases are increasing and that the disease will eventually become an epidemic. If R0=1, then the disease is endemic. If R0 is < 1 it can be noted that the infection is transmitted to fewer people

The R-value, in china (the average number of individuals, who can be infected by someone who is ill,) has increased gradually to 16, which is significantly greater than usual. According to NPR, the two fold increasing time may only be a matter of hours, which is a worrying sign, and a substantial increase in mortality is also anticipated. The omicron variant's BF7is thought to be responsible for the present increase in Covid-19 infections in China which is similar to the ones found in the US. But China is chocking to control it. The failure of China's zero-Covid policy, is recognized as the fundamental reason for the sudden increase in cases

Over the past three years, the Chinese government has completely insulated their people from coronavirus by imposing strict restrictions, through quarantine and all. Their natural immunity, which they would have acquired from past infections, has been taken away by the Chinese regime. The most effective defense against Covid-19 is thought to be natural immunity.

Vaccines made in China are also criticized for "less efficacious" than others which have been in use internationally. China largely avoided importing vaccines from Western countries because of its vaccine nationalism. In addition to this general lack of natural immunity, and vaccine reluctance reportedly present in the nation may also be a contributing factor to the low immunity levels among Chinese people. These are just rumours, after all. One cannot totally rule out the likelihood that more recent, dangerous strains are in existence. This brings up yet another pandemic that China is experiencing: maybe misinformation and China's information system is extremely controlled, secretive, opaque, and





rhetoric is also one of the reason.

Dissemination of accurate information and tackling infodemics and misinformation is essentially important to face unprecedented challenges thrown by Covid -19 pandemic. Both in China and globally. Incorrect and misleading information can be impartially filtered across all available channels. There are still many things that are unknown. The entire globe should be extremely wary in view of this. High-level experts have been making predictions about when the pandemic will end. The China incident serves as a warning message that they could have started speculating a little earlier.

Tedros Adhanom Ghebreyesus, Director, WHO, had earlier conveyed optimism that the episode of the medical crisis may be resolved in the next year. Furthermore, the COVID Public Health Emergency of International Concern (PHEIC) classification could be withdrawn by the United Nations. This opinion is open for debate. It is necessary to give more time to the pandemic to end gradually. Governments, intergovernmental organizations, and the general public should not lose patience with the pandemic. We are aware that many lives are at risk. On a more immediate level, it's critical to monitor the current situation in China. China must be willing to accept assistance, and other nations must always extend the same courtesy if requested.

> **Vaccines made in China are also criticized for "less efficacious" than others which have been in use internationally. China largely avoided importing vaccines from Western countries because of its vaccine nationalism**

DUE TO SUDDEN SURGE-CENTER ISSUES NEW GUIDELINES:

As cases are coming to light in the countries of the world, the center is preparing new guidelines keeping in mind Christmas and New Year. As part of this, mock drills will be conducted in hospitals across the country from Tuesday. 'The pandemic is not over yet. In this festive season, it is essential to create awareness for everyone to follow the Covid appropriate behavior. The R factor is 16 in China. It also mentions the reasons for the rise seen in China. It cited studies that attributed the situation to ineffective vaccines, low vaccination rates, lack of relevant immunity due to the zero-covid strategy and the one-time lifting of restrictions. Covid started from China, Korea and Brazil and spread to South Asia also arrived in India in 20 to 35 days. The Central Health Department has revealed that one should be vigilant about the latest situation.

