

# Innovative Translational Research at a National Level - **The Vision and Mission of CRIS**

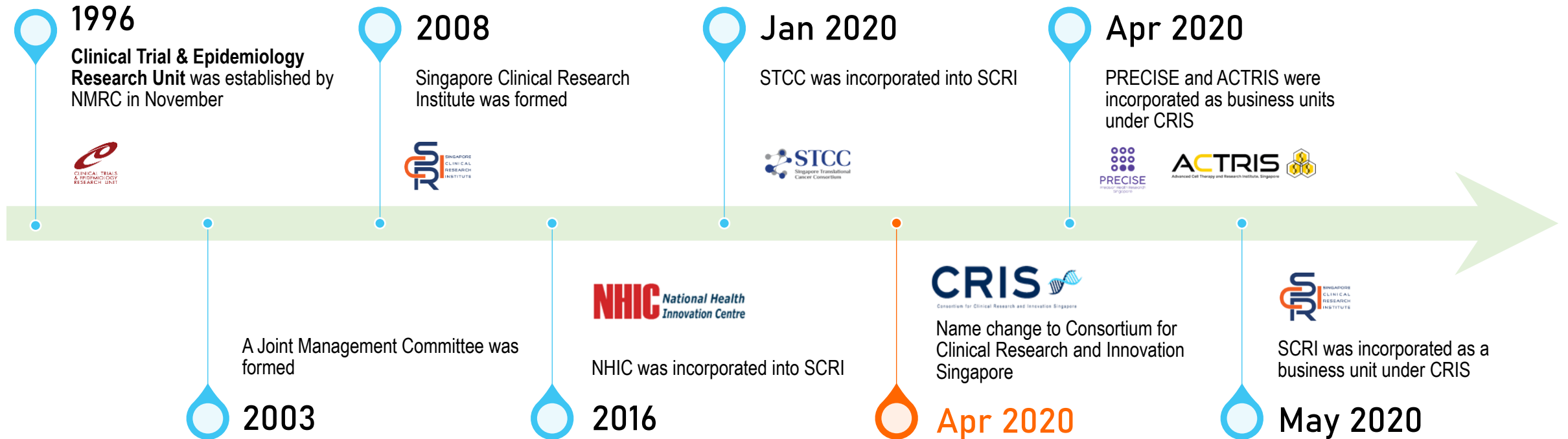
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Dr Danny Soon  
CEO CRIS

NMRC Awards Ceremony and Research Symposium 2021  
6<sup>th</sup> December 2021

# About CRIS

# Timeline and Formation of CRIS



# CRIS and Our Business Units



- To spearhead and develop core capabilities, infrastructure and scientific leadership for clinical research in Singapore



- Drive impactful health and economic outcomes for Singapore by catalysing innovation and enterprise endeavours in the healthcare research community through public and industry partnerships



- To spearhead quality manufacturing of cellular-based therapeutics and develop cell therapy services
- Support and foster collaboration in research and development within the cell therapy ecosystem
- Train and educate the next generation of scientists and clinicians in cellular-based therapy



- To synergise the strongest basic, clinical and translational talent and expertise from across Singapore to create a cohesive and focused national-level cancer research and translational programme



- Coordinate a whole-of-government effort to implement Singapore's National Precision Medicine programme, to drive at national level: data-driven healthcare, improved patients outcomes and economic value capture



# Singapore Clinical Research Institute

*To spearhead and develop core capabilities, infrastructure and scientific leadership for clinical research in Singapore*

# SCRI's DOMAINS

## Planning for Projects

- Pre-Grant Support
- Study Design, Analysis and Reporting
- Evidence Synthesis & Health Outcome Research
- Biostats
- Study Planning & Budgeting

## Research Networks

- Local and International
- Extend Reach of PIs
- Enable academic and industry collaborations



## Research Operations

- Project Management
- Research Informatics
- Study Randomisation
- Data Management
- Research Monitoring
- Pharmacovigilance
- Quality Assurance



