

# CALL FOR

# 2022

# Proposals

## DOST/PCHRD FUNDING

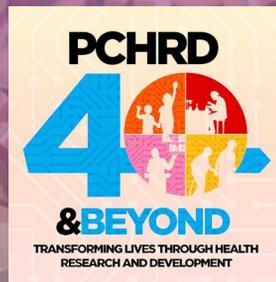


**PHILIPPINE COUNCIL FOR  
HEALTH RESEARCH AND DEVELOPMENT**

Department of Science and Technology



# PCHRD: 40 Years of Making Lives better



## The Philippine Council for Health Research and Development

is one of the three sectoral councils of the Department of Science and Technology (DOST). It is a forward-looking, partnership-based national body responsible for coordinating and monitoring health research activities in the country.

PCHRD is accepting research and development (R&D) proposals for funding in 2024. The call for proposals is for specific R&D priority areas under the Harmonized National R&D Agenda (HNRDA) which hinges on DOST's S&T thrusts, emerging and re-emerging health concerns, and health researches that will better equip the country in the next pandemic, and beyond.

This call encourages public and private higher education institutes, research and development institutes and non-profit organizations to conduct applied R&D and forge collaboration by and among organizations involved in health R&D.

# PCHRD

# PRIORITY AREAS



## 2022 DOST/PCHRD FUNDING



**Biomedical Devices  
Engineering for Health**



**OMIC Technologies  
for Health**



**Diagnostics**



**Nutrition and  
Food Safety**



**Digital and Frontier  
Technologies for Health**



**Functional Foods**



**Re-emerging and  
Emerging Diseases**



**Mental Health**



**Disaster Risk Reduction and  
Climate Change Adaptation  
in Health**



**Tuklas Lunas™  
(Drug Discovery and  
Development)**

# General considerations in formulating Program/ Project proposals



**2022** DOST/ PCHR  
FUNDING CALL

- Proposals are encouraged to harness or build on existing studies/ data, resources and technologies for further development. Some diseases/ conditions may already have information e.g. clinically-relevant biomarkers/ molecular signatures, therefore not needing new studies on biomarker discovery/ validation.
  - If the proposal will be positioning itself as “pioneering” (e.g. involving discovery of new biomarkers, or focusing on a topic wherein no previous research has been done), compelling justification/ arguments must be clearly stated to justify the need for the research.
  - For any proposal, the state of research, especially in the country, should be discussed thoroughly, including how the proposed outputs will contribute to better health outcomes, addressing the gaps and/or improvement of existing health programs.
  - For this year’s call, approved proposals will be funded and commence in 2024, therefore, relevance at that timepoint should also be considered.
- Rationale behind the choice of disease/ condition, proposed study framework/ biological model/ methodology etc. should be strongly justified and supported by relevant data.
- Proposals should be clear on how the expected outputs/ outcomes will lead to better health outcomes. For program proposals (or proposals requesting for significant resources), consider including a “Program Research Roadmap” in the “Expected Outputs/ Outcomes”, illustrating expected milestones/outputs per implementation year, and succeeding researches, especially translational studies that will have to be undertaken beyond the proposed project implementation period- to achieve the Program Outcomes. This is separate from the Project Workplan/ Gantt Chart.
- Plans for data sharing/access should be included in the proposal e.g. sharing research outputs to other researchers/ groups who might be interested in further collaboration.
- Proposed resources must be justified, especially if these will involve significant capital outlay. As stated in the DOST Grants-in-Aid Guidelines, counterpart from the Implementing Agency must be provided.
- It is encouraged that Program Proposals be multi-institutional / collaborative. In addition, relevant stakeholders (e.g. clinicians, government programs) should be engaged/consulted, even at the device development stage. For proposals that will involve clinical trials/ human trials, the proposal should already include study design details for the clinical trials phase.

# BIOMEDICAL DEVICES

# ENGINEERING FOR HEALTH



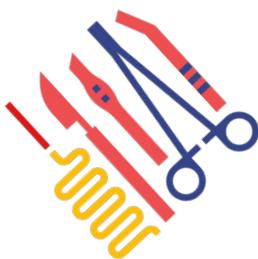
## 2022

DOST/ PCHRD  
FUNDING CALL

The **BIOMEDICAL DEVICES ENGINEERING FOR HEALTH** or **BIOMED Program** aims to develop accessible, affordable, good-quality, and innovative biomedical devices that consider sustainability of materials, manufacturing processes, and products; to develop skills and expertise in biomedical engineering and related areas, and contribute to establishing and strengthening support systems towards a Philippine Biomedical Devices Industry.

To ensure that we continuously support and elevate the Biomedical Devices Innovations in the country, we are identifying the following research topics for the upcoming Call for Proposals:

1. Technology-assisted surgical innovations for patient safety
2. Innovations in local implants development
3. Devices for postoperative/ rehabilitative/ assistive care
4. Devices for health emergency preparedness and response
5. Biomedical engineering devices in support of universal health care
6. Simulation platforms for health and disease studies



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# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH

## PRIORITY TOPICS



### 1. Technology-assisted surgical innovations for patient safety

This research area looks into surgical equipment which will result in more accessible/affordable devices, will utilize/harness local resources, and will be more appropriate for the Filipino build - all taking into consideration patient safety, local clinical practice guidelines, local health service provision and international markets.

Specific Priorities	Description	Expected Output/s
<b>Minimally-invasive surgical devices, tools and aids that can be used in either endoscopic or robotic-assisted surgeries</b>	<p>Minimally-invasive surgical equipment limits the size of incisions needed during surgeries to lessen wound healing time, associated pain, and risk of infection.</p> <p>The benefits of minimally-invasive surgical equipment include:</p> <ul style="list-style-type: none"><li>• Smaller incisions</li><li>• Less pain</li><li>• Low risk of infection</li><li>• Short hospital stay</li><li>• Quick recovery time</li><li>• Less scarring</li><li>• Reduced blood loss</li></ul>	<ul style="list-style-type: none"><li>• New equipment designed with the Filipino user in mind</li><li>• Modification of existing tools which are incompatible to the Filipino build</li><li>• Devices that are more suitable in the Philippine surgical environment</li><li>• Locally-developed, surgical equipment ready for clinical testing/ commercialization</li><li>• More affordable/accessible surgical device alternatives</li><li>• Better-suited surgical tools for Filipinos</li></ul>

# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH



## PRIORITY TOPICS

### 2. Innovations in local implants development

This research area aims to develop implants that are locally designed and sourced which can be used for surgical and non-surgical clinical devices. Ensuring patient compatibility safety should be paramount in developing these devices.

Specific Priorities	Description	Expected Output/s
1. Development of local implants	<ul style="list-style-type: none"> <li>•New materials for implant manufacturing</li> <li>•Implants for reconstructive surgery</li> <li>•Non-surgical Implants/ soft-tissue</li> </ul>	<ul style="list-style-type: none"> <li>• Locally-developed, implants ready for clinical testing/ commercialization</li> <li>• Policy recommendations how to enable increased, equitable healthcare access using medical technology innovations.</li> </ul>
2. Wearable/subcutaneous implants	Implants used for: <ul style="list-style-type: none"> <li>•Detection of symptoms</li> <li>•Monitoring of body functions</li> </ul>	

### 3. Devices for postoperative/ rehabilitative care

This research area focuses on smart biomedical devices that can lessen healing time and/or assist the specific body part to perform movement in which improvement can be monitored through built-in sensors and IoT as the treatment progresses. Materials and processes sustainability and innovation should also be factored in this area.