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

WORLD AIDS DAY

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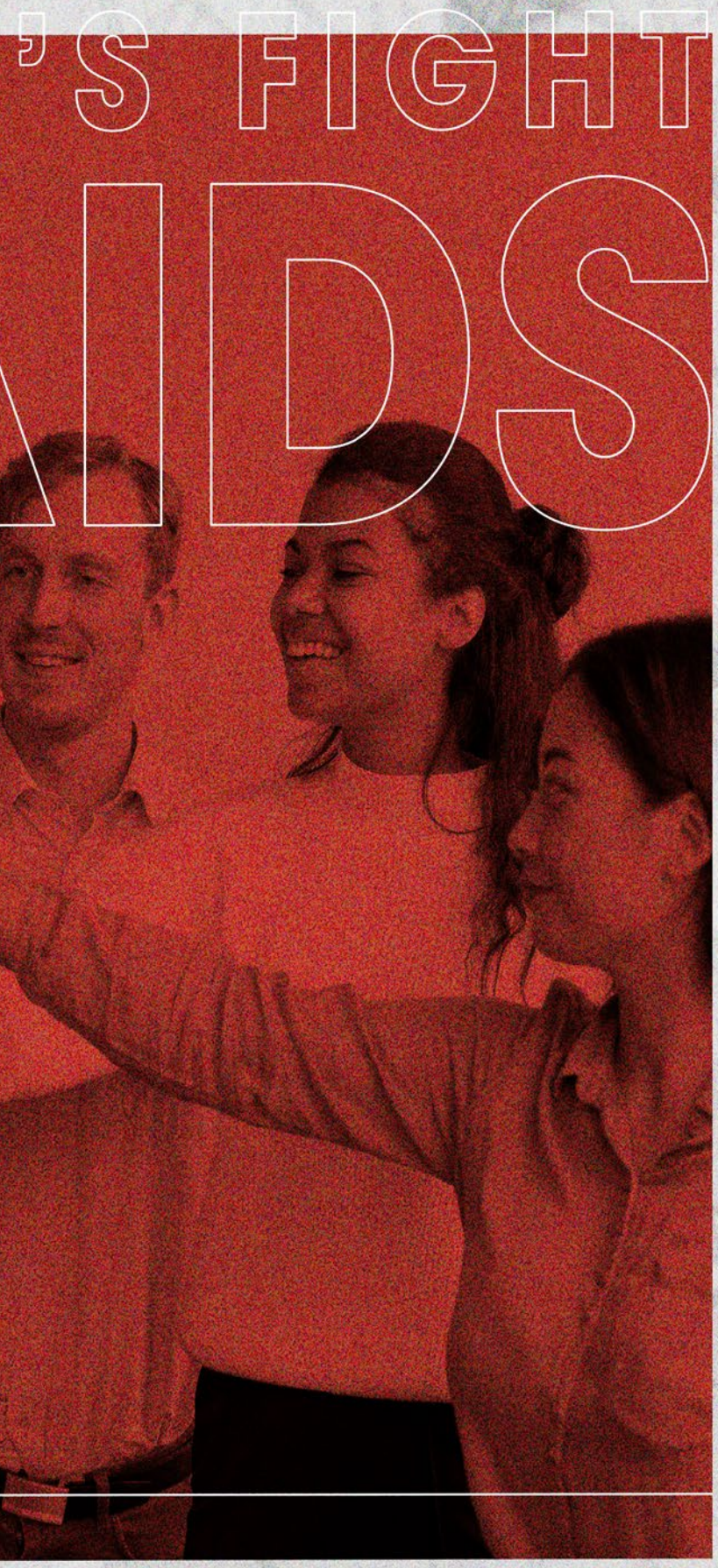


Equalize to end the

AIDS EPIDEMIC

BY DR POONAM KHETRAPAL SINGH

On World AIDS Day, WHO joins Member States and partners in the South-East Asia Region and across the world to highlight the urgent need for everyone, everywhere to be provided equitable access to quality HIV prevention, testing, treatment and care to end the AIDS epidemic as a public health threat by 2030.

Globally, an estimated 38.4 million people are living with HIV. In 2021, an estimated 1.5 million people acquired HIV and around 650 000 people died from AIDS-related causes. In the South-East Asia Region, an estimated 3.8 million people are living with HIV, accounting for around 10% of the global burden. In 2021, an estimated 82 000 people in the Region died of AIDS-related causes, accounting for more than 12% of the global burden.