## National Imperatives

- Talent Development
- Clinical Trial Strategies
- Covid-19

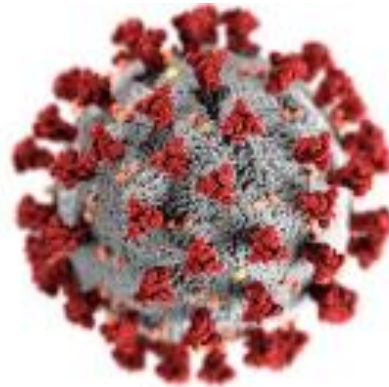
# NATIONAL IMPERATIVES: COVID-19 Support

## 2 Clinical Research Network with Covid-19 Research

- PACCMAN Network – Set up of Covid-19 Registry
- Covid-19 Clinical Trial Network
- Site Engagement & Industry Engagement together with EDB
- Supported Tychan Study

## Support 6 local COVID-19 Studies

- ACTT I to ACTT III
- ACTIV3
- 2 Gilead Studies



## Covid-19 Strategic Committees

- **A/Prof Edwin Chan** - Member of Covid-19 Research Fund Panel
- **Dr Danny Soon** – Member of EC19V

## 3 Staff deployed to support MOH in Covid-19 Response

- **A/Prof Teoh Yee Leong** is leading the Epidemiology Investigation team in MOH to investigate Covid-19 outbreak transmission in Singapore.
- **Dr Yoko Wong** – Data Analyst from April to October 2020
- **Ms Caryn Goh** – Claims processing for Quarantine Order Allowance from April to June 2020

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# NATIONAL HEALTH INNOVATION CENTRE SINGAPORE

An Innovation & Enterprise Office (IEO)  
for Public Healthcare Institutions

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Supported by





# Strategic Pathways to Accelerate Healthcare Innovations

## DEVELOPMENT

*Funds the patent expenses of innovations*

### **Innovation to Protect (I2P)**



### **Innovation to Develop (I2D)**

*Develops commercially-attractive innovations*

**Startup**

**Therapeutics**

**Licensing**

## TRANSLATION



### **Innovation to Startup (I2START)**

*Brings together funding and resources to support potential start-ups from Institutions*



### **Singapore Therapeutics Development Review (STDR)**

*Supports early therapeutics development*

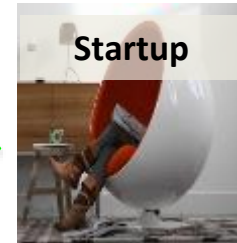


### **Innovation to Industry (I2I)**

*Develops an innovation with support from industry partner*

## OUTCOMES

### **Startup**



### **Therapeutics development**



### **Licensing**



# Our Start-ups



Antibody therapeutics for the treatment of fibrotic human diseases

businesswire  
A BERKSHIRE HATHAWAY COMPANY

Log In

Sign Up



## Boehringer Ingelheim Partners with Enleofen to Develop First-in-Class Anti-IL-11 Therapies for a Range of Fibrotic Diseases

- Acquisition of worldwide exclusive rights adds extensive anti-IL-11 platform to Boehringer Ingelheim pipeline portfolio
- Boehringer Ingelheim aims to develop therapies for multiple fibrotic human disorders, including non-alcoholic steatohepatitis (NASH) and interstitial lung diseases (ILDs)
- Singapore-based Enleofen to receive in excess of one billion USD per product in upfront and success-based development and commercialization milestones

January 09, 2020 07:00 AM Eastern Standard Time

INGELHEIM AM RHEIN, Germany & SINGAPORE--(BUSINESS

THE STRAITS TIMES



Ad



Nov 2021 BTO Sales Launch

HDB



Open

## Singapore Fintech Festival S'pore to invest additional \$180m to accelerate AI research; launches two new AI programmes



NovAI was unveiled by Deputy Prime Minister Heng Swee Keat

**NHIC** National Health  
Innovation Centre



TRANSFORMING AI VISION INTO REALITY

**SELENA+:** A deep learning system for diabetic retinopathy and related eye diseases

Singapore has five national AI programmes, noted Mr Heng, among them Selena+, an AI system under the healthcare programme that detects major eye conditions from retinal scans.

"Selena+ managed to achieve a similar diagnostic accuracy as experienced human graders. We have since rolled this project out nationwide, to screen seniors and diabetic patients for eye diseases more efficiently. This has allowed us to provide early intervention more quickly and accurately," said Mr Heng.



