



Catalysing Innovation and Enterprise Endeavours for Healthcare and Economic Impact in Singapore

A programme of **CRIS**
Consortium for Clinical Research and Innovation Singapore

MOH HOLDINGS

Supported by

NMRC *National Medical Research Council*
Singapore


MINISTRY OF HEALTH
SINGAPORE

Consortium for Clinical Research and Innovation Singapore (CRIS)

Vision

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



Programme Horizontals

Clinical Trials

Health Economics & Outcomes Research

Industry Engagement

Spearheading and developing core capabilities, infrastructure and scientific leadership for **clinical research** in Singapore

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

Cohesive and focused national-level **cancer research and translational programme** for value based treatment of cancers



Drive impactful health and economic outcomes for Singapore by catalysing **innovation and enterprise** endeavours

Provide quality manufacturing of **cellular-based therapeutics** and develop **cell therapy** services to industry and patients

Coordinate a whole-of-government effort to implement Singapore's **National Precision Medicine** programme

National Health Innovation Centre Singapore (NHIC)



Nationally appointed programme office to identify and commercialise promising clinical innovations from Public Health Institutions across Singapore

Dual mandate – Economic & Healthcare



Funds the translation, development & implementation of medical innovations



Project guidance & consultancy support (technical, business & clinical)



Talent development & mentorship in healthtech entrepreneurship



Strategic partnerships with corporates and ventures



Supporting Clinical-led Innovation to Accelerate Translation, Commercialisation & Implementation



IDEATION

DEVELOPMENT

COMMERCIALISATION

ADOPTION



Innovation to Protect (I2P)
Funds the patent expenses of innovation

Innovation to Develop (I2D)
Develops commercially attractive innovation

Innovation to Industry (I2I)
Supports co-development with an industry partner

Innovation to Adopt (I2Adopt)
Supports commercially viable innovation for implementation, adoption

Joint MedTech Grant-JMT
Support exploratory efforts for early-stage innovations

Innovation to Startup (I2START)
Brings together resources to support start-ups at Institutions

Expanded Thematic I2D
Supports innovations prioritized by PHC's innovation funding programmes

Clinical Innovation and Adoption Initiative

Singapore Therapeutics Developmental Review (STDR)
Supports high value therapeutic projects
(NHIC is a strategic partner of STDR)

NRF Central Gap Fund
Evaluation and endorsement of translational and commercialisation projects from public healthcare clusters
(Designated IEO for the clinical community)

Talent Development and Mentorship
Groom founders/project leads with tri-competent capabilities (clinical, technical, commercial)
(Helix Immersion Programme C-Suite track, Singapore Biodesign)

