

CRIS – Building Strategic Partnerships and Enabling Translational Research

28 April 2023 NMRC Symposium

A/Prof Danny Soon CEO CRIS

National Clinical Research and Translation Programmes





- Each of the programmes within CRIS are strategic and support the overall research and translation agenda of the healthcare ecosystem
- Intent to be longer standing capabilities/platforms (as opposed to short term research grants) to build talent and deliver impact for Singapore's healthcare & economic agenda
- Bring synergies so that we are bigger than the sum of our parts

CRIS and Our Stakeholders





Consortium for Clinical Research and Innovation Singapore (CRIS)







Enabling Cell Therapy Manufacturing for Clinical Trials and Services in Singapore



Facility to Support Cell Therapy Manufacturing





Legend

Personnel Movement

Non-Classified Rooms

Non-Classified Rooms

Controlled Non Classified Rooms

Classified Grade C Rooms

Classified Grade B Rooms

Process Movement



Lab Tour of Facility for Cell Therapy Manufacturing



The Mission of ACTRIS



Supporting Healthcare Needs, Research Translation, and Industry



Core Capabilities and Service Provisions







Case Study: SCG Cell Therapy Pte. Ltd.





SINGAPORE **CELL & GENE** THERAPY **CONFERENCE 2023**

ENABLING CELL AND GENE THERAPIES FOR ASIA

SAVE THE DATE

MAIN CONFERENCE:

- 4 5 August 2023
- Academia, Singapore

PRE-CONFERENCE WORKSHOP:

..... 3 August 2023

ORGANISED WITH

New National Cancer Centre Singapore And 0 Institute of Molecular and Cell Biology, A*STAR



International Society











MAIN CONFERENCE https://for.sg/scgt2023

workshop on 3 August 2023.

curative roles of CGT.



PRE-CONFERENCE WORKSHOP https://for.sg/celltherapy-workshop

Themed "Enabling Cell and Gene Therapies in

Asia", the conference brings together the CGT

research and share practical insights into the

The ISCT, International Society for Cell & Gene

Therapy will also be organising a pre-conference

Register your interest today at

https://for.sg/scgt2023

leaders in the region to showcase ground-breaking



To Become a Global Leader for Selected Asian Cancers in Research Translation and its Application to Health and/or Economic Value Creation



Driving Innovation & Synergy in Cancer R&D





Prof Chng Wee Joo

Executive Director



Co-Director

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With our five integrated platforms, STCC is a "one-stop shop" for industry partners

Cancer Clinical Trials & Investigational Medicine Units

Streamlined clinical trial start-up framework and a single contract agreement process





Prof Goh Boon Cher NCIS

A/Prof Daniel Tan NCCS



Cancer Databases and Tissue Banks

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



NUHS

A/Prof lain Tan SingHealth



Translational Research Integration and Support

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

Dr. Jason Chan NCCS

Dr Anand Jeyasekharan CSI, NUS

Dr Alexander Lezhava GIS, A*STAR





Seck Yee Kwang A*STAR / BMS IPO



A/Prof lain Tan SingHealth

Impact and Population Health

A new platform that facilitates high impact novel cancer treatment approaches and evaluate measures to improve population health

Restricted, Sensitive (Normal)

A dedicated team that facilitates research partnerships and leads

Business Intelligence and Development

engagements between STCC and industry collaborators



A/Prof. Ker Kan Tan

NUHS



STCC's Institutional Partners







Transforming Health in Singapore through Precision Medicine

The Need for Precision Medicine in Singapore



Rising Incidence of Chronic Diseases

NATIONAL POPULATION HEALTH SURVEY 2019



Rising Healthcare Costs

THE STRAITS TIMES

SINGAPORE

Budget 2022: Healthcare spending to form bulk of increase in social expenditures by 2030



Moving Away from "One Size Fits All"



Disease Risk in Healthy Populations





Accurate Disease Diagnosis Predict Therapy Response

18 Feb 2022

Singapore's National Precision Medicine Strategy



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10-year national strategy involving whole-of-government and the Singapore healthcare/ research ecosystem



