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EXCESSIVE ANTIBIOTIC USE PREVALENT IN INDIA?

CONTEXT: NCDC study reveals alarming misuse of antibiotics in India, with over 50% of 10,000 surveyed hospital patients receiving antibiotics for prevention rather than treatment, raising concerns about antibiotic resistance.

BACKGROUND: A survey conducted across 20 tertiary care institutes in India between November 2021 and April 2022 revealed concerning trends in antibiotic prescriptions. Of the patients surveyed, 55% received antibiotics as preventive measures, while only 45% were prescribed antibiotics for actual infections. Moreover, a mere 6% received antibiotics based on specific bacterial identification, raising concerns about over-prescription amid India's significant burden of drug-resistant pathogens.

HIGHLIGHTS

What is antimicrobial resistance (AMR) and how did India reach this stage?

Antimicrobial resistance (AMR) is the ability of microorganisms to resist the effects of medication, rendering common treatments ineffective. In India, factors like overuse of antibiotics and inadequate healthcare infrastructure contributed to the rise of AMR.

- **Resistant Strains:** E. coli, Klebsiella, Acinetobacter, Staphylococcus aureus, enterococcus resist latest antibiotics, leading to severe health risks.
- **Causes:** Inappropriate antibiotic use, lack of rapid diagnostics, insufficient training, poor monitoring, and pharmaceutical industry incentives contribute to AMR.
- **Global Spread:** Inadequate sanitation and infection control in communities and healthcare institutions facilitate the global spread of drug-resistant superbugs.
- **Complex Challenge:** AMR is a socio-economic and political challenge, not solely scientific; requires comprehensive solutions beyond medical interventions.
- **Urgent Action:** Addressing AMR necessitates immediate reforms in prescribing practices, diagnostic capabilities, training, monitoring, and global cooperation.

In the light of the recent NCDC report, should there be standardisation for ensuring uniformity in prescribing antibiotics?

Dr. Sumit Ray emphasizes the need for training doctors in appropriate antibiotic use and acknowledges the challenge of accurately diagnosing bacterial infections based on clinical judgment. Dr. Abdul Ghafur acknowledges the prevalence of unnecessary antibiotic prescriptions, attributing it to overcrowded hospitals, limited access to rapid diagnostics, and the cost-effectiveness of antibiotics compared to extensive investigations. Both agree that addressing these root causes is crucial for change.

Following COVID-19 and now with the knowledge that humankind is vulnerable to the ever-present threat of an outbreak due to climate change, zoonotic spillovers, resistance creeping in from agriculture products and poultry, how important is the judicious use of antibiotics in the world and what is the immediate danger that we face?

- **Lethal Impact:** Intensivist notes high mortality due to AMR; 75% resistance in E. coli/Klebsiella to third/fourth-gen antibiotics.
- **Global Concerns:** Carbapenem resistance rising, influenced by industrial agriculture; prescription practices



hindering AMR control, emphasizing the urgent need for change.

- **Holistic Approach:** Cancer specialist underscores AMR's connection to governance, infrastructure, sanitation, poverty, and clean water; stresses broader solutions beyond antibiotic consumption.
- **Patient Safety:** Rationalizing antibiotics crucial for AMR and patient safety, but emphasis on sanitation, hygiene, and infection control is equally vital.
- **Lesson from COVID-19:** Basic steps like handwashing and mask-wearing, learned from the pandemic, offer insights into tackling AMR through fundamental measures.

What measures have been put in place by the Central government most recently to control AMR in India? And are they enough?

Dr. Abdul Ghafur, a member of the national advisory committee on antibiotics, highlights the inadequate implementation of antibiotic regulations in India despite policies dating back to 2011. He stresses the need for coordinated efforts between the Centre and States to address antimicrobial resistance (AMR).

Dr. Sumit Ray advocates restricting access to reserve antibiotics and emphasizes the link between high antibiotic usage and privatized healthcare, underscoring the importance of strengthening public health systems to combat AMR effectively.