**ACTRIS**

Advanced Cell Therapy and Research Institute, Singapore



# Advanced Cell Therapy and Research Institute, Singapore

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**CRIS**   
Consortium for Clinical Research and Innovation Singapore



**MINISTRY OF HEALTH**  
SINGAPORE

# Core Capabilities and Service Provisions

## End-to-end Clinical Process Development and Manufacturing Capabilities

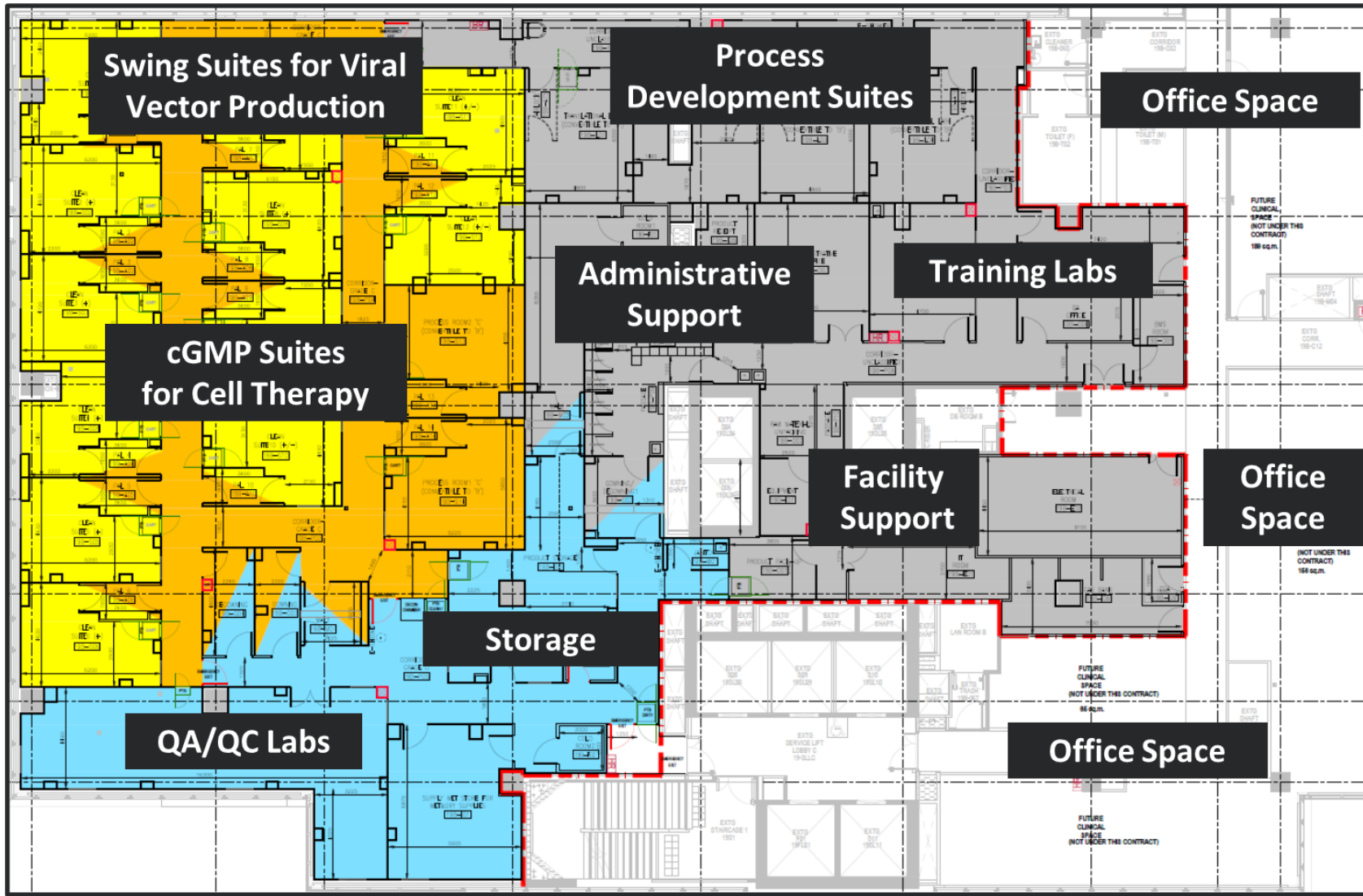
Process Development & Validation	Clinical Manufacturing	Product Characterization	Regulatory Facilitation	Clinical Trial Facilitation
				
