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MK Yadav Sir

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Unique ID must be generated for organ donation: Centre

Bindu Shajan Perappadan
NEW DELHI

All cases of organ transplants, whether from a living or deceased donor, will be allocated a unique National Organ and Tissue Transplant Organisation (NOTTO)-ID for both the donor and the recipient.

It must be generated by the hospital from the NOTTO website (www.notto.mohfw.gov.in). The Union Health Ministry has issued the directive to eliminate commercial dealing in organs, especially those involving foreign citizens.

The latest order, issued to all States and Union Territories, comes following reports of malpractice and a surge in the number of organ transplants related to foreigners in the country, the Ministry said. It has also called for stricter monitoring of such transplants by the local authorities.

Earlier this month, the Ministry had said that the Appropriate Authority of the State, appointed according to the Transplantation of Human Organs and Tissues Act (THOTA), 1994 should investigate transplants in respect of foreign nationals in the State, apart from any complaints concerning the breach of any provision or rule of the

The Union Health Ministry has issued the directive to eliminate commercial dealing in organs

Act, with appropriate action to be taken whenever such violations come to light.

"NOTTO-ID is mandatory for considering allocation of organs in case of deceased donor transplant, this ID in case of a living donor transplant, shall also be generated at the earliest, maximum within 48 hours after the transplant surgery is done," the communication said.

Regular inspection

The Ministry has also called for devising a system of regular inspection of the registered hospital for transplant/retrieval by the appropriate State authority, and to monitor them on-site on the quality of transplantation, post operative follow-up of the donor and recipient, and outcomes.

Any violation of the THOTA, 1994 and its rules have to be probed, and appropriate action includes the suspension of registration for performing organ transplants if hospitals are involved in illegal activities.

National Organ and Tissue Transplant Organization (NOTTO)

- **Establishment:** NOTTO is a National level organization established under the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.
- **Function:** NOTTO functions as the apex centre for All India activities of coordination and networking for procurement and distribution of Organs and Tissues and registry of Organs and Tissues Donation and Transplantation in the country.
- **Policy Guidelines and Protocols:**
 - **Networking:** NOTTO networks with similar regional and state-level organizations to streamline organ and tissue transplantation processes.
 - **Dissemination of Information:** NOTTO handles the dissemination of information to all concerned organizations, hospitals, and individuals involved in organ and tissue transplantation.
- **About ID:** It is mandatory for considering allocation of organs in case of deceased donor transplant, this ID in case of a living donor transplant, shall also be generated at the earliest, maximum within 48 hours after the transplant surgery is done

Transplantation of Human Organs and Tissues Act (THOTA), 1994

- **Source of Transplants:** A transplant can originate from a pool of organs donated by deceased persons' relatives or from a living person known to the recipient.
- **Living Donations Under the Act:** The Transplantation of Human Organs and Tissues Act, 1994 permits living donations, primarily from close relatives like parents, siblings, children, spouse, grandparents, and grandchildren.
- **Documentation for Living Donations:** In cases of living donations from close relatives, whether Indian or foreign, various documents including identity proofs, family tree, pictures, and documents proving the donor-recipient relationship must be submitted.
 - An external committee thoroughly examines such cases to prevent illegal dealings.
- **Penalties:** Imprisonment for up to 10 years and fines up to Rs 1 crore.

Context: Recently, the Union Health Ministry issued a directive mandating a unique **National Organ and Tissue Transplant Organisation (NOTTO)-ID** for all organ transplant cases, aiming to eliminate commercial dealings, particularly those involving foreign citizens.

PM Narendra Modi Inaugurates 2550th Bhagwan Mahaveer Nirvan Mahotsav In New Delhi

Context: Recently, the Prime Minister of India inaugurated the **2550th Bhagwan Mahaveer Nirvan Mahotsav** in New Delhi on the auspicious occasion of **Mahaveer Jayanti**.

