

**REGIONAL UNIFIED  
HEALTH RESEARCH  
AGENDA 2017-2022**

**REGION IV-A**  
CALABARZON



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# REGIONAL UNIFIED HEALTH RESEARCH AGENDA 2017-2022

## Region IV-A: CALABARZON

### Introduction

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The Philippines is at a turning point where it is slated to reap the benefits of health research investment towards the country's economic, social, and scientific growth (Philippine National Health Research System, 2018). Research has a huge role in the competitive edge of the country to boost its health economy local and abroad. There is huge potential in expanding innovation, health services in the country, and production of health goods, as well as in building the capacity of highly qualified Filipino healthcare managers and researchers. Setting a research agenda is essential to maximize the impact of investments and is regarded as key in strengthening health research systems.

The Philippine National Health Research System, with its goal to enhance health status through health research, generates the National Unified Health Research Agenda (NUHRA) as one of its core areas, alongside ethics, utilization, resource mobilization, system monitoring and evaluation, and capacity building. While the NUHRA serves as the country's template for health research and development efforts, previous evaluations revealed that the Regional Unified Health Research Agenda (RUHRA) was still perceived as more important as it was more relevant to regional problems and gave direction at the regional level (Ramos-Jimenez et al., 2015).

In the development of NUHRA 2017-2022, the Regional Health Research and Development Consortium (RHRDC) of each region was included in the identification process of health research priorities through the conduct of a consultation with other relevant stakeholders. Their inputs, together with technical papers and situationers defining the national and regional status of health research, were considered as important contributions in the formulation of the NUHRA and RUHRA (Philippine National Health Research System, 2018). The RUHRA presents the identified health research priorities and a contextual analysis of each and should guide researchers and funders alike in the development of more relevant health research in the region for the next six years.

Beyond research agenda setting, there is a challenge in equipping health professionals and researchers with good opportunities in an academic environment of innovation and research. Each region should also consider strengthening capacity in the implementation of RUHRA, management of research, and ultimately generating research outputs that can compete in local and global markets.

Regional health researches primarily focused on environmental health, specifically about the effects of pollution or contamination due to industry-based sources. In the current RUHRA, projects of highest priority are improving maternal, neonatal and child health, and addressing infectious diseases, especially sexually transmitted infections (STIs) and dengue. Prioritized

research areas also include food safety and nutrition, health system improvement, and environmental health among others. This document outlines the methods undertaken in the development of RUHRA and the health research priorities identified for Region IV-A.

## Regional Consultation

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The regional consultation was held on 18-19 May 2017 facilitated by the Alliance for Improving Health Outcomes, Inc. A total of 19 stakeholders attended the regional consultation (Annex A). The two-day consultation was broken down into four main activities.

Each participant was provided with a regional consultation package, which included the consultation design and program. Technical papers were presented to provide a context on the research and policies of government and multinational agencies. A regional situationer, which described the stakeholders, health research context, and health challenges, issues, gaps, and threats in the region, was also presented.

The research priorities and perceived needs of each representative were raised through small focus group discussions, with participants grouped into two: academe and non-academe. Both groups proposed possible research topics, which were presented to the plenary by a representative from each group. This activity generated a list of research themes.

To prioritize the generated health research themes, participants were asked to select an appropriate set of criteria. Participants wrote down their preferred criteria on metacards and the facilitator grouped similar criteria in front of the plenary. The selected set of criteria and weights were the following: health impact (40%), magnitude of the problem (30%), feasibility of study (20%), and innovation (10%). The scoring result is presented in Annex B.

## Health Research Priorities of the Region

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The research priorities for Region IV-A comprise of 19 themes. The top five priorities in the region are: (1) maternal, neonatal, and child health; (2) infectious diseases; (3) HIV, AIDS and other sexually transmitted infections; (4) reproductive health; and (5) dengue. Themes have corresponding specific research topics. These themes and topics are presented below, together with a brief situational analysis or data specific to the region.



