May 2016 Grant Call Roadshow

22 – 26 April 2016

NMRC National Medical Research Council Singapore

Agenda

- Introduction – RIE2020 Health & Biomedical Sciences (HBMS) Domain
- Overview of Open Competitive Grants
- Human Biomedical Research Act – Q & A
- General Q & A

Health & Biomedical Sciences Domain

RIE2020 Framework

Technology Domains

Advanced Manufacturing and Engineering (AME)

To develop technological capabilities that support the growth and competitiveness of our manufacturing and engineering sectors

Health and Biomedical Sciences (HBMS)

To be a leading centre that advances human health and wellness, and creates economic value for Singapore and Singaporeans through the pursuit of excellence in research and its applications

Urban Solutions and Sustainability (USS)

To develop a sustainable and liveable city through integrated solutions for Singapore and the world

Services and Digital Economy (SDE)

To develop, integrate and leverage Singapore's digital innovation capabilities to meet national priorities, raise productivity and support key services, create sustainable economic opportunities and quality jobs

Due to the pervasive and cross-cutting nature of digital technologies, AME, HBMS and USS domains will draw on and fund research in digital technology capabilities that support the research agenda within their domains

Cross-cutting Programmes

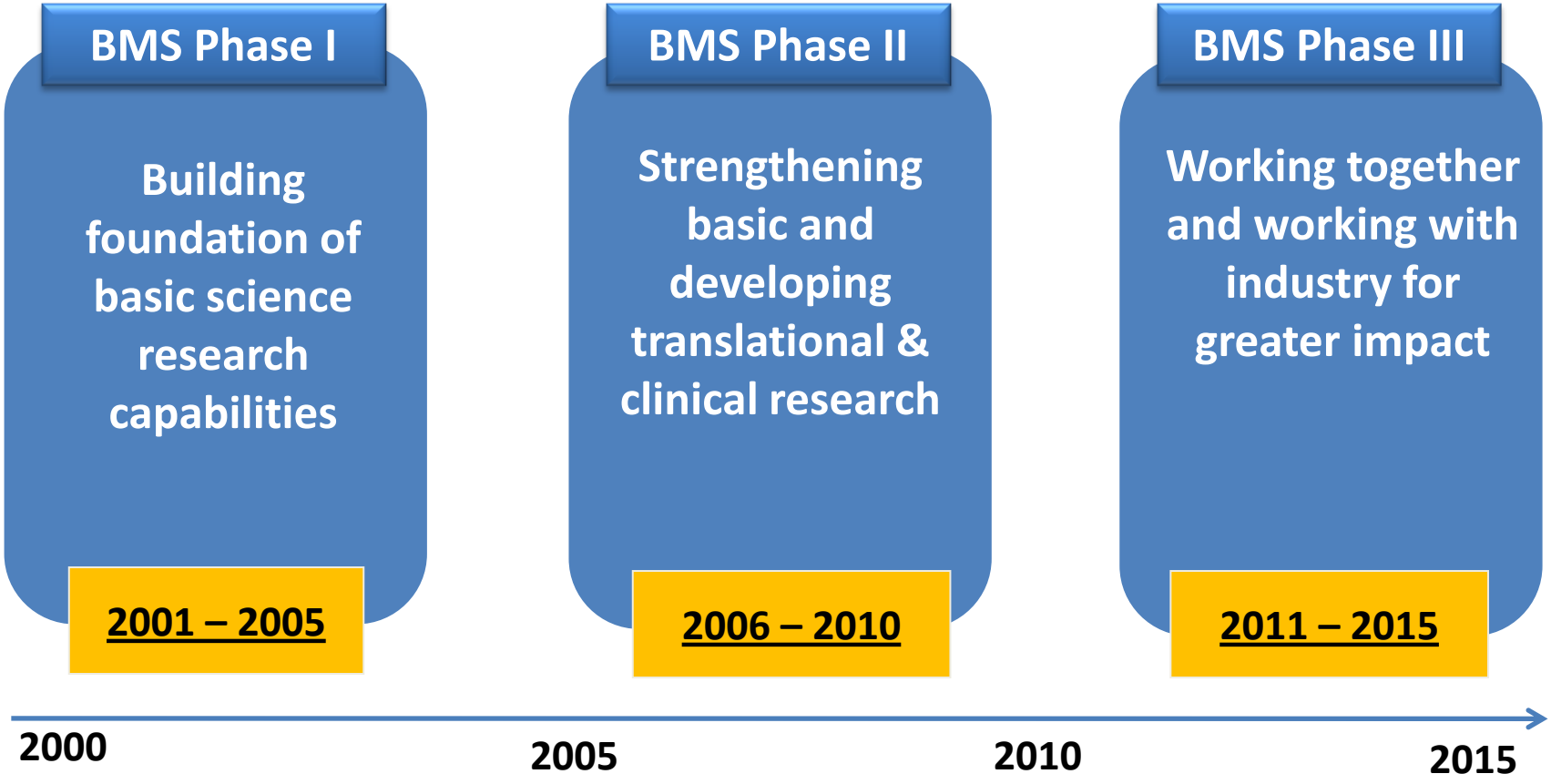
Academic Research
To build up a significant base of capabilities and a pipeline of ideas that can feed into applied and industrial research to drive the next phase of growth

Manpower
To build a strong research and innovation community

Innovation and Enterprise
To build up a strong core of innovative enterprises that drive value creation and economic competitiveness

VISION AND STRATEGY

Singapore's BMS initiative



HBMS Vision

To be a leading centre that advances human health and wellness, and creates economic value for Singapore and Singaporeans, through the pursuit of excellence in research and its applications.

HBMS RIE2020 Strategy

<u>Strategic Thrusts</u>:

Key thrust #1: Five therapeutic areas of focus

- Broad considerations in MOH's selection of therapeutic areas of focus
  - Singapore's disease burden
  - Degree of unmet needs globally
  - Diseases that are prevalent in Singapore but are not prevalent elsewhere in the developed world (e.g. myopia), or diseases that manifest differently in Asians as compared to Western populations (e.g. Asian phenotypes)
  - Singapore's existing capabilities
- Areas identified: (i) **Cancers**, (ii) **Cardiovascular Diseases**, (iii) **Diabetes Mellitus and other Metabolic/Endocrine Conditions**, (iv) **Infectious Diseases**, and (v) **Neurological and Sense Disorders**

HBMS RIE2020 Strategy (continued)

Key thrust #2: Establish pathways to bring discoveries from bench to bedside within the five therapeutic areas

- By articulating future healthcare delivery models in Singapore and identifying areas where R&D can make a difference in health outcomes, and lead to economic value capture for Singapore.

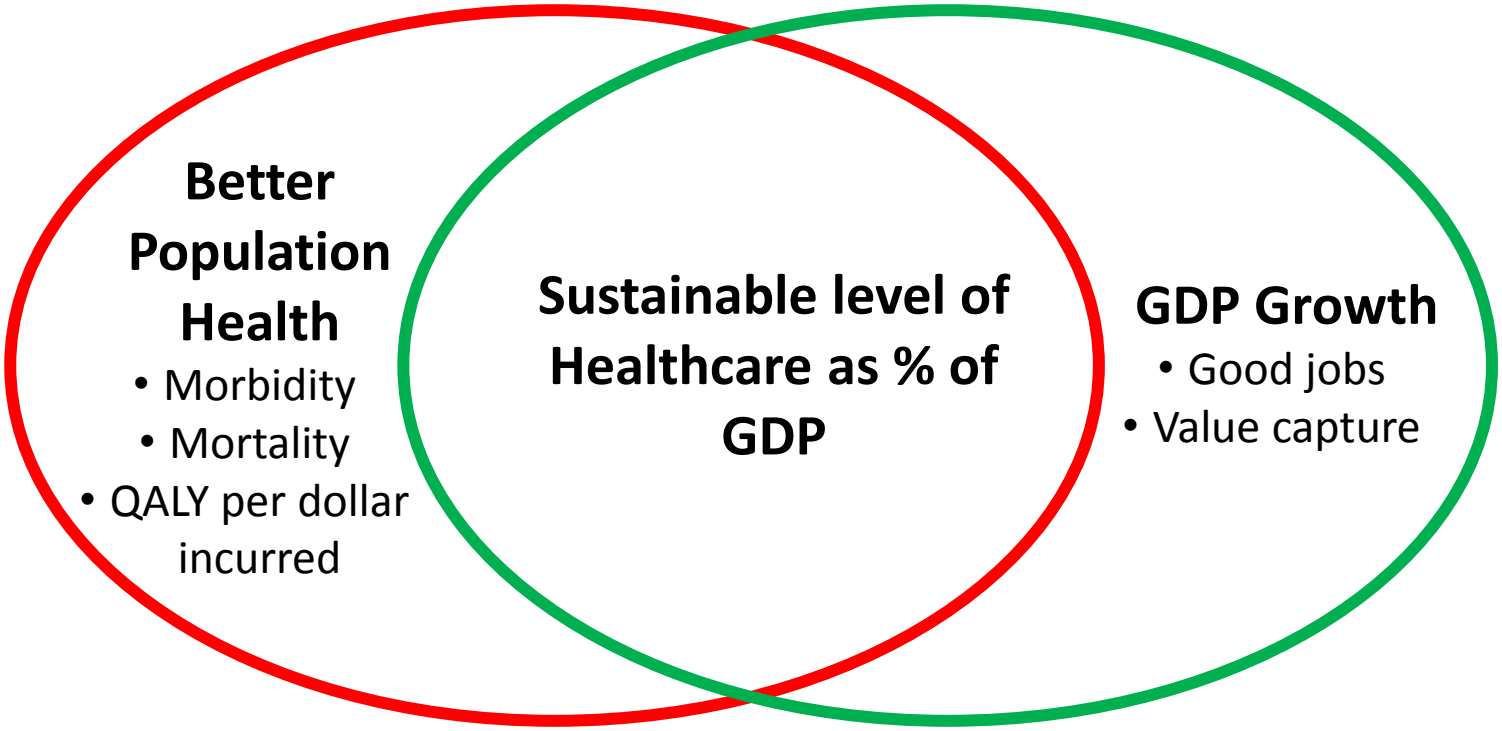
Key thrust #3: Deepen diversification beyond Pharmbio and MedTech

- Grow health-related industry sectors such as food and nutrition, and personal care.

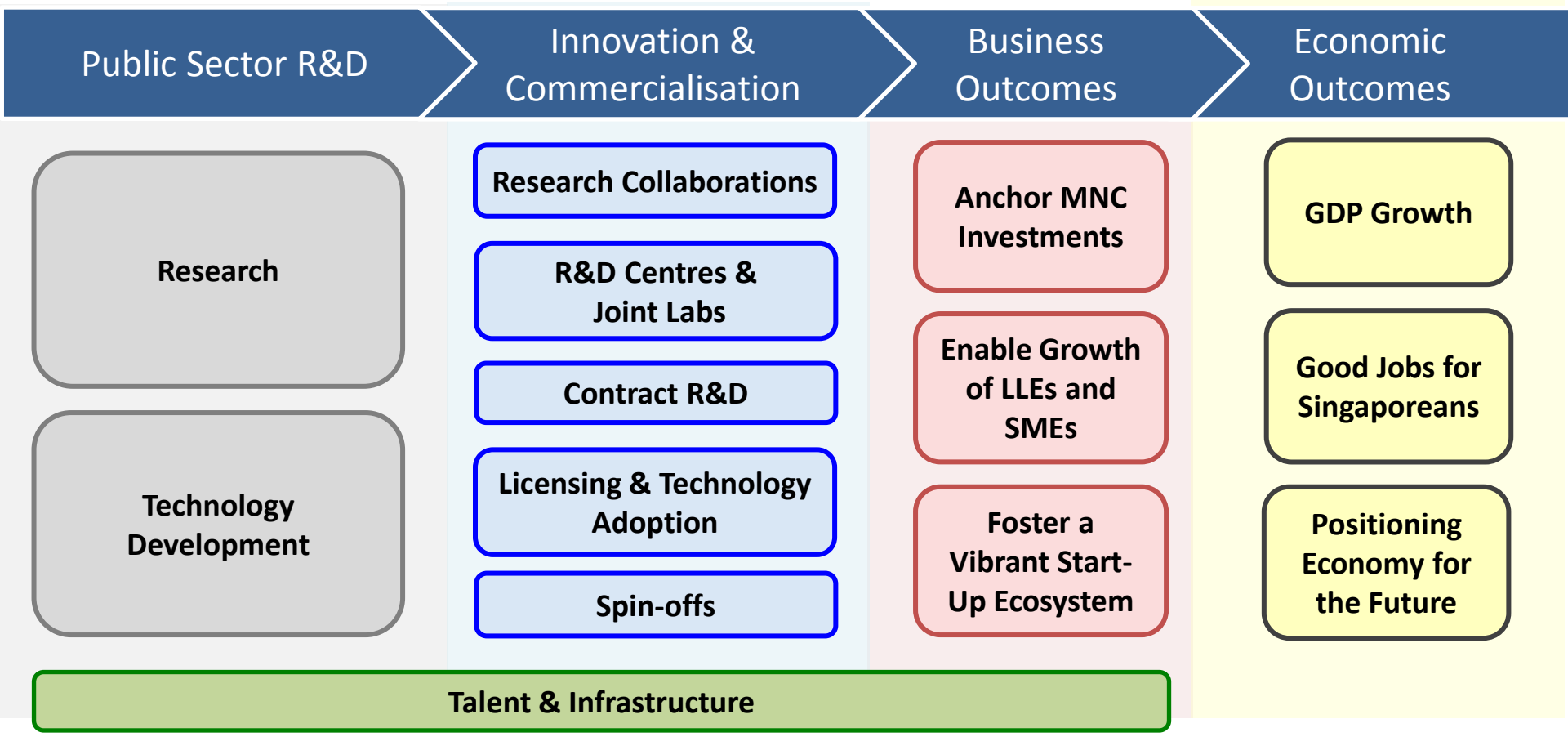
Key thrust #4: Increase focus on health services research (HSR)

- HSR examines ways of improving the delivery of health services and contributes to direct improvements of processes by implementing new services and evaluating existing ones for clinical and cost effectiveness.

