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A COMPLETE HEALTH JOURNAL

Double Helical

DOUBLE HELICAL

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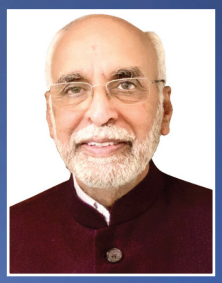
Dr Suneela Garg



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DOUBLE HELICAL

A COMPLETE HEALTH MAGAZINE

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Contact us :
contact@doublehelical.com
doublehelicaldesign@gmail.com,
editorial@doublehelical.com
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Navigating the Crossroads of Medicine

Dear Readers,

Double Helical, a comprehensive national health magazine, serves as a platform to acknowledge innovations, individuals, products, and services transforming India's healthcare sector, paving the way for affordable, high-quality, and inclusive healthcare. This month, we explore how medicine is evolving—through conferences that spark movements, crises that demand overhauls, and diseases that continue to challenge public health systems.

Our Cover Story entitled Down with the Corona Dynasty! revisits the legacy—and afterlife—of the coronavirus. The story offers a blistering critique of the fear-fuelled hysteria that outlives the virus's actual threat. It argues that the COVID narrative continues to cast a long shadow, distracting from far deadlier but less glamorous killers like TB, typhoid and malaria.

In parallel, our second cover piece—Stay Prepared, Not Scared—brings a measured voice to the discussion. As India reports a slight uptick in COVID cases, it points to how India's public health system—fortified by hybrid immunity, vigilant surveillance, and upgraded infrastructure—is now equipped to handle seasonal fluctuations calmly and effectively. With the calm competence now guiding our response, COVID-19 has become endemic, and with it, our approach must evolve from alarm to adaptation. Together, these two narratives underscore a vital shift: from crisis-driven panic to informed preparedness.

Our Focus section this month is on CAHOCON 2025, a gathering that has transcended its role as an annual medical conference to emerge as a national movement. Held against the backdrop of rising patient expectations and accountability demands, this year's edition spotlighted pioneering initiatives—from AI-powered diagnostics to eco-conscious hospital designs. But beyond the presentations and showcases, CAHOCON also sparked much-needed conversations on accreditation, patient safety, and the cultural shift needed to embed quality as a default rather than an aspiration.

In Perspective-Anatomy of a Crisis, we dissect the deepening crisis in Medical Education. The story lays bare the gaps—dilapidated infrastructure, a shortage of qualified faculty, rigid syllabi, and fragmented regulatory frameworks. These systemic flaws threaten to erode the very foundation of medical professionalism and produce graduates unfit for the realities of modern healthcare. Reform, if not revolution, is the need of the hour.

Our Spotlight-Deadly Disregard falls on Tropical Killers—a realm of diseases too often neglected despite their devastating reach. The story warns of the storm ahead as the monsoon and post-monsoon seasons approach. Dengue, chikungunya, scrub typhus, leptospirosis and others lurk ominously, and yet India's weakening commitment to tropical medicine—rooted in a colonial hangover—has left us poorly prepared. The focus must shift urgently from retrospective COVID response to proactive disease prevention.

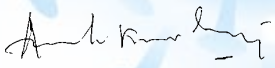
On World Hypertension Day, we offer a sobering Reflection on a chronic ailment that remains mostly invisible but immensely deadly. In A Silent Assassin, we explore how over 294 million Indians are affected by hypertension—yet a staggering 88 per cent remain undiagnosed or inadequately treated. As lifestyles grow more sedentary and diets saltier, this 'silent killer' demands louder attention.

In Insight, we delve into the obscure yet life-crippling world of Chronic Fatigue Syndrome (CFS). Decoding a Debilitating Illness examines the clinical enigma that is CFS—where extreme fatigue, cognitive dysfunction, and unrefreshing sleep combine to erode daily functioning. Despite its prevalence, CFS remains under-researched, misdiagnosed, and poorly understood even by clinicians.

As we round off this issue, we invite readers to recognise that India's medical landscape is not just about breakthroughs and technologies, but also about confronting uncomfortable truths. From institutional apathy in medical colleges to the return of age-old killers in newer disguises, the real battle lies in the balance between preparedness and prioritisation. This issue of Double Helical attempts to start—and sustain—that conversation. In short, this issue is packed with interesting, mind blowing and thought-provoking stories. Happy reading!.

Happy reading!

Thanks and regards



Amresh K Tiwary,
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Maldives, Thailand Sign MoU on Health: WHO Lauds Collaboration

The Ministry of Health of the Republic of Maldives and the Ministry of Public Health of the Kingdom of Thailand today signed a Memorandum of Understanding (MoU) to strengthen, promote, and develop cooperation and collaboration in the field of health. The two countries agreed to enhance primary healthcare services in the Maldives and improve the regulatory capacity of the Maldives Food and Drug Authority (MFDA). They also agreed to collaborate on developing training institutions for health professionals, human resource development for health, health policy and health system research, health information and information technology, and innovative sustainable financing for health promotion, among other areas.

"Maldives and Thailand are showing the world that cooperation, partnership, friendship, and solidarity is the way forward," said Saima Wazed, Regional Director, World Health Organization (WHO) South-East Asia, at an event held on the sidelines of the ongoing Seventy-Eighth World Health Assembly (WHA), where the MoU was signed.

Calling the MoU an important milestone in the ongoing partnership between the two countries, Abdulla Nazim Ibrahim, Minister of Health, Maldives, said it reflects the shared priorities of both countries in advancing universal health coverage (UHC) and building resilient health systems. The Minister appreciated Thailand's longstanding support and expertise in public health.

Dej-is Khaothong, Deputy Minister of Public Health, Thailand, noted that the MoU is a concrete outcome of the ongoing dialogue between the two countries, initiated during last year's WHA. He emphasised that the agreement would pave the way for collaboration in key areas such as primary healthcare, regulatory systems, academic exchange, health policy research, and financing.

Commending the collaboration, Wazed said that while the world today faces new health challenges—climatic, demographic, and epidemiological—alongside rising healthcare costs,

increasing population demands, and rapid technological transformation, both Thailand and the Maldives are responding through innovation, prioritising inclusion and quality.

"As we stand on the cusp of the coming AI age, the commitment of both Thailand and the Maldives to technology and data is commendable… Your actions are the manifestation of our shared vision for our Region, as outlined in our Regional Roadmap for Results and Resilience," she said.

"You are showing the world the power of cooperation and unity—that we are better together than alone. Your cooperation will certainly benefit the people of both your countries and is an example to our region and the world," the Regional Director added.

Pushpanjali Hosts Meet on Critical Healthcare Issues

The Pushpanjali Medical Education and Research Centre recently organised its monthly Pushpanjali Study Circle, a clinical meet focusing on pressing healthcare challenges including medico-legal aspects of emergency care, biomedical waste management, and the health impacts of air pollution and climate change. The event brought together leading medical experts to share insights and best practices for improving patient care and healthcare systems.

The monthly clinical meet was formally inaugurated by Dr Vinay Aggarwal, Chairman and Managing Director of Pushpanjali Medical Centre, who emphasised the vital importance of such regular gatherings for medical professionals. In his address, Dr Aggarwal explained how these meetings serve as a crucial platform for all members of the healthcare practice - from physicians and medical assistants to administrative staff - to collectively evaluate current workflows, identify areas for improvement, and implement solutions to enhance overall efficiency. He stressed that while these meetings require dedicated time where routine calls might need to be redirected, the benefits to patient care and practice management make this investment invaluable. Dr Aggarwal shared concrete examples of improvements that emerged from previous meetings, including the implementation of specialised patient "lanes" at reception areas to better address different patient needs, which significantly reduced stress for both patients and staff. Another notable outcome was the development of comprehensive care plans for patients with chronic conditions that later served as models for treating similar cases. These successes, Dr Aggarwal noted, clearly demonstrate why inclusive participation from all practice members is essential for meaningful healthcare innovation.

The clinical meet featured an insightful presentation by Dr Vijay Dhankar, Head of the Department of Forensic Medicine at Dr BSA Medical College and Hospital, New Delhi, who addressed critical medico-legal considerations in emergency care. Dr Dhankar emphasised the delicate balance required in emergency situations between upholding patient rights, maintaining medical ethics, and ensuring timely treatment. He provided practical guidance for healthcare providers, advising them to always acknowledge patient wait times with sincere apologies rather than excuses, as this demonstrates respect for patients' time and improves overall satisfaction. Dr Dhankar also examined the advantages and limitations of electronic medical records in emergency settings, noting that while their time-stamped entries provide accurate documentation of care timelines, the templated nature of such records can sometimes raise questions about their precision if not properly customised for each case.

Environmental health took centre stage in the presentation by Dr Ravindra Aggarwal, Senior Consultant at Lok Nayak Hospital and faculty member at Maulana Azad Medical College, New Delhi. Dr Aggarwal presented a comprehensive analysis of the interconnected health impacts of air pollution and climate change, explaining how various pollutants not only pose immediate health risks but also contribute significantly to global climate disruption. He highlighted the dual benefits of air quality improvement measures, which simultaneously protect public health while mitigating climate change through reduced emissions of both carbon dioxide and short-lived climate pollutants like black carbon and methane. Dr Aggarwal particularly emphasised the disproportionate climate impact of black carbon, which accelerates atmospheric warming and the melting of ice formations despite its relatively brief presence in the atmosphere compared to other greenhouse gases.

The monthly clinical meet also included valuable contributions from Dr Sangeeta Goel, Senior Consultant in Obstetrics and Gynaecology at Pushpanjali Medical Centre, and Dr Heemanshu Lodhi, Consultant Cardiologist at both Pushpanjali Medical Centre and Max Hospital, Vaishali, who shared their specialised perspectives on these critical healthcare issues. The event successfully fostered meaningful dialogue among healthcare professionals about improving patient care standards while addressing broader environmental challenges that impact public health.

A SILENT ASSASSIN

Hypertension, affecting over 294 million individuals, remains dangerously underdiagnosed and undertreated, with a staggering 88 per cent of cases lacking proper medical attention.

BY SAIMA WAZED

The persistent shadow of hypertension looms large over South-East Asia, where over 294 million people grapple with this silent yet deadly condition. As World Hypertension Day commemorated its 20th anniversary on May 17, the sobering reality remains that nearly 90 per cent of affected individuals in the region fail to receive adequate diagnosis, treatment, or control. This year's theme, "Measure Your Blood Pressure Accurately, Control It, Live Longer!", underscores the critical importance of awareness, early detection, and sustained management in combating what has become one of the region's most pressing public health challenges.

