

**For discussion
on 14 November 2011**

LEGISLATIVE COUNCIL PANEL ON HEALTH SERVICES

Proposed Health and Medical Research Fund

PURPOSE

This paper seeks Members' support for the Administration's proposal to set up a Health and Medical Research Fund (HMRF) to provide comprehensive and dedicated support for health and medical research activities, research infrastructure and research capacity building in Hong Kong, with the aim to encourage, facilitate and support health and medical research to inform health policies, improve population health, strengthen the health system, enhance healthcare practices, advance standard and quality of care, and promote clinical excellence, through generation and application of evidence-based scientific knowledge in health and medicine.

PROPOSAL

2. The Secretary for Food and Health (SFH) proposes to –
 - (a) consolidate the existing Health and Health Services Research Fund (HHSRF) and Research Fund for the Control of Infectious Diseases (RFCID) administered by the Food and Health Bureau (FHB) into a new Health and Medical Research Fund (HMRF); and
 - (b) increase the non-recurrent commitment of the consolidated HMRF by \$1,000 million to support the broadened funding scope for health and medical research in Hong Kong, in addition to the existing funding scope of HHSRF and RFCID.

The consolidated fund will continue to support committed research projects and research infrastructure under the existing HHSRF and RFCID.

JUSTIFICATIONS

Importance of Supporting Health and Medical Research

3. In this era of rapid technological advances in medical and related fields, investment in health and medical research and application of the research findings to improve population health are *de facto* indicators of the excellence and quality of the healthcare system in an economy. Research into the aetiology, pathogenesis, diagnosis, treatment and prevention of disease allows better insight into the disease, maximises treatment outcome and improves quality of care. The initial investment in research leads to a return in terms of less disease, improved population health and in turn economic gains. Investment in research and availability of facilities and resources for such research are also key factors that help attract and retain talents, both local and overseas, essential to the development of a hub for medical research and clinical excellence, and supportive of a quality medical service sector.

4. Over the past decade, FHB has pioneered the provision of dedicated funding support for health and medical research in two areas, namely public health and health services (e.g. primary care, tobacco control, mental health, health promotion, etc.), and control of infectious diseases (e.g. SARS, avian influenza, swine influenza, etc.). We have set up the HHSRF and RFCID, respectively, to provide funding support specific for research in these areas, over and above the general funding for local tertiary academic institutions and health and medical institutions. These funds have positive outcomes in terms of generating evidence-based scientific knowledge to inform health policies, and leading to application to health services and clinical practices that improves population health. The background and operation of the HHSRF and RFCID are summarised at *Annex A*.

5. Building on the successful experience of HHSRF and RFCID and leveraging the expertise established to support health and medical research, and with the advice of the Health and Medical Research Council (the Research Council established under FHB comprising renowned leaders in the academia and health and medical research fields, see current membership and terms of reference at *Annex B*), we propose to expand the scope for funding, apart from the existing scope of HHSRF and RFCID, into other areas of health and medical research, focusing initially on areas where Hong Kong has the potential to develop more advanced research capability. Investment in these expanded areas of health and medical research will further the objective to inform health policies, improve population health, enhance clinical practices and build research capacity for medical excellence.

International Trend in Health and Medical Research

6. There is an international trend for governments to spearhead health and medical research by providing strategic steer and dedicated support with strong government backing. Many developed countries have long supported health and medical research and have identified knowledge gaps and unmet public health needs in several advancing areas of research as their health research priorities. Overseas research funding agencies such as the National Institutes of Health (USA), Medical Research Council (UK), National Medical Research Council (Singapore) and National Health and Medical Research Council (Australia) have long been striving to support advanced medical research and have identified knowledge gaps and unmet public health needs in many advancing areas of medical and related research. These initiatives have been adopted by the respective governments to build research capacity and attract experts globally, which in turn has helped them strive for clinical excellence.

7. The spending on research and development in health, based on the Domestic Health Accounts compiled in accordance with Organisation for Economic Co-operation and Development's (OECD) framework for international comparison, was 0.11% GDP in Hong Kong (\$1.8 billion in 2007/08), as compared with 0.30% (in 2007) in the United States and 0.40% (in 2007) in France and Singapore. Comparing the spending on health and medical research in Hong Kong with that in Australia, the United States, Singapore and France (see table below), taking into account the difference in level of expenditure on health, Hong Kong has been relatively conservative in its spending on health and medical research.¹

Country	Expenditure on health and medical research (% GDP) (2007)	Total expenditure on health (% GDP) (2007)	Expenditure on health and medical research (% of total expenditure on health)
France	0.40%	11.0%	3.5%
Singapore	0.40%	3.0%	13.0%
US	0.30%	15.7%	1.9%
Australia	0.20%	8.5%	2.9%
Hong Kong	0.11%	4.8%	2.3%
New Zealand	0.10%	9.1%	1.5%
South Korea	0.10%	6.3%	1.3%