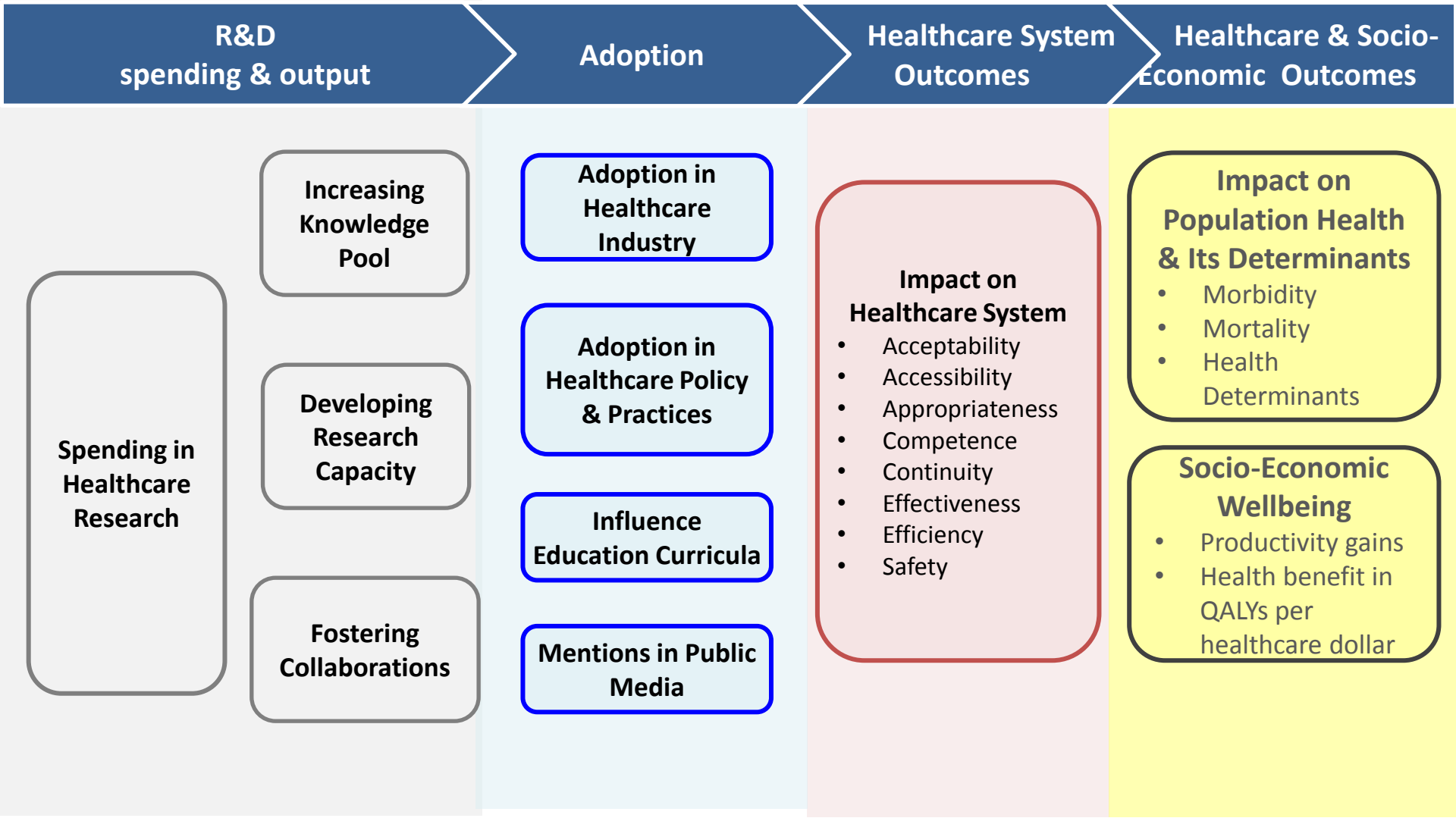
Desired Value Creation Outcomes



Economic value capture from R&D



Health value creation from R&D



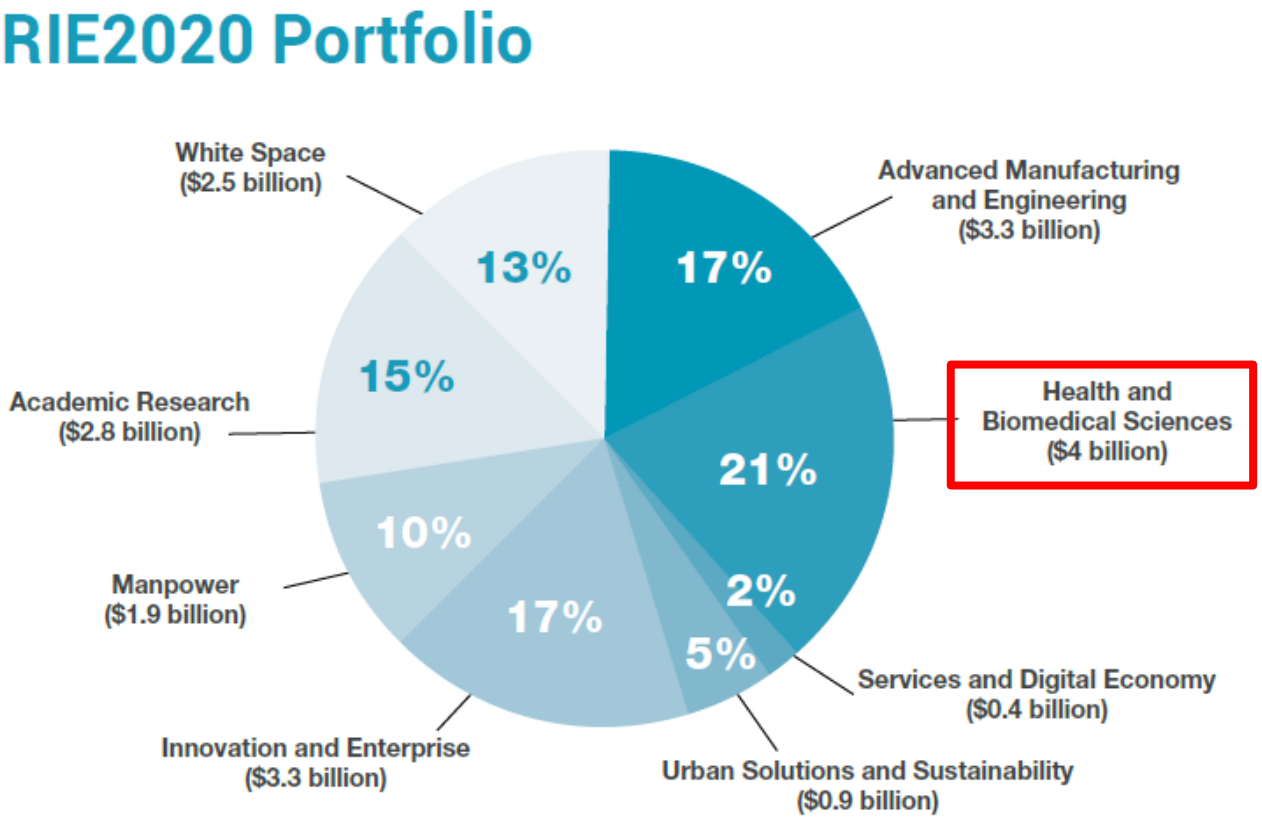
KEY DIRECTIONS

Overview of key directions

1. Continuation of strategy with stronger dynamics for renewal
2. Greater focus on value creation
3. Greater emphasis on collaboration for impact
4. Emphasis on greater focus and differentiation

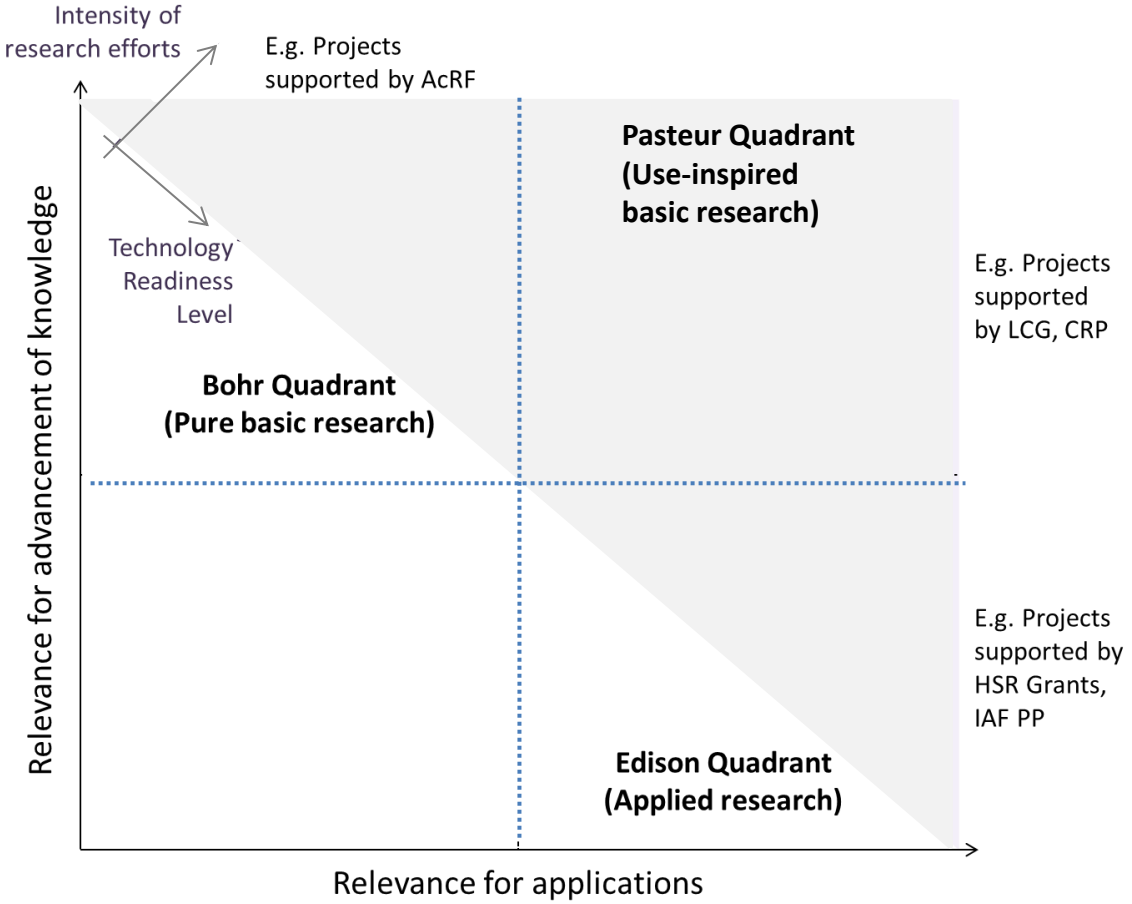
1. Continuation of strategy with stronger dynamics for renewal

- RIE2020 continues the direction set in RIE2015
- Overall HBMS budget will be maintained
- Competitive funding to drive research excellence



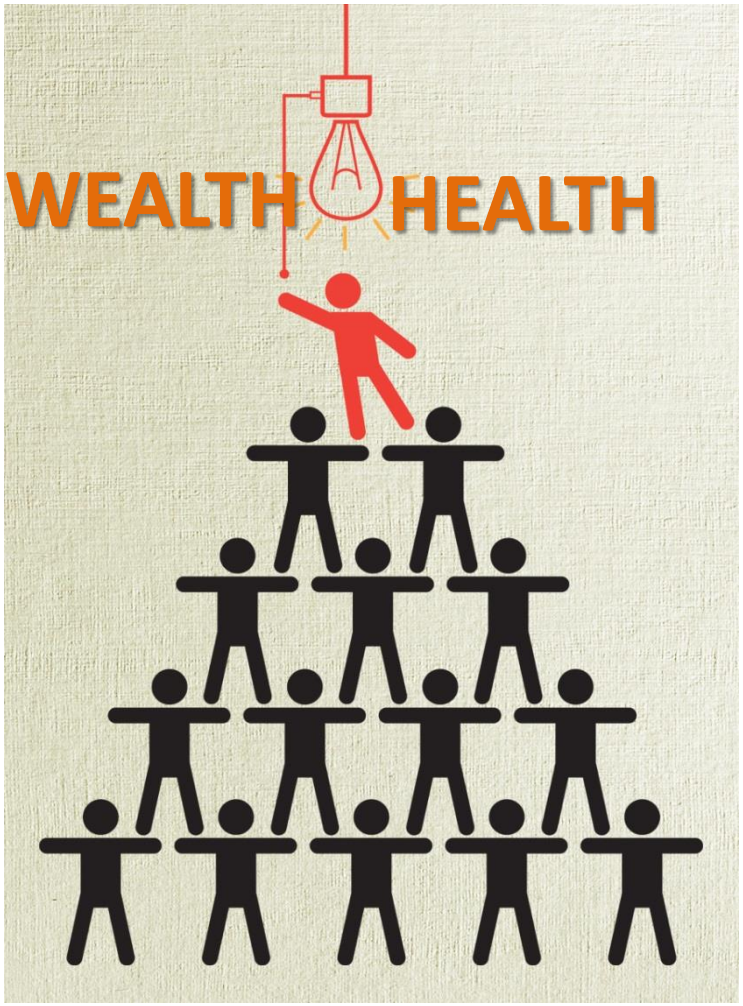
2. Greater focus on value creation

- HBMS research is a precursor to economic and health value creation.
- In RIE2015, R&D was focused on the economic mission. In RIE2020, there will also be focus on health outcomes.
- Researchers are encouraged to think about potential value creation and pathways to impact at the point of identifying research problems, developing grant proposals and assembling their teams.



