

### INDIA RETHINKING ITS ANAEMIA POLICY

#### Why in news?

- Questions related to anaemia are slated to be dropped from the National Family Health Survey (NFHS-6) scheduled to begin on July 6.
- The omission comes after health experts questioned the efficacy of the method being used to estimate haemoglobin levels.

#### National Family Health Survey (NFHS):

- The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India.
- The first National Family Health Survey (NFHS-1) was conducted in 1992-93. Subsequent NFHS' were conducted as below –
  - NFHS-2 was conducted in 1998-99
  - NFHS-3 was conducted in 2005-06
  - NFHS-4 was conducted in 2015-16
  - NFHS-5 was conducted in 2019-21
- The main objective of the NFHS has been to provide reliable and comparable data relating to health and family welfare and other emerging areas in India.
- All the rounds of NFHS have been conducted by the International Institute for Population Sciences (IIPS), Mumbai, as the national nodal agency.
- **Nodal Ministry:** Ministry of Health & Family Welfare

#### News Summary

##### Anaemia

- **About**
  - According to the World Health Organization (WHO), anaemia is a condition in which the number of red blood cells or the haemoglobin concentration within them is lower than normal.
  - Haemoglobin is needed to carry oxygen.
  - If there are too few red blood cells, or not enough haemoglobin, there will be a decreased capacity of the blood to carry oxygen to the body's tissues.

- This results in symptoms such as fatigue, weakness, dizziness and shortness of breath among others.
- **Factors**
- The most common nutritional cause of anaemia is iron deficiency although deficiencies in folate, vitamins B12 and A are also important causes.
- Certain chronic diseases, such as kidney disease, liver disease, cancer, or autoimmune disorders, can interfere with the production of red blood cells.
- Inherited conditions, such as sickle cell anemia or thalassemia, affect the structure or function of red blood cells, leading to chronic anemia.

### **India's anaemia burden**

- India's anaemia burden has grown alarmingly with NFHS-5 (2019-21) finding that:
  - 57% of women in the age group 15-49 and
  - 67% children between six months and 59 months are anaemic (from the corresponding 53% and 58.6% respectively in NFHS-4 (2015-16)).
- The Health Ministry has noted that **anaemia is a public health challenge**.

### **Why the focus is on anaemia?**

- Data on anaemia remains an important indicator of public health due to following reasons:
  - **Impact on morbidity and mortality**
    - Anaemia is related to morbidity and mortality in the population groups usually considered to be the most vulnerable — pregnant women and children under five.
  - **Effect on reproductive health**
    - A prevalence study on anaemia is useful to monitor the progress of reproductive health.
  - **Impact on economy**
    - Also, iron-deficiency anaemia reduces the work capacity of individuals and entire populations, with serious consequences for the economy and national development.

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## **ODISHA TRAIN ACCIDENT**

### **Why in news?**

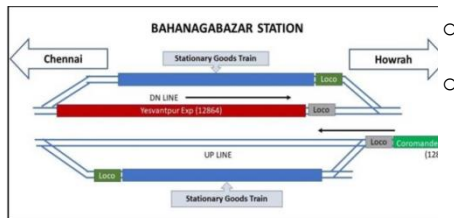
- At least 288 people were feared dead and several injured in a major rail accident in Balasore district of Odisha.
- The accident involved two express trains — Yashwantpur-Howrah Express and Shalimar-Chennai Coromandel Express — and a goods train.
- As per a statement of the Railways, Odisha route did not have Kavach safety system – an Indian technology that could have prevented the collision.

## Odisha train accident

- **Where and when did the accident happen?**

- The spot of the crash is a little before Bahanaga Bazar station in Odisha's Balasore district, which is part of the Kharagpur railway division of South Eastern Railway.
- Three trains were involved — two passenger trains going in opposite directions, and a goods train that was stationary.

- **How are the tracks laid out at Bahanaga Bazar?**



- There is the Up Main Line (towards Chennai), the Down Main line (towards Howrah), and two loop lines on the two sides.
- The purpose of a loop is to park a train on the side so that the main line is left clear for a faster or more important train.
- As the Coromandel approached, the loop line was occupied by a goods train going in the same (Up) direction.
  - The Coromandel was supposed to go past it on the main line.
- **What went wrong?**
  - As per the official brief, Coromandel express, instead of going past the goods train on the main line, entered the loop and smashed into the goods train from the rear.
- **How could that happen?**
  - Locomotive drivers are guided by signals, not so much by what they see on the tracks, especially in the dark.

- While details will be known after the inquiry, the Railways are looking at the possibility of a signalling error.
- A multi-disciplinary joint inspection by supervisors has concluded that a green signal was given to the Coromandel to pass through on the designated main line, and then the signal was taken off.
- The train entered the loop line, and rammed into the goods train.
- **Where does the third train come into the picture?**
- At the same time as the Coromandel hit the goods train, a third train, Bengaluru-Howrah Express, was going past on the adjacent Down main line, headed towards Howrah.
- Most of this train had already crossed the point of the accident when the Coromandel crashed into the goods train.
- However, the last few coaches were impacted.
- These derailed — either because they were hit by coaches of the Coromandel that toppled on to them, or because of the shock waves that could have passed through the ground and the tracks.

## LI-ION BATTERY RECYCLING TECHNOLOGY

Recently, the Ministry of Electronics and Information Technology (MeitY) transferred cost-effective Lithium-ion battery recycling technology to nine recycling industries and start-ups.



### About Li-ion battery recycling technology :

- It is the **indigenously developed technology** that could process assorted types of discarded Li-ion batteries.
- It has the capacity of recovering more than 95 per cent Lithium (Li), Cobalt (Co), Manganese (Mn) and Nickel (Ni) contents in the form of their corresponding oxides/carbonates of about 98 per cent purity.
- The recycling **process involves leaching** followed by hierarchical selective extraction of metal values through the solvent extraction process.
- These secondary raw materials could be used for battery manufacturing or in other potential applications.

