

REPORT ON STRENGTHENING RESEARCH CAPACITIES FOR HEALTH IN THE CARIBBEAN

2007-2017



Pan American
Health
Organization



World Health
Organization
REGIONAL OFFICE FOR THE
Americas

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Pan American Health Organization / World Health Organization (PAHO/WHO)
Office of Knowledge Management, Bioethics and Research (KBR)
Secretariat to the Advisory Committee on Health Research



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Report on Strengthening Research Capacities for Health in the Caribbean, 2007-2017

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***Authors' Note:** This report is intended to guide the reader through the context and process of activities that have taken place in the Region of the Americas (hereafter referred to as "the Region") over the past decade, with content and recommendations based on published studies and interviews with key stakeholders engaged in this process. Although we made our best efforts to provide a comprehensive picture of the technical cooperation, we are aware that some initiatives may have been missed. We welcome comments from readers on how it might be expanded. Further work is recommended over the coming years to map and evaluate the research impacts resulting from this capacity-building, and to provide a fuller picture of interdisciplinary engagement across such research for health issues as ethics. We express our most gracious thanks to everyone who assisted in the research for and writing of this report.*

LIST OF ACRONYMS



ACHR	Advisory Committee on Health Research (at both PAHO and WHO)
ACMR	Advisory Committee on Medical Research
AFRO	WHO Regional Office for Africa
AHPSR	Alliance for Health Policy and Systems Research
BWP	Biennial Work Plan
CAIHR	Caribbean Institute for Health Research
CanUSACLEN	Canada–United States Clinical Epidemiology Network
CAREC	Caribbean Epidemiology Centre
CARICOM	Caribbean Community
CARPHA	Caribbean Public Health Agency
CBUSCC	Caribbean Branch of the US Cochrane Center
CCH III	Caribbean Cooperation in Health Initiative Phase III
CCMRC	Commonwealth Caribbean Medical Research Council
CDC	United States Centers for Disease Control and Prevention
CEHI	Caribbean Environmental Health Institute
CEU	Clinical Epidemiology Unit
CFNI	Caribbean Food and Nutrition Institute
CGH	Center for Global Health at the National Cancer Institute of the United States National Institutes of Health (NIH/NCI/CGH)
CHRC	Caribbean Health Research Council
CIDEIM	Centro Internacional de Entrenamiento e Investigaciones Médicas (International Center for Training and Medical Research)
CITI	Collaborative Institutional Training Initiative
Cochrane Caribbean	Cochrane Collaboration for the Caribbean region
Cochrane Iberoamérica	Ibero-American Cochrane Network
COHRED	Commission on Health Research for Development
CPC	Caribbean Programme Coordination (at PAHO)
CRDTL	Caribbean Regional Drug Testing Laboratory
D.C.	District of Columbia (national capital of the USA)
ECOSOC	United Nations Economic and Social Council
ELAP	Emerging Leaders in the Americas
EMRO	WHO Regional Office for the Eastern Mediterranean
ENHR	Essential National Health Research
EPPE	Effective Project Planning and Evaluation for Biomedical and Health Research
ERU	Epidemiology Research Unit
EURO	WHO Regional Office for Europe

EVIPNet	Evidence-Informed Policy Network
HPSR	Health Policy and Systems Research
HTA	Health Technology Assessment
INCLEN	International Clinical Epidemiology Network
JIS	Jamaica Information Service
JHU	Johns Hopkins University
KBR	Knowledge Management, Bioethics and Research (PAHO Office of)
LAC	Latin America and the Caribbean
LMICs	Low-to-Middle-Income Countries
mHealth	Mobile health (using mobile phones and other wireless devices for healthcare)
MOOC	Massive Open Online Course
MSc	Master's of Science degree
NBCJ	National Bioethics Committee of Jamaica.
NCDs	Non-Communicable Diseases (also known as chronic diseases)
NCI	National Cancer Institute of the US National Institutes of Health
NIH	United States National Institutes of Health
NPR	National Public Radio (USA)
PABI	Pan American Bioethics Initiative at the University of Miami
PAHO/WHO	Pan American Health Organization, Regional Office of the World Health Organization
PASB	Pan American Sanitary Bureau (the PAHO/WHO Secretariat or Headquarters building in Washington, D.C.)
RP	Research Promotion and Development (at PAHO)
RTC	Regional Training Centre (under the umbrella of WHO/TDR)
SAC	Standing Advisory Committee for Medical Research in the British Caribbean
SALISES	Social Sciences Research Department (at UWI)
SDGs	Sustainable Development Goals
SDH	Social Determinants of Health
SEARO	WHO Regional Office for South East Asia
SGU	St. George's University
SIDS	Small Island Developing States
TDR	Special Programme for Research and Training in Tropical Diseases
TMRI	Tropical Medicine Research Institute
UK	United Kingdom
UN DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UOttawa	University of Ottawa
USA or US	United States of America, often shortened to United States
UTT	University of Trinidad and Tobago
UWI	University of the West Indies
VBDs	Vector-Borne Diseases
WB	The World Bank
WDC	Washington, D.C.
WHA	World Health Assembly
WINDREF	Windward Islands Research and Education Foundation
WPRO	WHO Regional Office for the Western Pacific
WWGS	What Works Global Summit (held by the Campbell Colloquium)

KEY MESSAGES



Context

Over the past decade, the Pan American Health Organization has worked with strategic partners and local institutions to develop capacity within the countries of the Caribbean Community (CARICOM) to grasp the benefits of research for health by advancing the *Policy on Research for Health* (document CD49/10 of PAHO's 49th Directing Council), thereby promoting the value of research and reducing waste when conducting and using research for health. The activities assessed in this document arise from efforts made since the 40th Meeting of the PAHO Advisory Committee on Health Research (ACHR) in Montego Bay, Jamaica, in April 2007. The meeting took place before the implementation of a series of important international mandates on research for health, including PAHO's aforementioned *Policy on Research for Health* that was approved in 2009.

Summary of Efforts

PAHO's efforts have led directly to the expansion of research capacity in the Region, which has included training more than 700 professionals from 19 countries in the key skills needed to carry out research for health programs, and the offer of 36 scholarships for professionals from seven CARICOM countries to attain masters, doctorates and specialization degrees. A coherent focus on the construction of effective teams, with the goal of supporting research production and further capacity development, catalyzed regional training initiatives in the Caribbean region as well as the institutional frameworks necessary for advancing research. These bodies include regional



PAHO/WHO © Source: www.paho.org/researchportal/partnerships/oas Accessed 30 Sep 2017.

training centers for systematic reviews (Cochrane Caribbean), epidemiology (International Clinical Epidemiology Network / INCLEN), and a training center for Effective Project Planning and Evaluation for Biomedical and Health Research (at UWI and SGU).