3. Greater emphasis on collaboration for impact

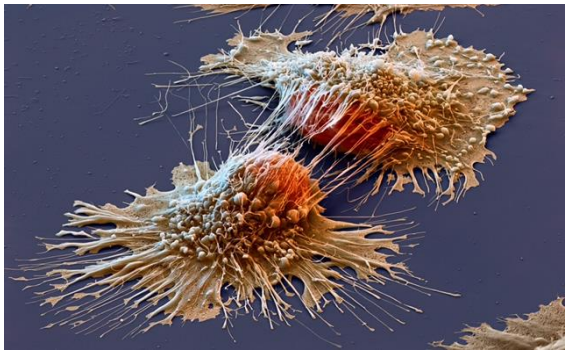
- With stiff global competition, it is important to recognise the need for a strong collaborative research network within Singapore in order to be internationally competitive
- Researchers are encouraged to collaborate with others across the ecosystem, and across basic, translational and clinical research, to bring together the best teams
- To enable the flow of ideas towards health and wealth



4. Emphasis on greater focus and differentiation

- Need to focus on areas which are of greatest relevance to Singapore, and where we can be globally competitive and differentiated
- Researchers are encouraged to align their research with Singapore's focus areas

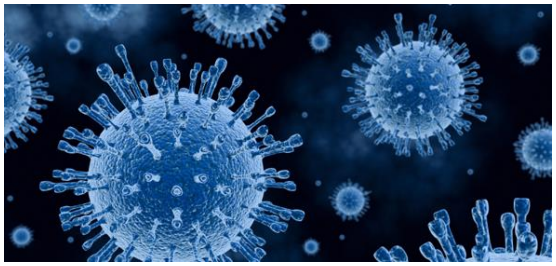
Cancers



Neurological and Sense Disorders

Diabetes and other Metabolic/ Endocrine Conditions

Infectious Diseases



Cardiovascular Diseases

S/N	RIE2020 HBMS KPIs – For MOH/NMRC Funding Initiatives
HUMAN CAPITAL KPIs	
1	Number of STAR Awards
2	Number of CSA Awards
3	Number of Transition Awards
4	Number of Clinicians who graduated with Masters/MD/PhD programmes
5	Number of MD-PhD or PhD currently employed
6	Number of NMRC Fellowships
7	Number of PhD and Master Students trained and graduated
8	Number of PhDs and Masters who work in Singapore (i) upon graduation and (ii) 5 years after graduation
INTELLECTUAL CAPITAL KPIs	
9	Number of publications in top 10% journal by field
10	Number of technical disclosures
11	Number of patents granted
12	Number of individuals (PIs) holding peer-revised national/international-level grants
13	Total amount/quantum of competitive research grants secured – includes both direct and indirect costs
INDUSTRY RELEVANCE KPIs	
14	Amount of industry funding/spending (cash)
15	Amount of industry spending (in-kind)
16	Number of licenses generated
17	Amount of licensing revenue
18	Number of spin-offs supported
19	Number of clinicians, faculty researchers and/or student exposed/participated in innovation & enterprise (I&E) activities

S/N	RIE2020 HBMS KPIs – For MOH/NMRC Funding Initiatives
HEALTH-SPECIFIC OUTCOME KPIs	
20	Number of registered clinical trials initiated from previously NMRC-supported centres/programmes/projects (registered under Clinicaltrials@gov, HSA, or equivalent agencies)
21	Number of subjects recruited for clinical trials
22	Number of subjects recruited for cohort or other clinical studies
23	Number of citations in healthcare/health research studies arising from NMRC-supported centres/programmes/projects (e.g. findings which are subsequently used in other research studies, commentaries, systematic reviews, review articles).
24	Number of Health Service Development Projects (HSDP) or documented quality improvement projects arising from previously NMRC-supported centres/programmes/projects.
25	Number of reports/presentations arising from NMRC-funded centres/programmes/projects that are made to policy-makers, health system managers, healthcare leadership etc.
26	Number of NMRC-supported clinician scientists/ investigators who progressed to take on leadership position (e.g., Heads of Department, Div Chair, etc)
27	Number of NMRC-supported centres/programmes/projects with findings that result in new or changes in local or international clinical practice guidelines (e.g. CPG) and healthcare/health policies, including implementation of new or improved medical interventions or diagnostics (can be drugs and procedures) or services (e.g. new clinical service, shorter patient waiting time)
28	Number of electronic/ online/ non-traditional/ technological tools developed from NMRC-supported centres/ programmes/ projects that lead to better information dissemination to doctors and patients (e.g. registry databases, communication tools such as interactive videos for patients)
29	Number of media reports and public education materials (e.g. Health Promotion Board booklet) arising from NMRC-supported centres/programmes/projects
30	Number of outreach or community programmes developed due to the influence of NMRC-supported centres/ programmes/ projects (e.g. HPB campaigns, new screening programmes)
31	Number of health economic (including cost-effectiveness and other health technology assessment applications) studies from NMRC-funded centres/programmes/projects that influenced health/healthcare policies or services. Studies must be submitted to the MOH forum (e.g. DMS-CMB meeting and/or MSM meetings or others) to have any impact.
32	Number of life years saved arising from all services (new/improved, medical intervention or health policy implemented from NMRC-funded centres/programmes/projects

OVERVIEW OF OPEN COMPETITIVE GRANTS

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
Large Collaborative Grant (LCG)	LCG, with a funding quantum of up to $25M (inclusive of indirect cost) over a maximum of 5 years, aims to bring together the best teams from all the public research performers to advance human health and wellness, and/or create economic value for Singapore and Singaporeans, through the pursuit of excellence in research and its applications. Interdisciplinary collaboration across institutions is preferred so as to integrate, coordinate and leverage on the full spectrum of research capabilities in Singapore from basic science to clinical research. For more info, please contact: chung_qiu_yan@moh.gov.sg	Please refer to NMRC website for more details. http://www.nmrc.gov.sg/	May 2016
Individual Research Grant (IRG)	The IRG, with a funding quantum of up to $1.5M (inclusive of indirect cost) up to a maximum of 5 years, supports basic and translational clinical research that are relevant to human health and wellness, as well as research that looks at the causes, consequences, diagnosis, prevention and treatment of human diseases. For more info, please contact: carol_teong@moh.gov.sg		

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
Young IRG (YIRG)	The YIRG is a sub-category of IRG and a step for new investigators to a first independent national level grant. The YIRG will provide a funding quantum of up to $0.3M (inclusive of indirect cost) over a maximum of 3 years. For more info, please contact: tricia_teo@moh.gov.sg	Eligibility of grant call varies. Please refer to NMRC website for details. http://www.nmrc.gov.sg/	May 2016
National Innovation Challenge (NIC) on Active and Confident Ageing	The NIC on Active and Confident Ageing seeks to catalyse innovative ideas and research in Singapore that can transform the experience of ageing in Singapore, tomorrow. The NIC comprises three key research thrusts: (i) Lengthening of health span (ii) Productivity Longevity (iii) Ageing in Place For more info, please contact: nic_ageing@moh.gov.sg		May 2016

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
Competitive Research Programme (CRP)	CRP funds use-inspired research programme based on scientific excellence and is open to all areas of science and technology. Funding quantum of varying size, capped at $10M up to 5 years For more info, please contact: NRF_CRP@nrf.gov.sg	PIs from publicly funded Institute of Higher Learning (IHLs), Research Institutions and Medical Institutions in Singapore are eligible to participate in the call. Private sector and other entities can participate as collaborators	1 Sep 2016

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
Academic Research Fund (AcRF)	Supports research in the four research-intensive Autonomous Universities that has academic significance and potential to create new knowledge that will benefit Singapore and the larger academic community. The Academic Research Fund (AcRF) comprises three tiers: • AcRF Tier 1 is provided as core institutional funding to the four research intensive Autonomous Universities and is allocated within each university through an internal competitive process. • AcRF Tier 2 supports research projects on a competitive basis across the four research-intensive Autonomous Universities. It is open to all discipline areas and provides funding of up to $1 million over 3 years. • AcRF Tier 3 supports high impact, multidisciplinary research programmes in the four research-intensive Autonomous Universities. It is open to all discipline areas and provides funding of between $5 million to $25 million over 5 years. For more info, please contact: MOE_ARD@moe.gov.sg	Full-time faculty from NUS, NTU, SMU and SUTD can be PI for Tier 1 and 2, and Lead PI for Tier 3. For Tier 3, researchers in A*STAR, CREATE entities and hospitals can support the Lead PI as project PIs, if they hold joint appointments with these AUs and spend a substantial amount of time in these AUs.	Tier 2 – Aug 2016 Tier 3 – Feb 2017

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
IAF Pre-Positioning (PP)	Supports public sector research aligned with industry outcomes for Singapore, through the development of integrated capabilities and programmes, which address major challenges faced by industry, or which have the potential to transform or disrupt existing industry sectors. Programmes are expected to lead to industry participation within 3-5 years. This encompasses new programmes, as well as existing programmes that have demonstrated strong track record of success and industry potential. For more info, please contact: contact@a-star.edu.sg	The IAF-PP process/mechanisms are currently being worked out and A*STAR/EDB will provide more information to the research community in May 2016	

Overview of open competitive grants for HBMS researchers

Grant	General Description	Eligibility	Next call date
IAF Industry Collaboration Programme (ICP)	Supports public research performers to collaborate with industry. Proposals require tangible upfront commitment from company(s), such as industry R&D spend in cash and headcount, as part of the collaboration. This scheme is governed by NRF, A*STAR and EDB/SPRING. For more info, please contact: contact@a-star.edu.sg	The IAF-ICP process/mechanisms are currently being worked out and A*STAR/EDB/NRF will provide more information to the research community in May 2016 Proposals can be submitted on a rolling basis	

RIE2020 – OVERVIEW OF GRANT PROGRAMMES

Administered by MOH

Talent Development

- NMRC Research Training Fellowships
- Master of Clinical Investigation

Human Capital Awards

- STaR Investigator Awards
- Clinician Scientist Awards (SI, Inv)
- Transition Awards
- CS & CI Salary Awards

Competitive Grants

- Centre Grant
- Clinician Scientist-Individual Research Grant
- Health Services Research Grant
- Ageing NIC

Open Fund

- Large Collaborative Grant
- Individual Research Grant
- Young Individual Research Grant

Enablers & Infrastructure

- IRBs
- IMUs
- Research Space Funding
- SCRI
- HSA National Cell Therapy Facility
- National Health Innovation Centre
- National Large Animal Research Facility
- Bioethics Advisory Council & Centre of Biomedical Ethics

Administered by other Agencies

- Industry Alignment Fund (IAF)
- MOE Academic Research Fund (AcRF)
- NRF Competitive Research Programme (CRP)

OPEN FUND - LARGE COLLABORATIVE GRANTS (OF-LCG)

OF-LCG (1)

Aim:

The OF-LCGs aim to support the best teams of researchers from public institutions to advance human health and wellness, and create economic value for Singapore and Singaporeans, through the pursuit of excellence in research and its applications. They represent a unique opportunity to bring together investigators from across all of Singapore with the clinician scientists and clinical investigators in the hospitals and Academic Medical Centres.