Vardhamana Mahavira

- **About:** The 24th Tirthankara, was born in 540 B.C. in Kundagrama near Vaishali.
- **Belonged to:** Jnatrika clan and had connections to the royal family of Magadha.
- **Family:** His father, Siddharta, led the Jnatrika Kshatriya clan, and his mother, Trishala, was the sister of Chetaka, the king of Vaishali.
- **Symbol:** Lion.
- **Renunciation:** At the age of 30, he renounced his home and became an ascetic.
- **Austerity and Enlightenment:** He practiced austerity for 12 years and attained the highest spiritual knowledge called Kaivalya (i.e., conquered misery and happiness) at the age of 42.
- **First Sermon:** He delivered his first sermon at Pava.
- **First Jain Council:** Pataliputra (Sthulbhadra)
- **Second Council:** Vallabhi (Gujarat) (Devardhigani Kshemasarmana).
- **Death:** Mahavira passed away at the age of 72 in 468 B.C. at Pavapuri in Bihar.

Jainism

- **About:** It is one of the world's oldest religions, originating in India at least 2,500 years ago.
 - The spiritual goal of Jainism is to become liberated from the endless cycle of rebirth and to achieve an all-knowing state called moksha.
- **Origin:** Jainism became prevalent in the **6th century B.C.** when Lord Mahavira propagated the religion.
 - There were 24 teachers, referred to as Jinas or the Tirthankaras, the last of whom was Lord Mahavira
- **First Tirthankara:** Adinath/Rishabhdev
- **23rd Tirthankara:** Parsvanatha
- **Three jewels of Jainism:**
 - Samyagdarshana ("right faith").
 - Samyagjnana ("right knowledge").
 - Samyakcharitra ("right conduct").
- **Doctrine of Jainism:**
 - Ahimsā (non-violence).
 - Satya (truth)
 - Asteya (not stealing)
 - Brahmacharya (chastity)
 - Aparigraha (non-possessiveness)

World Earth Day 2024 today: Google Doodle marks event with aerial views of planet's 'natural beauty'

Context: Recently Google Doodle celebrated World Earth Day 2024 by featuring aerial photographs from various locations worldwide, highlighting the planet's "natural beauty".

Earth Day 2024

- **About:** It was first celebrated in 1970, initiated by U.S. Senator Gaylord Nelson, as an environmental activism initiative.
- **Inspired by:** Vietnam War protesters Gaylord Nelson, who noticed that everyone was protesting against the war and not talking about the environmental impact of the war, so he decided to start speaking about environmental issues.
- **Purpose:** The event aimed to educate people about environmental issues and ways to conserve, strengthening the call for environmental activism.
- **Legal Impact:** The first Earth Day led to the introduction of significant environmental legislation, including the Clean Air Act and the Endangered Species Act.
- **Global Expansion:** In 1990, Denis Hayes organized the first global Earth Day, with over 200 million people from more than 140 countries participating.
 - At the present time, Earth Day is celebrated across 190 countries.
- **Theme 2024:** Planet vs. Plastics.

Significance

- Earth Day symbolizes the need to protect our mother nature.
- The day encourages every individual to think about environmental conservation and act accordingly.
- Earth Day speaks about the need to reduce carbon footprints.
- It advocates for the conservation of natural resources.
- Protection of Wildlife and Natural Habitats
- The day serves as a platform to advocate for policy changes that can have a positive impact on the environment.

Rice war: India gearing up to counter Pakistan's GI tag bid

Islamabad's claims in European Commission for basmati may hit India's exports to EU

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 NEW DELHI

India is gearing up to challenge Pakistan's attempts to broaden the geographical indication (GI) tag for its Basmati rice. The extension of the GI tag for the premium variety of rice, from 14 to 48 districts in Pakistan, could have significant implications on India's export prospects to the European Union (EU).

According to people in the know, the Union commerce ministry is actively strategizing to counter Islamabad's bid at the European Commission (EC). "A comprehensive report to completely refute Pakistan's claim is being finalized through consultations with key stakeholders, including the Basmati Export Development Foundation, which is affiliated with the Agricultural and Processed Food Products Export Development Authority (APEDA), alongside the Indian Agricultural

Research Institute (IARI), and association of rice exporters," one of the people said.

The development comes amid New Delhi's efforts to resolve all outstanding issues with the European Union (EU) for a bilateral free-trade agreement, with the eighth round of negotiations expected in May or early-June.

GI registration is key to access European markets, offering benefits such as tariff relief within the 27-member bloc.

India submitted its GI registration application on 20 July 2018, pre-dating Pakistan's application on 24 August 2023. According to the standard intellectual property rights (IPR) registration process, stakeholders can oppose a registration within three months. However, while the EC is yet to reach a final decision on

India's application, it published Pakistan's application for potential opposition on 23 February 2024. The EC is now considering registration based on all the available information from both countries.