¹ Sources: Figures for HK – Hong Kong's Domestic Health Accounts, 1989/90-2007/08; Figures for other economies (except Singapore) – OECD Health Data 2010; Figure for Singapore – WHO and Yearbook of Statistics Singapore

8. A notable feature of support for health and medical research in these other advanced economies is the dedicated mechanism for funding health and medical research in specific areas on a sustained basis. In particular, all the aforementioned funding agencies have dedicated funding, designated programmes, and specialised units to support and fund research projects, research infrastructure as well as other initiatives aiming at building research capacity. The experience of these economies, corroborated by our own experience in HHSRF and RFCID, is that the dedicated and sustained research funding, together with long-term investment in research facilities, has helped to build up capacity and infrastructure for medical research, thereby helping to attract talent and accumulate expertise, creating a virtuous cycle of enhancing research capability and quality.

Proposed Health and Medical Research Fund

Aim and Ambit

9. The aim of the proposed HMRF is to build research capacity and to encourage, facilitate and support health and medical research to inform health policies, improve population health, strengthen the health system, enhance healthcare practices, advance standard and quality of care, and promote clinical excellence, through generation and application of evidence-based scientific knowledge derived from local research in health and medicine. Building on the existing HHSRF and RFCID, we have formulated the detailed proposals on the scope and operation of the HMRF which are summarised at *Annex C*.

10. The proposed HMRF will continue to fund research projects and research infrastructure in health and health services as well as infectious diseases, which are currently supported by the existing HHSRF and RFCID. In addition, the proposed HMRF will also embrace broader research themes in health and medicine and provide dedicated funding support for research projects, research infrastructure and research capacity building initiatives in specific areas of advanced medical research identified on the advice of relevant experts under the Research Council. Initially, the HMRF will fund health and medical research in the following broad areas -

- (a) public health, human health and health services (e.g. primary care, non-communicable diseases, Chinese medicine, etc.) (*currently funded by HHSRF*);
- (b) prevention, treatment and control of infectious diseases, in particular emerging and re-emerging infectious diseases (*currently*

funded by RFCID); and

- (c) advanced medical research in the fields of paediatrics, neuroscience, clinical genetics and clinical trials (*broadened scope of research not funded by existing research funds*).

These areas of fields of health and medical research will be under the steer of the Research Council and subject to changes and refinements.

11. Hong Kong has the potential to pioneer medical research in the above areas including paediatrics, neuroscience, clinical genetics and clinical trials due to the availability of a pool of expertise among local academics, researchers, and healthcare professionals. To realise this potential there is a need for dedicated and sustained funding for research in these specific areas, where there will be a continued growth in demand for health services, and where investment in research will yield returns in terms of improving population health. Consolidating the existing funds specific for health and medical research into a single fund, broadening the scope of the consolidated fund and increasing the financial commitment will provide more effective support for local health and medical research.

Funding Opportunities and Training

12. Applications for HMRF funding support will be opened to researchers and institutions with research capabilities in the public, private and academic sectors in Hong Kong. Eligible applicants should have a track record of conducting research in the area for which they have applied for support. It is anticipated that the research efforts will produce scientific advances and best practices as a result of multi-disciplinary co-operation and collaboration. To be eligible for a grant, the proposed research project must demonstrate among other things high scientific merit, be ethically acceptable, be locally applicable, and provide value-for-money.

13. The HMRF will provide funding support for health and medical research activities, research infrastructure and research capacity building in Hong Kong. Specifically, under the steer of the Research Council of FHB, the HMRF is expected to provide funding in the following manner -

- (a) **Investigator-initiated research projects:** funding for individual research grant proposals submitted by individual researchers in response to “open call” invitation for research grant applications by FHB, with reference to the research areas and themes under the HMRF, subject to the two-tier peer review mechanism of Referee

Panel and Grant Review Board and approved by the Research Council. Majority of research projects are expected to be funded by the HMRF in this manner.

- (b) **Government-commissioned research programmes:** specific programmes commissioned to, *inter alia*, build research capacity, fill knowledge gaps, support policy formulation, address specific issues, assess needs and threats, etc., identified on the advice of relevant Expert Advisory Panels. Funding under such programmes may cover research projects, facilities, infrastructure and other capacity building initiatives as appropriate.
- (c) **Research fellowships:** to enhance research capability and build research capacity to facilitate the translation of knowledge into clinical practice, research fellowships will be awarded to eligible candidates covering a range of research areas and specialties and geared toward a variety of levels (e.g. PhD students, post-doctoral fellows, clinical research fellows, etc) on the advice of the relevant Expert Advisory Panels.