Key Elements

- Collaboration within as well as between the basic and clinical research communities is strongly encouraged. Interdisciplinary collaboration across institutions is important to integrate, coordinate and leverage on the full spectrum of research capabilities in Singapore from basic science to clinical research.
- LCG programmes should aim to make significant contributions to the advancement of study of therapeutic areas and help establish Singapore as a global leader.
- They should facilitate the discovery and application of basic science ideas relevant to the advancement of health (as well as the translation of clinical findings into practices and policies if any); and provide opportunities to support industry sectors integral to Health and Biomedical Sciences (HBMS) economic strategy, namely PharmBio, MedTech, Food & Nutrition and Personal Care. Pathway(s) to impact should be clearly articulated.

OF-LCG (2)

Grant call frequency:

Once a year, starting in **May 2016**.

Funding quantum and duration:

- Up to $25mil per project over up to 5 years.
- Amount is inclusive of indirect cost provided at a fixed percentage of 20% of the project's qualifying direct cost.

Research Themes

- The OF-LCG open to proposals of the highest quality across the breadth of disciplines relevant to its mission.
- To better realise the goals of Health and Biomedical Sciences (HBMS) in Singapore, the following **five therapeutic areas** have been identified as **national priorities**:
  - Cardiovascular diseases
  - Neurological and sense disorders
  - Infectious diseases
  - Diabetes mellitus and related metabolic/ endocrine disorders
  - Cancers
- **Themes** in these therapeutic areas will be set to focus on issues of particular national interest.
- **For each grant call, themes will be set in two/ three therapeutic areas.** The HBMS community is encouraged to address these themes. At the same time, proposals in other areas will also be considered.

Funding Principles Set

i. The OF-LCG grant call is open to proposals from all therapeutic areas. Evaluation is based on scientific merit and excellence.

ii. For each OF-LCG grant call, the HBMS community would be apprised of the set themes in two/ three emphasised therapeutic areas. Provided they are scientifically meritorious, proposals which address the set themes in the therapeutic areas would be given priority consideration.

iii. For **each** of the first two grant calls (i.e. 2016, 2017), no more than one LCG would be awarded in a particular therapeutic area per year.

After the first two grant calls (i.e. 2016, 2017), a review would be carried out to determine the therapeutic areas to be emphasised in the subsequent grant calls.

MAY 2016 GRANT CALL

Themes will be set in the following 2 therapeutic areas:

1. **Infectious Diseases**
   - ❖ Respiratory Tract Infection & Pandemic/ Emerging Infectious Diseases
   - ❖ Antimicrobial Resistance & Healthcare-Associated Infections
   - ❖ Dengue & Vector Control

2. **Diabetes Mellitus and Related Metabolic/ Endocrine Disorders.**
   - ❖ Microvasculature Complications of Diabetes

Respective focus area and challenge statement for each theme are detailed in next 3 slides.

1. Infectious Diseases

Set themes	Focus area and challenge statement
(1) Respiratory Tract Infection (RTI) & Pandemic/ Emerging Infectious Diseases (EID)	**Focus area:** Determining and breaking the transmission chain. **Challenge statement:** To utilise basic, clinical, public health and translational research to build capabilities to understand the factors influencing the transmission of pathogens, and to develop novel pharmacological and public health approaches for disease control. These capabilities will be used to build a system* that could provide early detection of RTIs/EIDs and prevention of tertiary transmission of these diseases in Singapore's densely urban context, contributing to the reduction of case counts and socioeconomic costs. **The actual implementation of the system should not be funded by LCG.*

1. Infectious Diseases (Cont'd)

Set themes	Focus area and challenge statement
(2) Antimicrobial Resistance & Healthcare-Associated Infections	**Focus area:** Determining and breaking the development of resistance and the transmission chain. **Challenge statement:** To utilise basic, clinical, public health and translational research to understand the characteristics and development of antimicrobial resistance, to develop better infection prevention measures, and to reduce inappropriate prescription of antimicrobial agents. This will contribute to a significant and sustained reduction in the burden of healthcare-associated infections and antimicrobial resistance in Singapore hospitals, particularly with regards to carbapenem-resistant Enterobacteriaceae (CRE) and/or methicillin-resistant *Staphylococcus aureus* (MRSA).
(3) Dengue & Vector Control	**Focus area:** An integrated national plan to eradicate dengue in Singapore. **Challenge statement:** To utilise basic, clinical, public health and translational research to understand the virus, host and entomological factors influencing dengue spread, to develop new dengue prevention and vector control methods, and to determine the effectiveness of these methods in the Singapore context. This will support the national goal to reduce overall burden and impact of adult dengue, and other infectious diseases transmitted by the same vectors.

2. Diabetes Mellitus and Related Metabolic/ Endocrine Disorders.

Set themes	Focus area and challenge statement
(1) Microvasculature Complications of Diabetes	**Focus area:** To reduce the development of complications in established diabetics. **Challenge statement:** To improve understanding of basic mechanisms that contribute to microvascular complications and their progression, as well as identify targets and approaches to mitigate them. This is in support of national goals to reduce blindness and end-stage renal disease (ESRD) due to diabetes by 30% within 10 years in the national population and reducing diabetic microvascular complications by 30% within 5 years in study populations.

Selection Criteria

Selection of successful proposals would be based on the following evaluation criteria:

i. High-quality scientific research spanning basic science to clinical translation.

ii. Proposed research topic should address issues of national importance. These should typically be challenges that no single institution or discipline can solve and require collaborative and interdisciplinary approaches. Provided they are scientifically meritorious, proposals which address the set themes in the therapeutic areas would be given priority consideration.

iii. Proposed research must be well-differentiated and highly competitive. It should demonstrate a high potential to be world class.

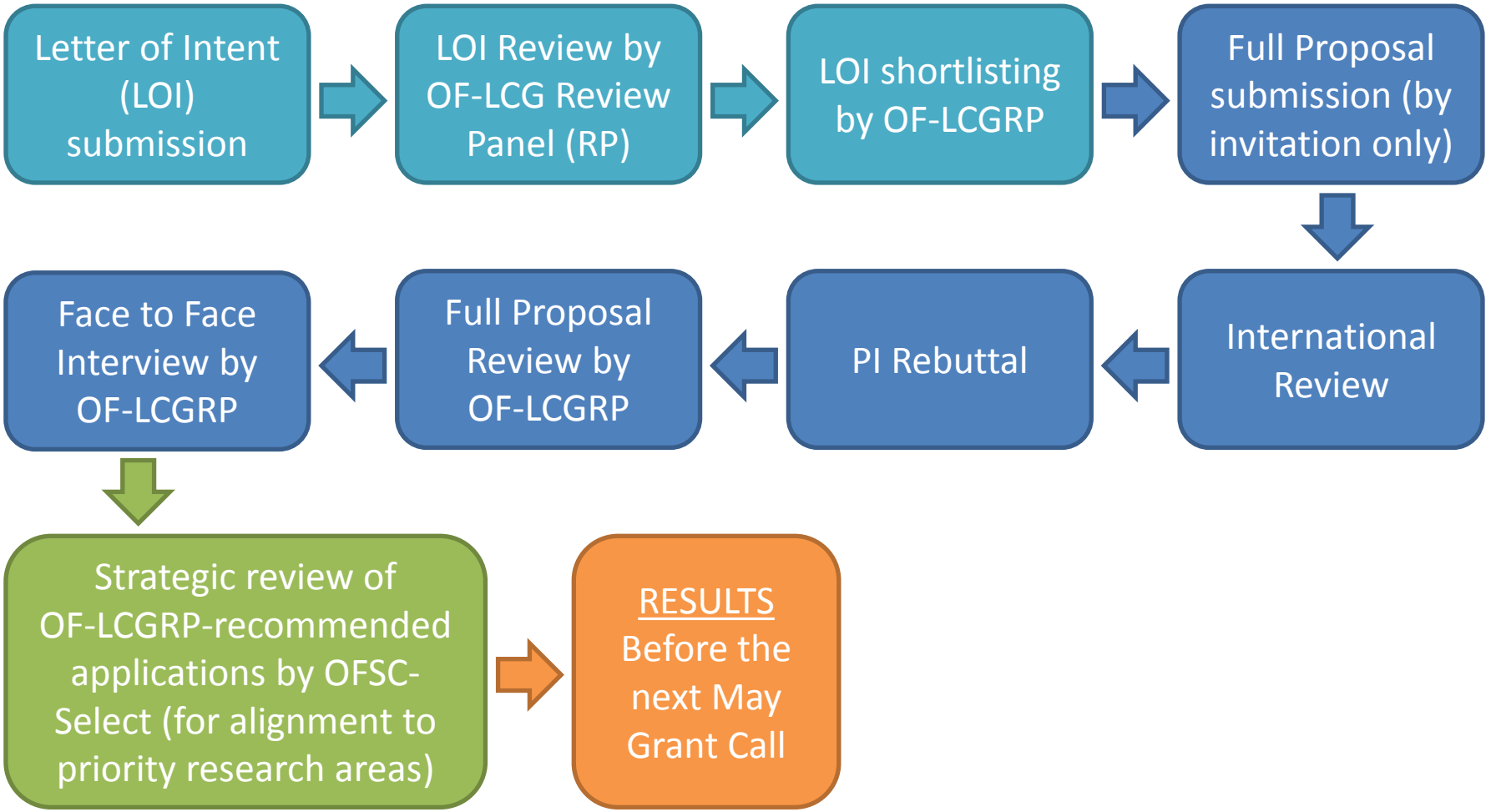
iv. Demonstrate the potential to improve health outcomes and capture economic value with a clear indication of pathway(s) to impact.

Eligibility Criteria for OF-LCG

- **Only one Principal Investigator (PI) is allowed per application, and there is no cap placed on the number of Theme PIs per theme (note: a cap of 5 themes applies).**
- **Applicant applying as the Lead PI and/or Theme PI 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 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), substantial publication record in the past 3 years, or PI status in research institutes.
  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.

OF-LCG Review Process

2-stage review process comprising a letter of intent (LOI) stage and (only for the LOIs shortlisted) a full proposal stage.



Submission Mode and Deadline

- 1 softcopy grant application in MS Word doc. format; and
- 1 scanned softcopy of the required signatures.

- Deadline: **Tues, 14 Jun 2016, 5pm,** to the NMRC OF-LCG secretariat at chung_qiu_yan@moh.gov.sg.

- Late submission or revision to the submitted application will not be entertained after the closing date.

Open Fund Individual Research Grant (OF-IRG)
Open Fund Young Individual Research Grant (OF-YIRG)

OF-IRG

OFIRG is provided to support the conduct of research proposals in basic and translational clinical research that are relevant to human health and wellness as well as research that looks at the causes, consequences, diagnosis, prevention and treatment of human diseases.

Grant call frequency: Twice a year

Funding Quantum: up to $1.5M (inclusive of 20% indirect costs) for up to 5 years

Research Themes

- Open to proposals of the highest quality across the breadth of disciplines relevant to its mission
- To better realise the goals of Health and Biomedical Sciences (HBMS) in Singapore, the following five therapeutic areas have been identified as national priorities:
  - Cardiovascular diseases
  - Neurological and sense disorders
  - Infectious diseases
  - Diabetes mellitus and related metabolic/ endocrine disorders
  - Cancers
- While the focus of the IRG is on scientific excellence, the HBMS community is encouraged to address these therapeutic areas and consider their proposals' relevance to the HBMS industry sectors in PharmBio, MedTech, Food & Nutrition and Personal Care.

Evaluation Criteria

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

**The vision of HBMS domain is to be a leading centre that advances human health and wellness, and creates economic value for Singapore and Singaporeans, through the pursuit of excellence in research and its applications*

Eligibility Criteria for IRG

- Only one Principal Investigator (PI) is allowed per application.
- 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 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), substantial publication record in the past 3 years, or PI status in research institutes.