Basmati rice is grown in 81 districts in India, spanning Jammu & Kashmir, Himachal Pradesh,

Haryana, Delhi, Uttarakhand, Punjab, and western Uttar Pradesh. 34 varieties of Basmati are officially recognized under Seeds Act of 1966. India will submit its

response, opposing Pakistan's claims, to the EC in the fourth week of May, a second person said.

Queries sent to a commerce ministry, spokesperson, IARI director, APEDA chairman, Pakistan embassy, and Pakistan Rice Exporters Association did not elicit any response till press time.

GI registration is key to access the European markets, offering benefits such as tariff relief within the 27-member bloc

GI Tag

- **About:** It is a symbol used on items that come from a particular geographical area and have qualities or a reputation linked to that place of origin.
- **Nodal Ministry:** Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- **Tenure:** 10 Years.
- **Regulated By:** Geographical Indications of Goods (Registration & Protection) Act, 1999.
- **Paris Convention:** GI is encompassed within the realm of intellectual property rights (IPRs) according to the provisions of the Paris Convention for the Protection of Industrial Property.

Context: India is gearing up to challenge Pakistan's attempts to broaden the geographical indication (GI) tag for its Basmati rice.

Basmati Rice Cultivation in India

- **Geographical Spread:** Basmati rice is grown in 81 districts in India, including regions such as Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Uttarakhand, and western Uttar Pradesh.
- **Varietal Diversity:** 45 varieties of Basmati rice have been notified under the seeds Act, 1966
- **India's Basmati Rice Exports:**
 - In FY23, India exported 152,857 metric tonnes (MT) of Basmati valued at \$167 million, up significantly from 88,452 MT worth about \$93.4 million.
- **India's position:** World's top exporter of Basmati rice.
- **Major Export Markets:** Saudi Arabia, Iran, Iraq, the United Arab Emirates, and Yemen.
- **GI tag in India:** Basmati rice has received GI tag from various states combined. They are - Punjab / Haryana / Himachal Pradesh / Delhi / Uttarakhand / Uttar Pradesh / Jammu & Kashmir.

Govt plans to extend PMSBY deadline for claims

SHIVA RAJORA
New Delhi, 21 April

The Centre is working to extend the deadline for unorganised sector workers to claim life and accident insurance cover under Pradhan Mantri Suraksha Bima Yojana (PMSBY), sources told *Business Standard*.

Last August, the labour ministry had started a facility that allowed unorganised workers registered on the social security portal—e-Shram — between the inception of the database in August 2021 and March 2022 to file

claims and avail insurance cover. According to the guidelines, only incidents that occurred after registration on e-Shram in August 2021 and before March 2022 were to be considered for availing the payout. The deadline to file claims under the facility expired last month.

"A large number of states are yet to appoint nodal officers that have to accept and process these claims. Also, the number of claims filed under the facility have been quite low across the country. Given that a lot of people are still unaware of the facility, the government



Between August 2021 and March 2022, close to 270 million workers had registered on the e-Shram portal

is considering extending the deadline for the facility so that the people who faced hard-

ships during the Covid period can get some relief," the person cited above said.

Between August 2021 and March 2022, close to 270 million workers had registered on the portal.

Under the facility, an online ex-gratia module was developed under e-Shram portal to provide benefits in the form of ex-gratia of ₹200,000 for death or severe accident and ₹100,000 for accident. The claim can be initiated by the registered worker himself in case of disability and only legal heirs of the registered workers can initiate the claim in case of death.

The objective behind the e-Shram portal was the idea of

creating a national database capturing the unorganised universe including workers ranging from agriculture and construction to new economy or gig. The portal has details such as name, occupation, address, educational qualification, skill type of the workers.

