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1. **Gas leak in Vizag claims 11 lives. The deaths have been suspected to be caused by styrene gas.**
2. **SBI cuts MCLR rate by 15 basis points.**
3. **India registered 3561 new cases and 89 deaths in a single day. The cases are likely to peak in June-July.**

A gas leak, reminiscent of the 1984 Bhopal tragedy, has affected thousands of residents in five villages in Visakhapatnam in Andhra Pradesh.

The source of the leak was a styrene plant owned by South Korean electronics giant LG, located at RRV Puram near Gopalapatnam, about 15 kms from the coast city.

What is styrene?

It is a flammable liquid that is used in the manufacturing of polystyrene plastics, fiberglass, rubber, and latex.

It is also found in vehicle exhaust, cigarette smoke, and in natural foods like fruits and vegetables.

What happens when exposed to styrene?

Short-term exposure to the substance can result in respiratory problems, irritation in the eyes, irritation in the mucous membrane, and gastrointestinal issues.

Long-term exposure could drastically affect the central nervous system and lead to other related problems like peripheral neuropathy. It could also lead to cancer and depression in some cases.

What are the symptoms?

Symptoms include headache, hearing loss, fatigue, weakness, difficulty in concentrating etc.

Animal studies, according to the EPA, have reported effects on the CNS, liver, kidney, and eye and nasal irritation from inhalation exposure to styrene.

What is MCLR? How is it determined?

It is the minimum interest rate that a bank can lend at. It is a tenor-linked internal benchmark, which means the rate is determined internally by the bank depending on the period left for the repayment of a loan. MCLR is closely linked to the actual deposit rates and is calculated based on four components: the marginal cost of funds, negative carry on account of cash reserve ratio, operating costs and tenor premium.

Genesis of MCLR:

The Reserve Bank of India introduced the MCLR methodology for fixing interest rates from 1 April 2016. It replaced the base rate structure, which had been in place since July 2010.

Convalescent plasma (CP) therapy is not a new therapy and banks on the age-old concept of passive immunity.

Basis of the Therapy:

The convalescent plasma therapy seeks to make use of the antibodies developed in the recovered patient against the coronavirus.

The whole blood or plasma from such people is taken, and the plasma is then injected in critically ill patients so that the antibodies are transferred and boost their fight against the virus.

Time Period for Infusion:

A study in The Lancet Infectious Diseases stated that a Covid patient usually develops primary immunity against the virus in 10-14 days.

Therefore, if the plasma is injected at an early stage, it can possibly help fight the virus and prevent severe illness.

Infusion into Covid-19 Patients:

The plasma can be infused into two kinds of Covid-19 patients, those with a severe illness or individuals at a higher risk of getting the virus.

However, while plasma transfers immunity from one person to another, it is not known if it can save lives in Covid-19 infection.

The treatment could be effective for patients in the age group 40-60, but may be less effective for people aged beyond 60 years.

Previous Application:

The United States used plasma of recovered patients to treat patients of Spanish flu (1918-1920).

Hong Kong used it to treat SARS (Severe Acute Respiratory Syndrome) patients in 2005.

In 2009, the Swine flu (H1N1) patients were treated with plasma.

It has also been used to treat critically ill patients during Ebola as well.

The report of a study, Proceedings of National Academies of Sciences (U.S.), highlighted that CP therapy shows a potential therapeutic effect and low risk in the treatment of severe Covid-19 patients.

According to the study, one dose (200 ml) of convalescent plasma with a high concentration of neutralising antibodies is well-tolerated by patients and it can rapidly reduce the viral load in patients and improve clinical symptoms significantly.

4. Tamil Nadu raises retirement age of government employees to 59 so as to save ₹5000 crore in what can be seen as a temporary relief to the bludgeoning fiscal deficit.

5. IMD includes PoK in weather forecasts

6. 4-Tertiary Butylcatechol (PTBC) to be airlifted from Gujarat to Vizag to neutralise the styrene gas leak. There are no scientific studies to prove that styrene leak can cause death.