What makes hypertension particularly dangerous is its asymptomatic nature in early stages, allowing it to quietly damage vital organs while evading detection. The consequences manifest in alarming rates of cardiovascular diseases, which continue to be the leading cause of premature mortality across South-East Asia. Behind these statistics lie modifiable risk factors that have become entrenched in modern lifestyles - excessive salt consumption, tobacco and alcohol use, physical inactivity, and diets high in processed foods and

SEA HEARTS

The SEAHEARTS initiative represents a watershed moment in the region's fight against hypertension, demonstrating that coordinated action can yield tangible results. With 46 million people now enrolled in standardised management programs, the foundation for progress has been laid.

trans fats. These behavioural patterns, combined with inadequate healthcare access in many communities, have created a perfect storm for hypertension to flourish unchecked.

In response to this growing crisis, the SEAHEARTS initiative has emerged as a beacon of hope, demonstrating what coordinated regional action can achieve. By December 2024, the program had successfully placed more than 46 million people on standardised hypertension management protocols within primary healthcare systems. This milestone represents significant progress, yet it merely scratches the surface of what needs to be accomplished. The initiative's comprehensive approach, which combines population-level interventions with improved clinical management, offers a blueprint for tackling not just hypertension but the broader spectrum of cardiovascular diseases.

Moving forward, success will depend on strengthening three interconnected pillars of action. First, prevention efforts must intensify through policies that promote healthier lifestyles, including reduced salt intake, increased physical activity, and better nutrition. Second, primary healthcare systems require bolstering to ensure widespread availability of accurate blood pressure measurement devices, affordable medications, and trained personnel capable of providing standardised care. Third, and perhaps most crucially, hypertension management must become integrated with other health services, creating seamless connections between cardiovascular care, maternal health programs, mental health services, and infectious disease management.

The road ahead demands unwavering commitment from all stakeholders - governments must prioritise hypertension in their health agendas, healthcare providers need support to deliver quality care, and communities

Common lifestyle factors - excessive salt consumption, tobacco use, physical inactivity, and unhealthy diets - continue to drive the epidemic of hypertension, creating an urgent need for comprehensive public health strategies that address both prevention and treatment.

require education to recognise and address this silent threat. Technological innovations, particularly in digital health monitoring and telemedicine, offer promising tools to extend care to remote and underserved populations. Public awareness campaigns must continue to emphasise the importance of regular blood pressure checks and lifestyle modifications.

As the region works toward the Sustainable Development Goal of reducing premature mortality from noncommunicable diseases by one-third by 2030, hypertension control stands as both a challenge and an opportunity. The progress made through SEAHEARTS proves that change is possible when evidence-based strategies meet political will and community engagement. This World Hypertension Day serves as both a reminder of the work remaining and a call to action - by measuring accurately, controlling effectively, and living healthier, South-East Asia can turn the tide against this silent epidemic and secure a healthier future for millions.

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

A MOVEMENT BEYOND A C

CONFERENCE

The conference showcased groundbreaking initiatives, from AI-driven diagnostics to sustainable practices, while sparking debates on accreditation and patient safety.

BY DR VIJAY AGARWAL

As the curtains fell on CAHOCON 2025, organised by the Consortium of Accredited Healthcare Organizations (CAHO) in New Delhi, the message was clear: collaboration is not an option but a necessity in modern healthcare. The conference, continuing its legacy of strong industry participation, drew a distinguished gathering of professionals from across the healthcare continuum—clinicians, administrators, policy architects, researchers, technologists, and innovators—all aligned with a singular vision: safer, smarter, and sustainable care.

CAHOCON 2025 unveiled a series of pioneering initiatives, reinforcing India's growing role in global healthcare innovation. The launch of the International Journal for Healthcare Quality, Patient-Centredness & Safety (IJHQPCS) marked a milestone for research, while the 5C Network's Diagnostic AI promised to revolutionise clinical decision-making.

SETTING THE STAGE: GROUNDWORK FOR EXCELLENCE

CAHOCON 2025, held on April 12–13, was preceded by 25 focused workshops that engaged 1,917 participants in hands-on sessions. These covered topics ranging from ISO 7101 implementation, NABH migration, and JCI 8th edition updates to strategic themes like biomedical engineering in ICUs, HA-VTE prevention, and sustainability in healthcare.

Notable highlights included:

- A session on clinical nutrition and food safety at Amrita Hospital, with 232 attendees.
- CAHO's Global Rehab Forum session, which drew 424 professionals and focused on inclusive rehabilitation.
- Workshops dedicated to nursing leadership, pharmacy safety, and digital transitions in standards compliance.

These sessions laid a strong foundation for the two-day main conference, blending technical rigor with systemic insights.

HIGH-PROFILE ENGAGEMENTS AND LAUNCHES

The inaugural day was marked by a ceremonial welcome and powerful addresses from dignitaries such as Delhi Chief Minister Ms Rekha Gupta, and ISQua President Dr Ezequiel Garcia Elorrio. Both emphasised the role of governance, standards, and technology in catalysing quality transformation.

KEY INITIATIVES LAUNCHED INCLUDED:

- International Journal for Healthcare Quality, Patient-Centredness & Safety (IJHQPCS)

> **Sustainability emerged as a key theme at CAHOCON 2025, with experts from Canada, Germany, and the UAE sharing insights on green logistics and resilient infrastructure during the Sustainability in Healthcare session.**

- 5C Network – Diagnostic AI
- Essentials of Safe Anaesthesia – a collaboration with the International Society of Anaesthesia
- CQP Centre Inductions at Sehgal Neo Hospital, CK Birla Hospital, and SRM Medical College
- White Paper by P4PSF on Patient Engagement Strategies

THEMATIC SESSIONS: INSIGHTS AND INNOVATIONS

Each thematic session offered strategic direction:

- Global Collaboration in Quality saw experts like Dr Jeffrey Braithwaite and Dr Peter Lachman advocate systems thinking and capacity building through adverse event learning.
- Design Thinking reshaped conversations around maternal care, obstetrics, and public health infrastructure.
- "Viksit Bharat – Made in India" promoted homegrown solutions such as robotic surgery systems and AI-driven diagnostics.
- The Grand Debate posed a critical question: Is accreditation still a five-day exercise, or has it matured into a culture of continual improvement?
- Sustainability in Healthcare took centre stage with contributions from Canada, Germany, and the UAE, exploring green logistics, high-reliability systems, and resilient infrastructure.
- Medical Value Travel sessions assessed India's position on the global healthcare map and the regulatory roadmap to grow this sector responsibly.

RESEARCH, YOUTH, AND SYSTEMIC REFORM

One of the conference's most impactful sessions focused on collaborative research. Cross-institutional models, such as the VET in Cancer Care initiative, demonstrated the tangible impact of partnerships on patient outcomes.

The Student Engagement Committee (SEC) was expanded into four domains: Medical, Nursing, Allied Health, and Hospital Administration, with a new leadership structure. This reflects CAHO's long-term investment in capacity building and future leadership.

BUILDING BRIDGES ACROSS PROFESSIONS

The final day emphasised multisectoral collaboration. CAHO forums brought together voices from nursing, pharmacy, engineering, dietetics, sustainability, and rehabilitation, all reinforcing the message: patient safety is everyone's responsibility.

New platforms, such as:

- Health-Tech Excellence Forum
- SHCO Forum for Small and **Medium Hospitals**
- Laundry Excellence Programme
- Sustainable Event Certification **Framework**

…illustrate how CAHO is embedding quality and safety at operational and systemic levels.

KEY TAKEAWAYS

CAHOCON 2025 was not just a conference—it was a statement of purpose, culminating in awards, cultural programmes, and memorable keynote dialogues, including an inspiring Coffee Pe Charcha session with Dr Kiran Bedi and Dr Narottam Puri on ethical leadership and public accountability.

As CAHO expands its footprint through new forums, MoUs with academic institutions, and the upcoming CAHOCON 2026, the organisation continues to work tirelessly for quality improvement in Indian healthcare.

(The author is President, CAHO)

ANATOMY OF A CRISIS

From crumbling infrastructure and faculty shortages to outdated teaching methods and uneven regulation, the challenges threaten to undermine the very purpose of medical education - producing competent doctors.

BY DR SUNEELA GARG / DR MADAN K. GOPAL / DR NILESH KAPOOR

DR SUNEELA GARG

India has witnessed significant expansion in the number of medical colleges in recent years to address the growing demand for healthcare professionals. While this expansion is crucial to bridge the doctor-patient ratio, concerns regarding the quality of medical education persist. Ensuring high standards in medical training is essential to produce competent healthcare professionals who can cater to the diverse healthcare needs of the country.

CHALLENGES IN MEDICAL EDUCATION EXPANSION

The challenges in medical education expansion are multifaceted and require urgent attention. First and foremost, infrastructure deficiencies plague many newly established medical colleges, which lack adequate infrastructure, properly equipped laboratories, and sufficient clinical exposure facilities. This is compounded by an acute shortage of qualified faculty members, where the growing demand for well-trained medical educators has led to concerning dilution in faculty standards.

The quality of clinical training suffers significantly due to inadequate patient exposure and limited availability of advanced diagnostic and therapeutic facilities, which hinders comprehensive clinical training. Regional disparities present another major challenge, with uneven distribution of quality medical institutions leaving rural and underserved regions struggling with substandard training facilities. The pedagogical approaches remain problematic with persistent over-reliance on rote learning and traditional teaching methods without adequate focus on skill development and critical thinking. Finally, regulatory challenges abound in ensuring compliance with medical education standards across an increasing number of institutions, posing significant governance challenges for oversight bodies.

PROPOSED MEASURES TO BALANCE QUALITY AND EXPANSION

To address these challenges while maintaining expansion, several comprehensive measures must be implemented. The establishment of Regional Centres of Excellence (RCEs) would involve identifying and developing select medical institutions as Centres of Excellence in each region to serve as mentoring institutions for newer colleges, coupled with facilitating faculty exchange programs and collaborative research projects to ensure knowledge transfer and standardisation. Leveraging technology for democratised learning

would require promoting the use of Massive Open Online Courses (MOOCs) and online medical education platforms to supplement classroom learning, implementing a national repository of medical lectures, case discussions, and surgical demonstrations accessible to all medical students, and encouraging virtual simulations and Artificial Intelligence-based training tools to enhance skill-based learning. Faculty development and teaching skill enhancement must include establishing dedicated Medical Education Units (MEUs) in every institution to train faculty in modern teaching methodologies, introducing structured training in pedagogy, assessment strategies, and communication skills for medical educators, and offering incentives for faculty members to engage in continuous professional development and research.

