

Health and Medical Research Fund
Thematic Priorities for 2021 Open Call

Infectious Diseases

**Ref. Thematic priority description
code**

Theme 1: Respiratory pathogens (Seasonal and zoonotic influenza, coronaviruses, emerging respiratory viruses, and tuberculosis)

- A-0101 Promote research, evaluation and innovation for improved and novel diagnostics, vaccines and treatments against respiratory pathogens
- A-0102 Promote operational research for prevention, control and programme delivery
- A-0103 Promote research to better understand the pathogen characteristics and host factors that drive the impact of respiratory infections
- A-0104 Identify reasons for low vaccine coverage, especially in high risk groups; develop and evaluate strategies to improve vaccine uptake
- A-0105 Identify mechanisms and risk factors for the emergence of resistance to antiviral agents to respiratory pathogens, develop and evaluate effective strategies to ameliorate resistance emergence
- A-0106 Investigate modes of transmission of respiratory pathogens (including determinants of contagiousness) and identify non-pharmaceutical interventions to limit its spread in hospitals and the community
- A-0107 Develop novel and effective surveillance methods that allow early detection of respiratory pathogens at the community level
- A-0108 Identify new correlates of immune protection against respiratory pathogens
- A-0109 Assess threats from zoonotic or other emerging respiratory pathogens and develop methods for reducing zoonotic risk.
- A-0110 Impact of co-circulation or co-infection with COVID-19 and other respiratory pathogens
- A-0111 Evaluation of concomitant use of COVID-19 vaccines with vaccines for other infectious diseases

Theme 2: Antimicrobial resistance

- A-0201 Development of novel diagnostics tools to aid diagnosis and treatment of infections and antimicrobial resistance
- A-0202 Development of novel preventive measures for antimicrobial resistance
- A-0203 Development of novel antimicrobials or other alternative agents
- A-0204 Promoting awareness and education regarding antimicrobial resistance, infection prevention and control, and antibiotic stewardship
- A-0205 Investigate the role of animal husbandry, wild-life and the environment in contributing to the increase of antibiotic resistance in humans
- A-0206 Novel approaches to decolonise patients carrying multiple drug-resistant organisms, including antimicrobial therapy and/or faecal transplantation

Theme 3: Vector-borne diseases (including mosquito-, other insect-, and rodent-borne diseases)

- A-0301 Epidemiology, monitoring and management of vectors, reservoirs and human infection of vector-borne diseases
- A-0302 Developing and testing novel molecular biology-based diagnostic assays to rapidly identify locally acquired cases of vector-borne disease
- A-0303 Novel therapeutic strategies for vector-borne diseases
- A-0304 Development and evaluation of strategies to minimise the risk of vector-borne diseases from establishing endemic transmission within Hong Kong
- A-0305 Examine the epidemiology of human rat hepatitis E infection for better understanding on its local prevalence, associated risk factors and the route of transmission

Theme 4: HIV / AIDS

- A-0401 Immune mechanisms underlying HIV/AIDS pathogenesis
- A-0402 Novel vaccines for eliciting protective immune responses
- A-0403 Innovative small molecule and immunotherapeutic drugs (including antibody drugs)
- A-0404 Therapeutic interventions to cure HIV infection or latency eradication

Theme 5: Preparedness and response to pandemic and epidemic

- A-0501 Utilising big data, artificial intelligence, digital technologies and –omics approaches for clinical and public health applications, including contact tracing, screening for infection, surveillance and clinical management
- A-0502 Evaluating psychological, societal and economic impact of infection control interventions
- A-0503 Developing assessment frameworks for ethical, legal and privacy issues on the use of digital health technology

Primary Healthcare and Non-communicable Disease

Notes:

- a) Cancer and mental illness are also types of non-communicable disease and thematic priorities for these areas are set out under the broad themes of “Cancer” and “Mental Health”.
- b) Several of the thematic priorities under the broad theme of “Primary healthcare and non-communicable disease” relate to elderly population/ageing. Please also refer to **A-0104** under the broad theme of “Infectious Diseases” and **C-0006** under the broad theme of “Mental Health”.