Disbursement of Funds

14. The distribution of the fund for different items and topics will depend on actual research grants. Based on the experience of RFCID, we expect that about half of the funding would be allocated towards supporting research infrastructure and facilities as well as research capacity building initiatives, while the other half would be used to fund investigator-initiated or government-commissioned projects. Depending on the development of research capacity in local institutions, we expect that the injected commitment would be able to support local health and medical research projects and activities, research capacity building initiatives, and research infrastructure and facilities over the next five years or longer.

Governance and Administration

15. The governance and administration of the HMRF will be built upon the established mechanisms of the existing HHSRF and RFCID. In particular, the Health and Medical Research Council chaired by the Secretary for Food and Health (***Annex B***) will be responsible for providing strategic steer for funding health and medical research, and overseeing its administration of the HMRF including the allocation of funds for approved grants. Applications for research grants will continue to be subject to the stringent two-tier peer review process established for HHSRF and RFCID following international practices, first by a

Referee Panel comprising individual experts both local and overseas to assess the scientific merit of applications according to their specific expertise, and second by a Grant Review Board acting as scientific advisor to the Research Council and making overall recommendation on funding applications. The Research Fund Secretariat will continue to be the executive arm of the HMRF - providing administrative and logistic support to the Research Council and its constituent boards and panels.

16. To cater for the broadened scope and increased commitment of the HMRF and to cope with the expected increase in research items to be funded, the governance and administration mechanism will be strengthened as follows –

- (a) **The Research Council** will be expanded to include more renowned local and overseas experts to advise on the direction and policy of the new fund, supported by two arms – a series of Expert Advisory Panels on relevant fields as the advisory arm, and the Referee Panel & Grant Review Board as the technical arm.
- (b) **Expert Advisory Panels** for individual research areas will be established to advise the Research Council on *inter alia* the health needs of the community, research strategies, thematic priorities and funding opportunities on the research areas to be supported by the fund.
- (c) **The Referee Panel and Grant Review Board**, forming the first and second tiers of the established peer review mechanism respectively, will be expanded to include more experts to provide stringent assessment of all submitted grant applications and final reports of completed studies.
- (d) **The Research Fund Secretariat** will be expanded to cope with expected increase in workload due to higher number of grant applications and funded projects, and greater need for secretariat support to the Research Council and the advisory and technical arms under it.

Monitoring and Evaluation

17. All successful applicants and administering institutions will be required to keep an audit trail of budget spent and submit periodic progress reports as well as a final report on the project. The results of their research will be disseminated in media or channels determined by the Research Council. All approved projects will be required to participate in a post-completion

assessment conducted by the Secretariat to evaluate the outputs and outcomes of the approved research.

18. FHB will report to the Legislative Council on a regular basis on the utilisation of funds under the HMRF.

Expected Benefits of HMRF

19. The knowledge and best practice protocol generated through supporting health and medical research is applicable to both the local and global community, leading to the following benefits -

- (a) provide coordinated and comprehensive coverage of a wide spectrum of health- and medical-related research;
- (b) provide evidence-based research for input to formulation of health policies and evaluation of their impact;
- (c) improve population health and quality of life through increased knowledge of local healthcare practitioners and improved delivery of medical and health services to the local community;
- (d) advance the standard and quality of healthcare through application of new knowledge to clinical practices, and strengthen the health system through research on its efficiency and effectiveness;
- (e) identify knowledge gaps and service needs, providing input on research priorities, disseminating research findings, and translating research findings to improved service; and
- (f) enhance local health and medical capacity in terms of physical infrastructure and trained personnel.

FINANCIAL IMPLICATIONS

20. The proposal to set up the HMRF would require consolidation of the existing HHSRF and RFCID, and injection of an additional non-recurrent commitment of \$1,000 million. As at 30 September 2011, the fund balances of the HHSRF and RFCID were \$191 million and \$229 million, respectively.

21. The administrative costs for the operation of HMRF will include staff cost of the HMRF Secretariat and expenses for other activities necessary to support the administration and operation of the HMRF such as inviting,

processing, vetting by expert referees and monitoring of grant applications. Most of the costs (including costs of staff overseeing and supporting the governance and administration of HMRF and overhead costs) will be absorbed by FHB. Direct operation costs² will be charged to the HMRF. Based on past experience for HHSRF and RFCID, it is estimated that annual operation costs³ will take up about 1.4% of the total fund.

22. There will not be any revenue implications arising from the proposal, as no application or administration fees will be charged on applicants.

