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சென்ற இடத்தால் செலவிடா தீதொரீஇ
நன்றின்பால் உய்ப்ப தறிவு.

மனத்தை சென்ற இடத்தில் செல்லவிடாமல், தீமையானதிலிருந்து நீக்கிக் காத்து நன்மையானதில் செல்லவிடுவதே அறிவாகும்.

— மு. வரதராசன்

The rise and risks of health insurance in India

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A minimal definition of universal health care (UHC) is that quality health care should be guaranteed to "all members of the community irrespective of their ability to pay" – as the Bhore Committee report put it as early as 1946. Nearly eight decades later, India is nowhere near this basic goal of human development, even as many other countries, rich and poor, have achieved it in substantial measure.

An illusion is being created today that UHC can be achieved by expanding health insurance. In the last 10 years, State-sponsored health insurance schemes have grown by leaps and bounds. The Pradhan Mantri Jan Arogya Yojana (PMJAY), launched in 2018 under Ayushman Bharat, is one landmark in this regard. Alongside PMJAY, every major State has its own State Health Insurance Programme (SHIP). Most SHIPs are modelled on PMJAY, with a maximum cover of ₹5 lakh a household a year. All these insurance schemes are restricted to in-patient care, with patients making a choice from a list of empanelled hospitals, public and private (roughly half-half). In 2023-24, PMJAY covered 58.8 crore individuals with an annual budget of about ₹12,000 crore (assuming that States contributed 40% of the total, as prescribed). Taken together, SHIPs covered a similar number and had a combined budget of at least ₹16,000 crore. The grand total of ₹28,000 crore or so is still a relatively small portion of public expenditure on health, but it is growing fast. In Gujarat, Kerala and Maharashtra, States for which relevant data are available, we found that the SHIP budget had grown at 8% to 25% a year in real terms between 2018-19 and 2023-24.

The faultlines can deepen

There is no doubt that the PMJAY and SHIPs provide some relief to poor patients when public facilities are overcrowded or substandard, by giving them wider options at reduced cost. However, these schemes are no substitute for a sound UHC framework. And they have major defects, some of which could worsen the fault lines of India's health-care system.

First, health insurance promotes for-profit medicine. About two-thirds of the PMJAY budget is spent on private, mainly profit-oriented hospitals (corresponding figures for SHIPs are not available). A recent study of PMJAY in six major States found that the scheme made little difference to hospitalisation rates, but increased the utilisation of private hospitals. As is well understood in economics, the profit motive in health care is highly problematic. If profit-seeking private providers are allowed at all, they must be tightly regulated. India's health-care system, however, is dominated by poorly-regulated profit seekers. Health insurance reinforces this bias rather than correcting it.

Health insurance schemes are not a sound route to universal health care

Second, health insurance also tilts the health-care system towards hospitalisation, when investments in primary and outpatient care may be more urgent. Strengthening primary care would not only ensure accessible treatment but also reduce unnecessary hospital visits and their financial burden. The ongoing induction of all elderly citizens (aged 70 years and above) in PMJAY, along with the rapid ageing of the population, involves a risk that expensive tertiary care will absorb a growing share of public health expenditure, even as many basic health services continue to fall short.

Third, there appear to be serious utilisation problems. Official figures suggest that the combined coverage of PMJAY and SHIPs is as high as 80% of the population. However, many people do not seem to know about the scheme or how to use it even if they are nominally enrolled. As a recent analysis of the 2022-23 Household Consumption Expenditure Survey shows, only 35% of insured hospital patients in that year were able to use their insurance. Other studies also report serious utilisation hurdles, especially among disadvantaged groups. Perhaps this is one reason why there is no strong evidence linking PMJAY or SHIPs with a substantial reduction in out-of-pocket health expenditure.

Hospitals and discrimination

Fourth, targeted health insurance schemes create issues of discrimination between insured and uninsured patients. Private hospitals prefer an uninsured patient since commercial charges for health care are usually higher, often much higher than the insurance reimbursement rates. One plausible reason why insurance utilisation is so low is that private hospitals discourage it in one way or another. Public hospitals, for their part, prefer insured patients since they get some money for their treatment. This creates its own problems, such as discriminatory treatment and pressure to enrol for insurance on the spot.

Fifth, health-care providers have their own complaints about health insurance, including low reimbursement rates and long delays. The first complaint may or may not be fair (one would expect to hear it), but the second is hard to dismiss. Indeed, the National Health Authority (NHA) itself revealed a few months ago that pending dues under PMJAY alone added up to ₹12,161 crore, more than the scheme's entire annual budget. Many reports have emerged of private hospitals suspending services to patients under PMJAY or even withdrawing from the scheme, as bills remain unpaid for months. According to a recent statement of the Health Ministry, in the Lok Sabha, 609 hospitals have opted out of PMJAY since its inception.

Last but not the least, health insurance schemes are prone to corruption and abuse. The NHA recently recommended action against 3,200 hospitals for fraudulent activities under PMJAY. There are also regular media reports of irregularities from across the country. These include eligible patients being denied treatment, private providers charging insured patients, and unnecessary procedures being performed to milk the scheme. These irregularities defeat the purpose of health insurance by exposing patients to serious financial and health risks.