7. Factory working hours have been increased in Madhya Pradesh and workers will be paid for overtime.

8. There has been a surge in domestic violence by 60% in Europe according to WHO.

4-tert-Butylcatechol (TBC) is an organic chemical compound which is a derivative of catechol. It is added as a stabilizer and polymerisation inhibitor to butadiene, styrene, vinyl acetate and other reactive monomer streams. It is 25 times better than hydroquinone at 60 °C for polymerization inhibitory effect. Also used as a stabilizer in the manufacture of polyurethane foam. It also can be used as an antioxidant for synthetic rubber, polymers and oil derivatives. It can be used as purification agent for aminoformate catalysts. TBC is available in a form of a solid crystal and 85% solution in methanol or water.

The National Disaster Management Authority (NDMA) is the apex statutory body for disaster management in India.

The NDMA was formally constituted on 27th September 2006, in accordance with the Disaster Management Act, 2005 with Prime Minister as its Chairperson and nine other members, and one such member to be designated as Vice-Chairperson.

Mandate: Its primary purpose is to coordinate response to natural or man-made disasters and for capacity-building in disaster resiliency and crisis response. It is also the apex body to lay down policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.

Vision: To build a safer and disaster resilient India by a holistic, proactive, technology driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness and mitigation.

Evolution of NDMA

In recognition of the importance of Disaster Management as a national priority, the Government of India set up a High-Powered Committee (HPC) in August 1999 and a National Committee after the Gujarat earthquake (2001), for making recommendations on the preparation of Disaster Management plans and suggesting effective mitigation mechanisms.

The Tenth Five-Year Plan document also had, for the first time, a detailed chapter on Disaster Management. The Twelfth Finance Commission was also mandated to review the financial arrangements for Disaster Management.

On 23 December 2005, the Government of India enacted the Disaster Management Act, which envisaged the creation of NDMA, headed by the Prime Minister, and State Disaster Management Authorities (SDMAs) headed by respective Chief Ministers, to spearhead and implement a holistic and integrated approach to Disaster Management in India.

Institutional Framework for Disaster Management in India

The Disaster Management Act, 2005 has provided the legal and institutional framework for disaster management in India at the national, state and district levels.

In the federal polity of India, the primary responsibility of Disaster management vests with the state government.

The central government lays down the plans, policies and guidelines and provides technical, financial and logistical support while the district administration carries out most of the operations in collaboration with central and state level agencies.

National Executive Committee (NEC)

A National Executive Committee is constituted under Section 8 of DM Act, 2005 to assist the National Authority in the performance of its functions.

Union Home secretary is its ex-officio chairperson.

NEC has been given the responsibility to act as the coordinating and monitoring body for disaster management, to prepare a National Plan, monitor the implementation of National Policy etc.

National Institute of Disaster Management (NIDM)

NIDM has the mandate of human resource development and capacity building for disaster management within the broad policies and guidelines laid down by the NDMA.

National Disaster response force (NDRF)

NDRF is the specialized force for disaster response which works under the overall supervision and control of NDMA.

State level Institutions

State Disaster Management Authority (SDMA)

Headed by Chief Minister of the respective state, SDMA lays down the policies and plans for disaster management in the state.

It is responsible to coordinate the implementation of the state Plan, recommend provision of funds for mitigation and preparedness measures and review the developmental plans of the different departments of the state to ensure integration of prevention, preparedness and mitigation measures.

State Executive Committee (SEC)- Headed by the Chief Secretary of the state, SEC has the responsibility for coordinating and monitoring the implementation of the National Policy, the National Plan and the State Plan as provided under the DM Act.

District level Institutions

District Disaster Management Authority (DDMA)

Section 25 of the DM Act provides for constitution of DDMA for every district of a state.

The District Magistrate/ District Collector/Deputy Commissioner heads the Authority as Chairperson besides an elected representative of the local authority as Co-Chairperson except in the tribal areas where the Chief Executive Member of the District Council of Autonomous District is designated as Co-Chairperson.