Amid the COVID-19 response and recovery, the Region continues to take targeted action to end HIV-related inequalities and expand service coverage, in line with its Flagship Priority on achieving universal health coverage (UHC) and the Region's new Integrated Action Plan for viral hepatitis, HIV and sexually transmitted infections (I-RAP 2022–2026), launched in September 2022.

Between 2010 and 2021, new HIV infections in the Region declined by 42% and HIV-related deaths reduced by 63%. Whereas in 2010, coverage of anti-retroviral therapy in the Region was just 17%, by 2020 it had increased 3.6 times, to 61%. In 2019, Maldives and Sri Lanka were

certified to have eliminated mother-to-child transmission of HIV and congenital syphilis, which Thailand achieved in 2016 – the first country in Asia to do so.

By the end of 2020, 75% of people in the Region living with HIV knew their status, 61% were on anti-retroviral therapy, and 58% were virally suppressed, meaning that despite strong progress, the Region fell short of the 90-90-90 targets, which were also missed globally. In December 2020, both the Region and world committed to ensure that by 2025, 95% of all people living with HIV know their status, 95% of all people with diagnosed HIV infection receive sustained anti-retroviral therapy, and 95% of all people receiving anti-retroviral therapy have viral suppression.

We have people and populations to reach, and progress to achieve. Across the Region, almost 95% of new HIV infections are among key populations such as sex workers, people who inject drugs, men who have sex with men, and transgender people. Just 22% of young people have knowledge about HIV prevention, and coverage of testing for people who inject drugs has significant room for improvement. Access to game-changing innovations such as HIV

By the end of 2020, 75% of people in the Region living with HIV knew their status, 61% were on anti-retroviral therapy, and 58% were virally suppressed, meaning that despite strong progress, the Region fell short of the 90-90-90 targets

Across the Region, almost 95% of new HIV infections are among key populations such as sex workers, people who inject drugs,

self-testing and pre-exposure prophylaxis remains highly uneven, both within and between countries.

WHO is calling for action in several key areas. First, policy makers and programme managers should rapidly increase the availability, quality and sustainability of HIV services, ensuring that everyone – especially key populations – are well-served and actively included in service provision. Second, political leaders and other key influencers should immediately reform laws, policies and practices that facilitate both direct and indirect discrimination, stigma and exclusion. The human rights of key populations and affected groups must be respected, protected and fulfilled.

Third, policy makers and other national, international and global actors must accelerate access for all countries and communities to the best HIV science, technologies and tools, which should be accompanied by evidence-based information on how best to deliver them, including through increased South-South collaboration and learning. Fourth, programme managers and other health leaders should implement concrete actions to engage and empower communities, civil society and affected populations, whose experiences must inform both policy and service delivery, as well as ongoing progress monitoring.

The inequalities which keep the AIDS epidemic alive are not inevitable. Together, we must end each and every inequality and accelerate progress towards our targets and goals. On World AIDS Day, WHO reiterates its commitment to achieve a Region and world in which AIDS is no longer a public health threat, leaving no individual, community or population behind.

(The author is WHO Regional Director for South-East Asia)

POOR AIR QUALITY: A GLOBAL THREAT

BY DR AMITAV BANERJEE

THE INCREASING LEVEL OF POOR AIR QUALITY BECOMES A GLOBAL WARMING AND THREAT OF EMERGING AND RE-EMERGING DISEASE...

Experts give short term solutions. Visionaries offer long term solutions. If we use their lenses we realize that many problems and their solutions are interrelated. We realize that technology without a blend of philosophy is sterile and often adds to the problems instead of solving them.

This narrative examines the hazards to human health due to deteriorating air quality in major cities in India, and short term and long term solutions. Every winter, heavy smog has become a regular feather in the national capital especially Delhi/NCR regions. Smog is a combination of smoke and fog entrapping particles in its fold. Besides being a health hazard, it seriously limits visibility often jeopardizing traffic movements and delaying flights.