SG100k: Creating Asia's Most Deeply Phenotyped Cohort



To identify environmental, lifestyle, and genetic factors that cause heart disease, cancer and other chronic diseases in Singapore

Comprehensive phenotyping and biological sampling of 100,000 Singaporeans



ENTERPRISE: Harnessing Industry Interest to Power Local Companies



Developing industry partnerships and joint industry projects to attract MNCs, and power local biomed tech sector

Three-Stage Strategy	Stage 3 <i>"Launch Payload"</i> Powering Local Ecosystem (PLS) - leverage private-public collaborations to enable local companies and improve competitiveness
	Stage 2 <i>"Achieve Escape Velocity"</i> Pre-competitive Pharma Consortium (PCC) to co-invest for data enhancement and collaborative research
	Stage 1 <i>"Lift off the Ground"</i> Public-Private Partnerships (PPPs) to achieve genomic data and analysis goals



To Spearhead and Develop Core Capabilities, Infrastructure and Scientific Leadership for Clinical Research in Singapore



SCRI Overview



Research Coordination

To coordinate clinical trial activities and drive initiatives that enhance the clinical trial ecosystem.



Coordination





Research Operations To support investigator-initiated clinical trials and maintain the standards of local clinical trial practice.





To support Industry, in particular biotechs to conduct clinical trials in Singapore and the region.

National University Health System







SCRI Research Operations Capabilities





Key Studies Supported by SCRI



PRIBIVAC

To assess if heterologous prime-boostboost vaccine combinations are comparable to homologous regimens in terms of long-term humoral and cellular immunity against COVID-19.



THE STRAITS TIMES



ATOM3

To investigate the use of atropine eyedrops for the prevention of Myopia in high-risk children.



TRUNCATE-TB

Evaluate an alternative treatment regimen strategy for patients with drug-sensitive pulmonary tuberculosis



Singapore study suggests much shortened treatment period for TB patients

TRUNCATE-TB trial is supported by the National Research Foundation, Singapore, under its Translational and Clinical Research Flagship Programme



image credit- NUS

Tuberculosis (TB) patients can look forward to a much-shortened treatment period, compared to the current six-month treatment regimen used globally, based around the antibiotic infampion, or infampion as it is culted in the United States.

In a ground-beaking study conducted acress Asia and Qanda, Africa, the response trans from the Vitra Load Lin School of Medicine, Rackota Usbreaking 45 Singaron (PRA), Medicine, National University Hospital (AVI) and Singarone Clinical Revealed Institute (SCR), and by Professor Michaina Patton from the Department of Medicine (BUS Medicine), fraund tata, a Till reastment strategiz with an insist, beneft treatment period followed by retrastituted a small minority show were not cured, showed the same efficacy lored as the strategized Service Instituted and the strategized by the Institute of the Service Institut

SCRI Supported Clinical Research Networks



Clinical Trial Networks



Launch of the Master Clinical Trial Agreement (MCTA)





Pre-Agreed Clauses

 Common clauses have been agreed upon in the MCTA, thus speeding up the agreement review process



Utilisation

- Single template for sponsors to engage PHIs for **multi-center trials**
- Useful for sponsors (new biotechs/startups) with no prior agreements with PHIs

Adaptability

- MCTA clauses can be individually adopted to supplement existing agreements
- Available in MS Word for customisation

Launch of the MCTA – 15 November 2022



The MCTA is available for download at:

https://www.scri.edu.sg/master-clinical-trial-agreement/



Drive Impactful Health and Economic Outcomes for Singapore by Catalysing Innovation and Enterprise Endeavours

Innovative Technologies: Enabler for Healthcare Transformation



Innovative Technologies

- Artificial Intelligence (AI)
- Telehealth
- Next Generation Sequencing (NGS)
- Wearables sensors
- 3D-printing
- Immunotherapy
- Point-of-care diagnostic

