Ilocos Region (Region I)
Regional Unified Health Research Agenda
2017 – 2022

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Source of Data

Ilocos Region Health Research and Development Consortium (CRHRDC)

Department of Budget and Management (DBM)

Department of Health – Center for Health and Development Ilocos Region (Region 1) (DOH – RO1)

Department of Interior and Local Government (DILG)

National Economic Development Authority – Ilocos Region (NEDA – RO1)

Philippine Statistics Authority (PSA)

Introduction

The Philippine National Health Research System (PNHRS) periodically constructs the National Unified Health Research Agenda (NUHRA) to guide health research to address health system needs, ensuring that optimal benefit is gained from national and international investments. The prior NUHRA from the period of 2011-2016 has reached its conclusion, and thus the NUHRA for the succeeding period of 2017-2022 must be drafted in line with the evolving health needs of the country.

In recognition of the diverse and specific health needs of each region, Regional Unified Health Research Agenda (RUHRA)'s is developed along with the NUHRA, and as such, it follows the same timeframe and direction. The degree with which the design of the NUHRA influences the RUHRAs, and vice versa, has been shifting throughout the preceding agenda, nonetheless, the strong links between the national and regional research priorities remain the same.

There is definite value in building the NUHRA for 2017-2022 with a strong foundation on the needs and interests of each region. This report will outline pre-established regional health needs, capacities and resources to aid the strategic and evidence-based formulation of the RUHRA for Ilocos Region (Region 1).

I. Background of the Region

1.1 Demography

Region I, popularly known as Ilocos Region, is located along the northwestern coast of Luzon bounded by the West Philippine Sea on the Cordillera Mountains. It is located on the northwestern coast of Luzon island. It has a direct access to international sea lanes, as it is bound on the east by the South China Sea and the Central Cordillera mountain range on the west. It is expected to develop export-oriented agri-industrial and tourism activities due to its proximity to Taiwan, Hongkong and Southern China.

Its terrain is composed of towering mountains, thick forests and narrow coastal plains. The region's total land area is 12,840 square kilometers. It is comprised of four provinces namely: Ilocos Norte, Ilocos Sur, La Union and Pangasinan. It has 9 cities: Alaminos City, Batac City, Candon City, Dagupan City, Laoag City, San Carlos City, San Fernando City, Urdaneta City and Vigan City. The regional capital is San Fernando City located in the province of La Union. The region also has 116 municipalities and 3,265 barangays (as of 2014).

Figure 1
Map of Ilocos Region

Source: http://dilg.gov.ph/

Table 1
List of Local Government Officials in Ilocos Region (2016)

Congress	
Ilocos Norte	Rodolfo Farinas
	Imelda Marcos
Ilocos Sur	Deogracias Victor Savellano
	Eric Singson
La Union	Victor Francisco Ortega
	Sandra Eriguel
Pangasinan	Jesus Celeste
	Leopoldo Bataoil
	Rosemarie Arenas
	Gina De Venecia
	Carmen Cojuangco
	Marilyn Primicias-Agabas
Governors	
Ilocos Norte	Maria Imelda Josefa R. Marcos
Ilocos Sur	Ryan Luis Singson
La Union	Francisco Emmanuel Ortega
Pangasinan	Amado Espino III

Source: http://dilg.gov.ph/

The population of Region I (Ilocos Region) as of August 1, 2015 was 5,026,128. The 2015 population of the region is higher by 277,756 compared with the population of 4.75 million in 2010, and by 825,650

compared with the population of 4.20 million in 2000. It increased by 1.09 percent annually, on average, during the period 2010 to 2015. By comparison, the rate at which the region's population grew during the period 2000 to 2010 was higher at 1.23 percent. This is accounted for about 5.0 percent of the Philippine population in 2015.