Strengthening clinical exposure and skill-based training necessitates ensuring adequate patient load per student by affiliating medical colleges with well-equipped government and private hospitals, developing skill labs and simulation centres to allow students hands-on experience before interacting with real patients, and promoting competency-based medical education (CBME) with standardized assessments to evaluate practical skills. Enhancing accreditation and

regulatory oversight would involve implementing a robust, transparent accreditation framework to assess medical colleges based on educational quality, faculty standards, and clinical training, strengthening the role of the National Medical Commission (NMC) in monitoring compliance and periodically updating curriculum guidelines, and establishing mechanisms for student feedback and independent quality audits to ensure accountability.

Public-private partnerships for sustainable growth should encourage collaboration between government institutions and private healthcare providers to improve infrastructure and resource utilisation, establish industry-academic linkages to integrate advancements in medical technology and research into the curriculum, promote scholarships and financial aid programs to attract talented students from underserved regions, and allow private practitioners to become full-time or visiting faculty based on a common Teacher Eligibility Test (TET) certification. Encouraging research and innovation requires creating dedicated research grants for medical colleges to promote evidence-based medicine and innovation, encouraging undergraduate research programs to inculcate a research-oriented mindset among medical students, and developing translational research centres that bridge the gap between basic science and clinical application.

Standardising curriculum and examination processes must include implementing a uniform, competency-based curriculum across all medical colleges with periodic updates to reflect emerging healthcare needs, and standardising assessment methods with a focus on both theoretical knowledge and practical skills. Improving student support systems involves establishing mentorship programs for medical students to enhance academic and emotional well-being, and providing career guidance, mental health support, and peer networking opportunities to improve overall student experience.

KEY TAKEAWAYS

The expansion of medical education need not come at the cost of quality. By implementing the above-mentioned measures systematically, India can achieve the dual objectives of increasing doctor production while ensuring global-standard training. Reforms must begin immediately to ensure the next generation of doctors receives world-class training.

Expanding medical education must go hand in hand with maintaining high educational standards. By leveraging technology, strengthening faculty training, enhancing clinical exposure, encouraging research, and establishing robust regulatory frameworks, India can ensure that the rapid growth in medical colleges translates into an equally proficient healthcare workforce. A structured approach focusing on quality-driven expansion will help achieve the twin goals of accessibility and excellence in medical education. The coming years will determine whether India becomes the world's healthcare provider or remains perpetually short of doctors. With coordinated action from regulators, educators, and policymakers, the medical education system can fulfil its promise of creating not just more doctors, but better healers for the nation.

(Prof Suneela Garg is the former Head of Community Medicine and Sub-Dean at Maulana Azad Medical College, and currently serves as the Chair of the Programme Advisory Committee at the National Institute of Health & Family Welfare, Delhi. Dr Madan Gopal is a Senior Public Health Adviser at the National Health Systems Resource Centre, Delhi, with extensive experience in health policy and systems strengthening. Dr Nilesh Kapoor is a Senior Consultant Physician, Diabetologist, and a Visiting Consultant at premier hospitals, including Manipal and Kailash).

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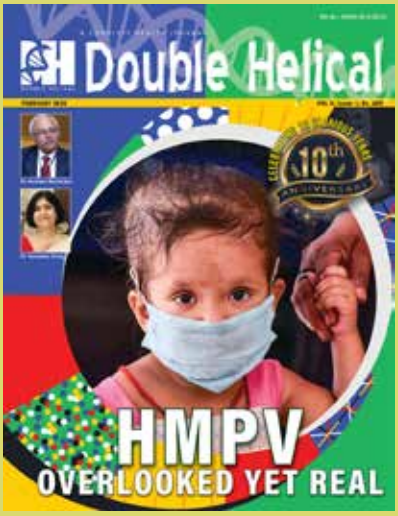

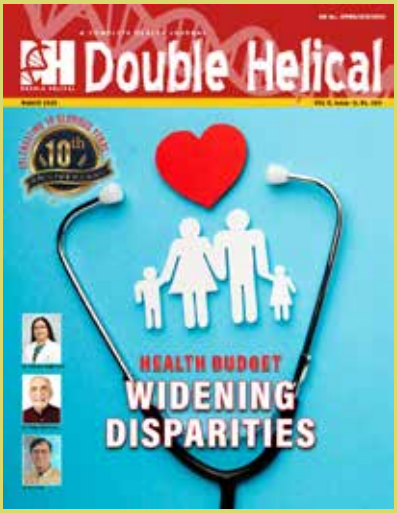

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DEADLY DISREGARD

Turbulence ahead: monsoons and post-monsoon season may fuel surges in tropical endemic diseases. The decline of tropical medicine, rooted in colonial legacies, has left India unprepared for recurring outbreaks.

BY DR AMITAV BANERJEE

Our country is diverse. This diversity extends to various disease outbreaks peculiar to specific regions of our vast population, driven by climatic variations and population demographics. Year after year, they recur with changing seasons, taking a heavy toll on the most vulnerable—our children. The worst periods for disease outbreaks in our country are the monsoons and post-monsoon seasons. Preventing these outbreaks of endemic diseases, which have become regular and recurring features year after year, should begin well before the onset of monsoons. This calls for inter-sectoral collaboration and public participation.

Frequent phenomena desensitise. The affected populations become resigned to their fate, while public health authorities drift into apathy. The diseases currently endemic in the tropics once held interest for Western countries and influenced their public health priorities.

IF YOU DON'T HAVE BREAD, EAT CAKE!

We are carrying the wrong public health compass to guide our health policies. This is best illustrated by outbreaks of "mysterious fevers" in many parts of our largest state, Uttar Pradesh, spreading to neighbouring states during the ongoing Covid-19 pandemic, when the entire country was awaiting, panic-stricken, the "paediatric third wave."

In the post-monsoon period of 2021, when the country was preparing for the "paediatric third wave," an outbreak of "mystery fever" spread from Firozabad in Uttar Pradesh starting in August, before the UP government identified it as dengue.

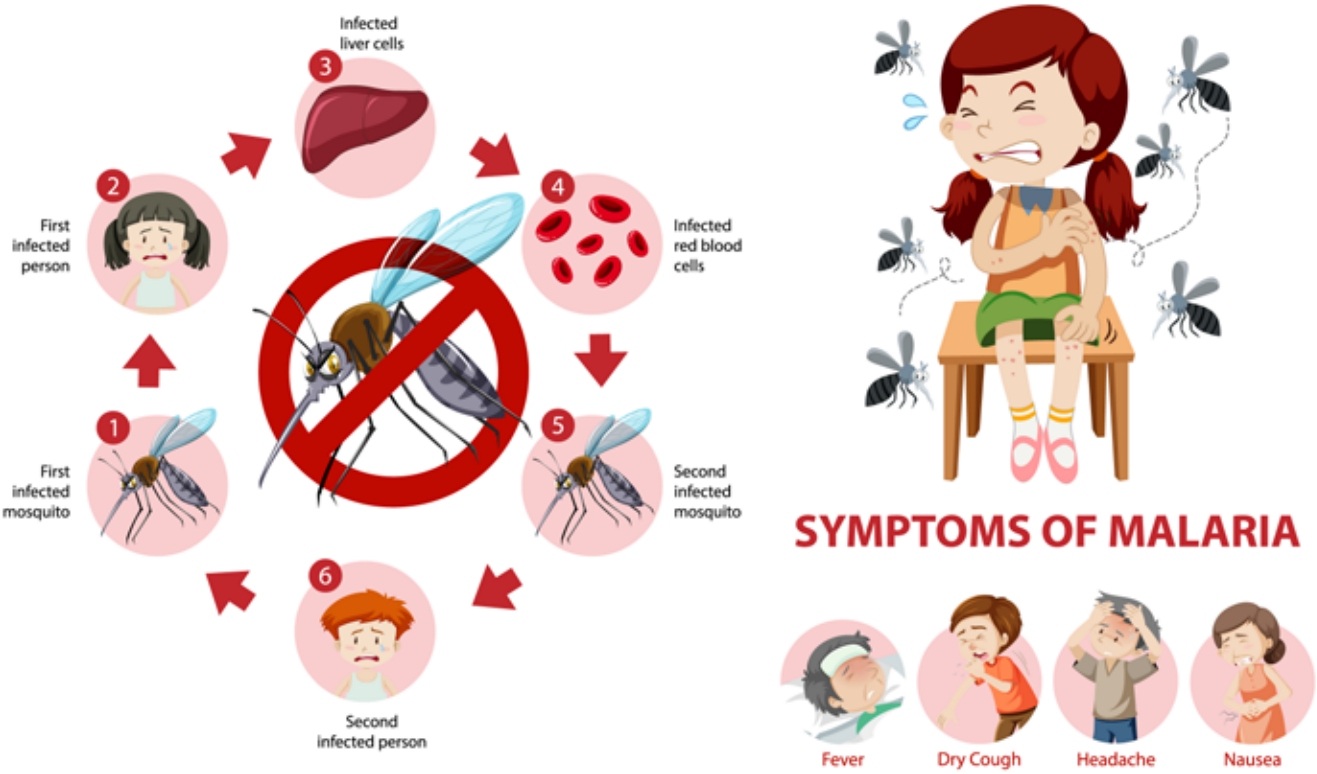
"The decline of tropical medicine after the British Raj has left India ill-equipped to tackle recurring endemic diseases. Over-reliance on Western health models ignores the unique challenges of the nation's diverse regions.

More than a hundred people died after suffering high fever across five states in northern and eastern India.

Firozabad, the epicentre of the "mystery fever" among children, is a city in Uttar Pradesh with a population of six lakh, near Agra, famous for its glassmaking industry. The population density is over 1,000 per km^2, more than twice the national average. The city lies on a national highway, making it an important stopover for passing transport vehicles. The district includes a large rural belt with frequent rural-urban movement of people in search of employment. These factors create an ideal environment for the spread of febrile illnesses from this epicentre to other parts of the state and neighbouring states.

The outbreak of "mystery fever" hit hard, leading to confusion and chaos. People fled entire villages as many, mostly children and young people, died from the mysterious fever. According to media reports, thousands in Firozabad district were bedridden with fever at home and in hospitals. In a short period, there were 71 reported deaths, of which, tragically, 52 were children. Out of a mere 185 samples tested, 73 were positive for dengue, 28 for scrub typhus, and one for Japanese encephalitis.