SCIENCE AND TECHNOLOGY

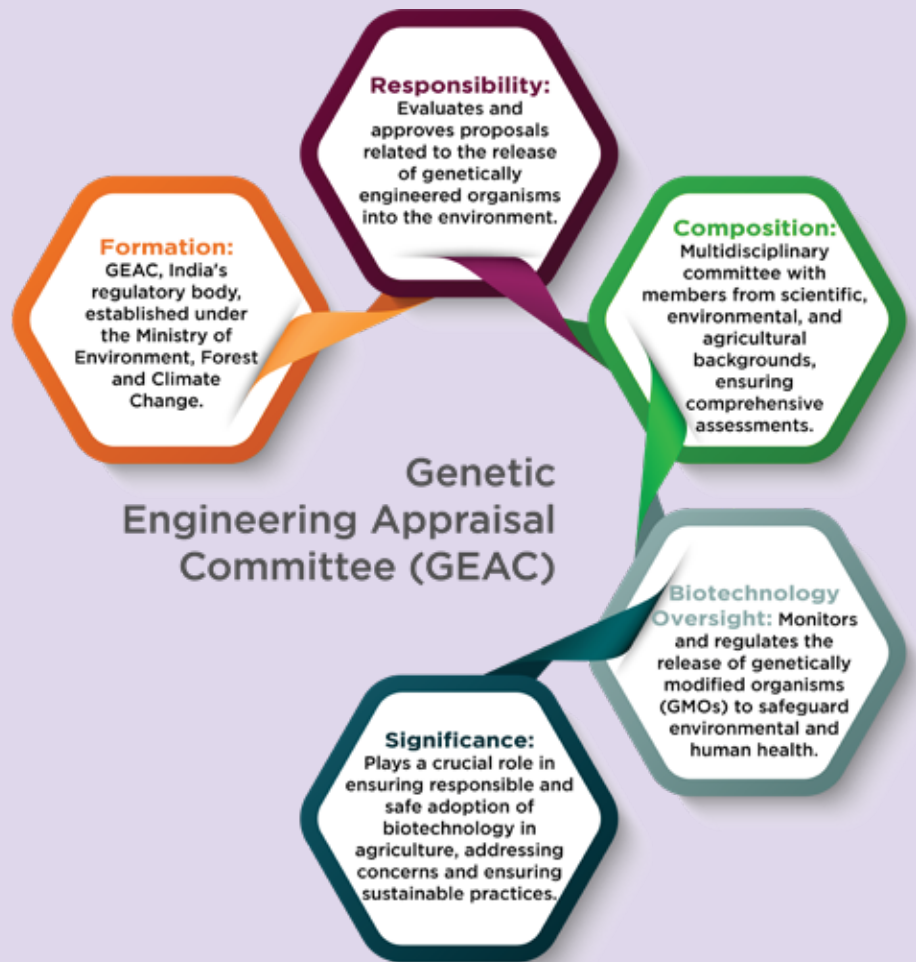
SC QUESTIONS CENTRE ON GM MUSTARD

CONTEXT: Supreme Court queries approval process for transgenic mustard DMH-11, questioning if GEAC considered biosafety reports from court-appointed Technical Experts Committee before environmental release.

BACKGROUND: The Supreme Court questioned the Indian government about whether the Genetic Engineering Appraisal Committee (GEAC) considered the reports of the court-appointed Technical Experts Committee (TEC) on the biosafety of transgenic mustard hybrid DMH-11 before approving its environmental release. The Attorney-General asserted that the GEAC, as a statutory body, had thoroughly examined scientific data before granting approval. The court expressed concern over dissenting notes in the reports potentially being ignored.

Transgenic Mustard DMH-11

- **Developer:** DMH-11, transgenic mustard, developed by the Centre for Genetic Manipulation of Crop Plants, University of Delhi.
- **Modification Type:** Genetically modified for hybrid vigor using a barnase-barstar genetic system to enhance yield.
- **Significance in India:** Aims to address edible oil demand, reduce import dependency, and improve farmer income.
- **Hybrid Vigor:** DMH-11 exhibits heterosis, enhancing yield potential by combining favorable traits from different parental lines.