A periodic phenomenon is the "Asian Brown Cloud," that hovers over eastern China and South Asia, every year from November onwards. This is due to large amounts of aerosols composed of soot and dust as a result of combustion of fossil fuels and biomass over the region. The Asian Brown Cloud has been linked with decrease in summer rainfall in India, decrease in agricultural activities and increased industrialization. Initial observations of this phenomena were made in the late 1990's as part of the Indian Ocean Experiment (INDOEX) which triangulated air pollution indicators estimated by satellites, aircrafts, ships, surface stations and balloons.

Since then air pollution has shown a rising trend particularly in Delhi. Only in the last decade civil society and media focused on the high PM 2.5 concentrations, which are more hazardous (Particulate Matter < 2.5 micrometer, particles larger than this

> **It envisages surveillance and response of 122 polluting cities to ensure city-specific measures to reduce PM2.5 levels by 20-30 percent by 2024 taking 2017 as the baseline**

are less hazardous as they are blocked and eliminated by the surface mucus and cilia of the respiratory system).

This year too, come November, Delhi was engulfed in heavy smog with poor air quality. School closure was recommended and debate around the root cause of the problem resurfaced. Both the events and the debates have become a pattern over the years. The issues are political, commercial, and last but not the least in conflict with the aspirations and lifestyles of the rapidly expanding middle class.

CIVIC SOCIETY AND SUPREME COURT INTERVENTIONS

Civic society has been active. Pleas by activists about polluting industries and motor vehicles was admitted by the Supreme Court in 1995 and again in 1996, which adjudicated that Delhi was the fourth most polluted city in the world as measured by suspended particulate matter (SPM). The major contributors to pollution were vehicles and industries. The court directed over 13000 polluting industries and many brick kilns to relocate beyond the city limits. The court also recommended the setting up of the Environmental Pollution Control Authority (EPCA).

This was created in 1998.

The EPCA recommended a two year action plan to convert all Delhi Transport Corporation (DTC) bus fleet, taxis, and autos to Compressed Natural Gas (CNG), removal of leaded petrol and commercial vehicles more than 15 years old, and restricting the number of two stroke auto rickshaws. Coal based power plants were also asked to convert to gas-based.

AIR QUALITY STANDARDS REVISED

In the year 2009, the National Ambient Air Quality Standards (NAAQS) were revisited to include 12 pollutants including PM 2.5. As mentioned while large particles can be ejected by natural defence mechanisms in the respiratory tract, particles smaller than 2.5 microns evade this defence and can penetrate deep in the lungs causing respiratory and cardiovascular problems and can affect other organs. The revised NAAQS recommends acceptable annual PM2.5 limit 40 micrograms per cubic meter as against the WHO standard of 5 micrograms per cubic meter.

During the winter of 2016, Delhi experienced one of the worst episodes of hazardous air quality with PM2.5 rising to over 900 microgram per cubic meter, many times higher than acceptable limits by whatever standards.