Capacity development is evident across the region, with institutional focal points at UWI, SGU-Grenada, and the University of Trinidad and Tobago (UTT). The Caribbean-wide presence of these training efforts has featured workshops in Antigua and Barbuda, Grenada, Jamaica, Suriname, and Trinidad and Tobago, —thus furthering representation from across the region. To support workshop attendance, travel scholarships have been provided for workshop participants.

Points for Action

Published information and interviews with key stakeholders reveal a clear message: actors in the Caribbean region are applying their potential to carrying out research for health, and there are opportunities currently available for further growth. With this in mind, we highlight two thematic areas to further strengthen local capacity:

1) Collaborative Engagement

We recommend continued and strengthened engagement among key stakeholders. This will require forging both inter- and intra-sectoral relationships among regional institutions, the Pan American Sanitary Bureau (PASB) in Washington, D.C. (PAHO's official Secretariat), and stakeholders and institutions in the United States (USA) and Canada—as well as linking both regionally and globally with Regional Training Centers supported by TDR and WHO Collaborating Centers to provide training and mentorship in a collaborative fashion.

2) Resource Development

We advise the efficient use of both current and predicted available resources, including engagement strategies with academia, policymakers, private companies, and the public. This will harness remote learning capabilities in the region and provide mechanisms to better utilize both available funding and research with the aim of furthering health capacity. The commitment and vision from those leading Caribbean research institutions, academia and authorities is essential to retain the growing human capital in research for health, and to offer research teams and professionals dealing with research, a nurturing work environment where they can thrive.

EXECUTIVE SUMMARY



General Introduction

This report guides the reader through some of PAHO's capacity development activities since 2007 that have been relevant to research for health in the CARICOM countries. It examines regional development and policy mandates, provides an overview of progress to date, and offers critical analysis on the basis of the available literature and interviews with stakeholders. Key developments over the past 10 years have included the following:

- a) Establishing a Branch of the Cochrane Collaboration for the Caribbean region
- b) Developing a Research Centre of the International Clinical Epidemiology Network (INCLEN)
- c) Creating a training center in Effective Project Planning and Evaluation for Biomedical and Health Research, led by WHO/TDR in collaboration with Colombia's WHO Collaborating Center, International Center for Training and Medical Research (*Centro Internacional de Entrenamiento e Investigaciones Médicas / CIDEIM*) and PAHO
- d) Providing training courses in research ethics, grant writing, and peer review
- e) Generating scholarships arising from agreements between the Organization of American States (OAS) and PAHO
- f) Supporting the advancement of human capital and building other capacities to promote evidence-informed policymaking in the CARICOM countries
- g) Promoting the use of research for health to address high-level development and health agendas, such as the Sustainable Development Goals (SDGs), as well as inter-sectoral work



Source: <http://socialinnovationinhealth.org/2017-call-for-solutions-central-america-and-the-caribbean>. Accessed 30 Sep 2017.

Research Capacity Development: Context, Policy, and Mandates

In the Caribbean, the roots for organizing health research run deep, thanks to efforts reaching back to the 1950s and the formation of the Standing Advisory Committee (SAC) for Medical Research in the British Caribbean, based at UWI's Mona Campus in Kingston, Jamaica. Early pioneers for evidence-based medicine in the region include Archie Cochrane, Kenneth Standard, and John Conrad Waterlow. In its institutional journey, research for health has undergone various stages to reach its current position, now operating under the umbrella of the Caribbean Public Health Agency (CARPHA) as part of the CARICOM's organizational framework. This report provides both a historical and a broad institutional perspective, followed by an introduction to the key academic entities involved with the program. Included among these is the Tropical Medicine Research Institute (TMRI) hosted at UWI-Mona, established in 1999 and re-named the Caribbean Institute for Health Research (CAIHR) in August 2016 in recognition of its evolving role on the international stage.



Meeting of Cochrane Global and Regional Directives with PAHO Directives and the Research Promotion and Development Unit, 19th Cochrane Colloquium in Madrid, Spain, October 2011. Photo Dr. Luis Gabriel Cuervo.

The report then outlines global and regional efforts to address health research inequity and capacity-building, focusing on activities both within or emanating from WHO. This includes institutional programs hosted at WHO, e.g. the Advisory Committee for Health Research (ACHR, established in 1959) and the Special Programme for Research and Training in Tropical Diseases (TDR, established in 1975)—the latter co-sponsored by the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the World Bank (WB), and WHO. The influence of such efforts became clear in the outcomes of the 1987 Commission on Health Research for Development (COHRED) and the initiatives that it established to address the global '10/90' gap in research funding. These developments are set forth in the context of global evidence-based medical activities, such as those carried out by Cochrane and its regional efforts through the Ibero-American Cochrane Network. The report also covers significant meetings relevant to research for health in the region, including the trio of *Latin American Conferences on Research and Innovation for Health* between 2008 and 2011—each critical in highlighting gaps that need addressing in the Region of the Americas.

In addition, the report outlines PAHO/WHO briefings and mandates on research capacity development, with a focus on framing efforts into PAHO's *Policy on Research for Health* (document CD49/10 from PAHO's 49th Directing Council, held in 2009)—and more broadly, into the WHO *Strategy on Research for Health* (WHA63/22 from the 63rd World Health Assembly, held in 2010). Expanding on this, there has been recognition of the mandates that both PAHO and WHO have passed since 2005, which have explicitly included reference to research for health and have highlighted its cross-cutting role. This overview and history of research for health provides a context for engagement in the program of work over the 2007–2017 period covered by this report, through technical expertise and governance. This context also demonstrates the ongoing opportunities for research for health in the current era of international health governance, with focus on the impetus to include *Health in All Policies*—thus offering research for health a more widespread role.

Progress and Challenges with Implementation of Research Capacity-Building

This report's discussion of the implementation of research capacity-building is divided into three distinct but integrated realms: (1) integration into collaborative networks; (2) research capacity development programs; and (3) sustainability and supporting initiatives.