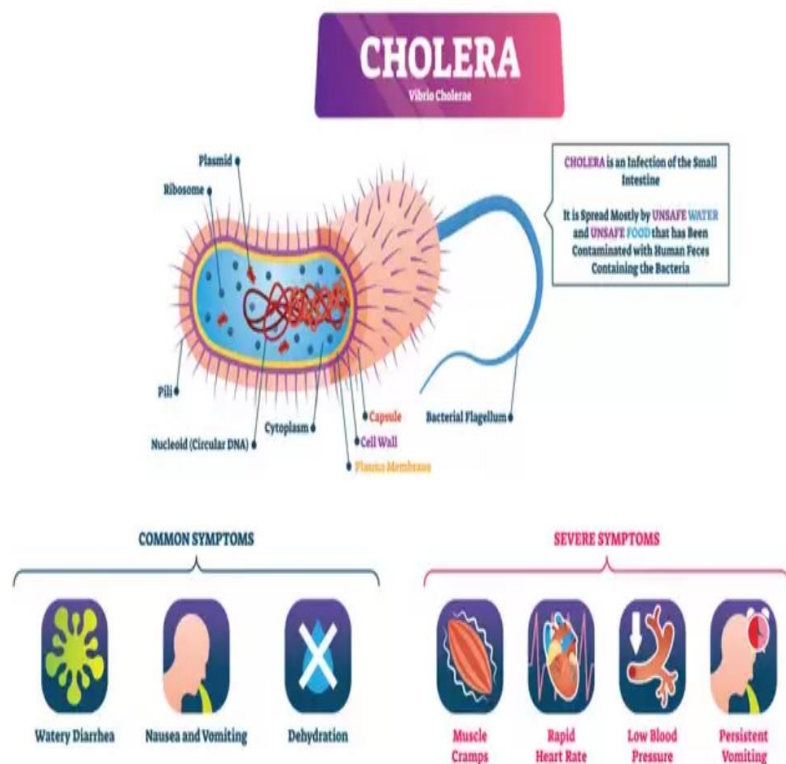
The government is also working on a slew of measures to provide benefits to the millions of unorganised sector workers registered on e-Shram, like integrating different portals. This is expected to help workers automatically avail various benefits under one umbrella.

Context: The Centre is working to extend the deadline for unorganised sector workers to claim life and accident insurance cover under Pradhan Mantri Suraksha Bima Yojana (PMSBY)

Pradhan Mantri Suraksha Bima Yojana (PMSBY)

- **About:** It is a one-year accidental insurance scheme renewable from year to year offering coverage for death or disability due to an accident.
- **Eligibility:** Individual bank/ Post office account holders of participating banks/ Post office aged between 18 years (completed) and 70 years (age nearer birthday) who give their consent to join / enable auto-debit, as per the above modality, will be enrolled into the scheme.
- **Payment Mode:** It will be directly auto-debited by the bank from the subscriber's account on or before 1st June of each annual coverage period under the scheme.
- **Risk Coverage**
 - **Death:** Rs. 2 Lakh
 - **Total and Irrecoverable Loss:** Both eyes or loss of use of both hands or feet or loss of sight of one eye and loss of use of hand or foot – Rs. 2 Lakh
 - Total and irrecoverable loss of sight of one eye or loss of use of one hand or foot – Rs. 1 Lakh.
- **Implementation by:** Public Sector General Insurance Companies and all other insurers who are willing to join the scheme and tie-up with banks for this purpose.

WHO prequalifies new oral vaccine for cholera; Here's what you need to know



Context: Recently, the World Health Organization (WHO) prequalified a new oral vaccine for Cholera called Euvichol-S.

Euvichol-S

- **About:** It is a simplified formulation of the oral cholera vaccine (OCV) Euvichol-Plus.
- **Manufacturer:** South Korea-based EuBiologics Co., Ltd.
- **Potential Solution:** The IVI claims that it can pave the way for a potential solution to the critical shortage of OCV worldwide.
- **Third Product in the Family:** It is the third product of the same family of vaccines for cholera listed in the WHO prequalification list.

Cholera Disease

- **About:** It is a water-borne disease.
- **Caused by:** An acute, diarrheal illness caused by infection of the intestine with the bacterium *Vibrio cholerae*.
- **Symptoms:** Profuse watery diarrhoea, Vomiting, and Leg cramps
- **Transmission:** A person may get cholera by drinking water or eating food contaminated with the cholera bacterium.
 - The disease can spread rapidly in areas with inadequate treatment of sewage and drinking water.
- **Vaccine:** Currently there are three WHO pre-qualified oral cholera vaccines (OCV), Dukoral, Shanchol, and Euvichol-Plus.

Indian Navy Conducted Exercise Poorvi Lehar On East Coast

Context: Indian Navy conducted **Exercise Poorvi Lehar** on the East Coast.