Transition of processes from basic R&D processes to clinical-scale protocols.	Regulatory compliant manufacturing for clinical use in trials and routine services.	Product characterization to comply with product acceptance criteria.	Development and submission of regulatory documents for clinical trials and manufacturing.	Support in clinical trial design, patient access, trial data analysis and clinical adoption.

	<b>Manpower and Training</b> Certified training to perform CTGT manufacturing in cGMP suites.	
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	<b>Infrastructure; and Basic Equipment &amp; Ancillary Materials (ACM)</b> FDA and HSA reviewed design; manufacturing platform technologies; and quality system.	
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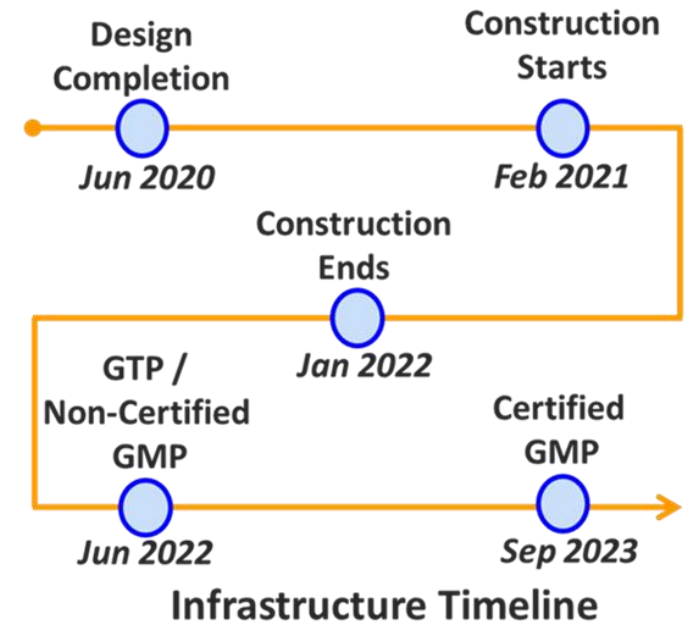


# Infrastructure for Manufacturing Facility and Office Space



**Facility design reviewed by  
FDA, USA and HSA, SG**

*The existing cGMP manufacturing facilities  
at HSA, NUH and NCCS will eventually  
transit under ACTRIS.*







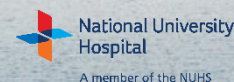
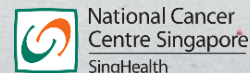
***A Nationally Coordinated  
Consortium to Synergise  
Cancer Research Capabilities  
Across Singapore***

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MINISTRY OF HEALTH  
SINGAPORE

**STCC Partners**



# STCC: Mission & Vision

## MISSION

STCC brings together the best **basic, clinical and translational** talent in Singapore to create globally significant peaks of excellence in selected cancers, and provides these teams with an enabling research and innovation environment.

### Peaks of excellence & thought-leadership

- Build leading Research & Translational **programmes** in selected Asian cancers
- Become a **reference** centre for clinical trials in Asia
- Grow critical mass of local key opinion leaders

LONG TERM OUTCOMES



### Economic Impact

- Anchor **critical mass** of industry research, innovation and **enterprise partnerships**

### Healthcare impact

- Conduct **world-class cancer research** with high-impact applications that improve health & healthcare
- Develop **new ways of delivering** cancer prevention, screening, treatment and care for Singapore

## VISION

The STCC envisions for Singapore to become a **global leader** for selected Asian cancers in **research translation** and its application to **health** and/or **economic value creation**.



