

CIWP

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POST-TEST MATERIAL FOR CIWP – W

Q. Highlight the risks associated with massive explosion of infections in the second wave of Covid-19. Do you think that Indian healthcare system is adequately equipped to deal with this crisis? Substantiate your views.

Ans.

Like all viruses, the coronavirus keeps changing in small ways as it passes from one person to another. The variant B.1.617, is responsible for the severity of the second wave. The variant is sometimes called “the double mutant,” though the name is a misnomer because it has many more mutations than two. It garnered the name because one version contains two genetic mutations found in other difficult-to-control variants. The rise in case numbers has been exponential in the second wave. The L452R mutation found in the variant B1.671, first detected in India, too has been associated with increased infectivity.

After the early restrictions were lifted, many Indians stopped taking precautions. Large gatherings, including political rallies, Panchayat Elections in Uttar Pradesh and religious festivals, resumed and drew millions of people. Due to this the country recorded an exponential jump in cases and deaths.

A deadly second wave of coronavirus infections is devastating India, leaving millions of people infected and putting stress on the country's already overtaxed health care system.

Risks associated with massive explosion of infections in the second wave of Covid-19:

- The laxity in preventive measures, coupled with the presence of new variants, has resulted in a nationwide crisis. Many states are reporting shortages of hospital beds, oxygen supply, medicines, even space in morgues and crematoriums.
- In India 80-85% of population are asymptomatic and they are the largest carrier of the virus. Also, during this surge, there has been a long waiting period for testing. Until the results are available, many asymptomatic persons violate isolation guidelines and spread the infection.
- Super-spreading events in indoor settings — house parties, social gatherings — can trigger local outbreaks if Covid-appropriate behaviours are not followed. Contact tracing guidelines are not being followed as rigorously as last time.
- The virus becoming more infectious and some mutations escaping the immune response, the younger population needs to strictly follow Covid-appropriate behaviours.
- The infection is spreading at a faster pace in every age group. However, those who have comorbidities at a young age are at high risk. Data released by the Centre shows that in seven age groups up to 70 years, the prevalence of deaths in this wave is comparable to the prevalence in the last wave. It is still the older population who is at higher risk and needs to be protected.
- Shortness of breath is the most common clinical feature among symptomatic patients in the second wave. In the second wave, 54.5% of admissions during the second wave required supplemental oxygen during treatment.

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- The two vaccines approved for emergency use in India don't stop transmission of the virus, and at present can only reduce severe disease or hospitalisation. Post-vaccination, around 2-4 persons per 10,000 have tested positive.
- India's escalating second wave of COVID-19 infections poses serious downside risks to the economy and heightens the possibility of business disruptions.
- As the cases are rising, the moral and ethical values have been shattered out in the country. Some of the people have started black marketing and storing the medicines as well as the injection and other required things.
- Most of the countries including India are going to face poverty at heightened rates which will create a new burden on the countries' development and in achieving the target of 5 trillion economy.
- Absence of proper health facilities in rural areas of India has made pathetic situation in villages as the cases also has shaken the grounds of the villages which was being considered untouched from the pandemic.

India's healthcare sector is not equipped for the unprecedented rise in coronavirus cases:

- In terms of access and quality of health services, India was ranked 145 out of 195 countries in a Lancet study published in 2018, below countries like China (48), Sri Lanka (71) Bhutan (134) and Bangladesh (132).
- India's general government expenditure on healthcare as a percentage of GDP was just 1.26 per cent, placing it at number 165 out of 186 countries in terms of government expenditure on healthcare.
- India's public hospitals have only 7,13,986 beds, including 35,699 in intensive care units and 17,850 ventilators, according to a recent study by the Center for Disease Dynamics, Economics & Policy (India) and Princeton University.
- The total number of hospital beds in the country was 7,13,986 — which translates to 0.55 beds per 1,000 population. Furthermore, the study also highlighted that twelve states that account for 70 per cent of India's 1.3 billion population were found to have hospital beds per 1,000 population below the national average of 0.55 beds.
- Much of the data presented above highlights the fact that fighting any major health emergency let alone an outbreak of this magnitude was always going to be a tough task for India.
- India's expenditure on R&D as a per cent of GDP has continued to remain stagnant at 0.7 per cent of GDP for three decades, with the public sector accounting for 51.8 per cent of the national R&D expenditure.
- Despite additional funding, the continued lack of medical investment and healthcare infrastructure will present challenges to mounting an effective response in India against COVID-19 pandemic.
- Moreover, the significant inefficiency, dysfunctioning and acute shortage of the healthcare delivery systems in the public sector do not match up with the growing needs of the population.

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- More than 80 per cent of the population still does not have any significant health insurance coverage, and approximately 68 per cent of the Indians have limited or no access to essential medicines.
- Over the last two decades, the availability of free medicines in public healthcare facilities has declined from 31.2 per cent to 8.9 per cent for inpatient care, and from 17.8 per cent to 5.9 per cent for outpatient care.
- India, the world's biggest vaccine maker, expanded its inoculation programme to include everyone above the age of 45. But so far it has vaccinated only about one in 25 people compared with nearly one in two in Britain and one in three in the United States.

Conclusion

The growth within India's pharmaceuticals and healthcare market will be supported by the government's push towards achieving universal health coverage status. Development of the healthcare sector is linked to investment in medical R&D, biotechnology R&D and pharma R&D.

The pandemic has shown that tele-medicine has enormous potential in meeting the challenges of health care delivery to rural and remote areas besides several other applications in education, training and health sector management.

To build a robust health system for the future, focusing on India's infrastructure and technology needs would require emphasising the triple helix model of innovation, that is, bringing together the government, academia and industry, now more than ever.

Q. What are the challenges faced by the higher education system in India? Critically analyse the steps taken to make higher education of India internationally compatible.

Ans.

Higher education aims to serve as a hub for developing ideas and innovations that enlighten individuals and help propel the country forward socially, culturally, artistically, scientifically, technologically, and economically. Despite having the second largest higher education system in the world, none of its 990 universities and 40,000 colleges figure in the top 100 of World University Rankings.

The country ranks as low as 72 among 132 countries in the latest Global Talent Competitive Index (2020) which gauges a country's current ability to grow and attract talents. Home to top scholars in the world, only six universities find places in the top 500 around the world.

The 'Right to Education Act' which stipulates compulsory and free education to all children within the age groups of 6-14 years, has brought about a revolution in the education system of the country with statistics revealing a staggering enrolment in schools over the last four years. The involvement of private sector in higher education has seen drastic changes in the field. Today over 60% of higher education institutions in India are promoted by the private sector.

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The Indian constitution places education as a concurrent responsibility of both the centre and state. While the centre co-ordinates and fixed standards in higher and technical education, school education is the responsibility of state.

Challenges of Higher Education System in India:

After more than 70 years of independence still our education system has not been developed fully. We are not able to list a single university in top 100 universities of the world. UGC is continuously working and focusing on quality education in higher education sector. Still we are facing lot of problems and challenges in our education system. Some of the basic challenges in higher education system in India are discussed below:

1. **Enrolment:** The Gross Enrolment Ratio (GER) of India in higher education is only 15% which is quite low as compared to the developed as well as, other developing countries. With the increase of enrolments at school level, the supply of higher education institutes is insufficient to meet the growing demand in the country.
2. **Equity:** There is no equity in GER among different sects of the society. According to previous studies the GER in higher education in India among male and female varies to a greater extent. There are regional variations too some states have high GER while as some is quite behind the national GER which reflect a significant imbalances within the higher education system.
3. **Quality:** Quality in higher education is a multi-dimensional, multilevel, and a dynamic concept. Ensuring quality in higher education is amongst the foremost challenges being faced in India today. However, Government is continuously focusing on the quality education. Still Large number of colleges and universities in India are unable to meet the minimum requirements laid down by the UGC and our universities are not in a position to mark its place among the top universities of the world.
4. **Infrastructure:** Poor infrastructure is another challenge to the higher education system of India particularly the institutes run by the public sector suffer from poor physical facilities and infrastructure. There are large number of colleges which are functioning on second or third floor of the building on ground or first floor there exists readymade hosieries or photocopy shops.
5. **Political interference:** Most of the educational Institutions are owned by the political leaders, who are playing key role in governing bodies of the Universities. They are using the innocent students for their selfish means. Students organise campaigns, forget their own objectives and begin to develop their careers in politics.
Apart from the political interferences in student, the interferences of politics or political leaders in the selection of faculties also has created a transparency related problem, Because some of the universities where the political influences does impact in transparent selection of good faculties who does fit into the criteria.
6. **Faculty:** Faculty shortages and the inability of the state educational system to attract and retain wellqualified teachers have been posing challenges to quality education for many years. Large numbers of NET / PhD candidates are unemployed even there are lot of vacancies in higher education, these deserving candidates are then applying in other departments which is a biggest blow to the higher education system.

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7. **Accreditation:** As per the data provided by the NAAC, as of June 2010, “not even 25% of the total higher education institutions in the country were accredited. And among those accredited, only 30% of the universities and 45% of the colleges were found to be of quality to be ranked at 'A' level”.
8. **Research and Innovation:** There is inadequate focus on research in higher education institutes. There are insufficient resources and facilities, as well as, limited numbers of quality faculty to advice students. Most of the research scholars are without fellowships or not getting their fellowships on time which directly or indirectly affects their research. Moreover, Indian Higher education institutions are poorly connected to research centers. So, this is another area of challenge to the higher education in India.
9. **Structure of higher education:** Management of the Indian education faces challenges of overcentralisation, bureaucratic structures and lack of accountability, transparency, and professionalism. As a result of increase in number of affiliated colleges and students, the burden of administrative functions of universities has significantly increased and the core focus on academics and research is diluted.

Steps taken to make higher education of India internationally compatible:

Internationalisation is a process of introduction of international constituents in research, educational and administrative to the function of higher education. Internationalisation includes the policies and practices undertaken by academic systems and institutions—and even individuals—to cope with the global academic environment.

Internationalisation of higher education in India has a pre-history. Many top foreign universities collaborate with Indian higher education institutions such as IITs and central universities for research and knowledge transfer. The collaboration has been strengthened by government's schemes such as GIAN and SPARC. Conventional wisdom dictates that the existing research and academic collaborations between foreign and Indian institutions would facilitate the entry of IBCs in India.

The NEP' 20 proposes the following major changes:

There are many provisions in the policy for improving the quality of higher education. For the first time, internationalisation of higher education has been highlighted as an objective. The underlying assumption is to raise the standard of research and teaching to international levels and slow down the out-bound mobility of Indian students.

1. India to be Promoted as Foreign Study Destination: Every institution will have an International Students Office to host foreign students. Colleges will be promoted to provide premium education at affordable costs.
2. Foreign Colleges Can Set Up Colleges in India: Top 100 Foreign Colleges will be allowed to set up their campuses in India as per NEP. They will be given special dispensation and regulations to set up the campuses.
3. Expenditure on Education: The expenditure on education will be changed to 6 percent of the total GDP, as opposed to earlier, which was 4 percent of the GDP. Both the State, as well as Central Government, will be working together on the expenditure.

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4. The international standards maintained by the IBCs would be attractive enough for international students to explore and experience Indian education and culture.

Q. In the light of National Policy for Rare Diseases- 2021, discuss the evolution in India's rare disease landscape. Comment on what could be the suitable approach to deal with this issue.