### **Maternal, neonatal, and child health**

Research on maternal, neonatal and child health services and its utilization

The percentage of fully immunized children (59%) in the region did not meet the World Health Organization (WHO) target of 80% in 2015. The region had the second lowest percentage of pregnant women with four or more prenatal visits at 39%. The percentage of women given two of tetanus toxoid vaccination (22%) and iron with folic acid (37%) was also low

(Department of Health, 2015). Specific research topics include:

- a. Community healthcare programs for mothers and children
- b. Investigating the maternal healthcare utilization in the region
  - i. Prenatal check-up in the region
    - Diet restriction among gestational diabetes mellitus and hypertensive patients
  - ii. Labor and delivery in a tertiary hospital
    - Primigravida
    - High risk pregnant women
- c. Knowledge, attitudes, and practices (KAP) studies on maternal health
  - i. Indigenous people
- d. Maternal mortality
  - i. In referral hospitals
- e. Child morbidity and mortality
  - i. Under-five mortality
    - toddlers and schoolers
- f. Child health
  - i. Wellness programs
  - ii. Implementation and evaluation of immunization and other programs
  - iii. Assessment and evaluation of health and development status (physiologic, mental, cognitive, psychiatric, behavioral and growth)



## Infectious diseases

Research on prevalent infectious diseases in the region

The region had the second highest rate of acute bloody diarrhea in the country in 2015. In addition, the region had one of the top five highest rates of morbidity due to acute lower respiratory tract infection and pneumonia (Department of Health, 2015). Specific research topics include:

- a. Vector-borne diseases
  - i. Chikungunya
  - ii. Zika
- b. Vectors
  - i. Mutations
  - ii. Behaviors
- c. Zoonotic diseases
  - i. KAP of various sectors on rabies
  - ii. Leptospirosis
- d. Less documented diarrheal diseases
- e. Neglected tropical diseases (e.g. parasitism)
- f. Transfusion-transmissible infections



## HIV, AIDS, and sexually transmitted infections

Research on factors that affect the spread of HIV, AIDS, and sexually transmitted infections, including monitoring & evaluation of programs

In 2016, there were 1,426 human immunodeficiency virus (HIV) cases reported in the region, the second highest in the country (Department of Health, 2017). In January 2017, over 150 of the 844 new HIV antibody seropositive individuals reported nationwide were from the region. Specific research topics include:

- a. Incidence and prevalence
  - i. Co-infection and/or opportunistic infections
  - ii. Adolescents and youth
  - iii. Men having sex with men, lesbian, gay, bisexual, and transgender
- b. Socio-behavioral studies
- c. Health education promotion
- d. Case finding
  - i. Voluntary testing and counseling programs and strategies
- e. Treatment
- f. Monitoring and evaluation of programs



## Reproductive health

Research on factors leading to early pregnancy and contraception and immunization in men and women

With a contraceptive prevalence rate of 43%, the region failed to meet the 65% national target in 2015 (Department of Health, 2015). In 2013, 23% of women in the region age 15-24 have had a live birth, while 24% have begun childbearing (Philippine Statistics Authority and ICF International, 2014). Specific research topics include:

- a. Pregnancy in less than 17 years old
  - i. Lessening risky behaviors and bad outcomes
  - ii. In relation to maternal deaths
  - iii. Prevalence
- b. Contraception in men and women
- c. Immunization in men and women



## Dengue

Research on causes of continued high prevalence of dengue in the region, including treatment and monitoring & evaluation of programs

In 2014, the region had the highest number of cases in the country at 9,430. (Department of Health, 2014) A study in Cavite in 2016 estimated that the burden of dengue was 178,282 disability-adjusted life years. This means that one year of full healthy life is lost per 17 persons in the Cavite population. The average annual cost per dengue case was PHP 32,324 in the province. The largest number of dengue cases per 1,000 population was from children and adolescents aged 5-14 years (Onuh et al., 2016). Specific research topics include:

- a. Outbreak investigation
  - i. Gaps
  - ii. Evaluation of existing programs
- b. Entomological studies
- c. Prevention and control
  - i. Ovi-larvae trap evaluation
  - ii. Community awareness
- d. Socioeconomic studies
- e. Treatment
- f. Monitoring and evaluation



## Multidrug resistance

Research on multidrug resistance of environmental and clinical isolates

In 2012, there were an estimated 1,730 multidrug resistant tuberculosis (MDR-TB) cases in the region (Department of Health, 2014). In 2016, out of 284 isolates tested for antimicrobial resistance, around 65% were identified as methicillin-resistant *Staphylococcus aureus*. In the same report, 40% of 159 isolates were suspected to be extended-spectrum  $\beta$ -lactamase-producing *Escherichia coli* (RITM, 2016). Specific research topics include:

- a. For clinical isolates
  - i. MDR of nosocomial agents of infection
- b. For environmental isolates
  - i. Drug resistance in foodborne pathogens



## Tuberculosis

Research on case finding, screening, and diagnosis of tuberculosis, including multi- and extremely-drug resistant tuberculosis

The cases of respiratory TB in the region increased from 1,932 in 2012 to 3,558 in 2015 (Department of Health, 2015). There were 24,818 identified TB cases in 2015, lower than the 30,811 cases in 2013. The case detection rate bettered the national rate in 2014 (63% vs 42%) but remained lower than the WHO target of greater than 70%. Specific research topics include:

- a. Pediatric age group
  - i. Diagnostic studies
  - ii. Contact tracing and screening
  - iii. MDR-TB and extensively drug resistant (XDR)-TB
  - iv. Recurrence/relapse
- b. Case finding of TB
  - i. Diagnostic practices
  - ii. Screening of XDR-TB



## Lifestyle-related diseases

Research on prevention, treatment, and control of lifestyle-related diseases

Based on the recent Food and Nutrition Research Institute household surveys for non-communicable diseases, the region has shown challenges on elevated blood pressure and high fasting blood glucose among adults (Food and Nutrition Research Institute, 2016). The prevalence of elevated blood pressure increased from 21.5% in 2013 to 24.6% in 2015. In 2013, the region had the second highest prevalence of high fasting blood glucose in the country at 6.7%. Specific research topics include:

- a. Prevention, treatment and control
- b. Overweight and obesity



## Food safety and nutrition

Research on food safety, food security, and nutrition status of the community

In 2015, only 84% of food establishments held a sanitary permit in the region, while 94% of food handlers had a health certificate. In 2015, the percentage of sick infants (26%) and children (25%) given vitamin A was low. In addition, the percentage of infants (13%) and children (1%) given iron is one of the lowest in the country (Department of Health, 2015). Specific research topics include:

- a. Prevalence of foodborne pathogens
  - i. Toxin-producing microorganisms
  - ii. Non-toxin-producing microorganisms
- b. Food safety assessment of informal food service establishment and street foods
- c. Health benefits of alternative farming for food production and sustainability
- d. Risk assessment of food safety hazard
- e. Malnutrition



## Health systems

Research on health systems quality, access, availability, and monitoring & evaluation of programs and services

In 2015, the region only had 1.53 barangay health stations per 10,000 population, one of the lowest in the country. In 2016, there were a total of 11.7 million PhilHealth beneficiaries in the region (PHIC, 2017). Specific research topics include:

- a. Healthcare service quality, access and availability
  - i. PhilHealth reimbursements
  - ii. Health service inclusion looking into trade-offs between cost and quality
  - iii. Functionality of Service Delivery Networks
- b. Geographically isolated and disadvantaged areas
- c. Monitoring and evaluation of healthcare delivery system



- d. Health industry prospects for future health workers
- e. Health information for improvement of healthcare services delivery
  - i. Death certificates (i.e. errors and underlying diseases)



## Environmental health

Research on water safety, biodiversity, and climate change resilience of barangays in the region