Specific Priorities	Description	Expected Output/s
Development of smart biomedical devices that can be used for movement rehabilitation	Biomedical devices that can: <ul style="list-style-type: none"> <li>• lessen healing time</li> <li>• assist the specific body part to regain/perform movement</li> <li>• monitor treatment progress through built-in sensors and IoT</li> <li>• utilize local and sustainable materials</li> </ul>	<ul style="list-style-type: none"> <li>• Locally-developed, devices and protocols ready for clinical testing/ commercialization</li> <li>• Low-cost rehabilitative devices</li> </ul>

# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH

## PRIORITY TOPICS



### 4. Devices for health emergency response

This research area involves the development of local biomedical devices that will equip healthcare providers, first responders, and the public for health emergencies such as pandemics and environmental disasters.

This topic also includes development of low-cost but still good quality emergency room equipment that can be alternatives in low-resource settings.

Specific Priorities	Description	Expected Output/s
<b>Development of biomedical devices used for:</b> <b>1. Health emergency situations</b>	Biomedical devices that are critical for timely and continued access of the public during health emergency situations (i.e. wound management, mobility assistance, etc.)	<ul style="list-style-type: none"><li>•Locally-developed, devices and protocols ready for clinical testing/ commercialization</li><li>•Portable and durable emergency devices</li></ul>
<b>2. Disaster response</b>	Biomedical devices that can be readily used during disasters (especially during power and water disruptions)	
<b>3. Pandemic</b>	Biomedical devices that can easily be used during pandemics, such as but not limited to: <ul style="list-style-type: none"><li>•Masks and respirators</li><li>•Ventilators and other ventilation-related devices</li><li>•Innovative personal protective equipment (PPEs) for <b>health emergency workers/ responders</b></li></ul>	

# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH

## PRIORITY TOPICS



### 5. Distributed healthcare and devices

The research area on distributed healthcare and devices aims to de-centralize health care provision by shifting from facility-based to patient-focused health care. This research area envisions innovations that will support facility-based health management and increase access to healthcare such as in geographically-isolated and disadvantaged areas (GIDAs).

This topic also includes development of low-cost but still good quality hospital equipment that can be alternatives to low-resource settings.

Specific Priorities	Description	Expected Output/s
<b>1. Development of assistive devices (e.g. prosthetics/ orthotics)</b>	<ul style="list-style-type: none"><li>Biomedical devices that can maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being, specifically:<ul style="list-style-type: none"><li>Artificial body part replacement (prosthesis) and orthosis</li><li>Mobility aids for PWDs</li></ul></li></ul>	<ul style="list-style-type: none"><li>Locally-developed devices and protocols ready for clinical testing/ commercialization</li><li>Evidence/data for policy formulation clinical practice guidance, more appropriate tools/ systems for health interventions, leading to better health outcomes</li></ul>
<b>2. Devices for better Primary Health Care provision</b> <ul style="list-style-type: none"><li>a) Elderly/geriatric care</li><li>b) Maternal and child care</li></ul>	<ul style="list-style-type: none"><li>Ensuring innovative, yet accessible technologies for elderly/ geriatric care, and maternal/ child care which can be deployed in the primary health care setting</li></ul>	

# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH

## PRIORITY TOPICS



### 6. Simulation platforms/ tools for health and disease studies

This research area aims to develop bioengineered devices that will support/augment either 1. disease studies, or 2. training of medical students/professionals.

Specific Priorities	Description	Expected Output/s
<b>1. Bioengineered tissues; “organ-on-a chip”, simulated body parts;</b>	Development of biomedical devices e.g. microfluidic systems and/ or tissue engineering to simulate tissue- and organ-level physiology for studies on disease etiology, or as possible alternatives for skin grafts or transplantation of organ parts	<ul style="list-style-type: none"><li>•Locally-developed, devices and protocols ready for clinical validation</li><li>•Locally-developed, devices and protocols ready for validation/ commercialization</li></ul>
<b>2. Locally-developed tools/ devices for medical training</b>	Devices and tools for training of medical students/ professionals, such as medical dummies, surgery simulators and tools (non- software- based)	

# BIOMEDICAL DEVICES ENGINEERING FOR HEALTH



## Considerations in formulating the proposals

1. The proposal should provide a *clear value proposition* i.e. why the proposed output/device will have more value compared to what is already available. Also, competition analysis should be included.
2. Proposals should be developed with the end-users in mind e.g. clinicians, relevant healthcare workers, patients etc. Proponents are strongly advised to collaborate and obtain inputs from these end-users even at the prototyping stage/involve them as project leaders or part of the project team.
3. For proposals/programs, a five-year development-to-commercialization (or technology transfer) plan should also be included, clearly stating the device development phase, testing phases, clinical trials, re-engineering, and commercialization phases. Target milestones should also be clearly identified.
4. Proponents are encouraged to partner with DOST-funded facilities such as Advanced Manufacturing Center (DOST- AMCEN), Electronic Products Development Centre (DOST EPDC), DOST- PTRI Medical Textile Testing Facility etc.

# DIAGNOSTICS



2022

DOST/ PCHRD  
FUNDING CALL

The **Diagnostics Program** focuses on the development of rapid, reliable, and efficient point-of-care diagnostic kits, tests, and devices for early detection and monitoring of communicable, non-communicable, and neglected tropical diseases. The program also credits the utilization of current and/ or novel technologies to improve and/ or validate existing diagnostic kits, tests, and devices.



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# DIAGNOSTICS

## PRIORITY TOPICS



### 1. Diagnostics for non-communicable diseases

Specific Priorities	Description	Expected Output/s
<p><b>Development of rapid, cost-effective, and minimally-invasive diagnostic kits/ tests for early detection and/or monitoring of non-communicable diseases such as cancer, cardiovascular diseases, and diabetes</b></p>	<p>Validation of biomarkers in detection platforms for cancer, diabetes and cardiovascular diseases</p> <p>Test kits for early detection of risks in non-communicable diseases, and for prevention and better management of these diseases such as hereditary gene testing kits important for prognosis</p> <p>Remote diagnostics for priority non-communicable diseases.</p>	<ul style="list-style-type: none"> <li>Locally-developed diagnostics ready for clinical testing/ commercialization</li> </ul>

### 2. Diagnostics for infectious diseases

Specific Priorities	Description	Expected Output/s
<p><b>Research and development of diagnostics on viral and bacterial respiratory diseases such as acute respiratory tract infection (upper and lower), pneumonia, bronchitis, tuberculosis, and influenza</b></p> <p><b>Researches on development of kits for other communicable diseases such as HIV and hepatitis</b></p>	<p>Detection and identification of volatile organic compound (VOC) biomarkers which can be used for developing point-of-care (POC) kits and diagnostic devices for viral and bacterial respiratory diseases.</p> <p>Validation of remote diagnostics for respiratory diseases for monitoring and determination of the long-term outcomes of disease.</p> <p>Proposals on building of biobank facilities for respiratory diseases' specimens and/or upgrading the existing biobank facilities -- for utilization and unified submission of epidemiological data.</p> <p>Field validation of point of care tests for HIV and hepatitis</p>	<ul style="list-style-type: none"> <li>Locally-developed diagnostics ready for clinical testing/ commercialization</li> <li>Information on the level of protection of COVID-19 vaccines</li> <li>HIV treatment and containment strategies</li> <li>Data for policy formulation</li> </ul>