MONITORING AND SURVEILLANCE OF AIR QUALITY

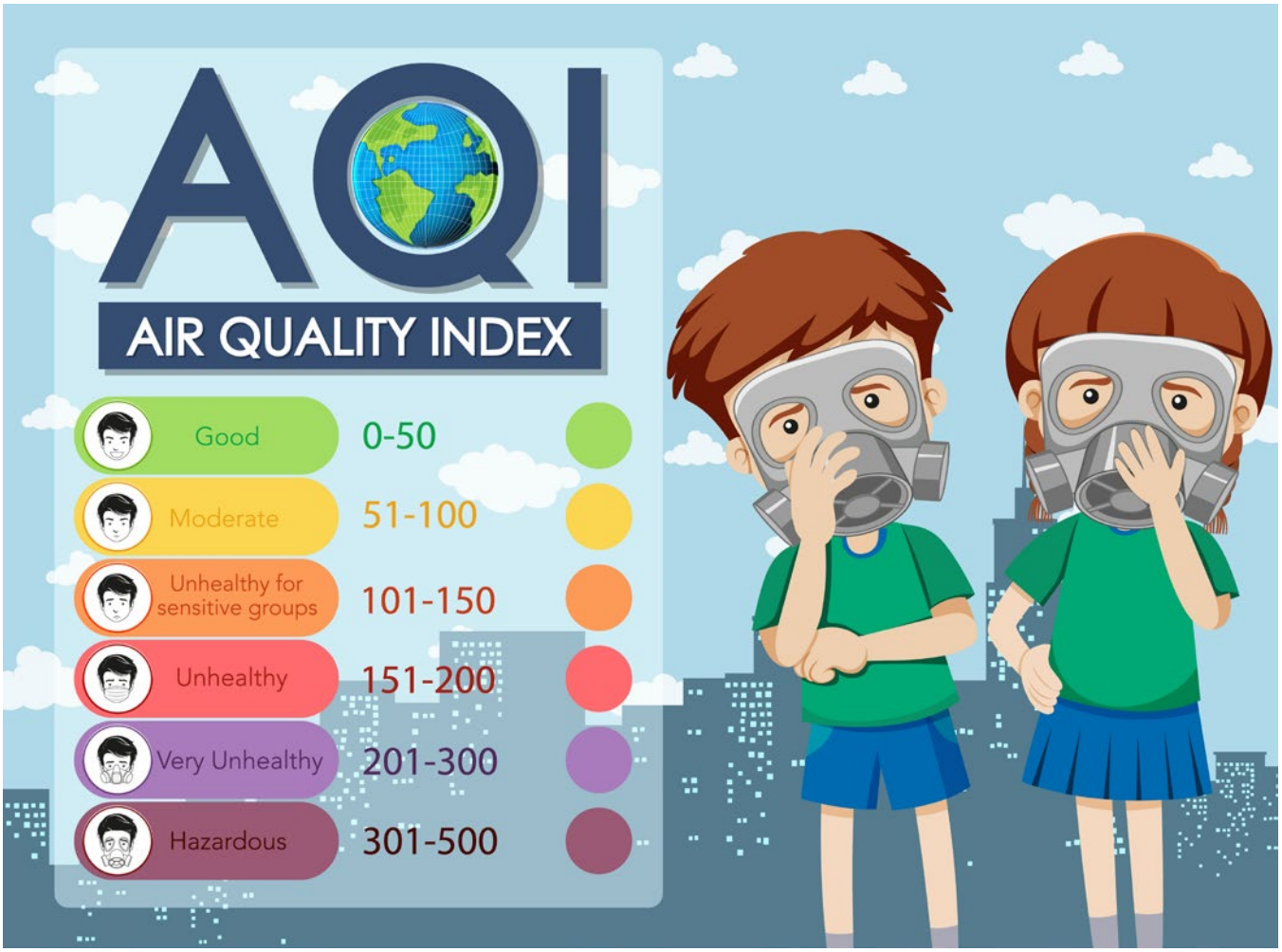
Established in 1982, the National Air Quality Standards are updated regularly. The National Air Quality Monitoring Programme (NAMP) estimates the ambient air quality and monitors compliance with standards. The National Clean Air Programme (NCAP) for Indian Cities was launched in 2019. It envisages surveillance and response of 122 polluting cities to ensure city-specific measures to reduce PM2.5 levels by 20-30 percent by 2024 taking 2017 as the baseline.

Other government schemes include BS-VI emission standards for motor vehicles, the National Electric Mobility Plan 2020, and accelerating LPG availability at household levels.

HOW MUCH IMPACT AT POPULATION LEVEL?

The results of the measures have been disappointing. World Air Quality Report 2021 reveals that air pollution in India increased in 2021 with average PM2.5 levels 10 times the recommended levels. Among the 100 most populated cities in the world 63 Indian cities were included.

The reasons for this dismal impact are many. Poor funding for the various schemes, poor compliance in absence



of legal deterrent and inadequate monitoring are some of the reasons. India had only 804 air quality monitors in 2021 or 0.14 monitors per million population. This compares poorly with China (1.24), US (3.4) and Brazil (1.8).

Cost of newer and cleaner technologies such as solar energy, wind energy, and storage batteries may have dropped appreciably, however financing and regulations have lagged behind. These need to be implemented at rapid pace.