In 2015, more than 93% of households in the region had access to improved, safe water supplies and sanitary toilets. However, in the same report, there were 88% of households with satisfactory solid waste disposal and only 82% had complete basic sanitation facilities (Department of Health, 2015). Specific research topics include:

- a. Use of microorganisms in wastewater treatment
- b. Risk assessment of water resources
  - i. Saltwater intrusion of groundwater
  - ii. Microbial assessment of water resources
  - iii. Correlation of water quality to water-borne diseases
- c. Biodiversity conservation
- d. Vulnerabilities of barangays to climate change
- e. Climate change mitigation



## Disaster risk reduction and management

Research on disaster risk assessment, prevention, and preparedness of the region

In 2014, a recorded 50 disaster incidents affected around 1.8 million people in the region. More recently, around 234,000 people in total were affected by tropical cyclones in 2015 and 2016 (UNOCHA, 2017). Specific research topics include:

- a. Disaster risk management
- b. Prevention, mitigation, and rehabilitation
- c. Disaster preparedness among hospitals in the region
- d. Post-disaster psychosocial needs



## Substance abuse

Research on causes of and interventions for substance or drug abuse

In the current political climate, addressing substance or drug abuse concerns is a national priority and thus may recognizably receive more support from the government. In a profile of drug abusers from 2009 to 2014 (Philippine Statistics Authority, 2015), substances of abuse were identified to be *methamphetamine hydrochloride* and cannabis. Specific research topics include:

- a. Drug abuse and rehabilitation
- b. Alcohol
- c. Smoking
  - i. Implementation of the National Smoking Ban
  - ii. Impact evaluation of the graphic health warnings
  - iii. E-cigarettes and vape



## Herbal medicinal products

Research on practices, use, and development of herbal medicines and products

The region has identified a need to examine alternative medicine from readily available herbal plants. Research efforts should aim to enrich current knowledge on practices, use, and development of herbal medicines and products. Specific research topics include:

- a. Development of herbal drugs
  - i. Optimization and standardization of raw material production
  - ii. For communicable and non-communicable diseases
  - iii. Excipients (e.g. fruit peel waste as source of pectin)
  - iv. Biochemical study to support health claim
  - v. Clinical trials
- b. Promotion and utilization of herbal medicines



## Health effects of urbanization and industrialization

Research on impact of urbanization and industrialization on health

There is a need to ascertain the magnitude of occupational health problems and compliance of businesses and industries to occupational health standards. Furthermore, injuries and trauma cases rose from a combined total cases of 16,431 in 2013 to 74,822 in 2015. Specific research topics include:

- a. Pandemics
- b. Injuries due to road traffic and accidents
- c. Health impacts of land use conversion
- d. Occupational hazards



## Development of diagnostics

Research advancing diagnostic development for various infectious agents

The region's TB case detection rate (CDR) of 63% is lower than the >70% WHO CDR target (Department of Health, 2015). The region has also identified the possibility of misdiagnosis of chikungunya cases due to diagnostic test kit limitations. Specific research topics include:

- a. Infectious agents
  - i. Fungal agents
  - ii. Bacterial agents
  - iii. Viral agents
  - iv. STIs
- b. Food hazards
- c. Using nanoparticles



## Mental health

Research on causes, treatment, and management of mental health issues

With the recent passage of the Mental Health Bill on third and final reading, the topic is increasingly gaining traction and may recognizably receive more opportunities for funding. Mental health has been identified as regional political priority. Specific research topics include:

- a. Across the lifespan (e.g. adolescents, youth, elderly, etc.)
- b. Impact of social media to the overall mental and physical status
- c. Health concern of overseas Filipino workers and their families
- d. Treatment and management of mental illness



## Geriatric health

Research on health services and programs for the aging population

In 2010, 6% of the region's population was composed of senior citizens who were at least sixty years old. This increased to 7% or 1,007,160 residents in 2015. In the same year, there were 130 welfare institutions in the region with a total of 562 residents aged 60 and over. Specific research topics include:

- a. Gerontological care and quality of life
- b. Hospice care
- c. Healthcare services for aging people



