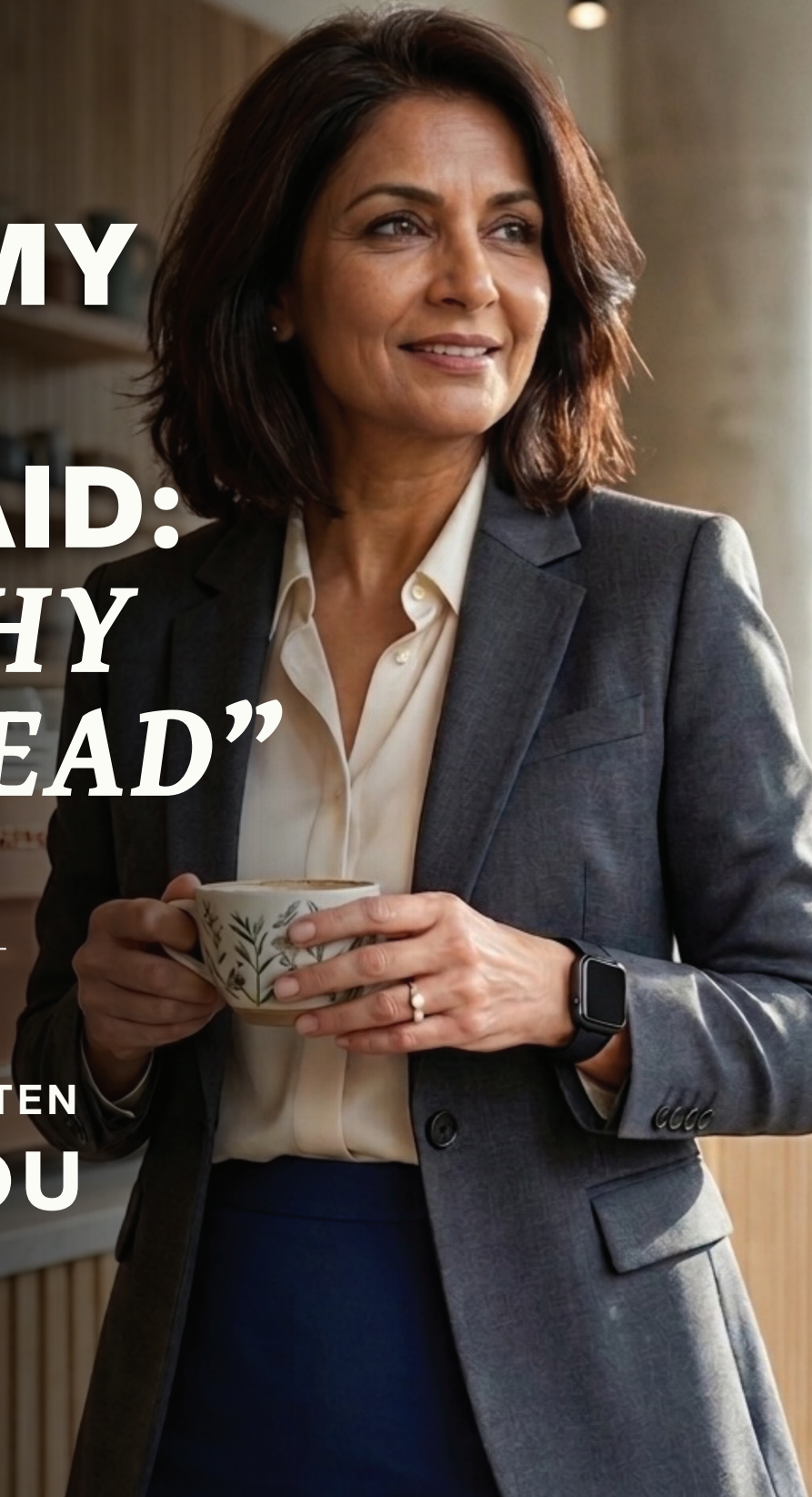




SRI MADHUSUDAN SAI
INSTITUTE OF MEDICAL
SCIENCES AND RESEARCH

**ASKED MY
GENES.
THEY SAID:
“HEALTHY
LIFE AHEAD”**

KNOW WHAT'S WRITTEN
WITHIN YOU



Four Pillars of Precision Medicine

Our research and clinical strategy is grounded in a four-pillar Precision Medicine framework — moving healthcare from reactive to proactive, from generalised to genomically guided, and from fragmented to fully participatory.



