

January 2023 Grant Call Roadshow

8 December 2022

Agenda

- Grant/Award Programmes for January 2023 Grant Call
 - Population Health Research Grant (PHRG)
 - Clinician Scientist – Individual Research Grant (CS-IRG)/ New Investigator Grant (CS-IRG-NIG)
 - Open Fund – Individual Research Grant (OF-IRG)/ Young Individual Research Grant (OF-YIRG)
 - Clinical Trial Grant (CTG)
 - Singapore Translational Research Investigator Award (STaR)
 - Clinician Scientist Award (CSA)
 - HPHSR^ Clinician Scientist Award (HCSA)
 - Clinician Innovator Award (CIA)
 - Transition Award (TA)
 - NMRC Research Training Fellowship (NMRC RTF)
- Grant Call Submission Mode and Deadline
- National Health Innovation Centre (NHIC)'s grants
- Q&A

Grant Programmes

Population Health Research Grant (PHRG)

PHRG Funding Scope

Overarching Focus: Population Health

- Population Health is the health of a population as measured by health status indicators and as influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services. As an approach, population health focuses on the interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations. A population health approach addresses the entire range of individual and collective factors that determine health. Population health strategies are designed to affect whole groups or populations of people. The overarching goals of a population health approach are to maintain and improve the health status of the entire population and to reduce disparities in health status between population groups.

PHRG Funding Scope

Overarching Focus: Population Health

- As we aim to develop an integrated ecosystem that anchors preventive health efforts in primary care and care in the community with good system linkages to support citizens at different life stages, novel strategies and approaches will be needed to drive sustained behavioural modifications for individuals to adopt healthier behaviour and habits. This would include new 'Precision Health' models that shift away from broad-based interventions to interventions that are tailored to maximise impact on high-risk groups (e.g. by combining clinical/phenotypic data, genetic data, behavioural data, digital data). To achieve this, the Population Health Research Grant will fund research proposals that seeks to improve health outcomes through a population health approach under the following **Research Areas**:

Health Promotion and Preventive Health

Health Services Research

Research Areas

Health Promotion and Preventive Health

- Singapore's rising chronic disease burden threaten the long-term sustainability of the country's healthcare system. Upstream investment in health promotion and preventive health is a key move that would decrease the incidence and/or delay the onset of non-communicable diseases (NCDs) such as cardiovascular diseases, cancers, and diabetes, and reduce the burden on Singapore's healthcare system and finite resources.
- This area encompasses research devoted to the building of the scientific and economic evidence base for health promotion and disease prevention in the Singapore context. This includes applied etiological or determinant research, field or community-based research, and cost-effectiveness/analysis research that are collaborative, interdisciplinary/multidisciplinary, problem-solving and solution-oriented, and translatable to practice for implementation.
- The research proposals submitted under this research area must lead to a better understanding of actionable, cost-effective and sustainable drivers of physical and mental health to promote healthy behaviour and address modifiable health risks across different life stages.

Research Areas

Health Services Research

- Health Services Research (HSR) is the “multidisciplinary field of scientific investigation that studies how social factors, financing systems, organisational structures and processes, health technologies, and personal behaviours affect access to healthcare, the quality and cost of healthcare, and ultimately our health and well-being. Its research domains are individuals, families, organisations, institutions, communities, and populations”.
- Given our population ageing resulting in increasing prevalence of chronic diseases, multi-morbidity and demand for healthcare services, rising costs and manpower demand, there is a need to transform our care delivery model and enablers (e.g. financing approach, data sharing services across settings) to anchor care in primary care and community care, to operate a more sustainable and manpower-lean healthcare system. We should also continue to leverage on digital technologies to improve health delivery (e.g. to prevent disease by empowering consumers to make better-informed decisions about their health, tailor medicine/treatment to individual needs, and lower the cost of healthcare provision), and enable new ways (e.g. through inter-disciplinary application) of intervening to effect behaviour changes whilst allowing rich data to be collected.
- The Population Health Research Grant could contribute to this effort by supporting a) rigorous real-world evaluation of promising interventions and/or models of care, and b) research into Implementation Science to better understand and implement effective methods to bring about widespread transformation.

PHRG Categories

- To concurrently allow the grant scheme to target MOH's interest areas, and allow space for researchers to identify emerging areas of need and discover novel ideas that may contribute significantly in the medium- to long-term, PHRG will have two separate categories with slightly different grant scheme design:

Thematic Category:

- To support co-creation of research studies to answer MOH's most pressing research questions
- Grant call open throughout the year
- Only open to proposals that address specific research themes

Open Category:

(including NIG Sub-Category)

- To support investigator-initiated research within the broader funding scope
- Regular grant calls
- Scientific quality, and alignment with MOH's priorities considered as part of review

PHRG – Open Category

Objective

- To allow space for researchers to identify emerging areas of need and discover novel ideas that may contribute significantly to health outcomes in the medium- to long-term
- Proposals with scope falling within the 2 Research Areas identified above are eligible for application

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$1.95M (inclusive of up to 30% indirect costs) for up to 3 years. Projects involving prospective patient/subject recruitment may apply for up to 5 years.

PI Eligibility Criteria

- PI must have a MBBS/BDS/PharmD/MD, and/or PhD and/or other appropriate Postgraduate Qualification (at least a Master's Degree) in areas relevant to the proposed research.
- Hold a primary appointment in a local publicly funded institution and salaried by the institution.
- Be an independent PI with a demonstrated track record of research as evidenced by the award of nationally competitive funding (international funding to be considered on a case by case basis) or substantial publication record. (does not apply to NIG)
- Have access to a laboratory or research program that carries out research in Singapore.
- Hold a minimum of 9 months employment with a local Singapore institution. Upon award, the PI must agree to fulfill at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.

Sub-category PHRG-NIG

Objective

- The **PHRG New Investigator Grant (PHRG-NIG)** is a sub-category of the PHRG to cater for new investigators.
- Applicants with substantial research experience will not be accepted under this category.

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$130,000 (inclusive of up to 30% indirect costs) for up to 2 years. Projects involving prospective patient/subject recruitment may apply for up to 3 years.

NIG-specific PI Eligibility Criteria (1)

- Applicants who are applying under the new investigators category have to work with a **mentor** for guidance in their research. This mentoring will provide support for a period of supervised research leading eventually to the clinical investigators conducting larger scale research projects independently. Please note that the NIG is intended to fund a new investigator's independent project, and not to provide additional funding for the mentor's project (or clinical trial).
- To be eligible for NIGs in general, the following requirements apply:
 - i. Awardees of the following grants as PI/Co-PI* at the point of application will not be eligible for the NIG: A*STAR Investigatorship, NRF Fellowship, NMRC CSA and STaR, MOE Tier 2 and 3 grants, MOH/NMRC IRG-equivalent grants^.
 - ii. Applicants must not have received external competitive funding exceeding \$500,000 (direct costs only), to conduct their own research project as the PI.

**Co-PIs refer to PIs whose projects are jointly led by other PIs (e.g. projects under NMRC's Bedside & Bench grant). They are not the same as, and should not be confused with Co-Investigators (Co-Is).*

^NIC Ageing Grants (with the exception of Health and Longevity Catalyst Awards) are considered IRG-equivalent grants.

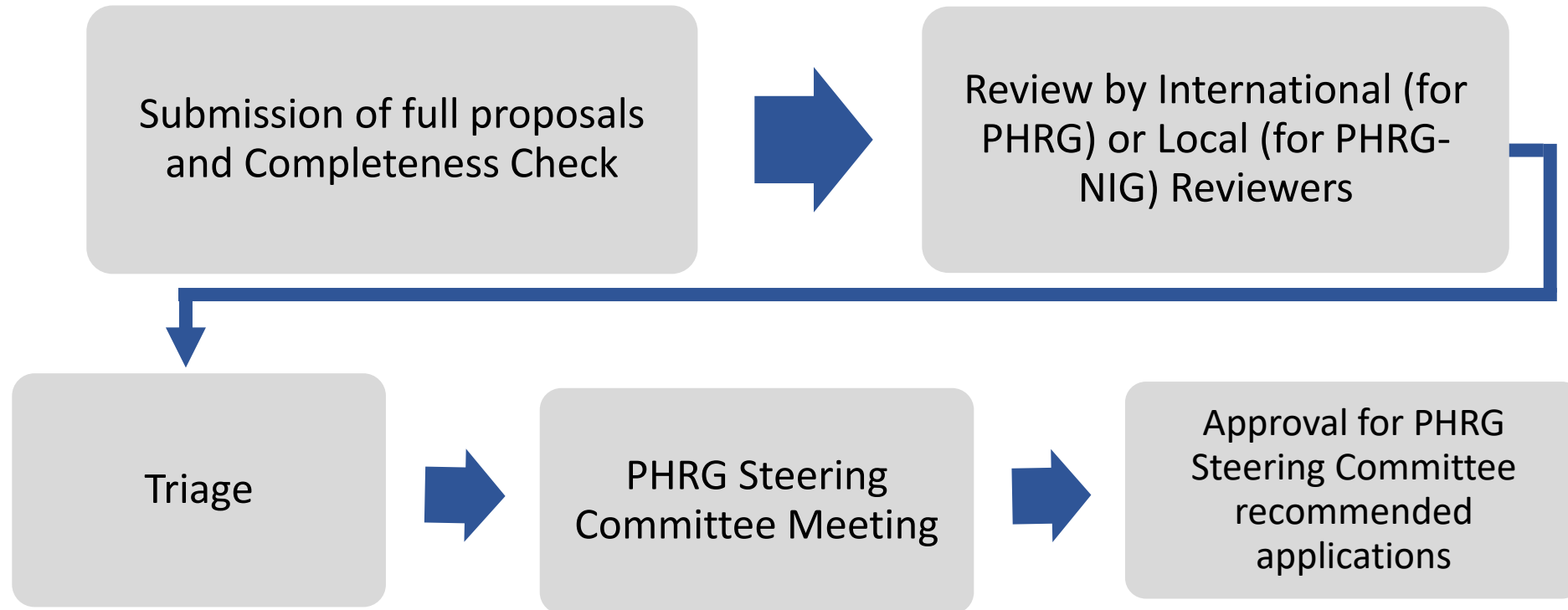
NIG-specific PI Eligibility Criteria (2)

Additional Eligibility Criteria:

- i. Hold a primary appointment in a local public institution and salaried by the institution.
- ii. Demonstrate relevant interest in research as evidenced by recent past work, including but not limited to clinical work, publications, participation in research studies etc.
- iii. Have a laboratory or clinical research program that carries out research in Singapore.
- iv. Hold a minimum of 9 months employment with a local Singapore institution. Upon award, the PI must agree to fulfill at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.
- v. No outstanding reports from previous BMRC, NMRC and other national grants

PHRG/PHRG-NIG – Review Process

Estimated Duration for Review Process: 5 to 6 months



Review Process & Assessment Criteria

	PHRG	PHRG-NIG
Review Process	<p><u>Two stage review process:</u></p> <ol style="list-style-type: none"> 1. International peer review 2. PHRG Steering Committee 	<p><u>Evaluation by:</u></p> <ol style="list-style-type: none"> 1. Local review 2. PHRG Steering Committee
Assessment Criteria	<ul style="list-style-type: none"> • High quality scientific research • Proposed research topic should be population health research of importance to the health system in Singapore. Provided they are scientifically meritorious, proposals which address the set themes would be given priority consideration. • Demonstrate the potential to improve health outcomes and be adopted into actual policy or practice within 2-3 years upon study completion. 	<ul style="list-style-type: none"> • High quality scientific research • Proposed research topic should be population health research of importance to the health system in Singapore. Provided they are scientifically meritorious, proposals which address the set themes would be given priority consideration. • Demonstrate the potential to further the investigators' career to become a full-fledged independent PI

PHRG – Thematic Category

Objective

- To allow the grant scheme to specifically address MOH's areas of pressing research needs
- Only proposals with scope falling within the specific Research Themes can apply
- Letter of Intent (LOI) submission before full proposal, to allow space for co-creation with MOH and other relevant agencies

Grant call frequency: Open throughout the year

Funding Quantum: No stipulated caps in funding quantum or duration. Quantum and duration to be deliberated during the co-creation and review process.