# DIAGNOSTICS

## PRIORITY TOPICS



### 3. Diagnostics for neglected tropical diseases

Specific Priorities	Description	Expected Output/s
<b>Rapid, cost-effective, and minimally-invasive diagnostic kits/ tools/ tests for early detection and/or monitoring of neglected tropical diseases such as leptospirosis, rabies, and soil-transmitted helminthiasis.</b>	<p>Point-of-care tests for leptospirosis, rabies and soil-transmitted helminthiasis.</p> <p>Biorecognition tools/tests to detect intermittent presence of organisms in body fluids.</p> <p>Validation of developed kits.</p>	Tools/test for detection of leptospirosis, rabies and soil-transmitted helminthiasis

## Considerations in formulating the proposals

1. Diagnostics-related programs/project proposals should have a clear concept-to-utilization roadmap. Significant expected outputs should also be identified.
2. The proposals should provide a justification for the uniqueness of the studies e.g. comparison of proposed kits over commercially-available ones.
3. The proposals should also include risk-assessment and cost analyses.

# DIGITAL AND FRONTIER TECHNOLOGIES FOR HEALTH



## 2022

DOST/ PCHRD  
FUNDING CALL

This program aims to address the need for an efficient, equitable, and affordable healthcare system and patient management through evidence-based policy making and innovative healthcare interventions via research and development of tools utilizing artificial intelligence and new fields of information and communication technologies in digital health.

For this year's Call for Proposals, the following are the priority:

1. **Artificial intelligence in healthcare empowered by data analytics**
2. **Artificial intelligence in healthcare applications**
3. **Assessment and development of ICT-enabled health delivery services**
4. **Cybersecurity and protection for health information system**



**Program  
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# DIGITAL AND FRONTIER TECHNOLOGIES FOR HEALTH

## PRIORITY TOPICS



### 1. Artificial intelligence (AI) in healthcare empowered by data analytics

Specific Priorities	Description	Expected Output/s
<b>Improvements on healthcare services utilizing health data analytics</b>	<p>a) Interventions to improve management, delivery and utilization of healthcare services</p> <p>b) Implementation of knowledge discovery studies utilizing health data analytics</p>	<ul style="list-style-type: none"> <li>• ICT platforms for HTA studies</li> <li>• Tools for data analytics and visualization of healthcare data</li> <li>• Demand forecasting models of healthcare services and infrastructure</li> <li>• Secondary use of electronic health record data (including the design, development, and implementation of publicly available clinical data sets similar to MIMIC)</li> <li>• Cloud-based health applications</li> <li>• Supercomputing AI integration</li> </ul>
<b>Disease modeling</b>	<p>a) Mathematical modeling of infectious diseases</p> <p>b) Visual analytics of common and endemic diseases</p>	<ul style="list-style-type: none"> <li>• Real-time or near-real time disease modeling</li> <li>• GPS/ satellite-enabled application for monitoring and surveillance during outbreaks</li> <li>• Epidemiologic representation for diseases</li> </ul>
<b>Clinical Decision Support Systems (CDSS)</b>	Utilization of health data analytics to develop a decision support tool for clinicians, administrative staff, patients, caregivers, or other members of the care team to improve care quality, avoid errors or adverse events, and allow care team members to be more efficient	<p>* CDSS integration with EMRs</p> <p>* Electronic medical records (EMR)-enabled CDSS</p> <p>Specifically:</p> <ul style="list-style-type: none"> <li>• Computerized alerts and reminders to care providers and patients</li> <li>• Clinical guidelines</li> <li>• Condition-specific order sets</li> <li>• Focused patient data reports and summaries</li> <li>• Documentation templates</li> <li>• Diagnostic support, and contextually relevant reference information</li> <li>• Other related tools</li> </ul>

# DIGITAL AND FRONTIER TECHNOLOGIES FOR HEALTH

## PRIORITY TOPICS



### 2. Artificial intelligence in healthcare applications

Specific Priorities	Description	Expected Output/s
<b>Machine learning in development of computer software as diagnostic tools</b>	Developing machine-enabled diagnostic tools through complicated statistical techniques	<ul style="list-style-type: none"><li>• AI-enabled tools for medical diagnostic purposes</li></ul>
<b>Robotic application for healthcare devices</b>	Developing smart robotic devices to aid well-being of patients	<ul style="list-style-type: none"><li>• Robotic assistive devices for physical rehabilitation</li><li>• Mixed reality technology</li></ul>
<b>Development and validation of <i>Internet of Things</i> (IoT) applications for health</b>	Designation of in-silico laboratories to test health applications	<ul style="list-style-type: none"><li>• Validated wearable health monitors and data-gathering biomedical devices</li></ul>
<b>Space technology in health</b>	<ol style="list-style-type: none"><li>a) Studies on effects of microgravity to the health of humans and other organisms;</li><li>b) Utilizing space technology such as Global Positioning System (GPS) and remote sensing for public health surveillance and implementation of public health programs</li></ol>	<ul style="list-style-type: none"><li>• Applications involving robotics and AR/VR technologies;</li><li>• GPS or remote sensing-enabled alert software or sensors for environmental monitoring in public health surveillance</li></ul>

# DIGITAL AND FRONTIER TECHNOLOGIES FOR HEALTH

## PRIORITY TOPICS



### 3. Assessment and development of ICT-enabled health delivery services

Specific Priorities	Description	Expected Output/s
<b>Telemedicine and teleconsultation services</b>	Interventions in the delivery of telemedicine and teleconsultation services	<ul style="list-style-type: none"><li>• Applications for delivery of telemedicine services in low-resource/rural areas</li><li>• Development of data compression and/or automated data transmission algorithms to improve data exchange in telemedicine</li><li>• Applications aiming to innovate health education system / public health promotions</li></ul>
<b>Infodemic management</b>	Involves surveillance of social media content, both situational and real-time data, for health planning and decision making	<ul style="list-style-type: none"><li>• Social listening dashboard;</li><li>• Mobile application development</li><li>• Infodemic management tools;</li><li>• Misinformation chatbots</li></ul>

# DIGITAL AND FRONTIER TECHNOLOGIES FOR HEALTH

## PRIORITY TOPICS



### 4. Cybersecurity and protection for health information system

Specific Priorities	Description	Expected Output/s
<b>Blockchain technology application in the healthcare provider network</b>	Involves the implementation of blockchain technology software on existing interoperability layers currently being implemented in health information systems of hospitals and LGUs with Province- or City-wide health systems	Blockchain technology applications
<b>Other software ensuring the implementation of the Data Privacy Act of 2012</b>	Development of cybersecurity software throughout a health information system	Cybersecurity software
<b>Collaborations on the upbuilding of secure and efficient digital data management and security</b>	Improvement of health data-sharing and interoperability; includes ethical data-sharing	Development in the local and national repository of digital health data
<b>Optimization of forensic practices and data security</b>	Development of electronic identification, acquisition, analysis, reporting and storage of forensic data	Application for digital forensics

# DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION IN HEALTH



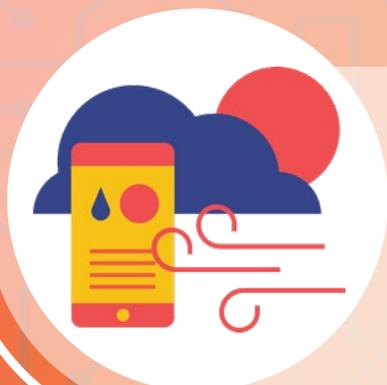
2022

DOST/ PCHRD  
FUNDING CALL

**Disaster risk reduction (DRR)** is the concept and practice of reducing disaster risks through systemic efforts to analyze and manage the causal factors of disasters by reducing exposure to hazards, lessening vulnerability of people and property, wise management of land and the environment, and improving preparedness for adverse events (UNISDR). Concrete actions to ensure that development gains are protected from disaster risk are enumerated in the Sendai Framework to which the Philippines is a signatory. **Climate change adaptation (CCA)**, on the other hand, is the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities in relation to climate change.

Disaster risk reduction and climate change adaptation, particularly in health is a significant contributor in inclusive and sustainable development of a nation such as the Philippines which is one of the many countries that experience natural disasters. Hence, scientific and technological activities and innovations in the **DRR-CCA in Health Program** are part of the priorities of the government with the aim to address the following gaps:

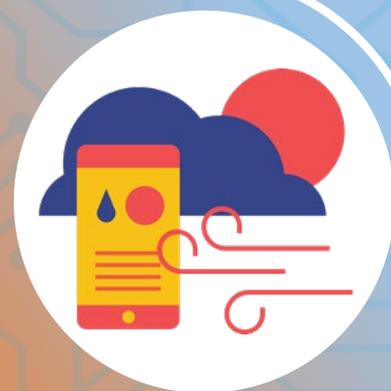
1. **Identification and characterization of climate-sensitive and/or climate-related diseases**
2. **Food security and nutrition during disasters especially for the vulnerable populations**
3. **S&T based innovations in building resilient health systems during disasters.**



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# DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION IN HEALTH



## PRIORITY TOPICS

Specific Priorities	Description	Expected Output/s
<b>S&amp;T based innovations in building resilient health systems during disasters</b>	Innovations for emergency medical care services, water, sanitation, hygiene and nutrition during disasters;	S&T based tools which improve health services during disasters
	Technology development for search and rescue, triage and health emergencies;	
<b>Food innovations to address the nutritional and health effects of disasters</b>	Researches on ready-to-use therapeutic food (RUTF) and food for disaster emergencies	Developed ready-to-use therapeutic food (RUTF) and food for disaster emergencies especially for vulnerable population
<b>Researches to ensure health consequences during disasters are reduced</b>	Prediction models or systems and other technologies to prevent or minimize negative health effects of natural or man-made disasters	Tools or inventions to ensure reduced health consequences brought about by natural or man-made disasters
<b>Climate change adaptation in health</b>	Characterization of diseases whose incidence is directly affected by climate change.	Generated data on the characterization climate change sensitive diseases for possible intervention development

# RE-EMERGING AND EMERGING DISEASES



## 2022

DOST/ PCHRD  
FUNDING CALL

Emerging and re-emerging diseases continue to pose serious and alarming threats to public health globally. Emerging diseases are diseases that have recently emerged in a population or those that are rapidly increasing in incidence or geographic range. Meanwhile, re-emerging diseases are those that reappear in a population after they have been on a dramatic decline.

The Re-emerging and Emerging Diseases (RED) Program of the Philippine Council for Health Research and Development (PCHRD) envisions to utilize research on the development of local and novel technology platforms, therapeutics, preventive measures, surveillance, control and management protocols against re-emerging and emerging diseases, for the benefit of the Filipino people, especially those marginalized and impoverished.

The current call for proposals under the RED Program will focus on:

1. Novel therapeutics and drug delivery systems against emerging and re-emerging diseases (NCDs and infectious diseases)
2. Epidemiological research on infectious and non-communicable diseases;
3. Preventive interventions (vaccine, and other modalities) against emerging and re-emerging diseases\*, and
4. Early warning, patient support and biosecurity, biopreparedness systems/platforms against emerging and re-emerging diseases.

\* The proponent is encouraged to consider partnering with the DOST Industrial Technology Development Institute (ITDI), which presently conducts initial research for the proposed Virology and Vaccine Institute of the Philippines (VIP).



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# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



### 1. Novel therapeutics and drug delivery systems against re-emerging and emerging diseases

This area aims to stimulate and support R&D for novel agents, specific and advanced multiagent therapeutic modalities, and effective drug delivery systems for control and management of infectious and non-communicable diseases toward translation/utilization to the clinical setting.

Specific Priorities	Description	Expected Output/s
<p><b>1. Development of multiagent yet specific advanced therapeutics for the following diseases:</b></p> <ul style="list-style-type: none"> <li>• Emerging infectious diseases                             <ul style="list-style-type: none"> <li>○ Arboviruses of public health importance</li> <li>○ HIV infection</li> </ul> </li> <li>• Re-emerging infectious diseases                             <ul style="list-style-type: none"> <li>○ Tuberculosis</li> <li>○ Influenza</li> <li>○ Malaria</li> <li>○ Cholera</li> <li>○ Pertussis</li> <li>○ Rabies</li> <li>○ Leptospirosis</li> <li>○ Neglected Tropical Diseases (NTD)                                     <ul style="list-style-type: none"> <li>• Helminthiasis</li> <li>• Trematode infection</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Disease characterization toward development of therapeutic strategies against emerging and re-emerging diseases</li> <li>• Characterization of arbovirus infection including investigation of public health and clinical implications</li> <li>• Epigenetics and biomarker studies of non-communicable diseases</li> </ul> <p>Development of therapeutic agent/s and modalities against emerging and re-emerging diseases</p> <ul style="list-style-type: none"> <li>• Novel and repurposed therapeutics and vaccines against HIV/AIDS, for enhancement and elongation of lives of persons with HIV/AIDS</li> <li>• Therapeutics and vaccines against arboviruses</li> </ul>	<p>Data on biomarkers and other host- or pathogen-related characteristics of emerging and re-emerging diseases</p> <p>Locally-developed/adopted technology or platform for disease characterization toward development of therapeutic strategies</p> <p>Locally-developed, designed or repurposed therapeutic agents and modalities against emerging and re-emerging diseases</p>