Ans.

Rare diseases are broadly defined as diseases that infrequently occur in a population, and three markers are used — the total number of people with the disease, its prevalence, and the availability/non-availability of treatment options.

WHO defines rare disease as having a frequency of less than 6.5-10 per 10,000 people. As per an estimate, there are 7,000 known rare diseases with an estimated 300 million patients in the world; 70 million are in India.

In the US, rare diseases are defined as a disease or condition that affects fewer than 200,000 patients in the country (6.4 in 10,000 people). EU defines rare diseases as a life-threatening or chronically debilitating condition affecting no more than 5 in 10,000 people.

According to the Organization for Rare Diseases India, these include inherited cancers, autoimmune disorders, congenital malformations, Hirschsprung's disease, Gaucher disease, cystic fibrosis, muscular dystrophies and Lysosomal Storage Disorders (LSDs).

The evolution in India's rare disease landscape:

Rare diseases pose a significant challenge to health care systems because of the difficulty in collecting epidemiological data, which in turn impedes the process of arriving at a disease burden, calculating cost estimations and making correct and timely diagnoses, among other problems. Apart from a few rare diseases, where significant progress has been made, the field is still at a nascent stage.

As per the 2017 report, over 50 per cent of new cases are reported in children and these diseases are responsible for 35 per cent of deaths in those below the age of one, 10 per cent of deaths between the ages of one and five, and 12 per cent between five and 15.

Currently few pharmaceutical companies are manufacturing drugs for rare diseases globally and there are no domestic manufacturers in India except for those who make medical-grade food for those with metabolic disorders. Due to the high cost of most therapies, the government has not been able to provide these for free. Where drugs are available, they are prohibitively expensive, placing immense strain on resources.

The policy was first prepared by the Centre in 2017 but put on hold. There were "implementation" challenges pointed out by States with the key question again remaining about costs. An expert group was constituted in 2018 to review these questions.

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To address all these challenges, a very comprehensive National Policy for Rare Diseases 2021 has been finalized by the Ministry of H&FW.

According to the policy, rare diseases include genetic diseases, rare cancers, infectious tropical diseases, and degenerative diseases. As per the policy, out of all rare diseases in the world, less than five per cent have therapies available to treat them.

- It aims to lower the high cost of treatment for rare diseases with increased focus on indigenous research and also focuses on early screening and prevention.
- Under the policy, there are three categories of rare diseases — requiring one-time curative treatment, diseases that require long-term treatment but where the cost is low, and those needing long-term treatments with high cost.
- A good start, it offers financial support for one-time treatment of up to ₹20 lakh, introduces a crowdfunding mechanism, creates a registry of rare diseases, and provides for early detection.
- Beneficiaries for such financial assistance would not be limited to BPL families, but the benefit will be extended to about 40% of the population, who are eligible under PradhanMantri Jan ArogyaYojana.
- The government would notify selected Centres of Excellence at premier government hospitals for comprehensive management of rare diseases. The Centres of Excellence would be provided a one-time grant to a maximum of ₹5 crore each for infrastructure development for screening, tests, treatment.
- Funds so collected will be utilized by Centres of Excellence for treatment of all three categories of rare diseases as first charge and then the balance financial resources could also be used for research.

Prevention & Control of Rare Diseases:

Capacity building of health professionals: The Central Government will work with the State governments to build capacity of health professionals at various levels. The Centres of Excellence would develop Standard Operating Protocols to be used at various levels of care for patients with rare diseases to improve early diagnosis, better care coordination and quality of life.

Prevention at different levels: Build the capacity of health professionals and increase awareness in the population at large about the prevalence of such diseases and prevention measures. Frontline workers will be adequately capacitated for screening of rare diseases. Adequate IEC material will be designed and made available across multiple levels of the health care pyramid as this forms a basic pillar of tackling the issue of limited awareness.

