



中華人民共和國香港特別行政區政府總部食物及衛生局
Food and Health Bureau, Government Secretariat
The Government of the Hong Kong Special Administrative Region
The People's Republic of China

Our Ref.: () in FHB/H/41/125

Tel: 3150 8918

Fax: 3150 8993

26 May 2016

Ms Maisie LAM
Clerk to Panel on Health Services
Legislative Council
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong

Dear Ms LAM,

**LegCo Panel on Health Services
Meeting on 18 April 2016
Supplementary Information**

Proposal for Injection into the Health and Medical Research Fund

I write to provide the supplementary information (**Annex**) requested by the above meeting.

Yours sincerely,

(Dr Edmond MA)
for Secretary for Food and Health

Legislative Council Panel on Health Services

**Supplementary Information on
Proposal for Injection into the Health and Medical Research Fund**

This paper provides supplementary information regarding queries on the proposal for injection into the Health and Medical Research Fund (HMRF) (LC Paper No. CB(2)1269/15-16(05) raised by Members at the meeting of the Panel on Health Services on 18 April 2016.

(a) Breakdown of investigator-initiated research projects funded under the HMRF by local and Mainland researchers based in Hong Kong institutions.

2. Members requested for a breakdown of the 634 investigator-initiated research projects funded under the HMRF by local and Mainland researchers based in Hong Kong institutions. All principal applicants to the HMRF open call should be based in a Hong Kong institution throughout the project period and be employed by the administering institution at the time of submission of application. Applicants who are employed by an institution outside Hong Kong (be it in Mainland or overseas) are not eligible to be principal applicants. The Research Fund Secretariat does not collect the nationality of the principal applicants in their applications as it is not an assessment criteria for funding.

(b) The breakdown of the projects funded under the HMRF by the amount of grant and the number of local residents that had benefited from the research findings.

3. From 2013 to 2015, a total of 634 investigator-initiated research projects were funded with a total commitment of \$543 million. A full list of the research projects is available at <http://rfs.fhb.gov.hk>. The projects funded by Food and Health Bureau have contributed to the registration of eight patents, which benefit patients in need as well as provide solid basis for future research. These include a novel assay to detect SARS-coronavirus, a new technique to detect hepatitis B virus mutations to aid in treatment and monitoring, a new approach to developing influenza vaccines, synthesis and use of novel anti-cancer compounds, synthesis and use of novel anti-HIV compounds (involving two patents) and novel approaches (involving two patents) to the control of bacterial infection. The research have also advanced the medical

knowledge and improved clinical practice on cancers (lung, breast, colorectal, nasopharyngeal, liver, etc), cardiovascular diseases, stroke, diabetes mellitus, asthma, chronic obstructive airway disease, infections such as influenza, avian influenza H7N9 and H9N2, HIV, hepatitis B, mental diseases such as depression, dementia and schizophrenia, hip fracture, cataract, glaucoma, etc. The impact on medical science development was far-reaching. Examples of key projects with the estimated number of people benefited by the research are at **Enclosure**.

(c) Outcomes of the evaluation of the HMRF-funded projects based on the Buxton-Hanney research payback questionnaire.

4. In order to determine the extent to which the objectives of the HMRF have been attained, the HMRF projects that have been completed for at least two years will be evaluated using an instrument developed by the Food and Health Bureau based on the internationally validated Buxton-Hanney¹ research payback questionnaire. The questionnaire measures research impact in several domains including knowledge production, utilisation of research findings by the healthcare system, capacity building, impact on policy, behaviour change in research end-users and dissemination of research findings. Using data from the most recent round of evaluation conducted in mid-2015 with the Buxton-Hanney Research Payback Questionnaire, the impact of the research is summarised as follows:

- (a) The majority (73.1%) of projects reported publication of research findings. There were, on average, 1.6 peer-reviewed publications per project generated. Evidence-based knowledge will help shape and direct healthcare policy.
- (b) Over thirty percent (31.0%) of the projects reported impact on (i) informing policy through promoting health and/or raising awareness about a health condition; (ii) supporting current/informing future policy and/or decision-making; (iii) informing treatment guidelines; and (iv) enhancing provision of health services.
- (c) Investigator-initiated research supported by the FHB funds has been instrumental in building research capacity and infrastructure in Hong Kong. The funded projects have enabled research staff to improve their scientific and healthcare-related research skills and to gain promotion at their

¹ The “payback framework” was developed by Prof Martin Buxton and Dr Stephen Hanney at the Health Economics Research Group, Brunel University, London, UK. It is the most widely used instrument to quantify the outputs and outcomes of publicly-funded health and medical research (Buxton M, Hanney S. How can payback from health services research be assessed? J Health Serv Res Policy 1996; 1:35-43).

institutions. Career advancement of research team members was reported for 44.8% of projects. Acquisition of higher qualifications was reported for 46.1% of projects. In addition, some 39.2% of project teams have attracted additional funding to support subsequent research. These highly skilled talents are important strategic asset for Hong Kong.

(d) Rationale for appointment of members of the Health Care and Promotion Fund Committee (HCPFC)

5. The HCPFC comprises members of the healthcare system with substantial experience in a wide spectrum of health services and health sciences to provide steer on the operation of the HCPF including but not limited to funding mechanism, peer review process, project monitoring and outcome evaluation. They should have a track record of active participation in community matters including health promotion related activities, and possess up-to-date knowledge on the trends and needs of health promotion in the community.