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<p>(con't):</p> <ul style="list-style-type: none"> <li>• Non-communicable diseases               <ul style="list-style-type: none"> <li>○ Neurodegenerative diseases                   <ul style="list-style-type: none"> <li>• Alzheimer's disease and other memory disorders</li> <li>• Parkinson's disease and other movement disorders</li> <li>• Epilepsy</li> </ul> </li> <li>○ Autoimmune disorders                   <ul style="list-style-type: none"> <li>• Autoimmune thyroid disease</li> <li>• Diabetes</li> <li>• Systemic lupus erythematosus</li> </ul> </li> <li>○ Organ Diseases                   <ul style="list-style-type: none"> <li>• Cardiovascular diseases</li> <li>• Stroke</li> <li>• Respiratory diseases</li> </ul> </li> </ul> </li> </ul>	<p>(con't):</p> <p>Development of drug delivery systems for improved or targeted delivery and controlled release of therapeutic agents against emerging and re-emerging diseases</p> <p>Development of Innovative approaches in prevention, diagnosis and management of emerging and re-emerging infectious diseases</p> <ul style="list-style-type: none"> <li>• Innovative strategies in the prevention and control of NTD</li> </ul> <p>Biobanking of clinical samples for research</p>	<p>(con't):</p> <p>Design for drug delivery systems for therapeutic agents against emerging and re-emerging diseases</p> <p>Locally-produced pseudovirions to be used for diagnostics and vaccine research</p> <p>System for secure and sustainable biobanking of clinical samples for research</p> <p>Evidence for policy recommendations</p>

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<b>2. Research on soil-transmitted, food-borne, air-borne, and water-borne diseases</b>	Disease characterization and investigation of public health and clinical implications	Data on transmission, risk factors and pathophysiology of disease  Data on public health and clinical implications of disease at local, regional, or national levels  Evidence for policy recommendations
<b>3. Evaluation of possible treatment and therapeutic modalities against the emerging and re-emerging diseases</b>	Evaluation and characterization of novel or repurposed therapeutics and vaccines against emerging and re-emerging diseases	Data on safety, efficacy/effectiveness and other pharmacotherapeutic parameters of novel or repurposed therapeutics and vaccines against emerging and re-emerging diseases  Evidence for policy recommendations

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



## 2. Epidemiological research on infectious and non-communicable diseases

This area focuses on obtaining local, regional or national epidemiologic data for determination of factors affecting disease incidence, transmission, and other outcomes. It also aims to utilize S&T advancements to develop and/or enhance disease mapping and surveillance systems for prediction and risk management of re-emerging and emerging diseases for eventual use in the field

Specific Priorities	Description	Expected Output/s
<b>1. Epidemiology of re-emerging and emerging infectious and non-communicable diseases specified under specific priorities in the first table</b>	<p>Epidemiological research (e.g., incidence/prevalence, outbreak research)</p> <ul style="list-style-type: none"><li>• Mapping of arbovirus outbreaks</li></ul> <p>Establishment of databases and surveillance systems in urban and rural areas</p>	<p>Robust local epidemiologic data or data collection systems</p> <p>Secure and well-maintained databases and surveillance systems</p>
<b>2. Use of science, technology and innovation to map disease incidence and outbreaks and to develop simulation models for prediction and risk management</b>	<p>Development of strategies for vector surveillance and control</p> <ul style="list-style-type: none"><li>• Vector surveillance and control/management of arboviruses</li></ul> <p>Development of simulation models for prediction and risk management</p> <ul style="list-style-type: none"><li>• Simulation models for dengue prediction and risk management</li></ul>	<p>Locally-developed, suitable and effective surveillance and control system</p> <p>Locally-developed simulation models for prediction and risk management based on updated and accurate local data</p>

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



### 3. Preventive interventions (vaccine and other modalities) against emerging and re-emerging diseases

This area focuses on improving health outcomes through R&D of preventive interventions including but not limited to vaccination. Using advances in bioinformatics and biotechnology, the aim is to enable R&D for prevention of disease and adverse outcomes, to forward ongoing R&D efforts in this area into translation/application, and to contribute evidence for recommendations which serve as basis for public health policies.

Specific Priorities	Description	Expected Output/s
<b>1. Studies leading to prevention of transmission of HIV/AIDS</b>	Research on local burden of disease and how to reduce it, and factors affecting transmission of HIV/AIDS  Development of strategies for early detection, early intervention and/or prevention of transmission of HIV/AIDS  Behavioral and sociocultural studies	Evidence for policy recommendations
<b>2. Development of bioinformatics computational facilities dedicated to virology, vaccinology and vaccine development</b>	Development of bioinformatics protocols for virology studies, and vaccine design and evaluation  Biobanking of clinical samples for research	Bioinformatics and computational methods for virology studies and vaccine development  Locally-developed vaccines and/or vaccine platforms/technologies

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<b>3. Development of preventive interventions against CVD, diabetes, obesity, cancer and COPD</b>	<p>Research on biomarkers, risk factors and disease characteristics which have implications on preventive interventions</p> <p>Development of preventive interventions and evaluation thereof in the prevention of CVD, diabetes, cancer or COPD</p>	<p>Data on biomarkers, risk factors and other disease characteristics with implications on interventions relevant to the country</p> <p>Preventive interventions or strategies, research-based policy recommendations</p>
<b>4. AMR biotechnology research for prevention and detection</b>	<p>Research on AMR and AMR detection</p> <p>Biotechnological innovations research for prevention of AMR</p> <p>Development of strategies to prevent AMR with consideration of principles of One Health</p>	<p>Robust local data on the AMR status of the country</p> <p>Technologies, methods or platforms for prevention of AMR</p>

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



### 4. Early warning, biosecurity, biopreparedness and patient support systems/platforms against emerging and re-emerging diseases

In this area, the focus is to foster resilience in the face of re-emerging and emerging diseases through R&D. Through R&D on early warning, biosecurity and biopreparedness systems, measures are developed and/or evaluated as regards preventing or mitigating adverse outcomes from re-emerging and emerging diseases. Recognizing the multiple dimensions of health, R&D on patient support systems focus on behavioral and psychosocial aspects of emerging and re-emerging diseases.

Specific Priorities	Description	Expected Output/s
<b>1. Development of early warning systems integrating disease, entomological, environmental and sociodemographic data for immediate response and the prediction of outbreaks</b>	<p>Development of an early warning/alert systems for emerging and re-emerging infectious diseases</p> <ul style="list-style-type: none"><li>• Development of an early warning system for arboviruses for immediate response</li></ul>	<p>Robust data and/or data collection system which can be used for the development of early warning systems for outbreaks</p> <p>Locally-developed early warning/alert systems</p> <ul style="list-style-type: none"><li>• Alert levels integrating data on dengue &amp; zika virus infections, entomological, environmental and sociodemographic data for prediction of arbovirus outbreak</li></ul> <p>Preventive measures to avoid public health crises due to emergence and re-emergence of communicable diseases</p> <p>Efficient and strengthened systems for data collection and database generation</p>

# RE-EMERGING AND EMERGING DISEASES

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<b>2. Research on support and interventions for patients with emerging and re-emerging diseases specified under specific priorities in the first table</b>	Development and/or evaluation of interventions for improvement of quality of life <ul style="list-style-type: none"> <li>Interventions for people with HIV</li> </ul>	Locally-developed, adapted and/or evaluated interventions and corresponding data to provide basis for policy recommendations
	Research on equity in health <ul style="list-style-type: none"> <li>Equity in health for people with HIV</li> <li>Improving access to healthcare</li> </ul>	Evidence for policy recommendations: data on equity and/or disparities, strategies to improve access
	Behavioral and sociocultural studies <ul style="list-style-type: none"> <li>Preventive interventions</li> <li>Patient support</li> </ul>	R&D initiatives to increase awareness, improve quality of life and lessen economic burden of disease

## Considerations in formulating the proposals

1. Rationale behind the choice of disease/ condition, proposed study framework/ biological model/ methodology etc. should be strongly justified and supported by relevant data.
2. For any proposal, the state of research, especially in the country, should be discussed thoroughly, including how the proposed outputs will contribute to better health outcomes/ improvement of existing health programs.
3. It is encouraged that Program/Proposals be multi-institutional / collaborative; in addition relevant stakeholders such as Industrial Technology Development Institute (DOST-ITDI) and clinicians should be engaged.

# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



2022

DOST/ PCHRD  
FUNDING CALL

The **OMIC Technologies for Health Program** utilizes information from different 'OMIC' technologies, such as genomics, transcriptomics, proteomics, metabolomics and bioinformatics, as input to the development of precision medicine, diagnostics, therapeutics, and as a support to health & clinical practice guidelines and policies of the Philippines.

The continuity of the country's long-term investments in OMICS research is ensured in this current Call for Proposals, which will focus on building on the collective success of the previous projects and programs while encouraging the submission of proposals on other important but often overlooked health research and policy issues. Neuroscience OMICS, cancer research, researches on rare diseases, translational studies on NCDs, and population and forensic studies will be at the forefront, along with the possible adaptation of the genomic biosurveillance model developed for SARS-CoV-2 strains to other emerging and re-emerging disease.



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# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



2022

DOST/ PCHRD  
FUNDING CALL

For this call, the following topics are identified:

## **Multi-omics approach on health and diseases**

- a) Cancers, including lung, liver, colorectal, etc.; may include use of proteomics or metabolomics approaches
- b) OMIC researches in neurosciences: focus on established neurological, neurodegenerative, or psychiatric diseases of relevance in the Philippines
- c) Studies on pre-, peri-, and post-partum conditions affecting maternal and child health
- d) The use of OMIC technologies in addressing malnutrition among children and adults

## **Genomic epidemiology studies: infectious diseases; rare diseases**

- a) Expanding genomic biosurveillance coverage to include infectious diseases of priority in the Philippines using next-generation sequencing
- b) Researches on the incidence and prevalence of rare diseases of relevance in the country (following Republic Act 10747 "Rare Disease Act") using genomic biosurveillance



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# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



**2022**

**DOST/ PCHRD  
FUNDING CALL**

## **Translational -omics research for precision medicine**

- a) Validation of discovered biomarkers for NCDs among Filipinos on the following:
  - cardiovascular diseases,
  - diabetes mellitus, and
  - different cancers
- b) Functional studies (pharmacokinetic studies, cellular models) arising from pharmacogenetic studies on NCDs and cancers
- c) Research on novel therapies for cancer using Filipino OMICS data
- d) Establishing a national reference sequence for Filipino diseases such as NCDs and cancers
- e) Host immune responses for infectious diseases

## **OMICS for Forensics, Ethnicity and Population Studies**

- a) Filipino population OMICS studies
- b) Forensic DNA profiling technology studies



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# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



## PRIORITY TOPICS

### 1. Multi-omics approach on health and diseases

The use and integration of multiple platforms such as genomics, transcriptomics, proteomics, metabolomics, and bioinformatics/ AI/ computational pipelines is essential to provide a more comprehensive view of a specific human condition e.g. disease or state of health.

Through this multi-perspective approach, it is envisioned that more comprehensive information regarding diseases/ conditions of utmost importance in the country will be generated, and in greater resolution. This information is expected to be translated **into tools for pre-emptive lifestyle intervention, better disease diagnosis and prognosis, prediction of treatment responses, as well as targets for development of diagnostics and therapeutics, focused on the Filipino population.**

Specific Priorities	Description	Expected Output/s
<p><b>1. Cancers</b></p> <ul style="list-style-type: none"> <li>Leukemia</li> <li>Prostate</li> <li>Cervix</li> <li>and others</li> </ul> <p><b>2. Neurological, neuro-degenerative, or psychiatric diseases of relevance in the Philippines</b></p> <ul style="list-style-type: none"> <li>Cerebrovascular disease</li> <li>CNS neoplasms</li> <li>Seizure disorders</li> <li>Movement disorders</li> <li>Dementia</li> <li>and others</li> </ul> <p><b>3. Studies on pre-, peri-, and post-partum conditions affecting maternal and child health</b></p> <p><b>4. The use of OMIC technologies (i.e. metabolomics) in addressing malnutrition among children and adults</b></p>	<p><i>Proposals may cover any or all of the following:</i></p> <ol style="list-style-type: none"> <li>Fundamental research: discovery and validation of biomarkers as biological signatures in signatures of the pathophysiology associated with the specific disease/ condition</li> <li>Integrating bioinformatics/ computational/ machine-learning pipelines and/or technologies with discovery/ validation of clinically biomolecular markers/ signatures for diagnosis, patient stratification, prognosis or monitoring or prediction of treatment/ therapy/ intervention response and side effects for the specific disease/ condition</li> <li>Integrating local -OMICs data with clinical and/or epidemiological research for a more holistic insight on disease causation</li> </ol>	<p><i>Outputs may cover any or all of the following:</i></p> <ul style="list-style-type: none"> <li>List/ database of biomarkers, biological signatures</li> <li>Computational/ machine-learning pipelines and/or technologies (e.g. software tools, programs, etc.) integrating clinically relevant biomolecular markers/ signatures, which can be used/ further developed for diagnosis, patient stratification, prognosis or monitoring or prediction of treatment response and side effects etc.</li> <li>Better/ more informative biological/ disease models incorporating informative of diagnosis, prognosis, treatment evaluation/ response</li> <li>Evidence/data for policy formulation clinical practice guidance, more appropriate tools for health interventions, leading to better health outcomes</li> </ul>

# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



## PRIORITY TOPICS

### 2. Genomic epidemiology studies (infectious diseases, rare diseases)

The genomic epidemiology research area involves the use of genomic technology platforms and associated technologies to actively gather, analyze and interpret data related to disease activity and threat in order to provide early warning of health threats, early detection of health events, and overall situational awareness of disease activity.

Proposals in this topic are advised to carefully look into existing genomic epidemiology studies/ programs, to make sure that there will be no duplication.

Specific Priorities	Description	Expected Output/s
<ol style="list-style-type: none"><li>1. Infectious diseases of priority in the Philippines</li><li>2. Rare diseases of relevance in the country</li></ol>	Involves use of genomic technologies and systems that will enhance the efficiency and sensitivity of biosurveillance including how to scale and sustain these systems.	<ul style="list-style-type: none"><li>• Genomic biomarkers and scalable/ sustainable systems for enhanced biosurveillance</li><li>• Evidence/data for policy formation, clinical practice guidance, improved systems/ tools leading to better health surveillance and interventions.</li></ul>

# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



## PRIORITY TOPICS

### 3. Translational -omics research for NCDs for precision medicine

Translational -omics refers to the deployment/ application of information/ knowledge to individual patients. It promises a new way of investigating and treating disease by targeting the molecular fingerprint of a given condition/state in specific populations/ groups (Wafi & Mirnezami, 2018).