# STCC: Driving Innovation & Synergy in Cancer R&D



Prof Goh Boon Cher  
**NCIS**



A/Prof Daniel Tan  
**NCCS**



Dr Eng Chon Boon  
**NUHS**



A/Prof Kenneth Chang  
**SingHealth**



Prof Teh Bin Tean  
**Duke-NUS**



Dr Anand Jeyasekharan  
**CSI, NUS**



Dr Alexander Lezhava  
**GIS, A\*STAR**



Seck Yee Kwang  
**A\*STAR/ BMS IPO**

## Cancer Clinical Trials & Investigational Medicine Units



Streamlined clinical trial start-up framework that facilitates PI/KOL engagement and a single agreement contract process

## Cancer Databases & Tissue Banks



Robust, secure and harmonised central catalogue portal for Asian-centric cancer samples & associated clinical research data

## Research-Based Molecular Diagnostics



A cooperative translational cancer research framework for the development of a catalogue of novel molecular diagnostics and assays

## Business Intelligence & Development



A dedicated team that facilitates partnerships and leads engagements between industries & STCC

← **STCC – A “ONE-STOP SHOP” FOR INDUSTRY PARTNERS** →





# Singapore's National Precision Medicine Strategy

A 10 Year Roadmap

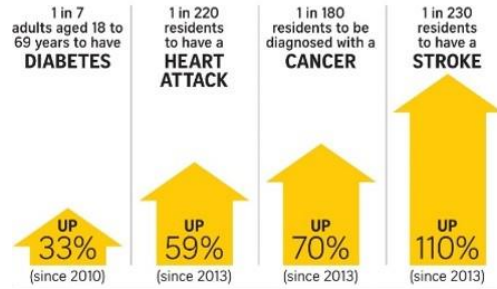


# The Need For Precision Medicine In Singapore

## 1. Rising Healthcare Costs

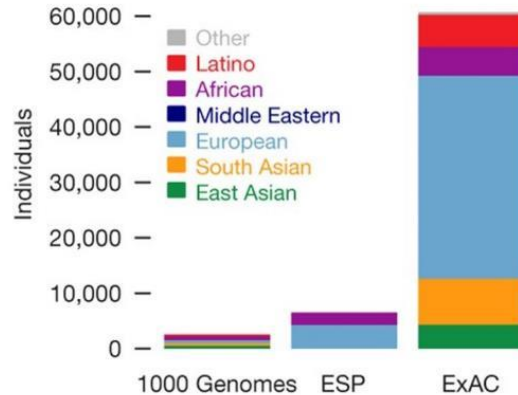
### Diseases on the rise due to ageing population