Food and Health Bureau
May 2016

Examples of Projects Supported by the HMRF

Investigator-initiated research projects

Colorectal screening strategies (approved funding around \$670,000)

Colorectal cancer is one of the most common causes of cancer death among Chinese in Hong Kong. Screening has the potential of preventing colorectal cancer death by early detection and treatment of colorectal cancer and pre-cancerous polyps. A study conducted in 2010-12 evaluated the cost-effectiveness of various colorectal screening strategies compared to no screening and found that biennial immunochemical faecal occult blood test was the most cost-effective screening compared to no screening. The research findings provided the scientific basis to support the Chief Executive's 2014 Policy Address on conducting a pilot programme for colorectal cancer screening. The Government plans to launch a 3-year Colorectal Cancer Screening Pilot Programme in September 2016 for eligible Hong Kong residents aged 61 to 70. The Pilot Programme will be implemented in phases and it is expected that there will be a total of about 300 000 attendances for Faecal Immunochemical Test screening, a new version of faecal occult blood test, of whom some 10 000 will require colonoscopy assessment for a positive stool test result.

Asthma control (approved funding around \$80,000)

2. Asthma affects about 330 000 people in Hong Kong, a large number of which are children and adolescents. Researchers supported by the HMRF funding prepared a potentially inhalable spray-dried powder of omalizumab. The spray-dried powder might allow improved asthma control (especially in children) as the usual route of administration of this medication is by sub-cutaneous injection.

Liver cancer (approved funding around \$160,000)

3. Liver cancer was the third leading cause of cancer deaths in Hong Kong and in 2014, a total of 1 585 people died from this cancer. Researchers supported by the HMRF have been investigating new biomarkers to enhance detection and monitoring of treatment as well as developing potential new forms

of treatment. High serum levels of a protein biomarker called granulins-epithelin precursor (GEP) were associated with poor prognosis in hepatocellular carcinoma patients. Therefore, targeting GEP might represent a novel therapeutic approach against liver cancer. In separate studies also supported by the HMRF, researchers found that GEP binding to liver cancer cells requires heparin sulfate. Another protein called glypican-3 is also involved in this interaction. It is possible that combination treatment with anti-GEP and anti-glypican-3 monoclonal antibodies could be an effective method to treat liver cancer.

Nasopharyngeal cancer (approved funding around \$1 million)

4. Nasopharyngeal cancer is the malignant change in the tissues of the nasopharynx. The cancer is more common in the southern part of China than in Western countries. In 2013, there were 841 new cases of nasopharyngeal cancer in Hong Kong. Researchers supported by the HMRF found a novel gene in local patients associated with nasopharyngeal cancer susceptibility. Additional biomarkers for nasopharyngeal cancer might help identify high-risk subjects.

Stroke and blood flow (approved funding around \$270,000)

5. In Hong Kong, nearly 3 000 people die of stroke each year. Researchers supported by the HMRF developed a feasible method to non-invasively visualise cerebral artery blood flow in high-risk stroke patients. Understanding blood flow in brains of stroke patients may help select high-risk patients for pre-emptive treatment and reduce disability, financial and social burden of stroke.

Commissioned research programmes²

Pneumococcal vaccination (approved funding around \$930,000)

6. An in-depth cost-effectiveness analysis study was conducted in 2006-07 which showed that implementation of universal pneumococcal vaccination of infants was cost-effective. The results of this study assisted the Centre for Health Protection's Scientific Committee on Vaccine Preventable Diseases to recommend that heptavalent pneumococcal vaccine be included on

² There could be more than one project under each commissioned research programme. Items in paragraphs 6 to 8 are examples of specific projects.

the list of recommended vaccines under the Childhood Immunisation Programme (“CIP”). In order to lower the risk of getting invasive pneumococcal disease, the Government has incorporated pneumococcal conjugate vaccine (“PCV”) into the CIP since 1 September 2009. All newborns born on or after 1 July 2009 can receive free pneumococcal vaccination in the Maternal and Child Health Centres (“MCHCs”) of the Department of Health. From 1 September 2009 to 31 March 2011, a one-off 18-month PCV catch-up programme was launched for children born between 1 September 2007 and 30 June 2009 inclusively who could receive catch-up pneumococcal vaccination at MCHCs. Up to 27 March 2016, a total of 1 389 948 doses of pneumococcal conjugate vaccine were administered to 365 971 children under the CIP since its launching on 1 September 2009.

Management of diabetes mellitus (approved funding around \$1.88 million)

7. Diabetes mellitus is a major cause of morbidity and mortality in Hong Kong. It was responsible for 15 300 in-patient discharges and in-patient deaths in all hospitals, and 390 registered deaths in 2014. Researchers supported by the HMRF are conducting an evaluation in a cohort of 133 954 diabetes mellitus patients under the care of Hospital Authority General Out-patient Clinic on the 3-year effectiveness of a programme to help patients manage risk factors for diabetes. The evaluation showed a reduction in cardiovascular disease and other complications of diabetes mellitus after the patients are better managed for the risk factors.

Avian influenza vaccine (approved funding around \$1.11 million)

8. To prevent avian influenza (H5N1), poultry vaccine in chicken is an important strategy. Researchers compared the Government’s recommended H5 vaccine with two other commercially available H5 vaccines and found one of the vaccines provided greater protection against the circulating strains of avian influenza H5N1 than the recommended vaccine. The research findings resulted in the Government changing its policy on which poultry influenza H5 vaccine to use in Hong Kong.