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News Analysis (16 Apr, 2019)

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Global Measles Cases up by 300%: WHO

Recently, the **World Health Organization (WHO)** has released **new measles surveillance data for 2019**.

- According to WHO, **measles cases rose 300% worldwide** through the first three months of 2019 compared to the same period in 2018.
- WHO has found that the current outbreak is mostly among children **in both developing as well as developed countries**.

Reasons for the Rise in Measles Cases

- **Anti-Vaccination Movement**
 - The major reason for rising in measles cases in developed countries is the **anti-vaccine movement seen recently in many parts of Europe and the United States**.
 - Such movements are driven by **fraudulent claims linking the vaccine against measles to risk of autism in children**.
 - However, repeated studies have shown that there is **no such link**.
- **Poverty**
 - In poorer countries, fewer people are vaccinated and a **larger portion of the population is left vulnerable to the virus**.
 - This creates the environment for a large outbreak to occur - such as those in the Democratic Republic of the Congo, Kyrgyzstan, and Madagascar.

Vaccine Hesitancy

- Vaccine hesitancy refers to **delay in acceptance or refusal of vaccines despite the availability** of vaccination services.
- In 2019, WHO has added Vaccine hesitation to the list of ten threats to global health in 2019.

- **Reasons for Vaccine Hesitancy**
 - **Compulsory nature** of vaccines is seen as forcing by state
 - **Temporal adverse health** outcomes due to vaccination,
 - **Unfamiliarity** with vaccine-preventable diseases,
 - **Lack of trust** in corporations and public health agencies.
- **Steps to Address Vaccine Hesitancy**
 - **Detecting** and **addressing** vaccine-hesitant subgroups
 - **Educating** all **health care providers** involved with immunization on best practices
 - **Educating children, youth** and **adults** on the importance of immunization for health

Measles

- Measles virus is an enveloped, ribonucleic acid virus of the genus Morbillivirus.
- Measles is highly contagious, and an infected person will often transmit the virus to over 90% of unprotected close contacts.
- The virus infects the **respiratory tract, then spreads throughout the body**. Measles is **a human disease** and is **not known to occur in animals**.
- Measles **can be entirely prevented through a two-dose vaccine** and had been officially eliminated in many countries with advanced healthcare systems.
- **Treatment**
 - **No specific antiviral treatment** exists for measles virus.
 - Severe complications from measles can be avoided through medical care that ensures good nutrition, adequate fluid intake, and treatment of dehydration.
- **Prevention**

Routine measles vaccination for children, combined with **mass immunization campaigns** in countries with high case and death rates, are key public health strategies to reduce global measles deaths.

The Measles & Rubella Initiative

- Launched in 2001, the Measles & Rubella Initiative (M&R Initiative) is a global partnership led by the American Red Cross, United Nations Foundation, Centers for Disease Control and Prevention (CDC), UNICEF and WHO.
- The Initiative is committed to ensuring that no child dies from measles or is born with congenital rubella syndrome. We help countries to plan, fund and measure efforts to stop measles and rubella for good

India and Measles

- **Incidence**

- India has one of the **highest incidences of Measles in the world.**
- According to WHO Data, in 2018, **more than 68,000 confirmed cases of measles** were reported in India.
- However, India has made important gains in recent years. **Measles deaths have declined by 51% from an estimated 100,000 in the year 2000 to 49 000 in 2015.**
- **Government Initiatives**
 - **Measles-Rubella (MR) vaccination**
 - The **Ministry of Health and Family Welfare** launched MR Vaccination program in 2017.
 - The MR campaign **targets around 41 crore children across the country,** the largest ever in any campaign.
 - All children aged between 9 months and less than 15 years will be given **a single shot of Measles-Rubella (MR) vaccination irrespective of their previous measles/rubella vaccination status or measles/rubella disease status.**
 - MR vaccine will be provided free- of- cost across the states.
 - Other Initiatives include **Universal Immunization Programme (UIP), Mission Indradhanush and Intensified Mission Indradhanush.**

'Near Normal' Monsoon in 2019: IMD

The **India Meteorological Department (IMD)** has announced that India is likely to have **'near normal' monsoon** this year with a well-distributed rainfall which could be beneficial for the agriculture sector.

- However, it has also suggested that there is a significant probability for rains falling in the 'below normal' category.
- Monsoon rainfall forecast is 96% of the Long Period Average (or 89 cm, which is a 50 year average of India's monsoon rains).
 - This forecast is **"near normal." While (90%-96% of LPA) rain is 'below normal'.**
- This is a more optimistic assessment from earlier forecast done by the a private agency, Skymet which had projected a below average monsoon in 2019 on the back of a prospective El Nino.
 - It can be noted that recently **US weather agencies have also forecasted** that there is a 60% chance of El Nino this summer season.
- The IMD's has based its finding on various other global climate models projecting a **'weakening El Nino.'**
 - A temperature rise greater than 1 degree C for three months constinously, is considered a 'strong' El Nino (and threatening to the monsoon).
 - A 0.5C -1C rise is called 'weak El Nino conditions.' Currently the El Nino is 0.9 C.

