Apollo Research and Innovations (ARI)
Spearheading Healthcare Research and Innovations for Apollo Hospitals
The Apollo Mission
A promise that redefined Healthcare

“Our mission is to bring healthcare of international standards within the reach of every individual. We are committed to the achievement and maintenance of excellence in education, research and healthcare for the benefit of humanity.”
VITAL ELEMENTS IN OUR VISION FOR THE FUTURE.

- An unwavering dedication to clinical excellence
- A relentless pursuit of expertise
- The ever-tender Apollo empathy
- Strong focus on future-ready healthcare through education & research

Dr. Prathap C Reddy
Founder Chairman - Apollo Hospitals Group
Apollo Legacy
A snapshot of a revolution

• Touched 40 million lives
• 9.5 million Preventive Health Checks
• Patients from 120 countries
• 140,000 Heart Surgeries
• Over 20000 Joint Replacements
• First Liver Transplant in Children & Adults and over 1200 Liver Transplants
• First Multi-Organ Transplant
• Over 12,000 Kidney Transplants
• Busiest Solid Organ Transplant programme in the world
IMPACTFUL GROWTH THAT MAPS PERFECTLY TO THE NEEDS OF THE COUNTRY
A BLUE PRINT SUPPORTED BY STRONG PILLARS

- Clinical Excellence
- Tender Loving Care
- Cutting Edge Technology
- Clear Cost benefit
- Academic and research excellence
A DAY AT APOLLO HOSPITALS

- 20,000 Foot Falls
- 1,500 Admissions
- 800 Major Surgeries
- 600 CT Scans
- 300 MRI
- 40 Cardiac Surgeries
- 350 Dialysis
- 3-4 Organ Transplants
- 1,000 Health Checks
Integrated Model

Apollo Global Projects and Consultancy
MedVarsity
Apollo Health Knowledge City
Apollo Pharmacy
Apollo Hospital Education & Research Foundation
Apollo Munich Health Insurance
Apollo Hospitals
HealthHiway
Apollo Clinics
E wellness Rx
Social Initiatives
Apollo Telemedicine Networking Foundation

THE APOLLO CIRCLE OF LIFE.
Enable a Research & Innovations led Apollo Hospitals, which consistently rides the cutting edge in Technology, Therapy, Delivery for improved patient outcomes, affordability and reach...
Work Scope: Pursuing a vibrant portfolio...

Clinal Research

Clinical Research Training

Basic & Public Health Research

Personalized Medicine

Research & Innovations ventures

Technology Evaluation

Thought leadership

Enabling a Research led Apollo Hospitals...
Clinical Trials:
High Focus on Quality Assurance and Patient Safety

- 800 global multi-centric clinical trials
- 200 trials across India (any time)
- 14 years of site management experience
- 18 operational sites
- 100% GCP compliance
- More than 200 PI’s and 60 CRC’s
- Trials across 6 leading therapeutic areas
- Access to diverse patient pools
- State-of-art Clinical Trial Management System

- Potential to take in more than 200 trials at any given time
- More than 80% trials are multicentric
- 66% Phase III
- 14% Phase II
- 15% Phase IV
- 5% Other (Device, FMCG, Software, Observational)
# Capability: An ARI Edge

## Reach
- 18 networked sites
- Availability of Satellite sites

## Resources
- 60 GCP certified CR Coordinators
- 200 GCP certified PIs on our panel
- 100 willing Clinicians

## Framework
- SPOC for Clinical Trial Site Solutions
- Clinical Trials Management System (CTMS)
- DCGI Registered ECs with a uniform SOP

## Credentials
- 800 clinical studies with 200 studies on ground at any point of time
- Drugs, Devices, Software, FMCG, others
- US FDA visited ARI sites
- Over 60 professionals trained every year

An experienced, centralized & Professional team
Clinical Research Courses:
Leveraging Experience to Evolve Clinical Research Education

Advanced Certificate Course in Clinical Research
ARI and Anna University

- Pan India course across 5 cities comprising of 16 modules
- Clinical research education in a hospital environment
- **Unique course design:** 4 months Theory, 2 months Focused Applied Learning and 6 months Internship (at ARI Clinical Trial Unit)
- Highest Faculty : Student Ratio – Only 20 students per batch
- Optimal faculty mix from Academia, Industry and Institutions
- 95% student placement, at leading CROs, SMOs and Pharmaceutical Companies

**Also offer customized training solutions to industry**

Apollo Research and Innovations
Basic and Epidemiological Research

Basic Research
- Genetic association of *Coronary Artery Disease* in young Indian adults -204 samples collected; Gene expression completed for Phase 1
- Pathogen detection and discovery through high Throughput Platforms with ICGEB
- Characterization of Endothelial Progenitor Cells in Polycystic Ovary Syndrome (PCOS) with IIT Madras
- Study to develop a prognostic biomarker for breast cancer; Phase 1 completed; Short-listed 30 gene signatures from 150 –with a leading Pharma MNC