PI Eligibility Criteria (same as Open Category)

- PI must have a MBBS/BDS/PharmD/MD, and/or PhD and/or other appropriate Postgraduate Qualification (at least a Master's Degree) in areas relevant to the proposed research.
- Hold a primary appointment in a local publicly funded institution and salaried by the institution.
- Be an independent PI with a demonstrated track record of research as evidenced by the award of nationally competitive funding (international funding to be considered on a case by case basis) or substantial publication record. (does not apply to NIG)
- Have access to a laboratory or research program that carries out research in Singapore.
- Hold a minimum of 9 months employment with a local Singapore institution. Upon award, the PI must agree to fulfill at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.

Research Themes

1) Mental Health

As the demands of modern life have increased, particularly in the face of an ongoing COVID-19 pandemic, the issue of mental health is on the forefront. This theme will fund research catering to the spectrum of patients with mental health conditions, from children and adolescents in schools, to working adults, to elderly patients. Particular attention will be given to research that improves access to mental healthcare in the community and supports the integration of primary and specialist mental healthcare.

HP/PH

- How can we further promote and support mental well-being among Singaporeans?

HSR

- proposing new models for screening and detection of mental health conditions
- studies assessing feasibility and effectiveness of community mental health services

Research Themes

2) Care for Mothers and Children

This theme spans the continuum of care from pre-conception, pregnancy and childbirth to infancy, childhood, and adolescence, and research should address metabolic health, mental health and cognitive development of children and their mothers.

HP/PH

- How do we optimise maternal health in order to achieve better child development outcomes?
- How do we optimise child health to ensure good development outcomes?
- What is the impact of the role of fathers in child development/health outcomes?

HSR

- Research into models of care that 'right-sites' maternal and child health conditions within primary care.
- Research on primary care initiatives for maternal and child health, such as mother-child dyad model, contraception counselling in polyclinics
- Implementation research on adoption and scaling up of successful initiatives

Research Themes

3) Population mobilisation and improved access in the “War on Diabetes” and other common chronic diseases

Since declaring a “War on Diabetes” in 2016 to rally the entire nation to tackle diabetes, a range of initiatives and programmes have been implemented as part of the strategy to beat diabetes. While headway has been made in early detection and intervention, more upstream challenges remain to be addressed, including patient education and awareness of disease course, patient ownership of disease management, and socioeconomic barriers to good diabetes control. Besides diabetes, the burden of other chronic diseases will also continue to rise as our population ages. To address these issues, proposals for research submitted under this theme can cover new models of care, strategies, and research pertaining to patient behaviour and education, as well as to create change and societal shifts in enabling access to healthcare for patients with diabetes or other common chronic diseases.

HP/PH

- How can we better instil and/or sustain healthy eating behaviour among Singaporeans?
- What influences consumer purchasing behaviour and choice of healthier foods?
- How can we better motivate and sustain interest among Singaporeans to engage in active lifestyles and/or physical activity, at various settings (e.g. workplaces, schools, homes)?
- How can we leverage on primary care as a community base to promote healthy behaviour and address modifiable health risks (including social and environmental factors) at different life stages to prevent or delay the onset of chronic diseases
- How can we enhance our tobacco control measures that can lead to further reduction in smoking rates?
- How can we motivate smokers to quit smoking and/or remain smoke-free?
- How can we better encourage Singaporeans to undergo health screening regularly?
- Research into the impact and effect of upstream interventions such as proactive lifestyle modifications in driving better health outcomes (e.g. in chronic diseases prevalent in primary care)

Research Themes

3) Population mobilisation and improved access in the “War on Diabetes” and other common chronic diseases

Since declaring a “War on Diabetes” in 2016 to rally the entire nation to tackle diabetes, a range of initiatives and programmes have been implemented as part of the strategy to beat diabetes. While headway has been made in early detection and intervention, more upstream challenges remain to be addressed, including patient education and awareness of disease course, patient ownership of disease management, and socioeconomic barriers to good diabetes control. Besides diabetes, the burden of other chronic diseases will also continue to rise as our population ages. To address these issues, proposals for research submitted under this theme can cover new models of care, strategies, and research pertaining to patient behaviour and education, as well as to create change and societal shifts in enabling access to healthcare for patients with diabetes or other common chronic diseases.

HSR

- studies looking at current patient knowledge and health literacy regarding diabetes and/or other common chronic diseases
- how to motivate patients diagnosed early in their disease course (e.g. asymptomatic diabetics)
- larger-scale initiatives to address difficulties with healthcare access and compliance (e.g. patients with poorly controlled diabetes also tend to be patients with lower socioeconomic status)
- implementation research on adoption and scaling up of successful initiatives

Research Themes

4) Effective Use of Technology to Improve Health

What started out as an alternative for patients who prefer a tele-consult in the comfort of their own homes has become increasingly relevant in a post-pandemic world. The use of apps to monitor health and fitness have also become increasingly popular. However, recent incidences of data breaches have also highlighted the need for enhanced cyber-security. This theme will fund research that seeks to identify and create innovative models of care in the areas of telehealth and telemedicine, including for health promotion and preventive health, systems integration and databases, and privacy protection and data security.

HP/PH

- Ideas that leverage on advances in technology and data science, e.g. to provide customized just-in-time feedback/nudging, that lead to greater ownership of healthy behaviour by individuals.

HSR

- quantitative or qualitative research on provider and patient factors and experiences pertaining to telemedicine
- research into cost-effective, operable telehealth/telemedicine solutions that meet security and confidentiality considerations while improving care delivery
- implementation research on adoption and scaling up of successful telemedicine initiatives

Research Themes

5) Prevention and Preparedness for Healthy Ageing

This theme seeks to fund research into ideas that can extend healthy and functional lifespan and reduce the impact of disability, with a view for translation or application of solutions that can have a positive impact on our seniors.

HP/PH

- study of risk factors for diseases (e.g. malnutrition, lack of social support)
- approaches for eliminating/reducing risks at an earlier age before manifestation of diseases, and early detection and treatment of diseases.

Research Themes

6) Care for Complex Patients

With the increasing chronic disease burden, patients with multiple morbidities have become the norm and often have poor clinical outcomes. They often require care across multiple care sites (e.g. SOCs, home-based care), and face significant challenges navigating the healthcare system. Research submitted under this theme should address the needs of this patient population, including healthcare access, self-management, and care coordination. This theme will also support research targeted towards allied health and multi-disciplinary team-based care pertaining to the delivery of integrated care, including both medical and non-medical professionals. Strategies that have a community-based focus will be prioritised.

HSR

- research on challenges faced by complex care patients (e.g. polypharmacy) and innovative ideas on how to better coordinate their care
- studies on care models with increased focus on allied health professionals and nursing professionals, e.g. effectiveness of a community pharmacy
- evidence of integrated care (IT systems, data registries, shared care plans, care coordinators, multi-disciplinary teams, telemonitoring etc.) and their qualitative and/or quantitative impact on our local healthcare system.
- studies evaluating the strengths and weaknesses of current transitional and home care services and recommendations on improvements
- new models for how to integrate home care with existing tertiary and primary care structures
- implementation research on adoption and scaling up of successful initiatives

Research Themes

7) Sustainable and Efficient Care Delivery

This theme addresses the need to improve the sustainability and efficiency of our healthcare delivery system through improving resourcing and allocation, and approaches such as **Value-Based Care**.

This theme will support research that seeks to optimize resource allocation, improve healthcare manpower productivity, and increase the efficiency of healthcare delivery without compromising quality.

HSR

- research into **Value-Based Care** initiatives, and/or models for implementing **Value-Based Care** (e.g. bundled payments, structures)
- research to explore new manpower deployment models and improve efficiency of the healthcare workforce e.g. in primary care
- research on how to attract and retain manpower in areas of need (e.g. primary care) by addressing factors for attrition such as burn-out
- research on improving education and training programmes for family medicine
- research on strategies to broadly standardise the quality of care delivery in primary care in Singapore
- implementation research on adoption and scaling up of successful initiatives

Research Themes

8) Palliative Care

As our population ages, palliative care will become increasingly important as we seek to enable patients to live out their final days in a dignified manner. Over the years, Singapore has been enhancing the quality, affordability and accessibility of palliative care services. We have a variety of palliative care options such as the inpatient hospice palliative care, home palliative care and day hospices to cater for different needs and preferences of treatment and places of death. However, with evolving palliative (and end-of-life (EOL)) care models, in addition to challenges such as the current COVID-19 pandemic significantly altering traditional views on care delivery, we are keen on exploring how we can adopt and/or adapt existing palliative care models to offer more holistic, person-centric and cost-efficient options.

HSR

- Innovative palliative care models which emphasise an integrated, patient-centred approach, involving cross-agency collaboration whilst also allowing patients to transit seamlessly across different settings (e.g. from institutions to the community) and providers according to their individual needs. These approaches should demonstrate cost-effectiveness, as well as sustainability and scalability to deliver holistic, person-centric palliative and EOL care
- Improved methods of identifying and supporting persons who can benefit from early introduction to palliative care approach. This may include proposals on training or equipping generalist health and social care professionals with skills to identify persons who can benefit from the palliative care approach
- New models of palliative care that employ approaches which optimise utilisation of local assets (including the strengths, skills and resources of the community and family)
- Scaling up existing models of care including home palliative services in a sustainable manner, leveraging technology where possible, while ensuring sufficient flexibility to cater to patients' preferences
- New models of engagement and communication with staff, patients and their families to enable a more person-centric EOL care, including encouragement of early consideration/thinking about palliative care. It can also include new engagement modes in reaching out to the public on having more open and meaningful dialogue about issues surrounding the end of life and palliative care.
- implementation research on adoption and scaling up of successful initiatives

Research Themes

9) Traditional and Complementary Medicine (T&CM)

As a multi-racial, multi-cultural society, Singapore remains home to individuals of different ethnicities and religions. This diversity plays out in health seeking behaviours as well, with the presence of traditional Chinese medicine (TCM), traditional Malay medicine (TMM), and traditional Indian medicine (TIM), although only TCM practitioners are statutorily regulated. This theme will fund research that seeks to understand the prevalence, attitudes and health seeking behaviour of our population with regard to T&CM, with a focus on how Western medicine and T&CM can be used safely together.

