CURRENT AFFAIRS 2020

[Part 1] - Science & Tech.

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CHIM study

Context

ICMR and the DBT plan to introduce controlled human infection model (CHIM) studies in India.

What is CHIM study?

It is a research method in which healthy people are infected with a selected strain of an infectious virus or bacteria in order to test a vaccine.

Difference with clinical trial?

A clinical trial is defined as the systematic study of new drug(s) in human subjects with the objective of determining the safety and efficacy of the new drug.

Need/Advantages

1. Pathological studies
2. Principle of no harm to animals
3. Reduced costs & easier licensing
4. Improving local efficacy of drugs
5. Vaccine development
6. International Ethics
7. Ineffective traditional vaccine research

Concerns/Disadvantages:

1. Certainty of harm in CHIM studies.
2. A safer, well characterised strain will lose some semblance to the real "challenge" organism.
3. Possible spurt in trials
4. Joining multiple trials & withholding information
5. Consent to be harmed
6. Loophole in the Drugs and Cosmetics Act, 1940
8. Contrary to the established principles

Experts Voice:

1. The Alliance for Human Research Protection (AHRP) has called the proposed studies on human volunteers in India, "a vaccine experiment atrocity".
2. Justice R.M. Lodha commented about these trials saying, "human beings are being treated like animals".

Way Forward

1. Objectivity and clarity
2. Systematic public engagement, taking the public into confidence, transparency at every stage, addressing ethical and social concerns, and a clear regulatory framework specific to CHIM.
3. Other ethical concerns
4. Revision of existing guidelines

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Edge Computing

What is it?

Edge computing is the practice of processing data near the edge of your network, where the data is being generated, instead of in a centralised data-processing warehouse.

Difference with cloud computing

It is a centralized network of remote servers which provide on-demand availability of computing and storage resources over an internet connection.

Uses/Advantages

1. Reducing internet bandwidth usage
2. Reduces latency
3. Decrease in server resources and associated cost
4. Reduces ecological footprint
5. Newer functionalities
6. Inclusion and accessibility
7. Increases data security
8. Good digital experience for consumer

Concerns

1. Increases attack vectors
2. Requires more local hardware
3. Incomplete data availability for companies
4. Potential loss or data corruption

Applications

1. Self-driving vehicles
2. Traffic management
3. Power management with smart grids & smart meters
4. Safety monitoring in remote oil and gas rigs
5. Mobile app data management
6. Edge video orchestration

Related Terms

1. Fog computing
2. Cloudlets