IMPLEMENTATION PLAN

23. Subject to the necessary funding approval by the Finance Committee of Legislative Council, our plan is to formally establish the HMRF by the second quarter of 2012. The operation of the current research projects granted under the HHSRF and RFCID will continue and will be funded from the HMRF. Consideration of research themes and priorities of research infrastructure and programmes to be commissioned will be initiated in the second quarter of 2012. The invitation of investigator-initiated research projects under the expanded scope of the HMRF is planned to be issued in the third quarter of 2012 in line with the usual annual cycle of research grant applications.

BACKGROUND INFORMATION

24. Background information on the two health-related research funds administered by FHB, namely HHSRF and RFCID are set out at *Annex A*.

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² These may include, for instance, meeting costs of the Research Council and its constituent panels, boards and committees for members' technical and advisory input to the HMRF; publication of research dissemination reports; publicity, training workshops and seminars; and expenses for other activities necessary to support the operation of the HMRF under the direction of the Research Council.

³ These include non-civil servant staff cost of the HMRF Secretariat and other operation costs.

Overview of Health and Health Services Research Fund (HHSRF) and Research Fund for the Control of Infectious Diseases (RFCID)

The Food and Health Bureau (FHB) currently administers two health-related research funds namely the *Health and Health Services Research Fund* (HHSRF) and the *Research Fund for the Control of Infectious Diseases* (RFCID).

BACKGROUND

Health and Health Services Research Fund

2. The HHSRF was established in 2002¹ for funding health and health services research in support of policy formulation and service development. It aims to maximise population health, improve the quality of life, and enhance the standard and cost-effectiveness of the health system through the generation of new knowledge in areas of human health and health services. It covers three broad themes, public health, health services and Chinese medicine. HHSRF has a total capital commitment of \$226 million approved by the Finance Committee (comprising an initial commitment of \$10 million in 2002, an injection of \$16 million in February 2005, a second injection of \$50 million in June 2007 and a further injection of \$150 million in February 2010).

Research Fund for the Control of Infectious Diseases

3. The RFCID was established after the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 to encourage, facilitate and support research on the prevention, treatment and control of infectious diseases, in particular emerging infectious diseases such as SARS and avian influenza (H5N1). It has a total capital commitment of \$450 million approved by the Finance Committee (initial commitment when the fund was established in July 2003).

GOVERNANCE AND ADMINISTRATION OF RESEARCH FUNDS

4. The HHSRF and RFCID are governed by a Research Council established under FHB that makes executive decisions on fund policy and strategy and makes funding recommendations to FHB for allocation of research funds. The Research

¹ Prior to the establishment of HHSRF in 2002, research projects on health services issues were funded under the Health Services Research Fund (HSRF) set up in 1993-94. The HSRF was subsequently replaced by the HHSRF, which has a new mode of operation and a more focused research agenda.

Council is underpinned by working committees, namely the Grant Review Boards (GRB) and the Referee Panel which provide independent two-tier peer review. Their work and the day-to-day administration of research funds are supported by the Research Fund Secretariat of the Research Office established under FHB.

Governance of Research Funds

Research Council

Role and Responsibility

5. The Research Council assumes responsibility for all aspects of the administration of the HHSRF and the RFCID and the allocation of funds for approved grants. The Research Council appoints members to the GRB and the Referee Panel.

Composition

6. The Research Council is chaired by the Secretary for Food and Health (SFH) and comprises representatives from public institutes and bodies and members from the academic arena and private sector appointed by SFH. The term of service of appointed members is normally two years. The membership of the Research Council is at **Annex B**.

Terms of Reference

7. The terms of reference of the Research Council are to –

- (a) determine research agenda and funding control mechanism of the RFCID and HHSRF;
- (b) approve procedures for inviting, and criteria for vetting research applications;
- (c) approve standard terms and conditions for grant-holders;
- (d) approve funding allocation after peer review process;
- (e) approve processes for the ongoing monitoring and evaluation of approved research projects;
- (f) establish GRB to carry out the technical work of the Research Council; and
- (g) disseminate key findings of funded projects.

Grant Review Boards

Role and Responsibility

8. The GRB act as the scientific advisors to the Research Council and make recommendations with regard to initial funding, requests for additional funds and assesses the outcomes of funded research. It is through the GRB that all applications as

well as final and dissemination reports for funded grants are subject to peer review for their scientific merit and compliance with the funding principle and ethical considerations.

Composition

9. Chairmen and Members of the GRB are appointed by the Research Council and are expected to be academics and other local experts versed in health and medical research. Potential members are identified through established networks, publications, scientific roles and committee meetings or collaborative work. Separate GRB are established under the two Research Funds.