NHIC is Technology-Agnostic

MedTech



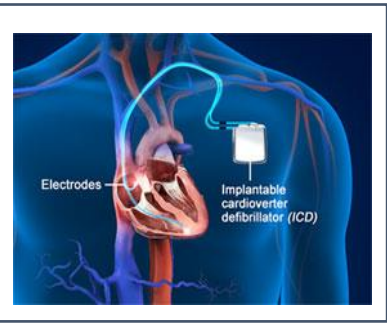
DIAGNOSTICS



SURGERY TOOL



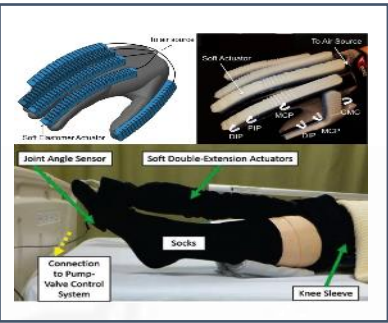
HEALTH IT



IMPLANTS

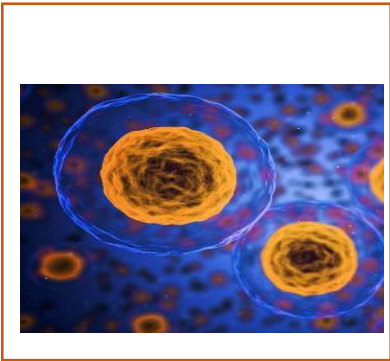


**SENSORISED
FEEDBACK SYSTEM**

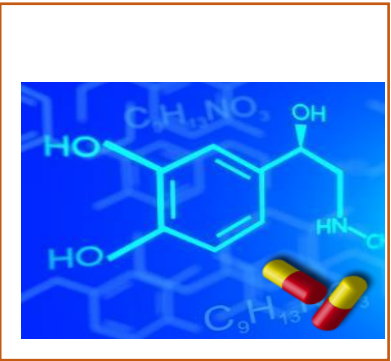


THERAPY

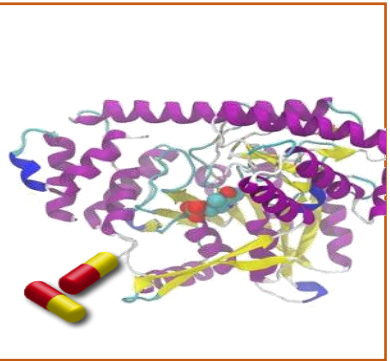
BioPharma and Stem Cell Therapy



DRUG DELIVERY



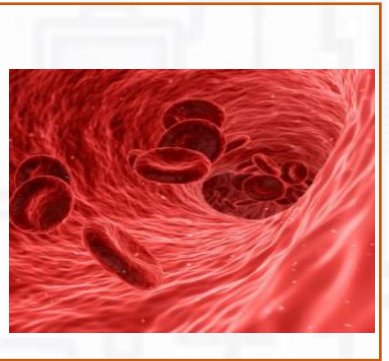
SMALL MOLECULES



PEPTIDES/PROTEINS



ANTIBODY



CELL THERAPY

Support for over 100 innovation projects from public healthcare clusters

Over 20 startup companies



National Healthcare Group
Adding years of healthy life



Over 70 licensed technologies to industry



Other technologies being adopted into local PHCs (Partner companies)



Innovation to Protect Grant (I2P)

Funding patent expenses for inventions.

Eligibility Criteria

- Applicant must be Head / Deputy Director / Director of the healthcare cluster designated office
- Applicant applies on behalf of inventors that hold a primary appointment at:
 - local public hospital or
 - public health institution or
 - national specialty centre

Healthcare Cluster Designated Office

NHG Group Research

NUHS Research Office

SingHealth Office of Intellectual Property (SHIP)

Funding Criteria

- Strong patentability
- Technology development plan
- Commercialisation strategy



Open

Throughout the year



Up to \$40,000

Depending on:

- Stage of patent protection
- Ownership ratio



6 – 12 months

Depending on stage of patent protection



Submission

via designated office of healthcare cluster

NHIC does not take ownership of IP, nor recover expenses/take revenue share

Innovation to Develop Grant (I2D)

Funding for development of a healthcare innovation to a commercialisable endpoint.

Eligibility Criteria

Principal Investigator must hold primary appointment in a

- local public hospital or
- public health institution or
- national specialty centre or
- academic medical school

and be salaried by the institution



Funding Criteria

- Healthcare impact
- Commercial potential
- Strong preliminary data
- Technology development plan



3

Grant calls per year
1st Friday of:
Feb, Jun, Oct
(institutional dates may vary)



\$300,000

(inclusive of max.
30% IRC)



12 months

(max. 6 months
extension)



Submission

via designated office
of healthcare cluster

NHIC does not take ownership of IP, nor recover expenses/take revenue share

Innovation to Industry Grant (I2I)

Co-development of healthcare innovation with an industry partner.

Eligibility Criteria

- Successfully completed I2D funded projects (or equivalent as deemed appropriate by NHIC)
- Co-development with an industry partner to license the technology.



Funding Criteria

- Healthcare impact
- Commercial potential
- Clinical feasibility data
- Binding agreement with an industry partner as a licensee



Open

Throughout the year

Application by Invitation only



\$300,000

Awarded to institutions
(inclusive of max. 30% IRC)



12 months

(max. 6 months extension)