- **Other factors** which may have influence on **Monsoon** are:
 - The **location of the warming** in the Pacific.
 - **Progressive heating** of the land during April-May-June.
 - The **extent of the Himalayan/Eurasian snow cover** is another. Less snow cover means a warmer subcontinent, which can help to intensify the monsoon circulation and bring more rain.
 - However, this year north India has had an extended winter earlier this year resulting in more snow cover.
 - Another factor, called a positive **Indian Ocean Dipole (IOD)** could further neutralise the potential negative impact from the El Nino.

Indian Ocean Dipole

IOD refers to a **warming in the western Arabian ocean phenomenon**. A positive Indian Ocean Dipole — where the western portions of the Indian Ocean are warmer than the east and thereby push rain-bearing clouds over India.

El Nino

- Under **'normal' conditions**, the west tropical Pacific is warmer than its eastern basin. The warmer area of the ocean is also a source for convection and is associated with cloudiness and rainfall.
- During El Nino years, the warmth shifts to Central and East Tropical Pacific and along with it, cloudiness and rainfall.
- El Nino has been found to impact almost half the world triggering droughts in Australia, India, southern Africa and floods in Peru, Ecuador, the United States, the Gulf of Mexico, and the Colorado River basin.
- However, there is no direct correlation between the ENSO events and the monsoon has been established yet.
 - From 1950 to 2012, there were 16 La Nina years, with the monsoon rains above or around average nearly every time.
 - The 1997-98 El Nino, among the century's strongest, generated above-average rain. Likewise, 2002 proved to be one of the driest monsoons despite it being a weak to moderate El Nino year.
- Other acronyms related to El Nino:
 - **Southern Oscillation Index (SOI)** that gives an indication of the development and intensity of El Nino or La Nina.
 - The SOI is calculated on the basis of the atmospheric pressure differences between South Pacific Ocean and Australia.
 - Sustained positive SOI values are indicative of La Nina conditions while negative values suggest El Nino conditions.
 - **ENSO (El Nino Southern Oscillation)** refers to the oscillation between the El

Nino and the La Nina.

- ENSO shifts irregularly back and forth between El Nino and La Niña every two to seven years.
- Each phase triggers predictable disruptions of temperature, precipitation, and winds disrupting large-scale air movements in the tropics, triggering a cascade of global side effects.

Resilient Cities Asia-Pacific Congress 2019

The Vice President of India highlighted the need to make sustainable solutions such as harvesting solar energy, enhancing green cover and water conservation an essential part of town planning while addressing the **4th Resilient Cities Asia-Pacific (RCAP) Congress 2019**.

- **RCAP 2019 is the 4th in the series of Resilient Cities Asia Pacific Congresses.** The first three being held in Bangkok, Thailand in February 2015; in Melaka, Malaysia in March 2016 and in Vietnam in December 2017.
- The 4th Resilient Cities Asia-Pacific 2019 Congress is being organised by the **International Council for Local Environmental Initiatives (ICLEI) – Local Governments for Sustainability and hosted by South Delhi Municipal Corporation on 15th to 17th of April 2019 in New Delhi.**
- The **proposed themes for RCAP 2019 are:**
 - Integrated climate resilience planning to manage risks and vulnerabilities
 - Good governance and resilience
 - Nature-based solutions to adaptation
 - Climate knowledge brokering
 - Opportunities for regional networking and collaboration
 - Sustainable infrastructure development and green growth
 - Urban Nexus
 - Financing mechanisms for Asian cities

Resilient Cities Asia-Pacific

- Resilient Cities is the annual global platform for urban resilience and climate change adaptation where dialogues are conducted to forge partnerships, with the ultimate goal of identifying implementable solutions and creating lasting impacts for cities in the region.
- It was launched in 2010.

Need

- Current changes in climate, combined with rapid and often unplanned urbanisation,

make Asia one of the regions of the world most vulnerable to the impacts of climate change.

Increasing temperatures, changing precipitation patterns, intensification of extreme weather events and rising sea levels are already a reality in the region.

- At the same time, increasing population and spreading of human settlements in low lying, flood prone coastal areas magnify the risks coming from climate change related disasters, thus increasing the vulnerability of people, especially the urban poor, who live in hazardous areas.

