

Mains Master

Shaping India's path to inclusive health care

Context

- **World Health Day** (April 7th) highlights a critical theme: health equity
- The WHO has declared health to be a fundamental human right.
- Despite this, disparities in access to healthcare are alarmingly high.

Background

- Even with over 140 nations upholding health as a right, millions lack access to basic health services.
- The COVID-19 pandemic, environmental challenges, and socioeconomic inequalities exacerbate the inequity.

What is Health Equity?

- Ensures everyone has the same chance to be as healthy as possible, regardless of background.
- Goes beyond medical care - social, economic, and environmental factors heavily influence health.

What is True Health Equity?

- It's not just equal healthcare access, but fixing the root causes of poor health: poverty, discrimination, lack of quality education, clean water, and housing.

- It eliminates the disadvantages faced by those born into less favorable circumstances.

Challenges Faced at a Global Level

- **Infectious Diseases:** Pandemics like COVID-19 hit the most vulnerable hardest.
- **Climate Change:** Adversely impacts the poor and marginalized.
- **Conflicts:** Destroy health infrastructure, displace people, and limit access to care.

Challenges India Faces in Ensuring Health Equity (with Data)

- **Rural-Urban Gap:**
 - **Infrastructure Disparity:** As of 2019, there are roughly three times more hospital beds per 1000 people in urban areas compared to rural India. (Source: Rural Health Statistics, Government of India: [invalid URL removed])
 - **Doctor Shortage:** Studies estimate that over 70% of doctors are concentrated in urban areas, despite only about 34% of India's population residing there.
 - **Out-of-Pocket Spending:** Rural residents spend a much higher percentage of income on healthcare than urban counterparts, often due to seeking private care as the only option. ([Source: National Sample Survey])
- **Slums:**
 - **Disease Burden:** Tuberculosis rates are approximately 1.5 times higher in slums than in non-slum urban areas. ([Source: Indian Council of Medical Research])
 - **Child Mortality:** Under-five mortality in slums can be double that of the overall urban rate. ([Source: UNICEF])
 - **Population Growth:** Slum populations are increasing rapidly, further straining limited health resources. India's urban slum population is estimated to reach close to 100 million by 2028. ([Source: ORF])
- **Caste and Gender:**
 - **Maternal Health:** Women from Scheduled Castes and Scheduled Tribes have lower rates of births assisted by skilled health professionals. This contributes to higher maternal and infant mortality rates. ([Source: National Family Health Survey - 5])
 - **Childhood Anemia:** 59% of women from the lowest wealth quintile suffer from anemia, compared to 30% in the highest quintile; their children are far more likely to be anemic as well ([Source: National Family Health Survey - 5])

- **Social Barriers:** Women in many communities face restrictions on deciding their own healthcare, delaying or entirely preventing necessary treatment.

- **Non-Communicable Diseases:**
 - **Access Inequality:** Advanced cancer diagnosis and treatment, kidney dialysis facilities, etc., are concentrated in major cities and private hospitals, financially inaccessible to the majority.

- **Rising Burden:** NCDs now account for over 60% of deaths in India. The economic impact is estimated to exceed \$6 trillion by 2030 if trends continue. ([Source: Public Health Foundation of India])

- **Lifestyle Factors:** Lack of access to fresh produce, safe exercise spaces, and education on NCD risks hit the poor especially hard, both in urban and rural settings.

- **Doctor Shortage:**
 - **WHO Benchmark:** India has around 0.8 doctors per 1000 people, below the WHO recommendation of at least 1 per 1000.

- **Rural Severity:** The shortage is especially acute in rural areas, where the doctor-population ratio can be significantly lower.
- **Impact on Quality:** Overworked doctors face burnout, potentially leading to poorer quality care and medical errors.

Efforts Taken So Far

- **Ayushman Bharat:** Provides health insurance to the economically disadvantaged.
- **National Health Mission (NHM):** Aims to bridge rural-urban care gaps, serves vulnerable populations.

What Needs To Be Done

- **Government Role:** Prioritize health funding, smart policies, and legislation for health equity.
- **Health Literacy:** Make communities part of the solution through education and awareness.
- **Partnerships:** Government, private healthcare, NGOs working together are vital.
- **International Support:** Collaborate for funding, best practices, and support for weaker healthcare systems.
- **Role of Innovation:** Use technology to increase healthcare reach and affordability.
- **Research:** Use evidence to shape better policies and target interventions.
- **Local Organizations:** Their insights and participation are fundamental to success.

Conclusion

India's health equity issues demand action on multiple fronts, going beyond simply building more hospitals. Addressing health determinants like poverty, education, and more, is how lasting change will come. It requires a joint effort from all stakeholders to create a future where health is truly accessible for all.

Implementing universal health coverage

Context

- Universal Health Coverage (UHC) is a critical goal. The Indian government has shown commitment, but implementation poses challenges.
- This article explores the path to UHC and how to overcome the barriers, especially for vulnerable populations.

Background

- **Global Push:** The UN General Assembly (2012) urged nations to accelerate progress towards UHC.
- **India's Response:** Expert groups proposed increased healthcare funding, and the National Health Policy (2017) aligned India's goals with the principles of UHC.

What is UHC as per WHO?

- UHC guarantees that everyone can access the health services they need, including prevention, treatment, and rehabilitation, without suffering financial hardship.
- It focuses on building robust, fair health systems anchored in communities and emphasizing primary healthcare.

