Prelim Bits 22-06-2022 | UPSC Daily Current Affairs

Drug-resistant Typhoid

A recent genome sequencing study showed that the effectiveness of antibiotics for typhoid fever is threatened by the emergence of resistant strains of the bacteria Salmonella Typhi.

> Typhoid fever causes 11 million infections and more than 100,000 deaths per year. South Asia accounts for 70% of the global disease burden.

- Typhoid is a bacterial disease caused by the Salmonella Typhi.
- **MDR Typhoid** - Typhoid strains were classified as Multi-Drug-Resistant (MDR), when they are resistant to 3 first-line antibiotics used to treat typhoid - chloramphenicol, ampicillin, and cotrimoxazole.
- MDR S. Typhi first appeared in the 1970s and has since spread globally.
- Since 2000, MDR S. Typhi has declined steadily in Bangladesh and India, remained low in Nepal, and increased slightly in Pakistan.
- But, these are being replaced by strains resistant to other antibiotics.
- The recent genome analysis also reveals that resistant strains - almost all originating in South Asia - have spread to other countries 197 times since 1990.
- **XDR typhoid strains** are resistant to five classes of antibiotics -chloramphenicol, ampicillin, cotrimoxazole, streptomycin, fluoroquinolones, and third-generation cephalosporins.
- This leaves only one oral antibiotic remaining, azithromycin, that is effective in treating XDR typhoid patients.
- Strains resistant to the azithromycin have also been seen in India, Bangladesh, Nepal and Pakistan.
- Evidence suggests that **much of the drug-resistance in typhoid has evolved within India**, so we certainly need to be concerned about the appearance of drug resistance in the country.
- **Intravenous antibiotics** are required in advanced, severe cases.
- But they are more expensive and less readily accessible, placing greater costs and pressure on public health systems in low-income countries.
- **Vaccine** - India's Health Ministry is considering introducing new **typhoid conjugate vaccines** into the national immunisation program.
- Two WHO-prequalified vaccines have been developed in India (by Bharat Biotech and Biological E).
- However if transmission still prevails and resistance develops to commonly used antibiotics, then it is likely that there will be an upsurge in severe disease.

Reference

1. https://indianexpress.com/article/explained/study-emergence-drug-resistant-typhoid-strains-7983050/
2. https://www.coalitionagainsttyphoid.org/the-issues/drug-resistant-typhoid/

Isle of Wight

Palaeontologists have found the skeletal remains of the Europe's largest meat-eating dinosaur on Isle of Wight.

> This dinosaur belonged to the spinosaur group of dinosaurs. It is considered the longest-known dinosaur predator. It lived during the Cretaceous Period.

- Isle of Wight is a county and the largest and second-most populous island of England. It is part of the historic county of Hampshire.
- The island lies off the south coast of England in the **English Channel**.
- It is separated from the mainland by a deep strait known as **The Solent**.
- The administrative centre of the unitary authority of the Isle of Wight is **Newport**.
- The backbone of the island is formed by a **chalk ridge** that extends across the entire breadth of the island, from Culver Cliff in the east to the Needles in the west.
- It is designated a UNESCO Biosphere Reserve.

Reference

1. https://www.thehindu.com/sci-tech/science/europes-largest-meat-eating-dinosaur-found-on-isle-of-wight/article65513627.ece
2. https://www.britannica.com/place/Isle-of-Wight

Microplastics in Antarctic Snow

Scientists have found microplastics in freshly fallen snow in the Ross Island region of the Antarctica for the first time. The microplastics in ice have the potential to influence the climate by accelerating melting of ice.

- Previous studies have found that microplastics have
    1. Negative impacts on the health of the environment,
    2. Limiting growth, reproduction, and general biological functions in organisms, and
    3. Negative implications for humans.
- Finding microplastics in fresh Antarctic snow highlights the extent of plastic pollution into even the most remote regions of the world.
- The most common microplastics found was polyethylene terephthalate (PET), which is used to make soft drink bottles and clothes.
- The darker-colored microplastics may also help speed up melting because they can absorb more sunlight
- **Source** - Atmospheric modelling suggested microplastics may have travelled 6,000 km **through the air** to arrive in the Ross Island region.
- This long distance travel is possible due to process known as the plastic cycle - the cycle of movement of plastics across the globe.
- However, it is also likely that the presence of humans in Antarctica has established a **microplastic 'footprint'**.
- **Related Links** - Microplastics, Global Treaty on Plastic Pollution, Microplastics in the Atmosphere, Microplastic Pollution in Ganga, Microplastics In Human Blood

Microplastics have been found in other remote areas of the Earth, including the top of Mount Everest and deep in the Mariana Trench. Earlier in 2022, researchers found evidence of the microplastics in human blood.

Reference

1. https://www.thehindu.com/sci-tech/microplastics-found-in-fresh-antarctic-snow-for-first-time/article65517037.ece
2. https://www.smithsonianmag.com/smart-news/in-a-first-microplastics-are-found-in-fresh-antarctic-snow-180980264/#:~:text=Scientists%20have%20found%20microplastics%E2%80%94small,their%20findings%20in%20The%20Cryosphere.