In the 18th century, when told that citizens had no bread, the French queen reportedly remarked, "Let them eat cake." We are experiencing the same ethos among our health policymakers, allowing our priorities to be dictated by the West. Here we were, with one of the largest states in the country in the grip of a "mysterious fever" killing mostly children and young people, while all our health resources were deployed for mass Covid-19 vaccination, which rarely affected young people, and quixotically preparing for a paediatric third wave that never materialized. To



add insult to injury, vaccine trials for Covid-19 were conducted among children in unholy haste. Schools remained closed, ostensibly to protect children from a "lethal" virus. The panic among parents was sustained, prompting many to rush for a vaccine for their children before schools reopened.

UP health officials confirmed this mindset in a statement, noting that with increasing cases of this "mysterious disease," the situation was fast becoming Covid-like. What a naïve approach! With so many deaths from the endemic "mysterious fever," only 185 samples had been tested a month into the outbreak to identify it, compared to lakhs of RT-PCR tests to detect the "Covid-19 cake" in both young and old during the same period!

While India braced for a Covid-19 "paediatric third wave" that never came, deadly outbreaks like dengue and scrub typhus ravaged communities. Resources funnelled into global pandemics overlook local health threats.

Post-pandemic, we are losing sight of our endemic tropical diseases in the blind chase of a pandemic virus or awaiting the next pandemic of "Disease X." The following endemic diseases in our country surge during environmental disturbances due to heavy rains, floods, natural disasters, and population movements.

DENGUE

After monsoons, dengue is a major public health problem year after year. It is a leading cause of hospitalisation and death among children and young people. Death rates can vary from 2 per cent to 20 per cent, depending on severity and access to early diagnosis and management. The dreaded dengue haemorrhagic fever, with a severe drop in platelets and bleeding, can be fatal.

The dengue virus is transmitted by the bite of Aedes mosquitoes, which

thrive in artificial water containers. The mosquito, known as the tiger mosquito, is a daytime biter. There are four serotypes of the virus, and previous infection with one serotype does not protect against subsequent infection by a different serotype; in fact, it makes a person more vulnerable to dengue haemorrhagic fever syndrome.

SCRUB TYPHUS

This is caused by rickettsiae, a small bacterium, named after Howard Ricketts, the American pathologist who died of it after discovering it. Scrub typhus is transmitted by the bite of mites that thrive in grassy soils. Post-monsoons, these grassy "mite islands" expand. The cycle of transmission continues in nature between mites and rodents. Children playing on grassy terrain and campers are vulnerable to infection from mite bites. Scrub typhus is treated with antibiotics of the tetracycline group. When treated early, the mortality rate is 1.6 per cent. In missed or untreated cases, mortality can reach 30–35 per cent, or 500 times that of the "dreaded" Covid, to provide perspective.

JAPANESE ENCEPHALITIS (JE)

Japanese encephalitis (JE) is a viral infection that can affect the central nervous system. It is transmitted by Culex vishnui mosquitoes, which breed in rice fields. The natural cycle involves mosquitoes and pigs or other animals, such as cattle and certain birds of the Ardeidae family. These animals and birds do not suffer from illness (except horses) but act as amplifier hosts, enabling the virus to multiply within them. Most infections are asymptomatic, but JE can be fatal in children and young adults, with a case fatality rate of 20 per cent to 40 per cent. Neurological deficits in survivors are common. A vaccine is available and should be used judiciously in endemic areas, particularly in rural regions with rice fields.

The lack of insight into epidemiology, resulting from the decline of tropical medicine as a discipline, is evident in the recent misuse of the JE vaccine. In 2025, lakhs of school children in urban Pune were vaccinated against JE following a single non-fatal case reported in 2022. Urban Pune has no rice fields, and JE virus transmission is unlikely. Serological surveys and entomological studies could have confirmed this before launching a mass JE vaccination drive in a non-endemic area, which represents a waste of resources with no risk-benefit considerations.

LEPTOSPIROSIS

Post-monsoon, leptospirosis is a recurring problem in the country. This bacterial infection spreads through wastewater contaminated by the urine of animals carrying Leptospira spirochetes. While treatable with antibiotics like penicillin, death rates

can range from 5 per cent to 30 per cent, depending on diagnostic and treatment facilities. After heavy rains, people wading through water may contract leptospirosis through cuts or abrasions on the skin.

OTHER ENDEMIC DISEASES

Other endemic diseases, such as malaria, typhoid, diarrheal diseases, hepatitis A, and hepatitis E, increase post-monsoon. Malaria surges due to the increased density of vector mosquitoes, while others result from contaminated water bodies. Malaria, though treatable, can lead to rapid deterioration in cases of untreated Plasmodium falciparum malaria, with a fatality rate of 20 per cent. Typhoid has a fatality rate of 1 per cent to 4 per cent with treatment, but without treatment, mortality can reach 10 per cent to 30 per cent. Diarrhoea kills over 1,000 children in India daily. A recent outbreak of Guillain-Barré syndrome in Pune, with over 200 cases and 11 deaths, was attributed to water contamination with Campylobacter jejuni bacteria, though other triggers, such as a Zika outbreak a few months prior, could not be ruled out.

These are our unfinished agenda. These endemic illnesses take a far higher toll on the young in our country than any present or future pandemics. We have enough work to do without awaiting a pandemic of "Disease X." The following paragraphs provide an overview of the reasons for our failure to address these recurring public health problems.

TROPICAL MEDICINE WENT DOWN WITH THE "BRITISH RAJ" AND CONTINUES TO BE NEGLECTED

Power dynamics dictate public health priorities. During the 17th and 18th centuries, European doctors studied tropical endemic diseases in countries like India because these diseases were prevalent in their own countries and because controlling them aided colonial dominance. Tropical medicine was a by-product of the British Raj. Investment in research and control of tropical diseases was driven by vested interests: first, preserving the health of British officials, and second, applying lessons learned to eliminate these diseases in their home countries.

> **Market-driven research prioritises clinical trials over addressing root causes of tropical diseases. This focus on profit over prevention stalls efforts to control India's endemic health challenges.**

During the British Raj, tropical medicine emerged as a distinct discipline encompassing public health, hygiene, population migration, epidemiology, and the natural history of disease, spurred by the evolving "germ theory." Researchers like Manson and Ross (who received the Nobel Prize in 1902 for his work on malaria) contributed to medical parasitology and entomology in the tropics.

END OF COLONISATION AND THE

> **India's diverse climates and demographics demand tailored public health strategies. A one-size-fits-all approach, like global health treaties, risks sidelining the nation's unique epidemiological needs.**

FALL OF TROPICAL MEDICINE

After World War II and the end of the British Raj, tropical medicine lost the attention of Western powers. Improved living standards eradicated these diseases in their countries, and the health issues of the tropics no longer affected their populations after they withdrew from the colonies. The discipline gradually shifted to "travel medicine" in Western literature, focusing on temporary preventive measures for tourists or business travellers visiting the tropics.

INDIA SHOULD HAVE CONTINUED THE LEGACY OF TROPICAL MEDICINE TO ADDRESS OUR ENDEMIC DISEASES

Regrettably, years of dependence on the Raj for scientific cues led Indian doctors to neglect tropical medicine, at a huge cost to public health. Vast swathes of our population still lack the living standards that many European countries enjoyed post-World War II. Against this backdrop, we can ill afford this drift. Our unfinished agenda of communicable diseases remains. Controlling seasonal endemic diseases that periodically escalate into epidemics would enable better governance and economic development.

Market forces driven by the pharmaceutical industry add complexity. As long as tropical endemic diseases remain uncontrolled, the pharmaceutical industry thrives. Most research projects in tropical countries, funded by these agencies, focus excessively on clinical trials rather than addressing the root causes of diseases. With high-pressure promotions and vested interests at play, the resurgence of tropical medicine is unlikely.

THE WAY FORWARD

India, with its extensive scientific resources and knowledge, should set its own public health priorities based on the regional epidemiology of endemic diseases. Given the demographic diversity, varied climates, terrains, and cultures—all of which significantly influence population health—the concepts of "One Health" and global health "treaties" risk leaving developing and tropical countries disadvantaged due to power dynamics. These should be approached cautiously.

(Currently, Professor Emeritus at Dr D Y Patil Medical College in Pune, the author has over two decades of experience serving as an epidemiologist in the armed forces. He has been ranked in Stanford University's list of the world's top 2 per cent scientists for two consecutive years, 2023 and 2024.)

DOWN WITH THE CORONA DYNASTY!

The coronavirus may have long shed its virulence, but not its aura of fear. As its weakened descendants spread silently, it's time to discard hysteria and move towards sanity, turning our attention to far deadlier vector-borne and waterborne diseases such as dengue, chikungunya, Zika virus, scrub typhus, leptospirosis, typhoid, and malaria…

BY DR AMITAV BANERJEE

The word "Corona" has once again made its way into headlines, reviving a haunting déjà vu and triggering ripples of anxiety among people. Within the vast realm of viruses and microorganisms, none has claimed a more prominent and controversial throne than the novel coronavirus and its descendants. In this microbial kingdom, they have been accorded a status akin to royalty—feared, revered, and mythologised.

"What's in a name? That which we call a rose by any other name would smell as sweet." This oft-quoted line from William Shakespeare's Romeo and Juliet evokes the idea that names themselves carry little inherent meaning. Yet, the global saga of the coronavirus over the past five years appears to challenge the Bard's assertion. The very act of naming and the symbolic status it conveys seems to have altered the trajectory of global public health.

Dr Wolfgang Wodarg, a German physician and politician, stirred controversy when he suggested that Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was not significantly different from other coronaviruses, which frequently circulate during seasonal waves of respiratory illnesses and typically go unnoticed. According to Wodarg, the new nomenclature and elevated focus on SARS-CoV-2 triggered what he termed a "tragedy of errors," launching a series of missteps and overreactions on the global stage.

Whispers abound in various corners of public discourse that the coronavirus may not have emerged through natural evolution but was rather engineered or manipulated in a clandestine laboratory. Despite the lack of definitive evidence, such suspicions persist. Nevertheless, the global scientific and political establishment—those who effectively function as the "royal courtiers"—vehemently refuted such claims, continuing to uphold the legitimacy

> **Lethal viruses tend to self-destruct by killing their host too quickly to spread. In contrast, milder variants that allow the host to survive can propagate effectively. Today, SARS-CoV-2 has evolved into a relatively benign parasite—present in the throats of countless individuals without causing illness.**

and urgency of their response to the virus's emergence.