Table 2
Population in Ilocos Region (Region 1)
(Based on the 2000, 2010 and 2015 Census)

Year	Census Reference Date	Population (in millions)
2000	May 1, 2000	4.20
2010	May 1, 2010	4.75
2015	August 1, 2015	5.03

Table 3
Annual Growth Rate in Ilocos Region (Region 1)
(Based on the 2000, 2010 and 2015 Census)

Annual Population Growth Rate	Annual Population Growth Rate (in percent)
2010-2015	1.09
2000-2010	1.23

Among the four provinces comprising the region, Pangasinan had the biggest population in 2015 with 2.96 million, followed by La Union with 787 thousand, and Ilocos Sur with 690 thousand. Ilocos Norte had the smallest population with 593 thousand.

Table 4
Population by Province/Highly Urbanized City in Ilocos Region
(Based on the 2000, 2010 and 2015 Census)

Province	Population (in thousands)		
	2000	2010	2015
Ilocos Norte	514	568	593
Ilocos Sur	594	659	690
La Union	658	742	787
Pangasinan	2,434	2,780	2,957

Accordingly, Pangasinan was the fastest growing province in the region with an average annual population growth rate (PGR) of 1.18 percent during the period 2010 to 2015. It was followed by La Union (1.12 percent) and Ilocos Sur (0.88 percent). Ilocos Norte posted the lowest PGR of 0.83 percent.

Table 5
Annual Growth Rate by Province/Highly Urbanized City in Ilocos Region

Province	Population (in thousands)	
	2010 – 2015	2010 – 2015
Ilocos Norte	0.83	1.00
Ilocos Sur	0.88	1.03
La Union	1.12	1.21
Pangasinan	1.18	1.34

Hence, among the cities and municipalities in the region, the largest in terms of population size is San Carlos City, Pangasinan with 188,571 persons. It was followed by two other cities in Pangasinan - Dagupan City (171,271) and the City of Urdaneta (132,940). Five other municipalities in Pangasinan and one city each in La Union and Ilocos Norte comprise the rest of the top ten most populous cities/municipalities. Contrariwise, the municipality of Carasi in Ilocos Norte has the least population of 1, 567. It was followed by Adams, Ilocos Norte (1,792) and Sigay, Ilocos Sur (2,737). The rest of the ten least populous cities/municipalities in the region are located either in the province of Ilocos Norte or in the province of Ilocos Sur.

Table 6
Ten Most Populous Cities/Municipalities: Ilocos Region, 2015

Rank	City/Municipality	Province	Population
1	San Carlos City	Pangasinan	188, 571
2	Dagupan City	Pangasinan	171, 271
3	Urdaneta City	Pangasinan	132, 940
4	Malasiqui	Pangasinan	130, 275
5	San Fernando City	La Union	121, 812
6	Bayambang	Pangasinan	118, 205
7	Laoag City	Ilocos Norte	111, 125
8	Mangaldan	Pangasinan	106, 331
9	Lingayen	Pangasinan	103, 278
10	Calasiao	Pangasinan	95, 154

Table 7
Top Ten Least Populous Cities/Municipalities: Ilocos Region, 2015

Rank	City/Municipality	Province	Population
1	Carasi	Ilocos Norte	1, 567
2	Adams	Ilocos Norte	1, 792
3	Sigay	Ilocos Sur	2, 737
4	Dumalneg	Ilocos Norte	2, 947
5	Sugpon	Ilocos Sur	4, 585
6	Lidlidda	Ilocos Sur	4, 647
7	Gregorio del Pilar (Concepcion)	Ilocos Sur	4, 875
8	Nagbukel	Ilocos Sur	5, 259

9	Alilem	Ilocos Sur	6, 695
10	San Emilio	Ilocos Sur	7, 407

While, of the 3,265 barangays, the largest in terms of population size is Bonuan Gueset in Dagupan City, Pangasinan with 23,373 persons. It was followed by two other barangays in Dagupan City, Pangasinan - Pantal (17,841) and Bonuan Boquig (14,354). The rest of the top ten most populous barangays in the region are located either in the province of Pangasinan or in the province of La Union.