NATIONAL HYDROGEN MISSION - GREEN HYDROGEN POLICY

The National Hydrogen Mission was launched on India's 75th Independence Day, 15 August 2021. The aim is to produce 5 million tonnes of green hydrogen by 2030 to enable renewable energy capability. The Government of India notified the Green Hydrogen Policy in Feb 2022 for implementation by concerned agencies.

Hydrogen and Ammonia are expected to replace fossil fuels in the future. These will be produced by using power from renewable energy sources.

IMPACT OF TECHNOLOGY WITHOUT VISION WILL BE LIMITED.

While the above technological solutions hold promise to curb the escalating levels of air pollution, earlier experience should caution us of their limitations.

Major paradigm shifts are needed to address the air quality and associated issues such as global warming not only in India but across the globe. While Gandhi's views on environment and the simple life may seem too idealistic to many, some of them can offer long term solutions.

Father of Nation Mahatma Gandhi had expressed his concerns about urbanization and mechanization and their impact on the environment, in his speeches and writings. "Hind Swaraj", written by him more than a century ago, warned of the dangers of rapid unplanned urbanization which he said would be slow death for villages and villagers. Abolishing of cottage industries would remove the opportunities of employment in rural area and promote urban migration. He

The National Clean Air Programme (NCAP) for Indian Cities was launched in 2019. It envisages surveillance and response of 122 polluting cities to ensure city-specific measures to reduce PM2.5 levels by 20-30 percent by 2024 taking 2017 as the baseline...

stressed on production by the rural masses instead of mass production in urban areas.

At the individual level a bit of Gandhism will not only check air pollution but will improve population health. Increasing cars on Indian roads not only leads to poor air quality but their overuse by the urban middle class predispose to obesity and related ills. Western populations are two to three times more obese that Asian and African populations. However, the urban middle class in India is fast catching up with their Western counterparts. Market forces promoting new cars on congested Indian roads, and junk food through Swiggy and Zomato to the sedentary urban middle class lead to poor quality of air we breathe and poor quality of food we eat.

Gustavo Petro, the former mayor of Bogota, once said, "A developed country is not a place where the poor have cars. It is where the rich use public transport."

Fast developing economies like India should pause and introspect. Such economies generate a vast middle class with disposable incomes, an ideal target for market forces promoting automobiles and urban centres of mass production accelerating the environmental disaster. Mahatma Gandhi had rightly anticipated that the Earth has enough resources for our need but not for our greed.

Adopting the vision and lifestyle of the Mahatma, even partly, both by society and the people, will go a long way in solving the health hazards at the population level and preventing diseases at the individual level..

(The author is Clinical Epidemiologist, is currently Professor and Head, Community Medicine, Dr D Y Patil Medical College, Pune.)