Tight monitoring and a battery of audits are supposed to prevent irregularities, but there is little evidence that these safeguards are effective. We were unable to find any trace of audit reports on the scheme portals. This is one symptom, among others, of a pervasive lack of transparency in health insurance.

The system is profit driven

In short, India's health insurance schemes are a very poor way of arranging health care, especially for people who find it difficult to navigate the system. They cannot make up for India's persistent failure to expand and improve public health facilities. No country has achieved UHC on this sort of foundation.

This is not to deny that social health insurance is a part of the UHC framework in some countries. Canada and Thailand are two examples. But PMJAY and SHIPs lack important features of social health insurance, such as universal coverage, and more importantly, a strong focus on non-profit health-care providers.

India's profit-driven health-care system reflects decades of severe under-investment in public health facilities – few countries beat India in this regard. According to the World Bank's latest World Development Indicators, public expenditure on health was still as low as 1.3% of GDP in India in 2022, compared with a world average of 6.1%. UHC cannot be achieved without a serious effort to address this deficit and transform health-care standards in the public sector. Some Indian States are moving in that direction, with encouraging results, but immense gaps remain. Health insurance is little more than a pain killer for a system that needs proper healing.

Context

- **Universal Health Care (UHC)**: The Bhore Committee (1946) envisioned health care as a *right for all, irrespective of ability to pay*. Eight decades later, India still lags behind many countries.
- **Rise of Health Insurance**: In the last decade, government-backed health insurance has expanded rapidly.
    - **PMJAY (2018, Ayushman Bharat)** → ₹5 lakh annual cover per family, covering ~58.8 crore people with ₹12,000 crore budget (2023-24).
    - **State Health Insurance Programmes (SHIPs)** → Similar coverage, adding another ~₹16,000 crore.
- **The Concern**: While schemes provide some relief, they do not substitute for a robust UHC system. Instead, they risk deepening fault lines by:
    - Promoting for-profit hospitals.
    - Skewing expenditure towards hospitalisation over primary care.
    - Leaving large sections unable to use their "coverage."
    - Creating discrimination between insured and uninsured patients.
    - Facing financial, administrative, and corruption challenges.

Mains Focus Points

Issues with Health Insurance-led Model

- **Profit-driven bias**: Majority of PMJAY funds go to private hospitals; public health is side-lined.
- **Hospitalisation-centric**: Focuses on inpatient care, neglecting **primary care & preventive services**.
- **Low utilisation**: Despite 80% coverage on paper, only ~35% of insured patients could actually use insurance.
- **Discrimination**:
    - Private hospitals discourage insured patients (since private charges > insurance reimbursements).

    - Public hospitals prefer insured patients (to earn revenue).
- **Financial bottlenecks**: ₹12,161 crore pending dues under PMJAY; 609 hospitals withdrew.
- **Fraud & corruption**: 3,200 hospitals flagged for irregularities; fake claims, denial of services, unnecessary procedures.
- **Lack of transparency**: Weak audits, missing public accountability.

Structural Challenges in India's Healthcare

- **Severe underinvestment**: India spends just **1.3% of GDP on health (2022)** vs world average of **6.1%** (World Bank).
- **Dominance of private sector**: Poor regulation, weak public infrastructure → dependence on profit-oriented providers.
- **Ageing population risk**: PMJAY induction of elderly may push expenditure towards costly tertiary care.

Way Forward

- **Strengthen public health infrastructure** → hospitals, PHCs, diagnostic facilities.
- **Shift focus to primary and preventive care** → reduces unnecessary hospitalisation.
- **Ensure equity & accessibility** → avoid discrimination between insured/uninsured patients.
- **Regulate private sector effectively** → standard treatment guidelines, fair pricing, timely reimbursements.
- **Improve scheme design** →
    - Awareness campaigns for utilisation.
    - Faster claim settlement & transparent audits.
    - Use technology for fraud detection.

- **Increase public expenditure** → gradually move towards **at least 3% of GDP on health**.
- **Learn from global models** → Canada (public-funded, universal coverage), Thailand (Universal Coverage Scheme).

Noise pollution is rising but policy is falling silent

Rohan Singh

is an independent journalist covering urban environmental governance and public health

Urban India must adopt a rights-based approach to fight growing noise pollution

Urban noise pollution has quietly emerged as one of the most neglected public health crises of our time. Across Indian cities, decibel levels routinely exceed permissible limits, especially near schools, hospitals and residential zones, eroding the constitutional promise of peace and dignity.

In 2011, the Central Pollution Control Board (CPCB) launched the National Ambient Noise Monitoring Network (NANMN), which was envisioned as a real-time data platform. A decade later, the network functions less as a tool for reform and more as a passive repository. Data are scattered across dashboards, but meaningful enforcement remains elusive.

The problem lies not only in flawed sensor placement (many are mounted 25 to 30 feet high, in violation of the CPCB's 2015 guidelines – but in a deeper absence of accountability. Whether biased or incomplete, the available data remains politically and administratively inert. Contrast this with Europe, where noise-induced illnesses and mortality statistics actively shape policy. The European Environment Agency recently pegged the annual economic cost of urban noise pollution at €100 billion, prompting redesigns in speed zones and zoning frameworks. India, by contrast, suffers from regulatory fragmentation and institutional silence. Right to Information queries go unanswered; State Pollution Control Boards operate in silos; and even in States such as Uttar Pradesh, first-quarter 2025 data remains unavailable to the public.