Preventive

Prenatal and early genetic diagnosis to intercept disease before clinical manifestation — enabling timely intervention, family counselling, and improved long-term outcomes.



Predictive

Diagnosis, prognosis, and risk assessment enabling proactive care delivery — utilising polygenic risk scores, advanced biomarker profiling, and comprehensive molecular diagnostics.



Personalised

Targeted genomics-guided therapies tailored to each patient's unique molecular profile — from gene therapy and drug repurposing to immunotherapy and precision oncology.



Participatory

Collaborative and informed healthcare involving patients, families, clinicians, and researchers working together toward shared, measurable health goals.

Comprehensive Genomic Healthcare Across the Lifespan

The Genomics Suite integrates advanced genetic diagnostics, expert counselling, and precision medicine to provide accurate diagnosis, personalised treatment, and preventive healthcare across every stage of life.



Patient Groups Served

NEWBORNS • ANTENATAL WOMEN • CHILDREN • ADULTS • OLDER ADULTS

Core Services

Pre-test Counselling

- Clinical Assessment
- Family History
- Risk Assessment
- Informed Consent

Advanced Genetic Testing

- Targeted Gene Panels
- Whole Exome Sequencing
- Whole Genome Sequencing
- Pharmacogenomics

Post-test Counselling

- Clinical Interpretation
- Family Risk Assessment
- Clinical Recommendations
- Follow-up Planning

Precision Diagnostics & Therapeutics



Inborn Errors of Metabolism

- Phenylketonuria (PKU)
- Maple Syrup Urine Disease (MSUD)
- Galactosemia
- MCAD Deficiency
- Urea Cycle Disorders



Cardiovascular Disorders

- Familial Hypercholesterolemia
- Hypertrophic Cardiomyopathy
- Dilated Cardiomyopathy
- Long QT Syndrome
- Arrhythmogenic Right Ventricular Cardiomyopathy



Kidney Disorders

- Alport Syndrome
- Autosomal Dominant Polycystic Kidney Disease
- Chronic Kidney Disease
- Steroid-resistant Nephrotic Syndrome
- CAKUT



Liver Disorders

- Wilson Disease
- MASLD
- Alpha-1 Antitrypsin Deficiency
- Progressive Familial Intrahepatic Cholestasis
- Glycogen Storage Diseases



Respiratory Disorders

- Cystic Fibrosis
- Interstitial Lung Disease
- Alpha-1 Antitrypsin Deficiency
- Familial Pulmonary Fibrosis



Genodermatoses

- Epidermolysis Bullosa (EB)
- Ichthyosis
- Palmoplantar Keratoderma (PPK)
- Xeroderma Pigmentosum (XP)
- Other Inherited Skin Disorders

Precision Therapeutics



Cell Therapy

Advanced therapeutic approaches utilising naturally occurring revertant mosaicism for selected genetic disorders.



Pathway-guided Therapy

Disease-causing molecular pathways identified and treated using clinically available precision medicines.

Advanced Genomic Diagnostics

PATIENT CARE WORKFLOW

The Genomics Suite combines cutting-edge DNA sequencing with expert clinical interpretation to identify inherited disorders, enable precision diagnosis, and guide personalised treatment strategies.



Pre-test Counselling

Specialist counselling to understand your medical and family history, discuss testing options, and make informed decisions before genomic analysis.



Genetic Counselling

Advanced Next-Generation Sequencing (NGS), Whole Exome Sequencing (WES), and targeted gene panels to detect disease-causing genetic variants.



Variant Interpretation

Comprehensive analysis of genetic variants with clinically actionable insights, enabling accurate diagnosis and personalised treatment planning.



Precision Care & Follow-up

Integrated genomic findings support personalised therapies, family screening, disease monitoring, and long-term clinical management.

Advanced Immune Diagnostics

PATIENT CARE WORKFLOW

The Immunology Suite combines advanced laboratory diagnostics with expert clinical interpretation to diagnose immune-mediated disorders and deliver personalised immunotherapies.