Estimated numbers by 2030

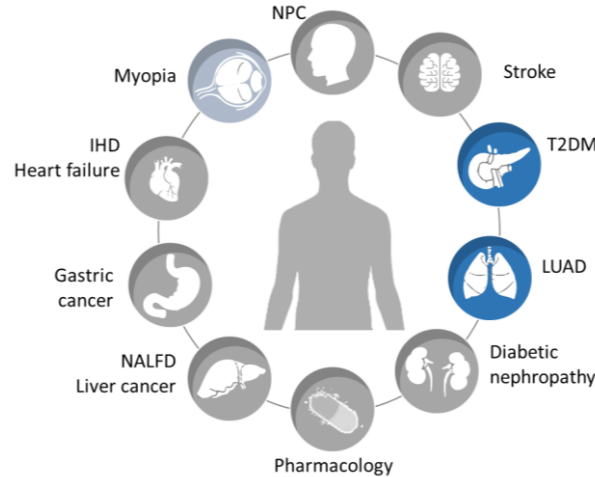


Source: MINISTRY OF HEALTH SUNDAY TIMES GRAPHICS

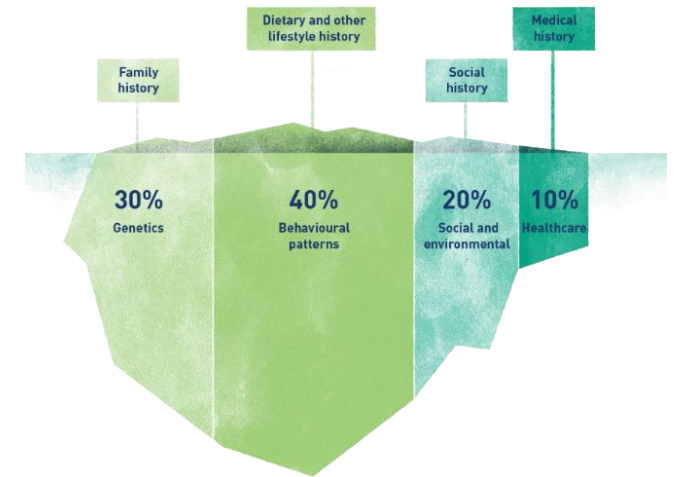
## 2. Missing Asian Genome



## 3. The Asia Phenotype



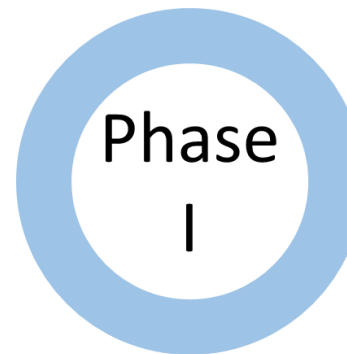
## 4. Gene-Environment



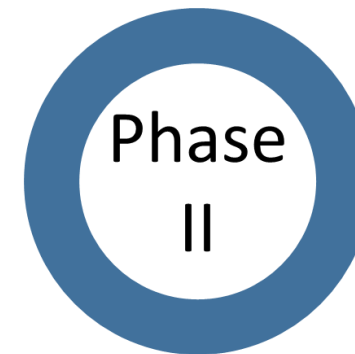
**Strategy** 10-year research roadmap to accelerate biomedical research, improve health outcomes and enhance opportunities for economic value across sectors



A central entity incorporated to **coordinate a whole of government effort to implement Phase II** of Singapore's 10-year National Precision Medicine (NPM) strategy.



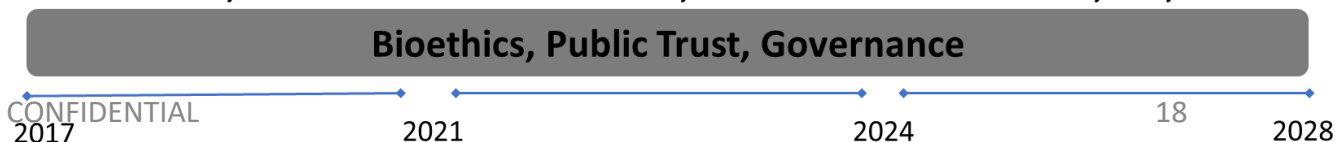
"Proof of Concept"  
N = 10,000



"Proof of Value"  
N = 100,000



"Proof of Scale"  
N = 1,000,000



# Singapore's Competitive Advantages

ASIAN DIVERSITY



DEEP PHENOTYPES



LONGITUDINAL



CONSENTED  
FOR RECALL



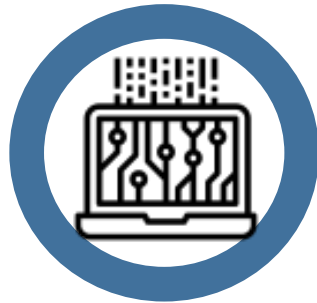
UNIQUE IDENTIFIER



STRONG IP  
PROTECTION



DATA SCIENCE



GOOD  
HEALTHCARE OUTCOMES



WHOLE OF GOV.



Singapore

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Consortium for Clinical Research and Innovation Singapore

**NATIONAL RESEARCH FOUNDATION**  
PRIME MINISTER'S OFFICE  
SINGAPORE

  
**MINISTRY OF HEALTH**  
SINGAPORE

CONFIDENTIAL



# Why CRIS?

# Large Cross-Institutional Research Programmes:

- Latency
- Complexity
- Scalability
- Compliance
- Neutrality
- Coordination





# CRIS's Mission

*To ensure unity of mission across research platforms and programmes under the CRIS stable.*

*To ensure synergies of capabilities, scientific resources, industry development, and finances across research platforms and programmes.*

*To ensure that the platforms and programmes stay relevant and are aligned to the needs of Singapore patients, researchers and industry, through constant and regular stakeholder engagement.*

*To build, review and sustain long term strategies for research platforms and programmes.*



# CRIS's Vision



*To nurture and build for Singapore,  
cutting edge capabilities and innovation in  
clinical research and translation*



# Thank you

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