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GIST OF YOJANA

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1. BENCHMARKING HEALTHCARE SYSTEM

What is all about NITI AAYOG's Health Index?

- NITI Aayog in collaboration with the Ministry of Health and Family Welfare (MoHFW)

- and the World Bank developed the index in 2017.

- It is the first ever systematic exercise for tracking the progress on health outcomes and health systems' performance across all the States and Union Territories (UTs) in India on an annual basis.

- The Health Index is a weighted-composite Index based on select indicators in three domains: a) Health Outcomes; (b) Governance and Information; and (c) Key Inputs and Processes, with the health outcomes carrying the most weight across the different category of States/UTs.

- For generation of ranks, the States are classified into three categories (Larger States, Smaller States and UTs) to ensure comparability among similar entities.

Why this Index is necessary?

- The Health Index is a useful tool to measure and compare the overall performance and incremental performance across States and UTs over time.

- It is an important instrument in understanding the variations and complexity of the nation's performance in health.

- The vision behind establishing the annual systematic tool is to propel States towards undertaking multi-pronged interventions and drive efforts towards achievement of SDG Goal 3.

- It can be viewed as being akin to an annual health checkup diagnostic report; providing the State Governments to identify parameters in which States have improved, stagnated, or declined.

- The Health Index report provides the direction and magnitude of change at a composite level as well as for each of the indicators of the Health Index.

- An analysis of this can help States in focusing attention on better targeting of interventions and

improving the delivery of health services and also an opportunity of sharing best practices.

- The Index is an innovative tool as it not only fosters competition among states by comparing similar states to each other but also nudges them to better their own performance in the previous year.

- It is envisaged that tracking progress on incremental performance will also help shake complacency among "Healthiest Large States" such as Kerala, Punjab, and Tamil Nadu that have historically done well.

- At the same time, it is expected that it will nurture hope and optimism among large states such as Haryana, historically lagged in performance but are demonstrating greater improvements in health outcomes.

- The Health Index has the potential to be game changer as it can shift the focus from budget spends, inputs and outputs to outcomes by shining the light on States that have shown most improvement.

- The MoHFW's decision to link the Index to incentives under the National Health Mission sends a strong signal to States in the shift towards outcome based monitoring and performance linked incentives.

2. COVID-19: THE NOVEL THREAT

What are Viruses?

- Viruses are host cell-dependent particles, they use host cell machinery to build their structure.

- Their size ranges from 18 nm-400 nm, they do not grow on routine laboratory media.

- Because of this, specific laboratory diagnosis of viral infections is not easy.

- That is why, specific antiviral drugs which don't damage host cells are very limited.

- Mutations occur during every viral infection, either spontaneously or may be induced with chemicals or physical agents.

- A hybrid or recombinant virus will have new genes and new characteristics as well.

What are Corona Viruses?

- All Corona viruses are large (120-160 nm) enveloped RNA viruses which have single stranded genome.

- The name "corona virus" is derived from Latin *corona,* meaning "crown" or "wreath".

- The virus possesses a club shaped or crown like peplomer spikes giving appearance of solar corona.

- Most of these infect animals and birds.

- Human infection is caused by only those which can adapt to human conditions.

- There are already known six corona viruses involved in human infections.

- Most of them are widespread, affecting people of most parts of the world and are known to produce mild upper respiratory tract infection and occasional diarrhea.

- In 2003 there was an outbreak of SARS-CoV (Severe Acute Respiratory Syndrome coronavirus).

- Another member of corona viruses, MERS-CoV (Middle East Respiratory Syndrome coronavirus) emerged in 2012.

What is COVID 19?

- It represents **CO**rona **VI**rus **D**isease originated in 2019.

- First case of this virus was identified in December 2019 from Wuhan, Hubei province of China.

- WHO declared the 2019-20 corona virus outbreak, a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and a pandemic on 11 March 2020.

What are the modes of Transmission?

- There are two main routes of transmission of the COVID-19 virus : respiratory and contact.

- The virus is mainly spread by small droplets produced by coughing, sneezing or even talking to an infected person.

- These droplets may also be produced during breathing; however, since the virus is large (as compared to other viruses), they rapidly fall to the ground or surfaces and are not generally spread through the air, over large distances.

- People may also become infected by touching a contaminated surface and then their face.

- Spread is possible before symptoms appear and in later stages of the disease as well.

What are the preventive measures?