Terms of Reference

10. The terms of reference of the GRB are to –
- (a) set policies and procedures for the grant submission and review process, and the assessment and dissemination of final reports;
 - (b) distribute guidelines for the formulation of research proposals, grant applications, and the submission of interim, final and dissemination reports;
 - (c) review and assess applications and recommend projects for funding;
 - (d) review and assess final, interim and dissemination reports;
 - (e) promote the development of research in the areas of health, health services and controlling infectious diseases in the wider community;
 - (f) monitor the progress of approved projects; and
 - (g) monitor the financial performance of approved projects.

Referee Panel

Role and Responsibility

11. Individual members of the Referee Panel, according to their specific area of expertise, are selected to review grant applications for funding on the basis of scientific merit and to assess the outcomes of funded projects.

Composition

12. Local and overseas referees are identified through a variety of sources: recommendation of the GRB members, bibliographic sources such as MedLine, the reference section of the grant proposal or through internet contacts particularly in evidence-based health and health services literature.

Terms of Reference

13. The terms of reference of the Referee Panel are to –
- (a) assess the scientific merit of submitted proposals in terms of originality, scientific content, design and methods, statistical analysis and outcome measures;
 - (b) assess the relevance of the proposal to the thematic priorities and the applicability of the research to the local context; and
 - (c) assess the ‘value for money’ as presented in the final and dissemination reports.

Administration of Research Funds

Research Fund Secretariat

14. The FHB houses a Research Office which serves as the Research Fund Secretariat to the HHSRF and RFCID. The secretariat provides administrative and technical support to fund administration, including initial screening of applications, liaison with applicants, assignment of referees, preparation of documents for Research Council and GRB meetings, and input on grant management and operation.

Funding Opportunities

15. The HHSRF and RFCID support investigator-initiated and commissioned research. Investigator-initiated projects are those that encourage the development of innovations from individual researchers. Commissioned projects include those that address specific research needs, fill gaps in scientific knowledge and respond to public health needs and threats identified by the FHB. Commissioned research is by special invitation only.

Eligibility

16. Applications for funding support are open to researchers and research institutes from the public, private and academic sectors in Hong Kong. Eligible applicants must have a track record of conducting relevant research in the territory. Researchers collaborating with Mainland China and overseas institutions are encouraged to apply to the fund. It is anticipated that the research efforts would produce scientific advances and best practices as a result of multi-disciplinary cooperation and collaboration. To be eligible for a grant, the proposed research project must demonstrate high scientific merit and local applicability.

Funding Mechanism and Peer Review

17. All eligible grant applications undergo stringent two-tier peer review to ensure that funded projects are of appropriate scientific design and high scientific merit. The first tier of peer review is performed by a Referee Panel. The second tier is

conducted by the GRB. Together they assess the scientific merit of the research projects, such as originality, significance of the research questions, quality of scientific content, credibility of design and methods and applicability to the local context. Other objective assessment criteria including research ethics, justification of budget, and track record of grant applicant are also considered. The GRB makes funding recommendations for consideration and endorsement by the Research Council.

18. The administering institution and the principal applicant of successful grant applications are required to sign a contractual agreement, covering the terms and conditions under which the grant is offered. Principal applicants are required to report the progress of the projects and the financial position at regular intervals for assessment by the Research Fund Secretariat. Payment of grants is tied to satisfactory progress and submission of acceptable deliverables as set out in the contractual agreement.

19. The principal applicants of completed projects are required to submit a final and dissemination report and independent audited account or certified financial statement not more than six months after project completion.

Mechanism to Prevent Duplicate Funding

20. The two-tiered peer review process not only provides comments on the relevance by the experts, but also advice on any duplication with on-going projects based on their most updated knowledge of research projects. Duplication will be rejected. In addition, and in line with prevailing international practice, all grant applicants are required to declare whether their research proposals are also being considered by other funding agencies. The secretariat will conduct cross-checking with relevant funding organisations including RGC, HHSRF, RFCID, AIDS Trust Fund, Innovation and Technology Fund, Quality Education Fund, etc. The aim is to ensure that no single project will be funded twice.

Monitoring of Funded Projects

21. All successful applicants and host institutions are required to sign a funding agreement with the Government and to keep an audit trail of budget spent and submit periodic progress reports as well as a final report of the project. The results of their research are also disseminated in media or channels determined by the Research Council.

Dissemination of Research Results

22. For completed projects graded as satisfactory by the GRB, research reports will be uploaded to the secretariat's website at <http://www.fhb.gov.hk/grants> for public access. Dissemination reports are further distributed to relevant healthcare professionals, previously in the form of loose-leaf pamphlets, and since April 2006 as supplements to the *Hong Kong Medical Journal*. To date, about 450 dissemination reports have been published. In addition, regular grant skills training workshops are conducted to facilitate potential applicant's preparation of applying for research funds. Research symposia have been organised to recognise outstanding studies, that have set a

benchmark for good research and assisted the formulation of health policies, and to provide a platform of sharing with international and local researchers.