The 40th Meeting of the ACHR in Montego Bay, Jamaica, in April 2007 and the interpersonal connections made there catalyzed integration into collaborative networks. These developed into institutional relationships that have since evolved into formally assigning Caribbean focal points for the INCLEN Network, Cochrane, and WHO's Evidence-Informed Policy Network (EVIPNet). Leading Caribbean universities (UWI, SGU and the University of Trinidad) and their counterparts in North America forged affiliations and collaboration, which have since facilitated academic and training exchanges (for example, with Johns Hopkins University / JHU and the University of Ottawa / UOttawa). A particular highlight is the creation of the Caribbean Branch of the United States Cochrane Center (Cochrane Caribbean), a symbol of research capacity-building efforts in the region and the foundation for further efforts of this sort. Research capacity-development programs were both introduced and honed in the region



Admission of the UWI Clinical Epidemiology Unit to INCLEN. From left to right: Vice Chancellor Prof. Nigel Harris (UWI), Dr. Ernest Pate (PAHO), Prof. Alan Jackson (University of Southampton), Dr. Anselm Hennis (UWI). 19 Feb 2009. Courtesy of UWI, Dr. Marshall Tulloch-Reid.

through the efforts of PAHO/WHO and local and regional institutions. The discussion on these will focus on TDR and Cochrane training. In 2007, the WHO/TDR Regional Training Center for Latin America and

the Caribbean took root at CIDEIM in Cali, Colombia. Subsequent efforts have emanated via training in research project management skills through courses in *Effective Project Planning and Evaluation for Biomedical and Health Research* (EPPE). Aside from skills training, the program was integrated into the CARICOM countries thanks to the efforts of a training focal point assigned at UWI, who has been incorporated into the activities of several undergraduate and graduate degree programs at both UWI and SGU. As a result, by 2017, almost 400 professionals had been trained in essential research project

management skills in the region, which now has eight trainers—thus expanding the amount of available expertise in Barbados, Grenada, Jamaica, Trinidad and Tobago, and Suriname. Directives have also fostered training in how to conduct and utilize systematic reviews, thanks to the work of Cochrane Caribbean and some epidemiologically-focused workshops that UWI faculty members run in association with CARPHA. Notably, these training initiatives have proven their sustainability and have continued



EPPE Training of Trainers for the Caribbean with support from CIDEIM and UWI. Jamaica, 5 May 2017. Courtesy of Dr. Shelly McFarlane, UWI.

to expand, with plans for further increases in capacity-building through activities that have taken place this year as well as future activities on the planning roster. Between 2014 and August 2017, the PAHO-OAS health scholarship program has complemented this process by offering 36 scholarships to applicants from seven CARICOM countries to pursue master's degrees (28 applicants), specialization degrees (1 applicant) and doctorates (7 applicants); the programs opens calls for applications at least twice every year.

The report also provides insight into sustainability and supporting initiatives by focusing on skills training in various aspects of research for health. A key concern with all capacity-building initiatives is whether the effort and funding put into them will yield appropriate returns over time. We shall explore this by examining PAHO/WHO's efforts up to now in the areas of grant writing, ethics training, and funding mechanisms for early-career researchers. Ongoing momentum for capacity development in the region relies on the necessary impetus to ensure that critical mechanisms are in place to provide research teams with the breadth of fundamental expertise to enable them to increase their skills ('upskill'), carry out programs, and implement knowledge in research for health.

Moving Forward: Expectations, Lessons Learned, and Opportunities

Discussion in the report adopts a nuanced viewpoint, involving stakeholder engagement with a view to the practicalities of sustaining high levels of engagement in research for health. Attention is paid to future expectations for trained cohorts, lessons learned from the process as a whole, and opportunities available for efficient and sustainable growth in regional capacities.

Focal points for key activities have been built around academic institutions in the region—namely UWI, SGU, and UTT. Their faculty members have cemented multinational links in international research for the health community through institutional relationships, publications, and presence at global summits. These connections have fueled expansion in the region’s capacities in research for health, which had increased both in the long term (via overarching institutions, e.g. the Caribbean Health Research Council / CHRC and the Caribbean Public Health Agency / CARPHA) and the shorter term (via academic programs, e.g. UWI’s Master’s of Science [MSc] program in Epidemiology). Another synergy was active at a time of growth for TDR training in *Effective Project Management and Evaluation* (EPPE) in the Region of the Americas, thanks to CIDEIM. Nearly 400 people were trained in EPPE methods, along with more than 100 in systematic reviews in accordance with Cochrane methodologies, 46 in grant writing, 13 in implementation research (including two trainers) and more than 250 upskilled in other essential research skills across 19 CARICOM countries. Thus, regional outreach and engagement has supported broader involvement in research for health in the Caribbean by cross-cutting academic study and research, medical practice, policymaking, and broader disciplines. Associated efforts include assistance in developing the *National Research Agenda for Health* in Jamaica, as well as operational research on the consequences of chikungunya and zika infections. Moreover—and perhaps more importantly—those interviewed noted a change in the cultural reception of research for health throughout the region, though further work is necessary to ensure present capacities in operational and implementation research.

A number of lessons learned have been underpinned by the enormous potential evident in the capacity-building process over the past ten years. Engagement with local actors—first developed at the 40th Meeting of the ACHR in Montego Bay, Jamaica, in 2007—facilitated the connections that led to establishing regional focal points who are passionate about developing research for health. Integration into international collaborative networks and efforts—such as INCLIN, Cochrane, and TDR—has further ensured this. However, barriers remain to sustainable development, including lack of access to literature by academic institutions, lack of opportunities for career path development, brain drain, challenges to project continuity, and funding shortages. Constraints affecting the research for health workforce, which similarly affect the rest of the sector, also constitute cause for concern. These include retaining and harnessing the capacity created within the region, a situation that faces the same difficulties as those encountered globally in low-to-middle-income countries (LMICs). Issues that are particularly challenging in the region include the cost and time involved in traveling between

island states, concerns involving native capacity in areas with a lower population, and difficulties in sustaining regional connections. However, the fact that institutions have embraced communication and online education technologies shows tremendous potential for addressing these issues in the Caribbean region. The discussion section also provides a commentary on methods that trainers have used thus far in capacity-building, highlighting the present potential for monitoring and mentoring to ensure further growth.

Final focus is placed on opportunities for sustainability and growth in the region, with particular emphasis on cost-effective means for continued growth—especially through an elucidation of where marginal improvements can be made in areas where there are few additional resources available for harnessing. This takes place through activities falling under the banners of ‘collaborative engagement’ and ‘resources developed.’ Stakeholder interviews have made clear the value of collaboration between various institutional bodies and frameworks across multilateral, governmental, and academic spheres. As such, we recommend further integration and use of existing connections through the PASB’s institutional connections in the USA and the Region of the Americas overall. Additionally, we acknowledge the potential for further multidisciplinary work and the utility of information and communications technologies, building on existing projects in UWI and ensuring continual engagement to build on the strong foundation in research ethics already present in the region. Finally, centers of excellence, e.g. CIDEIM, play a key role in offering skill and leadership development by providing EPPE and other training in the Caribbean region and beyond.