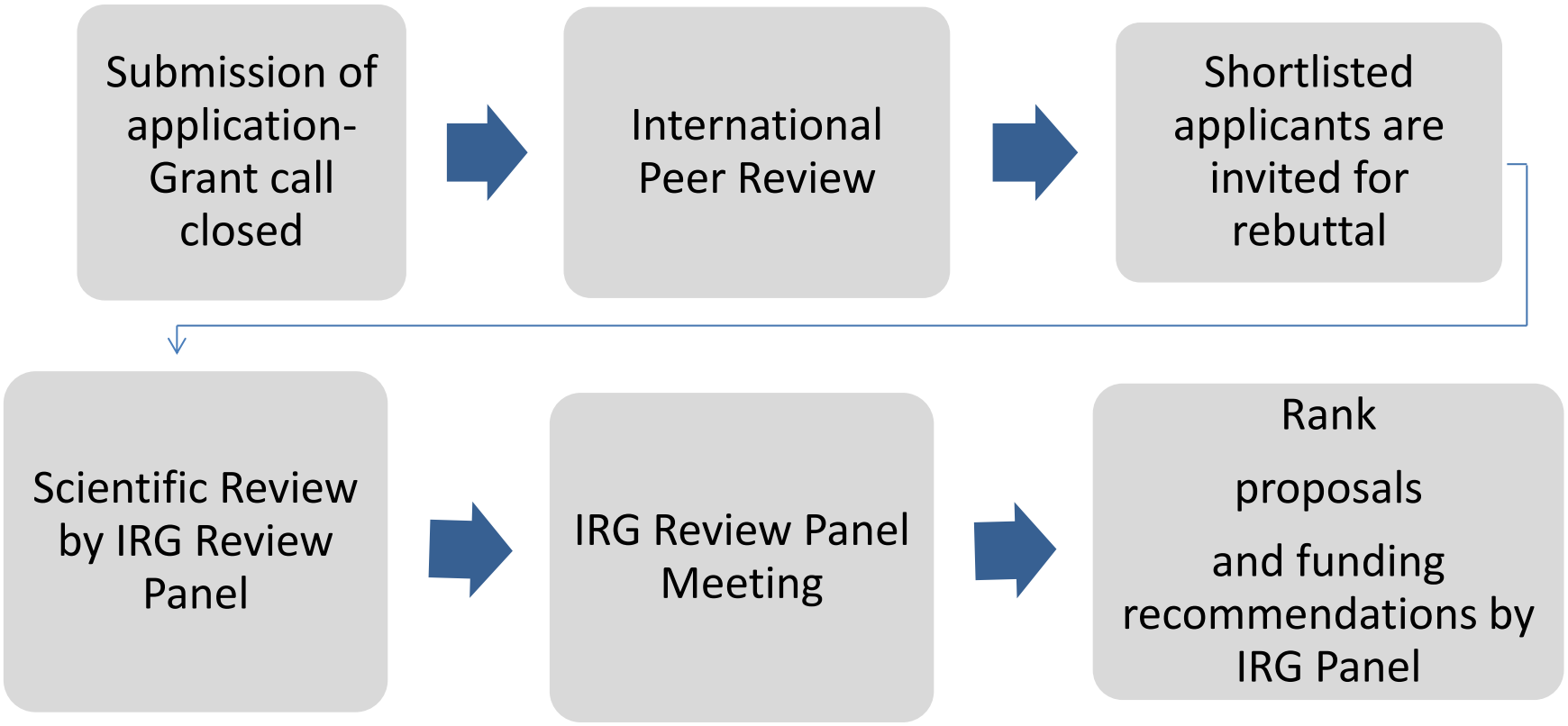
d) Has a laboratory or clinical research program that carries out research in Singapore

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.

IRG Review Process



YIRG

- Sub-category of IRG
- Young IRG is a step for the new investigator to a first independent national level grant

Grant call frequency: Twice a year

Funding Quantum:

- up to $0.3M (Inclusive of 20% indirect costs) for up to 3 years

Research Themes

- Open to proposals of the highest quality across the breadth of disciplines relevant to its mission
- To better realise the goals of Health and Biomedical Sciences (HBMS) in Singapore, the following five therapeutic areas have been identified as national priorities:
  - Cardiovascular diseases
  - Neurological and sense disorders
  - Infectious diseases
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- While the focus of the IRG is on scientific excellence, the HBMS community is encouraged to address these therapeutic areas and consider their proposals' relevance to the HBMS industry sectors in PharmBio, MedTech, Food & Nutrition and Personal Care.

Evaluation Criteria

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

**The vision of HBMS domain is to be a leading centre that advances human health and wellness, and creates economic value for Singapore and Singaporeans, through the pursuit of excellence in research and its applications*

Eligibility Criteria for YIRG

- Only one Principal Investigator (PI) is allowed per application.
- 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.

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) 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.

Additional Eligibility Criteria for Young IRG (I)

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) Applicant's postdoctoral experience should not exceed 7 years for PhD holders and 10 years for MBBS/MD/BDS holders. No exceptions will be allowed.

c) There will not be a limit to the amount of prior funding that OF-YIRG applicants have received. However, awardees of A*STAR Investigatorship, NRF Fellowship, MOE Tier 2 and 3 grants, and IRGs will not be eligible for OF-YIRG.

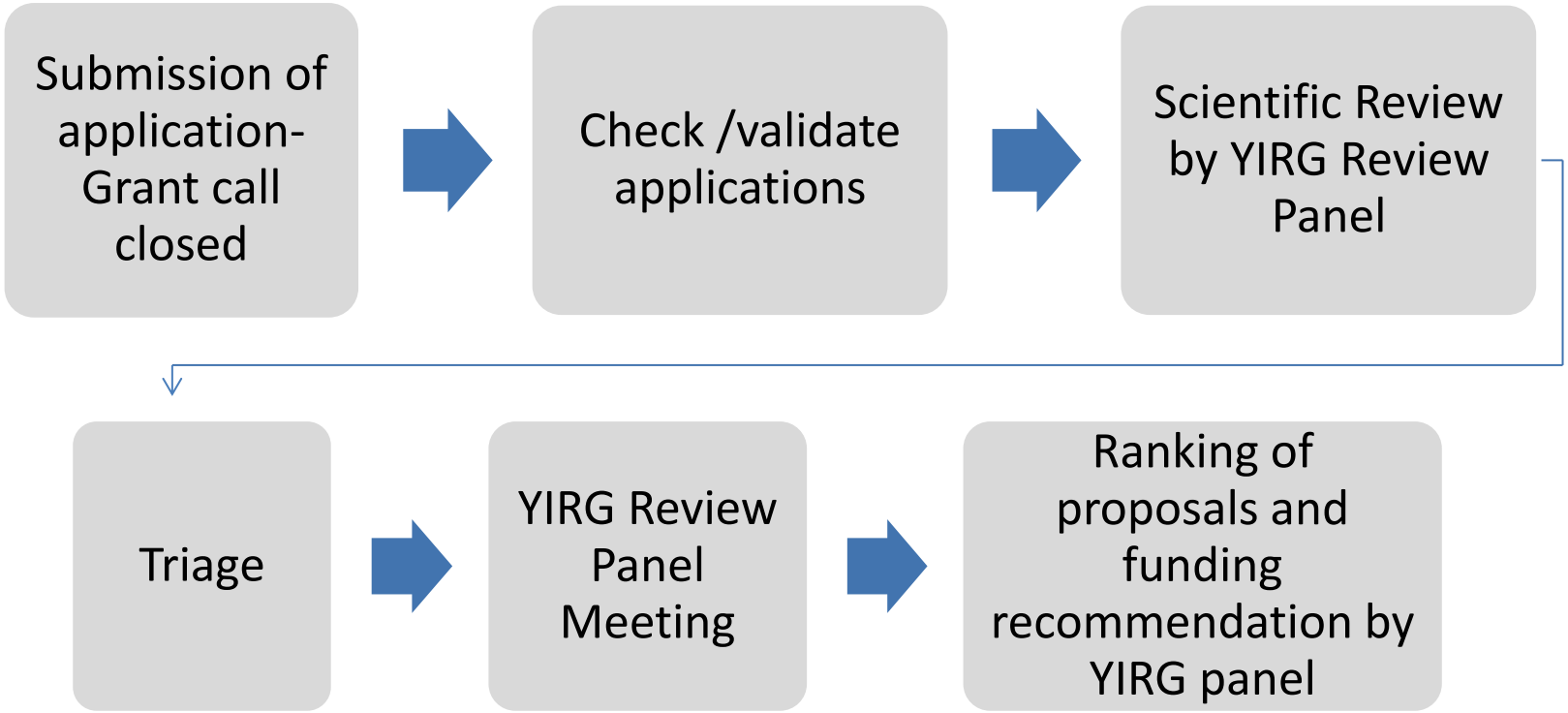
d) Applicant should not have held any prior OF-YIRG award.

Additional Eligibility Criteria for Young IRG (II)

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.

Young IRG Review Process



Submission Mode and Deadline (IRG/YIRG)

- It is **mandatory** for **all applications** to be submitted **online via nGager** by **1 June 2016, 5pm**

- Please ensure that all submissions are endorsed by the corresponding host institution's Research Director.

- We will not entertain any late/hardcopy submissions or submissions from individual applicants without endorsement from the Host Institution.

Clinician Scientist-Individual Research Grant (CS-IRG)

No change from RIE2015

CS-IRG (1)

Objective

- CS Individual Research Grants (CS-IRGs) are provided to Clinician Scientists (CS) to enable them to carry out medical research on a specifically defined topic for a period of 3 years in local public institutions.

Funding Quantum, Duration and Grant Call Frequency

- The CS-IRG will provide a funding quantum of up to **S$1.5M** per project for **3 years** with additional 20% indirect costs provided to the host institution of the lead PI.

CS-IRG (2)

Eligibility Criteria

- **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.
  - Exceptions are given to Allied Health Professionals who fall within the list of professions. The PI must possess a minimum academic qualification of a PhD or the equivalent training.

List of Professions			
Audiologist	Dietician	Optometrist	Prosthetist/ Orthotist
Biostatistician	Epidemiologist	Pharmacist	Radiation Therapist
Clinical Pharmacologist	Nurse	Physiotherapist	Radiographer
Clinical Psychologist	Occupational Therapist	Podiatrist	Speech Therapist

No change from RIE2015

CS-IRG (3)

Eligibility Criteria

- 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.

No change from RIE2015

CS-IRG (4)

Additional Eligibility Criteria:

(a) 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.

(b) 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.

(c) Have a laboratory or clinical research program that carries out research in Singapore.

(d) 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.

(e) No outstanding reports from previous BMRC, NMRC and other national grants

CS-IRG (5)

- Open to proposals of the highest quality across the breadth of disciplines relevant to its mission
- To better realise the goals of Health and Biomedical Sciences (HBMS) in Singapore, the following five therapeutic areas have been identified as national priorities:
  - Cardiovascular diseases
  - Neurological and sense disorders
  - Infectious diseases
  - Diabetes mellitus and related metabolic/ endocrine disorders
  - Cancers
- While the focus of the CS-IRG is on scientific excellence, the HBMS community is encouraged to address these therapeutic areas

Subcategory New Investigator Grant (CS-IRG-NIG)

No change from RIE2015

Subcategory CS-IRG-NIG (1)

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.

Funding Quantum, Duration and Grant Call Frequency

- The CS-IRG-NIG will provide a funding quantum of up to **S$200,000** per project for **2 years** with additional 20% indirect costs provided to the host institution of the lead PI.

No change from RIE2015

NIG-specific Eligibility Criteria

• Applicants who are applying as 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) Applicants must not have held any national grants (e.g., NMRC, A*STAR, NRF, MOE AcRF Tier II, etc) or international grants (e.g., MRC, NIH, NHMRC, etc) as a PI/Co-PI* ***prior to the award of the NIG***.

(iii) Applicants must not have received funding to conduct their own research project which cumulatively exceeds $300,000. This can be funding from any sources.

**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).*

Submission Mode and Deadline (CS-IRG/CNIG)

- It is **mandatory** for **all applications** to be submitted **online via nGager** by **1 June 2016, 5pm**
- nGager is compatible to **Internet Explorer** or **Mozilla Firefox** only
- Please ensure that all submissions are endorsed by the corresponding host institution's Research Director.
- We will not entertain any late/hardcopy submissions or submissions from individual applicants without endorsement from the Host Institution.
- Application forms, guidelines and grant call information are available on the NMRC website.

LAUNCHING

June 2016

Health Services Research Grant (HSRG)

PRELIMINARY INFORMATION

Aim:

In view of the increasing demands on the healthcare system and the need to optimise value from Singapore's limited healthcare resources, it is recognised under the Research, Innovation, and Enterprise (RIE) 2020 plan that a sharper focus on HSR is necessary to identify the most cost-effective care delivery models for Singapore.

Grant Calls

The HSR grant will focus on research areas that will more directly address key challenges of our current healthcare system, while at the same time allowing ground-up ideas to develop a portfolio of research capabilities in anticipation of future healthcare challenges.

Grant calls will be phased to focus on a subset of research themes each time.

Selection Criteria

The selection of RIE2020 HSR projects will be based on the following evaluation criteria:

- High quality scientific research
- Proposed research topic should address health services and/or health systems research of importance to the public healthcare 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.

COMING SOON…

- 1st call in June 2016
- Details are in the midst of being firmed up
- More will be shared nearer the scheduled launch

Talent Development

Human Capital Awards

Agenda

- Types of Programmes
- Objective of Award
- Funding Quantum
- Grant Call Frequency
- Eligibility Criteria
- Review Process
- Assessment Criteria

Human Capital Awards

Types of Programmes

- Singapore Translational Research (STaR) Investigator Award
- Clinician Scientist Award (CSA)
- Transition Award (TA)

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

Funding Quantum

- Total funding quantum of up to **S$8mil over 5 years** comprising:
  - PI's salary support between **S$400k to $600k** per annum
  - Grant support of up to **S$5mil** (depending on salary support required)
  - Additional 20% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: **May** and **November**

STaR Investigator Award (2)

Eligibility Criteria

i. 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)^.

ii. Applicants should have **a strong track record of scientific achievement, conduct cutting edge translational and clinical research and produce outstanding research output with clinical and health impact.**

iii. Applicants who are **PhD holders working in human clinical research** (including PhDs in areas such as biostatistics, epidemiology, behavioural science, nursing, pharmacy, psychology, and allied health) and whose research is clinically relevant and has potential health impact, will be considered an exceptional and case-by-case basis*.

iv. Non-medically trained PhD applicants conducting laboratory based research are not eligible.

v. Upon award, 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;
- Hold a regular-rank faculty/academic appointment in one of the academic medical centres (AMC) or medical school;
- Agree to fulfill 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);

vi. All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.