HSR

- Studying the prevalence of T&CM use together with mainstream healthcare services

Research Themes

10) Health Systems Research

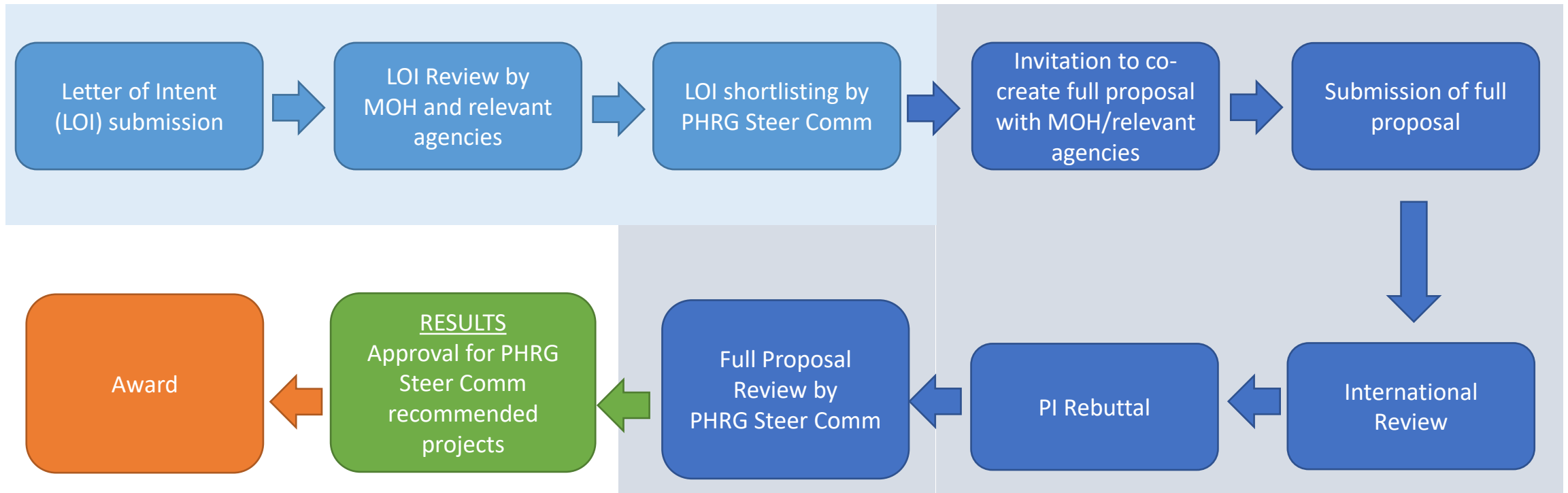
Besides improving various care models serving different groups of patients, research at a health systems-level could potentially yield important insights into system-level interventions or policies that may impact health on a wider or deeper scale.

HSR

- Efficacy of system-level outcome indicators to measure population-level interventions such as vaccinations and health screening
- what does an integrated population health ecosystem look like in Singapore's context, and what are its components?
- analysis on whether a community with better support in wider determinants of health (such as socioeconomic status, environmental factors, accessibility to health and healthcare facilities/programmes etc) achieve better health outcomes as a community, and would have reduced social and health inequalities.

PHRG Thematic Category – Review Process

2-stage review process comprising a letter of intent (LOI) stage and (only for LOIs shortlisted) a full proposal stage. (total duration ~5 months)



Review Process & Assessment Criteria

- High quality scientific research
- Proposed research topic should be population health research of importance to the health system in Singapore. Provided they are scientifically meritorious, proposals which address the set themes would be given priority consideration.
- Demonstrate the potential to improve health outcomes and be adopted into actual policy or practice within 2-3 years upon study completion.

Clinician Scientist-Individual
Research Grant (CS-IRG)
Clinician Scientist-Individual
Research Grant-New
Investigator Grant
(CS-IRG-NIG)

CS-IRG

Objective

- The Clinician Scientist – Individual Research Grant (CS-IRG) aims to support Clinician Scientists in carrying out internationally competitive medical research.
- CS-IRG supports basic, clinical and translational research.

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$1.95M (inclusive of up to 30% indirect costs) for up to 3 years. Projects involving prospective patient/subject recruitment may apply for up to 5 years.

CS-IRG – Eligibility Criteria (1)

- Grant application to be led by a Clinical PI
 - PI must be clinically qualified (i.e. with MD/MBBS/BDS) and preferably with post-graduate clinical training and experience.
- Allied Health Professionals who meet the following conditions may apply:
 - i. Non-medically trained PIs who are nurses, pharmacists or other allied health professions listed on the MOH's website* in clinical practice, doing research in clinical settings or doing research with clinical and healthcare applications/relevance, are eligible to apply.
 - ii. Applicants who are working in human clinical research, including epidemiologists, biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.
 - iii. Non-medically trained applicants conducting wet laboratory based research are not eligible.
 - iv. Applicants must possess a minimum academic qualification of a PhD or the equivalent training.
 - v. Recipients of NMRC Human Capital Awards, Transition Award and NMRC Research Training Fellowship are eligible to apply.

CS-IRG – Eligibility Criteria (2)

- A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and who fulfil the following may apply:
 - i. hold primary appointments in Academic Medical Centres (AMCs), public health institutions (PHIs) or medical schools; or
 - ii. hold primary appointments in A*STAR but (with mutual agreement of A*STAR and the AMC/PHI/medical school) also hold a joint appointment in the AMC/PHI/medical school, provided that any such grant application is supported by the AMC/PHI/medical school. The institution/school should also consider if these A*STAR CS scholars are able to demonstrate that they can act as a bridge between A*STAR and the healthcare system.
 - iii. submit the grant application through AMCs/PHIs/medical schools as host institutions.

CS-IRG – Eligibility Criteria (3)

- For proposals **involving patients**, the clinical PI or co-I should be **SMC registered**; or should be able to demonstrate ability to access patients through SMC registered collaborators.
- For some CS-IRG proposals it is recognized that some studies may be **pre-clinical** and do not require the PI to be SMC registered.
- Only one PI is allowed per application. The number of application by an individual (as PI) is capped at 1 grant application per grant type in a grant call.

CS-IRG – Eligibility Criteria (4)

Additional Eligibility Criteria:

- i. Hold a primary appointment in a local public hospital/public health institutions/national specialty centre/public universities/Academic Medical Centres and salaried by the institution.
- ii. Be an independent PI with a demonstrated track record of research as evidenced by the award of nationally competitive funding (international funding to be considered on a case by case basis) or substantial publication record.
- iii. Have a laboratory or clinical research program that carries out research in Singapore.
- iv. Hold a minimum of 9 months employment with a local Singapore institution. Upon award, the PI must agree to fulfill at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.
- v. No outstanding reports from previous BMRC, NMRC and other national grants

Subcategory CS-IRG-NIG

Objective

- The **CS-IRG New Investigator Grant (CS-IRG-NIG)** is a sub category of the CS-IRG to cater for new clinical investigators.
- Applicants with substantial research experience will not be accepted under this category.

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$260,000 (inclusive of up to 30% indirect costs) for up to 2 years. Projects involving prospective patient/subject recruitment may apply for up to 3 years.

NIG-specific Eligibility Criteria (1)

- Applicants who are applying under the new investigators category have to work with a **mentor** for guidance in their research. This mentoring will provide support for a period of supervised research leading eventually to the clinical investigators conducting larger scale research projects independently. Please note that the NIG is intended to fund a new investigator's independent project, and not to provide additional funding for the mentor's project (or clinical trial).
- To be eligible for NIGs in general, the following requirements apply:
 - i. Awardees of the following grants as PI/Co-PI* at the point of application will not be eligible for the NIG: A*STAR Investigatorship, NRF Fellowship, NMRC CSA and STaR, MOE Tier 2 and 3 grants, MOH/NMRC IRG-equivalent grants^.
 - ii. Applicants must not have received external competitive funding exceeding \$500,000 (direct costs only), to conduct their own research project as the PI.

**Co-PIs refer to PIs whose projects are jointly led by other PIs (e.g. projects under NMRC's Bedside & Bench grant). They are not the same as, and should not be confused with Co-Investigators (Co-Is).*

^NIC Ageing Grants (with the exception of Health and Longevity Catalyst Awards) are considered IRG-equivalent grants.

NIG-specific Eligibility Criteria (2)

Additional Eligibility Criteria:

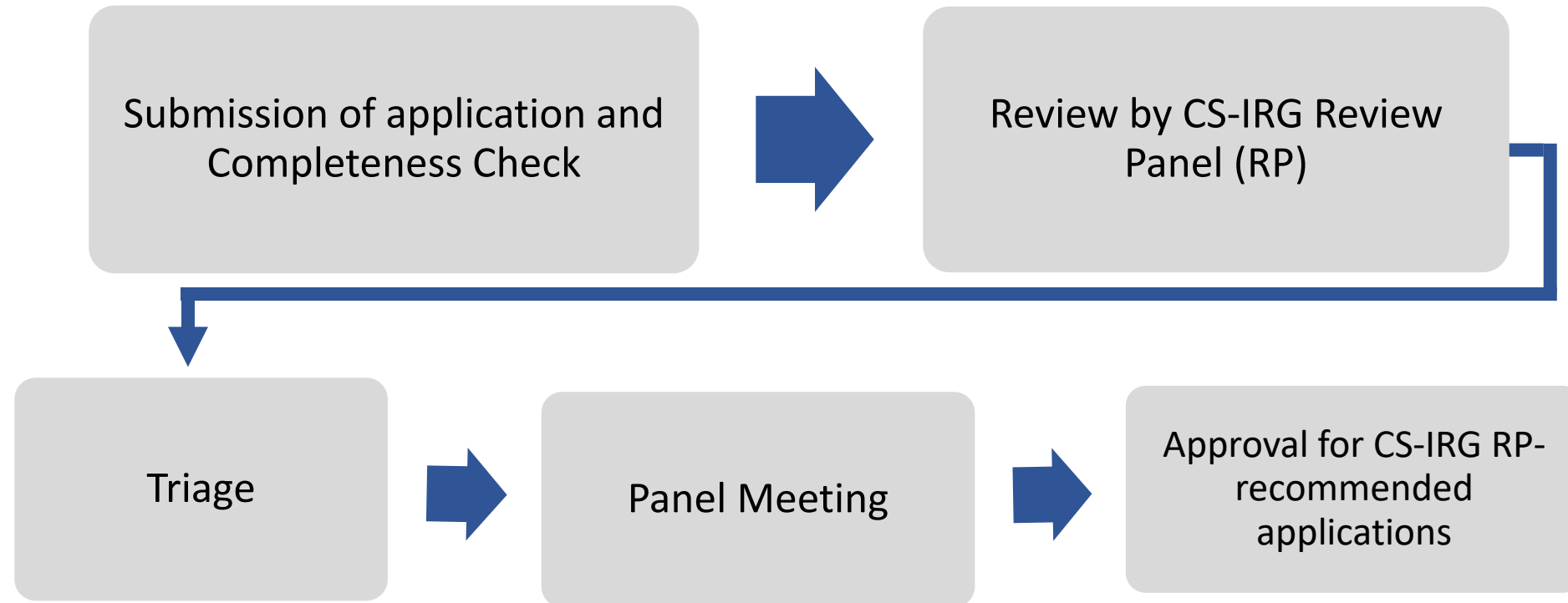
- i. Hold a primary appointment in a local public hospital/public health institutions/national specialty centre/public universities/Academic Medical Centres and salaried by the institution.
- ii. Demonstrate relevant interest in research as evidenced by recent past work, including but not limited to clinical work, publications, participation in research studies etc.
- iii. Have a laboratory or clinical research program that carries out research in Singapore.
- iv. Hold a minimum of 9 months employment with a local Singapore institution. Upon award, the PI must agree to fulfill at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.
- v. No outstanding reports from previous BMRC, NMRC and other national grants