Pragmatism is important when planning and delivering education, and we shall discuss how the region might develop further sources of capacity for research for health through novel distance-learning measures, as well as through more specific skill-set expansion via diploma programs. We shall outline opportunities for obtaining project funding through further collaboration with extra-regional institutions, as well as through increased efforts to integrate into the policymaking process. Many of the activities and initiatives we shall be recommending are already in place; and therefore, it is important that stakeholders across the region adequately harness these efforts in order to sustain them and guarantee their benefits.

Conclusions

The advisory and funding roles of the Pan American Sanitary Bureau (PASB) have been clearly beneficial to CARICOM countries over the past ten years of research capacity-building initiatives. Understanding the context within which these took place is essential to comprehending the expanded mechanisms and how further development can occur in the future. Systematic reviews and their production and use throughout the region have been anchored with the launch of Cochrane Caribbean. Currently, there is tangible support to ensure the presence of the necessary skills to better deal with existing and future threats across the spectrum of health concerns. There is significant potential for

further development in the region; and continued engagement by subregional, regional, and global actors can ensure that the rewards continue in the years to come. At the time of this publication, further EPPE training in the region and the contributions made by UWI faculty members at the 2017 WHO Cornell Summer Institute provide a good prognosis for the continued success of engagement and capacity development.



4th WHO/Cochrane/Cornell University Annual Summer Institute for systematic reviews in nutrition for global policy-making. Ithaca, New York, July 2017. Photo Dr. Luis Gabriel Cuervo

In summary, our recommendations for sustaining and increasing momentum in this area focus on two core themes:

1) Collaborative Engagement

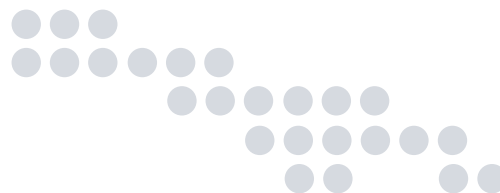
We recommend continued and strengthened engagement among key stakeholders. This will require forging both inter- and intra-sectoral relationships among regional academic institutions, their counterparts in the USA and Canada, and the PASB—and then linking these relationships both regionally and globally with Regional Training Centers receiving support from TDR and WHO Collaborating Centers to provide training and mentorship in a collaborative way.

2) Resource Development

We advise efficient uses of available resources, be they current or predicted—including engagement strategies with academia, policymakers, private companies, and the public. We additionally recommend harnessing remote learning capabilities in the region. Lastly, we recommend developing mechanisms to better utilize what is available in terms of both funding and research.



Group photo, Launch of the Clinical Epidemiology Unit at UWI and admittance to the International Clinical Epidemiology Network (INCLIN) 19 Feb 2009. Courtesy of U.W.I.



1. Introduction

Background and Purpose

This report takes stock of efforts between May 2007 and July 2017 resulting from the support and recommendations of the Secretariat of the Pan American Health Organization, the Pan American Sanitary Bureau (PASB, which resides at the PAHO Headquarters building in Washington, D.C.), with the aim of building research for health capacity in the CARICOM countries. As previously stated, this timeframe began with the 40th Meeting of PAHO's ACHR in Montego Bay, Jamaica, on 29 April – 1 May 2007. Hosted at the invitation of the Ministry of Health Jamaica, the meeting fostered key relationships and facilitated initial contacts for a number of future collaborative projects (Skold, 2013). These projects would develop capacity in line with the ethos that PAHO and WHO developed in mandates they issued in subsequent years—particularly the PAHO *Policy on Research for Health*, the WHO *Strategy on Research for Health*, and the PAHO *Health Agenda for the Americas 2008–2017*.

This report also reviews the beginning of the Sustainable Development Era, driven by the post-2015 agenda (also known as the *2030 Agenda for Sustainable Development*; United Nations, 2016). Landmark agreements such as the *Sustainable Development Goals* (SDGs) henceforth assigned the task of implementing the interdisciplinary and evidence-based actions that characterize research for health in local, national, and multilateral organizations. Moreover, the burden of noncommunicable diseases and neglected tropical diseases in the Region of the Americas continues to constitute cause for concern; and we cannot address those causes without local capacities to observe, understand, and intervene (Wang et al, 2016).

In the CARICOM countries, institutional oversight in the field of research for health is led by the Caribbean Health Research Council (CHRC). As the oldest research body in the Region of the Americas and the coordinating body for public health activities in the CARICOM countries, it has been integrated in recent years to operate under the umbrella of the Caribbean Public Health Agency (CARPHA). CARPHA is comprised of 24 Member States, the majority of which are predominantly English-speaking (CARPHA, 2017). Regional community engagement occurs annually through CARPHA's *Caribbean Health Research Conference* (Hunte, 2015). In geographic and developmental terms, the CARICOM region is mostly comprised of small island developing states (SIDS), as defined and listed by the United Nations Department of Economic and Social Affairs (UN DESA, 2017).

Scope and Methodology

The scope of this report engages operational activities for research capacity development within the CARICOM Region. In a broad sense, capacity development is defined as “*the process by which individuals, organizations, institutions and societies develop abilities to perform functions, solve problems and set and achieve objectives*” (United Nations Economic and Social Council / ECOSOC, 2006). Key developments during the ten years covered by this report were as follows:

- a) Establishing a branch of Cochrane Caribbean
- b) Developing a research center of the International Clinical Epidemiology Network (INCLIN)
- c) Creating a training center in Effective Project Planning and Evaluation for Biomedical and Health Research (EPPE), led by WHO/TDR in collaboration with the WHO Collaborating Center CIDEIM and PAHO
- d) Providing training courses in research ethics, grant writing, and peer review
- e) Offering scholarships resulting from agreements between the Organization of America States (OAS) and PAHO
- f) Providing support for building human capital and other capacities needed to promote evidence-informed policymaking in CARICOM countries
- g) Promoting the use of research for health to address high-level development and health agendas, such as the SDGs and inter-sectoral work

For the production of this report, core guidance was provided by the PAHO Research Promotion and Development team and by members of Caribbean Institute for Health Research (CAIHR) at UWI's Mona Campus. Between September and November 2016, semi-structured audio interviews took place with key stakeholders in the region who were involved in capacity-building efforts. The structure of these conversations was based around a series of questions agreed upon in advance with the stakeholders. These interviews provided valuable contextual information and perspective on the capacity-building

process, with stakeholders also bookmarking academic and grey literature to review later for further information and citable materials. The team obtained additional documentation to support basic quantitative investigation through individual course documents and graduation statistics. For further exploration of source materials, please see Appendix 1. We have put forth our best efforts to deliver a comprehensive report, asking our sources for additional information. Despite our outreach, however, we are aware that additional initiatives may have been missed.