Specific Priorities	Description	Expected Output/s
<ol style="list-style-type: none"> <li>1. Cardiovascular Diseases</li> <li>2. Diabetes Mellitus</li> <li>3. Cancers of relevance / priority in the country                             <ol style="list-style-type: none"> <li>1. Lung</li> <li>2. Liver</li> <li>3. Colorectum</li> <li>4. Breast</li> </ol> </li> <li>4. Host immune response for infectious diseases</li> </ol>	<ol style="list-style-type: none"> <li>1. Validation of clinically biomolecular markers/ signatures for diagnosis, patient stratification, prognosis or monitoring or prediction of treatment response, and targeted therapies</li> <li>2. Functional studies (pharmacokinetic studies, cellular models) arising from pharmacogenetic studies on NCDs and cancers</li> <li>3. Proof-of-concept researches on novel therapies (small molecules) for cancer using Filipino OMICS data</li> </ol>	<ul style="list-style-type: none"> <li>• Validated and clinically-relevant biomolecular markers/ signatures for better disease stratification, prognosis or monitoring or prediction of treatment response, and targeted therapies</li> <li>• Evidence/data for policy formulation clinical practice guidance, more appropriate tools/ systems for health interventions, leading to better health outcomes</li> <li>• Established national reference sequence for Filipino diseases such as NCDs and cancers</li> </ul>

# 'OMIC' TECHNOLOGIES FOR HEALTH (OMICS)



## PRIORITY TOPICS

### 4. OMICS for forensics, ethnicity, and population studies

The practical applicability of population OMIC studies in the country is exhibited by its contribution to ethnic and forensic research and practice. The Council would like to build on the findings of previous population and forensic OMIC research, in particular, through the development of tangible applications of generated data.

Note: Proposals that build from previous DOST/ PCHR funded research will be given priority.

Specific Priorities	Description	Expected Output/s
<ol style="list-style-type: none"><li>1. Filipino Population OMICs Studies</li><li>2. Forensic DNA Profiling Technologies</li></ol>	Validation and application of Filipino genomic data in forensic sciences and population studies	<ul style="list-style-type: none"><li>• Locally-developed kits/ technologies in support of the Philippine criminal justice system</li><li>• Filipino-specific sample resource and population reference database/ sample bank</li></ul>

# NUTRITION AND FOOD SAFETY



2022

DOST/ PCHR  
FUNDING CALL

The **Nutrition and Food Safety Program** seeks to address the human nutrition problems in the country such as micronutrient and macronutrient deficiencies, overnutrition, nutrition related diseases, as well as the current and emerging issues in food safety. The program aims to explore avenues and opportunities using science, technology, and innovation in providing solutions for the improvement of Filipinos' health through proper nutrition and safe food.



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# NUTRITION AND FOOD SAFETY

## PRIORITY TOPICS



Nutrition		
Specific Priorities	Description	Expected Output/s
<b>1. Maternal and child nutrition</b>	<ul style="list-style-type: none"> <li>• Undernutrition in adolescent pregnant women</li> <li>• Undernutrition in infants and children below 5 years</li> <li>• Perinatal nutrition of older mothers (pregnancy after age 35)</li> </ul>	<ul style="list-style-type: none"> <li>• Information from prevalence and intervention studies on the undernutrition in adolescent pregnant women</li> <li>• Information from studies on appropriate perinatal nutrition for older women</li> <li>• Policies on improvement of maternal and child health in the Philippines</li> </ul>
<b>2. Malnutrition and infectious diseases</b>	<ul style="list-style-type: none"> <li>• Studies on interventions for the management of malnutrition in relation to infectious diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Developed recommendations/ guidelines/ manuals/ materials for standard-of-care patient management</li> </ul>
<b>3. Upgrading of dietary assessments and plans</b>	<ul style="list-style-type: none"> <li>• Personalized diets using OMIC technologies</li> <li>• Assessment of prevalence and efficacy of fad diets</li> </ul>	<ul style="list-style-type: none"> <li>• Developed tools or mobile applications for personalized diets</li> <li>• Information on prevalence and efficacy of fad diets</li> <li>• Improved information materials for public dissemination</li> </ul>
<b>4. Nutrition assessment in selected populations</b>	<ul style="list-style-type: none"> <li>• Nutrition Assessment of individuals with physical and mental/intellectual disabilities</li> </ul>	<ul style="list-style-type: none"> <li>• Developed tools for improved nutrition assessment</li> </ul>
<b>5. Sports nutrition</b>	<ul style="list-style-type: none"> <li>• Development of products appropriate for sports and exercise using locally available commodities</li> </ul>	<ul style="list-style-type: none"> <li>• Developed safe and effective products ready for technology adoption</li> </ul>

# NUTRITION AND FOOD SAFETY

## PRIORITY TOPICS



### Food Safety

Specific Priorities	Description	Expected Output/s
<b>Dietary exposure assessment of selected chemical hazards in foods</b>	Qualitative and/or quantitative evaluation of the population intake of selected chemical hazards in the Filipino diet	<ul style="list-style-type: none"><li>• Information on the consumption patterns and levels of chemical hazards in food</li><li>• Improved policies on food production and safety monitoring</li></ul>
<b>Exposure assessment of selected microbiological hazards/pathogens in foods</b>	Qualitative and/or quantitative evaluation of the population intake of microbiological hazards/pathogens via food	<ul style="list-style-type: none"><li>• Information on the occurrence and concentrations of selected microbiological hazards in locally available foods</li><li>• Improved policies on food production and safety monitoring</li></ul>
<b>Technologies and approaches for prevention, traceability, and outbreak response</b>	Research on the development of technologies and approaches for the prevention, traceability, and outbreak response to diseases related to food safety	<ul style="list-style-type: none"><li>• Developed or updated technologies/tools for improvement of food safety monitoring system</li></ul>

# FUNCTIONAL FOODS



2022

DOST/ PCHRD  
FUNDING CALL

The **Functional Food Program** of PCHRD focuses on researches tackling crops and food products that have possible health advantages beyond their distinctive nutritional benefits for the prevention of non-communicable diseases.

For 2024, the commodities identified for research prioritization are the following: root crops, seaweeds, local berries, unpolished and pigmented rice, indigenous vegetables, underutilized fruits, pulses, and local citrus fruits.