CS-IRG/CS-IRG-NIG – Research Themes

- Open to applications in all research areas
- Applications are assessed based on scientific merit at the international level and relevance to Singapore, but should prioritisation be required between meritorious applications, the following seven disease areas have been identified as national priorities for research:
 - Cancers and neoplasms
 - Cardiovascular
 - Eye
 - Infection
 - Mental health
 - Metabolic and endocrine
 - Neurological

CS-IRG/CS-IRG-NIG – Review Process

Estimated Duration for Review Process: 4 to 5 months



CS-IRG/CS-IRG-NIG – Assessment Criteria

	CS-IRG	CS-IRG-NIG
Assessment Criteria	<ul style="list-style-type: none">• Scientific excellence• Feasibility of study in local context• Productivity• Overall impact in local context• Track record of investigators	<ul style="list-style-type: none">• Scientific excellence• Feasibility of study in local context• Productivity• Overall impact in local context• Suitability of applicant to be an independent investigator and to assume the role of a PI

Open Fund Individual Research
Grant (OF-IRG)

Open Fund Young Individual
Research Grant (OF-YIRG)

OF-IRG

OF-IRG is provided to support the conduct of research proposals in basic, translational and clinical research that are relevant to human health and potential, including research that looks at the causes, consequences, diagnosis and treatment of human diseases.

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$1.625M (inclusive of up to 30% indirect costs) for up to 5 years

OF-IRG – Eligibility Criteria

- Only one Principal Investigator (PI) is allowed per application. The number of application by an individual (as PI) is capped at 1 grant application per grant type in a grant call.
- Applicant applying as **Principal Investigator** is required to fulfil the following criteria at the point of application:
 - a) Holds a primary appointment in a local publicly funded institution and salaried by the institution.
 - b) PIs should have PhD or MD/MBBS/BDS qualifications. (*Exceptions would be made on a case-by-case basis*).
 - c) Is an independent investigator (with PI status in institution) with a demonstrated track record of research, as evidenced by the award of nationally competitive funding (international funding to be considered on a case by case basis), substantial publication record in the past 3 years.
 - d) Has a laboratory or clinical research program that carries out research in Singapore
 - e) Holds a minimum of 9 months employment (per calendar year) with local Singapore institution(s). Upon award, the PI must agree to fulfil at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.
 - f) Has no outstanding reports from previous BMRC, NMRC grants, and other national grants.
 - g) For proposals involving patients, the PI should be SMC registered; or should be able to demonstrate ability to access patients through SMC registered Co-Is or collaborators.

Subcategory OF-YIRG

- Sub-category of IRG
- Young IRG is a step for the new investigator to a first independent national level grant.
- Investigators with substantial research experience will not be accepted under this subcategory

Grant call frequency: Twice a year (Jan and Jul)

Funding Quantum: up to \$0.325M (Inclusive of up to 30% indirect costs) for up to 3 years

OF-YIRG – Eligibility Criteria

- Only one Principal Investigator (PI) is allowed per application. The number of application by an individual (as PI) is capped at 1 grant application per grant type in a grant call.
- Applicant applying as **Principal Investigator** is required to fulfil the following criteria at the point of application:
 - a) Holds a primary appointment in a local publicly funded institution and salaried by institution from time of award.
 - b) PIs should have PhD or MD/MBBS/BDS qualifications (*Exceptions would be made on a case-by-case basis*).
 - c) Has a laboratory or clinical research program that carries out research in Singapore
 - d) Holds a minimum of 9 months employment (per calendar year) with local Singapore institution(s). Upon award, the PI must agree to fulfil at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.
 - e) Has no outstanding report from previous BMRC, NMRC grants, and other national grants.
 - f) For proposals involving patients, the PI should be SMC registered; or should be able to demonstrate ability to access patients through SMC registered Co-Is or collaborators.

OF-YIRG – Additional Eligibility Criteria (1)

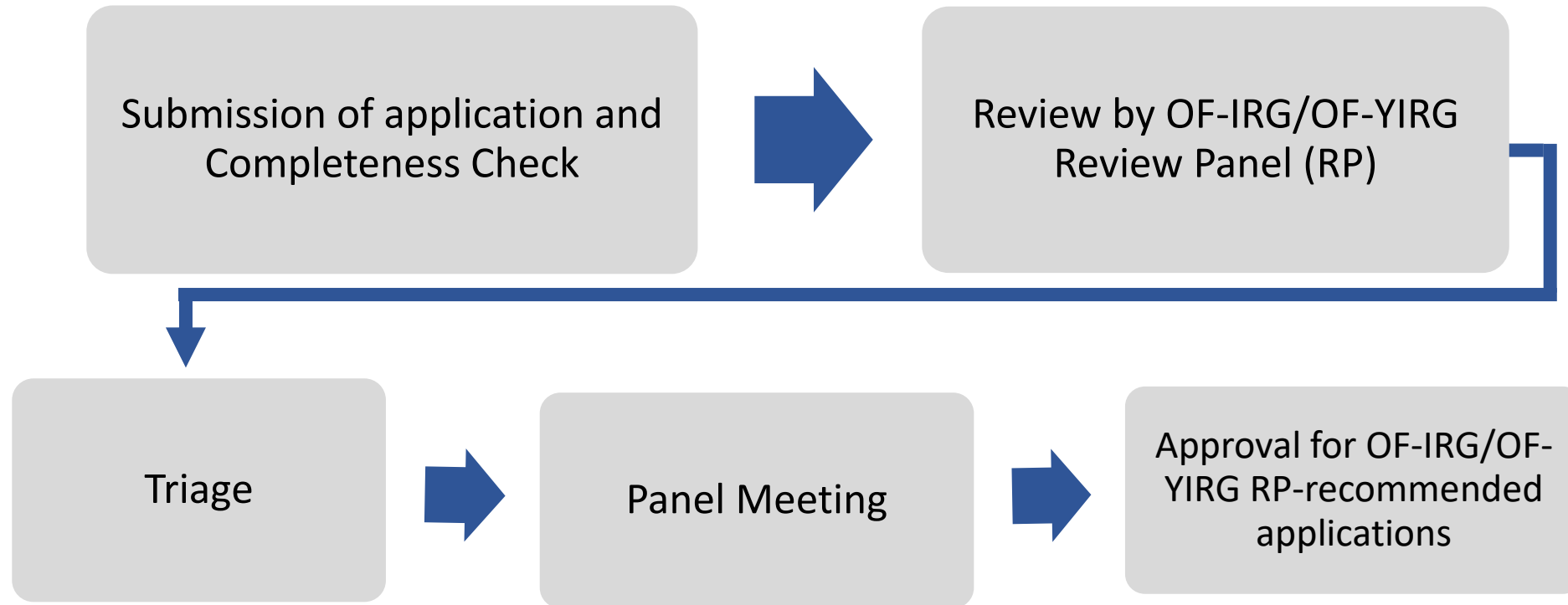
- a) Applicants who are applying for the Young IRGs are strongly encouraged to work with a mentor for guidance in their research. This mentoring will provide support for a period of supervised research leading eventually to the investigators conducting larger scale research projects independently.
- b) Applicants must have completed their PhD or MBBS/MD/BDS within the past 7 years and past 10 years respectively (whichever date is later).
 - Exception would be considered on a case-by-case basis to grant a one-year extension to the 7-year post-PhD and 10-year post-MBBS cap eligibility criterion for applicants who declared that their productivity have been affected by COVID-19.
 - PIs are strongly encouraged to submit DOR-endorsed request with justifications through the HIORE preferably 3 weeks before grant call closing deadline for NMRC's assessment on eligibility.
- c) Applicants must not have received external competitive funding exceeding \$500,000 (direct costs only) within the last 5 years to conduct their own research project as the PI.

OF-YIRG – Additional Eligibility Criteria (2)

- d) Awardees of the following grants will not be eligible for YIRG:
- A*STAR Investigatorship
 - NRF Fellowship
 - MOE Tier 2 and 3 grants
 - MOH/NMRC IRG-equivalent grants*
- *NIC Ageing Grants (with the exception of Health and Longevity Catalyst Awards) are considered IRG-equivalent grants.*
- e) Applicants must indicate how the proposed area of work would be distinct from their current supervisor's existing research. The applicant's current supervisor should not be a co-investigator on the proposal.
- f) Upon the award of the OF-YIRG, the host institution will be required to provide written confirmation from either the applicant's Head of Institution or supervisor to describe the steps the institution will take to demonstrate its commitment to his/her career development. This must include provision of appropriate space to carry out the work proposed, but may also include investment in the equipment necessary to establish the laboratory, access to shared institutional resource, and career development support etc.

OF-IRG/OF-YIRG – Review Process

Estimated Duration for Review Process: 4 to 5 months



Note: The single-stage review process similar to the CS-IRG/CS-IRG-NIG will be implemented for OF-IRG/OF-YIRG from January 2023 grant call onwards.