## Functional foods

Research on the development and commercialization of functional foods

In 2013, the prevalence of anemia among 6- to 12- year-old children was 10%, higher than the national prevalence of 5% (Food and Nutrition Research Institute, 2016). The region has also prioritized the development of alternative natural, low-glycemic index sugar from local palms such as *kaon*, *huri*, and *nipa*. Specific research topics include:

- a. Functional foods and commercialization
- b. Nutraceuticals

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## Annex A: Participants of regional consultation

Name	Position	Affiliation
Adelina Pring-Abarintos		Batangas Medical Center
Reinachell Dacdac	Science Research Specialist (SRS) I	Health Research and Development Consortium Region IV-A (HRDCR IVA)
Nenta Panaligan	Associate Professor	Cavite State University (CvSU)
Cherry Alvarez	Assistant Professor	CvSU
Anaclea Valdez	Research Director, Center for Research and Development	Mary Mediatrix Medical Center
Melchor Frias, IV	Convenor; Vice Chancellor for Research	De La Salle Health Sciences Institute (DLSHSI)
Danaida Marcelo	Biostatistician	DLSHSI
Claire Mendoza	Research Assistant	DLSHSI
Edgar Allan Castro	Research Director	De La Salle Lipa
Norbel Tabo	Ethics Coordinator	De La Salle University (DLSU) – Dasmariñas
Lydia Manguiat	Assistant Regional Director	Department of Science and Technology (DOST) Regional Office (RO) IV-A
Emelita Bagsit	Supervising SRS	DOST RO IVA
Christine Alvarez	Nurse V	Department of Health (DOH) RO IV-A
Supachai Basit	Dean	Emilio Aguinaldo College – Cavite
Cecilia Pring	Assistant Vice President for Academics and Research	Lyceum of the Philippines University – Batangas
Maria Corazon Valdeavilla	Dean	Manuel S. Enverga University Foundation
Michael Lavadia	Supervising Economic Development Specialist	National Economic and Development Authority (NEDA) RO IV-A
Nonie Dalisay	Hospital Training Officer	Provincial Health Office Cavite
Rufo Calixto Jr.	Research Director	University of Perpetual Help-Dr. Jose G. Tamayo Medical University
Bernadette Mendoza	Assistant Professor	University of the Philippines Los Baños (UPLB)

## Annex B: Results of priority scoring

Rank	Topic	Health impact (40%)	Magnitude of the problem (30%)	Feasibility of study (20%)	Innovation (10%)	Final score
1	Maternal, neonatal, and child health	9.400	9.400	8.533	6.333	8.920
2	Infectious diseases	8.667	8.333	7.333	6.133	8.047
3	HIV, AIDS and other sexually transmitted infections	8.200	7.600	6.600	6.733	7.553
4	Reproductive health	7.467	7.333	7.733	5.733	7.307
5	Dengue	7.533	7.533	6.933	6.200	7.280
6	Multidrug resistance	7.600	7.067	6.800	7.333	7.253
7	Tuberculosis	7.333	7.733	6.800	6.400	7.253
8	Lifestyle-related diseases	7.267	7.667	7.067	6.267	7.247
9	Food safety and nutrition	7.600	6.600	7.400	7.067	7.207
10	Health systems	6.667	7.333	7.333	7.000	7.033
11	Environmental health	6.933	7.200	7.067	6.867	7.033
12	Disaster risk reduction and management	6.800	6.867	7.533	6.667	6.953
13	Substance abuse	6.400	6.933	6.133	5.467	6.413
14	Herbal medicinal products	6.467	5.333	6.800	7.867	6.333
15	Health effects of urbanization and industrialization	6.267	5.867	6.667	6.067	6.207
16	Development of diagnostics	5.733	5.467	5.733	7.867	5.867
17	Mental health	5.800	5.867	6.067	5.533	5.847
18	Geriatric health	6.067	5.267	6.000	5.467	5.753
19	Functional foods	5.733	4.000	5.667	7.267	5.353

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