Table 8
Top Ten Most Populous Barangays: Ilocos Region, 2015

Rank	Barangay	City/Municipality/Province	Population
1	Bonuan Gueset	Dagupan City, Pangasinan	23, 373
2	Pantal	Dagupan City, Pangasinan	17, 841
3	Bonuan Boquig	Dagupan City, Pangasinan	14, 354
4	Poblacion	Lingayen, Pangasinan	12, 238
5	Sevilla	San Fernando City, La Union	11, 470
6	San Vicente	Urdaneta City, Pangasinan	10, 572
7	Poblacion	Alaminos City, Pangasinan	10, 302
8	Lucao	Dagupan City, Pangasinan	10, 252
9	Poblacion	Bugallon, Pangasinan	9, 999
10	Catbangen	San Fernando City, La Union	9, 781

NEDA 2015 data revealed that the region's economy as measured by its GRDP performance grew by 5.0 percent but at a slower rate as compared to 6.4 percent in 2014. Nevertheless, the 5.0 percent growth rate is still within the region's target as contained in the Updated Regional Plan 2011-2016. As thus, this highlight of the region's performance zeroing-in on the contributions of the three major sectors of the economy, namely: 1) Agriculture, Hunting, Forestry and Fishery (AHFF) Sector; 2) Industry Sector and 3) Services Sector. Of the three sectors, services sector remains to be the biggest player by having the highest share to the region's economy at 51.4 percent followed by the Industry sector at 26.4 percent. Meanwhile, the AHFF posted the lowest contribution to the region's economy at 22.2 percent due to its vulnerability to natural disasters and calamities.

On employment, 38.6 percent of employed in the region in October 2014 are laborers and unskilled workers. The service sector shared the largest part to the region's economy with 50.2 percent to the Gross Regional Domestic Product in 2014. The poverty incidence (among families) in Ilocos Region using the refined methodology decreased by 2.8 percent from 16.8 percent in 2009 to 14.0 percent in 2012. Among the four provinces, Ilocos Norte had the lowest poverty incidence at 8.4 percent while La Union had the highest poverty incidence at 15.3 percent.

1.2 Health Situational Analysis

The regional data on crude death rate, infant mortality rate, under-five mortality rate and maternal mortality rate on Table 9, shows that Ilocos region is below the national average. In comparison, with the previous data the region has steady flat decline. However, the region was still challenged on the health of the populations under-five years of life this is despite from the fact that there was a scaled-up maternal and child health programs and initiatives except on the coverage of fully immunized children.

Table 9
Vital Indices per 100, 000 Population (Region 1)
Source: DOH – FHSIS Annual Report 2015

Vital Indices	2015	
	National Level	Regional Level
Crude Death Rate	4.28	4.64
Infant Mortality Rate	7.92	4.76
Under-5 Mortality Rate	10.95	8.08
Maternal Mortality Rate	73.71	47.42

On child health, the region achieved:

1. 68.28% level of infant exclusively breastfed until 6 months;
2. 77.32% fully immunized children, and;
3. 79.52% measles vaccine coverage (2 doses).

While, on maternal health, the region achieved:

1. 56.15% contraceptive prevalence rate;
2. 67.24% pregnant women with 4 ante-natal care;
3. 65.93% post-partum women with at least 2 post-partum visits;
4. 60.98% pregnant women given with tetanus toxoid 2;
5. 98.59% deliveries attended by skilled health professionals, and;
6. 97.67% facility-based deliveries.

Table 10
Health workforce per 10, 000 Population (Region 1)
Source: DOH – FHSIS Annual Report 2015

Health Workforce	Total	Ratio
Medical Doctor	172	29, 378
Dentist	112	45, 116
Public Health Nurse	285	17, 730
Midwives	1, 036	4, 877
Nutritionist	6	842, 166
Medical Technologist	101	50, 030

On the other end, the health workforce needed to serve the population in the region fall behind the recommended health workforce per 10, 000 population, especially medical doctors. However, at the primary care level, the ratio of public health nurse and midwives to serve the population reached the recommended ratio per 10, 000 population.