OF-IRG/OF-YIRG – Research Themes

- Open to applications in all research areas
- Applications are assessed based on scientific merit at the international level and relevance to Singapore, but should prioritisation be required between meritorious applications, the following seven disease areas have been identified as national priorities for research :
 - Cancers and neoplasms
 - Cardiovascular
 - Eye
 - Infection
 - Mental health
 - Metabolic and endocrine
 - Neurological

OF-IRG/OF-YIRG – Evaluation Criteria

- Quality of the science
- Capability of the research performers to conduct the research
- Objectives of the research program in context of HHP goals*

** The HHP Domain's vision for RIE2025 is to be a leading hub that transforms and protects health, advances human potential and creates economic value through excellence in research and its application for Singapore, Asia and the world.*

Clinical Trial Grant (CTG)

Clinical Trial Grant (CTG)

Objective

- To support clinicians to carry out clinical trials for the development of novel therapies, interventions and diagnostics, focusing on healthcare needs

Two Schemes

- CTG-Industry Collaborative Trials (CTG-ICT)
(Open whole year)
- CTG-Investigator-Initiated Trials (CTG-IIT)
(Twice a year; Jan and Jul)

CTG-ICT Scheme

- Supports ICTs that involve both clinician and company contributing intellectual inputs and funds to conduct the trial and developing novel or pre-existing therapies/drugs/medical device for new indications.
- **This scheme does not support trials that are fully funded/sponsored by companies.** Such trials typically do not require the clinicians' intellectual inputs as the clinical trial protocol has already been designed by the company, and the clinicians' involvement is more for subject/patient recruitment.
- Industry partner required
- At least 70% of total project costs (cash or in-kind) contributed by industry partner
- Submit RCA showing budget
 - *Only industry contribution incurred in SG will be considered as admissible*
 - *Admissible in-kind drug cost contribution by companies is limited to equivalent to non-drug cost contribution (next slide)*
- Funding quantum capped at \$4.94M per project (inclusive of up to 30% indirect costs) for up to 5 years

*Admissible industry in-kind drug cost contribution

- Admissible in-kind drug cost contribution from companies is capped at the amount of non-drug cost contribution from the companies
- Example

Line items	Industry contribution (cash and in-kind) (\$ in mil)	<u>Admissible</u> industry contribution# (cash and in-kind) (\$ in mil)
EOM	1	1
EQPT	0.5	0.5
OOE Consumables	0.5	0.5
Subtotal	2	2
OOE Drugs	10	2*
Total	12	4

* Admissible in-kind drug cost contribution = \$2mil capped at subtotal (sum of EOM, EQPT and OOE (consumables))

#Cost is admissible only if they are incurred in Singapore

CTG-IIT Scheme

- Support IITs of both early- and late-phase which are initiated and driven by clinicians who are interested to conduct trials on novel or pre-existing drugs/medical device/interventions for new indications.
- Collaboration with industry partner is optional.
- No requirement for minimum company contribution, however applications with industry contribution would have higher priority.
- Funding quantum capped at \$1.625M per project (inclusive of up to 30% indirect costs) for up to 5 years.

CTG – Eligibility Criteria (1)

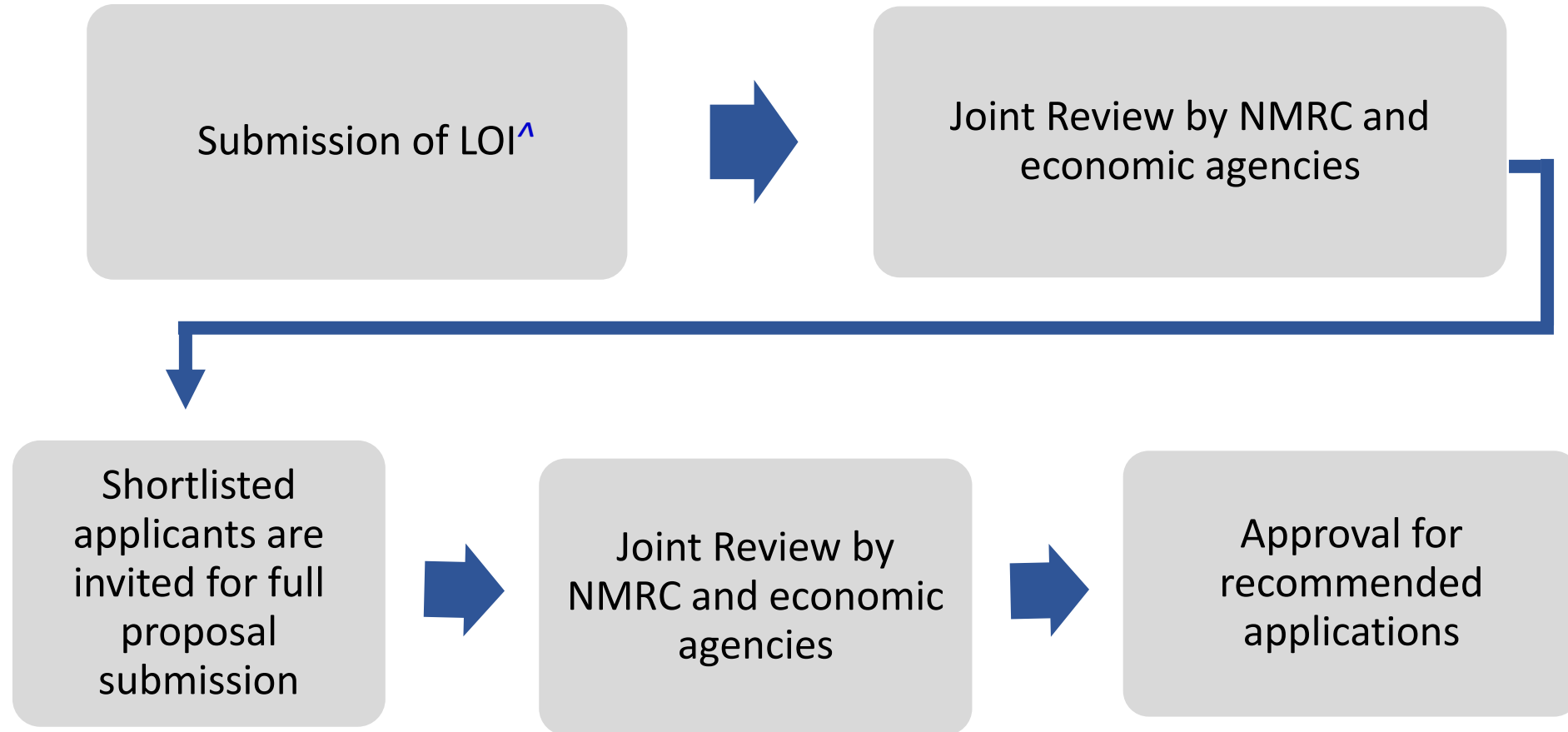
- Each grant application must be submitted by a **Clinical Principal Investigator** who has to fulfil the eligibility criteria listed below at the point of application. Only one Principal Investigator (PI) is allowed per application.
- Must be **clinically qualified** (i.e. with MD/MBBS/BDS) and preferably with **post-graduate** clinical training and experience.
- Must **fulfill HSA's requirements** for PIs who are conducting clinical trials. Please refer to HSA website for detailed guidelines on conducting clinical trials: <https://www.hsa.gov.sg/clinical-trials>
- Registered pharmacists who fulfil HSA's requirements may apply as PI. The pharmacist PI should involve physicians who are locally registered, as their co-investigators for all interventional clinical trials.

CTG – Eligibility Criteria (2)

- Must hold a primary appointment in a local public hospitals/public health institutions/ national specialty centres/public universities/Academic Medical Centres and salaried by the institution.
- Must be an independent PI with a demonstrated track record of research as evidenced by the award of nationally competitive funding (international funding to be considered on a case-by-case basis), or substantial publication record.
- Have a laboratory or clinical research program that carries out research in Singapore.
- Hold a minimum of 9 months employment with the a local institution, and fulfil full time residency in Singapore over a period of the calendar year.
- No outstanding reports from previous BMRC, NMRC grants and other national grants.

CTG-ICT – Review Process

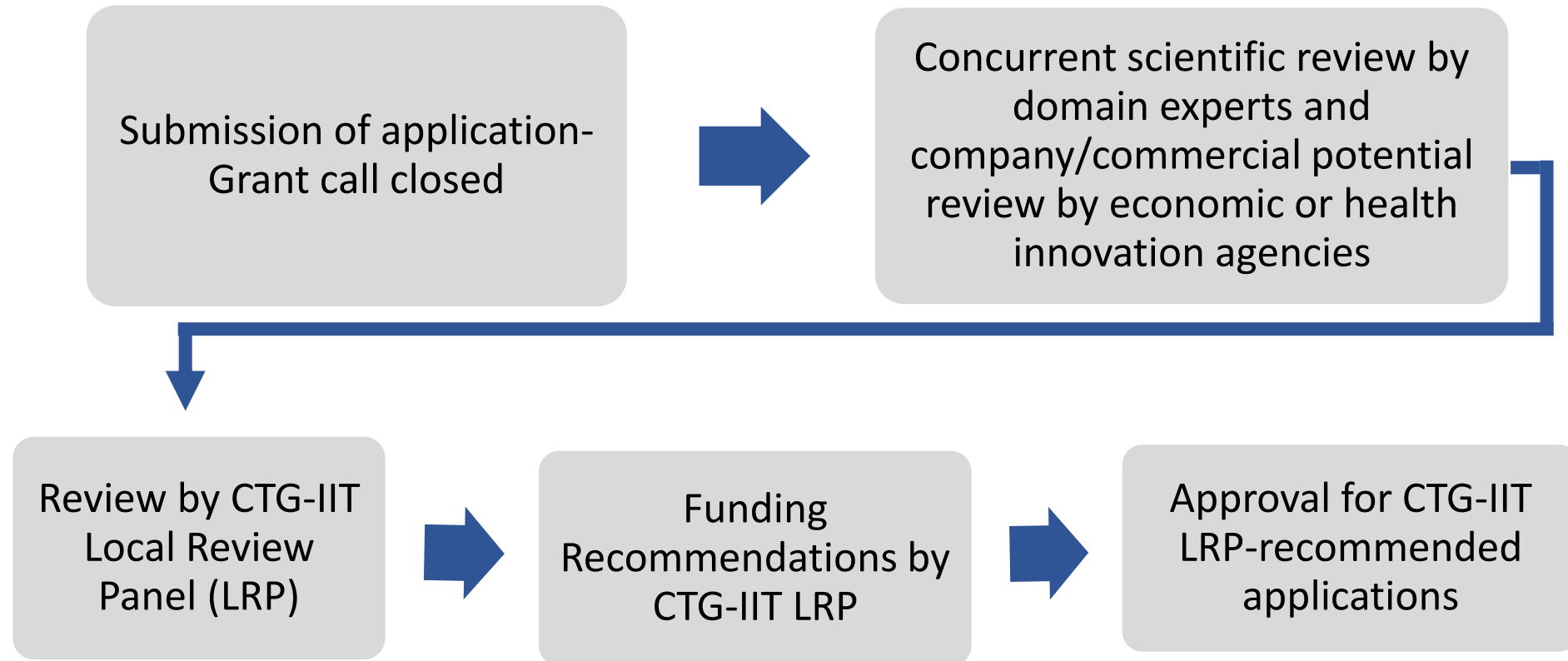
Estimated Duration for Review Process: 2 months



[^] Applicants are strongly encouraged to engage NMRC for discussion prior to the submission of the LOI, as early as the RCA is close to finalisation, to facilitate timely commencement of the project where necessary.