ONE HEALTH ACTION TO PREVENT ANTIMICROBIAL RESISTANCE

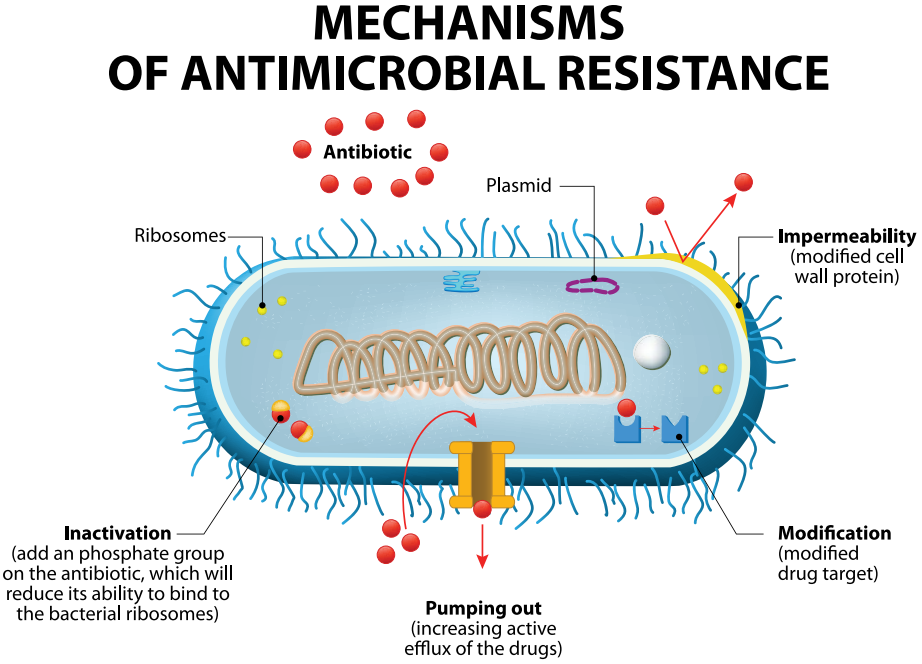
BY DR POONAM KHETRAPAL SINGH

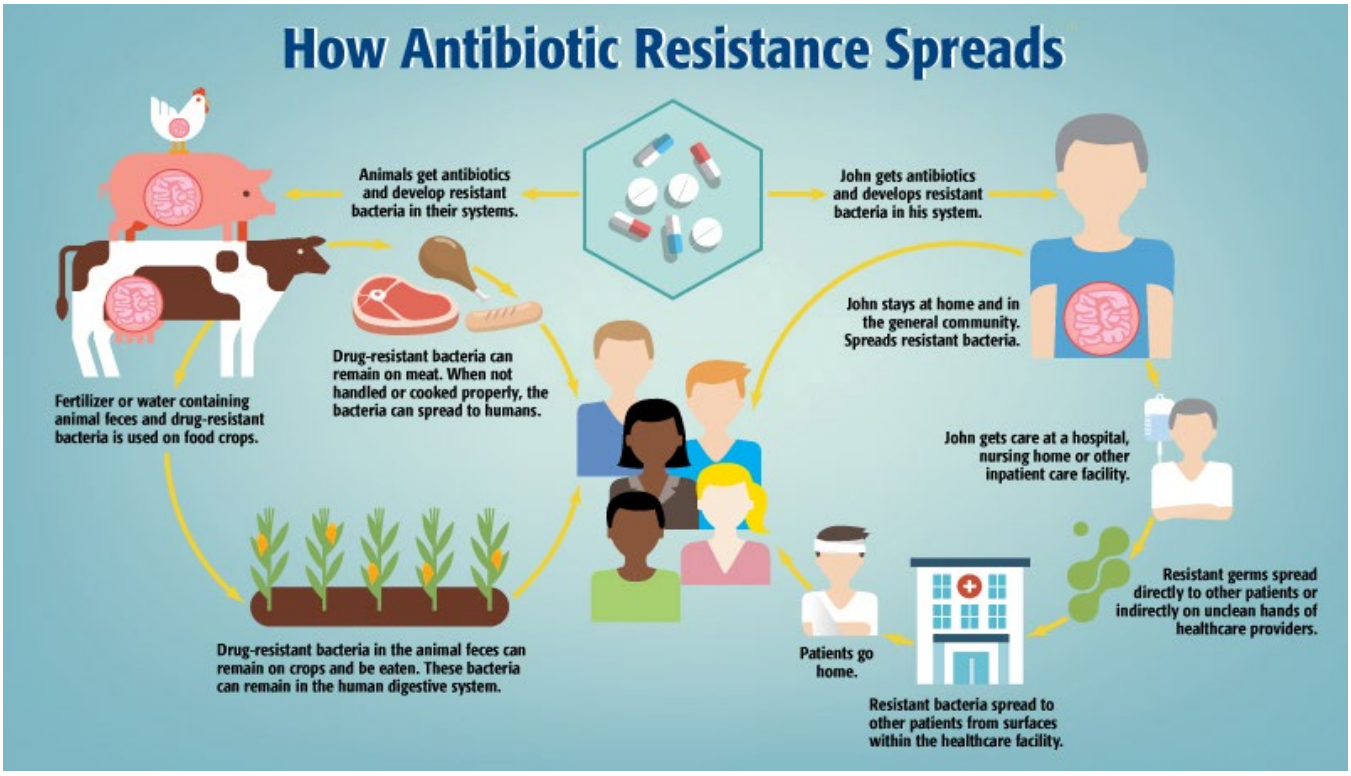
There is urgent need for sustained multispectral action to prevent and contain antimicrobial resistance (AMR), which occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines, making infections harder to treat and increasing the risk of disease spread, severe illness and death.