Report Structure

The remainder of the report is structured as follows:

Section 2 discusses the context, policy, and mandates relevant to research capacity development in the Caribbean region. This entailed adopting a historical perspective on regional and global efforts to address health research inequity, one which involved examining relevant PAHO/WHO briefings and mandates.

Section 3 reviews the implementation of capacity-building in the context of progress made and challenges faced. These include efforts to improve integration into collaborative networks, specific development programs, initiatives with a focus on sustainability, and support for health capacities.

Section 4 examines the current state of affairs in light of future expectations, lessons learned, and opportunities available. This entailed defining the aspirations for cohorts to receive training, as well as collating feedback and analysis on the accompanying processes—in addition to highlighting areas that can ensure sustainability and growth in the area of research for health in the Caribbean Region.

Section 5 provides our conclusions and recommendations for future initiatives.



*Savaou Bird (1964) by Ronald Moody, commissioned and donated to the UWI by Archie Cochrane. Courtesy UWI.
Note about the sculpture and the artist.*

..... 2. Research Capacity Development: Context, Policy and Mandates

Historical Perspective

The Caribbean region has made clear efforts to actively support the need to address capacity development in research for health; indeed, this has been an ongoing process for over three decades. Moreover, the roots of the region's institutional efforts in the area of health research extend back more than 60 years into the past. This brief history provides a context for the progress the region has made in recent years (Wilks, 2015).

The Standing Advisory Committee (SAC) for Medical Research in the British Caribbean was formed in 1955 to provide expert input on both the need for and application of medical research, as well as on facilities for collaboration in the region. Its administrative offices were located in Jamaica at UWI's Mona Campus. This was followed by the establishment of the annual Caribbean Health Research Conference in 1956 (Hunte, 2015). During the 1950s, UWI established a clear connection to research for health in the region, symbolized at the UWI Mona Campus by the Savacou bird, a metal statue donated by Archie L. Cochrane (from whom the Cochrane Collaboration takes its name), to commemorate Cochrane's collaboration in instituting a medical research program (UWI, 2013; CHRC, 2017).

The cadre of research pioneers in the Caribbean included Cochrane himself and grew in subsequent decades to include such evidence-based medicine pioneers as Sir Kenneth Standard (Standard & Ennever, 1974) and Professor John Conrad Waterlow (Forrester et al, 2007). They helped build the

foundations for research on malnutrition and infectious diseases in the Caribbean. However, the practice of ensuring sustainable research capacities was not a part of this process. By 1972, the SAC had evolved into the Commonwealth Caribbean Medical Research Council (CCMRC) for the Caribbean countries of the British Commonwealth. It began institutionalizing regional efforts to promote health and coordinate medical research. By the mid-1980s, this initiative had gained momentum in earnest, with its guiding principle being a belief in the need to develop research skills as an essential element in ensuring better health outcomes. These activities provided a critical foundation for present-day research programs in the region (Wilks, 2015). Over the years, CCMRC's membership broadened to include Caribbean countries that were not a part of the British Commonwealth.

In 1998, the CCMRC changed its name to the Caribbean Health Research Council (CHRC), under which it continues to lead research coordination in the region. In 2013, the Caribbean Public Health Agency (CARPHA)—part of CARICOM's institutional framework assimilated five former regional health institutes in the Caribbean, including the CHRC.¹ Over the past decade, the CHRC has developed blueprints for research systems adaptable to CARICOM Member States through the *Health Research Policy for the Caribbean* (CARICOM, 2009) and the *Health Research Agenda for the Caribbean* (CARICOM, 2011). These policies focus on governance, capacity development, resource mobilization, and knowledge translation (i.e. translating knowledge into practice).

The central role of UWI in recent regional health research initiatives took shape following the 1999 launch of the Tropical Medicine Research Institute (TMRI). The Institute focused on increasing the output of research in major areas affecting people's health across the region and on raising the number of trained research scientists in the region's health sector (Forrester, 2010). The TMRI was also host to UWI's Epidemiology Research Unit (ERU), which coordinated the creation of UWI's Master's in Epidemiology program in cooperation with international partners and experts.² This program has served as a regional platform for research capacity-building by raising the bar in study design and research analysis, with a specific focus on involving graduates in regional projects and retaining their expertise. This course evolved into UWI's PhD program in epidemiology, which it launched in 2008, and formed the template for a PhD program that UWI now offers at its Barbados campus. In August 2016, TMRI officially changed its name to the Caribbean Institute for Health Research (CAIHR) to reflect its international presence in conducting high-quality research for informed health policies, programs, and care delivery (UWI, 2016).

1 The five institutes mentioned as now having been assimilated into CARPHA are as follows: The Caribbean Environmental Health Institute (CEHI), the Caribbean Epidemiology Centre (CAREC), the Caribbean Food and Nutrition Institute (CFNI), the Caribbean Regional Drug Testing Laboratory (CRDTL), and the Caribbean Health Research Council (CHRC).

2 Parties providing assistance included faculty from Cambridge University, UWI's Department of Community Health and Psychiatry, the UWI Deans Office, the UWI Faculty of Medical Sciences, the Ministry of Health Jamaica, the University of Manchester, the University of Leeds, the United States Centers for Disease Control and Prevention (CDC), the University of Arizona, and PAHO. (Source: Tulloch-Reid M. Building a Cadre of Epidemiologists to Support Public Health in the Caribbean. PowerPoint presentation given at the 46th Meeting of the Advisory Committee on Health Research; 2016 29-30 Nov. Washington, D.C.: Pan American Health Organization / World Health Organization [PAHO/WHO].)

Global and Regional Efforts to Address Health Research Inequity

Global Efforts

For more than half a century, the World Health Organization (WHO) has ensured significant positioning for health research through its activities. In 1959, it formed the Advisory Committee on Medical Research (ACMR), precursor to the present-day Advisory Committee on Health Research (ACHR), which it established in 1986 (WHO, 2010). A group specific to the Pan American Health Organization (PAHO) followed suit in 1962. It advises the PASB on carrying out its constitutional role of promoting and coordinating research related to international health, while acting in close cooperation with external institutions and pursuing common goals with the scientific community at large (PAHO, 2010). Over the past decade, each PAHO ACHR meeting has included representation from CARPHA. (PAHO, 2017).