CTG-IIT – Review Process


Estimated Duration for Review Process: 5 to 6 months



CTG – Research Themes

- Open to applications in all research areas
- Applications are assessed based on scientific merit at the international level and relevance to Singapore, but should prioritisation be required between meritorious applications, the following seven disease areas have been identified as national priorities for research :
 - Cancers and neoplasms
 - Cardiovascular
 - Eye
 - Infection
 - Mental health
 - Metabolic and endocrine
 - Neurological
- Additional identified priority areas for clinical trials are as follows:
 - Small regional network-based trials led by Singapore KOLs, particularly for rare diseases and Asian prevalent diseases of high priority healthcare challenges to Singapore
 - Early phase clinical trials of high value to build on strong translational expertise (particularly in oncology and cardiology)
 - Clinical pharmacological clinical trials focusing on aging population
 - Precision medicine
 - Digital health technologies
 - Clinical trials using real-world data and evidence and well characterised and pre-consented patient cohorts

CTG – Application Info

CTG-Industry Collaborative Trials (CTG-ICT)	CTG-Investigator Initiated Trials (CTG-IIT)
<ul style="list-style-type: none"> • Included a Letter of Intent stage. Applications to be accompanied with a letter of support from the Industry Partner confirming that they: <ol style="list-style-type: none"> a) will co-fund at least 70% of the Total Project Costs as stated on the LOI/FP application b) Support the proposed work mentioned in the CTGICT grant application <div style="text-align: center; margin-top: 20px;"> <p>LOI</p>  <p>Shortlist</p> <p>Full Proposal Submission</p> </div>	<ul style="list-style-type: none"> • Applications to be accompanied with: <ol style="list-style-type: none"> a) A letter of support from HI and PI's Head of Department to show commitment to adopt IIT outcome with the following caveats: <ol style="list-style-type: none"> i. If IIT outcome is positive ii. If there are no other competing and/or better solutions than IIT outcome iii. If IIT outcome is worthy of implementing based on analysis on cost effectiveness and other necessary analyses needed b) In kind support from HI (could include EOM/OOE/EQPT support from grants received by HI e.g. NMRC Centre Grant, Clinical Research Coordinator Funding Award, or internal funds)

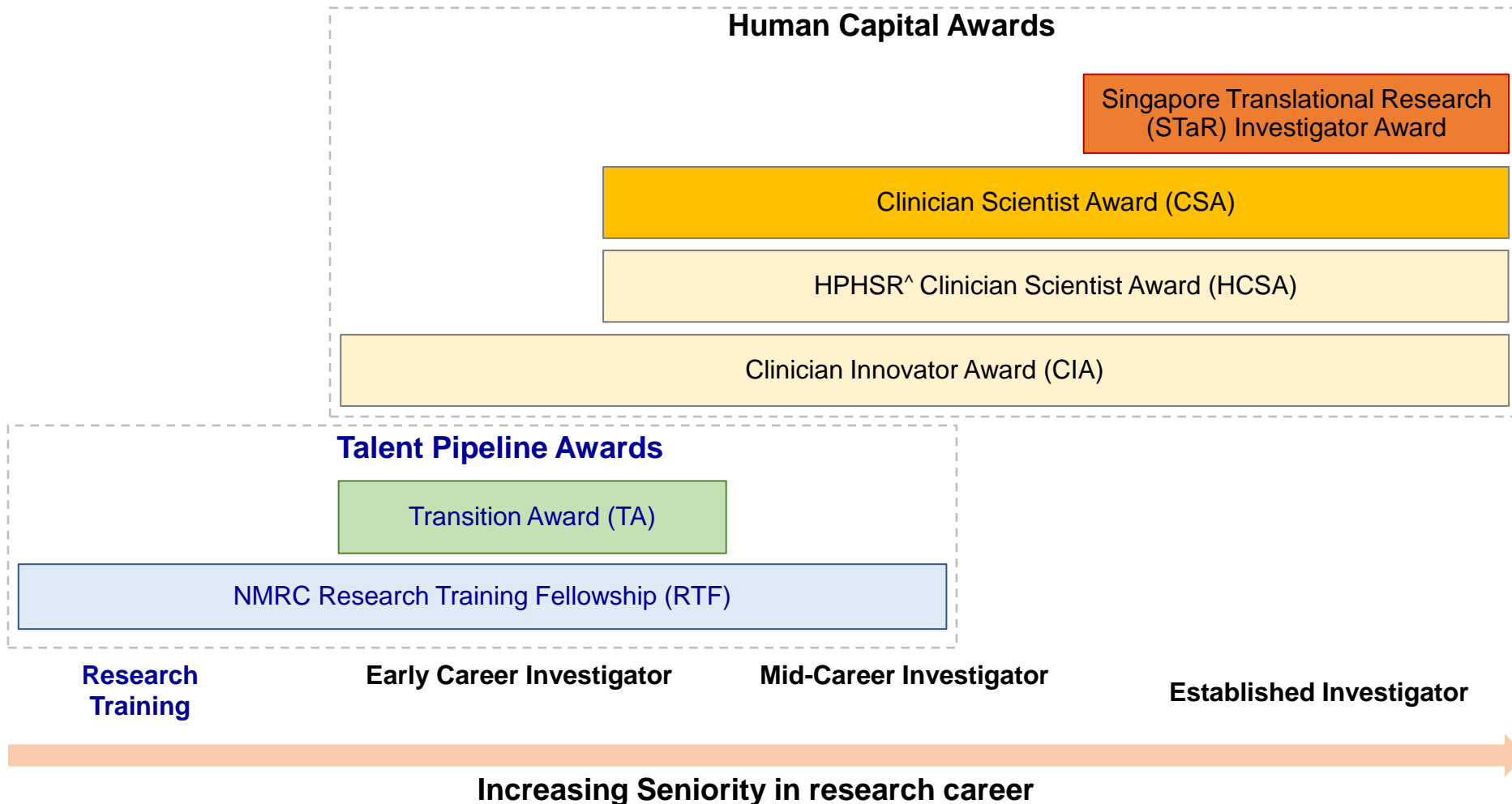
CTG – Assessment Criteria

- a) Scientific merit of proposal
- b) Feasibility of study in local context
- c) Track record of applicants
- d) Overall impact in local context
- e) Scientific/health outcomes and relevance to HHP strategy (eg. national priority areas, national clinical trials strategy)
- f) Economic outcomes:
 - i. Attract a range of companies including large pharmaceutical companies, medical device and biotech SMEs, and encourage them to extend their investment and deepen partnerships with public healthcare institutions. It will also help to groom local companies which are bringing new medical products or therapies into market.
 - ii. Develop next generation of KOLs, deepening expertise in key therapeutic areas to further attract industry investments.
 - iii. Potential for economic impact, value creation and value capture for industries in Singapore.

Talent Programmes

Talent Programmes

NMRC administers a range of human capital awards and talent pipeline programmes aimed at supporting individuals in their research and career progression.



Areas of Research

The Talent Programmes are open to applications on all research areas.

Applicants focusing on the translation of research and innovations into healthcare in the following strategic areas (covering both expertise in technology as well as use case areas) will be prioritised:

- Medical Technology (MedTech), Artificial Intelligence (AI), Data Science and Digital Health
- Epidemiology, Population Health and Implementation Science
- Precision Medicine
- Healthy and Meaningful Longevity*
- Family Medicine and Primary Care

**Updated from “Healthy and Productive Longevity” to “Healthy and Meaningful Longevity” in alignment with RIE2025 aims.*

Singapore Translational Research (STaR) Investigator Award

STaR Investigator Award (1)

Objective

- A prestigious award offered by the MOH to recognise and support internationally renowned and outstanding investigators in Translational and Clinical Research (TCR), Health Promotion, Preventive Health, Population Health and Health Services Research (HPHSR), and/or Health Technology.

The STaR Investigator Award is a talent award for an individual. A large collaborative project involving themes not driven/led by the same investigator would be deemed unsuitable for this programme.

Funding Quantum

- **First Award: S\$6mil over 5 years ; Renewals S\$4mil over 5 years**
 - PI's salary support up to S\$600k per annum
 - Grant support and up to 30% indirect costs will be adjusted accordingly

** Institutions are encouraged to co-fund; Applications with co-funding would be considered favourably during review.*

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

STaR Investigator Award (2)

Eligibility Criteria

- 1) Applicants should have a **strong track record of scientific achievement, conduct cutting edge translational and clinical research (TCR) or research in Health Promotion, Preventive Health, Population Health, Health Services Research (HPHSR) or Health Technology, and produce outstanding research output with clinical and health impact.**
- 2) Applicants should hold a **clinical qualification (e.g. MBBS, MD, BDS or equivalent)** with recognised specialty training beyond medical or dental school (including specialists, family physicians and public health practitioners).^{i, ii}
- 3) Applicants who are health science / healthcare professionals with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website*, and possess PhD or equivalent qualifications are eligible to apply. Those without PhD or equivalent qualifications, but possess relevant research track record can be considered for award on case-by-case basis.
- 4) Applicants working in human clinical research, including epidemiologists and biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.ⁱⁱⁱ
- 5) All applicants must be doing research in clinical settings or doing research with clinical and healthcare applications/relevance.
- 6) Applicants with non-medical degrees conducting laboratory based research are not eligible.

Notes:

- i. *Recipients of NMRC Human Capital Awards (i.e., STaR, CSA, HCSA, CIA/CIDA) and Transition Award are exempted.*
- ii. *Clinicians with recognised specialty training are:*
 - a. *Clinicians who are accredited by the MOH Specialists Accreditation Board (SAB), Dental Specialists Accreditation Board (DSAB) and Family Physicians Accreditation Board (FPAB).*
 - b. *Clinicians who do not fulfil the above but are able to demonstrate completion of specialist training in countries which do not have specialist boards/colleges and are holding consultant positions as a specialist may be considered on a case-by-case basis.*
- iii. *Applicants who are submitting on an exception basis are to submit their CV (with track records including publication records and grants held as PIs/Co-PIs in the past 5 years) to the Secretariat to determine their eligibility prior to submitting a full proposal.*

STaR Investigator Award (3)

Eligibility Criteria (con't)

- 7) Applicant must hold the following appointments:
 - a) A primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre (AMC) and be salaried by the institution;^{iii, iv} and
 - b) A regular-rank faculty/academic appointment in one of the AMCs or medical schools **within 3 months of award conveyance.**^v
- 8) Applicant must agree to fulfil at least 9 months of residency in Singapore for each calendar year over the duration of the grant award (Host Institution must provide a letter, to commit that the STaR applicant will spend at least 75% of their time in Singapore upon award).
- 9) Applicant must generally **not be beyond the retirement age** at the point of first award.ⁱ
- 10) All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.
- 11) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 12) Applicant may only submit one application to the human capital/talent awards (i.e. STaR, CSA, HCSA, CIA and TA) for each round of grant call.
- 13) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- iv. *A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:*
 - a. *hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or*
 - b. *hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school. The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.*

The grant application must be submitted through the PHI/AMC/medical school as the host institution.
- v. *An applicant without regular-rank faculty/academic appointment pledged by the AMC/medical school can be considered, if the PHI demonstrates that there is existing framework and governance that allow sustained research career / opportunities available to the applicant, as well as the availability of a conducive and facilitation structure where high quality research can be undertaken.*

STaR Investigator Award (4)