Table 11
Double Burden of Malnutrition 2016 (Ilocos Region)
Source: FNRI - DOST

Age	Findings
Less than 5 years old	a.1 out of 5 of 19.0% are underweight b. 3 out of 10 or 31.3% are stunted c. 7 out of 100 or 6.6% are wasted or thin and considered to be a health problem d. 3 out of 100 or 3.3% are overweight for their height
5 – 10 years old	a. 3 out of 10 or 27.5% are underweight b. 1 out of 4 or 25.1% are stunted c. 1 out of 10 or 9.7% are wasted or thin and considered a public health problem d. 9 out of 100 or 9.2% are overweight for their height
10 – 19 years old	a. 1 out of 5 or 22.6% are stunted b. 1 out of 10 or 13.4% are wasted or thin c. 1 out 10 or 11.1% are overweight and obese
20 years and older	a. 1 out of 10 or 11.9% are chronic energy deficient b. 3 out of 10 or 27.6% are overweight and obese c. Prevalence of high waist circumference and high waist hip ratio is higher among females than males making them more at risk to non-communicable disease.

Another health challenge faced by the region is the looming double burden of malnutrition. Accordingly, the region's nutrition status is improving with lesser population who are underweight, stunted and overweight. However, among less than 5 years old and 5 – 10 years old group wasting is considered a public health problem with 6.6% and 9.7% prevalence rate accordingly. More so, there is an increasing risk on non-communicable diseases among females for 20 years and older.

The top 10 leading cause of mortality based on 2015 data as reported by DOH-RO1 are mainly non-communicable diseases.

Table 12
2015 Top 10 Leading Causes of Mortality (per 100, 000 population)

Rank	Disease	Total	Rate
1	Cardio Vascular Diseases	7,748	153.33
2	Cerebro Vascular Accidents	5,668	112.17
3	Pneumonia	3,061	60.58
4	Cancer (all forms)	2,297	45.46
5	Diabetes Mellitus	855	16.92
6	Chronic Obstructive Pulmonary Disease	772	15.28
7	Accidents (all types)	682	13.50
8	Kidney Disease	545	10.79

9	PTB (all forms)	454	8.98
10	Bronchial Asthma	357	7.07

While, the top 10 leading cause of morbidity based on 2015 data as reported by DOH-RO1 are a mixed of non-communicable and communicable diseases.

Table 13
2015 Top Leading Causes of Morbidity in Ilocos Region
Source: DOH – FHSIS Annual Report 2015

	Disease	Number of case	Rate per 100,000 population
1	Acute Respiratory Infection	536,402	10,615.53
2	Hypertension	135,216	2,675.96
3	Urinary Tract Infection	45,322	896.93
4	Dengue Fever	34,526	683.28
5	Bronchitis	32,892	650.94
6	Influenza	24,752	489.85
7	Acute Watery Diarrhea	22,147	438.29
8	Diseases of the Heart	11,836	234.24
9	TB Respiratory	10,642	210.61
10	ALTRI & Pneumonia	10,296	203.76

On the basis epidemiologic data, health needs to be addressed are in the areas of non-communicable, communicable and infectious diseases as well as health service delivery. Therefore, priority health research in the area should target studies on service and societal impact.

1.3 Health Research in the Region

The regional health consortia have established its strong leadership in health research. The health research interest of the region is inclined with drug discovery and medical technology development. In this regard, Mariano Marcos Memorial Hospital and Medical Center and some academic institution like Don Mariano Marcos Memorial State University, Virgen Milagrosa University Foundation and the University of Northern Philippines are some of the most active institutions in implementing health research projects in the region. In addition, DOST-PCHRD regional office takes part as main funding institution. While, DOH – RO1 epidemiologic data and end-user need are also fundamental consideration.