Evaluation of Impact

23. All approved projects are required to participate in a post-completion assessment conducted by the secretariat to evaluate the outputs and outcomes of the approved research. The criteria for evaluation are determined by the secretariat and include benefits to the healthcare system in terms of knowledge production, use of research findings in health system policy and decision making, application of the research findings through changed behaviour of health professionals, and public health and health service / economic benefits.

24. FHB will report to the Legislative Council on a regular basis on the utilisation of funds under the HHSRF and RFCID.

FUNDING POSITION OF RESEARCH FUNDS

25. The total capital commitment of the HHSRF is \$226 million. At 30 September 2011, a total of 869 grant applications have been received in response to eight open calls for investigator-initiated projects with a success rate of about 28%. A total of 193 grant applications worth \$102.95 million have been approved. One commissioned portfolio on mental health worth \$7.65 million was approved.

26. The total capital commitment of the RFCID is \$450 million. At 30 September 2011, a total of 946 grant applications have been received in response to ten open calls (and a special resubmission round) for investigator-initiated projects with a success rate of about 32%. A total of 302 projects worth \$208.46 million have been approved. Seven commissioned portfolios worth \$183.73 million were approved.

27. All approved research projects for the HHSRF and RFCID through the open call submissions and commissioning, with abstracts and the approved amounts, have been uploaded to the Secretariat's website for public access.

EVALUATION OF OUTPUT OF COMPLETED STUDIES

28. The impact of completed research projects is evaluated on a regular basis using a "payback framework" – an internationally recognised measure of health research activities. The payback framework allows a quantitative assessment to be made of the value for money invested in research funding. Including data from the most recent round of evaluation conducted in mid-2010, the impact of the research supported by HHSRF (and the former HSRF) and RFCID is summarised as follows:

- The majority (77.0 – 88.2%) of projects supported by HHSRF and RFCID

reported publication of research findings. There were, on average, 4.88 publications per project generated. Evidence-based knowledge will help shape and direct healthcare policy.

- Up to one-third (33.6%) of the projects supported by HHSRF and RFCID reported impact on informing policy through production of new or revised treatment guidelines, treatment protocols, reference standards, and Cochrane reviews.²
- HHSRF and RFCID have been instrumental in building research capacity and infrastructure in Hong Kong. Work related to funded projects has enabled research staff to improve scientific and healthcare-related research skills and to gain promotion at their institutions. Career advancement of research team members was reported for 34.1%-60.0% of projects. Acquisition of higher qualifications was reported for 38.9%-73.0% of projects. These highly skilled talents form an important strategic research asset for Hong Kong.

29. In summary, the impact of research supported by the HHSRF and RFCID compares well with that found with other funding agencies with similar public health objectives, e.g. National Health Service (UK), National Health and Medical Research Council (Australia).

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² Cochrane reviews are an internationally regarded source of evidence about the effectiveness of healthcare interventions.

**Research Council
Food and Health Bureau**

Membership (as at 1 October 2011)

Dr York CHOW	Secretary for Food and Health (Chairperson)
Dr. Felix Hon-wai CHAN	Chief of Service (Medicine), Consultant Geriatrician, Fung Yiu King Hospital
Prof. Sophia CHAN	Professor and Research Director, School of Nursing, The University of Hong Kong
Prof. Tai-fai FOK	Dean and Professor of Paediatrics, Faculty of Medicine, The Chinese University of Hong Kong
Prof. Sian Meryl GRIFFITHS	Director, School of Public Health and Primary Care, The Chinese University of Hong Kong
Prof. Mary IP	Chair of Respiratory Medicine, Department of Medicine, The University of Hong Kong
Prof. Nancy IP	Chair Professor and Dean of Science, Division of Life Science, School of Science, The Hong Kong University of Science & Technology
Prof. Cindy Lo-kuen LAM	Head and Professor (Clinical), Department of Medicine and Primary Care, The University of Hong Kong
Prof. Yu Lung LAU	Associate Dean (Research Affairs), Li Ka Shing Faculty of Medicine, The University of Hong Kong
Prof. Sum Ping LEE	Dean, Li Ka Shing Faculty of Medicine, The University of Hong Kong
Dr. Patrick Chung-ki LI	Chief of Service, Department of Medicine, Queen Elizabeth Hospital
Prof. Dennis LO	Associate Dean (Research), Faculty of Medicine, The Chinese University of Hong Kong
Prof. Joseph Jao-yiu SUNG	Vice-Chancellor/President, The Chinese University of Hong Kong

