



Steps taken for advancing personalized medicine

GenomeIndia completes WGS database of 10,000+ Indians across all major groups, boosting health, science, and sustainable development

State-of-the-Art Phenome National Biobank launched at CSIR-Institute of Genomics and Integrative Biology, New Delhi for nationwide cohort study with 10,000 individuals' genomic, lifestyle, and clinical data

DBT's BioE3 Policy spotlights precision biotherapeutics: funding R&D and manufacturing of indigenous mRNA therapeutics, monoclonal antibodies, and cell/gene therapies for affordable health gains

Department of Biotechnology's UMMID Initiative Launches NIDAN Kendras to Tackle Genetic Disorders via Prenatal Testing, Newborn Screening, and Counseling for At-Risk Pregnant Mothers

Leveraging Genomics and AI, Indian Tuberculosis Genomic Surveillance Consortium programme (InTGS), Catalogues TB Drug Resistance Mutations, Enabling Faster Detection and Evidence-Based Control and management Strategies

DHR's DIAMOnDS Scheme Delivers Free Advanced Molecular Diagnostics to Poor Lung/Breast Cancer Patients via 25 Centers, Boosting Precision Treatments; HTAI Ensures Cost-Effective Tech Integration, ICMR Drives High-Risk Indigenous R&D and mPRAGATI Innovation

ICMR Shapes India's Ethical Framework for Advanced

Biomedical Tech with National Guidelines on Research, Biobanking, Genomics, Sample Analysis, and Gene Therapy Development

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The Government of India has undertaken various initiatives on advanced, personalized medicine including genomics, precision diagnostics and targeted therapies.

The 'GENOMEINDIA', funded by the Department of Biotechnology of the Central Government has completed whole genome sequencing (WGS) database of over 10,000 individuals representing all major population groups, across the country. GenomeIndia data represents Government of India's commitment to scientific inquiry and is poised to reshape health and science in India and beyond, fostering sustainable development through democratizing and disseminating this national genetic resource knowledge.

Ministry of Science and Technology has also launched the state-of-the-art Phenome India 'National Biobank' at the CSIR-Institute of Genomics and Integrative Biology in New Delhi. The Biobank aims to serve as the backbone of a nationwide cohort study, collecting comprehensive genomic, lifestyle, and clinical data from 10 thousand individuals across the country.

Department of Biotechnology has informed that under the BioE3 Policy, it has identified Precision Biotherapeutics as one of the thematic areas. Under this thematic area, DBT facilitates R&D, and manufacturing of indigenous mRNA therapeutics, monoclonal antibodies and Cell and Gene Therapies, by industry and academia, as cost effective solutions for improved health outcomes. The support traverses discovery and application oriented research to bridging the gap for scale up.

As reported by the Department of Biotechnology, Unique Methods for Management of Inherited Disorders (UMMID) initiative was started by them to address the burden of genetic disorders in the country. One of the components of the UMMID initiative is establishing NIDAN Kendras (National Inherited Disorders Administration Kendras) for providing clinical care broadly encompassing the activities of prenatal testing for genetic disorders, newborn screening for relatively common treatable genetic metabolic disorders, and genetic counseling of pregnant mothers carrying fetuses with high risk of genetic disorder.

Further, DBT supports Indian Tuberculosis Genomic Surveillance Consortium programme (InTGS) aiming to catalogue the existing and emerging drug resistance mutations in Mycobacterium tuberculosis. The initiative aims to leverage genomics and artificial intelligence for a faster and more comprehensive detection of drug resistance and support evidence-based strategies for more effective TB control and management.

The Department of Pharmaceuticals implements the Scheme for Promotion of Research and Innovation in Pharma-MedTech Sector (PRIP) to strengthen research and innovation by supporting projects across the innovation lifecycle from early research to product development and commercialisation. The PRIP scheme provides for disbursement of financial assistance to industries, MSMEs, start-ups for eligible R&D projects for the development or expeditious validation of new medicines; complex generics and biosimilars; and novel medical devices in identified priority areas taken up either in-house or in collaboration with the academia.

The Department of Health Research (DHR) has implemented the DHR-ICMR Advanced Molecular Oncology Diagnostic Services (DIAMOnDS) Scheme, with the aim of providing free of cost advanced molecular oncopathology diagnostic services to the poor and needy lung and breast cancer patients. Through its network of 25 DIAMOnDS centres across the country, the scheme aims to facilitate

biomarker based precision and personalized treatment to the cancer patients. Moreover, through its Health Technology Assessment in India (HTAI) Attached Office, DHR supports cost-effective studies for affordable advanced technology and their integration into National Health Programmes.

DHR through Indian Council of Medical Research (ICMR) promotes indigenous innovation by supporting high-risk, high-reward R&D to translate new diagnostics, drugs, biologics and medical devices from proof-of-concept to product development, including patient-specific and targeted therapies. This is complemented by national facilities such as mPRAGATI at IIT Delhi for precision design, fabrication, testing and validation.

Further DHR through its Human Resource Development (HRD) scheme supports capacity building in health research including personalised medicine and advanced technologies. ICMR through its pioneer initiatives like MedTech Mitra, Patent Mitra and Clinical Trial Network – INTENT supports regulatory handholding and clinical trials respectively. This support system is assisting quick translation of useful products and tools for betterment of health of the people.

ICMR has played a central role in shaping India's environment for ethical research on advanced biomedical technologies by issuing national ethical guidelines governing biomedical research, biobanking, genomic data use, and secondary analysis of clinical samples and by co-developing national guidelines for gene therapy product development and oversight, providing a facilitatory pathway for advanced and targeted therapies.

The Union Minister of State for Health and Family Welfare, Shri Prataprao Jadhav stated this in a written reply in the Lok Sabha today.

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