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ECOLOGY

SURAT, INDORE CLEANEST CITIES; MAHARASHTRA TOPS STATE LIST

CONTEXT: Surat and Indore named India's cleanest cities in 2023 by Union Urban Affairs Ministry, with Navi Mumbai ranked as the next best.

Ranking cleanliness

The tables list the cleanest cities with more than 1 lakh population and the best-performing States, according to the Swachh Survekshan Awards. Indore bagged the tag of India's cleanest city for the seventh consecutive time

Cleanest cities with >1 lakh population		States ranking	
Rank	City	Rank	State
1	Indore	1	Maharashtra
1	Surat	2	M.P.
3	Navi Mumbai	3	Chhattisgarh
4	Greater Visakhapatnam	4	Odisha
5	Bhopal	5	Telangana



BACKGROUND: Indore has secured the title of the cleanest city for the seventh consecutive time in the Swachh Survekshan awards. The top 10 cleanest cities with populations over one lakh include Greater Visakhapatnam, Bhopal, Vijayawada, New Delhi, Tirupati, Greater Hyderabad, and Pune. Maharashtra, Madhya Pradesh, and Chhattisgarh lead the state rankings, while Odisha, Telangana, and Andhra Pradesh also feature prominently. President Droupadi Murmu presented the awards.

News Highlights

- **Cleanest Small Cities:** Sasvad, Lonavala (Maharashtra), and Patan (Chhattisgarh) top the list for cities with populations under one lakh.
- **Cantonment Excellence:** Mhow Cantonment Board in Madhya Pradesh recognized as the cleanest cantonment board.
- **Ganga Towns:** Varanasi and Prayagraj (Uttar Pradesh) awarded for cleanliness among Ganga towns.
- **Safety Recognition:** Chandigarh acknowledged as the safest city for sanitation workers; 20 zonal awards distributed.
- **Cleanliness Theme:** Survey theme for 2023 was "Waste to wealth"; 2024 focuses on "Reduce, reuse, and recycle" for sustainable practices.

Union Urban Affairs Minister Hardeep Singh Puri announced that all cities in India are now Open Defecation

Free (ODF), attributing the achievement to the success of the Swachh Bharat Mission turning into a people's movement. He highlighted significant progress in waste processing, aiming for 100% in the next two to three years. The Swachh Survekshan, starting with 73 cities in 2016, now covers 4,477 cities, with over 3,000 assessors and nearly 12 crore citizen responses in the latest evaluation.

ECONOMICS

DIRECT TAX KITTY CROSSES 80% OF 2023-24 TARGET

CONTEXT: India's net direct tax collections touched ₹14.7 lakh crore by January 10, meeting over four-fifths of this year's target and reflecting a growth of 19.4% over the same period of 2022-23.

The Central Board of Direct Taxes on Thursday said that provisional direct tax collections continue to register 'steady growth' with gross collections rising 16.77% to ₹17.18 lakh crore, led by a 26.11% rise in Personal Income Tax (PIT) inflows. Corporate Income Tax or CIT collections grew at a relatively muted pace of 8.32%.

"After adjustment of refunds, the net growth in CIT collections is 12.37% and that in PIT collections is 27.26% (PIT only)," the Board said in a statement. Net of refunds, PIT and Securities Transaction Tax receipts were up 27.22%.

What is Direct Tax ?

A direct tax is a tax that a person or organization pays directly to the entity that imposed it. Examples include income tax, real property tax, personal property tax, and taxes on assets, all of which are paid by an individual taxpayer directly to the government.

About CBDT

The Central Board of Direct Taxes (CBDT) is the authority vested with the responsibility of the administration of laws related to direct taxes through the Department of Income Tax. In India, necessary inputs for policy and planning are provided by the CBDT.

The CBDT is **headed by Chairman and also comprises of six members**, all of whom are **ex-officio Special Secretary to the Government of India**.

- Member (Income Tax)
 - Member (Legislation and Computerization)
 - Member (Revenue)
 - Member (Personnel & Vigilance)
 - Member (Investigation)
 - Member (Audit & Judicial)
- The **Chairman is the co-ordinating head**, and each of the **members has been assigned a specialized function**.
 - The Chairman and Members of CBDT are **selected from Indian Revenue Service (IRS)**.