Review Process

- **Two-stage** review process comprising an **international peer review stage** followed by a **collective review** by STaR Panel.
- Applicants may be invited for interview by the STaR panel.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Track Record of PI will be the highest priority
- Scientific excellence and potential outcomes in the respective areas
- Feasibility of study in local context
- Productivity
- Overall Impact in local context

Clinician Scientist Award (CSA)

Clinician Scientist Award (1)

Objective

- To provide salary & funding support for selected outstanding clinician scientists, to enable them to carry out internationally competitive translational and clinical research, to bring bench discoveries to bedside applications.
- 2 categories of award:
 - Investigator level (INV)*
 - Senior Investigator level (SI)

**One renewal allowed*

Funding Quantum

- 0.5 FTE to 0.7 FTE salary support of actual research time, subject to NMRC annual salary cap
- Grant support of up to:
 - **S\$675k over 3 years** (INV category)
 - **S\$1.75mil over 5 years** (SI category)
- Up to 30% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

Clinician Scientist Award (2)

Eligibility Criteria

- 1) Applicants should hold a **clinical qualification (e.g. MBBS, MD, BDS or equivalent), with specialty training beyond medical or dental school** (including specialists, family physicians and public health practitioners).^{i, ii}
- 2) Applicants who are health science / healthcare professionals with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website* in clinical practice, possess PhD or equivalent qualifications are eligible to apply. Those without PhD or equivalent qualifications, but possess relevant research track record can be considered for award on case-by-case basis.
- 3) Applicants working in human clinical research, including epidemiologists and biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.ⁱⁱⁱ
- 4) All applicants must be doing research in clinical settings or doing research with clinical and healthcare applications/relevance.
- 5) Applicants with non-medical degrees conducting laboratory based research are not eligible.
- 6) Applicants must have been an independent PI on at least one national or international peer-reviewed research grant, equivalent to an Individual Research Grant (IRG)-level grant.

Notes:

- i. *Recipients of NMRC Human Capital Awards (i.e., STaR, CSA, HCSA, CIA/CIDA) and Transition Award are exempted.*
- ii. *Clinicians with recognised specialty training are:*
 - a. *Clinicians who are accredited by the MOH Specialists Accreditation Board (SAB), Dental Specialists Accreditation Board (DSAB) and Family Physicians Accreditation Board (FPAB).*
 - b. *Clinicians who do not fulfil the above but are able to demonstrate completion of specialist training in countries which do not have specialist boards/colleges and are holding consultant positions as a specialist may be considered on a case-by-case basis.*
- iii. *Applicants who are submitting on an exception basis are to submit their CV (with track records including publication records and grants held as PIs/Co-PIs in the past 5 years) to the Secretariat to determine their eligibility prior to submitting a full proposal.*

Clinician Scientist Award (3)

Eligibility Criteria (con't)

- 7) Applicant must hold the following appointments:
 - a) A primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre (AMC) and be salaried by the institution;^{iv} and
 - b) A regular-rank faculty/academic appointment in one of the AMCs or medical schools **within 3 months of award conveyance.**^v
- 8) Applicant must be a Singapore citizen or Permanent Resident **at the point of application.**
- 9) Applicant must generally **not be beyond the retirement age** at the point of first award.[‡]
- 10) All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.
- 11) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 12) Applicant may only submit one application to the human capital/talent awards (i.e. STaR, CSA, HCSA, CIA and TA) for each round of grant call.
- 13) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- iv. *A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:*
 - a. *hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or*
 - b. *hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school. The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.*

The grant application must be submitted through the PHI/AMC/medical school as the host institution.
- v. *An applicant without regular-rank faculty/academic appointment pledged by the AMC/medical school can be considered, if the PHI demonstrates that there is existing framework and governance that allow sustained research career / opportunities available to the applicant, as well as the availability of a conducive and facilitation structure where high quality research can be undertaken.*

Clinician Scientist Award (4)

Review Process

- **Two-stage** review process comprising an **international peer review stage** followed by a **collective review** by the local CSA panel.
- Applicants may be invited for interview by the local CSA panel.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Track Record of PI will be the highest priority
- Scientific excellence and the potential to bring bench discoveries to bedside applications
- Feasibility of study in local context
- Productivity
- Overall Impact in local context
- For INV: Mentorship training plan, suitability and track record of mentor

HPHSR Clinician Scientist Award (HCSA)

HPHSR Clinician Scientist Award (1)

Objective

- To provide salary & funding support for selected outstanding clinician scientists, to undertake research in the areas of Health Promotion (HP), Preventive Health, Population Health (PH) and Health Services Research (HSR), bringing about significant and sustainable impact to health outcomes of the nation.
- 2 categories of award:
 - Investigator level (INV)*
 - Senior Investigator level (SI)

**One renewal allowed*

Funding Quantum

- 0.5 FTE to 0.7 FTE salary support of actual research time, subject to NMRC annual salary cap
- Grant support of up to:
 - **S\$500k over 3 years** (INV category)
 - **S\$1.3mil over 5 years** (SI category)
- Up to 30% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

HPHSR Clinician Scientist Award (2)

Eligibility Criteria

- 1) Applicants should hold a **clinical qualification (e.g. MBBS, MD, BDS or equivalent), with specialty training beyond medical or dental school** (including specialists, family physicians and public health practitioners).^{i, ii}
- 2) Applicants who are health science / healthcare professionals with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website* in clinical practice, possess PhD or equivalent qualifications are eligible to apply. Those without PhD or equivalent qualifications, but possess relevant research track record can be considered for award on case-by-case basis.
- 3) Applicants working in human clinical research, including epidemiologists and biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.ⁱⁱⁱ
- 4) All applicants must be doing research in clinical settings or doing research with clinical and healthcare applications/relevance.
- 5) Applicants with non-medical degrees conducting laboratory based research are not eligible.
- 6) Applicants must have been an independent PI on at least one national or international peer-reviewed research grant, equivalent to an Health Services Research Grant (HSRG)-level grant.

Notes:

- i. *Recipients of NMRC Human Capital Awards (i.e., STaR, CSA, HCSA, CIA/CIDA) and Transition Award are exempted.*
- ii. *Clinicians with recognised specialty training are:*
 - a. *Clinicians who are accredited by the MOH Specialists Accreditation Board (SAB), Dental Specialists Accreditation Board (DSAB) and Family Physicians Accreditation Board (FPAB).*
 - b. *Clinicians who do not fulfil the above but are able to demonstrate completion of specialist training in countries which do not have specialist boards/colleges and are holding consultant positions as a specialist may be considered on a case-by-case basis.*
- iii. *Applicants who are submitting on an exception basis are to submit their CV (with track records including publication records and grants held as PIs/Co-PIs in the past 5 years) to the Secretariat to determine their eligibility prior to submitting a full proposal.*

HPHSR Clinician Scientist Award (3)

Eligibility Criteria (con't)

- 7) Applicant must hold the following appointments:
 - a) A primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre (AMC) and be salaried by the institution;^{iv} and
 - b) A regular-rank faculty/academic appointment in one of the AMCs or medical schools **within 3 months of award conveyance.**^v
- 8) Applicant must be a Singapore citizen or Permanent Resident **at the point of application.**
- 9) Applicant must generally **not be beyond the retirement age** at the point of first award. ⁱ
- 10) All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.
- 11) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 12) Applicant may only submit one application to the human capital/talent awards (i.e. STaR, CSA, HCSA, CIA and TA) for each round of grant call.
- 13) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- iv. *A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:*
 - a. *hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or*
 - b. *hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school. The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.*

The grant application must be submitted through the PHI/AMC/medical school as the host institution.
- v. *An applicant without regular-rank faculty/academic appointment pledged by the AMC/medical school can be considered, if the PHI demonstrates that there is existing framework and governance that allow sustained research career / opportunities available to the applicant, as well as the availability of a conducive and facilitation structure where high quality research can be undertaken.*

HPHSR Clinician Scientist Award (4)

Review Process

- **Two-stage** review process comprising an **international peer review stage** followed by a **collective review** by the local HCSA panel.
- Applicants may be invited for interview by the local HCSA panel.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Track Record of PI will be the highest priority
- Scientific excellence and potential to improved health outcomes and adoption into actual policy/practice
- Feasibility of study in local context
- Productivity
- Overall Impact in local context
- For INV: Mentorship training plan, suitability and track record of mentor

Clinician Innovator Award (CIA)

Clinician Innovator Award (1)

Objective

- To provide salary & funding support for selected outstanding clinician innovators, to bring healthcare innovation ideas to the next level, and eventually, towards the commercialisation end-point.
- 2 categories of award:
 - Investigator level (INV)*
 - Senior Investigator level (SI)

**One renewal allowed, second renewal on a case-by-case basis*

Funding Quantum

- Up to 0.3 FTE salary support of actual research time, subject to NMRC annual salary cap
- Grant support of up to:
 - **S\$250k over 2 years** (INV category)
 - **S\$500k over 2 years** (SI category)
- Up to 30% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

Clinician Innovator Award (2)

Eligibility Criteria

- 1) Applicants should hold a **clinical qualification (e.g. MBBS, MD, BDS or equivalent), with specialty training beyond medical or dental school** (including specialists, family physicians and public health practitioners).^{i,ii}
- 2) Applicants who are health science / healthcare professionals with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website* in clinical practice, possess PhD or equivalent qualifications are eligible to apply. Those without PhD or equivalent qualifications, but possess relevant research track record can be considered for award on case-by-case basis.
- 3) Applicants working in human clinical research, including epidemiologists and biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.ⁱⁱⁱ
- 4) All applicants must be doing research in clinical settings or doing research with clinical and healthcare applications/relevance.
- 5) Applicants with non-medical degrees conducting laboratory based research are not eligible.