Further in district, where Zila Parishad exists, its Chairperson shall be the Co-Chairperson of DDMA.

The District Authority is responsible for planning, coordination and implementation of disaster management and to take such measures for disaster management as provided in the guidelines.

The District Authority also has the power to examine the construction in any area in the district to enforce the safety standards and to arrange for relief measures and respond to the disaster at the district level.

Achievements of Disaster Planning in India

Cyclone Fani, was one of the worst cyclones to hit India in last two decades. Odisha's preparedness, efficient early warning system, timely action, and well-planned large-scale evacuation strategies helped 1.2 million people move safely into nearly 4,000 cyclone shelters, thereby saving the lives of vulnerable population in the sensitive coastal region.

The United Nations office for Disaster Risk Reduction (UNISDR) and other organizations have hailed government and volunteer efforts that have ensured the levels of destruction to keep minimum.

Similarly, Andhra Pradesh demonstrated an equally excellent evacuation strategy for millions during cyclone Hudhud in 2014.

There has been significant reduction in mortality rate from the loss of over 10000 lives in 1999 during Super Cyclone in Odisha to a mortality of 16 in 2019 during cyclone Fani.

NDMA runs intensive earthquake and extreme weather events awareness campaigns and provides guidelines regarding natural and man-made disasters.

NDMA has released Guidelines on School Safety, Hospital Safety and Minimum Standards for Shelter, Food, Water, Sanitation and Medical Cover in Relief Camps. The Authority worked closely with the States in mitigating the impact of Heat Wave and the number of casualties came down drastically.

NDMA conducts mock exercises for better crisis management during a disaster situation.

Shortcomings and challenges

Questions were raised about the role of NDMA during Uttarakhand Flooding in 2013, where it failed to timely inform people about the flash floods and landslides. The post disaster relief response had been equally poor. Experts blamed the poor planning of NDMA that lead to unfinished projects for flood and landslide mitigation.

A CAG report noted that there were delays in completion of projects under the flood management programmes. It noted the projects were not taken up in an integrated manner and blamed NDMA for institutional failures for poor flood management.

It held that there were huge delays in completion of river management activities and works related to border areas projects which were long-term solutions for the flood problems of Assam, north Bihar and eastern Uttar Pradesh.

Devastations during Kerala Floods in 2018 and Chennai Floods in 2015 were eye-opening for the institutions regarding preparedness for the disaster situation.

CAG report on 2015 Chennai Floods termed it to be a "man-made disaster" and holds Tamil Nadu government responsible for the catastrophe.

The NDRF personnel lack sufficient training, equipment, facilities and residential accommodation to tackle the crisis situation properly.

Misutilization of Funds- Government constituted National Disaster Response Fund and State Disaster Response Fund to deal with the disasters.

Audit findings reveal that some states have mis-utilized funds for expenditures that were not sanctioned for disaster management.

There was in a few cases significant delay in releasing funds. Additionally, some States didn't invest the funds thereby incurring huge interest losses. This shows financial indiscipline in states management of funds.

Way Forward

Policy guidelines at the macro level are needed that would inform and guide the preparation and implementation of disaster management and development plans across sectors.

Building in a culture of preparedness and mitigation is the need of the hour.

Operational guidelines should be framed for integrating disaster management practices into development, and specific developmental schemes for prevention and mitigation of disasters.

Robust early warning systems coupled with effective response plans at district, state and national levels should be put in place.

Community, NGOs, CSOs and the media should be involved at all stages of disaster management.

Climate risk management should be addressed through adaptation and mitigation.

A dynamic policy is required to develop disaster-resilient infrastructure through proper investment in research. ISRO, NRSA, IMD and other institutions have to collectively provide technological solutions to enhance capabilities to tackle disasters.

India should learn from best global practices.

Countries such as Hong Kong, China, Japan and Korea have built a robust infrastructure over the years to effectively tackle typhoons and other disasters.