Epidemiological Research
- MoU with INCLEN; Won grant from ICMR on Fatty Liver disease project
- Multi-centric study on *Fatigue completed*
- *Haematological and biochemical parameters survey*
Research Grants Program:
Seeding clinical research projects across the Apollo Hospitals Network

- Provided research grants to over 21 projects
- 3 Projects submitted to Department of Biotechnology, Govt of India
- 5 more projects in pipeline

A few of our projects

- “A comparative study of enteral vs IV rehydration in dengue illness”, Apollo Children’s Hospitals Chennai.
- “Prevalence of vitamin D [25(OH)D] deficiency, its association with type 2 diabetes patients.”, Apollo Hospitals, Bilaspur
- “Evolution of fronto-temporal lobar degeneration and its relation with molecular genetics, imaging and neuro-chemical markers”,
Vision of Apollo-Saarum: India’s largest financially sustainable Biobank

**Clinic Facing Services, Apollo-Saarum**

- **Patient Facing Services**
  - Treatment Optimization
  - Molecular Diagnostics

- **Clinical Support Services**
  - Stratification of clinical trial populations

- **Research Support & Bio-repository Services**

**Drug Discovery & Services, Saarum**

- **Create custom cell lines & tumour microarrays**

- **Target & Biomarker Services**
  - Discovery & validation using primary human cells
  - Genomics & proteomics services

- **Drug Discovery related Services**
  - Idea-to-IND phase collaborative drug discovery programmes
  - Human Cell based Phenotype screening services

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Apollo Research and Innovations
Key Achievements: Life Sciences

Incubated Sapien Bio-Sciences (An Apollo company)

- **MyPlatelet:** Personalized blood thinning medication post stent/CABG; 200 tests -6 months-hyd & bhubaneshwar

- **Genetic Risk Assessment:**
  - For CVD, diabetes & obesity with nutri-genomics
  - Preventive health checks enable behavioral change

- **Clinical Genomics:**
  - For differential diagnosis, better disease mgmt & family screening - Eye, cancer & CVD panels

- **Bio-Bank:**
  - Creating India’s largest bio-repository
  - Samples & info priceless for drug discovery, diagnostics
  - Harvard, Astra Zeneca, DRL interested

- **Peri-natal genetics:**
  - Pre-natal testing
  - New-born screening
  - Standardized, white labelled & customized for Apollo

- **Diagnostic Collaborations:**
  - Prostrate cancer diagnostics

Apollo Research and Innovations
Key Developments: Software

Forged Collaboration with Analytics for Life -

- Detect a range of cardiac health issues and abnormalities from a simple non-invasive ECG test
- 2 tranches of study (64 subjects) completed with over 85% sensitivity & specificity
- 3rd tranche completed with encouraging results of Sensitivity & Specificity
- Extension Study with 1000 subjects - May 14
- Clinician verdict (so far): Tool applicable for mass screening

A potentially disruptive non-invasive Screening tool for Cardio-vascular Disease
CRO Activities – Ambulatory BP Management Trial

- The Study is an observational study to assess the correlation of Ambulatory Blood Pressure Monitoring (ABPM) versus Office Blood Pressure Monitoring (OBPM) in patients newly diagnosed with High Blood Pressure.
- The Study is a 1000 patient study across 13 different ARI sites and 100 investigators.
- The scope of the work by ARI includes document preparation, monitoring, recruitment, data gathering and management, analysis and report writing.

* A large multicentric study with a vision of changing the paradigm in hypertension management
Key Developments: Devices

Forged Collaboration with Medtronic

- Improve access to care for End Stage Renal Disease (ESRD) patients
- Medtronic creating an advanced dialysis device with clinical & operational insights from Apollo
- Device will need 6 ltrs of water Vs. 120 ltrs of water/ session
- Lower risk to patient
- Making mobile dialysis a reality

A potentially disruptive healthcare delivery model in Dialysis
Key Developments: Biomarkers

Diagnostic for Glioblastomas

- Blood based (non-invasive) cancer diagnostic for Glioblastoma Multiform (GBM)
- Pilot data indicates positive results
- Larger study to commence shortly

Indian pre-disposition to CVD

- Completed pilot study on genetic risk assessment in Indians predisposing them to cardiovascular disease
- Used a state-of-art technology platform, to perform genomic data analysis for detecting genome specific signatures and associations
- DNA sample of each individual was genotyped
- Genetic pathway analysis in progress
Key Collaborations

- Philips (Medical Device studies & IP)
- Anna University, Chennai - Education
- Nestle (Non Drug Studies)
- Parexel – Drug Trials
- Drug Trials & Training
- Dialysis Device Innovation
Technologies under Evaluation...

1. Early warning hand held Breast Cancer Screening
2. ECG for Home Care
3. Technology for measuring intra-cranial pressure
4. Non invasive Prostate Cancer Screening using Urine Sample
5. Skin repair for burns

and many more...
Creating an eco-system for Research & Innovations...

Apollo Research and Innovations
Thank You!

“Every great advance in science has issued from a new audacity of the imagination”

- John Dewey