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B-0001	Health and health services research on major NCD including cancer, diabetes mellitus, heart disease, stroke, hypertension, respiratory diseases and closely related diseases such as musculoskeletal disorders and injury and their risk factors including unhealthy diet, physical inactivity, tobacco and nicotine use, alcohol, obesity and psychosocial problems
B-0002	Effectiveness of interventions to tackle NCD and their risk factors
B-0003	Health and health services research tackling issues relating to ageing population including sarcopenia, frailty, fracture, falls, cognitive impairment and promotion of healthy ageing
B-0004	Clinical application of knowledge from genetic/genomic analysis and gene-environment interaction to prevention / personalised treatment of NCDs
B-0005	Application of big data analytics to assist diagnosis, treatment and rehabilitation of patients with NCD
B-0006	Enhancing primary care services for the prevention of NCD and avoidable hospitalisations
B-0007	Development and evaluation of effectiveness and cost-effectiveness of collaborative, interdisciplinary, inter-sectoral and integrated care service models (including public-private interface) for prevention and management of NCD and multi-morbidity

Mental Health

Notes:

- a) Mental illness is also a type of non-communicable disease and thematic priorities for non-communicable disease are set out under the broad themes of “Primary Healthcare and Non-communicable Disease”, “Cancer” and “Mental Health”.
- b) Interdisciplinary research with a view to provide scalable, implementable, translational interventions under any of the thematic priorities listed below is appreciated.

Ref. Code	Thematic priority description
C-0001	Identify risk and protective factors and trajectories (including genetics, biological, environmental and social factors) at population level for development and prevention of mental disorders, particularly for vulnerable and disadvantaged populations such as children and adolescents, ethnic minorities, people with disabilities, etc.
C-0002	Test novel and evidence-based approach for early interventions for mental disorders
C-0003	Develop innovative service models and improve the efficiency of service delivery through implementation science and health economics research, in particular those with medical-social collaboration in the community.
C-0004	Identify means to increase mental health literacy and enhance mental wellbeing of the general public and destigmatise mental disorders
C-0005	Study factors that influence personal recovery of people with mental disorders
C-0006	Study effective measures to address physical and psychosocial needs and capacity of carers, and in particular vulnerable carers such as single mothers and elderly couples
C-0007	Apply innovative technology in the provision of accessible screening and preventative interventions and services for mental disorders
C-0008	Evaluate the impact of physical and mental comorbidity in people with mental disorders

Cancer

Note:

Cancer is also a type of non-communicable disease and thematic priorities for non-communicable disease are set out under the broad themes of “Primary Healthcare and Non-communicable Disease”, “Cancer” and “Mental Health”.

Ref. Code	Thematic priority description
D-0001	Epidemiology studies on cancer risk factors that can help formulate strategies for primary prevention
D-0002	Use of appropriate screening strategies for early identification and treatment of cancer
D-0003	Development of novel diagnostic tools; new treatment modalities including advanced surgical techniques, systemic therapy and radiotherapy to reduce mortality and morbidity
D-0004	Development and evaluation of cancer rehabilitation and cancer survivorship / palliative care delivery to address long-term and late effects of cancer
D-0005	Applied research in genetics and genomics for personalised medicine, in particular target therapies for different tumors
D-0006	Application of big data analytics to examine clinical information for better management of cancer patients
D-0007	Development and evaluation of telehealth approaches to cancer care, including patient knowledge and empowerment, screening, diagnosis, treatment and monitoring, prevention, recovery and rehabilitation services to support more efficient workflow

Implementation Science

Introduction

Implementation science aims to promote the systematic uptake of research findings and other evidence-based information into routine practice. It also aims to assess the performance, and, hence, improve the quality and effectiveness of health services. Proposals submitted under this thematic priority should aim to improve the existing healthcare system in terms of enhancing patient care or informing health policies.

There are several established theories, frameworks, models and taxonomies that can be used to analyse barriers and facilitators of implementation outcomes. Relevant frameworks include CRIR (Consolidated Framework for Implementation Research), PRISM (Practical, Robust, Implementation Sustainability Model), RE-AIM (Reach Effectiveness Adoption Implementation Maintenance), Theoretical Domains Framework (TDF), and PARHiS (Promoting Action on Research Implementation in Health Services). Human-centred design (HCD) is another framework which helps tailor innovations to fit end-users, narrowing the gap between efficacious interventions and large-scale impact.

Interested parties from non-academic institutions are highly recommended to collaborate with partners from academic institutions to prepare their implementation research proposals.

Ref.	Thematic priority description
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E-0001	Strategies to implement health promotion, prevention, screening, early detection, and diagnostic interventions, as well as effective treatments, clinical procedures, or guidelines by enhancing the existing care systems through patient-level or system-level interventions
E-0002	To develop strategies for contextualising clinical, patient-level and system-level interventions, and practice-based evidence for implementation of clinical health service and community-based practice
E-0003	To conduct formative and process evaluation for improving implementation outcomes
E-0004	Implementation of multiple levels of interventions within community or health services settings to meet the needs of complex patients and diverse systems of care

Ref. Thematic priority description

Code

E-0005 Studies of dissemination strategies that aim to promote the use of evidence and its sustainability in public policy and health care policy, and develop methods and measures focused on policy dissemination and implementation for policy contexts including assessment of applicability and adaptability. Formative studies that can inform the design of policy dissemination strategies are also of interest.