** 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.*

^ Exceptions apply to CSes who <u>are existing holders</u> of NMRC Human Capital Awards.
Clinicians with recognised specialty training are:
a. Clinicians who have full, conditional or temporary registration with SMC as specialist; or
b. Clinicians who have SMC recognised postgraduate qualifications as provided in the MOH website, which includes registration with specialist boards or specialist colleges (e.g., American Board of Internal Medicine, Royal College of Physicians), but not necessarily registered in with SMC's Register of Specialists.
c. 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.

STaR Investigator Award (3)

Review Process

- **Two-stage** review process comprising an **international peer review stage** followed by a **collective review** by StaR Panel. Applicants may be contacted to be interviewed by the STaR panel if needed.
- The review process will take about 6 months after the application closes.

Assessment Criteria

- Scientific excellence will be the highest priority
- Feasibility of study in local context
- Productivity
- Track Record of PI
- 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.
- 2 categories of award:
  - INV
  - SI

Funding Quantum

- PI's salary support according 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)
- With additional 20% indirect costs

Clinician Scientist Award (2)

- **Two** categories for time commitment in research
  i. ≥ 70%
  ii. 50-69 %
- Corresponding salary component
  i. ≥ 70% time commitment
    - Full salary support (up to NMRC annual salary cap)
  ii. 50-69% time commitment
    - Salary support proportionate to time commitment

Grant Call Frequency

- Twice a year
- Opening dates: **May** and **November**

Clinician Scientist Award (3)

Eligibility Criteria

i. 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)^.

ii. Applicants who are **PhD holders working in human clinical research** (including PhDs in areas such as biostatistics, epidemiology, behavioural science, nursing, pharmacy, psychology, and allied health) and whose research is clinically relevant and has potential health impact, will be considered an exception on a case-by-case basis*.

iii. Non-medically trained PhD applicants conducting laboratory based research are not eligible.

iv. Applicants must have been an independent PI on at least one national or international research grant, equivalent to an Individual Research Grant (IRG)-level grant.

v. Upon award, 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;
   - Hold a regular-rank faculty/academic appointment in one of the academic medical centres (AMC) or medical school;
   - Be a Singapore citizen or Permanent Resident.

vi. All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.

** 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.*

^ Exceptions apply to CSes who <u>are existing holders</u> of NMRC Human Capital Awards.
Clinicians with recognised specialty training are:
a. Clinicians who have full, conditional or temporary registration with SMC as specialist; or
b. Clinicians who have SMC recognised postgraduate qualifications as provided in the MOH website, which includes registration with specialist boards or specialist colleges (e.g., American Board of Internal Medicine, Royal College of Physicians), but not necessarily registered in SMC's Register of Specialists.
c. 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.

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.
- The review process will take about 6 months after the application closes.

Assessment Criteria

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

Transition Award (TA)

Transition Award (1)

Objective

- To assist **budding, young clinicians** 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.

Funding Quantum

- PI's salary support according to NMRC annual salary cap
- Grant support of up to **S$375k over 3 years**
- Additional 20% indirect costs

Grant Call Frequency

- Twice a year
- Opening dates: **May** and **November**

Transition Award (2)

- **Two** categories for time commitment in research
  i. ≥ 70%
  ii. 50-69%

- Corresponding salary component
  i. ≥ 70% time commitment
     - Full salary support (up to NMRC annual salary cap)
  ii. 50-69% time commitment
     - Salary support proportionate to time commitment

Transition Award (3)

Eligibility Criteria

i. 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)^.

ii. Applicants must have received in-depth scientific training such as obtained in a PhD programme, Masters programme, or at least 2 years of post-MBBS/MD intensive research experience, in relevant local or overseas universities, research institutes, centres etc.

iii. Applicants who are **PhD holders working in human clinical research** (including PhDs in areas such as biostatistics, epidemiology, behavioural science, nursing, pharmacy, psychology, and allied health) and whose research is clinically relevant and has potential health impact, will be considered an exception on a case-by-case basis*.

iv. Non-medically trained PhD applicants conducting laboratory based research are not eligible.

v. Applicants should not have been an independent PI on national/international research grants**.

vi. Upon award, 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;
   - Hold a regular-rank faculty/academic appointment in one of the academic medical centres (AMC) or medical school;
   - Be a Singapore citizen or Permanent Resident.

vii. All research must be conducted in Singapore at a public research institute, hospital/centre or medical school.

**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.*

***Recipients of institutional grants or NIG grants are eligible to apply. Applicants who have previously held one national grant (equivalent to Exploratory Developmental Grant (EDG) or Individual Research Grant (IRG) level), can apply on exceptions basis with justifications.*

^ Exceptions apply to CSes who <u>are existing holders</u> of NMRC Human Capital Awards.

Clinicians with recognised specialty training are:

a. Clinicians who have full, conditional or temporary registration with SMC as specialist; or

b. Clinicians who have SMC recognised postgraduate qualifications as provided in the MOH website, which includes registration with specialist boards or specialist colleges (e.g., American Board of Internal Medicine, Royal College of Physicians), but not necessarily registered in SMC's Register of Specialists.

c. 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.

Transition Award (4)

Criteria on PI's previously held grants

- Not 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.

Transition Award (5)

Review Process

- Evaluation by the Transition Award Review Panel (TARP).
- The review process will take about 5 months after the application closes.

Assessment Criteria

- Scientific excellence will be the highest priority
- Feasibility of study in local context
- Productivity
- Overall Impact in local context
- Track record of mentor and mentorship training plans
- Suitability of the applicant to be an independent investigator and to assume the role of a Principal Investigator in the proposal.

Submission Mode and Deadline

- It is **mandatory** for **all applications** to be submitted **online via nGager by 1 Jun 2016, 5pm.**

- Endorsement by the Research Director (for host Institution) and Dean (for academic institution) or equivalent upon submission.

- The Host institution to submit a summary of the applications to NMRC.

- Late submissions, submissions from individuals or those without endorsement from the Host Institution **will not be entertained**.

- Application forms, guidelines and grant call information are available on the NMRC website.

Talent Development
NMRC Research Training Fellowship

NMRC Research Training Fellowship

(Now open for applications)

Objective

- Awarded to outstanding and talented clinicians and health science professionals for research training to have qualifications and skills to become Clinician Scientists and Principal Investigators respectively.

Updates

- The MOH Healthcare Research Scholarship (PhD) is now merged with the NMRC Research Training Fellowship.
  - Applicants who intend to apply for the MOH Healthcare Research Scholarship (PhD) are to submit their applications under the NMRC Research Training Fellowship.

- The changes to the eligibility criteria are as follows:
  - Inclusion of a **Local Research Attachment** category.
    - Research attachment applications that encourage collaborations between local institutions, or local institutions with overseas institutions will be prioritised.
  - **Health science professionals** who fall under the list of professions stated (on the website) may apply to the programme if they are **existing PhD holders** or intending to apply for **training leading to PhD** degrees.

Notes

- Please refer to the NMRC website for details on the eligibility criteria, submission deadline, sample application form and award guidelines.
- Applications are to be submitted **online** via nGager.
- Endorsement by the Research Director (for host Institution) on nGager is required upon submission.
- Late submissions, submissions from individuals or those without endorsement from the Host Institution **will not be entertained**.

Industry Alignment Fund: Pre-positioning Programmes (PP) & Industry Collaboration Projects (ICP)

For Roadshow to HBMS community

22, 25 & 26 Apr 2016

CREATING AN INNOVATION ECONOMY

Agency for Science, Technology and Research
SINGAPORE

IAF-PP Overview

- To support public sector research aligned with industry outcomes for Singapore, through building up integrated capabilities and programmes

- To address major challenges faced by industry, or with the potential to transform or disrupt existing industry sectors

- To catalyse and orchestrate R&D activities across Singapore towards industry development outcomes and to achieve economic impact

- To support new programmes, as well as existing programmes that have demonstrated strong track record of success and industry potential

Governance

- **Strategic Oversight Committee** (SOC)
  - Makes decisions on all IAF-PP policies and programmes
  - Comprises MD EDB and MD A*STAR

- The RIE Strategy Committee has tasked A*STAR as the **Implementing Agency**, reporting to the IAF-PP SOC.

Role of Implementing Agency includes
- *evaluation and scoping of proposals together with research performers and companies*
- *management of budget (e.g. fund disbursement, monitoring overall fund commitment and utilisation)*
- *tracking progress of endorsed proposals*

Assessment Criteria

- Minimum leverage ratio
  - 1 : 0.5 (funding : industry R&D spending in SG)
- Technical and commercial considerations
  - Programmes developed with independent technical assessment
- Programmes supported by IAF-PP are expected to lead to industry investments within 3-5 years

- Key Decision Criteria: Potential for economic impact
  - Pre-positioning for eventual value creation and value capture for industries in SG

Application Process

- Announcements will be made periodically to inform or solicit proposals from community on key focus areas and/or potential programme areas
  - Includes via public workshops and calls for proposals

- Applications must be endorsed by the applying Institution(s) prior to submission

- All submitted applications are subject to evaluation by the SOC.

Application form and contact information will be available on the A*STAR website from May 2016.

IAF-ICP Overview

- To support strategic R&D projects between industry and public R&D performer(s)
- Requires tangible upfront commitments from companies (e.g., industry R&D spending)
- Open to all public R&D performers across all Domains
- National funding mechanism for public R&D performers
  - *Should not be used as an active marketing tool when discussing collaborations with companies; focus should be on scoping the project, involving the Implementing Agency and Economic Agency.*

Governance

- **Strategic Oversight Committee** (SOC)
  - Decides on all IAF-ICP policies and project approvals
  - Comprises MD EDB, CE SPRING, MD A*STAR, CEO NRF

- The RIE Strategy Committee has tasked A*STAR as the **Implementing Agency** to administer the programme, reporting to the IAF-ICP SOC.

Role of Implementing Agency includes
- *evaluation and scoping of proposals together with research performers and companies*
- *management of budget (e.g. fund disbursement, monitoring overall fund commitment and utilisation)*
- *tracking progress of endorsed proposals*

Assessment Criteria

- Upfront industry commitment
  - minimum $5M industry R&D spending in SG (cash and in-kind)*
- Minimum leverage ratio
  - 1 : 1.5 (funding : industry R&D spending in SG)
- Technical and commercial considerations

- Key Decision Criteria: Potential for economic impact
  - Value creation and value capture for industries in SG

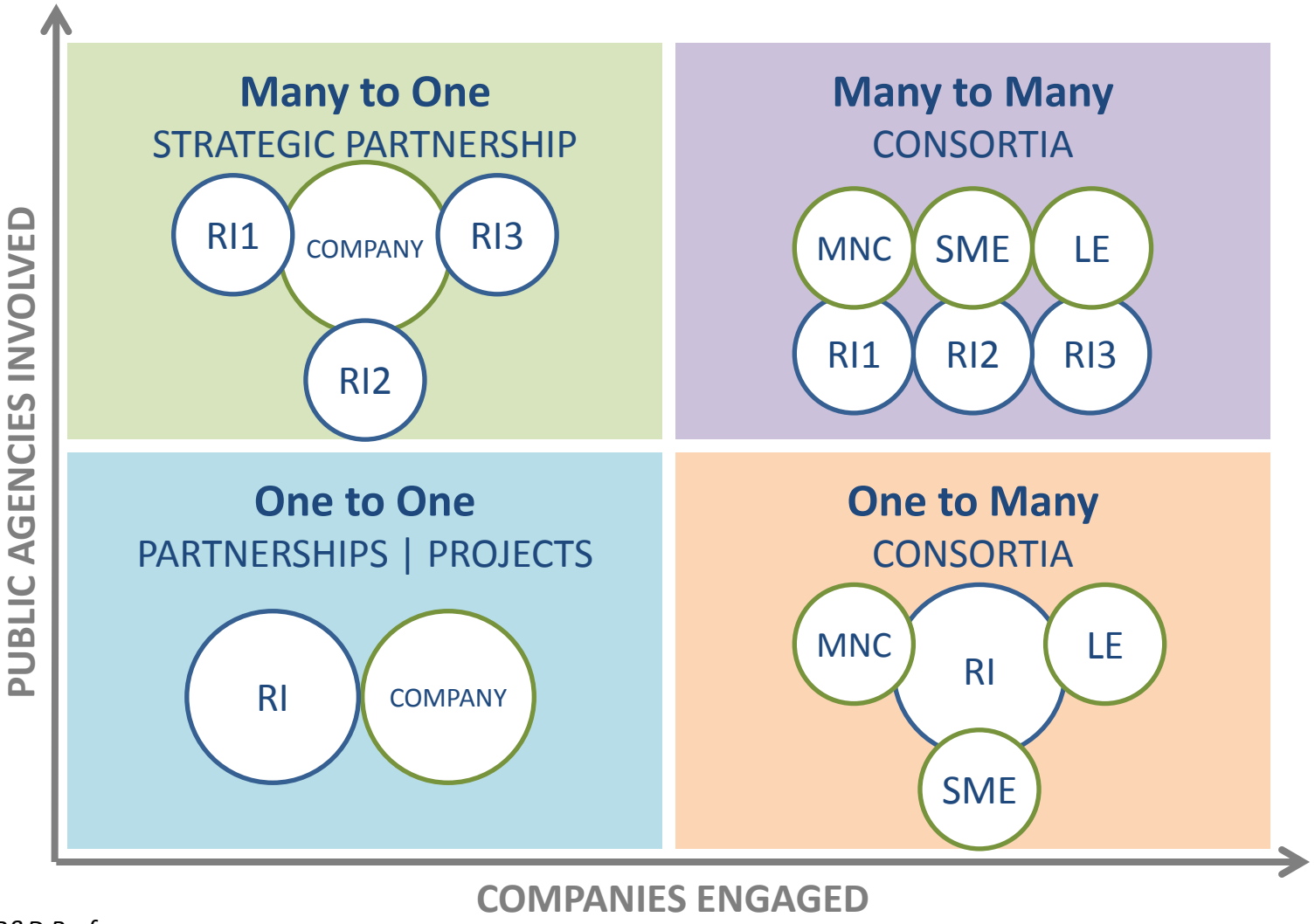
* The SOC may consider funding smaller projects (e.g., with SMEs) of high potential on a case-by-case basis.