Apathy, neglect, serious questions

This is not merely environmental apathy. It borders on constitutional neglect. Article 21 guarantees the right to life with dignity, encompassing mental and environmental well-being. Article 48A mandates proactive environmental protection. When "silence zones" become epicentres of noise, it raises serious questions about state capacity and civic respect.

The Noise Pollution (Regulation and Control) Rules, 2000 offer a robust legal framework, but enforcement has remained largely symbolic. According to the World Health Organization, safe limits in silent zones are 50 dB(A) by day and 40 dB(A) by night. Yet, in cities such as Delhi and Bengaluru, readings near sensitive institutions often reach 65 dB(A)-70 dB(A).

Infrastructure expansion and logistics-driven traffic have exacerbated the crisis. Late-night drilling and crane operations continue despite regulatory restrictions. In 2024, the Supreme Court of India reaffirmed that environmental disruptions – including excessive noise – can infringe upon the fundamental right to life and dignity under Article 21. In Noise Pollution (V), In Re, the Court recognised that unchecked urban noise poses a serious threat to mental well-being and civic freedom (The case dates back to 2005, and was referenced and interpreted again by the Court in 2024, in the context of renewed concerns over urban noise and its impact on fundamental rights).

The ecological cost is no less troubling. A 2025 study by the University of Auckland found that urban noise and artificial light disrupted the sleep and song patterns of common mynas after just one night. The birds sang less and with reduced complexity, impairing their social signalling. This is not merely an avian concern, it signals a breakdown in ecological communication systems. When biodiversity loses its voice, it reflects a deeper erosion of urban environmental ethics.

Civic fatigue and the politics of silence

Urban noise is not just a technical issue, it is deeply political. The absence of sustained public outrage stems from a normalisation of sonic aggression. Honking, drilling and loudspeakers have become ambient irritants, tolerated rather than challenged. This civic fatigue is compounded by the invisibility of noise as a pollutant. Unlike smog or garbage, sound leaves no residue, no visible stain – only a frayed mind and a disturbed sleep cycle. The result is a quiet erosion of public health, especially among children, the elderly, and those with pre-existing conditions.

India's legal framework, while robust on paper, suffers from fragmented execution. The Noise Pollution Rules, 2000 are rarely updated to reflect urban realities. There is little coordination between municipal bodies, traffic police and pollution control boards. A national acoustic policy akin to the National Ambient Air Quality Standards is urgently needed. Such a framework must define permissible decibel levels across zones, mandate regular audits, and empower local grievance redress mechanisms. Without inter-agency synergy, enforcement will remain sporadic and symbolic.

Adopt a culture of 'sonic empathy'

Ultimately, the fight against urban noise is not just regulatory, it is cultural. Cities must cultivate a shared ethic of sonic empathy. Public campaigns should move beyond slogans to immersive education, in schools, driver training programmes and community spaces. Just as seatbelt usage became a norm through sustained messaging, honking reduction and noise sensitivity can be socially internalised. Silence is not the absence of sound, but the presence of care.

Where, then, must reform begin? First, decentralise NANMN – grant local bodies access to real-time noise data and the responsibility to act.

Second, link monitoring to enforcement – without penalties, zoning compliance or construction curbs, data remains performativity.

Third, institutionalise awareness – initiatives such as "No Honking Day" must evolve into sustained behavioural campaigns.

Fourth, embed acoustic resilience in urban planning – cities must be designed not just for speed and expansion, but for sonic civility.

Silence must not be imposed and must be enabled through design, governance and democratic will. Unless India adopts a rights-based lens to urban noise, its smart cities may remain unliveable at the level of sound.

Context of the Article

- **Urban Noise Pollution** → Emerging as one of the most neglected public health crises in Indian cities.
- **Current Situation**:
    - Decibel levels in Indian metros far exceed permissible limits, especially in **sensitive zones** (schools, hospitals, residential areas).
    - Despite laws like the **Noise Pollution (Regulation & Control) Rules, 2000**, enforcement remains weak.
    - Monitoring networks (NANMN) exist but function as passive data collectors, not reform tools.
- **Constitutional Angle**:
    - **Article 21** → Right to life includes mental peace & well-being.
    - **Article 48A** → Directive Principle on protecting the environment.
    - Courts (2005, reaffirmed 2024) have held that excessive noise = violation of fundamental rights.

Key Issues Highlighted

Data without accountability

- Sensors wrongly placed (25–30 ft high).
- Data exists but enforcement negligible.
- RTI queries unanswered; State boards work in silos.

Policy Gaps

- Noise Rules, 2000 → outdated, symbolic implementation.
- No **National Acoustic Policy** unlike air quality standards.
- Fragmented approach (traffic police, municipalities, pollution boards not coordinated).

Public Health Crisis

- WHO safe limits (50 dB day, 40 dB night) routinely breached.
- Noise linked to stress, sleep disturbance, cardiovascular risks.
- Children, elderly, vulnerable groups most affected.