- *Personal Preventive Measures in public places :* Staying home

- Covering mouth and nose with flexed elbow or tissue when coughing or sneezing

- Disposal of used tissue immediately

- Systematic washing of hands often with soap and water for at least 20 seconds OR using a hand sanitizer that contains at least 60% alcohol.

- Avoid touching your eyes, nose and mouth with unwashed hands

- Cleaning frequently touched surfaces and objects

- *Preventive Measures in Public Places :* Keep about 6 feet distance with others

- Wear a cloth face cover/mask.

- Clean and disinfect frequently touched surfaces daily like doorknobs, lift handles, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets and sinks.

- To disinfect- Most common household disinfectants like bleach solution will work. Use disinfectants appropriate for the surface.

- Effective inactivation could be achieved within 1 minute using common disinfectants, such as 70% ethanol or sodium hypochlorite.

3. STRENGTHENING HEALTH SYSTEMS

What is the current status of health in India?

- Over the past seven decades, since independence, India has made a phenomenal progress in access and availability of health services adding a network of 1,58,417 Sub-Centres (SCs), 25,743 Primary Health Centres (PHCs) and 5624 Community Health Centres (CHCs).

- More than 30,000 SCs and PHCs have been up scaled to Health and Wellness Centres (HWC) to provide comprehensive primary health care since 2018.

- India has achieved reduction in infant mortality rate (IMR) from 74 per 1000 live birth in 1994 to 33 in 2017; maternal mortality ratio (MMR) from 600 per one lakh live

births to 122 per one lakh live births in 2015-2017 and crude death rate (CDR) and crude birth rate (CBR) declined to 6.3 and 20.2 per 1000 population.

- The life expectancy at birth has increased from 58 years to 69 years from 1990 to 2017.

- India has successfully eliminated diseases like small pox, guineaworm, neonatal tetanus and polio, and effectively controlled many communicable diseases like leprosy, malaria, filariasis, kalaazar and progressing well towards ending tuberculosis by 2025.

What is the status of health financing in India?

- To address the entire game of disease burden, the public expenditure on health accounts for nearly one third of the total expenditure at 1.2% of the GDP and remaining is met by Out-of-Pocket expenditure (OOPE) by the households which is exorbitant and puts extra pressure on low socioeconomic population as almost 10 crore population goes below poverty line due to high OOPE.

- According to the latest National Health Accounts Estimates (2016-2017), the total spending on health in India is 3.8% of the GDP which has reduced from 4.2% in 2004-05.

- The Government health spending has remained almost static around an average of 1% of GDP and the State health spending is around 2% of SGDP on average with variations across the States.

- A sum of 45% of the total current health expenditure is spent on primary health care followed by 36% for secondary care, and 13.9% for tertiary care. 52% primary health care is supported by government as compared to primary sector (41%). The government share on secondary tertiary (10.8%) care is lower than the private sector (42.4% and 15.6% respectively).

What is the Rationale for Spending on Health, especially Public Health?

- It is widely acknowledged that health is not only a goal in itself, but also vital for improved developmental outcomes.

- It is known that better health improves productivity and reduces

loss due to premature deaths, prolonged disability and early retirement. Health and nutrition also directly impact the scholastic achievements which have bearing on productivity and income.

- Studies have indicated that even benefit to cost ratio for key healthcare interventions is 10:1; one extra year of life expectancy raises GDP per capita by 4%.

- Investment in health creates millions of jobs, largely for women, through the much needed expansion of the health workforce.

- The UN High Level Commission has stated in year 2016, that "investment in job creation in the health and social sectors will make a critical positive contribution to inclusive economic growth and least likely to be affected by automation".

What is the way forward?

- Raising taxes on harmful commodities may not only improve health but can generate more fiscal space for health.

- In case of India, taxes on alcohol, tobacco, salt and sugar will not only generate additional resources but would be preventing non

communicable diseases and contribute to easing burden on health systems.

- At present, non-communicable diseases cause more than 60 percent deaths, hence, the revenue generated through tobacco and other harmful products need to be earmarked for health sector to deal with cancer and cardiovascular diseases and for agriculture sector to shift farmers from tobacco cultivation to other crops which yield high returns and are sustainable ecologically.

- Food substances that contribute to obesity including refined grains such as white flour and white rice are highly subsidised and these subsidies need to be reviewed and reoriented towards improving the nutritional content of subsidised food.

- Re-allocating fuel subsidies towards clean fuels and eliminating subsidies on those items which have direct harmful effect on health is necessary to improve health and save scarce resources.