The very act of naming this novel virus SARS-CoV-2, and subsequently branding the disease it caused as COVID-19 (Coronavirus Disease 2019), bestowed upon it an aura of ominous significance. Unlike its less famous cousins, the common cold coronaviruses, this new entrant was catapulted into global notoriety. The "King Corona," a ruthless sovereign, commanded fear wherever it went. Streets emptied, schools closed, and marketplaces fell silent under its gaze. The world retreated indoors; playgrounds and parks

stood desolate. A terrified populace, fearing annihilation, confined themselves to their homes, sealing children away from the sunlit outdoors.

With astonishing ease and unprecedented speed, Corona swept across continents, facing little resistance in its conquest. Its territorial expansion eclipsed even that of Alexander the Great, not only in geographical reach but also in the velocity of its global domination. The political rulers of the world, seizing the moment, used the pandemic's looming threat as a powerful instrument to exert control over their populations. Mandatory face coverings became the norm, symbolising both submission to authority and the fear of a largely invisible enemy. Ironically, exceptions to this rule were often seen among the global elite and powerful leaders—those in the virus's inner circle—who continued to hold mass gatherings and political rallies without restraint.

The ruling playbook, adopted almost universally by governments across the globe, relied on a singular powerful emotion—fear. This became their "master key" to unlock social compliance. A legend grew around COVID-19, portraying it as a merciless killer of both the young and the old. However, upon closer inspection, the virus behaved more like a cowardly warrior, typically striking down those who were elderly, chronically ill, or otherwise immunocompromised. Nevertheless, widespread panic ensured that everyone—regardless of risk profile—remained imprisoned indoors. Parents, driven by

anxiety, barred their children from attending school or even playing outside.

World governments declared a full-fledged war against coronavirus and its ever-expanding army of variants. A multitude of private and public stakeholders rushed to offer arms and ammunition for this war. These took the form of rapidly developed vaccines, testing kits, ventilators, and antiviral medications such as remdesivir. Predictably, some of these interventions—introduced under emergency authorisations—caused unintended harm, resulting in occasional loss of innocent lives. Such incidents were typically dismissed as "rare and unfortunate collateral damage," a necessary sacrifice to shield humanity from a virus that was described in almost apocalyptic terms.

But like all dynasties, the House of Corona is showing signs of fatigue. Its recent progeny—descendants of the Omicron sub-lineage such as JN.1—have begun to wane in strength. The latest heirs to this fading empire, identified as LF.7 and NB.1.8, have been granted minor dominions in viral hotspots such as Singapore, Hong Kong, and Thailand. These new variants, though far weaker than their ancestors, continue to enjoy royal status purely by lineage. Their actual capacity to cause disease is modest, yet their heritage ensures they are treated with deference.

To sustain the aura of danger surrounding the Corona Dynasty, policymakers and scientific advisers convene high-level meetings and draft elaborate contingency plans. These are designed not necessarily to prevent catastrophe but to prepare for hypothetical future scenarios. Once the media—acting as the regime's trumpet blowers—sound the alarm, the public can once again be stirred into panic. This, in turn, facilitates lucrative contracts and deals for the continued production of vaccines,

COVID-19 CASES

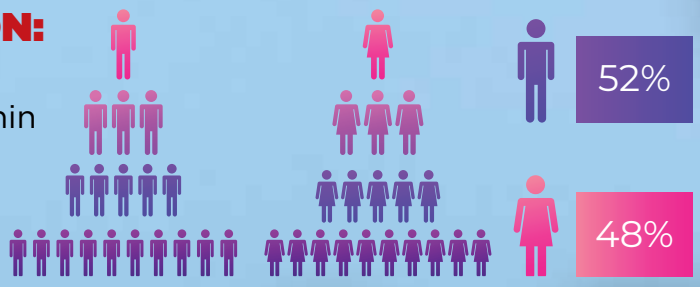
Mild Covid-19 Surge Detected in Parts of Asia

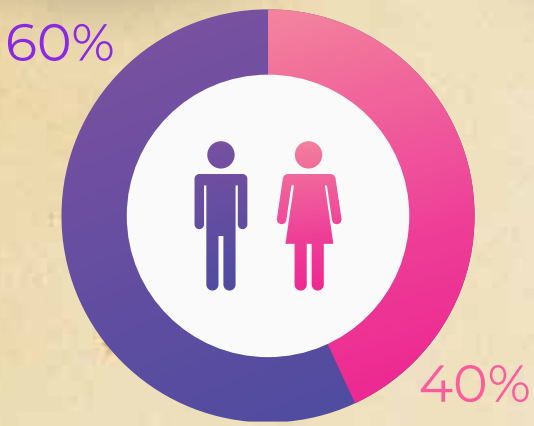
HONG KONG (POPULATION: 75.4 LAKHS)

- Positivity rates increased from 6.21 per cent to 13.66 per cent over a four-week period extending into May 2025.

SINGAPORE (POPULATION: 59.2 LAKHS)

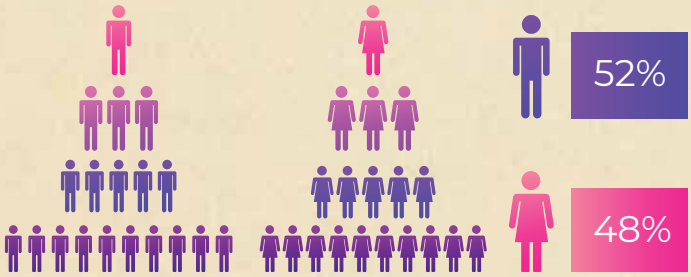
- Reported 3,100 new cases within a week.
- Hospital admissions rose from 102 to 133 in a week, while ICU cases decreased from 3 to 2.





THAILAND (POPULATION: 7.17 CRORES)

o Cases spiked to 33,030 in one week in May, with 6,000 cases reported in Bangkok.



INDIA (POPULATION: 143.81 CRORES)

o Around 1,000 RT-PCR-confirmed Covid-19 cases reported so far, with numbers still rising as states report single-digit figures.

o The novel coronavirus is no longer novel. If testing increases due to public and media pressure, case counts may rise, potentially causing undue panic. Such figures should be presented in proper context to avoid misinformation.

o Compared to other Asian countries experiencing surges—with no severe impact on hospitalisations or deaths—India's current caseload does not signify a "wave" but rather a "ripple" that will likely subside soon.

o Occasional deaths have been reported, primarily among individuals with severe pre-existing conditions (comorbidities).

KEY NOTES ON THE CURRENT SURGE:

- Driven by new Omicron JN.1 subvariants (LF.7 and NB.1.8).
- Cases remain mild and self-limiting, with rare fatalities linked to comorbidities.

diagnostic kits, and other paraphernalia. Without fear, there are no fortunes to be made. While the new variants may lack the menace of their forebears, they are nonetheless descendants of King Corona—and this fact alone keeps the machinery of hysteria well-oiled.

So, what is the path out of this modern-day serfdom, this pandemic-induced mental captivity? It begins with an end to mass hysteria. The world must address its collective obsession with COVID-19 to restore the mental and social equilibrium of society. Here, ancient wisdom offers guidance. Lessons from the Bhagavad Gita—a philosophical cornerstone of Indian thought—can illuminate our way forward.

In Chapter 14, Verse 10 of the Bhagavad Gita, the concept of the three gunas—Tamas, Rajas, and Sattva—is explored. Tamas represents darkness, inertia, and chaos—aptly describing the initial months of the pandemic when ignorance and panic reigned supreme. This was followed by Rajas, characterised by passion, frenetic activity, and often-confused decision-making. Flip-flops in guidelines from institutions like the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) exacerbated this chaotic phase. We now stand at the threshold of the Sattva phase—marked by clarity, constructive action, and harmony. This is the stage where humanity must learn to coexist with the virus and its mild offshoots. "Live and let live" is not merely a slogan—it is now a biological reality.

The newer variants, in fact, embody Charles Darwin's principle of natural selection. Their genetic mutations, caused by replication errors, have favoured less virulent forms that can coexist peacefully within human hosts. Lethal viruses tend to self-destruct by killing their host too quickly to spread. In contrast, milder variants that allow the host to survive can propagate effectively. Today, SARS-CoV-2 has evolved into a relatively benign parasite—present in the throats of countless individuals without causing illness.

Every day, over 25,000 Indians die from various causes. Among these, thousands may be carrying harmless coronavirus variants. If RT-PCR tests were conducted on every deceased individual, it would yield sensational headlines and inflated case counts—perfect fodder for media outlets seeking viewership.

Every day, over 25,000 Indians die from various causes. Among these, thousands may be carrying harmless coronavirus variants. If Reverse Transcription Polymerase Chain Reaction (RT-PCR) tests were conducted on every deceased individual, it would yield sensational headlines and inflated case counts—perfect fodder for media outlets seeking viewership. Such fear-mongering would once again drive the public to panic, hastily procure vaccines, and suffocate themselves under masks, believing they are at risk from a now largely innocuous virus.

In our myopic focus on COVID-19, we have allowed far deadlier pathogens to thrive in the shadows. Tuberculosis claims the lives of over 1,400 young Indians every day. More than 2,000 children die daily from preventable causes. Vector-borne and waterborne diseases like dengue, chikungunya, Zika virus, scrub typhus, leptospirosis, typhoid, and malaria continue to exact a heavy toll. In a recent public health emergency in Pune, over 200 cases of Guillain-Barré Syndrome—a paralysing condition—were reported, including 11 fatalities. These cases were linked to bacterial contamination of drinking water by Campylobacter jejuni, although other causes such as Zika could not be ruled out.

These, and not COVID-19 or speculative future pandemics, are the real enemies of public health. Yet, there is a dangerous global trend pushing us toward ceding sovereignty over national health policies to unelected, undemocratic bodies such as the World Health Organization. This development demands urgent scrutiny and resistance..

(The author is a Clinical Epidemiologist and currently Professor Emeritus at DY Patil Medical College, Pune. He served in the Indian Armed Forces and formerly headed the Mobile Epidemic Investigation Team at the Armed Forces Medical College (AFMC), Pune. He was ranked among the top 2 per cent of scientists globally by Stanford University in 2023 and 2024. He is the author of Covid-19 Pandemic: A Third Eye.)

STAY PREPARED, NOT SCARED

Reports of rising COVID-19 cases in India have sparked fleeting concern—but the uptick remains small, symptoms are mild, and health systems stand ready. Hybrid immunity, robust surveillance, and vaccination have transformed corona from a crisis into a manageable seasonal challenge.