Ecological Impact

- 2025 study → Mynas lose song complexity after just one night of noise/light exposure.
- Signals breakdown in **urban biodiversity communication systems**.

Civic & Cultural Factors

- Noise seen as "normal irritation," not a pollutant.
- Honking, loudspeakers, drilling → culturally tolerated.
- Lack of public outrage = "politics of silence."

Solutions Suggested in the Article

- **Decentralise monitoring** – local bodies should get real-time data + enforcement powers.
- **Link monitoring to enforcement** – penalties for construction noise, honking, zoning violations.
- **Sustained awareness** – No Honking campaigns, driver training, school education.
- **Urban planning with acoustic resilience** – design quieter neighbourhoods, regulate traffic flow, zoning reforms.
- **Sonic empathy as culture** – shift public behaviour (like seatbelt adoption).
- **Rights-based lens** – treating silence as part of dignity & constitutional rights.

Rethinking carbon pricing and taxes

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India's free trade agreement (FTA) with the U.K., heralded as the gold standard by the Minister for Commerce and Industry, Piyush Goyal, has a lot going for it. Yet, it does not address the one imminent policy instrument that is likely to significantly upend its possible benefits for India.

The U.K.'s Carbon Border Adjustment Mechanism (UK-CBAM), similar in principle to the European Union (EU)'s CBAM, will be implemented from January 2027. It covers both direct and indirect emissions for hard-to-abate sectors such as steel and aluminum, including the electricity used in their production. CBAM's scope will later be expanded to other products.

Mr. Goyal noted that India would retaliate against any harmful impacts of CBAM. However, any prospective action may not provide the desired relief for the imminent cost impact. This is an issue that needs to be addressed upfront in a bilateral agreement. For instance, in the recently announced U.S.-EU trade agreement, the EU has agreed to address U.S. concerns on CBAM and other rules relating to corporate sustainability, through flexibilities.

CBAM effect on India's exports

Before the FTA, the U.K.'s MFN rates for aluminium and iron and steel were in the range of 0-6%. Under the India-U.K. FTA, these duties will be reduced to zero for Indian exports. At first glance, this appears beneficial for India. But from January 2027, aluminium and steel imports will need to match the U.K.'s carbon price, which, as of now, is approximately \$66/tCO_2, translating to a cost increase of at least 20% to 40% for exporters.

The U.K.'s CBAM permits deductions for carbon pricing in exporting countries, including carbon taxes or prices paid under emissions trading schemes. While Indian industry pays levies such as coal cess, bears costs under the renewable purchase obligation, and now an explicit carbon price under the recently announced Carbon Credit Trading Scheme (CCTS), it is unclear whether the U.K. will allow deductions beyond the CCTS. Even with respect to the CCTS, a major challenge is the large gap between India's projected carbon price, estimated by the Bureau of Energy Efficiency at around \$8-10 per tonne of CO_2, and the U.K.'s carbon price, currently at \$66 per tonne.

As with the EU's CBAM, the U.K.'s approach is focused on levying a charge on exports into the U.K. to match the embedded carbon price paid by domestic producers. By levying the same price as paid by U.K. producers in specific sectors where the U.K. perceives a competitive disadvantage, the unilateral setting of carbon price upends multilateral commitments on emission reductions under the United Nations Framework Convention on Climate Change and the Paris Agreement.

There can never be a singular carbon price across economies as emissions vary across countries based on energy mix, industry structure, and technological availability and viability. A joint report by multilateral institutions in October 2024 urged greater coordination on carbon markets, warning that fragmented systems cause distortions, leakage, and undermine net-zero goals.

Fragmented markets will only raise compliance costs, disrupt supply chains, and hinder both growth and climate goals. A global carbon pricing agreement is essential to align methods for measuring emissions, streamline reporting requirements, and ensure support for green tech transfer. The International Monetary Fund in 2021 proposed an International Carbon Price Floor (ICPF) with tiered pricing: \$25 for low-income, \$50 for middle-income, and \$75 for high-income countries. Building on this, the World Economic Forum proposed a three-phased approach to facilitate a smooth transition to global carbon pricing, starting with minimum standards for pricing and reporting, and linking this to regional systems and harmonising monitoring and verification processes. It also proposed linking regional carbon markets (EU, China, India, other parts of Asia) to reduce fragmentation and move towards a unified global system.

It is important for the Indian government to assess whether this model would work and explore synergies with like-minded developing countries. In an era of rising tariff and non-tariff barriers, we cannot risk fragmented carbon pricing turning into massive compliance costs.

National action

Amidst rising protectionism global consensus is unlikely in the short term. Hence Indian industry must view clean technologies as tools for efficiency and competitiveness, and not just as export compliance. The government needs to act as an enabler by streamlining various implicit carbon taxes into a unified carbon market framework. Implementing stricter emission reduction targets under a single explicit carbon tax through the CCTS, instead of multiple taxes on carbon-intensive sectors, will improve carbon price discovery, simplify compliance and monitoring, and preserve our competitiveness. It would position India to build a stronger carbon pricing system, capable of joining a cohesive global carbon market in the future. Revenues from these carbon taxes should be ploughed back for industrial decarbonisation. The draft climate finance taxonomy developed by the Ministry of Finance, is another initiative that will enable investors to boost clean tech investment.