In 1975, the Special Programme for Research and Training in Tropical Diseases (TDR) was created, operating independently under the legal auspices of the WHO with co-sponsorship from UNICEF, UNDP, and the World Bank (PAHO, 2010). TDR has since developed and implemented operations to strengthen research capacity on a global scale. Its aim is to provide national professionals in developing countries with the necessary skills to locate and implement appropriate solutions to endemic health problems. This is carried out via three interdependent objectives: (1) supporting infectious disease research to meet the needs of the most vulnerable; (2) strengthening health research capacity in low- and middle-income countries; and (3) sharing the knowledge generated so that it carries over into both policy and practice (Ogundahunsi et al, 2015).

In 1987, the Commission on Health Research for Development sparked international activity to address significant differences in health research capacities throughout the world. The twelve-member group established the concept of the '10/90 gap,' a term the group uses to quantify the severe inequity



Dr. Martheliese Eersel (Director of Health, Suriname) and Dr. Donald Simeon, Director CHRC, 44th PAHO Advisory Committee on Health Research, Barcelona, Oct 2011. Photo Dr. Luis Gabriel Cuervo

inherent in the fact that the world invests less than 10% of its total health research funds on issues that affect 90% of the world's peoples (Commission on Health Research for Development, 1990). Consequently, the Commission recommended a series of implementation measures to expand national health research capacities. These resulted in a series of LMIC-directed initiatives launched over the ensuing decade, for example:

- **Task Force on Health Research for Development** (established in 1991), which developed Essential National Health Research (ENHR) as a strategy for countries to use in defining research priorities (COHRED, 2000)
- **Council on Health Research for Development / COHRED** (established in 1993 as an outgrowth of the Commission on Health Research for Development), an international mechanism to facilitate ENHR implementation (COHRED, 2017)
- **Global Forum for Health Research** (established in 1998), an independent foundation to promote health research on the problems of poor countries and peoples; it merged with COHRED in 2010 (COHRED, 2017)
- **Alliance for Health Policy and Systems Research / AHPSR** (established in 2000), which promotes both the generation and use of health policy and systems research (HPSR) as a means to strengthen health systems in LMICs; AHPSR's base is at WHO headquarters in Geneva but has independent funding, with its mission being to advance the field of HPSR in particular (AHPSR, 2017)

Other bodies have also played important roles in supporting and campaigning for better practice and use of health research throughout the world. One that is truly noteworthy was established in 1993. Cochrane (previously known as the Cochrane Collaboration) focuses on improving the quality of research used by health practitioners, through the preparation and maintenance of systematic reviews. Its presence in the Americas has developed through centers it has established in the USA and Canada—alongside the creation of the Ibero-American Cochrane Network (*Cochrane Iberoamérica*), based in Spain, and Cochrane's sibling organization, the Campbell Collaboration. All have played a similar international role in the social sciences since 1999 (Campbell Collaboration, 2017).

A concluding point worthy of note in an international context has been the systemic shift in the production characteristics of health research. Based on changing perspectives on the role and production of research, interdisciplinary and multi-sectoral teams now support “research for health,” a term popularized since 2008 and structurally embedded both in the aforementioned PAHO *Policy on Research for Health* and the WHO *Strategy on Research for Health* in 2009 and 2010, respectively (Becerra-Posada et al, 2014).

Regional Efforts

In the context of the CARICOM states, actions were underway in 2007 and 2008 that were essential to the process of developing the current PAHO/WHO strategies in research for health. In the 2007 *Declaration of Port-of-Spain*, CARICOM committed

In so doing, the Declaration squarely placed the need for, and its secretariat's expertise in, research for health in the context of pressing health issues in the region. Furthermore, the CARICOM secretariat ensured its inclusion in consultations at the *Bamako Ministerial Forum on Research for Health* in November 2008. CARICOM country representation occurred via its secretariat's collaborative activities, as well as through its sponsorship of a preparatory meeting for the Bamako Forum in Trinidad and Tobago and for a representative contingent to travel there. The results of the Bamako consultations, including the *Bamako Call to Action on Research for Health*, were presented at PAHO's 48th Directing Council and 60th Session of the Regional Committee of WHO for the Americas in document CD48/17, *Regional Contribution to Global Ministerial Forum on Research for Health* (PAHO, 2008).

In the context of the Region of the Americas, a key event in the development of directives for research capacity took place in 2008. That year hosted the inception of the Latin American Conferences on Research and Innovation for Health. This series of conferences brought together key stakeholders in the area of research for health, including members of the ACHR, government officials from national and technology councils, and key officials from the national health systems. Focus and outcomes arising from the conferences revolved around identifying solutions to systemic barriers to the effectiveness of national health research. In April 2008, Rio de Janeiro, Brazil, hosted the First Latin American Conference on Research and Innovation for Health. A follow-up meeting was held in Havana, Cuba, in November 2009. Regional delegates in the field of research for health met for a third time in November 2011 in Panama City, Panama, for the 2nd Latin American Conference on Research and Innovation for Health. These meetings were essential to providing better understanding of the inefficiencies of national research for health systems within the region of Latin America and the Caribbean (LAC), highlighting issues that include weak coordination, the need to define working priorities, and equally the need to develop sustainable financing mechanisms (Becerra-Posada, 2014).

Our full support for the initiatives and mechanisms aimed at strengthening regional health institutions, to provide critical leadership required for implementing our agreed strategies for the reduction of the burden of Chronic, Non-Communicable Diseases as a central priority of the Caribbean Cooperation in Health Initiative Phase III (CCH III), being coordinated by the CARICOM Secretariat, with able support from the Pan American Health Organization / World Health Organization (PAHO/WHO) and other relevant partners ...

That we will establish, as a matter of urgency, the programmes necessary for research and surveillance of the risk factors for NCDs ...

(CARICOM, 2007)

PAHO/WHO Briefings and Mandates on Research Capacity Development

This section outlines a selected series of PAHO/WHO policy briefs and mandates. All of them have highlighted the need for effective programs both in national health research and in research for health—as well as the need to address systemic inequities.

In 1990, at the 43rd World Health Assembly, technical discussions took place on Research for HEALTH FOR ALL, which stressed the importance of research when setting priorities for health systems (PAHO, 2010; WHO, 1990). The 2004 *Mexico Statement on Health Research* developed this theme by confirming its necessity in the era of the Millennium Development Goals (MDGs) by calling for better research systems (WHO, 2004). WHO Director General Margaret Chan reaffirmed the need for action at the beginning of her tenure in 2007, outlining its priority among the “six issues” that guide the organization’s approach to work (Chan, 2007).