BY DR K MADAN GOPAL AND PROF SUNEELA GARG

In recent days, various media reports have highlighted what appears to be a fresh rise in COVID-19 cases across certain parts of India. While these headlines might initially cause concern among readers, a closer examination of the actual ground situation reveals multiple reassuring factors that should prevent any undue alarm. The current increase in detected cases remains relatively small in absolute numbers, the clinical presentation continues to be overwhelmingly mild in nature, and India's healthcare infrastructure stands thoroughly prepared to handle the present scenario. Perhaps most importantly, after nearly five years of living with the pandemic, we now possess significantly better tools, deeper scientific understanding, and hard-earned community resilience to manage such periodic fluctuations without resorting to fear or panic.

Geographical Distribution of Cases

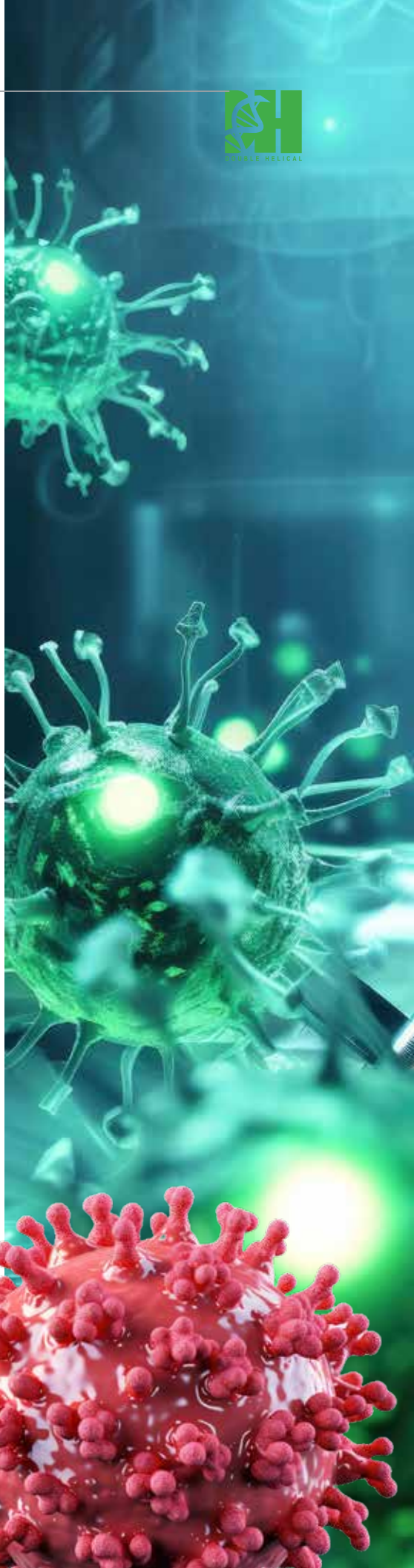
When we examine the specific numbers as of May 19, 2025, the total count of active COVID-19 cases across India stands at 257, according to the latest updates from the Union Ministry of Health and Family Welfare. While this does represent a modest increase compared to the figures from early May, the situation remains comfortably within manageable limits and shows no signs of developing into anything resembling the challenging waves India previously experienced. A geographical breakdown of these cases shows that Kerala, Maharashtra and Tamil Nadu together account for more than 85 percent of all currently active infections nationwide. Kerala alone reported 69 out of the 164 new cases detected across India on May 12, with the state having recorded 273 cases so far during May, primarily concentrated in the districts of Thiruvananthapuram, Ernakulam and Kottayam. Maharashtra's total active cases stand at 56, including 30 new detections in Mumbai on May 24, while Tamil Nadu currently has 66 active cases under observation. Other states are reporting only negligible numbers, with Delhi having 23 cases, Karnataka 13, Puducherry 10, Gujarat 7, while Rajasthan, Haryana, Sikkim and West Bengal have between one to two cases each.

SURVEILLANCE AND MONITORING SYSTEMS

When viewed against India's massive population of over 1.4 billion people, these numbers represent nothing more than minimal background transmission rather than any concerning surge in infections. This stable situation owes much to India's significantly enhanced disease surveillance capabilities that have been developed and refined over the course of the pandemic. The Integrated Disease Surveillance Programme (IDSP) continues to maintain rigorous tracking of fever clusters and respiratory illnesses across the country, with district-level teams maintaining constant vigilance for any unusual patterns in case occurrences. This multilayered surveillance network, combined with real-time data analysis systems, allows health authorities to identify and respond to any emerging hotspots with precision and speed, ensuring that localised increases can be contained before they develop into wider spread.

Variant Analysis and Characteristics

Genomic surveillance conducted through the Indian SARS-CoV-2 Genomics Consortium (INSACOG) network reveals that the JN.1 subvariant of Omicron continues to be the dominant circulating strain in In[illegible] at present, accounting [illegible] approximately 53 percent of recently sequenced cases. Minor prese[illegible]e of other variants like NB.1.8.1 and LF has also been detected, though in much



The broader perspective reveals that COVID-19 has completed its transition from being a pandemic emergency to an endemic respiratory illness in India, joining the ranks of other seasonal viruses that periodically circulate in human populations.

smaller numbers. All currently circulating strains share certain common characteristics - they demonstrate increased transmissibility compared to earlier variants, but crucially, they continue to show reduced clinical severity and no significant ability to evade the immune protection provided by prior vaccination or infection.

CLINICAL PRESENTATION AND OUTCOMES

The clinical presentation of current COVID-19 cases remains consistently mild, with most patients experiencing symptoms indistinguishable from common seasonal influenza or cold. The most frequently reported symptoms include fever, dry cough and sore throat, often accompanied by general fatigue, headache and body ache. Some patients infected with the JN.1 variant have reported diarrhoea as an accompanying symptom, while a few cases have shown conjunctivitis or itchy eyes, reminiscent of the XBB.1.16 variant that circulated previously. Hospitalisation rates have stayed remarkably low across all states, with the rare deaths being exclusively limited to elderly patients above 70

The dominant JN.1 Omicron sub-variant spreads easily but causes mild, cold-like symptoms: fever, dry cough, and fatigue. Rare hospitalisations or deaths—often linked to comorbidities—highlight India's 'hybrid immunity' from vaccines and past infections.

years of age, individuals with multiple pre-existing health conditions, or those who were either unvaccinated or had compromised immune systems.

INDIA'S THREE-PRONGED RESILIENCE

India's current resilience against COVID-19 stems from three fundamental strengths that have been built up systematically over the past few years. First and foremost is the robust population immunity resulting from the combination of widespread vaccination coverage and natural exposure to previous infections. With over 2.2 billion vaccine doses administered across the country to date, including both primary series and booster doses, combined with the fact that a substantial majority of Indians have experienced at least one natural infection, the concept of "hybrid immunity" provides strong protection against severe outcomes from the currently circulating variants. Second, the country's health infrastructure has undergone massive upgrades since the early days of the pandemic, with substantial improvements in oxygen supply systems, ICU bed capacities, stockpiles of essential medications, and the overall readiness of hospital systems to handle potential surges, as regularly tested through statewide mock drills. Third, India has developed sophisticated scientific infrastructure for pandemic management, including the INSACOG network for variant surveillance, streamlined mechanisms

for real-time data sharing between institutions, and constantly updated treatment protocols that incorporate the latest global learnings.

EXPERT CONSENSUS AND GLOBAL PERSPECTIVE

The expert consensus on the current situation remains unanimous and reassuring. Eminent virologist Dr T Jacob John emphasises that "the minor fluctuations we're seeing represent expected seasonal patterns of viral transmission and do not constitute a public health threat of any significance." The World Health Organization (WHO) has not issued any special alerts regarding the currently circulating variants, while India's own Ministry of Health maintains a posture of "situational awareness without alarm," continuing to monitor developments closely while reassuring the public about the stable situation.

RECOMMENDED PUBLIC HEALTH MEASURES

In terms of practical public health measures, no restrictions or mandates are being considered at this stage given the entirely manageable nature of the current caseload. However, health authorities continue to recommend sensible precautions that people may choose to adopt based on their individual circumstances. These include maintaining basic hygiene practices like regular hand washing, voluntary use of masks in particularly crowded indoor settings or when visiting healthcare facilities, ensuring good ventilation in shared spaces, and checking vaccination status to receive booster doses if eligible, especially for those in high-risk categories. Perhaps most importantly, individuals experiencing respiratory symptoms are advised to practice self-restraint by limiting their interactions with others until they recover, particularly avoiding contact with elderly or vulnerable individuals.

THE ENDEMIC TRANSITION

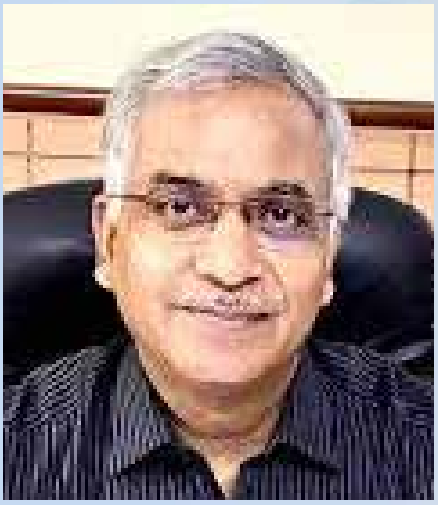
The broader perspective reveals that COVID-19 has completed its transition from being a pandemic emergency to an endemic respiratory illness in India, joining the ranks of other seasonal viruses that periodically circulate in human populations. This new phase is characterised by predictable seasonal fluctuations in case numbers, stable and manageable indicators of disease severity, and sustainable levels of demand on healthcare systems. The combination of widespread population immunity and vastly improved public health infrastructure allows India to respond to minor case variations with calm, measured strategies rather than emergency measures. This represents the hard-earned payoff from the nation's sustained efforts over the past several years to build scientific capacity, health system resilience, and community awareness.

(Dr K Madan Gopal, public health systems expert, is Advisor at the National Health Systems Resource Centre's Public Health Administration Division; Prof. Suneela Garg, senior public health expert, is former Chair of the National Institute of Health and Family Welfare's Program Committee.)

DECODING A DEBILITATING ILLNESS

Characterised by extreme exhaustion lasting at least six months, unrelieved by rest, and worsened by exertion, chronic fatigue syndrome disrupts daily life and poses unique diagnostic and treatment challenges.