Important Facts For Prelims (16th April 2019)

3D Printed Heart with Human Tissue

- Scientists in Israel have unveiled a of a heart with human tissue and vessels, advancing the possibilities for transplants.
- This is the **first time that anyone has successfully engineered and printed an entire heart replete with cells, blood vessels, ventricles and chambers**. People have managed to 3D-print the structure of a heart in the past, but not with cells or with blood vessels.
- The heart produced by scientists is about the **size of a rabbit's**. Scientists believe that larger human hearts would require the same technology but expanding the cells to have enough tissue to create a human-sized heart, is a challenge.
- The **ink** for this 3D print was developed by scientists **by taking a biopsy of fatty tissue from a patient**. This is **crucial for eliminating the risk of implant rejection**.
- **Cardiovascular disease is the world's leading cause of death**, according to the World Health Organization, and transplants are currently the only option available for patients in the worst cases. But the number of donors is limited and thus many die while waiting. Sometimes, **a patient's body even rejects the transplant**, leading to his/er death.

PIO led team's CubeSat to be launched by NASA

- A team led by an Indian American student, **Keshav Raghavan**, has been chosen by NASA to have its CubeSat - a mini research satellite to detect cosmic rays, flown into space on future missions.
- The team's CubeSat '**BLAST**' (**Bouchet Low-Earth Alpha/Beta Space Telescope**) **has been named for physicist Edward A Bouchet** -- the first African American to receive a Ph.D. in America.
- BLAST will **contribute** to the ongoing search for the origins and **nature of cosmic rays**, which will provide an insight into the origins of the universe.
- **CubeSats are miniature satellites** intended as a standard, inexpensive design that

can easily fit alongside larger satellites aboard launch vehicles.

- The CubeSat model has given student groups, hobbyist organizations, and research teams operating with limited funding or experience unprecedented access to space.
- CubeSats are built from **a modular structure of 10x10x10cm cubes** and feature a wide variety of commercially available off-the-shelf components, designed to fit the structure from various manufacturers.
- **Cosmic rays** are high energy charged particles, originating in outer space, that travel at nearly the speed of light and strike the Earth from all directions.
 - Most cosmic rays are the nuclei of atoms, ranging from the lightest to the heaviest elements in the periodic table. Cosmic rays also include high energy electrons, positrons, and other subatomic particles.
 - The term "cosmic rays" **usually refers to galactic cosmic rays**, which **originate in sources outside the solar system**, distributed throughout the Milky Way galaxy.

Demand For Tiger Reserve Status to Nandhaur Sanctuary

- With the number of tigers steadily on the rise at the Nandhaur Wildlife Sanctuary in Uttarakhand, the authorities have sought the 'Tiger Reserve Status' for it.
- The number of tigers at the sanctuary when it came into being in 2012 was 9 which rose to 27 in 2018. **The number is expected to cross 32 this year.**
- The sanctuary's elevation as a tiger reserve **will help in receiving funds from the Centre and the expertise of national-level zoological scientists** to conserve the growing population of tigers at the sanctuary.
- The sanctuary is **situated close to the Nandhaur river in the Kumaon region** and spreads over an area of 269.5 sq km.
- The Government of India took a pioneering initiative for conserving its national animal, the tiger, by launching the 'Project Tiger' in 1973.
 - **The tiger reserves are constituted on a core/buffer strategy.** The core areas have the legal status of a national park or a sanctuary, whereas the buffer or peripheral areas are a mix of forest and non-forest land, managed as a multiple use area.
 - **The National Tiger Conservation Authority (NTCA) is a statutory body** of the Ministry of Environment, Forests and Climate Change, with an overarching supervisory / coordination role, performing functions as provided in the Wildlife (Protection) Act, 1972.

Nirbhay Missile

- **Defense Research & Development Organisation (DRDO)** has successfully test-fired "Nirbhay" cruise missile from the Integrated Test Range (ITR), Chandipur Odisha.

- Nirbhay is an **indigenously designed & developed Long Range Sub-Sonic Cruise Missile**.
- The missile has the capability to cruise at 0.7 Mach, and at altitudes as low as 100 m.
- The missile can be deployed from multiple platforms and has a **range of 1000 km**.

Government e-Marketplace (GeM)

- **GeM has witnessed a four-fold increase in the total value of transactions** on the portal and doubling of the number of sellers in the marketplace in the FY 2018-19.
- There has also been an overall growth in other dimensions like the number of categories, products, and buyers.

Government e-Marketplace (GeM)

- GeM is an **Online Market platform was set up in 2016** to facilitate **procurement of goods and services by the government ministries, departments, public sector undertakings (PSU), etc.**
 - It has been envisaged as **National Procurement Portal of India**.
 - It has been **developed by Directorate General of Supplies and Disposals** (Ministry of Commerce and Industry) with technical support of National e-governance Division (Ministry of Electronic and Information Technology).
 - It **functions under Directorate General of Supplies and Disposals** (DGS&D), Ministry of Commerce and Industry.
 - **GeM is a completely paperless, cashless and system driven e-marketplace** that enables procurement of common use goods and services with minimal human interface.
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