Pre-test Counselling

Expert guidance to understand your condition, testing options, and the most appropriate diagnostic pathway before evaluation.



Immune Profiling

Comprehensive immune profiling using Flow Cytometry, Multiplex Cytokine Assays, and advanced immune phenotyping technologies.



Precision Report Interpretation

Detailed interpretation of immune biomarkers with actionable clinical insights to support accurate diagnosis and personalised treatment.



Disease Monitoring & Follow-up

Continuous monitoring of immune health and disease progression to evaluate treatment response and optimise long-term care.



Precision Immunotherapy

Personalised immune-based treatments tailored to each patient's molecular and genetic profile for improved therapeutic outcomes.

Conditions Managed

- **Rheumatoid Arthritis:** A chronic autoimmune disease that causes inflammation, pain, stiffness, and progressive damage to the joints.
- **Systemic Lupus Erythematosus (SLE):** A complex autoimmune disorder where the immune system attacks multiple organs, including the skin, joints, kidneys, and heart.
- **Psoriasis:** An immune-mediated skin condition that accelerates skin cell turnover, leading to red, scaly, and inflamed patches.
- **Vitiligo:** An autoimmune condition in which pigment-producing cells are destroyed, resulting in well-defined white patches on the skin.
- **Pemphigus:** A rare autoimmune blistering disorder causing fragile skin and painful sores on the skin and mucous membranes.
- **Pemphigoid Disorders:** A group of autoimmune diseases characterised by tense blisters caused by inflammation beneath the skin surface.

Precision Therapies



**CAR-T Cell
Therapy**



**Biologic
Therapies**

Equipment & Laboratory Infrastructure

Our laboratory features a high-throughput research and diagnostic pipeline spanning eight functional categories — from molecular processing and quantification through next-generation sequencing, bioinformatics, and long-term biobanking.

CATEGORY	EQUIPMENT & INFRASTRUCTURE DETAILS
DNA Isolation & Molecular Processing	Sorvall ST 8R Refrigerated Centrifuge · Gel Electrophoresis System · Sartorius Analytical Balance · Eutech pH Meter · Digital Vortex Mixer · Hot Plate Stirrer · Micropipettes
Quality Control & Quantification	NanoDrop Ultra Microvolume UV-Vis Spectrophotometer · Qubit Fluorometric Quantification System
PCR, Library Prep & Fragment Analysis	Applied Biosystems ProFlex™ 3×32-well PCR System · Library Preparation Workstations · Biofragment Analyzer
Next-Generation Sequencing	Illumina MiSeq i100 Platform for Targeted Sequencing
Bioinformatics & Data Analysis	High-Performance Server — 256 GB RAM · 48 GB Dedicated GPU · 50 TB Internal Storage · 50 TB NAS Backup
Karyotyping & Cytogenetics	Class II A2 Biosafety Cabinet · Forma CO ₂ Incubator · Inverted Microscope · EVOS M7000 Imaging System
Biobanking & Sample Storage	TDE Series -86°C Ultra-low Temperature Freezer · Liquid Nitrogen (LN ₂) Cryostorage · 4°C and -20°C Refrigerated Storage
Sterilisation & Utilities	Zealway Autoclave · Smart2Pure Pro Water Purification System (RO) · Heating/Drying Oven



Dr Vamsi Krishna Yenamandra

Director, Genomics & Immunology – Professor of Dermatology

A globally recognised physician–scientist and dermatologist, Dr Yenamandra brings over 15 years of expertise in rare disease genomics, clinical trials, and translational medicine. He developed AlphaSeq, now deployed in 96 countries, and pioneered NGS for the world's largest Epidermolysis Bullosa cohorts.