Prof. Kwok-yung YUEN	Chair of Infectious Diseases, Department of Microbiology, The University of Hong Kong
Prof. Paul TAM	Pro-Vice-Chancellor and Vice-President (Research), The University of Hong Kong
Dr. Dominic NC TSANG	Chief Infection Control Officer, Hospital Authority Consultant Medical Microbiologist, Department of Pathology, Queen Elizabeth Hospital
Prof. Maurice YAP	Chair Professor of Optometry and Dean of the Faculty of Health and Social Sciences, PolyU
Chief Executive, Hospital Authority or representative	Representing Chief Executive, Hospital Authority
Director of Health, Department of Health or representative	Representing Director of Health, Department of Health
Dr Su Vui LO	Head, Research Office, Food and Health Bureau (Secretary)

Terms of Reference

The terms of reference of the Research Council are to –

- (a) Determine research agenda and funding control mechanism of the Reach Fund for the Control of Infectious Diseases and Health and Health Services Research Fund;
- (b) Approve procedures for inviting, and criteria for vetting research applications;
- (c) Approve standard terms and conditions for grant-holders;
- (d) Approve funding allocation after peer review process;
- (e) Approve processes for the ongoing monitoring and evaluation of approved research projects;
- (f) Establish Grant Review Board to carry out the technical work of the Research Council and
- (g) Disseminate key findings of funded projects.

Proposed Health and Medical Research Fund (HMRF)

This note provides a more detailed description of the research areas & themes and governance & administration of the proposed Health and Medical Research Fund (HMRF).

Research Areas and Themes

2. Under the ambit of the proposed HMRF a number of health and medical research areas and themes will be supported, including –

- (a) public health, human health and health services (e.g. primary care, non-communicable diseases, Chinese medicine, etc.) (*currently funded by HHSRF*);
- (b) prevention, treatment and control of infectious diseases, in particular emerging and re-emerging infectious diseases (*currently funded by RFCID*); and
- (c) advanced medical research in the fields of paediatrics, neuroscience, clinical genetics and clinical trials (*broadened scope of research not funded by existing research funds*).

Research Area on Health and Health Services Research

3. Health and health services research examines the cause, treatment and prevention of the full range of diseases and conditions that affect human health and the impact of the organisation, financing and management of healthcare services on the delivery, quality, cost, access to, and outcomes of such services.

4. The research proposals under this theme will focus on three broad areas of health services, public health and Chinese medicine. Health services research is essential to determine which interventions and services are effective and cost-effective in the local healthcare setting. Examples may include the more widespread implementation of the family doctor model of healthcare, strategies to reduce avoidable hospitalisation, and enhanced primary care for patients with non-communicable diseases such as diabetes or hypertension.

5. Public health research addresses issues such as prevalence, epidemiology and surveillance of specific diseases with the aim of identifying modifiable risk factors and behaviours that can be targeted to enhance treatment and prevention. Examples may include strategies to enhance physical exercise and better nutrition to help reduce complications arising from diabetes and cardiovascular disease.

6. Chinese medicine represents a locally important and culturally different way of looking at health. Research in Chinese medicine may identify unique approaches in treating and/or preventing a wide range of diseases. Examples may include strategies that enhance the complementary use of western and Chinese approaches to healthcare.

Research Area on Infectious Diseases

7. Infectious diseases remain a considerable healthcare burden in Hong Kong and globally. The twin threats of newly emerging infectious diseases (e.g. SARS-coronavirus, avian influenza H5N1, human swine influenza H1N1) and the ease of cross-border travel have increased the possibility of a global pandemic and have made research into infectious diseases a priority.

8. Research proposals should focus on infectious diseases which are prevalent in Hong Kong and neighbouring regions or areas in which the Hong Kong academic community has a competitive edge. Possible areas include respiratory infectious diseases, such as influenza; emerging infectious diseases; drug-resistant pathogens; hepatitis viruses; human immunodeficiency virus; Epstein-Barr virus; novel diagnostics; treatment/drug discovery/traditional Chinese medicine; vaccine and other prevention measures; and psychosocial and cultural determinants of health behaviours relevant to the transmission and prevention of infectious diseases.

Research Area on Paediatrics

9. It is intended to build on policy initiatives to create a Centre of Excellence in Paediatrics to support a wide range of research studies that include but is not limited to basic science studies, epidemiological research, clinical trials and translational research.