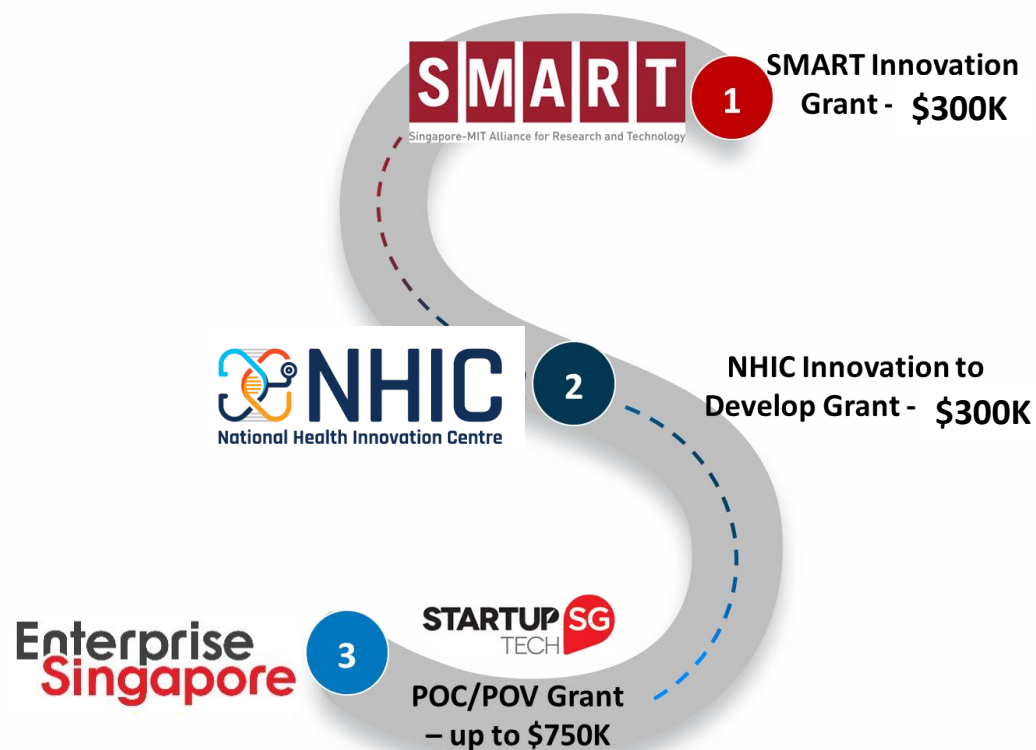
Submission

via designated office of healthcare cluster

NHIC does not take ownership of IP, nor recover expenses/take revenue share

Innovation to Startup (I2START)

A premium funding program targeted at HealthTech start-ups from Singapore public institutions.



The tripartite partnership between NHIC, SMART, and Enterprise Singapore strategically bring together funding and resources to support start-ups.

Eligibility Criteria

- Entry: TRL 3* and above
- Health Technologies in the following areas;
 - Clinical diagnostics
 - Medical device and products
 - Digital health
 - Life science tools, etc
- Team with the intent to start-up a company
- Team must consist of one Clinical PI and Technical PI from public institutions

Clinical PI must hold primary appointment in a

- local public hospital or public health institution or national specialty centre or academic medical school and be salaried by the institution



Letter of Intent

Submit LOI to I2Start Grant Secretariat at grant@nhic.cris.sg

Please visit www.nhic.sg to find out future submission dates.

National Research Foundation (NRF) Central Gap Fund (Central Gap)

A national-level platform to resource impactful and preferably collaborative projects to translate research outcomes into products, processes and/or services that generate economic and societal benefits for Singapore.

Eligible Entities

Local public hospitals, public health institutions and national specialty centres.

NHIC's Role

- NHIC is the designated Innovation and Enterprise Office (IEO) for public hospitals, public health institutions and national specialty centres.
- All Central Gap applications must be endorsed by NHIC in its capacity as IEO.

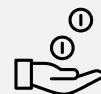
Funding Criteria

- Project scope
- Commercialisation potential
- Team composition
- Technical innovation
- Institutional support



Open

Throughout the year
Applications to be
batch processed



>\$300,000



24 months



Pre-engagement

with NHIC is required

More info please visit www.nrf.gov.sg/funding-grants/central-gap-fund

A glimpse into our innovation portfolio

Ideation



A HSA-approved/CE Mark IVD blood test used in conjunction with gastroscopy for early detection of **gastric cancer**

Development



Novel formulations for improving the bioavailability and pharmacokinetics of 5-hydroxytryptophan (5-HTP) for first-choice **adjunctive treatment in depressed patients** responding inadequately to conventional antidepressants