Healthcare System

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Value-Based Reimbursement

Precision Medicine

From Treatment towards Prevention

From Hospital to Home **Healthcare Applications**

Screening and Diagnosis

- Early detection through screening
- Al technologies improves productivity
- POC test kits enable quicker diagnosis
- Genomics data for personalised medicine

Wellness and Disease Prevention

- · Activities trackers to easily monitor health
- Disease prevention tools/programs
- Medication adherence solutions

Care Delivery

- Telemedicine, remote monitoring
- Digital therapies, home based rehab
- · Digital pharmacies, supply-chain solutions

Supporting the Public Health Clusters with **Development and Commercialisation of Innovation & Technologies**



Powering the next generation of Healthcare Innovation Supporting Clinical Innovations with Healthcare and Commercial/economic outcomes



Clinical Advancement and Development for Research, Entrepreneurship and Enterprise (CADRE²):

Project Co-development, Investment, Mentorship and Talent Development

opment Project pport	IDE	ATION	DEVELOPMENT	COMMERCIALISATION	ADOPTION
n & Devel atent and ement Su	NHIC supports early stage development of medtech/biotech projects – IP creation/licensing/spin-offs [I2P, I2D, I2I, I2S] – RIE				Clinical Adoption Initiative [I2A] – MOH/MHI
Innovatio Grants, F Manag	Co-create/ build New Investable Ventures and/or Project Co-development		ouild New Investable Ventures ect Co-development	Groom Tri-Competent Founders/Senior Innovation Leads (clinical, technical, commercial) for biotech/ medtech sectors	





Talent Development (Helix Immersion Programme) – 12 months immersion Co-payment salary support: 30% by private sector partner; 70% by SGInnovate

Innovation to Startup (I2START)

A tripartite partnership between NHIC, SMART, and ESG that strategically bring together funding and resources that support the spinoff from public institutions.



Alignment of funding criteria across different funding bodies



Bridge project funding gap by creating a seamless funding pathway



Reduced paperwork for applicants



Reduced waiting time and the need for subsequent grant application and approval



Project teams able to tap into **multiple agencies** resources and support





Our Licensed Technologies





(Source: Vivo Surgical)

A self-retaining surgical-site lighting solution. It is small, portable, single-use, sterile and can be flexibly positioned within any open deep surgical cavity





Modular assembled, multiple surgical procedures training stimulator using 3D technologies with realistic changeable anatomies within a training stimulator.





(Source: MirXES)

GASTROClear is the world's first molecular blood test for early detection of gastric cancer in high-risk populations.

> NUHS National University Health System



Our Start-ups



AI Diagnostic



(Source: EyRIS)

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



Rehabilitative Device



(Source: QuantumTX)

MRegen, a rehabilitative device targeting beachhead markets in rehabilitation postmusculoskeletal surgeries and athletic performance enhancement.



Therapeutics



(Source: Asian Scientist Magazine)

Antibody therapeutics for the treatment of fibrotic human diseases



Story of SELENA+

A deep learning system for diabetic retinopathy and related eye diseases

Clinical Problem

Diabetic retinopathy (DR) poses a **large economic burden** on the healthcare system with nearly 1 in 10 diabetes patients developing vision threatening DR. **Early detection, accurate evaluation, timely treatments are effective in preventing blindness.**

NHIC Support

I2D funding support the optimisation and validation of SELENA, a reliable automated DR grading system that can eliminate the need for manual grading. Resulting in **reduction of the workload** of human graders and physicians, thus **reducing the cost of widespread DR screening.**







CArdiovascular Diseas**E N**ational Collaborative **Enterprise** (CADENCE)

CADENCE Vision and Mission

VISION

To become a global leader in the translation of cardiovascular research for better health and economic outcomes.

MISSION

To create a national-level cardiovascular research programme to drive clinical application, improve health outcomes and commercialisation by combining basic research, translational and clinical research strengths across Singapore and institutions in a synergistic and integrated manner.

Joint Platforms and Use Cases



Corporate Support





Thank you