In a world where multilateral rules are being undermined, and bilateral free trade deals are failing to secure equity, proactive action between government and industry within the country is the only answer.

In an era of rising tariff and non-tariff barriers, we cannot risk fragmented carbon pricing turning into massive compliance costs

Context of the Article

- India signed an **FTA with the U.K.** with zero duties for aluminium and steel.
- But from **Jan 2027**, the **U.K.'s CBAM** will apply, requiring exporters to pay a carbon price equal to U.K. domestic producers.
- This negates much of the tariff benefit India hoped for under the FTA.
- Larger issue → **fragmented global carbon pricing systems** (EU, U.K., others) → trade distortions, compliance costs, supply chain disruptions.

Key Issues Highlighted

Carbon Price Gap

- U.K. carbon price: ~$66/$tCO_2$.
- India's projected carbon price (CCTS): ~$8–10/$tCO_2$.
- Huge gap → Indian exports face **20–40% cost escalation**.

Fragmented Carbon Markets

- EU, U.K., and other regions setting their own CBAMs.
- No uniformity → risk of **trade fragmentation** + **higher compliance costs**.

Conflict with Multilateral Climate Goals

- CBAMs impose **unilateral carbon tariffs**, undermining **UNFCCC & Paris Agreement principles** of *common but differentiated responsibilities*.

Indian Exporters at Risk

- Even if India's implicit carbon levies (coal cess, RPO, CCTS) are considered, deduction rules remain unclear.
- Could erode competitiveness of steel, aluminium, and other energy-intensive exports.

Global Debate on Carbon Pricing

- **IMF (2021)** → proposed an *International Carbon Price Floor (ICPF)* with tiered levels ($25 low-income, $50 middle-income, $75 high-income).
- **WEF Proposal** → phased approach:
    - Set minimum global standards for pricing & reporting.
    - Link regional systems (EU, China, India, etc.).
    - Move towards a unified global carbon market.
- **Multilateral Institutions (2024 report)** → warned that fragmented carbon pricing → leakage, distortions, undermines *net zero*.

National Action Needed for India

Unify Domestic Carbon Pricing

- Streamline coal cess, renewable obligations, sectoral taxes into a **single explicit carbon tax via CCTS**.
- Ensures **price discovery, easier compliance, monitoring**.

Strengthen Competitiveness

- View **clean tech adoption** as competitiveness tool, not just export compliance.
- Revenues from carbon taxes → reinvest in **industrial decarbonisation**.

Strategic Positioning

- Explore alliances with **developing countries** to push for fairer carbon market frameworks.
- Work towards integration into **future global carbon pricing systems**.

Finance & Investment

- Implement **Climate Finance Taxonomy** → enable clean-tech investment.
- Use carbon tax revenues to **fund R&D and industrial transition**.

What is CEREBO, the brain tool developed indigenously?

How are traumatic brain injuries caused? Why would the tool be particularly useful in rural areas?

Bindu Shajan Perappadan

The story so far:

CEREBO is a novel hand-held, portable non-invasive brain injury diagnostic tool, developed through a collaboration between the Indian Council of Medical Research (ICMR), the Medical Device & Diagnostics Mission Secretariat (MDMS), AIIMS Bhopal, NIMHANS Bengaluru, and Bioscan Research. The device is to be used for Traumatic Brain Injuries (TBIs) and can detect intracranial bleeding and edema within a minute. It is safe for infants and pregnant women, and can be used by paramedic staff as well as unskilled personnel.

Why is this device important?

Offered as an option in settings where advanced diagnostic tools like CT or MRI scans are inaccessible or delayed, CEREBO provides colour-coded, radiation-free, and cost-effective results. The device is designed for deployment in ambulances, trauma centres, rural clinics, and disaster response units and is aimed at enhancing early TBI detection and patient outcomes. According to the ICMR, CEREBO has undergone clinical validation, regulatory approvals, and feasibility studies, paving the way for global adoption in emergency and military healthcare systems.

ICMR added that multi-centre clinical performance evaluation and utility trials were conducted at leading trauma care and neurosurgical centres to generate prospective evidence on diagnostic accuracy, time-to-decision benefits, and integration feasibility within emergency care pathways. Post-market surveillance supported by ICMR-MDMS further confirmed its role in user adoption as a tool for effectively triaging patients for further neurological assessments. Health technology assessments also recommended the adoption of the device in tertiary care to accelerate CT scans, optimise triage, and reduce imaging costs.

What is TBI?

TBIs are a significant public health challenge, particularly in emergency settings, rural areas, and underserved populations. Traditional diagnostic methods, such as the Glasgow Coma Scale (GCS), are prone to errors and subjective interpretations, while imaging techniques require specialised infrastructure, trained personnel, and are cost-intensive. It is to address this issue that CEREBO has been developed using advanced near-infrared spectroscopy technology powered by machine learning.

