

## Health and Medical Research Fund - Thematic Priorities for 2017 Open Call for Investigator-initiated Research Projects

### **Research Area 1: Health and Health Services**

This area focuses on the cause, treatment, prevention of human diseases and the effectiveness and cost-effectiveness of healthcare services and policy.

#### **Theme 1: Public Health**

##### **Ref. Code Major non-communicable diseases (NCD)**

- PH-NC-1** ○ Identification and surveillance of socioeconomic and health-related risk factors associated with quality of life and major NCD in local population
- PH-NC-2** ○ Risk factors of cancers that has rising trends in Hong Kong in recent years including thyroid cancer, corpus cancer, prostate cancer, kidney cancer, non-small cell lung cancer and ovarian cancer
- PH-NC-3** ○ Effectiveness of interventions to tackle major NCD and their contributing factors, e.g. cancer, cardiovascular diseases, cerebrovascular diseases, diabetes mellitus, childhood nutrition and obesity
- PH-NC-4** ○ Extent and impact of food marketing on children's eating behaviour and body weight
- PH-NC-5** ○ Mechanisms for engaging patients and methods for enabling patient self-management for major NCD

##### **Modifiable lifestyle factors**

- **Tobacco control**
  - PH-MF-1a** ▪ Identification of factors and evaluation of methods to prevent uptake of smoking, e-cigarettes and novel tobacco products
  - PH-MF-1b** ▪ Effectiveness of strategies to reduce smoking prevalence in general population
  - PH-MF-1c** ▪ Effectiveness of smoking cessation programmes and publicity including new media
  - PH-MF-1d** ▪ Evaluation of tobacco control policies (including surveillance and intervention)
- **Alcohol consumption behaviour and harm**
  - PH-MF-2a** ▪ Identification of factors influencing drinking behaviour
  - PH-MF-2b** ▪ Effectiveness and cost-effectiveness of interventions to reduce alcohol-related harm
  - PH-MF-2c** ▪ Public health impact of alcohol tax change and/or alcohol marketing (including online media)
  - PH-MF-2d** ▪ Effect of restricting off-premises alcohol sale to underage people

- **Promoting good mental health**
  - PH-MF-3a ▪ Assessment of people suffering from and at risk of developing mental disorders
  - PH-MF-3b ▪ Risk and protective factors for mental disorders
  - PH-MF-3c ▪ Effectiveness of interventions to promote mental well-being and optimise recovery from mental disorders
  - PH-MF-3d ▪ Evaluation of models of community mental health interventions
  - PH-MF-3e ▪ Mental health literacy of the general public
  
- **Injury and poisoning**
  - PH-MF-4a ▪ Identification of risk factors and effectiveness of prevention methods, especially in the areas of domestic injury, sports injury, falls and drowning/ near drowning
  - PH-MF-4b ▪ Study on the epidemiology and the clinical aspects of metal poisoning in Hong Kong
  
- **Sleep deprivation**
  - PH-MF-5a ▪ Effects of sleep deprivation on physical and mental health outcomes
  - PH-MF-5b ▪ Effectiveness of strategies to promote sleep hygiene
  - PH-MF-5c ▪ Effects of sleep intervention to reverse the adverse outcomes in chronically sleep deprived individuals
  
- **Exercise science and health**
  - PH-MF-6a ▪ Effectiveness of exercise intervention to promote physical and psychological well-being in disease populations
  - PH-MF-6b ▪ Effective strategies to promote physical activity in general population
  - PH-MF-6c ▪ Relationships between fundamental motor development and physical literacy
  - PH-MF-6d ▪ Exercise and cognitive health
  
- **Environmental factors in health**
  - PH-EP-1 ▪ Epidemiology, identification and quantification of pollutants
  - PH-EP-2 ▪ Impact of living environment on health
  - PH-EP-3 ▪ Improve public health knowledge about linkages between health and climate
  - PH-EP-4 ▪ Effectiveness of climate change adaptation and mitigation to protect health

## **Theme 2: Health Services**

- **Primary care**
  - HS-PC-1 ▪ Developing multidisciplinary health service models
  - HS-PC-2 ▪ Evaluation of adoption of the Hong Kong Reference Frameworks in Primary Care Settings and identification of the associated enabling factors and/or barriers
  - HS-PC-3 ▪ Effectiveness of primary care programmes and community-based interventions

- **Chronic disease management and palliative care**
  - HS-CD-1
    - Service delivery models and intervention and implementation effectiveness for chronic disease management, palliative and end-of-life care
  - HS-CD-2
    - Health economic analysis of the new targeted/biological therapies
  - HS-CD-3
    - Effectiveness and safety of new medications or innovative devices in the management of obesity
  - HS-CD-4
    - Effectiveness of end-of-life programmes in residential care homes
  - HS-CD-5
    - Effectiveness of supportive and palliative/end of life care
- **Reducing avoidable hospitalisation**
  - HS-RH-1
    - Effectiveness of programmes (e.g. geriatric service at the front door / Emergency Department) to reduce avoidable hospitalisation
  - HS-RH-2
    - Evaluation of models of ambulatory care
  - HS-RH-3
    - Health systems research to enhance co-ordination and continuity in the transitions of care, including supporting enhanced care in the community
- **Elderly care**
  - HS-EC-1
    - Prevention of cognitive decline in old age, exploring intervention methods and models of care for dementia
  - HS-EC-2
    - Promote the bone health of elderly population and to promulgate secondary prevention of fragility fractures
  - HS-EC-3
    - Early return to function and quality of life after fragility fractures in elderly
  - HS-EC-4
    - Effectiveness of structured fall prevention programmes for elders in the community
  - HS-EC-5
    - Clinical application and service planning implication of frailty identification in older population
- **Evaluation on efficiency**
  - HS-EE-1
    - Cost-effectiveness models for better management plans
  - HS-EE-2
    - Cost-utility comparisons between treatment options
  - HS-EE-3
    - Efficiency and effectiveness of health services
- **Use of modern information technology in healthcare**
  - HS- IT-1
    - Improve quality and safety of patient care
  - HS- IT-2
    - Enhance efficiency
  - HS- IT-3
    - Facilitate public private collaboration
  - HS- IT-4
    - Enhance the capacity and ability in ambulatory / community care