1. **Primary Prevention:** This aims at preventing the occurrence of the disease, i.e., preventing birth of an affected child. Though not always feasible, this strategy yields the highest returns in terms of decreasing the incidence & prevalence of rare disorders in the population in the long run.

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2. **Secondary prevention:** This strategy focuses on avoiding the birth of affected fetus (prenatal screening and prenatal diagnosis), early detection of the disorders, appropriate medical intervention to ameliorate or minimize the manifestations (newborn screening).
3. **Tertiary prevention** refers to provision of better care and medical rehabilitation to those rare disease patients who present at an advanced stage of the disease. It encompasses providing best supportive care to the affected patients with various rare disorders including the ones for which no specific treatment is available. This would improve quality of life of affected individuals and families.

Optimal screening and diagnosis strategy: Considering the competing priorities within available resources, universal screening of all pregnancies and/or all newborns in the country for all rare disorders is not feasible. This strategy is in sync with the policy direction of reducing the incidence of rare diseases in the population.

Centres of Excellence (COE): The Government will notify selected Centres of Excellence, which will be premier Government tertiary hospitals with facilities for diagnosis, prevention and treatment of rare diseases. Ex. All India Institute of Medical Sciences, New Delhi, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, etc. Along with notification of National Health Policy for Rare Disease and Centre of Excellence, the centre also has proposed to set up National Consortium for Research, Development and Therapeutics (NCRDT) for such ailment.

Rashtriya Arogya Nidhi (RAN): Rashtriya Arogya Nidhi, an umbrella scheme has been remitted with a healthy budget under the rare disease component. The rare diseases patients are provided treatment under RAN, which is a specific scheme for poor patients living below threshold poverty line.

NidanKendras: NidanKendras have been set up by Department of Biotechnology (DBT) under Unique Methods of Management and treatment of Inherited Disorders (UMMID) project for genetic testing and counseling services. These NidanKendras will be performing screening, genetic testing and counseling for rare diseases. NidanKendras possessing the facility for treatment may do so under the guidance and supervision of a CoE.

Early diagnosis of rare diseases is a major challenge owing to a variety of factors that include lack of awareness among primary care physicians, lack of adequate screening and diagnostic facilities etc.

There are also fundamental challenges in the research and development for the majority of rare diseases as relatively little is known about the pathophysiology or the natural history of these diseases particularly in the Indian context.

Rare diseases are also difficult to research upon as the patients pool is very small and it often results in inadequate clinical experience.

Availability and accessibility to medicines are also important to reduce morbidity and mortality associated with rare disease.

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Despite progress in recent years, there is a need to augment effective and safe treatment for rare diseases. The cost of treatment of rare diseases is prohibitively expensive. Various High Courts and the Supreme Court have also expressed concern about lack of a national policy for rare diseases.

To address all these challenges, a very comprehensive National Policy for Rare Diseases 2021 has been finalized by the Ministry of H&FW after multiple consultations with different stakeholders and experts in the area.

The Rare Diseases Policy aims to lower the high cost of treatment for rare diseases with increased focus on indigenous research with the help of a National Consortium to be set up with Department of Health Research, Ministry of Health & Family Welfare as convenor.

Increased focus of research and development and local production of medicines will lower the cost of treatment for rare diseases.

The policy also envisage creation of a national hospital based registry of rare diseases so that adequate data is available for definition of rare diseases and for research and development related to rare diseases within the country.

India does not have a definition of rare diseases because there is a lack of epidemiological data on their incidence and prevalence. According to the policy, rare diseases include genetic diseases, rare cancers, infectious tropical diseases, and degenerative diseases. As per the policy, out of all rare diseases in the world, less than five per cent have therapies available to treat them.

In India, roughly 450 rare diseases have been recorded from tertiary hospitals, of which the most common are Haemophilia, Thalassemia, Sickle-cell anemia, auto-immune diseases, Gaucher's disease, and cystic fibrosis.