However, while there is a strong leadership in drug discovery and medical technology development among members of the consortia, underrepresented groups are the private sector, non-government institutions, indigenous group associations or organizations and local government.

Regional health research produced in the region is strong in basic science research studies. The consortium has active academic and medical center partnership and collaboration in terms of research agenda setting and implementation. Taking this at hand, the Mariano Marcos Memorial Hospital and Medical Center has level 3 Philippine Health Ethics Review Board accredited ethics committee which is also considered as clinical research hub of the region. In fact, the region could implement level 3 clinical research projects with Pfizer aside from the fact that the research studies conducted are mostly discovery and development of medicines (herbal plants). Moreover, the consortium has actively advocating health research among clinicians and academic partners.

Table 14, reflects PHREB Accredited institutions in Ilocos Region (Region 1).

Table 14
PHREB Accredited Institutions in Ilocos Region

1	Mariano Marcos State University
2	None
3	Mariano Marcos Memorial Hospital and Medical Center

The regional health research consortium is productive and able to review technical and ethical aspects of the research proposal. Wherein, annually from 10 out 10 research studies submitted by the principal investigator/research were reviewed by the consortium. However, on annual basis only 3 – 4 were funded and implemented. Factors such as lengthy institutional processes on funding and motivation of health researchers to review and revise the research proposal contributed to low output on funded and implemented health research.

Table 15
Research Productivity VS Processing Time

Areas	Average Process Time
Estimated average processing time on the review of research proposal.	1 months
Estimated average processing time on the revision of the research proposal.	2-month deadline given to proponent for revision but it depends on them if they comply
Estimated average processing time of funding of approved research proposal.	3 months
Estimated average processing time of research proposal implementation to completion.	1 year

Table 16, reflects the strengths, weaknesses, opportunities and threats (SWOT) of the Ilocos Region's health research landscape based on key informant interviews (KIIs).

Table 16
SWOT Table of Ilocos Region (Region 1)

STRENGTHS 1. Strong link with academic institutions, CHED, DOST-PCHRD Regional Office and DOH-RO1. 3. With funding support from DOST-PCHRD, institutional counterpart and out of pocket. 4. Strong in basic science health research. 5. Established health research and clinical research hub. 6. Accredited ethics review committee.	**WEAKNESSES** 1. Limited participation from private sector, NGOs and IPs. 2. Lengthy process and limited funding on health research funding.

7. Institutionalized M&E platform. 8. Strong research advocacy among members of consortia. 9. High interest on conducting clinical research.	
OPPORTUNITIES 1. Potential partnerships and collaboration with the private sector. 2. LGUs are seen with high potential to be partners on agenda setting and research utilization. 3. Has capacity to do level 3 and 4 clinical research.	**THREATS** 1. Lengthy and bureaucratic processes if the subject of the research studies involves minority group especially indigenous people.

Table 17, reflects the TOWS analysis based on SWOT table above. TOWS analysis basically analyzed factors by answering the following questions:

Strengths – Opportunities	How do you take advantage of opportunities by using the region's strengths?
Strengths – Threats	How do you address threats by using the region's strengths?
Weaknesses – Opportunities	How do you minimize weakness by using the region's opportunities?
Weaknesses – Threats	What are strategies to minimize weakness and avoid threats?

Table 17
TOWS Analysis of Ilocos Region (Region 1)

STRENGTHS – OPPORTUNITIES 1. Expand networks to non-member of consortia especially to private sector. 2. Identify other source of funding on health and clinical research. 3. Invest on capacity building of the consortia members.	**STRENGTHS – THREATS** 1. Establish institutional arrangements on ethical or technical review processes. 2. Establish and engage non-members of consortia on health research.
WEAKNESSES – OPPORTUNITIES 1. Encourage, engage and enable non-consortia members to take part on health research agenda setting, implementation and utilization.	**WEAKNESSES – THREATS** 1. Scale-up inclusive health research participation sector-wide. 2. Improve institutional process through effective advocacy, information and communication sharing.