TBI is a condition caused by a sudden trauma or injury to the head, which disrupts normal brain function. This injury can range from mild (concussion) to severe, often resulting in long-term physical, cognitive, emotional, and behavioural impairments. The severity of TBI depends on factors such as the force of impact, the location of the injury, and the individual's overall health. According to an article titled, 'Epidemiology of traumatic brain injuries: Indian scenario', TBIs are a leading cause of morbidity, mortality, disability and socio-economic losses in India and other developing countries. It is estimated that nearly 1.5 to 2 million persons are injured and one million succumb to death every year in India. Road traffic injuries are the leading cause (60%) of TBIs followed by falls (20%-25%) and violence (10%).

It is possible for a TBI to go undiagnosed initially, especially if symptoms are mild or if there are no visible signs of injury. A TBI can cause permanent brain damage in some cases, particularly if the injury is severe or if there are complications such as bleeding or swelling in the brain. Patients with mild TBIs (concussions) may only require monitoring and observation to ensure symptoms do not worsen. "Close monitoring of neurological status, vital signs, and cognitive function is important, especially in the first 24 to 48 hours after injury," it adds. Long-term consequences of TBI include cognitive impairments (such as memory problems), emotional and behavioural changes (such as depression, anxiety), physical disabilities, and increased risk of neurodegenerative diseases later in life, say experts.

THE GIST

- The device is to be used for Traumatic Brain Injuries (TBI) and can detect intracranial bleeding and edema within a minute.
- Offered as an option in settings where advanced diagnostic tools like CT or MRI scans are inaccessible or delayed, CEREBO provides colour-coded, radiation-free, and cost-effective results.
- It is possible for a TBI to go undiagnosed initially, especially if symptoms are mild or if there are no visible signs of injury.

Context

- **CEREBO** is a hand-held, portable, non-invasive brain injury diagnostic tool.
- Developed indigenously by **ICMR, AIIMS Bhopal, NIMHANS Bengaluru, and Bioscan Research**.
- Designed to detect **Traumatic Brain Injuries (TBIs)** like intracranial bleeding and edema *within a minute*.

What is CEREBO?

- Portable, radiation-free, and cost-effective device.
- Uses **near-infrared spectroscopy + machine learning**.
- Provides **colour-coded results**.
- Safe for infants and pregnant women.
- Can be used by **paramedics and even unskilled personnel**.
- Validated clinically and approved for deployment in:
    - **Ambulances, trauma centres, rural clinics, disaster zones, and military healthcare systems**.

Why is this device important?

- **Bridges diagnostic gaps** – in rural/remote areas where CT/MRI scans are inaccessible or delayed.
- **Speeds up triage** – allows quick decision-making to refer patients for advanced care.
- **Cost-effective** – reduces dependence on expensive imaging.
- **Public health impact** – enhances survival rates by enabling *early detection*.
- **Reduces burden on tertiary care** – by filtering unnecessary CT scans.

What is Traumatic Brain Injury (TBI)?

- **Definition**: Disruption of normal brain function due to sudden trauma.
- **Causes in India**:
    - Road traffic accidents → **~60%**
    - Falls → **20–25%**
    - Violence → **~10%**
- **Impact**:
    - 1.5–2 million injured annually.
    - ~1 million deaths per year in India.
    - Major cause of **morbidity, mortality, disability, and socio-economic loss**.

Challenges with Traditional Diagnosis

- **Glasgow Coma Scale (GCS)** – prone to subjectivity and errors.
- **CT/MRI scans** – require costly infrastructure, trained radiologists, and time.
- TBIs can remain **undiagnosed if symptoms are mild** → risk of long-term damage.

Why is CEREBO particularly useful in rural areas?

- **Lack of CT/MRI access** in most rural/remote hospitals.
- **Shortage of trained neurosurgeons/radiologists**.
- **Portable & user-friendly** → usable by paramedics/primary health staff.
- **Quick results** enable timely referral to higher centres, reducing fatalities.

Can an AI image-to-video feature put children at risk?

New Generative AI tools have made it easy to turn your photos into videos with just a tap of the finger, meaning it is easier for children's images to be morphed and misused

Sahana Venugopal

On June 22, Reddit co-founder Alexis Ohanian posted a childhood photo of his mother and himself. In the picture, both are wearing red sweaters while hugging each other against a mountain backdrop.

Alongside the image, Mr. Ohanian posted an AI-generated video that brought the picture to life: the mother and child cuddle each other as the wind ruffles their hair.

"Damn, I wasn't ready for how this would feel. We didn't have a camcorder, so there's no video of me with my mom," posted Ohanian on X (formerly Twitter). "I dropped one of my favourite photos of us in midjourney as 'starting frame for an AI video' and wow... This is how she hugged me. I've rewatched it 50 times."

The post quickly went viral, and garnered well over 20 million views. While many empathised with Mr. Ohanian's act of turning a cherished family photo into a video, he was also severely criticised. Many X users accused him of creating "false" memories, damaging his ability to grieve his mother in a healthy way, or seeking comfort in an interaction that he manufactured.

The capacity to turn images into videos is not limited to tools like Midjourney. In recent weeks, multi-billionaire Elon Musk announced 'Grok Imagine' for users to generate short videos from text/image prompts. Google, in July, rolled out 'Create' mode in its Photos app to transform photos into short videos for U.S.-based users. There are also other, smaller platforms that offer to turn users' photos into AI videos.