- This technology has been developed under the Centre of Excellence on E-waste Management.

## Key facts about Lithium

- It is a soft, **silvery-white metal** that heads group 1, the alkali metals group, of the periodic table of the elements.
  - It has the **lowest density** of all metals and the **lightest of the solid elements**.
  - It **reacts vigorously with water**.
  - It does not occur as a metal in nature but is found combined in small amounts in igneous rocks.
  - **Major Reserves:** Lithium reserves are concentrated in the **lithium triangle** in South America – **Argentina, Bolivia & Chile**, with 50% of the deposits concentrated in these regions.
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## WHAT ARE SEAWEEDS?

Clusters of brown Sargassum seaweed reported to be infested by flesh-eating bacteria were recently found awash in Florida.



### About Seaweeds:

- "Seaweed" is the **common name for countless species of marine plants and algae that grow in the ocean as well as in rivers, lakes, and other water bodies.**
  - They **range in colours from red, green, brown and black** and also **vary in size**, from microscopic to large underwater forests.
  - Seaweeds are **generally anchored to the sea bottom or other solid structures by rootlike "holdfasts,"** which perform the sole function of attachment and do not extract nutrients as do the roots of higher plants.
  - Seaweeds **often form dense growths on rocky shores or accumulations in shallow water.**
  - **Many show a well-established zonation along the margins of the seas,** where the depth of the water is 50 metres (about 165 feet) or less.
  - **Uses:**
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- A number of seaweed species are edible, and many are also of commercial importance to humans.
- Some are used as fertilizers or as sources of polysaccharides.
- The high amount of antioxidants present in seaweed protects the body from damages caused by free radicals and protect cells from their impact.
- Animal studies have found that substances found in seaweed help increase the production of a protein that metabolises fat effectively.
- Research suggests that consuming seaweed can help in managing diabetes by balancing the sugar levels in the blood.
- Many seaweeds contain anti-inflammatory and anti-microbial agents.
- They are effective binding agents (emulsifiers) in such commercial goods as toothpaste and fruit jelly, and popular softeners (emollients) in organic cosmetics and skin-care products.

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## WHAT IS KAVACH SYSTEM?

The railways recently confirmed that there was no ‘Kavach’ system installed on the trains involved in the accident in Odisha's Balasore district.



### About Kavach System:

- It is an indigenously developed Automatic Train Protection (ATP) system.
- Kavach was developed by the Research Design and Standards Organisation (RDSO) under Indian Railway (IR) in collaboration with Medha Servo Drives Pvt Ltd, HBL Power Systems Ltd and Kernex Microsystems.
- It is a set of electronic devices and Radio Frequency Identification devices installed in locomotives, in the signalling system as well the tracks, that talk to each other using ultra-high radio frequencies to control the brakes of trains and also alert drivers, all based on the logic programmed into them.
- Since 2016, the railways have been carrying out field tests for Kavach on passenger trains.
- Applications:



- It has been designed to **assist locomotive pilots in avoiding Signal Passing At Danger (SPAD) and overspeeding.**
  - The system can **alert the loco pilot, take control of the brakes and bring the train to a halt automatically when it notices another train on the same line** within a prescribed distance.
  - The device **also continuously relays the signals ahead to the locomotive, making it useful for loco pilots in low visibility.**
  - It also **controls the speed of the train by an automatic application of brakes in case the loco pilot fails to do so.**
  - It **helps the loco pilot in running the train during inclement weather conditions such as dense fog.**
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## MYRISTICA SWAMPS

Naturalists opined that **Climate change and human intervention threaten the Myristica swamps of Kerala**



### About Myristica swamps:

- These are freshwater swamps predominated by members of the **Myristicaceae family.**
  - These forests are characterized by **trees with large protruding roots jutting** out of waterlogged soil which remains inundated throughout the year.
  - They have evolved over millions of years and are comprised of old-growth trees.
  - **Geographical distribution:** In India, these unique habitats occur in **the Western Ghats** and a smaller distribution exists in the **Andaman and Nicobar Islands.**
  - **Climatic conditions:** The formation of these swamps is dependent on abiotic conditions like the shape of the valley between the forested hills, the amount of rainfall a place receives (with an average of 3000 mm), and water availability throughout the year.
  - Typically, Myristica swamps are seen next to rivers and help in retaining water and act as a sponge, ensuring perennial water availability.
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- These swamps are **home to many vertebrate and invertebrate faunal species**. This is due to stable macroecological conditions like high humidity, moderate temperature, and macrohabitat availability.
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## PETROLEUM COKE (PET COKE)

Recently, the Union government of India permitted the import of pet coke for making graphite anode material for lithium-ion batteries.



### About Petroleum Coke:

- It is a final **carbon-rich solid material** and residual waste material **extracted from oil refining**.
  - It is a spongy, solid residue from oil distillation that can be burned for fuel similar to coal.
  - It is a **byproduct created when bitumen** is found in tar sands.
  - Bitumen contains a higher number of carbon atoms than regular oil and it's these atoms, extracted from large hydrocarbon molecules using heat, that go on to form petcoke.
  - It is **high in calorific value** and easy to transport and store.
  - It releases toxic gases like **carbon dioxide, nitrous oxide, mercury, arsenic, chromium**, nickel, and hydrogen chloride after burning.
  - There are two distinctive grades of Petroleum Coke viz. **Calcifiable or Green Petcoke and Fuel Grade Petcoke**.
  - **Application:**
    - It is widely used by **power stations** and several manufacturing industries including **cement, steel and textile plants** in India.
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