- Taxes should be imposed on specific industrial commodities

causing air water and soil pollution other than the taxes on tobacco, alcohol and foods having negative impact on health and taxes on polluting industries.

- There is a need to develop partnership with the private health sector for co-financing secondary and tertiary health care, and with the corporate sector for allocating CSR funds in health care.

- Health insurance to finance hospitalisation to reduce OOPE and catastrophic health expenditure can also be introduced.

- Ayushman Bharat has a great promise but the coverage should be extended to the whole population.

- People contributing towards their annual premiums may also be thought of Removing bottlenecks in allocation, disbursement and timely flow of funds would also enhance utilisation of allocated funds.

4. ARTIFICIAL INTELLIGENCE IN HEALTHCARE

What are the opportunities of AI in healthcare system?

- **AI in Assistance to Physicians :** One of the ways in which AI can enhance healthcare delivery in India is to relieve highly-skilled medical professionals from routine activities, freeing up doctors to concentrate on the higher-value cognitive application of medical practice, truly connect with patients and positively impact cases of medical errors and misdiagnosis.

- Given the resource constraints and stress on the healthcare system, a significant part of a doctor's workload could be safely offloaded to carefully-designed AI systems, reserving the serious cases for more detailed physician's attention.

- **AI in Diagnostics :** One of the key healthcare challenges in India is acute shortage of radiologists. AI based diagnosis can be especially helpful for radiology, pathology, skin diseases, and ophthalmology.

- AI for Optimising Treatment Plans AI can also be used for assisting doctors and patients to choose an optimal treatment protocol.

- ML can be used to mine not only doctor's notes and patient's lab reports, but also link to the extant medical literature to provide optimal treatment options.

- **AI for Monitoring/Ensuring Compliance :** The potential for AI application in remote monitoring has enhanced manifolds via the use of wearables.

- These can be used for monitoring various aspects such as movements, physiological parameters, temperature and alerts that can be communicated to healthcare professionals.

- **AI in the COVID-19 Epidemic :** The COVID-19 epidemic highlights the need for an AI based epidemic monitoring system that can model and predict outbreaks and help optimize scarce resources.

- AI can help fight the virus via Machine Learning-based applications including population screening, notifications of when to seek medical help and tracking how infection spreads across swathes of the population.

What are the challenges?

- **Healthcare Industry Issues :** Due to the nature of the industry as well as people dynamics, the healthcare industry has been slow to adopt technological innovations.

- The challenges of migrating to an AI-technology-based healthcare infrastructure are numerous as medical professionals attempt to transition to new ways of working and adopt new systems and processes.

- Traditional healthcare personnel may resist new innovations, doctors may not trust AI systems, patients may question AI-based decision-making and medical staff could view the changes as disenfranchising them from their key roles and decision-making powers.

- **Technology-related Issues :** AI systems and the underlying algorithms are reliant on the quality of data to enable the ML elements to perform the necessary processing and decision-making.

- The challenge within India is the disparate nature of healthcare

related data. Each state has its own system and working process.

- Initiatives are needed at state and national government levels to ensure shared data standards, data security and exchange processes are incorporated within healthcare systems.

- **Regulatory and Ethical issues :** Data security of wearables which can potentially cause identity theft through hacking of devices and data.

- AI is set to alter the traditional relationship between the doctor and the patient as technology plays the role of a third substantial actor.

What is the way forward?

- To enhance the adoption of technology by healthcare providers, AI and its applications should be incorporated within the curriculum for medical and paramedical training.

- Technology should be recognised as socio-culturally embedded; hence the technology design and implementation should take into account cultural practices and address the gender divide in India.

- Ethical guidelines regarding security and privacy of data should be protected, especially as more and more the data is available through wearables and IOT.

- The AI system must be explainable and auditable. All decisions made in the context of diagnosis or recommendations can impact on human lives. As such the underlying algorithms must be transparent and explainable to ensure ease of audit rather than acting as a black-box based system.

- AI systems should not exhibit bias. The algorithms developed for the AI system must not exhibit any racial, gender or Pincode-based decision-making that disenfranchise or favour any population groups.

- AI healthcare systems must conform to human values and ethics. Regulatory bodies must ensure that human ethical values are an integral element of AI algorithms and resulting decision-making.

- Adoption of AI based healthcare must be benefits-driven. The migration toward greater levels of technology use may not be

universally accepted or trusted by the medical staff within healthcare institutions.