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# FUNCTIONAL FOODS



## PRIORITY TOPICS

Specific Priorities	Description	Expected Output/s
<b>Unpolished and pigmented rice, seaweeds, indigenous vegetables, underutilized fruits, pulses, and local citrus fruits</b>	<ul style="list-style-type: none"><li>• Studies on characterization, safety assessment, efficacy, and product development</li></ul>	<ul style="list-style-type: none"><li>• Information on the health relevant components of the mentioned commodities</li><li>• Functional food product or ingredient with established health benefits</li></ul>
<b>Root crops</b>	<ul style="list-style-type: none"><li>• Efficacy studies on root crop-based products (sweet potato and purple yam)</li><li>• Studies on characterization, safety assessment, efficacy, and product development of other root crops</li></ul>	<ul style="list-style-type: none"><li>• Information on the health relevant components of root crops</li><li>• Functional food product or ingredient with</li><li>• Established health benefits</li></ul>
<b>Local berries</b>	<ul style="list-style-type: none"><li>• Product development for lipote and bignay and efficacy studies on the developed product</li><li>• Studies on characterization, safety assessment, efficacy, and product development of other local berries</li></ul>	<ul style="list-style-type: none"><li>• Information on the health relevant components of local berries</li><li>• Functional food product or ingredient with established health benefits</li></ul>

# MENTAL HEALTH



## 2022

DOST/ PCHRD  
FUNDING CALL

In 2018, the Philippine Mental Health Act or RA 11036 was enacted after 15 years of lobbying and advocacy. Based on the law, research and development shall be conducted in collaboration with academic institutions, NGOs, and psychiatric, neurologic, and related associations to gather needed data for the development of a culturally-relevant national mental health program (Lazo and Ignacio, 2019).

In response to the needed research and innovation for mental health, the Philippines' Mental Health Research Agenda was launched on October 11, 2019. The agenda focuses on the following three themes which are outcome based: (1) Improved Mental Health Information System, (2) Strengthened Leadership and Governance, and (3) Accessible, Affordable, Responsive and Holistic Mental Health Services. Guided by these themes, the Mental Health Program of PCHRD aims to support researches on providing quality, effective, and culture- appropriate mental health R&D innovations.



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# MENTAL HEALTH

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<b>Social Determinants for Mental Health</b>	Research on the development of science and technology innovations in relation to the various social determinants which affect the mental health in the nation.	<ul style="list-style-type: none"><li>• Guidelines on how to improve social determinants related to mental health</li><li>• Policy recommendations for MH practitioners</li></ul>
<b>Inventory and Evaluation of Mental Health Interventions</b>	<ul style="list-style-type: none"><li>• Research on the effectiveness, assessment, management, and evaluation of various existing mental health interventions in the country, including the development of guidelines for community-based MH services.</li><li>• Research on effective interventions or services for special populations (i.e. elderly, children, women, etc.)</li></ul>	<ul style="list-style-type: none"><li>• Inventory of existing MH interventions or services</li><li>• Monitoring and evaluation tools specific for local MH intervention programs</li><li>• Policy recommendations on best-practice interventions for LGUs</li></ul>
<b>Standardization of Mental Health Services</b>	Research on the standardization of mental health services for implementation across various settings.	<ul style="list-style-type: none"><li>• Manuals on how to implement specific MH interventions</li></ul>

# MENTAL HEALTH

## PRIORITY TOPICS



Specific Priorities	Description	Expected Output/s
<b>ICT for Mental Health</b>	Research on the development and use of web and mobile-based applications and the improvement of existing information systems, which includes inter-clinic referral systems, electronic medical records, remote patient monitoring systems, and patient portals for effective delivery of mental health services at all levels of health care.	<ul style="list-style-type: none"><li>• Web- and mobile-based applications geared towards improvement of mental health service delivery</li><li>• Improved information systems for both MH service practitioners and users</li></ul>
<b>Diagnostics and Omics Technology for Mental Health</b>	Research on the generation of new knowledge about mental health using genomics, proteomics, transcriptomics, and metabolomics and the utilization of off-patent or lapsed and/or novel technologies including the localization of existing tools for appropriate management of mental health.	<ul style="list-style-type: none"><li>• Localized tools for the diagnosis and/or management of mental health conditions</li><li>• Generated data using omics technologies to contribute to the development of personalized treatment and management of Filipinos' mental health</li></ul>

# Tuklas Lunas™

## (Drug Discovery and Development)



# 2022

DOST/ PCHRD  
FUNDING CALL

The **Tuklas Lunas Program** is the drug discovery and development program of the DOST and PCHRD which envisions to “produce world-class medicines derived from the Philippine biodiversity, leveraging on local expertise”.

Building on the experience and successes of the National Integrated Research Program on Medicinal Plants (NIRPROMP) which produced lagundi and sambong herbal drugs now valued to be a Php 1 billion industry , Tuklas Lunas aims to further tap into the potential of Philippine biodiversity as sources of drug candidates, contribute to addressing local need for more safe, effective, affordable and accessible locally-developed health products; and to the growth of the local natural products and pharmaceutical industry.

Recognizing that as much as USD 1 billion may be needed to bring one (1) successful drug from discovery to commercialization, the Tuklas Lunas program has adapted a strategic framework which pursues two tracks of development: (1) Shorter track: development of standardized herbal drugs, (2) Longer/Standard track: the identification of high-value compounds that can be offered for early licensing for further development as drugs. In the process, several outputs may be produced such as functional food, standardized herbal supplements, standardized herbal drugs, and pure drug candidate compounds.

The Tuklas Lunas program supports the following:

1. **Building institutional and human capacity for discovery and development of natural products through R&D grants**
2. **Developing bioresources (unique in the regions) into natural products**
3. **Bringing candidate substances/compounds to a stage where they are sufficiently de-risked and ripe for early licensing (not necessarily for full product development).**



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# Tuklas Lunas™

(Drug Discovery and Development)



## PRIORITY TOPICS

To date, several bioactive principles have been extracted and tested for toxicity and are now ready for formulation and animal testing. For this year's call, it is the priority to move forward these technologies in the pipeline to the next phase in the drug development process. Hence, the following new/additional call themes are prioritized:

Priorities	Description	Expected Output/s
<b>Researches on drug delivery systems</b>	Use of nanotechnology in improving the delivery of herbal formulation and drugs, with preference for existing products with formulation concerns.	Developed technology in "nanofying" herbal formulations.
<b>Researches on drug/pharmaceutical excipients from natural sources</b>	Development of safe, nonreactive, biocompatible, excipients sourced using natural sources.	Drug/pharmaceutical excipient from natural sources for possible use by the pharmaceutical industry.

# CALL SCHEDULE



**2022**  
DOST/ PCHRD  
FUNDING CALL

**OPENING 01 March 2022**  
**OF CALL 12:00 AM**

## SUBMISSION PERIOD

**CLOSING 31 March 2022**  
**OF CALL 5:00 PM**

**Submit via:**

**<https://dpmis.dost.gov.ph/>**

*All submissions must go through the DOST Project Management Information System (DPMIS).  
No email / mailed-in submissions will be processed*

# CALL FOR PROPOSALS



2022

DOST/ PCHRD  
FUNDING CALL

Mental Health  
Functional Foods  
Nutrition and Food Safety

Ms. Marianne Joy Gochangco-Laya  
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Disaster Risk Reduction and  
Climate Change Adaptation in Health

Ms. Nheka Louise de Mesa  
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OMIC Technologies for Health  
Biomedical Devices Engineering  
for Health

Mr. Jose Joy Gepanaga  
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Re-emerging and Emerging  
Diseases

Ms. Cecile G. Dumol  
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Digital and Frontier  
Tech for Health

Ms. Pearl Kathleen Tumlos  
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Diagnostics

Ms. Mary Ann Pacho  
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Tuklas Lunas

Ms. Melissa Bulao  
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General concerns

[info@pchrd.dost.gov.ph](mailto:info@pchrd.dost.gov.ph)