### **Theme 3: Chinese Medicine**

- CM-1**        Integrated approaches in combining Chinese and Western models of health care
- CM-2**        Effectiveness of Chinese medicine in prevention/ treatment of human diseases
- CM-3**        Interactions including efficacy and toxicity of combined Chinese-western medicine
- CM-4**        Identifying quality control parameters for Chinese medicines

## **Research Area 2: Infectious Diseases**

This area focuses on the research of infectious diseases which pose potential threats in Hong Kong and neighbouring areas.

### **Theme 1: Respiratory Pathogens (including influenza and tuberculosis)**

<b>RP-1</b>	Epidemiology (including mathematical modelling)
<b>RP-2</b>	Transmission
<b>RP-3</b>	Pathogenesis
<b>RP-4</b>	Rapid diagnostic tests
<b>RP-5</b>	Novel control approaches
<b>RP-6</b>	Economic burden of disease
<b>RP-7</b>	Vaccine and therapies

### **Theme 2: Emerging & Zoonotic Diseases**

<b>EZ-1</b>	Characterise new pathogens in animals that can infect humans
<b>EZ-2</b>	Identification of risk factors that contribute to the emergence of disease
<b>EZ-3</b>	Transmission
<b>EZ-4</b>	Pathogenesis
<b>EZ-5</b>	Development of diagnostic tests
<b>EZ-6</b>	Surveillance methods for emerging infections
<b>EZ-7</b>	Vaccine and therapies

### **Theme 3: Antimicrobial Resistance**

<b>AR-1</b>	Epidemiology and burden of multi-drug resistant organisms
<b>AR-2</b>	Identification of risk factors for colonisation and infection
<b>AR-3</b>	Mechanisms of resistance and its transfer
<b>AR-4</b>	Novel tools for diagnosis or treatment guidance
<b>AR-5</b>	Optimal infection control measures
<b>AR-6</b>	Appropriate antimicrobial therapy and avoidance of antibiotic overuse
<b>AR-7</b>	Effectiveness of programmes to promote antibiotic awareness in community and antimicrobial resistance

### **Theme 4: Vaccination Programmes**

<b>VP-1</b>	Development of new vaccines
<b>VP-2</b>	Acceptability of vaccination programmes (e.g. pneumococcal vaccination in elderly) and factors affecting vaccination
<b>VP-3</b>	Effectiveness and economic analysis of vaccine (e.g. effectiveness in seasonal influenza vaccine in local community and cost-benefit analysis of hepatitis A vaccine)
<b>VP-4</b>	Measures to enhance vaccination of elderly, institutionalised or other at-risk populations

## **Theme 5: Technology Platforms**

- TP-1**            Application of the “omics” technologies in infectious diseases diagnosis and epidemiology studies
- TP-2**            Application of the new mobile IT technologies in infectious disease surveillance and contact tracing
- TP-3**            Genome sequencing and molecular epidemiology
- TP-4**            Technology substitution/supplement for traditional pathogen typing methods

## **Theme 6: Severe Sepsis**

- SS-1**            Epidemiology in Hong Kong

### **Research Area 3: Advanced Medical Research**

This area focuses on the development and use of new technologies, and treatment paradigms to improve human health. The following 4 themes are our priorities:

#### **Theme 1: Clinical Genetics**

- CG-1** Genetic and genomic study of major chronic and hereditary diseases in Hong Kong
- CG-2** Identification of biomarkers for common cancers using molecular biology approaches
- CG-3** Genetic counselling
- CG-4** Research on ethical, legal and social issues associated with advances in medical genetics and genomics

#### **Theme 2: Clinical Trials**

- CT-1** Assessing the safety and effectiveness of a new medication/ new device/ new indication of existing medication or device on a specific group of patients
- CT-2** Comparing the effectiveness in patients with a specific disease of two or more already approved or common interventions for that disease

#### **Theme 3: Neuroscience**

- NS-1** Epidemiology, identification of risk factors, prevention, diagnosis, treatment, management and rehabilitation of neurological diseases, particularly neurodegenerative diseases, stroke and injuries
- NS-2** Stem cell therapy and regenerative medicine

#### **Theme 4: Paediatrics**

- PD-1** Epidemiology, identification of risk factors, prevention, diagnosis, treatment, management in the following special areas: Neonatology, respiratory, allergy, clinical immunology, dermatology, gastroenterology, haematology, oncology, metabolic, cardiovascular, surgical diseases and nutrition (Vitamin D supplementation to exclusive breastfed babies)