- The impact and change in working practices must not be underestimated by policy makers, who need to ensure that changes are geared to the benefits to patients and the overall healthcare of the Indian people.

- Pilot initiatives should be developed within key states to trial the impact that AI systems could have on existing healthcare systems and infrastructure.

5. RBI ANNOUNCES RELIEF MEASURES

What are the aims of these measures?

- The RBI Governor said that the additional measures are aimed to:

- maintain adequate liquidity in the system and its constituents in the face of COVID-19 related dislocations

- facilitate and incentivize bank credit flows ease financial stress, and enable the normal functioning of markets.

What are the new sets of measures?

1) Targeted Long-Term Operations (TLTRO) 2.0 :

- A second set of targeted long-term repo operations (TLTRO 2.0) for an initial aggregate amount of Rs. 50,000 crore will be conducted.

- This is being done to facilitate funds flow to small and mid-sized corporates, including NBFCs and MFIs, who have been more severely impacted by the disruptions due to COVID-19.

- The funds availed by banks under TLTRO 2.0 should be invested in investment grade bonds, commercial paper, and non-convertible debentures of non-banking financial companies (NBFCs), with at least 50 per cent of the total amount availed going to small and mid-sized NBFCs and micro finance institutions (MFIs).

2) Refinancing Facilities for All India Financial Institutions :

- Special refinance facilities for a total amount of Rs. 50,000 crore will be provided to National Bank for Agriculture and Rural Development (NABARD), the Small Industries Development Bank of India (SIDBI) and the National

Housing Bank (NHB) to enable them to meet sectoral credit needs.

- This will comprise Rs. 25,000 crore to NABARD for refinancing regional rural banks (RRBs), cooperative banks and micro finance institutions (MFIs); Rs. 15,000 crore to SIDBI for on-lending / refinancing; and Rs. 10,000 crore to NHB for supporting housing finance companies (HFCs).

3) Reduction of Reverse Repo Rate under Liquidity Adjustment Facility :

- Reverse repo rate has been reduced by 25 basis points from 4.0% to 3.75% with immediate effect, in order to encourage banks to deploy surplus funds in investments and loans in productive sectors of the economy.

- The Governor explained that the surplus liquidity in the banking system, which has risen significantly due to sustained government spending and the various liquidity enhancing measures undertaken by the RBI, is the backdrop to this decision.

4) Raising Limit of Ways and Means Advances of states and UTs :

- Ways and Means Advances (WMAs) Limit of states and union

territories has been increased by 60% over and above the limit as on March 31, 2020, in order to provide greater comfort to states for undertaking COVID-19 containment and mitigation efforts, and also to help them plan their market borrowing programmes better.

- WMAs are temporary loan facilities provided by RBI to help governments tide over temporary mismatches in receipts and expenditure.

- The increased limit will be available till September 30, 2020.

5) Asset Classification :

- With respect to recognition of Non-Performing Assets (NPAs), the central bank has decided that the payment moratorium period, which lending institutions have been permitted to grant as per RBI's announcement on March 27, 2020, will not be considered while classifying assets as NPAs. i.e., the moratorium period will be excluded while considering 90-day NPA norm for those accounts for which lending institutions decide to grant moratorium or deferment and

which were standard as on March 1, 2020.

- This means that there will be an asset classification standstill for such accounts from March 1 - May 31, 2020. NBFCs will have the flexibility under the prescribed accounting standards to provide such relief to their borrowers.

6) Extension of Resolution Timeline :

- Recognizing challenges to resolution of stressed assets or accounts which are or are likely to become NPAs, the period for implementation of resolution plan has been extended by 90 days.

- Currently, scheduled commercial banks and other financial institutions are required to hold an additional provision of 20 per cent if a resolution plan has not been implemented within 210 days from the date of such default.

7) Distribution of Dividend :

- It has been decided that scheduled commercial banks and cooperative banks shall not make any further dividend pay-outs from profits pertaining to FY 2019-20; the decision will be reviewed based on the financial position of banks at the end of the second quarter of the financial year 2019-20.

- This has been done in order to enable banks to conserve capital so that they can retain their capacity to support the economy and absorb losses in an environment of heightened uncertainty.

8) Lowering of Liquidity Coverage Ratio requirement :

- To improve the liquidity position for individual institutions, Liquidity Coverage Ratio requirement for scheduled commercial banks has been brought down from 100% to 80% with immediate effect. This will be gradually restored in two phases - 90% by October 1, 2020 and 100% by April 1, 2021.