Spur in Benchmark Stock Indices

The benchmark stock indices (S&P BSE Sensex and NSE Nifty-50 index) rose almost 2% spurred by sliding commodity prices and the absence of fresh selling triggers in the domestic and global economy.

- The Absence of fresh selling triggers and falling commodity prices relieved the heavily discounted equity market, to showcase recovery.
- The recovery indicates that the current uncertainties of inflation and monetary policy tightening have been factored in.

S&P BSE Sensex

- The term ‘Sensex’ is a portmanteau of the words ‘sensitive’ and ‘index’ coined by stock market analyst Deepak Mohoni.
- It is benchmark stock index of India’s Bombay Stock Exchange (BSE).
- It represents **30 of India's largest and most well-capitalized stocks** listed on the BSE.
- It was launched in 1986 and is operated by Standard & Poor's (S&P).
- The index is calculated in Indian rupees and U.S. dollars.
- It is float-adjusted and market capitalization-weighted. The Sensex is reviewed semi-annually each year in June and December.
- The Sensex has grown since India opened up its economy in 1991.

Nifty-50

- The Nifty 50 refers to the **50 most popular large-cap stocks** that traded at high valuations in the 1960s and 1970s.
- They included household names such as Xerox (XRX), IBM, Polaroid and Coca-Cola (KO).
- Due to their proven growth records and continual increases in dividends, the Nifty-50 were viewed as "one-decision" picks: investors were told to buy and never sell.

NSE Nifty-50 Index

- The NSE NIFTY 50 is a diversified **50 stock index** accounting for **13 sectors** of the economy.
- NIFTY 50 is owned and managed by NSE Indices Limited (formerly known as India Index Services & Products Limited).
- It is used for a variety of purposes such as benchmarking fund portfolios, index based derivatives and index funds.

- NIFTY 50 is ideal for **derivatives trading**.
- Since 2009, NIFTY 50 is computed based on free float methodology.

NIFTY Next 50 Index

- The NIFTY Next 50 Index represents 50 companies from NIFTY 100 after excluding the NIFTY 50 companies.
- This index represents about 10% of the free float market capitalization of the stocks listed on NSE.
- Since 2009, NIFTY Next 50 is computed based on free float methodology.

Reference

1. https://www.thehindu.com/todays-paper/tp-business/sensex-surges-almost-2-as-commodity-prices-ebb/article65551020.ece
2. https://www.investopedia.com/terms/s/sensex.asp
3. https://www.investopedia.com/ask/answers/08/nifty-fifty-50.asp
4. https://www1.nseindia.com/products/content/equities/indices/nifty_50.htm
5. https://www1.nseindia.com/products/content/equities/indices/nifty_next_50.htm

Registered-Unrecognised Political Parties

The Election Commission of India (ECI) has deleted 111 Registered Unrecognised Political Parties (RUPPs) from the register and their benefits under the Symbols Order (1968) were withdrawn.

- The ECI registers political parties for the purpose of elections and grants them recognition as national or state parties on the basis of their poll performance.
- The other parties are simply declared as Registered Unrecognised Political Parties (RUPPs).
- A Registered Unrecognised Political Party is
    1. Newly registered parties or
    2. The parties which have not secured enough percentage of votes in the assembly or general elections to become a state party, or
    3. The parties which have never contested elections since being registered.
- These parties don't enjoy all the benefits extended to the recognised parties of the ECI.
- **Star campaigners** - The RUPPs can have only 20 "star campaigners" during the time of elections.
- Travel expenses of these star campaigners are not included in the election expenditure of the candidates of their parties.
- **Symbol** - A registered-unrecognised party can select a symbol from a list of 'free symbols'.

  The ECI specifies certain symbols as 'reserved symbols' which are meant for the candidates set up by the recognised parties and others as 'free symbols' which are meant for other candidates.

Recognised Political Party

- A recognised political party shall either be a National party or a State party if it meets certain laid down conditions.
- To become a recognised political party, a party has to secure a minimum percentage of polled valid votes or certain number of seats in the state legislative assembly or the Lok Sabha during

the last election.

- The recognition granted by the Commission to the parties determines their right to certain privileges like
    1. Allocation of the party symbols,
    2. Provision of time for political broadcasts on the state-owned TV and radio stations and
    3. Access to electoral rolls.
- Further, the recognized parties need only one proposer for filing the nomination.
- **Star campaigners** - These parties are allowed to have 40 “star campaigners” during the time of elections.
- **Symbol** - A registered-unrecognised party can select a symbol from a list of ‘reserved symbols’.
- Every national party is allotted a symbol exclusively reserved for its use throughout the country.
- Similarly, every state party is allotted a symbol exclusively reserved for its use in the state or states in which it is so recognised.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1835789
2. https://indianexpress.com/article/india/poll-panel-to-delete-111-unrecognised-political-parties-for-flouting-norms-7980859/
3. https://economictimes.indiatimes.com/news/politics-and-nation/registered-unrecognised-political-parties-increased-two-fold-from-2010-to-2019-adr/articleshow/80707642.cms