II. Setting the Regional Health Research Agenda

2.1 Pre-Regional Consultation

In the agenda setting for the development of Regional Unified Health Research Agenda 2017 – 2022 of Central Luzon AIHO Staff for Northern Luzon Cluster proposed to the Regional Health Research

Consortium during the courtesy visit to have of well-mixed stakeholders from various institutions. Wherein, we identified and invited consortia and non-consortia members through the regional consortium's coordinator. For consortia member both active and non-active members were invited, while, for non-consortia members AIHO Staff for Northern Luzon Cluster identified under-represented groups like the local government units (the city health officer or president of the association of municipal health officer and the provincial health officers), non-government organizations and the private sectors. Also, other regional government agency representatives from the Commission on Higher Education, National Economic Development Authority, Department of Health and Department of Science and Technology were invited to participate in agenda setting. These stakeholders were classified as health research funders, implementers, and end-users.

2.2 Regional Consultation

2.2.1 Brainstorming

2.2.1.a. Plenary

At the plenary level, the facilitators from AIHO asked the present core agencies of PNHRS to put forward their agenda in the next 5 years. The Chair of Consortium emphasized that there is a great need that the health research in the region should level up from level 1 and 2 drug discovery and development to level 3 and 4 clinical trials. He also stressed that the regional health research capacity is strong on basic sciences thus making an opportunity to venture on development of medical products and technologies. However, he also pointed out prolonged bureaucratic process in conducting health research impeded these aspirations. As a resolution, he encouraged the stakeholders especially the four funding agencies, Department of Health, Department of Science and Technology – Philippine Council for Health Research and Development, and Commission on Higher education to establish formal institutional arrangements to streamline the process of health research funding. On his last point, he raised the redundant processes on health research involving indigenous people should be streamlined. The Department of Health advanced their agenda by presenting the Philippine Health Agenda and focused on *achieving the 20130 Sustainable Development Goals and Targets on Health*. While, the Commission on Higher Education (CHED) reiterated that the health and issues involving investment on human development is the primary issues that CHED wanted to address through health research. Lastly, the Department of Science and Technology (DOST), framed their agenda in the next 5 years lies on drug discovery and development, and the development and transfer of health technologies. The DOST director reiterated to the stakeholders the basis of their agenda on health is anchored on the Philippine Development Plan as well as on the Regional Development Plan which considers unique needs of the region.

2.2.1.b. Group

During the workshop on identifying health research priorities of the region, the AIHO facilitators were assigned with one group to guide them on the process of identifying health research priorities. During the grouping to identify health research priorities, the facilitators distribute metacards to each stakeholder for them to write one health research topics of their interest which is also relevant to improving regional health status through health research. Next, the facilitator asked them to present each health research topics within the group and give the context and rationale why the topic is essential to be part of the agenda in the next 5 years. Then, the facilitator asked the group leader and secretary to lead the groupings of topics according to the context and rationale during the group discussions and sharing. Lastly, the facilitator asked the group to do thematic analysis and thematized the grouped topics.

2.2.2. Prioritization of Health Research

2.2.2.a. Group

Table 3
List of Criteria for Prioritization of Health Research

Rank 1	Relevance	40%
Rank 2	Impact	30%
Rank 3	Feasibility	30%

While, during the workshop on identifying criteria for prioritization the AIHO facilitators open the plenary to identify, define and rationalize proposed criteria. During the discussion, the facilitator asked the group to scrutinize sample criteria used in the previous agenda setting. Then, the facilitator asked the group to pick criteria and define each criterion. Lastly, the facilitator asked the group to do thematic analysis and agree upon the operational definition of each criterion selected. While, for weight setting in each criterion, the group decided to do ranking, wherein rank 1 criterion should be given higher weight and rank 3 criterion should be given lower weight.