New global estimates show that in 2019, nearly 5 million human deaths worldwide were associated with bacterial AMR, of which 1.3 million human deaths were directly attributable to bacterial AMR. In a high-impact scenario, AMR will reduce global annual GDP by 3.8% by 2050. If left unchecked, in the next decade, it could result in a GDP shortfall of US$ 3.4 trillion annually, pushing 24 million more people into extreme poverty.

Since 2014, preventing and combating AMR has been one of eight Flagship Priorities of the WHO South-East Asia Region, which is at high risk for the emergence and spread of AMR. All Member States continue to implement national action plans to address AMR, and in each Member State, a multisectoral working group or coordination committee on AMR has been established, in alignment with the Global Action Plan on AMR, adopted in 2015. Most Member States continue to implement national monitoring systems for resistance pathogens and antimicrobial consumption as well as foster stewardship in human health. All Member States are enrolled in the Global Antimicrobial Resistance Surveillance System (GLASS) AMR and the South-East Asia Region is the only WHO Region in which all countries carry out the annual Tracking AMR Country Self-Assessment Surveys, which this year was expanded to include the environment sector for the first time.

Despite this progress, countries of the Region continue to face an array of multisectoral challenges, as highlighted in a review of progress launched at the Seventy-fifth Session of the WHO Regional Committee for South-East Asia in September 2022. Such challenges include unsafe disposal of medicine and pharmaceutical waste, inadequate regulation of antimicrobial use in food production, insufficient infection





prevention and control in health facilities, and inadequate access to safe water, sanitation and hygiene in homes and health facilities. The climate crisis is creating additional breeding grounds for antimicrobial-resistant bacteria.

In recognition of these and other challenges, for this year's WAAW, the One Health Quadripartite – which includes WHO, the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (WOAH), and the United Nations Environment Programme (UNEP) – is highlighting the urgent need to increase One Health action to address AMR, with the theme 'preventing antimicrobial resistance together.

THE REGION HAS SEVERAL PRIORITIES…..

First, accelerating implementation of national multispectral action plans, for which adequate, sustained and reliable financing must be allocated – domestic, international and global.

Second, improving surveillance of antimicrobial-resistant infections and strengthening laboratory capacity. This is critical to know the true extent of the problem, and to effectively target energy and resources.

> **The development of a new antimicrobial can take 10-15 years and cost more than US$ 1 billion. Few are in the pipeline**

Third, developing and enforcing regulations on the appropriate use of antimicrobial medicines in all relevant sectors – human, animal, plant, food safety and environment – while ensuring such regulations promote and facilitate access for appropriate antimicrobial use.

Fourth, stepping-up investments in adequate water, sanitation and hygiene, a critical health intervention in and of itself, but which will also have significant impact on the tsunami of environmental pollution and contamination-driven antimicrobial resistance.

Time is of the essence. The development of a new antimicrobial can take 10-15 years and cost more than US$ 1 billion. Few are in the pipeline.

For the foreseeable future, we must accelerate One Health action while continuing to increase national, regional, international and global awareness and support – precisely as Indonesia achieved during its presidency of the G20 group of nations, which resulted in a Call to Action to increase One Health efforts to address AMR. Today, throughout WAAW and beyond, WHO reaffirms its commitment to support all countries of the Region to prevent and contain AMR together, across sectors, partners, stakeholders and the public.

(The author is Regional Director for South-East Asia, WHO)

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