AI tools have been used for years to enhance old media through a process called AI upscaling: removing blurred parts, pixelation, and grain to deliver better output. While GenAI has made this process faster and easier, it also allows users to morph and manipulate images with advanced tools that can remove objects and fill in missing spaces.

The jump in technology comes with legal questions to consider, as permission is usually required before making any significant edits to a copyrighted creation. Furthermore, ethical conundrums also arise when a person manipulates a photo featuring someone who is no longer alive. Significantly, more users need to consider the impact on the photo's most vulnerable subjects – children.

GETTY IMAGES

Children's rights and safety at risk

For instance, cybercriminals can now rapidly create realistic AI videos of minors by using their publicly available photos with ease. In the past, criminals have targeted minors by generating synthetic nude photos of them to extort money. One such case in the U.S. led to a teenager dying by suicide. His family was not aware that the child was being harassed.

Data protection lawyer and AI specialist Kleanthi Sardeli, who works with the Vienna-based NGO noyb and advocates for consumers' digital rights, said that turning still images into video clips could be done for innocent reasons but that there are "serious implications" to consider as well.

"The lower the barriers to creating realistic content, the more we also need to think about ethics, consent and context. A photo can be turned into a convincing video without the knowledge or consent of the person depicted, increasing the risk of deepfakes, defamation and abuse," said Ms. Sardeli, adding that the risks multiplied when photos of children were involved.

She explained that under the EU's General Data Protection Regulation (GDPR) laws, children cannot legally consent to such use of their personal data, including their image, until they turn 16 years old.

Though experts and lawmakers have called on AI companies to enforce strong guardrails to prevent AI chatbots from generating highly pornographic media, the reality is that many chatbots easily churn out sexual content. What's more, AI firms and their bosses are aggressively promoting their service. For instance, one specific video Mr. Musk shared that promoted Grok Imagine's capability depicted a fantasy-style clip of a winged woman wearing very little clothing.

Across the internet, meanwhile, websites lure users with morphed porn videos, featuring celebrities, and invite users to digitally undress victims of their choice. "Beyond obvious dangers such as CSAM (Child Sexual Abuse Material), less malicious uses, such as animating a child's photo for advertising or entertainment purposes, can also jeopardise children's privacy, dignity and autonomy," said Ms. Sardeli.

Gatekeepers and guardrails

The Hindu reached out to both Google and xAI about the safeguards in place on these platforms to restrict users from turning photos of children into videos, and whether there are content filters to stop photos from being turned into pornographic content or child abuse material. A Google spokesperson said that the company took child safety online seriously and that the photo-to-video capability in Google Photos could be used with only two prompts: "Subtle movements" and "I'm feeling lucky".

Furthermore, these videos would include an invisible SynthID digital watermark, as well as a visual watermark, the company said.

"Our safety measures include extensive 'red teaming' to proactively identify and address potential issues, as well as thorough evaluations to understand how features can be used and prevent misuse. We also welcome user feedback on issues, which we use to make ongoing improvements to our safety measures and overall experience. We have clear policies and Terms of Service on what kinds of content we allow and don't allow, and build guardrails to prevent abuse," said the Google spokesperson.

"Google Photos is a place to store your memories and we want our users to be able to use its fun creative tools on photos of their friends and family, including their kids, while also prioritising safety," the company said.

xAI did not respond to a request for a statement.

In the U.S., the National Center for Missing and Exploited Children (NCMEC) has highlighted that it is "deeply concerned" about how Generative AI was being used to sexually exploit children.

"Over the past two years, NCMEC's CyberTipline has received more than 7,000 child sexual exploitation reports involving GAI [Gen AI], and the numbers are expected to grow as we continue to track these trends," stated the organisation on its website.

Meanwhile, Ms. Sardeli noted that existing laws in the EU provided some safeguards but were not specifically designed with AI content in mind. This means EU child protection laws clearly prohibit explicit material, but they are less clear when it comes to synthetic media that is not overtly illegal but is still exploitative or harmful, according to her.

In India, the Ministry of Electronics and Information Technology (MEITY) has issued advisories that require platforms to remove morphed content (including AI deepfakes), and especially if the content is graphic or sexually abusive. Furthermore, platforms such as Meta, Google, and X have appointed grievance officers in India to handle complaints raised by affected users.

"AI providers are beginning to build in safeguards, like detection systems and content filters, but these are uneven across platforms and not always effective. The law is lagging behind the technology. In particular, there is no comprehensive global framework that addresses the misuse of children's likenesses in GenAI," explained Ms. Sardeli.

"Stronger rules around consent, transparency, and accountability are needed, along with technical standards that make it harder to misuse children's photos."

Can an AI Image-to-Video Feature Put Children at Risk?

What is happening?

- New **generative AI tools** (like Midjourney, Grok Imagine by xAI, Google Photos' "Create" mode) can now turn a **still photo into a realistic video**.
- While this can be used for nostalgia and creativity (e.g., Alexis Ohanian animating a childhood photo of his mother), it also raises **ethical, legal, and safety concerns**.