Exercise Poorvi Lehar

- **About:** The Indian Navy conducted this exercise under the Operational Control of the Flag Officer Commanding-in-Chief, Eastern Naval Command.
- **Aim:** The exercise was aimed at the validation of procedures towards assessing the Indian Navy's preparedness to meet maritime security challenges in the region.
- **Phases of the Exercise:** The exercise was conducted in multiple phases, including combat training in a realistic scenario during the tactical phase and successful conduct of various firings during the weapon phase, towards reaffirming the Indian Navy's capability to deliver ordnance on target.
- **Continuous Maritime Domain Awareness:** With operation of aircraft from diverse locations, a near continuous maritime domain awareness was maintained throughout the Area of operationst.
- **High Degree of Interoperability:** In addition to the participation of assets from Eastern Naval Command, the exercise also witnessed participation of assets from IAF, Andaman and Nicobar Command, and Coast Guard indicating a very high degree of interoperability amongst the Services.
- **Lessons Learned:** The exercise offered valuable lessons to participating forces operating under realistic conditions, thereby enhancing their readiness to respond effectively to maritime challenges in the region.

THE STORY OF INDELIBLE INK, A LASTING SYMBOL OF ELECTIONS

RISHIKA SINGH
NEW DELHI, APRIL 21

AS FRIDAY marked the first phase of the Lok Sabha elections, the classic symbol of Indian polls was under the spotlight again — a left hand with its index finger extended, marked by purple-black indelible ink.

Mysore Paints & Varnish Ltd, owned by the Karnataka government, which is the sole manufacturer of the ink in India, told DD News that around 26.5 lakh phials or small bottles (with a capacity of 10 ml each) would be made for this election cycle.

Why is the ink required?

The indelible ink was first manufactured at the Election Commission of India's request by the Council of Scientific & Industrial Research. The MyGov website says, "It was to counter the challenge of fraudulent voting" that research work on formulating the ink began in the 1950s by scientists. Later, the National Research Development Corporation patented it.

Mysore Paints & Varnish Ltd has been licensed to manufacture the ink and has been in the business since 1962. It was established in 1937 by Nalwadi Krishnaraja Wodeyar, the Maharaja of Mysore.

How long has it been in use?

The Representation of the People Act (RoPA) of 1951 mentions the ink. Section 61 states that rules may be made under the Act "for the marking with indelible ink of the thumb or any other finger of every elector who applies for a ballot paper or ballot papers for the purpose of voting at a polling station before delivery of such paper or papers to him."

When ballot papers were the norm, voters had to mark their preference on them. Before the paper was given, a voter's



Voters after casting votes for the Lok Sabha polls, in Nagpur, on Friday. PTI

index finger would be marked with the ink.

The RoPA also speaks of rules being formulated "for prohibiting the delivery of any ballot paper" to anyone having a mark.

An ECI report on the first general elections (1951-52) said the ink was applied with a glass rod. A total, 3,89,816 phials were supplied to the states for Rs 2,27,460.

The mark was made on the base of the forefinger until the 1962 general elections, after which it was made above the root of the nail on the skin.



What makes it indelible?

Indelible ink contains silver nitrate. It is colourless and becomes visible when exposed to ultraviolet light, like sunlight.

At around 20% concentration of silver nitrate, the ink becomes difficult to remove for at least 72 hours after application.

According to MyGov, "This water-based ink also contains a solvent like alcohol to allow its faster drying."

Currently, each phial is sold for Rs 174. The ink is exported to more than 25 countries. However, the procedure of its application varies. "In Cambodia and the Maldives, voters need to dip his/her finger into the ink... in Burkina Faso the ink is applied with a brush, and nozzles are used for its use in Turkey," the website says.

Context: With the first phase of voting for the 2024 Lok Sabha elections beginning on April 19, the classic symbol of Indian polls is visible everywhere — a left hand with only its index finger extended, marked by a purple-black indelible ink.

Indelible Ink

- **About:** It contains silver nitrate, a colorless compound.
- **Visibility:** The ink's colorless compound becomes visible when exposed to ultraviolet light, including sunlight.
- **Ink Quality:** The higher the silver nitrate concentration, around 20 percent, the higher the ink's quality.
 - According to a report from the United Nations Development Programme, for up to 72 hours after application, it can remain resistant to soap, liquids, home-cleansing, detergents, etc.
- **Composition:** This water-based ink also contains a solvent like alcohol to allow its faster drying.
- **Manufacturer:** The indelible ink was first manufactured at the Election Commission of India's (ECI) request by the government's Council of Scientific & Industrial Research (CSIR).
- **Representation of the People Act (RoPA) of 1951:** It includes provisions regarding the use of indelible ink during elections.
 - **Section 61 of RoPA:** It specifically addresses the use of indelible ink during the electoral process.
 - **Purpose:** To mark the fingers of electors who apply for a ballot paper before voting at a polling station.