10. Research funding will support multi-disciplinary research efforts to study the nature and health outcomes of important childhood illnesses, and to develop innovative treatment interventions and technologies and their translation into state-of-the-art clinical care practices for Hong Kong, as well as serving as an anchor point for international linkage and collaboration to advance child health and well being. Research projects that could be supported by the proposed fund include:

- (a) Brain and development
- (b) Epidemiology
- (c) Circulation, oxygen transport and haematology
- (d) Nutrition, gastroenterology and metabolism
- (e) Pulmonology
- (f) Paediatric and neonatal pharmacology
- (g) Neonatology

Research Area on Neuroscience

11. With the extended life expectancy of the population, degenerative and other disorders of the nervous system, including dementia, stroke and Parkinson disease, are expected to be important causes of disability and loss of self-care ability. The potential for research in the field of neuroscience will be enhanced by new imaging modalities and advances in genomics, proteomics and molecular science. Investment into such research including basic science studies, epidemiological research, clinical trials and translational research, will have great potential for achieving better understanding and possibly effective treatment for these neurological disorders. Research projects that could be supported by the proposed fund include:

- (a) Neurodegenerative diseases (Parkinson disease, Alzheimer disease, etc.)
- (b) Other neurological diseases (stroke, epilepsy, etc.)
- (c) Psychiatric diseases (schizophrenia, depression, etc.)
- (d) Cognitive and behavioural neuroscience
- (e) Basic neuroscience

Research Area on Clinical Genetics

12. Research into clinical genetics and genomic medicine of diseases of special relevance to Hong Kong and the region will be supported. In particular those that may yield important insights into fundamental biology, for example Down syndrome, and hereditary diseases. Other possible areas include application of advanced technology in gene sequencing for disease discovery; clinical validation of putative biomarkers; drug development; bioinformatic databases; and prediction, prevention and treatment of human diseases. Research projects that could be supported by the proposed fund include:

- (a) Genetic diagnostics and counselling
- (b) Genetic laboratory services
- (c) Genetic screening, especially for newborns
- (d) Genomic medicine

Research Area on Clinical Trials

13. Clinical trials research allows safety and efficacy data to be collected for a wide range of health interventions (including, for example, drugs, diagnostics, devices and therapy protocols). Examples of the types of research that may be considered for support include but are not limited to the following:

- Assessing the safety and effectiveness of a new medication or device on a specific group of patients
- Assessing the safety and effectiveness of a different dose of a medication than is commonly used

- Assessing the safety and effectiveness of an already marketed medication or device for a new indication
- Assessing whether a new medication or device is more effective for a patient's condition than the current standard medication or device
- Comparing the effectiveness in patients with a specific disease of two or more already approved or common interventions for that disease

Governance and Administration of the HMRF

14. The governance and administration of the HMRF will be built upon the established governance and administration mechanisms of the existing HHSRF and RFCID. The governance and administration mechanism will be strengthened in the following ways to cater for the broadened scope and increased commitment of the HMRF, especially to cope with the expected increase in research studies and support items to be funded –

- (a) The **Research Council** will continue to assume responsibility for all aspects of the administration of the HMRF and the allocation of funds for approved grants. The Research Council will be expanded to include more renowned local and overseas experts to advise on the direction and policy of the new fund.
- (b) The Research Council will be supported by two arms – a series of **Expert Advisory Panels** (advisory arm) and the **Referee Panel & Grant Review Board (GRB)** (technical arm).
- (c) A series of **Expert Advisory Panels (EAPs)** on the respective research areas will be established to advise the Research Council.

Role and responsibility: The EAPs will assess the health and healthcare needs of Hong Kong and advise the Research Council on research policy and priorities and funding opportunities with respect to their specific areas of expertise.

Composition: EAP members are appointed by the Research Council and are expected to be local and/or overseas academics and experts versed in health and medical research. The term of service of appointed members is normally two years.

Terms of reference: The terms of reference of the EAPs include –

- (i) Advise the Research Council on health and healthcare needs and research policy and priorities under their respective research area;
- (ii) Make recommendations to the Research Council on thematic priorities, research foci and funding opportunities; and

- (iii) Make recommendations to the Research Council on funding allocation to respective research themes/ activities.
- (d) The **Referee Panel** and **GRB** will continue to form the first and second tier of the established peer review mechanism, respectively, and will be strengthened and expanded to provide stringent assessment of all submitted grant applications and final reports of completed studies.
- (e) The **Research Fund Secretariat** will continue to be the executive arm of the HMRF. The Secretariat provides administrative and logistic support to the HMRF in terms of processing grant applications, overseeing the two-tier peer review process, arranging the GRB, EAP and Research Council meetings, corresponding with the principal applicants and administering institutions on all grant-related matters, and preparing and issuing contractual agreements for approved projects. The Research Fund Secretariat will be expanded and strengthened to cope with the expected increased workload.

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