Risks to Children

Exploitation & Deepfakes

- Cybercriminals can morph children's photos into **synthetic nude or pornographic videos**, often used for extortion.
- Example: In the U.S., such harassment led to a teenager's suicide.

Consent & Privacy

- Children cannot legally consent to such use of their data (under EU GDPR, until age 16).
- Even non-malicious uses (e.g., animating kids' photos for ads) risk violating their **dignity, autonomy, and privacy**.

Ease of Abuse

- Lower barriers (one click to create a video) make it **easier for predators** to misuse content.
- Platforms that also allow **AI-undressing** or morphing into sexual content multiply the risks.

Safeguards & Responses

- **Google**: Adds invisible/visible watermarks (SynthID), restricts AI movement prompts to “subtle movements” or “I’m feeling lucky,” conducts red teaming, and enforces ToS against abuse.
- **xAI (Musk’s Grok Imagine)**: No clear public response yet on safeguards.
- **NCMEC (U.S.)**: Reported 7,000+ child exploitation cases involving GenAI in 2 years — numbers expected to rise.
- **India (MeitY)**: Advisories issued to remove morphed/AI deepfake content, especially sexual abuse material; grievance officers appointed by Meta, Google, X.

Legal & Policy Gaps

- EU laws ban explicit child sexual material, but synthetic AI content that is not overtly pornographic **remains in a grey area**.
- No **global legal framework** yet for AI misuse of children’s likeness.
- Experts call for:
    - Stronger rules around **consent, transparency, and accountability**.
    - **Technical standards** to prevent child photo misuse.

Conclusion:

AI image-to-video tools can create touching, personal memories — but when children’s images are involved, they **pose serious risks of exploitation, privacy invasion, and abuse**. Current safeguards are inconsistent, and **laws lag behind technology**, making it crucial to build **stronger guardrails** and **legal protections**.

Larger Bench to rule if minority-run schools are exempted from RTE Act

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Monday referred to a larger Bench the question of whether minority educational institutions are entirely exempt from the purview of the Right to Education (RTE) Act, 2009.

A two-judge Bench of Justices Dipankar Datta and Manmohan made the reference in a judgment based on a batch of civil appeals questioning school education departments' insistence on faculty clearing the Teachers Eligibility Test (TET) in minority institutions.

The reference stems from apprehensions over a Constitution Bench verdict of 2014 in *Pramati Educational and Cultural Trust* case. In the case, a five-judge Bench was testing the constitutionality of Section 12(1)(c) of the Right to Education Act. The provision mandates educational institutions to provide 25% reservation for children from disadvantaged groups and weaker sections at the entry level in order to foster social inclusion in elementary education.

However, the 2014 judgment concluded that Section 12(1)(c) violated the minority character of these institutions and impacted their institutional autonomy. The Constitution Bench went on to take minority institutions entirely out of the ambit of the RTE law. Justice Datta, writing for the Bench, observed that the *Pramati Educational and Cultural Trust* judgment has "unknowingly jeopardised the very foundation of universal elementary education".

> Minority status seems to have become a vehicle for circumventing the mandate of the RTE Act and tool to achieve autonomous status
>
> **DIPANKAR DATTA**
> SUPREME COURT JUDGE

"Exemption of minority institutions from the RTE Act leads to fragmentation of the common schooling vision and weakening of the idea of inclusivity and universality envisioned by Article 21A. We are afraid, instead of uniting children across caste, class, creed, and community, it reinforces 'divides' and 'dilutes' the transformative potential of shared learning spaces," Justice Datta pointed out.

The judge wrote that the 2014 judgment has led to misuse. "Minority status seems to have become a vehicle for circumventing the mandate of the RTE Act. In our humble opinion, it has opened up a situation whereby multiple institutions have sought to acquire minority status to become autonomous," Justice Datta observed.

Larger Bench to Rule if Minority-Run Schools Are Exempted from RTE Act

Background

- The **Right to Education (RTE) Act, 2009** mandates free and compulsory elementary education and requires private schools to reserve **25% seats for children from disadvantaged groups** (Section 12(1)(c)).
- In **2014 (Pramati Educational and Cultural Trust case)**, a Constitution Bench ruled that applying RTE to minority institutions violated their autonomy. As a result, **minority schools were exempted from RTE provisions**.

Current Issue

- A two-judge Supreme Court Bench (Justices Dipankar Datta & Manmohan) has now questioned this broad exemption.
- The case arose from civil appeals challenging the requirement for teachers in minority schools to clear the **Teachers Eligibility Test (TET)**.

Court's Observations

- Justice Datta expressed concern that the **2014 ruling undermines universal elementary education** under **Article 21A** (right to free and compulsory education).
- Exempting minority schools:
    - **Fragments the common schooling vision**.
    - Weakens inclusivity and universality of education.
    - Risks reinforcing **social divides** instead of promoting integration.
- The exemption has been **misused**, with institutions seeking **minority status to escape RTE obligations**.

Next Step

- The matter has been **referred to a larger Bench** of the Supreme Court to decide whether:
    - Minority institutions should be **entirely exempt** from RTE.
    - Or whether a balance can be struck between **minority rights (Article 30)** and the **right to education (Article 21A)**.