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INTERNATIONAL RELATIONS

MALDIVES, CHINA COMMIT TO GREATER STRATEGIC COOPERATION, SIGN 20 MOUS

CONTEXT: Two governments agreed to cooperate — the two leaders presided over the signing of 20 MoUs — in several areas including blue economy, digital economy, infrastructure development projects linked to the Belt and Road Initiative [BRI], disaster and risk mitigation, and news cooperation, through an MoU between the Public Service Media of the Maldives and the Xinhua news agency of China.

Noting that the “strategic significance” of China-Maldives relations has become more prominent, the two countries committed to greater strategic cooperation this week, while China said it “firmly opposes” external interference in the internal affairs of the Maldives, according to a joint press communiqué.

“The two sides agree to elevate China-Maldives relations to a comprehensive strategic cooperative partnership, better leverage the political guidance of high-level engagement, expand practical cooperation between the two countries in various fields, strengthen collaboration on international and multilateral affairs, enhance the well-being of the two peoples, and work toward a China-Maldives community with a shared future,” said the communiqué, issued on January 11, on the penultimate day of Maldivian President Mohamed Muizzu’s five-day state visit to China.

About Belt Road Initiative (BRI)

The BRI, represents a **multifaceted development strategy** aimed at enhancing **global connectivity and cooperation**.

It was launched in 2013 and aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.

The project was first named the ‘**One Belt, One Road**’ but renamed as the BRI to convey a more open and inclusive initiative as opposed to a Chinese-dominated one.

The initiative includes two principal components: the **Silk Road Economic Belt and the Maritime Silk Road**.

The primary goal of the BRI is to **boost international connectivity** by enhancing infrastructure, trade, and economic cooperation.

The initiative encompasses a wide range of projects, including railways, ports, highways, and energy infrastructure.



ECONOMICS

‘BUDGET MAY SET FISCAL DEFICIT TARGET OF 5.3%’

CONTEXT: Rating firm ICRA said on Thursday it expects the government to set a fiscal deficit target of 5.3% of GDP in the upcoming Union Budget for next year, covering half the distance to its commitment to achieve a deficit of 4.5% of GDP for 2025-26.



While the deficit for this year is unlikely to overshoot the ₹17.9 lakh crore target, with the National Statistical Office estimating a lower nominal GDP growth of 8.9% compared with 10.5% estimated in the Budget, the fiscal deficit is expected to hit 6% of GDP for 2023-24, instead of the 5.9% target.

Factoring in the 3% of Gross State Domestic Product (GSDP) borrowing limit for States set by the 15th Finance Commission for 2024-25, ICRA expects the General Government deficit to dip to 8.3% of GDP next year from 9.2% of GDP expected this year. “This would be the lowest level of the General Government deficit since 2019-2020, when it was 7.2% of GDP,” it said in a report on expectations from the Interim Budget to be presented on February 1.

While ICRA believes the government will have fiscal room to raise its capex target by 10% over this year’s levels to around ₹10.2 lakh crore, it noted that a higher capex target would impinge on the Centre’s ability to bridge half the required fiscal consolidation next year and make meeting the 2025-26 target even more challenging.

About Budget

Budget is an estimate of income and expenditure for a future period of time. The estimated receipts and expenditure of the government of India in respect of each financial year is called the budget of Govt. Article 265 of the Constitution provides that no tax shall be levied or collected except by authority of law. And as per Article 266 no expenditure can be incurred except with the authorization of the legislature. Government takes the approval of the parliament for the taxes/receipts through the Finance Bill and the approval for the expenditures through the Appropriation Bill.

Budget is prepared by the Budget Division, Department of Economic Affairs, Ministry of Finance. The

Article 112 specifies that the President shall, in respect of every financial year, cause to be laid before both the houses of the parliament, the Annual Financial Statement (Budget) of estimated receipts and expenditures of the government in respect of every financial year from 1st April to 31st March.

What is Fiscal deficit ?

Fiscal deficit is the difference between the government's total expenditure (Revenue and Capital) and its total receipts (Revenue and Capital) except the borrowings.

Fiscal Deficit = Total Expenditure - Total Receipts except borrowing



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