BY PROFESSOR(DR) SUNEELA GARG/DR ARVIND GARG/ DR KINSHUK GUPTA



Chronic Fatigue Syndrome, also known as Myalgic Encephalomyelitis (ME/CFS), is a complex illness defined by a profound and debilitating weariness that significantly impairs an individual's ability to carry out daily activities such as working, attending school, or even performing basic tasks like showering. This fatigue must persist for at least six months to meet the diagnostic criteria for ME/CFS and is unrelenting in nature, meaning it is not alleviated by rest or sleep. Instead, it often worsens with physical or mental activity, a phenomenon known as post-exertional malaise (PEM). Beyond fatigue, ME/CFS presents a wide range of symptoms that further complicate the lives of those affected. Individuals often experience cognitive

difficulties, commonly referred to as "brain fog," which makes it challenging to focus, remember information, or make decisions. Sleep disturbances are prevalent, with many facing insomnia, excessive sleep, or a persistent feeling of being unrefreshed after rest. Additional symptoms include muscle and joint pain, headaches, sore throats, and tender lymph nodes, all of which contribute to the severe and persistent nature of the condition. The intensity of these symptoms often limits a person's ability to engage in everyday activities, making ME/CFS a profoundly life-altering illness that requires careful management and understanding.

Beyond fatigue, individuals face cognitive challenges like "brain fog," which impairs memory, focus, and decision-making. Sleep disturbances, muscle and joint pain, headaches, sore throats, and tender lymph nodes further complicate daily life, severely limiting the ability to perform tasks like showering or working.

CHALLENGES IN DIAGNOSIS AND EPIDEMIOLOGY IN THE INDIAN CONTEXT

Diagnosing ME/CFS is a complex process due to the absence of a specific test, requiring doctors to rule out other potential causes of fatigue through a thorough medical examination and a detailed health history. In India, this challenge is exacerbated by a lack of awareness, often leading to misdiagnosis. Fatigue is frequently attributed to nutritional deficiencies, such as anaemia, or other conditions, which delays the accurate identification of ME/CFS. The epidemiology of ME/CFS suggests a prevalence ranging from 0.007 per cent to 2.8 per cent in the general adult population globally, with women being more affected than men, particularly those aged between 40 and 70 years. In primary care settings, prevalence ranges from 0.006 per cent to 3.0 per cent, while a global estimate based on the 1994 diagnostic criteria from the Centers for Disease Control and Prevention (CDC) reports a prevalence of 0.89 per cent. Some studies suggest a higher prevalence among White non-Hispanic individuals compared to other ethnic groups, though research on racial and ethnic differences is ongoing. In the Indian context, specific large-scale data is limited, but a survey published in the British Medical Journal found that over 12 per cent of women aged 18 to 50 reported chronic fatigue, highlighting the disproportionate impact on women. Key risk factors in India include socioeconomic hardship, gender disadvantage, and poor mental health, with lower socioeconomic status and minority cultural or ethnic groups potentially showing higher prevalence rates. The cause of ME/CFS remains unknown, but several theories are under investigation, including immune system dysfunction, viral infections, genetic factors, and environmental toxins. There is also growing concern that Long COVID, a condition following COVID-19 infection, may increase the number of individuals meeting the diagnostic criteria for ME/CFS. In India, infections, stress, and environmental factors can also

trigger or contribute to the condition, further complicating diagnosis and treatment.

PUBLIC HEALTH IMPLICATIONS AND SOCIOECONOMIC BURDEN

ME/CFS carries significant public health implications due to its profound impact on individuals' health-related quality of life (HRQoL), disability, and economic costs. Compared to other chronic conditions like cancer or rheumatic arthritis, ME/CFS significantly lowers HRQoL, affecting daily activities, social interactions, and overall enjoyment of life. The severe symptoms, including fatigue, cognitive impairment, and PEM, often lead to substantial functional impairment, with some patients unable to work, attend school, or even leave their homes due to the severity of their condition. This functional limitation results in individuals and families facing direct healthcare costs, lost productivity, and disability-related expenses. Many individuals with ME/CFS struggle to maintain employment or complete educational programmes, further exacerbating financial strain. Social isolation is another significant consequence, as the reduced ability to participate in social activities leads to feelings of loneliness, a critical issue given that social connection is a basic human need. Additionally, ME/CFS patients often require increased healthcare utilisation, including frequent doctor visits, specialist consultations, and therapies, which drive up healthcare costs. The condition also contributes to mental health challenges such as depression and anxiety, compounded by the stigma and discrimination individuals may face due to a lack of understanding about the illness. This lack of awareness can lead to dismissive attitudes, further isolating those with ME/CFS and hindering their ability to seek support or

Globally, ME/CFS prevalence ranges from 0.007 per cent to 2.8 per cent, with women, particularly those aged 40 to 70, more affected. In India, a British Medical Journal survey revealed that over 12 per cent of women aged 18 to 50 report chronic fatigue, with socioeconomic hardship, gender disadvantage, and poor mental health as key risk factors.

treatment, ultimately worsening the overall burden of the disease on both individuals and society.

STRATEGIES FOR MANAGEMENT AND ADVOCACY

While there is no cure for ME/CFS, treatment focuses on managing symptoms and improving quality of life through a multidisciplinary approach tailored to the individual's needs. Medications such as antidepressants or pain relievers may be used to address specific symptoms like depression or chronic pain, while non-pharmacologic techniques, including deep breathing, muscle relaxation, massage, acupuncture, and cognitive behavioural therapy, can help manage stress and improve overall well-being. Lifestyle modifications are also crucial, such as establishing good sleep hygiene, practising activity pacing to avoid triggering PEM, and adopting a balanced diet to support overall health. Managing stress and seeking professional guidance are equally important for those living with ME/CFS, a condition that often persists lifelong, with full recovery—defined as a return to pre-illness functioning—being rare and estimated at less than 10 per cent. For some individuals, symptoms may improve over time, allowing them to do more, but this is typically a slow and gradual process. Addressing the broader public health implications requires increased awareness and education to reduce stigma, encourage early diagnosis, and improve understanding of ME/CFS among both healthcare providers and the public. Advocacy for policy changes is essential to ensure access to disability benefits, reasonable accommodations, and improved healthcare coverage for those affected. Developing support systems, such as peer support groups, counselling services, and vocational rehabilitation programmes, can enhance quality of life and enable greater societal participation. Continued research into the causes, diagnosis, and treatment of ME/CFS is vital, as is improved access to specialised healthcare services, including multidisciplinary teams of professionals in sleep, pain management, and mental health, to better manage this debilitating condition and support those living with it.

Bamboo is rewriting the rules of sustainable design, apart from providing the synergy of ecological and human health benefits, from air-purifying forests to disease-fighting compounds. It offers a blueprint for a civilisation that grows, heals, and endures without plundering the planet.

BY DR C S PANDAV/ HRUSHIKESH KEDARI

THE SELF-HEALING SUPERMATERIAL

In a world increasingly marred by environmental degradation, resource depletion, and unsustainable industrial practices, bamboo emerges not merely as an alternative material but as an emblem of nature's perfect design for a regenerative future. Bamboo's phenomenal mechanical properties, ecological significance, and wide-ranging applications—from architecture to nanotechnology—underscore its unique ability to catalyse a paradigm shift toward sustainability, social equity, and climate resilience. Beyond its environmental virtues, bamboo actively promotes human health: its natural antimicrobial properties make it ideal for medical applications like wound dressings and surgical tools, while its air-purifying capacity reduces indoor pollutants linked to respiratory diseases. This humble grass thus contributes to a healthier existence on Planet Earth through both ecological and physiological wisdom.

THE SILENT GIANT

Revered across ancient civilizations and now reawakened by modern science, bamboo has been aptly nicknamed "The Vegetable Steel"—a testament to its unyielding strength, flexibility, and utility. In an epoch where sustainability is no longer a choice but a necessity for survival, bamboo stands at the crossroads of tradition and innovation. Its shoots, rich in fibre and bioactive compounds, have nourished generations with anti-inflammatory and cardioprotective benefits, while its charcoal is used in water filtration to prevent diarrheal diseases. Bamboo offers a blueprint for a civilization that grows, heals, and endures without plundering the planet.

From the silent wisdom of ancient forests to the cutting-edge laboratories of tomorrow, bamboo embodies nature's timeless principle: strength without destruction, abundance without excess, and resilience without rigidity. It invites humanity to imagine a world where growth is regenerative, consumption is mindful, and progress is symbiotic with the Earth's rhythms.

Across Asia, Africa, and the Americas, bamboo has been a lifeline for communities—feeding, sheltering, clothing, and healing societies for over 5,000 years. Traditional medicine systems from Ayurveda to Chinese pharmacopeia harness bamboo sap ("bamboo manna") for its febrifuge and detoxifying properties. Today, as industries scramble for low-carbon, biodegradable, and rapidly renewable resources, bamboo's story is being rewritten on the grandest stage yet: the future of humanity itself.

THE MARVEL OF NATURE: CHARACTERISTICS AND MECHANICAL SUPREMACY

Bamboo's cellular structure is a masterpiece of evolutionary

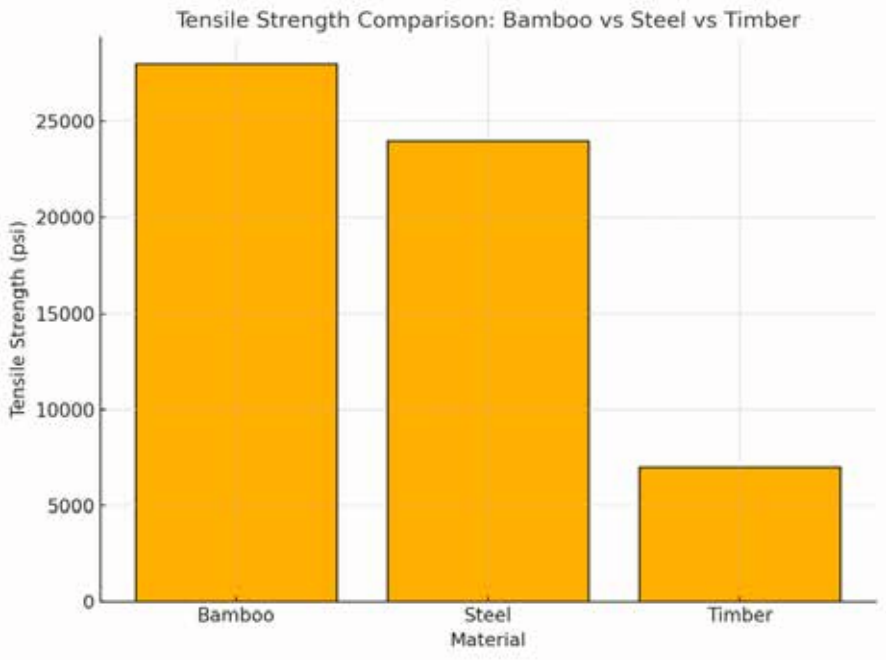
engineering. With a tensile strength of up to 28,000 psi (pounds per square inch)—surpassing even steel (24,000 psi)—bamboo demonstrates nature's unparalleled genius (Nan, 2016). Its strength-to-weight ratio rivals the finest carbon fibre composites, while its flexural strength enables it to bend gracefully under pressure, resisting fractures even during earthquakes and cyclones.