Constitutional and Legal Roots of UHC in India

- **No Explicit Right:** India lacks a constitutional provision specifically on health. However, the Directive Principles of State Policy (Articles 39, 42, 47) lay a foundation, directing the state to protect workers' health, improve nutrition, and raise public health standards.
- **Role of Local Bodies:** Article 243G empowers panchayats and municipalities to play a role in public health.

What Hinders India in Ensuring UHC?

- **Migrant Populations:** Their significant numbers and mobility strain healthcare access and continuity of care.
- **Urban Slums:** Poor living conditions in densely populated slums exacerbate health problems, while access to primary care is limited.
- **Out-of-Pocket Costs:** Despite some programs, high direct healthcare expenses remain a huge barrier to care, especially for the poor.
- **Decentralized System:** Since health is a state subject, implementing a national UHC policy requires coordinated and consistent efforts.

Is UHC and Right to Health the Same?

- These concepts are closely related but distinct.
- UHC emphasizes the mechanics of providing access to a wide range of services without financial ruin for individuals.
 - **Right to Health:** Is a broader framework, arguing that health is a basic human right and governments are obligated to guarantee it.

India's Policy Alignment for UHC

- The two core UHC elements are echoed in India's policies:
 - **Primary Healthcare:** There is a focus on strengthening preventative, community-based primary care models.
 - **Reducing Financial Burden:** Programs like Ayushman Bharat aim to mitigate out-of-pocket costs.

Need of the Hour

- **Migrant Focus:** Rethink healthcare to account for mobility, ensuring portable access.
- **Streamlining Reimbursement:** Lessen the financial strain on the poor by simplifying aid programs.
- **Inclusive Systems:** Address language barriers and adapt systems to serve India's diverse population.
- **Urban Primary Care:** Invest heavily in community-level primary care with good referral to higher-level care when needed.

Conclusion

- UHC is possible but demands focused action. Political leadership is crucial. True success lies in a strong, consistent nationwide healthcare system that places equity at its heart.

Mains -Shorts

- **Core Issue:** India allows limited onion exports to the UAE despite a ban. However, these onions are sold well below the soaring global market price.

Implications:

- **Indian farmers:** Get very low returns for their onions.
- **UAE Importers:** Reap major profits due to the artificially low price.
- **Questionable Deal:** Raises concerns about how the export price is set and who benefits.
- **Lack of Clarity:** No official explanation from Indian government ministries on how this deal was structured.

Prelims Booster

What is the technology behind manufacturing a semiconductor chip?

💡 Semiconductor Chip Manufacturing:

A semiconductor chip is created by injecting dopants into a pure semiconductor to form intricate circuits, akin to creating art with stencils and paint, with the dopants acting as the 'paint.'

🔌 Role of Transistor:

Transistors, versatile devices acting as switches or amplifiers, are fundamental components in semiconductor chips, enabling logical and computational operations in circuits.

🏗️ Fabrication Technology Advancements:

Semiconductor technology has evolved rapidly, with advancements in miniaturization and transistor switching capabilities, denoted by labels like '45nm,' '28nm,' and '16nm,' reflecting the level of miniaturization achievable.

🔄 Wafer Manufacturing Process:

Semiconductor chips are printed on circular wafers, diced into individual chips, packaged, wired, and tested in assembly and test plants, with larger wafer sizes enhancing production efficiency.

🇮🇳 India's Semiconductor Ecosystem:

India's semiconductor industry, primarily focused on chip design, is expanding into manufacturing, leveraging existing design expertise and interdisciplinary opportunities for professionals to contribute to the sector's growth.

What would be the impact of the Baltimore bridge collapse

🏗️ Impact of Baltimore Bridge Collapse:

The collapse of the Francis Scott Key Bridge has halted maritime traffic at the Port of Baltimore, leading to an estimated daily cost of \$9 million and potential disruptions in supply chains, affecting workers, tax revenue, and rerouted goods.

🚢 Significance of Port of Baltimore:

As the ninth largest U.S. port by trade volume, the Port of Baltimore plays a crucial role in processing international trade traffic, particularly for products like automobiles, heavy machinery, coal, and sugar imports.

On April 8, 1911, superconductivity was discovered by Dutch physicist Heike Kamerlingh Onnes.

🔬 The Breakthrough:

Dutch physicist Onnes discovered superconductivity in 1911 by observing the complete disappearance of electrical resistance in mercury at extremely low temperatures, marking a revolutionary advancement in physics.

- Superconductors are a material whose properties are such that the material can conduct electricity without resistance. Superconductors also demonstrate one other common trait: they expel magnetic fields.

💡 Impact on Physics:

Superconductivity introduced a new realm in physics, challenging existing theories and prompting extensive research into the phenomenon's underlying mechanisms.

🏗️ Technological Advancements:

The discovery of superconductivity sparked visions of frictionless power transmission, powerful electromagnets, and levitating trains, driving the quest for higher-temperature superconductors to enable practical applications.

📅 Legacy and Progress:

Decades after Onnes' breakthrough, the BCS Theory explained conventional superconductors, and high-temperature superconductors were discovered in the 1980s, fueling ongoing research for room-temperature superconductors and pushing the boundaries of materials science and nanotechnology.

🌍 Real-World Applications:

Superconductors find applications in MRI machines, research magnets like particle accelerators, and experimental maglev trains, showcasing the tangible impact of Onnes' discovery on various technological advancements.

- In 1986, Georg Bednorz and Alex Muller found that lanthanum barium copper oxide became a superconductor at 35 K — a big jump from the 23 K record until then. In 1987, the American Physical Society invited the duo to present their findings at a meeting. This meeting has since been called the "Woodstock of physics" for the excitement it generated.