Application Process

- Proposals can be submitted throughout the year
- Preliminary assessment before full proposal
  - In-principle approval by SOC to facilitate negotiations
- Applications must be endorsed by the applying Institution(s) prior to submission
- All submitted applications are subject to evaluation by the SOC.

Application form and contact information will be available on the A*STAR website from May 2016.

Potential Modes Of Collaboration



RI: Public R&D Performer
MNC: Multi-National Company
LE: Local Enterprise
SME: Small & Medium Enterprise

Thank You

National Health Innovation Centre

April 2016

NHIC National Health Innovation Centre

Accelerating Healthcare Innovation

NHIC Overview

Provide Singapore's clinical research sector with translational funding and strategic guidance to stimulate healthcare innovation and commercialisation

Alexandra Health | Eastern Health Alliance | NUHS National University Health System | SingHealth Defining Tomorrow's Medicine | National Healthcare Group Adding years of healthy life | JurongHealth

Clinician-led projects with healthcare impact and commercial potential

NHIC National Health Innovation Centre

- **INNOVATION TO PROTECT (I2P)**
- **INNOVATION TO DEVELOP (I2D)**
- **INNOVATION TO IMPLEMENT (I2I)**

COMMERCIALISATION

Licensing
Spin outs
Commercial Collaborations

FOLLOW-ON FUNDING

*A*STAR - DxD Hub & ETC/D3*
SNEC Incubator
SPRING Singapore - TECS

NHIC National Health Innovation Centre
Accelerating Healthcare Innovation

NHIC Objectives

Identify and support projects with healthcare impact & commercial potential

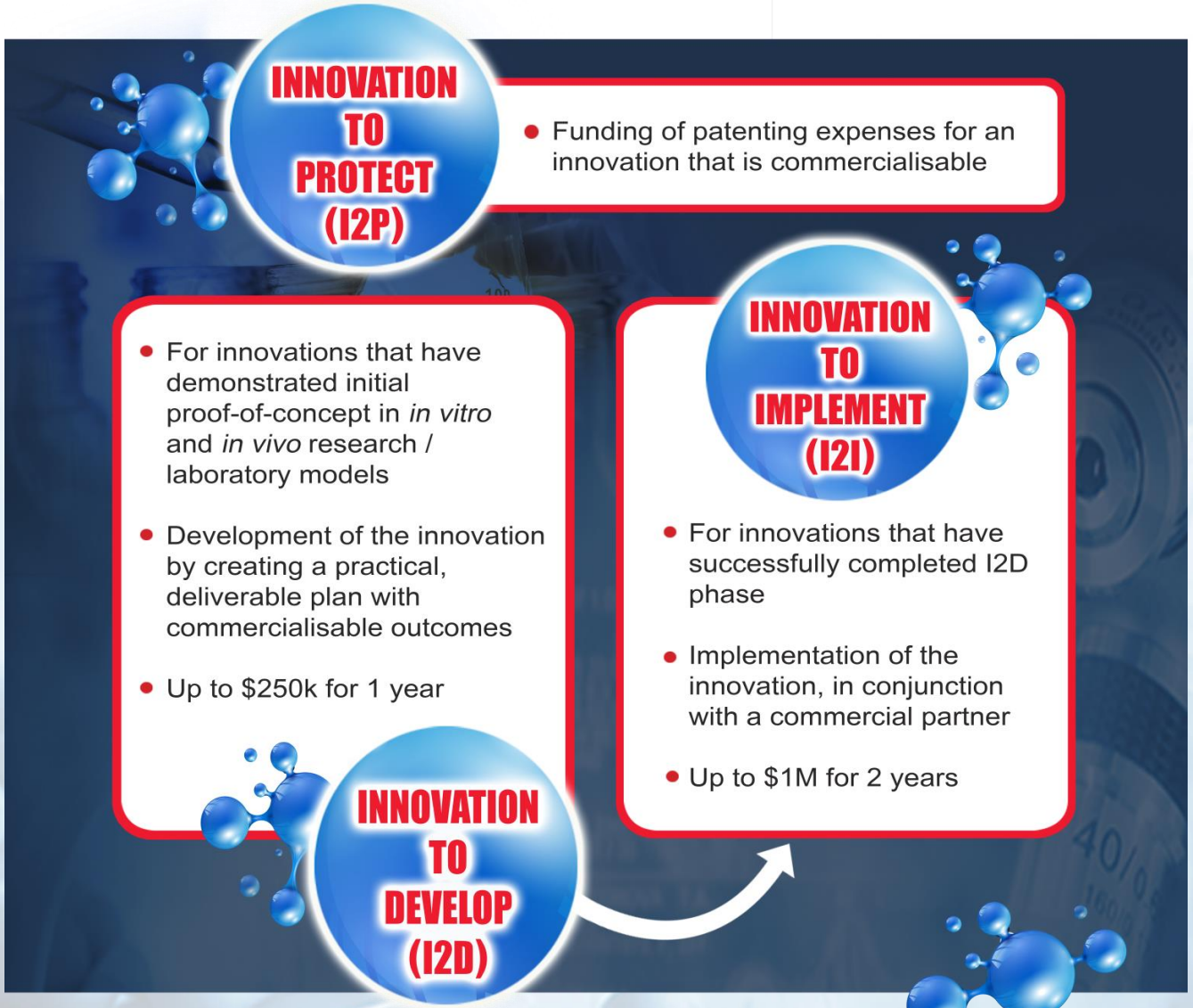
National Health Innovation Centre
Accelerating Healthcare Innovation

NHIC Objectives - Funding

- Closed 6 calls for I2D grant and received 98 applications
- Funded 20 I2D projects
- Funded 9 I2P applications

National Health Innovation Centre
Accelerating Healthcare Innovation

NHIC Grant Streams



NHIC National Health Innovation Centre
Accelerating Healthcare Innovation

Innovation to Protect (I2P) Grant

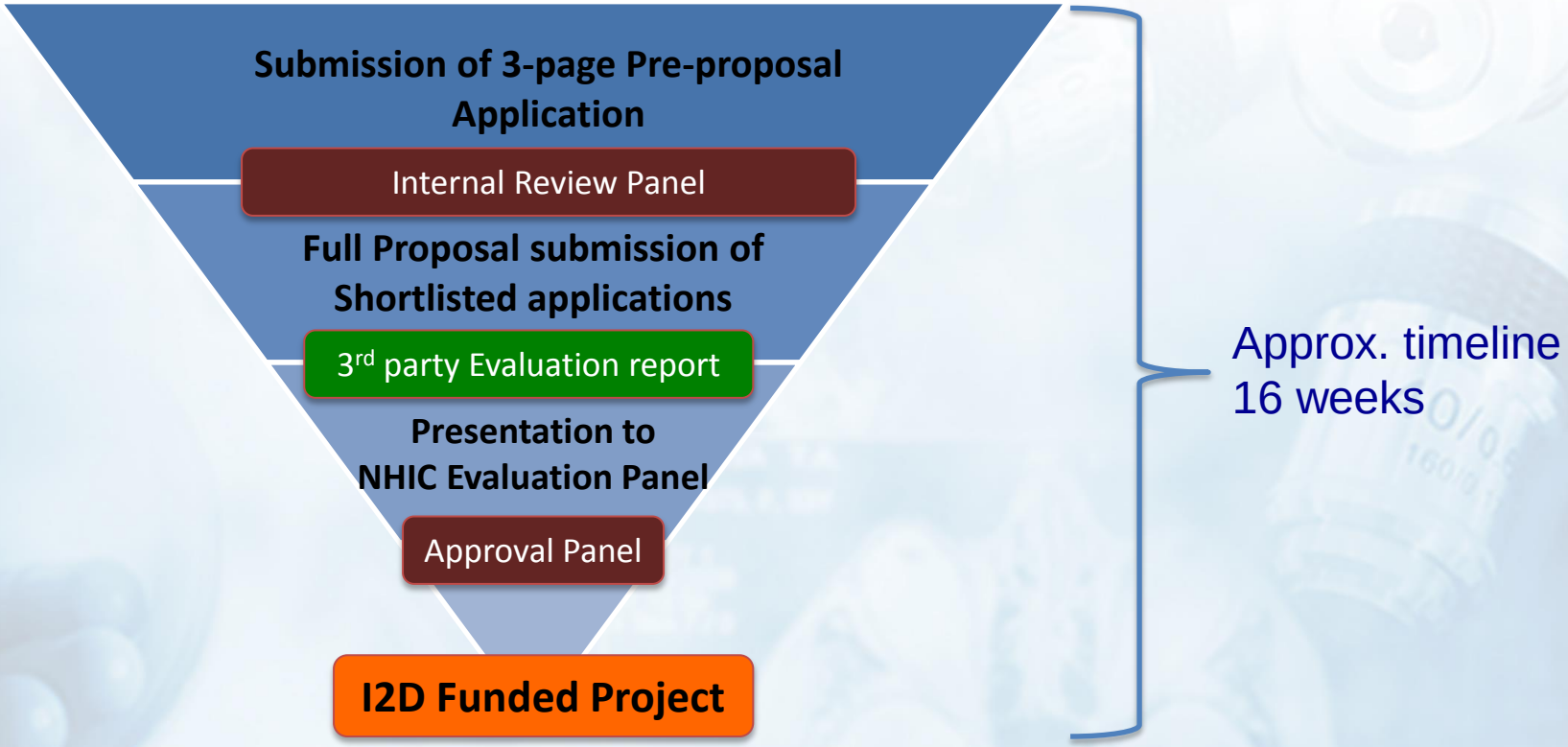
- **Aim:**
  - To support the patent expenses of an innovation with healthcare impact and commercial potential.
- **Eligibility Criteria:**
  - At least one of the innovators must hold a primary appointment in a local public hospital/public health institution/national specialty centre and salaried by the institution.
- **Grant Frequency:**
  - Open for application throughout the year.
- **Submission Mode:**
  - Submission by your IP/Research/Innovation Office of your Cluster
  - Email to: ip@nhic.sg

Innovation to Develop (I2D) Grant

- **Aim:**
  - To support a development programme to move a healthcare innovation towards commercialisation.
- **Eligibility Criteria:**
  - Principal Investigator must hold a primary appointment in a local public hospital/public health institution/national specialty centre/academic medical centre/medical school and salaried by the institution.
- **Funding Quantum, Duration, Frequency:**
  - Capped at S$250,000 (inclusive of max. 20% indirect costs) over a period of up to 12 months
  - Pre-proposal submission cut-off dates for 2016: **26th Aug, 23rd Dec**
- **Submission Mode:**
  - Supported by your Research Office of your Institution or Cluster
  - Email to: grant@nhic.sg