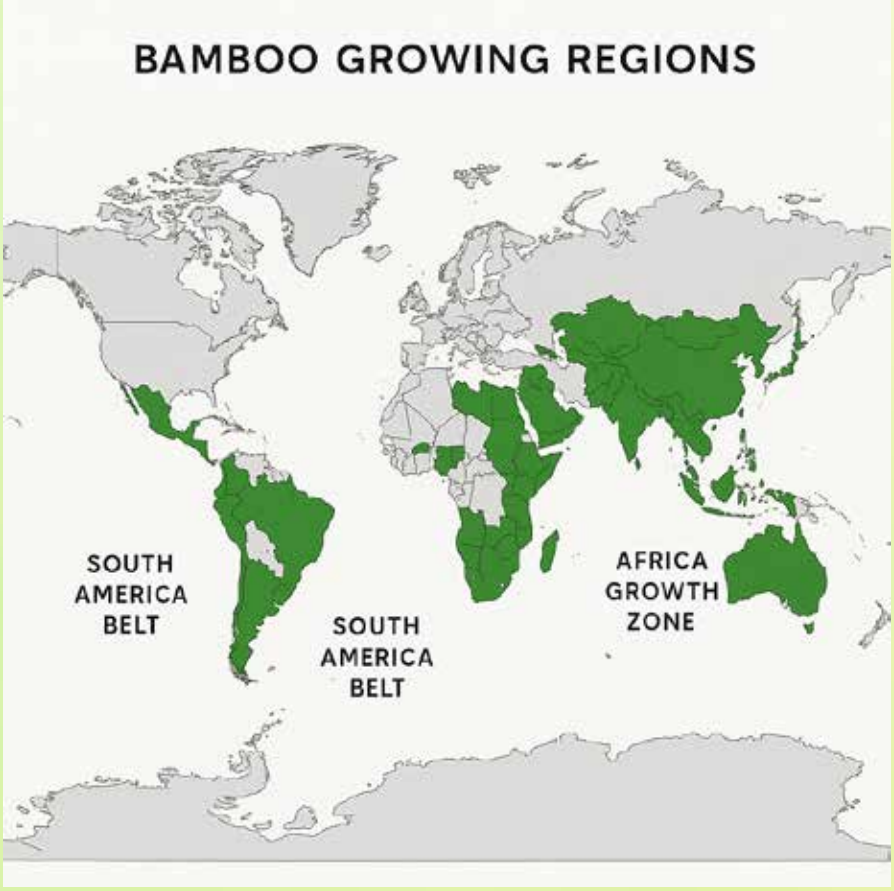
Microscopically, bamboo's vascular bundles are densely packed and longitudinally oriented, optimizing the material for axial loading—much like the rebar inside reinforced concrete. Furthermore, its natural lignin content acts as a biological epoxy, providing exceptional durability. Bamboo can also self-heal minor fractures through lignification over time, a property still unmatched by any synthetic material engineered by humanity. **This regenerative capacity mirrors the human body's own healing processes, inspiring biomedical research into self-repairing implants and scaffolds for bone regeneration.**

INTERESTING FACT:
Bamboo can withstand compression twice as well as concrete and tension rivalling steel, while regenerating itself in a fraction of the time.

BAMBOO AND THE PLANET: A PARTNERSHIP FORGED IN CARBON
Environmental scientists hail bamboo as Earth's ultimate carbon sink. One hectare of bamboo can absorb 12 tonnes of carbon dioxide per year—compared to 2-4 tonnes by equivalent hardwood forests (Lobovikov et al.,

"Tensile Strength Comparison: Bamboo vs Steel vs Timber"





2009). Moreover, bamboo releases 35 per cent more oxygen into the atmosphere than an equivalent mass of trees.

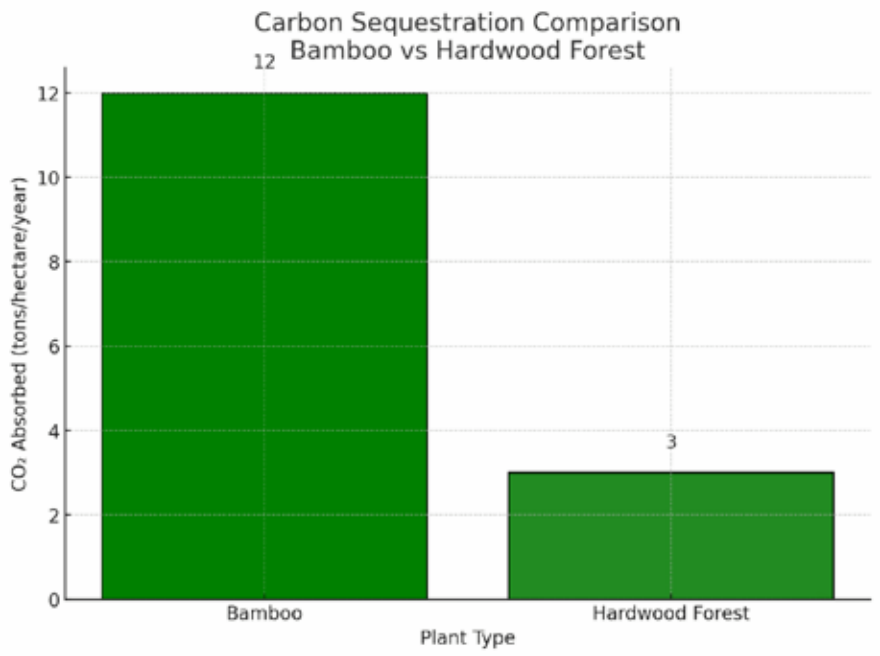
Bamboo's regenerative cycle is nothing short of miraculous:
• Maturity in 3–5 years (compared to 25–70 years for timber).
• Harvest without replanting: Its underground rhizome system ensures continual growth without soil erosion.
• Zero-waste resource: Every part of the plant—from shoots to roots—can be utilised, minimising ecological footprint.

Moreover, bamboo cultivation restores degraded lands, prevents desertification, and enhances biodiversity, aligning perfectly with the United Nations' Sustainable Development Goals (SDGs) 13, 15, and 17.

Carbon Sequestration Infographic: "Bamboo vs Hardwood Forest – CO Absorption per Hectare per Year

Transforming Industries: Bamboo's

While its structural and ecological value is well known, bamboo also has some health-related uses. Bamboo shoots, for example, are edible and used in various cuisines. They are low in fat, contain fibre, and are a source of essential nutrients. Rich in bioactive compounds, they have nourished generations with anti-inflammatory and cardioprotective benefits, while its charcoal is used in water filtration to prevent diarrheal diseases.



REVOLUTIONARY APPLICATIONS
1. Architecture and Construction: Green Cathedrals of the Future
From the ingenious bridges of Vietnam to the ethereal bamboo cathedrals in Bali, bamboo is redefining structural aesthetics and resilience.
• Modern engineered bamboo composites (like laminated bamboo panels and bamboo scrimper) outperform traditional hardwoods and steel reinforcements.
• The Green School Bali and Elora Hardy's Ibuku Designs are global showcases of bamboo's limitless architectural expression.
Bamboo's seismic resistance has led UNESCO to recommend bamboo architecture in earthquake-prone regions like Nepal and Haiti.

2. TEXTILES: WEAVING THE FUTURE
Bamboo's cellulose fibres create fabrics that are:
•Naturally antibacterial (eliminating 99.8 per cent bacteria).
•Moisture-wicking, thermo-regulating, and hypoallergenic.
•Biodegradable within 3-6 months after disposal.
The global bamboo textile market, valued at USD 1.7 billion in 2022, is projected to grow at a CAGR of 6.2 per cent till 2030 (Grand View Research, 2023).
Luxury brands like Stella McCartney and Patagonia are embracing bamboo fibres as their sustainable cornerstone.

3. TECHNOLOGY AND NANOMATERIALS: A NEW AGE OF GREEN INNOVATION

Recent breakthroughs in bamboo nanocellulose have led to the creation of:

- Flexible, biodegradable electronic circuits.
- High-strength bio-composites for automobiles and aerospace.
- Smart bamboo materials for renewable energy storage (supercapacitors and batteries).

China, Japan, and Germany are investing heavily in bamboo nano-research projected to be worth USD 800 million by 2028.

FUTURE HORIZONS: GENETIC MARVELS AND INDUSTRIAL BREAKTHROUGHS

Biotechnologists are unlocking bamboo's deeper secrets:

- Gene editing (CRISPR-Cas9) is enhancing traits like pest resistance, frost tolerance, and fibre density.
- Vertical farming models are being piloted to grow bamboo in urban environments.
- 3D-printed bamboo bioplastics could soon revolutionise furniture, packaging, and medical implants.

Emerging projects, such as the International Bamboo and Rattan Organization (INBAR)'s Bamboo for Climate Action program, envision bamboo forests becoming carbon credit powerhouses.

CHALLENGES AND THE ROAD AHEAD

Despite its prowess, bamboo's global ascendancy faces challenges:

- Lack of standardised industrial norms (ISO standards are evolving).
- Geographic and climatic constraints on commercial species.
- Misconceptions around durability without proper treatment.

Solutions are emerging through global bamboo certification frameworks, eco-labels, and greater R&D investment.

If nurtured wisely, bamboo could fuel a USD 80 billion global industry by 2035, lifting millions out of poverty while healing the planet.

TAKEAWAYS

Bamboo is not the 'Future'. Bamboo is the 'NOW'.

More than a material, bamboo is a philosophy—a way of harmonising human ambition with ecological stewardship. In its hollow strength, silent growth, and regenerative cycle, bamboo teaches us that the mightiest structures are those that bend, not break; that progress can be swift yet sustainable.

In a time, desperate for solutions, bamboo rises, not as a relic of the past, but as the architect of a living, healthier, greener civilisation. And perhaps, just perhaps, it holds the keys to humanity's most important blueprint: a thriving Earth for generations yet unborn.

(The authors are Padmashree and Former Professor & Head, Centre for Community Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi/ Adjunct Professor, Symbiosis Skills and Professional University, Pune)

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