2.2.2.b. Plenary

At the plenary level, the facilitator discussed the importance of priorities as well as the prioritization process. Hence, the facilitator asked the health research funders especially the Department of Science and Technology and the Department of Health representative the value of health research prioritization, while reiterating to the stakeholders that all health research areas identified during the workshops will be funded for 5 years and funding will not only come from the four core agencies of PNHRS but also may come from private sector, philanthropic organizations etc. However, the response of DOST and DOH was that it will serve as a guide to them the regional health capacity, interest as well as funding purposes.

Prior to ranking exercise, the facilitator explained the process of prioritization. Wherein, each stakeholder has one ballot for his/her vote. Whereas, the stakeholder will score each criterion from 1 to 10, where 1 being the least and 10 being the highest. Then, the facilitator will encode to excel file each of the stakeholders' vote and will generate ranking based on weighted scores.

From the initial 16 health research priorities, the facilitators asked the plenary if they are happy with the output of the 2-day regional consultations. The Director of DOST-Region1 commented that all identified research priorities should be anchored with the national and regional priorities. Thus, he suggested using terminologies used in both documents (the Philippine Development Agenda and the Regional Development Agenda) as theme with a broader meaning to maintain sense of alignment. In addition, the Chair of the Consortium, agreed that using words from national and regional development plans the better way to align regional health research agenda with the national. Hence, the facilitator introduced the appeals process wherein, the plenary has the leverage to modify the ranked output. Hence, member of the consortium suggested subsuming similar topics with broader topics so that all inputs from the workshop will not be deleted. Then, the facilitator asked if there were dissenting opinion on lumping similar topics into broader topic using the terminologies from the regional and national development plan; however, there was no dissenting opinion from the group. For consensus building the facilitator instead

asked the plenary to raise their hand if they were willing to go through the process of appeals wherein similar topics will be lumped into more broader topics and assures there will be no cutting or deleting of the subsume topics and their sub-sub-topics. And, all stakeholders of the plenary raised their hands for the suggestion raised at the plenary.

III. RUHRA: The Health Research Priorities of the Region

Priority Area 1: Triple Burden of Disease
Rationale: To understand and identify factors on emerging and re-emerging health issues especially on communicable, non-communicable, and diseases of rapid urbanization and industrialization.

1. Communicable Disease
a. Sexually Transmitted Infection
b. HIV and AIDS
- Factors affecting increasing HIV/AIDS and STDs in Region 1R
- Assessment of Local AIDS Council in Region 1
c. Rabies
- Effectiveness of laws and policies targeting rabies in dogs
d. Parasitic Infections
- Elimination of parasitic infections

2. Non – communicable Disease
- Cancer (all forms)
- Access to Mental Health Services
  i. Causal Factors
  ii. Predisposing
  iii. Mitigating
- Dental Diseases
- Assessment of community initiatives for NCDs

3. Diseases of Rapid Urbanization and Industrialization
a. Health consequences of climate change / disaster
- Disaster preparedness
- Nutrifoods for emergencies and hazards
- Use of technology (drones) in disasters
- Natural Hazards
- Climate Change Adaptation
- Resilience
b. Environmental Health
- Sanitation
- Pollution
- Waste Management

Priority Area 2: Health of the Vulnerable Populations
Rationale: To understand the factors affecting the health of vulnerable groups [i.e. teenage and youth, geographically isolated areas and indigenous people, and mothers] especially its relationship to their socio-economic status.

a. Teenage and youth

- Pre-teen pregnancy factors
- Pre-disposing factors for teen pregnancy
- Adolescent mental health
- Adolescent health facilities accessibility/functionality

b. GIDA/IP

- Community profiling of GIDA/IP groups
- IP traditional beliefs in health vs. Standards
- Culture sensitivity of health workers in service delivery among IPs
- Awareness on the IPRA Law
- Access of IPs to health facilities

c. Mothers

- Factors affecting high incidence of maternal mortality in Region 1

Priority Area 3: Drug Discovery and Development
Rationale: To develop medical products and medicines out of endemic herbal plants with medicinal value.