Notes:

- i. *Recipients of NMRC Human Capital Awards (i.e., STaR, CSA, HCSA, CIA/CIDA) and Transition Award are exempted.*
- ii. *Clinicians with recognised specialty training are:*
 - a. *Clinicians who are accredited by the MOH Specialists Accreditation Board (SAB), Dental Specialists Accreditation Board (DSAB) and Family Physicians Accreditation Board (FPAB).*
 - b. *Clinicians who do not fulfil the above but are able to demonstrate completion of specialist training in countries which do not have specialist boards/colleges and are holding consultant positions as a specialist may be considered on a case-by-case basis.*
- iii. *Applicants who are submitting on an exception basis are to submit their CV (with track records including publication records and grants held as PIs/Co-PIs in the past 5 years) to the Secretariat to determine their eligibility prior to submitting a full proposal.*

Clinician Innovator Award (3)

Eligibility Criteria (con't)

- 6) Applicant must hold the following appointments:
 - a) A primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre (AMC) and be salaried by the institution;^{iv} and
 - b) A regular-rank faculty/academic appointment in one of the AMCs or medical schools **within 3 months of award conveyance.**^v
- 7) Applicant must be a Singapore citizen or Permanent Resident **at the point of application.**
- 8) Applicant must generally **not be beyond the retirement age** at the point of first award.ⁱ
- 9) All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.
- 10) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 11) Applicant may only submit one application to the human capital/talent awards (i.e. STaR, CSA, HCSA, CIA and TA) for each round of grant call. Applicants are allowed to hold up to 0.3 FTE salary support under the Clinician Scientist / Clinician Investigator Salary Support Programme (CS/CISSP), if awarded the CIA.
- 12) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- iv. *A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:*
 - a. *hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or*
 - b. *hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school. The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.*

The grant application must be submitted through the PHI/AMC/medical school as the host institution.
- v. *An applicant without regular-rank faculty/academic appointment pledged by the AMC/medical school can be considered, if the PHI demonstrates that there is existing framework and governance that allow sustained research career / opportunities available to the applicant, as well as the availability of a conducive and facilitation structure where high quality research can be undertaken.*

Clinician Innovator Award (4)

Review Process

- **Two-stage** review process comprising an **expert review stage** followed by a **collective review** by the local CIA panel.
- Applicants may be invited for interview by the local CIA panel.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Track Record of PI will be the highest priority
- Demonstration of intellectual property position
- Viability of development and commercial plans
- Feasibility of study in local context
- Productivity
- Overall Impact in local context
- For INV: Mentorship training plan, suitability and track record of mentor

Notes on CSA, HCSA and CIA

- Applicant may decide which programme is more suitable to apply for.
- The key difference between the programmes would be how the proposals are evaluated (i.e., expected outcomes). Proposal assessment will be in line with the criteria for the respective programmes.
- The review panel will comprise experts clearly informed of the assessment criteria of that programme.

For example, work that generates outcomes such as new clinical guidelines or spin offs may not be given as much weight under CSA compared to HCSA or CIA respectively.

Transition Award (TA)

Transition Award (1)

Objective

- To assist **budding, young clinician scientists** who have just returned from formal research training, to build up their capability in research
- Help the clinicians to transit to a stable independent research position or other independent research funding.
- Expected to “differentiate” into one of the three CS tracks of TCR, HPHSR or health technology.

Funding Quantum

Funding quantum is awarded over 4 years comprising:

- 0.5 FTE to 0.7 FTE salary support of actual research time, subject to NMRC annual salary cap
- Grant support of up to **S\$300k**
- Up to 30% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

Transition Award (2)

Eligibility Criteria

- 1) Applicants should hold a **clinical qualification (e.g. MBBS, MD, BDS or equivalent), with specialty training beyond medical or dental school** (including specialists, family physicians and public health practitioners).ⁱ
- 2) Applicants must have received **in-depth scientific training** through a PhD programme, Masters programme, or at least 2 years post-doctoral intensive research experience, in relevant local or overseas universities, research institutes, centres etc.
- 3) Applicants who are health science / healthcare professionals with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website* in clinical practice, possess PhD or equivalent qualifications are eligible to apply. Those without PhD or equivalent qualifications, but possess relevant research track record can be considered for award on case-by-case basis.
- 4) Applicants working in human clinical research, including epidemiologists and biostatisticians, and whose research is clinically relevant and has potential health impact, will be considered as exceptions on a case-by-case basis.ⁱⁱ
- 5) All applicants must be doing research in clinical settings or doing research with clinical and healthcare applications/relevance.
- 6) Applicants with non-medical degrees conducting laboratory based research are not eligible.

Notes:

- i. *Clinicians with recognised specialty training are:*
 - a. *Clinicians who are accredited by the MOH Specialists Accreditation Board (SAB), Dental Specialists Accreditation Board (DSAB) and Family Physicians Accreditation Board (FPAB).*
 - b. *Clinicians who do not fulfil the above but are able to demonstrate completion of specialist training in countries which do not have specialist boards/colleges and are holding consultant positions as a specialist may be considered on a case-by-case basis.*
- ii. *Applicants who are submitting on an exception basis are to submit their CV (with track records including publication records and grants held as PIs/Co-PIs in the past 5 years) to the Secretariat to determine their eligibility prior to submitting a full proposal.*

Transition Award (3)

Eligibility Criteria (Con't)

- 7) Applicants should **not have been an independent PI** on national/international research grants. Recipients of institutional grants or NIG grants are eligible to apply. Applicants who have previously held one national grant (e.g. EDG or IRG), can apply on exceptions basis with justifications.ⁱⁱ
- 8) For clinicians (with MBBS/MD/BDS), the number of years after **exiting from specialist training should not exceed 8 years**. For non-medically trained healthcare professionals and applicants applying on exception basis, the number of years post PhD (or post basic degrees for those without PhD) should not exceed **8 years**.
- 9) Applicant must hold a primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre and be salaried by the institution.ⁱⁱⁱ
- 10) Applicant must be a Singapore citizen or Permanent Resident **at the point of application**.
- 11) All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.
- 12) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 13) Applicant may only submit one application to the human capital/talent awards (i.e. STaR, CSA, HCSA, CIA and TA) for each round of grant call.
- 14) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- iii. A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:
 - a. hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or
 - b. hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school.
The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.
The application must be submitted through the PHI/AMC/medical school as the host institution.

Transition Award (4)

Review Process

- Introduction of rebuttal stage.
- Evaluation by the Transition Award Review Panel.
- Applicants may be invited for interview by the review panel.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Track record and suitability of the applicant to be an independent investigator/CS will be of highest priority
- Quality of proposed research
- Feasibility of study in local context
- Productivity
- Overall Impact in local context
- Mentorship training plan, suitability and track record of mentor

NMRC Research Training Fellowship (RTF)

NMRC Research Training Fellowship (1)

Objective

- Awarded to outstanding and talented clinicians and health science / healthcare professionals for research training[^] to have qualifications and skills to become Clinician Scientists.

Funding Quantum

Funding quantum of up to \$500K is awarded over 2-3 years (extendable to 4 years for PhD degree) comprising:

- Salary support
- Tuition Fees
- Conference support
- Maintenance allowance and others (e.g. return air travel, health insurance)*

** For overseas training, to be accordance to the institution's guidelines*

Clinicians pursuing overseas full-time PhD training may request for up to S\$800k.

Grant Call Frequency

- Twice a year
- Opening dates: Typically in **January** and **July**

[^]A list of local post-graduate programmes will be included in the NMRC RTF website as a guide for interested applicants. Please note that the list is not meant to be exhaustive and applicants can still apply for programmes or courses not stated in the list.

NMRC Research Training Fellowship (2)

Eligibility Criteria

- 1) Applicants must be **medical doctors/dental surgeons** (i.e., with MBBS/MD/BDS degree) who are registered with the Singapore Medical Council/Dental Board. Residents or AST/BST trainees who wish to pursue research training in the midst of their clinical training will be required to submit additional documents. Medical/House officers are not eligible to apply.
- 2) **Health science / healthcare professionals** with non-medical degrees, such as nurses, pharmacists and other allied health professions listed on MOH's website* and possess PhD or equivalent degrees are eligible to apply. Those without PhD or equivalent degrees may apply for training leading a formal postgraduate degree.
- 3) Applicant must be a Singapore citizen or Permanent Resident **at the point of application**.
- 4) Applicant must hold a primary appointment in a local public hospital/public health institutions/national specialty centre/public university/Academic Medical Centre (AMC) and be salaried by the institution.¹

Notes:

- i. *A*STAR CS scholar from the National Science Scholarship (NSS) (MBBS-PhD) or NSS (MD-PhD) schemes and fulfil the following may apply:*
 - a. *hold a primary appointment in a public health institution (PHI), Academic Medical Centre (AMC), or medical school; or*
 - b. *hold a primary appointment in A*STAR and a joint appointment in the PHI/AMC/medical school, and the grant application is supported by the PHI/AMC/medical school. The PHI/AMC/medical school is to consider if the applicant is able to demonstrate that he/she can act as a bridge between A*STAR and the healthcare system.*

The application must be submitted through the PHI/AMC/medical school as the host institution.

NMRC Research Training Fellowship (3)

Eligibility Criteria (con't)

- 5) Applicant must remain employed in a public institution in Singapore during and throughout duration of the award. Applicant will also be required to serve a bond with the Government of Singapore upon the completion of training.ⁱⁱ
- 6) Applicant is encouraged to apply for local training if expertise is available locally so that knowledge acquired is applicable in the local context.
- 7) The curriculum of the formal degree can be research-based or course-based. Applicant is advised to apply to the university of interest and liaise the necessary arrangements for the research training or degree programme concurrently with this fellowship application to avoid delay in the submission of the application and commencement of training.
- 8) Applicant should not have outstanding reports from NMRC grants and other national grants.
- 9) Applicant is only allowed up to 2 resubmissions following an unsuccessful first submission.

Notes:

- ii. *Please refer to the NMRC website for details on the types of awards and corresponding bond periods.*
- iii. *Applicants may be invited for interview by the panel.*

NMRC Research Training Fellowship (4)

Other Requirements

- All applicants must provide a write-up on their research area/focus, to justify how the curriculum/training will enable them to pursue a career as a CS and to include a 5-year career plan post-training.
- For formal course-based training which does not require a research project, applicants are only required to provide the project title and scientific/lay abstract i.e. they need not submit a detailed research proposal.
- For overseas training, applicants are required to provide additional justifications for proposing overseas training over local training (if there are equivalent or similar local courses/expertise) and the potential positive impact of the training.
- All applicants are required to nominate a research supervisor/mentor to provide guidance during and after training.

Submission Mode and Deadline

January 2023 Grant Call

Submission Mode and Deadline

- Grant Call will be open on **3 January 2023**.
- Grant Call Closing Deadlines:

Grant Programme	Deadline
PHRG/PHRG-NIG (Open Category)	6 February 2023 (Mon), 5pm
PHRG (Thematic Category)	NA – Open throughout the year
CS-IRG/CS-IRG-NIG	6 February 2023 (Mon), 5pm
OF-IRG/OF-YIRG	6 February 2023 (Mon), 5pm
CTG-ICT	NA – Open throughout the year
CTG-IIT	6 February 2023 (Mon), 5pm
STaR	6 February 2023 (Mon), 5pm
CSA/HCSA/CIA	6 February 2023 (Mon), 5pm
TA	6 February 2023 (Mon), 5pm
NMRC RTF	6 February 2023 (Mon), 5pm

Note: The grant call closing deadline has been extended for 1 week in view of the Chinese New Year holidays

Submission Mode and Deadline

- It is mandatory for all applications to be submitted online via IGMS.
- Please ensure that all submissions are endorsed by the corresponding Research Director (for Host Institution) and Dean (for Academic Institution)* or equivalent , by the deadline.
- The Host institution is to submit a summary of the applications to NMRC.
- We will not entertain any late/hardcopy submissions or submissions from individual applicants without endorsement from the Host Institution and Academic Institution* .
- Application forms, guidelines and grant call information will be available on the NMRC website by 3 January 2023.

** For applicable STaR, CSA, HCSA and CIA applicants with regular rank faculty / academic appointments. AI's endorsement will now be required under "Other Attachment" template (i.e., no longer be required in the IGMS).*

Q&A

Thank you.