NHIC National Health Innovation Centre
Accelerating Healthcare Innovation

I2D Grant Process Flow



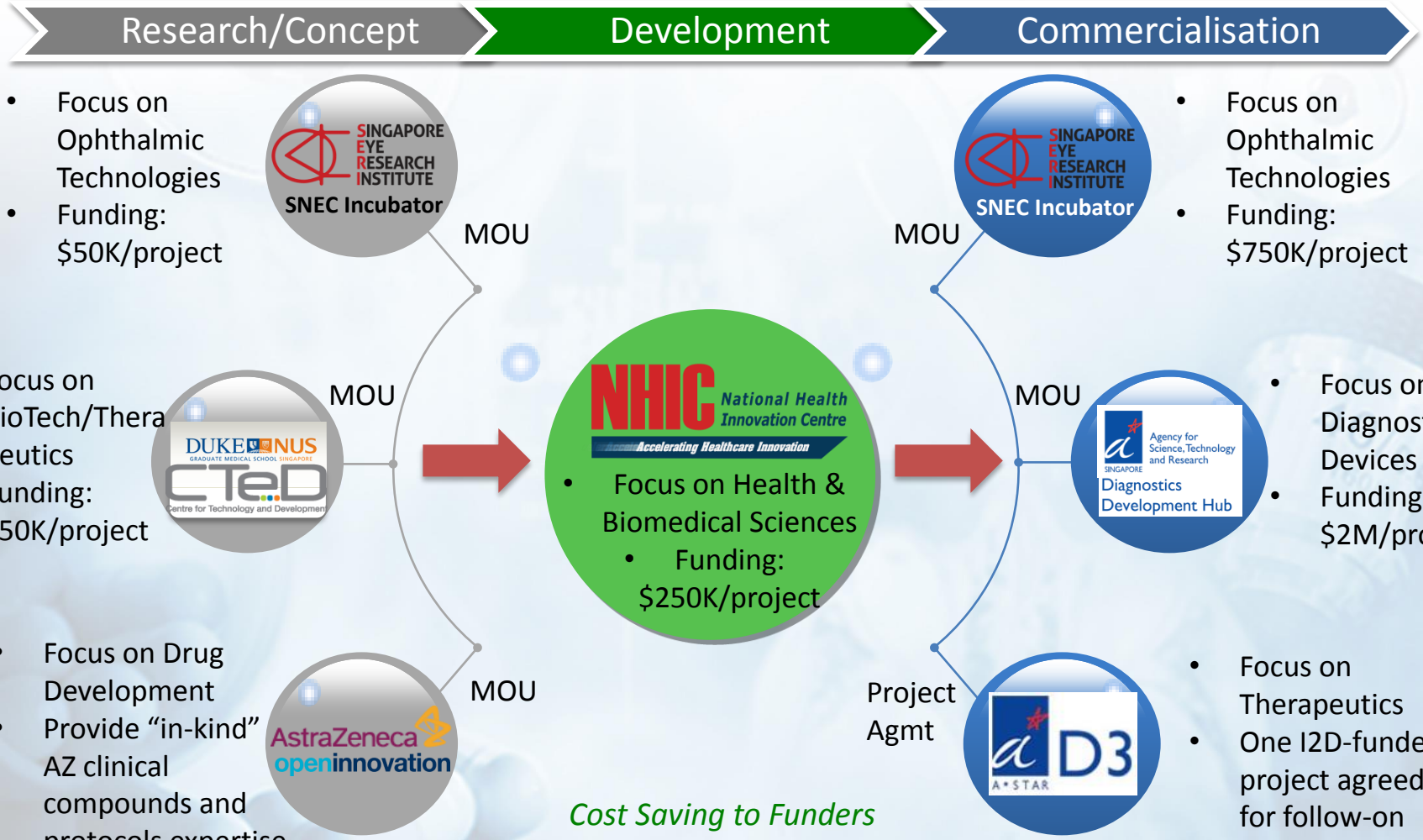
National Health Innovation Centre
Accelerating Healthcare Innovation

NHIC Objectives - Partnering

- Cluster Managers for each Healthcare Cluster
- Partnering in Ecosystem: DxD Hub, SNEC, IPI, AstraZeneca, Duke-NUS CTeD, SHF

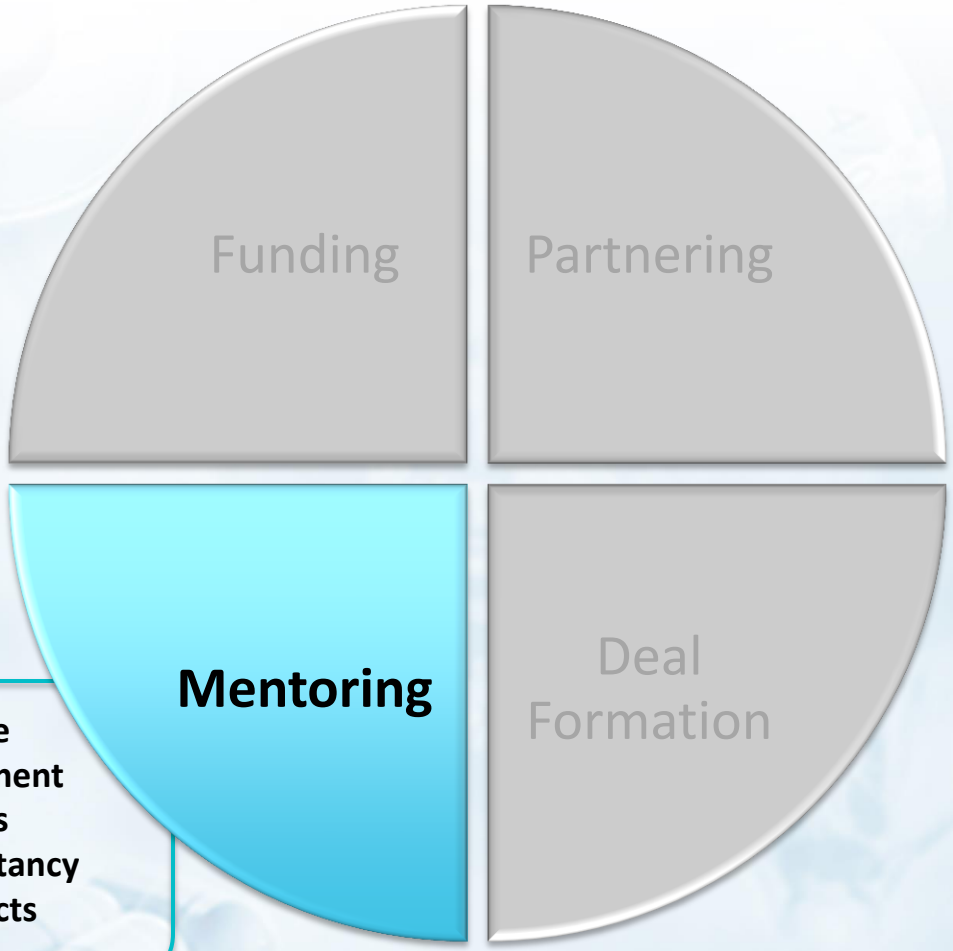
NHIC National Health Innovation Centre
Accelerating Healthcare Innovation

Partnering in Ecosystem for Accelerating Innovation



NHIC National Health Innovation Centre
Accelerating Healthcare Innovation

NHIC Objectives - Mentoring



- IP strategy/triage
- Project management
  - 20 I2D projects
- Specialist consultancy for funded projects

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Regulatory & Quality Management

Objective

To provide Regulatory and Quality management guidance to support our funded projects.

Regulatory and Quality Support

NHIC-appointed Regulatory and Quality Consultants will provide advice on regulatory and quality issues, including but not limited to:

- *technical document template set up;*
- *regulatory strategy;*
- *product & user requirements specifications;*
- *essential principles checklists;*
- *risk management;*
- *design validation and verification (V&V);*
- *manufacturing considerations (manufacturability; process V&V);*
- *quality management systems;*
- *clinical trials.*

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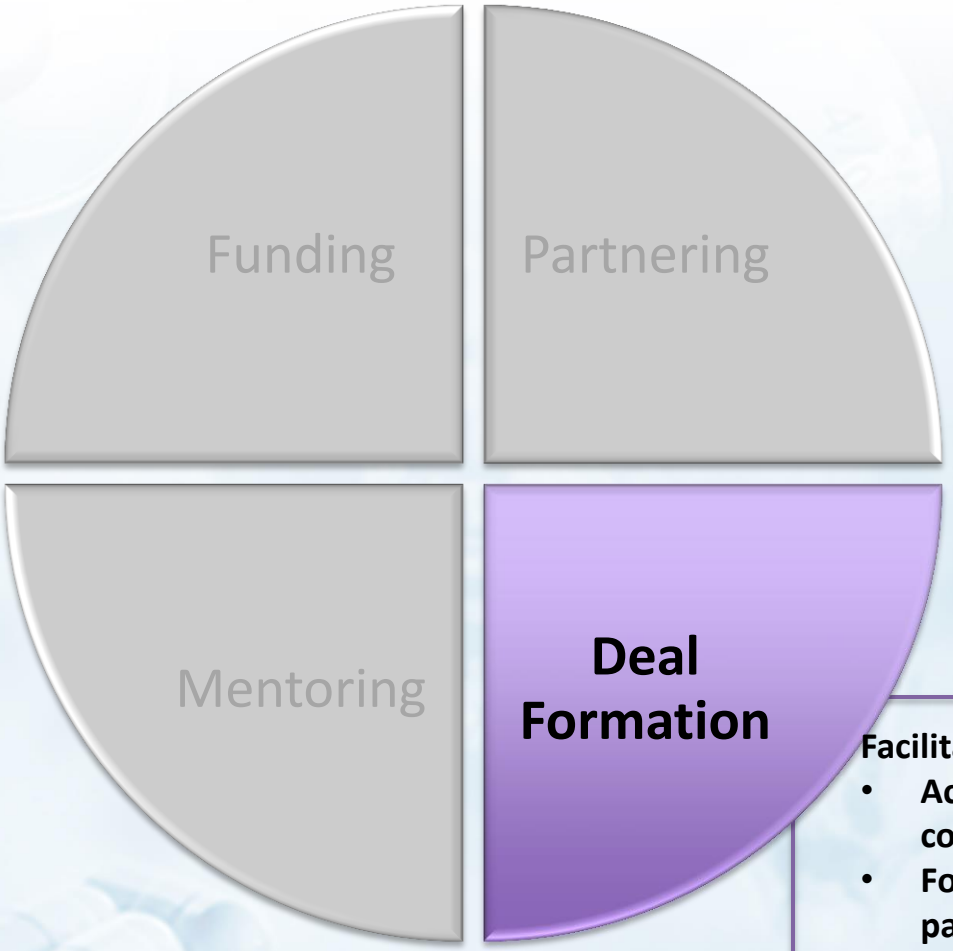
NHIC Objectives – Deal Formation



Facilitate

- **Academia - Industry collaboration**
- **Follow-on funding pathway for projects**
- **Licensing negotiations**

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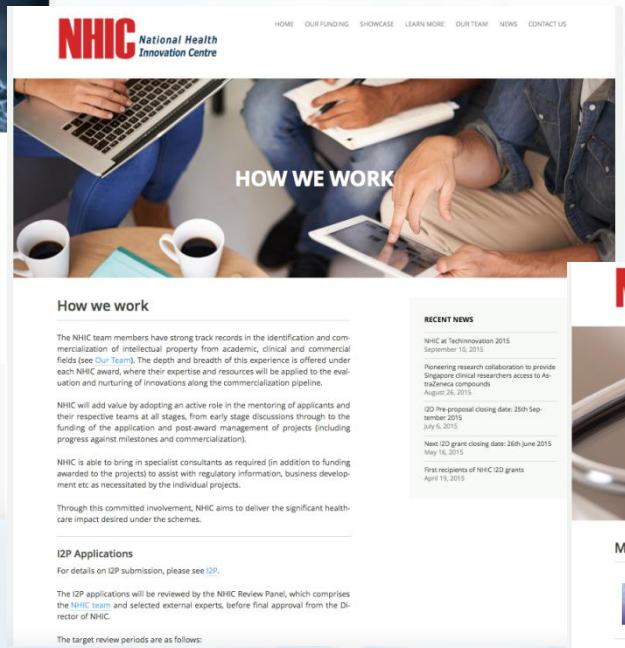
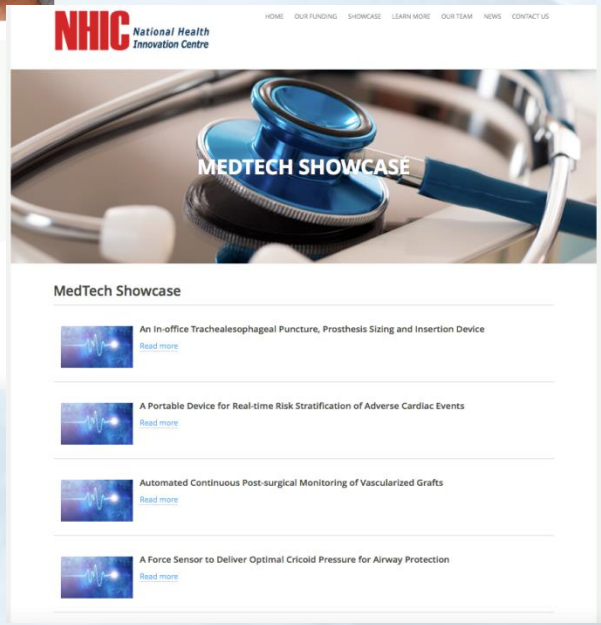
NHIC Website





www.nhic.sg

- Funding schemes
- Application documents
- How we work
- Funded projects
- News
- Our team and partners

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