Art for Research Exhibit, PAHO HQ, 25 April 2014. From the left, PAHO Emeritus Director Sir George Alleyne, PAHO Director Dr. Carissa Etienne, Dr. Ciro de Quadros shortly after being named Public Health Hero of the Americas. Photo Dr. Luis Gabriel Cuervo

More specifically in the Region of the Americas, the PASB’s efforts include a context that first emerged in a paper published in 2000, which laid out its specific concerns: “Science for health: notes on the organization of scientific activity for the development of health in Latin America and the Caribbean.” Noteworthy in the analysis were overall improvements made in research quality and output, as well as in development expenditures invested, due to a mix of greater multilateral aid and improved skills among researchers. However, these improvements exist side by side with the systemic inequalities present in the Region. Highlighted were the need for greater capacity development, human resource retention, and attention paid to the societal context of the health-disease process, now considered as part of the “social determinants of health” (SDH) (Pellegrini, 2000).

With respect to guidance documents, two United Nations health mandates are of structural relevance to this report:

1. Pan American Health Organization, *Policy on Research for Health* (document CD49/10 from the 49th Directing Council, 61st Session of the Regional Committee of WHO for the Americas, 2009)
2. World Health Organization, *WHO's Roles and Responsibilities in Health Research* (document WHA63/21 from the 63rd World Health Assembly, 2010)
 - a. This included the ratification of WHO's *Strategy on Research for Health*.

Over the course of the capacity-building project, PAHO's *Policy on Research for Health* (the abovementioned document CD49/10) has provided an institutional structure for both the PASB's actions and stakeholder support upholding research for health in the CARICOM countries. At its core are six interrelated objectives:

- a) to promote the generation of relevant, ethical, and quality research,
- b) to strengthen research governance and promote the definition of research agendas,
- c) to improve competencies of and support for human resources involved in research,
- d) to seek efficiencies and enhanced impact and appropriation of research through effective and strategic alliances, collaboration, and the building of public trust and engagement in research,
- e) to foster best practices and enhanced standards for research, and
- f) to promote the dissemination and utilization of research findings.”

At the 63rd World Health Assembly in 2010, following the ratification the aforementioned *WHO's Roles and Responsibilities in Health Research* (document WHA63/21), WHO formally published its *Strategy on Research for Health*. It follows a similar core structure, with five interrelated goals:

- a) **Organization:** Strengthening of the research culture across WHO
- b) **Priorities:** Reinforcing research (at the national, regional, and global levels, as well as within WHO) in response to priority health needs
- c) **Capacity:** Providing support for strengthening national systems for health research
- d) **Standards:** Promoting good practice in research, as well as drawing on WHO's core function of setting norms and standards
- e) **Translation:** Strengthening links among research policy, practice, and products

Furthermore, a series of recent health mandates give direct reference to research for health in their component parts, emboldening the need for continued capacity development and engagement throughout the Region, as the Secretariats of both PAHO and WHO continue to mandate the role of evidence in decision-making processes. Mandates that fall into this category include, but are not limited to, the following:

- **World Health Organization**

- 56th World Health Assembly, *Intellectual Property Rights, Innovation, and Public Health* (document WHA56/27, 2003)
- 59th World Health Assembly, *Public Health, Innovation, Essential Health Research, and Intellectual Property Rights: Towards a Global Strategy and Plan of Action* (document WHA59/24, 2006)³
- 61st World Health Assembly, *Report of the Intergovernmental Working Group on Public Health, Innovation and Intellectual Property* (document WHA61/9, 2008)
- 61st World Health Assembly, *Global Strategy and Plan of Action on Public Health, Innovation, and Intellectual Property* (document WHA61/21, 2008)
- 62nd World Health Assembly, *Public Health, Innovation and Intellectual Property: Global Strategy and Plan of Action—Proposed Time Frames and Estimated Funding Needs* (document WHA62/16, Add. 1, 2009)

- **Pan American Health Organization, Regional Office of the World Health Organization**

- 47th Directing Council, 58th Session of the Regional Committee of WHO for the Americas, *Public Health, Health Research, Production and Access to Essential Medicines* (resolution CD47/R7, 2006)
- 47th Directing Council, 58th Session of the Regional Committee of WHO for the Americas, *Report of the Commission on Intellectual Property Rights, Innovation and Public Health* (document CD47/20, 2006)
- 27th Pan American Sanitary Conference, 59th Session of the Regional Committee of WHO for the Americas, *Faces, Voices, and Places: A Community-Based Response to the Millennium Development Goals—A Strategy from the Local to the Regional* (document CSP27/14, 2007)
- 142nd Session of the Executive Committee, *Intergovernmental Working Group on Public Health, Innovation and Intellectual Property: Current Status* (document CE142/INF/4, 2008)
- 48th Directing Council, 60th Session of the Regional Committee of WHO for the Americas, *Public Health, Innovation, and Intellectual Property: A Regional Perspective* (document CD48/18, 2008)
- 51st Directing Council, 63rd Session of the Regional Committee of WHO for the Americas, *Plan of Action on Road Safety* (document CD51/7, 2011)
- 51st Directing Council, 63rd Session of the Regional Committee of WHO for the Americas, *Strategy and Plan of Action on e-health* (document CD51/13, 2011)

³ Key guidance was provided by the Report of the Commission on Intellectual Property Rights, Innovation and Public Health (Geneva: WHO; 2006).



PAHO/WHO Meeting of the Directing Council. PAHO/WHO ©

- 51st Directing Council, 63rd Session of the Regional Committee of WHO for the Americas, *Resolution CD51/14: Plan of Action to Reduce the Harmful Use of Alcohol* (resolution CD51.R14, 2011)
- 150th Session of the Executive Committee, *Strategy and Plan of Action on Knowledge Management and Communications* (document CE150/17, 2012)
- 28th Pan American Sanitary Conference, 64th Session of the Regional Committee of WHO for the Americas, *Strategy and Plan of Action for Integrated Child Health* (document CSP28/10, 2012)
- 28th Pan American Sanitary Conference, 64th Session of the Regional Committee of WHO for the Americas, *Health Technology Assessment and Incorporation Into Health Systems* (document CSP28/11, 2012)
- 52nd Directing Council, 65th Session of the Regional Committee of WHO for the Americas, *Plan of Action for the Prevention and Control of Noncommunicable Diseases* (document CD52/7, 2013)
- 55th Directing Council, 68th Session of the Regional Committee of WHO for the Americas, *Plan of Action for Disaster Risk Reduction 2016–2021* (document CD55/17, 2016)⁴

⁴ The extended version of this document urges PAHO Member States to “strengthen national-level efforts to develop and update the knowledge and procedures of emergency and disaster response teams.”