Co-Development

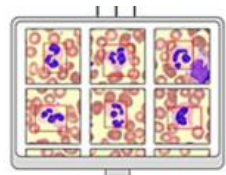


Ex-vivo validation and detection of **peritoneal metastases** (PM)

Startups

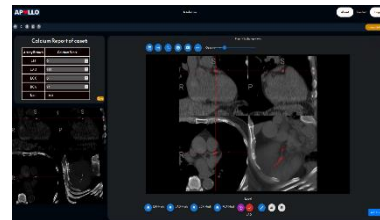


Boehringer Ingelheim partners with Enleofen to develop first-in-class Anti-IL-11 Therapies for a range of **Fibrotic Diseases** (antibody treatment)



Digitised images

An algorithm for **diagnosis of peripheral blood films** via deep learning and computer vision.



Medical image processing methods and systems for **analysis of coronary artery stenoses** and automated classification of arterial calcium



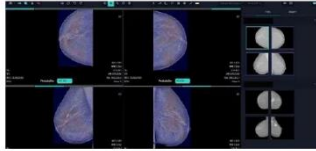
An image processing platform, iScreen to Empower Radiology and Clinicians Through Artificial Intelligence (e.g. detection and classification of **Intracranial Haemorrhage**)



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

A glimpse into our innovation in Implementation Phase

FATHOMX



FxMammo is a radiological computed assisted detection of breast cancer on acquired mammography images

HiCura



uSINE is an ultrasound guidance software that identifies spinal landmarks with guidance markers – needle navigation system

tiim



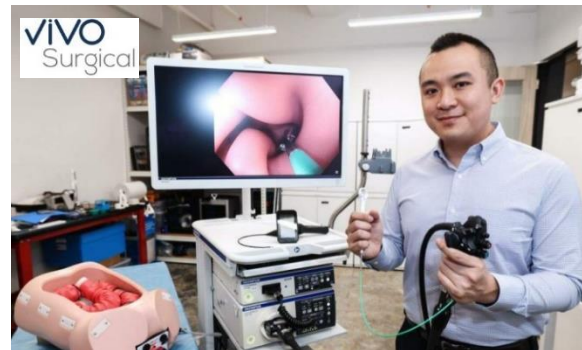
aiTriage platform enables rapid and accurate triage for chest pain patients

Driving Clinical Adoption, Investor Confidence & Overseas Expansion for Startups



Chronic kidney disease

- Mesh Bio Attains Regulatory Approval for HealthVector® Diabetes
- Expansion to Indonesia supported by East Ventures



Surgical technologies

- KLARO™ portable surgical light (global)
- ENLYT® flexible endoscope (US)
- ERES™ endoscopic robot (China)



Respiratory monitoring

- Secured USFDA for Remote Respiratory Monitoring Platform, backed by the Cedars-Sinai Accelerator
- Secured investment from East Ventures to expand into Southeast Asia

Talent Development

Innovation training

SINGAPORE
BIODESIGN

Identifying and validating **unmet clinical needs/product development** using the biodesign process adapted for the region

Helix Immersion Program



Groom founders/project leads with **tri-competent capabilities (clinical, technical, commercial)** for biotech and medtech sectors

NHIC CADRE Partners – Corporates and Ventures

Clinical Advancement and Development for Research, Entrepreneurship and Enterprise (CADRE)

- Open Innovation/Collaboration
- Venture Building/Investments
- Talent Exchange and Development
- Knowledge sharing

AstraZeneca 

CLAVYSTBIO


CORONET


elev8.vc


East Ventures

InnoMed
accelerator
CHUANG CAPITAL

 MEDTECH
ACTUATOR


OPENSOURCE


origgin
SUCCESS STARTS HERE


Roche

 SINGAPORE
DEEP-TECH
ALLIANCE

TEMASEK
LIFE SCIENCES
accelerator


TIBS

2Health
VENTURES

vertex
VENTURES





Forging Meaningful International I&E Partnerships for Singapore's Clinical Community

- Co-development/Co-funding
- Test-bedding/Implementation
- New Technology Use-Cases
- Market Access & Investment
- Talent Development
- Collaborative Clinical Studies

International Network



Leverage Enterprise Singapore-Global Innovation where applicable



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THANK YOU