9) NBFC Loans to Commercial Real Estate Projects :

- The treatment available for loans to commercial real estate projects with respect to the date for commencement for commercial operations (DCCO) has been extended to NBFCs, in order to provide relief to both NBFCs and the real estate sector.

- As per the current guidelines, DCCO in respect of loans to commercial real estate projects delayed due to reasons beyond the control of promoters can be extended by an additional one year, over and above the one-year extension permitted in normal course, without treating the same as restructuring.

6. "COVID INDIA SEVA" - AN INTERACTIVE PLATFORM FOR CITIZEN ENGAGEMENT ON COVID-19

What is meant by COVID India Seva platform?

- Covid India Seva is an interactive platform to establish a direct channel of communication with millions of Indians amid the pandemic.

- This initiative is aimed at enabling transparent e-governance delivery in real-time and answering citizen queries swiftly, at scale, especially in crisis situations like the ongoing COVID-19 pandemic.

- Through this, people can pose queries @CovidIndiaSeva and get them responded to in almost real time.

- It works on a dashboard at the backend that helps process large volumes of tweets, converts them into resolvable tickets, and assigns them to the relevant authority for real-time resolution.

- Trained experts will share public health information swiftly here at scale, helping to build a direct channel for communication with citizens.

- The dedicated account is accessible to people be it local or national in their scope.

- Whether it is for latest updates on measures taken by the Government, learning about access to healthcare services or seeking guidance for someone who perhaps has symptoms but is unsure about where to turn to for help, @CovidIndiaSeva empowers public to reach out to the authorities.

- As these responses are transparent and public, everyone can benefit from the responses received around common queries.

- It is important to note that the Ministry of Health and Family Welfare will respond to broader

queries and public health information.

- This does not require the public to share personal contact details or health record details.

What are the other measures?

- Over the last three months, the Ministry has introduced several initiatives in the war against Corona - including as part of a strategic communication strategy.

- This includes focused travel and health advisories, various Guidelines/ Standard Operating Procedures/Protocols for different stakeholders across the public and private sectors for the governments, hospitals, citizens, different healthcare workers, employees and various other knowledge resources.

- Different channels of communication spanning the print, electronic and social media have been deployed as part of a holistic awareness campaign.

7. IOT IN HEALTHCARE

What is the internet of things (IoT)?

- The IoT can be described as an extension of the internet and other network connections to different sensors and devices — or "things" — affording even simple objects, such as lightbulbs, locks, and vents, a higher degree of computing and analytical capabilities.

- Connected or "smart" devices — as "things" in the IoT are often called — have the ability to gather and share data from their environments with other devices and networks.

- Through the analysis and processing of the data, devices can perform their functions with little or no need for human interaction.

- Given the ever-increasing number of connected devices, the IoT continues its path of evolution, adding different layers to the data that is already being shared and processed, and giving rise to sophisticated algorithms that result in improved levels of automation.

- And because of the variety of "things" that can be connected to it, the IoT has enabled diverse applications for individual users and entire industries alike.

How IOT can be employed in the Health front?

- Connecting health systems together can reduce a huge amount of manual admin tasks by consolidating EMRs (electronic medical records), scheduling systems, and patient monitoring into one place.

- As all hospital resources are being stretched, having a tool to monitor patients all around the hospital and ensure that medication is delivered effectively will be a massive help.

- Devices that monitor glucose levels for diabetic patients keep track of blood pressure and heart rate levels and alert to issues can allow hospital staff to take care of these patients remotely while in another section of the hospital.

- Devices for patients at home can also connect to EMRs so that chronically ill patients do not necessarily have to visit the hospital or medical centre while still being attended by medical staff.

- Medical IoT devices for patients staying at home are already being used to improve out-patient care and reduce recurring appointments and these devices are beneficial even during a crisis.

- Apart from reducing the burden on medical services, using connected medication could also help to develop a vaccine faster.

- By measuring patient progress and the effects of new drugs in real-time, researchers could conduct dispersed remote trials and potentially speed up development of a vaccine that would work on a wider base of individuals.

- IoT has already been used in the remote monitoring of in home patients with chronic conditions such as hypertension or diabetes.

- In hospitals, telemetry, the transmission of biometric measurements like heartbeat and blood pressure from wearable, wireless instruments on patients to the central monitoring has been used to monitor a large number of patients with minimal staff.

- IoT can be used to reduce the workload and increase the efficiency of the medical staff, all the while reducing the exposure of healthcare workers to infection.