IISc Launches 'Longevity India Initiative' to Pioneer Ageing Research in India

Context: The Indian Institute of Science (IISc) announces the launch of the Longevity India Initiative, a project focused on efforts to extend human 'healthspan' and tackle ageing-related challenges.

Longevity India Initiative

- **About:** It is a project of IISc, focused on to systematically study the causes of deteriorating health conditions among the elderly and devise interventions to aid an improved health span.
- **Large-Scale Clinical Study:** It has initiated a large-scale clinical study that will involve researchers from multiple IISc departments, clinicians, industry, philanthropists, and civil society.
- **Need:** Increasing old age population (**silver economy**).
 - WHO has projected that by 2050, the country would be home to over 31 crore people above the age of 60. So, it is imperative that we leverage technology to provide accessible geriatric healthcare, nurture the silver economy and invest in digital systems that support ageing populations.
- **Research Objectives:** The initiative seeks to enhance the understanding of ageing through both fundamental and applied research and to develop solutions that can improve the quality of life.
- **Development of Interventions:** It will leverage advanced research to develop interventions that can help manage age-related diseases more effectively, with an emphasis on promoting healthy ageing across India.
- **Funding:** The initiative has received initial grant funding support from Prashanth Prakash, Founding Partner, Accel India.

Significance

- **Growing Elderly Population:** With India's elderly population projected to surge to 347 million by 2050, it is imperative that there is a need to leverage technology to provide accessible geriatric healthcare.
- **Nurturing the Silver Economy:** The initiative aims to nurture the silver economy and invest in digital systems that support ageing populations.

The mpox virus uses a 'genomic accordion' to evolve and infect humans

The mpox family of viruses is known to be able to evade selective evolutionary pressures by duplicating genes or accumulating mutations and expanding its genome or contracting it by deleting or inactivating genes. In an April 18 study, scientists reported the part of the mpox genome where these changes happen

Siddharth Shrivastava
Nimrod Scientific

Poxviruses have long been a cause of fear as well as curiosity for humankind. One particularly infamous poxvirus, smallpox, alone may have killed more than 600 million people in the last century.

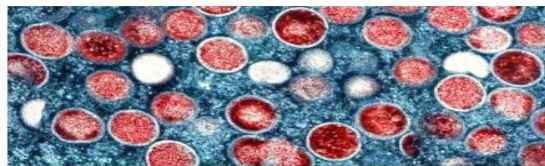
Smallpox didn't discriminate between rich, poor, young, old, and killed a third of the individuals whom it infected. The turning point came with evidence of the efficacy of the smallpox vaccine. This followed a concerted effort worldwide to administer the vaccine and eventually eradicate the dread disease. This feat has stood as a testament to the power of sustained global public health initiatives.

Mpox's 15 minutes
Another poxvirus, mpox, was recently in the headlines after a rapidly expanding global outbreak in 2022-2023. The virus was previously called monkeypox after a spillover event in a research facility involving cynomolgus monkeys. The name is considered both wrong and inappropriate today, since there have been many identified mpox in many sporadic outbreaks among humans. They have also found multiple mpox lineages have been circulating in humans, adapting by accumulating mutations modulated largely by the APOBEC proteins.

But it wasn't until 2022 that the disease became widely known, thanks to outbreaks in more than 118 countries and the World Health Organization (WHO) quickly declaring it a public health emergency. To date, this outbreak has infected almost 100,000 people. Based on WHO data, infections have a mortality rate of 10%.

The outbreak was due to one clade (strains of the virus descended from a common ancestor) – called 1B – having developed very high human-to-human transmission through close contact and spread through the sexual route. While the rate of new infections has been dropping, mpox continues to circulate and cause unanticipated outbreaks worldwide. This increases the chance that a more virulent and transmissible strain might emerge and become endemic somewhere.