- Indigenous/Natural Sources
  i. Plant sources
  ii. Animal sources
  iii. Mineral sources
- Development of ethnic medicines/drugs
- Efficacy of Herbal Plants for disease treatment
- Drug development from local diversity
- Phase 1 & 2 Clinical trials
- Molecular characterization of herbal plant extracts tested for biological activity
- Drug Development Phase 2 and 3

Priority Area 4: Health Technology and Innovations
Rationale: To develop health technologies to realize better health services through data management and information sharing, and safe and accurate rapid diagnostic kits.

a. Diagnostics

- Anato Seed Used as Fungal Staining Agent and other indigenous/natural sources
- Genomic basis for disease

b. ICT for Health

- Telemedicine
- IT solutions for governance
- E-records for hospitals (paperless transactions)

c. Biomedical Devices

- Development of biomedical devices

d. ICT for Health

- Telemedicine
- IT solutions for governance
- E-records for hospitals (paperless transactions)

Priority Area 5: Food Safety and Nutrition
Rationale: To evaluate nutrition status and programs implemented towards in-depth understanding of

malnutrition prevalence in the region.

- Complete food for nutrition and feeding
- Food fortification for nutrition
- Development of educational materials/e-nutrition
- Nutritional program assessments
- Documenting effects of the use of pesticides/herbicides to agricultural products and human health
- Food Hygiene and Safety (Carcinogenic foods, food preparation especially street foods) (e.g. Hepatitis A, food poisoning)

Priority Area 6: Health Governance and Policies
Rationale: To evaluate government health and health-related programs and policies and its effects in achieving better health outcomes.

a. Assessment and Evaluation
- Assessment of functionality of HFEP (infra and equipment)
- Medical missions and antibiotic resistance
- School curriculum modification (health education)
- Community Rehab Program
- Decentralization of healthcare and community medicine
- Health care studies primary vs. Special
- Family health care profiling
- Gatekeeping and primary care physicians for better health outcome and cost reduction
- Early Cancer screening programs
- Vehicular Accident (e.g. motorcycle accidents due to alcohol intoxication)
  i. Safety
  ii. Policy
  iii. Implementation
- Impact Studies
  i. Multi-sectoral (4Ps Evaluation)
  ii. Programs Assessment and Evaluation
- Healthcare services
  i. Indigenous Health (Baseline/Survey/Documentation for correlation to the health of the people)
    - Knowledge, Attitude and Practice
    - Traditional Practices

Priority Area 7: Functional Foods and Nutraceuticals
Rationale: To develop food products and nutraceuticals from the available agricultural products in the region.

- Nutraceuticals
- Impact assessment of functional food to improvement of nutrition

Priority Area 8: Health Financing
Rationale: To evaluate and give recommendations on the effectiveness and efficiency of health financing in both private and public health care facilities at all level.

- Evaluation of PHIC use: patients eventual (out-of-pocket) vs case rates
- Impact of 4Ps on health improvement of beneficiaries
- Evaluation of NBB (no Balance Billing) of PHIC
- Health care financing

IV. Strategies for Dissemination, Advocacy, Implementation, and Monitoring and Evaluation for the RUHRA

The consortia identified the lessons learned to improved translational research and its impact:

1. Advocate health research awareness and participation among non-consortia members especially to the LGUs, NGOs and IPs;
2. Expand private sector partnerships on health and clinical research;
3. Identify other source of health research funding through established institutional networks;
4. Establishment of mechanisms to access open data sharing among relevant stakeholders.

Strategy	
Institution	**Commitment**
Cordillera Regional Health Research and Development Consortium	a. Establishment of the Structure Organizing Monitoring and Evaluation Committee b. R1HRDC Research Caravan c. Periodic Call for Papers d. IEC material (websites)
Philippine Information Agency	e. Radio Broadcasting of RURHA