MBBS

Dr NTR University of Health Sciences

MD–PhD

AIIMS, New Delhi

Postdoc

UMC Groningen, Netherlands

Postdoc

Stanford University, USA

Asst. Prof

CSIR-IGIB & TATA IISc

Awards & Recognition

- CDA Trophy – British Association of Dermatologists
- Young Dermatologist 2016 – IADVL
- Future Leader 2018 – EADV
- AIIMS Excellence Awards 2014-2018
- DSMB – University Hospital Salzburg

Clinical Trials & Repurposing

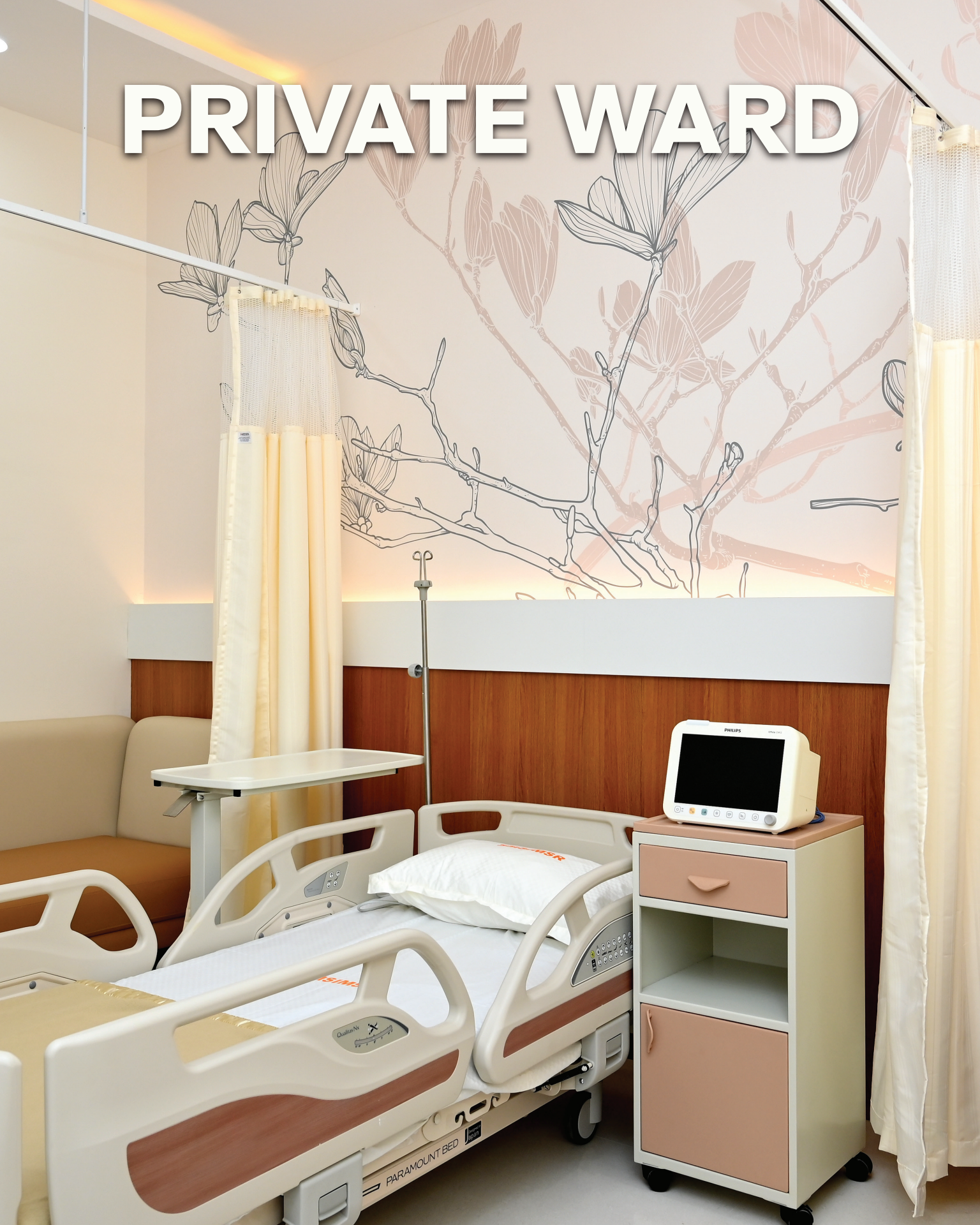
Cord Blood Stem Cell Therapy · HSV-1 Topical Gene Therapy (Krystal – first FDA-approved topical gene therapy globally) · Antisense Oligonucleotide (Wings) · Diacerein · Propranolol · Secukinumab · Tofacitinib · Dupilumab

ILLUMINA MISEQ I100

NEXT-GENERATION SEQUENCING SUITE



PRIVATE WARD





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SCAN OR CLICK FOR THE LOCATION