Expanding, contracting as required
Mpox, like all poxviruses, are DNA viruses. The mpox genome has about 197 kilobases (kb). The core genes are those closely conserved (i.e., preserved during evolution) by various poxviruses plus two



A colorized transmission electron micrograph of mpox particles (red) found within an infected cell (blue), cultured in the laboratory, captured and colour enhanced at the H&M2 Integrated Research Facility in the U.S.

sections about 6.4 kb long, one at each end of the genome.

Researchers don't yet know what function these two sections serve but suspect they influence how well the poxviruses can infect different hosts.

The mpox genome also has a sequence of bases repeating in a pattern, which researchers believe play a role in the virus's evolution.

The mpox family of viruses is also known to be able to evade selective evolutionary pressures. It does this by duplicating genes and/or accumulating mutations and expanding its genome significantly – or contracting its genome by deleting gene stretches or inactivating them. Such rhythmic expansions and contractions are called genomic accordions.

Find the accordion
In a study published on April 18 by Nature Communications, researchers at the Icahn School of Medicine in New York and multiple institutions in Spain extensively sequenced the genome of the mpox virus implicated in the 2022 outbreak. They used advanced genome sequencing technologies to piece together a comprehensive genome of the mpox virus from scratch.

They found that the 6.4-kb-long section of the virus strongly influenced the virus's human-to-human transmission. It was also correlated that variations in three genes in particular – which were spread and as well as mortality. Researchers soon confirmed this section of the genome was not so informative, were actually found to be the virus's genomic accordions.

One particularly infamous poxvirus, smallpox, alone may have killed more than 600 million people in the last century.

All mpox genomes can be divided into two distinct yet broad clades 1 and 2. Clade 1 is thought to have a higher mortality. Each clade has sub-clades, or lineages, defined by specific evolutionary processes.

Researchers have also found evidence of significantly different mpox virulence in animal models. The new study, like others like it, further the idea that the 2022 outbreak largely involved a new lineage of the virus, clade 1B, that was even better adapted to human-to-human transmission than clades 1 or 1A.

The outbreak in the DRG
Between September 2022 and February 2023, health workers detected a large mpox outbreak detected in the Democratic Republic of the Congo (DRG), centred on a mining village and quickly spreading to a number of regions within the country.

This outbreak was associated with a mortality rate of 10%. Researchers soon confirmed this section of the genome was not so informative, were actually found to be the virus's genomic accordions.

The authors are senior consultants at the Vidyaanand Cancer Care Foundation and Adjunct Professors at Indian Institute of Technology Kharagpur. All opinions expressed are personal.

THE GIST

Mpox was in the headlines after a rapidly expanding global outbreak in 2022-2023. The virus was previously called 'monkeypox' after a spillover event in a research facility involving monkeys in 1958.

Researchers sequenced the genome of the mpox virus implicated in the 2022 outbreak. Mpox are DNA viruses. The mpox genome has about 197 kilobases. The core genes plus two sections about 6.4 kb long, one at each end of the genome.

These sections of the virus genome were found to strongly influence human-to-human transmission. These were eventually found to be the virus's genomic accordions.

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The authors are senior consultants at the Vidyaanand Cancer Care Foundation and Adjunct Professors at Indian Institute of Technology Kharagpur. All opinions expressed are personal.

Context: In a recent study, scientists recently reported that a section of the mpox genome, believed to be 'less important,' is responsible for giving the virus a peculiar evolutionary ability.

Mpox Virus

- **About:** It is an infectious disease caused by the monkeypox virus.
- **Origin:** Mpox, previously known as monkeypox, originated from a spillover event in a research facility involving monkeys in 1958.
- **Sporadic Outbreaks:** Mpox has been identified in sporadic outbreaks among humans since the initial event in 1958.
- **Genetic Adaptations:** Mpox lineages have been circulating in humans, evolving through mutations modulated by APOBEC proteins.
- **Global Outbreak:** The global outbreak of mpox in 2022-2023 affected over 118 countries, prompting the WHO to declare it a public health emergency.
- **Causes:** It is a painful rash, enlarged lymph nodes and fever. Most people fully recover, but some get very sick.
- **Transmission:** Person-to-person transmission of mpox can occur through direct contact with infectious skin or other lesions such as in the mouth or on genitals.
- **Symptoms:** It usually begin within a week but can start 1–21 days after exposure. Symptoms typically last 2–4 weeks but may last longer in someone with a weakened immune system.
- **Treatment:** Getting an mpox vaccine can help prevent infection.

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