First EPPE course in Paramaribo, Suriname, 2015. October 2015. Photo Dr. Luis Gabriel Cuervo

..... 3. Progress and Challenges in Implementing Research Capacity-Building

Building capacities in research for health encompasses a trio of categories. This section examines progress in the CARICOM region emerging over the past decade under these three thematic banners of collaboration, skill-building, and sustainability. Focus is on collaborative activities between the PASB and UWI. The 2007–2017 period has been chosen because of the impetus for increased research capacities and the progress made by programs since the *40th Meeting of the Advisory Committee on Research for Health* (Montego Bay, Jamaica, 2007). At that landmark event, the ACHR Secretariat proposed to delegates from partner organizations to join efforts in developing a cadre of epidemiologists in the Caribbean to support public health (Cuervo Amore, 2007).

Integration into Collaborative Networks

Collaborative networks have acted as important pillars of support for capacity-building efforts. They have integrated UWI, in its role as a regional center of excellence in research, into established international organizations that have facilitated key outcomes crucial to unlocking potential in human capital.

Following the relationships brokered at the *EVIPNet: Evidence-Informed Policy Networks—40th Meeting of the ACHR* in Montego Bay, Jamaica, in April 2007, formal discussions were held by the PASB between faculty from UWI and UOttawa regarding UWI's entry into the International Clinical Epidemiology Network (INCLIN). Furthermore, the 2008 discussions that led to the development of CD49/10 and



The Epidemiology Research Unit, UWI Advancing Medical Training & Research

UWI Admitted to International Epidemiology Network

The Epidemiology Research Unit (ERU) at the University of the West Indies (UWI) has been admitted to the International Clinical Epidemiology Network (INCLIN) as a member institution. The admission ceremony took place on February 19, 2009, in Kingston, Jamaica, during the launch of the UWI Clinical Epidemiology Unit (CEU) and the Caribbean Network of Universities Academic Clinicians (CanUSACLEN).

The ERU, led by Professor Marshall Tulloch-Reid, is a leading research and training center in the Caribbean. It has been instrumental in the development of the UWI CEU, which is a multi-disciplinary unit focused on the study of the epidemiology of infectious diseases and the development of evidence-based practice. The ERU has also been instrumental in the development of the UWI CanUSACLEN, which is a network of academic clinicians from various Caribbean universities.

The admission to INCLIN is a significant achievement for the ERU and the UWI. INCLIN is a global network of leading epidemiology research centers, and its membership provides the ERU with access to a wealth of resources, including training opportunities, research funding, and international collaboration. The ERU is committed to continuing its efforts to advance medical training and research in the Caribbean, and to contributing to the global epidemiology research community.

Research is a Catalyst for Effective Medical Services – Prof. Wilks

Research is a catalyst for effective medical services, according to Professor Wilks. He emphasized the importance of research in the development of evidence-based practice and the improvement of patient care. He noted that research is essential for the identification of new treatments and the evaluation of existing ones. He also stressed the need for a strong research culture in medical institutions, which requires the support of leadership and the investment of resources. Professor Wilks concluded by stating that research is not just an academic exercise, but a practical tool for the advancement of medicine and the benefit of society.

Major Achievements

The ERU has achieved several major milestones in its history. It has been instrumental in the development of the UWI CEU and the UWI CanUSACLEN, which are now leading research and training centers in the Caribbean. The ERU has also been instrumental in the development of the UWI School of Health, Behavior and Society, which is a leading center for research in public health and population science. The ERU has also been instrumental in the development of the UWI Institute of Health, Behavior and Society, which is a leading center for research in the social and behavioral determinants of health. These achievements demonstrate the ERU's commitment to excellence in research and its impact on the Caribbean and the global research community.

UWI photos and news featuring the Admission of the UWI to INCLIN. 19 Feb 2009. Jamaica. Courtesy U.W.I. Dr. Marshall Tulloch-Reid.

WHA 63/22 played an essential role in formulating a broader framework for the project and ensured the necessary impetus for success in project activities. Continued support from the University of Ottawa and the PASB led to the achievement of this goal on 19 February 2009, with the launch of the Epidemiology Research Unit (ERU) in TMRI (now the Caribbean Institute of Health Research / CAIHR) at UWI's Mona campus. The unit's creation signified admittance as a Clinical Epidemiology Unit (CEU) in the Canada/USA International Clinical Epidemiology Network (CanUSACLEN) branch of INCLIN (UWI, 2009). Furthermore, UWI's CEU created an orbital forum for a range of specialists to support various aspects of public health and research for health in their role as practicing clinicians, biostatisticians, clinical researchers, social scientists, economists, and policymakers (Tulloch-Reid, 2015).

Later that year, in October 2009, the Caribbean region was integrated into WHO's Evidence Informed Policy Network (EVIPNet) at its first national network launch in Trinidad and Tobago (PAHO, 2009; EVIPNet Americas, 2008). This opened up the opportunity for a further follow-up workshop to discuss the state of research for health within a CARICOM country. It integrated Trinidad and Tobago into an innovative initiative that focused on promoting country-level partnerships among policymakers, researchers, and civil society. The workshop received support from experts from McMaster University in what later was to become the WHO Collaborating Centre for Evidence-Informed Policy. The goal of the workshop was to facilitate policy development and implementation through the use of the best scientific evidence available (WHO, 2016).

Entry into the INCLIN network strengthened the presence of UWI in the international research for health community and facilitated ties with leading health research institutions in North America. These connections led to important research capacity-building exchanges between UWI and the



First EVIPNet workshop in Trinidad. University of Trinidad and Tobago, Port-of-Spain, 5 Oct 2009. Photo Dr. Luis Gabriel Cuervo.

School of Epidemiology and Public Health of the University of Ottawa⁵, as well as between UWI and the US Cochrane Center at the Johns Hopkins Bloomberg School of Public Health⁶ in Canada and the USA, respectively. Each experience brought high-potential graduates from UWI into contact with advanced research methodologies, provided valuable hands-on experience, and developed capacities to offer training in how to conduct research for health workshops at UWI and across the region, in association with CARPHA. Furthermore, these exchanges further boosted the ties between UWI and Cochrane US, as well as with Cochrane Canada. These were later formalized through membership of UWI faculty in the Cochrane and Campbell Equity Methods Group.

In 2012, following the successful exchange with UOttawa, further collaboration took place with a workshop at UWI's Mona campus led by Cochrane and the PASB: *Health Systems Strengthening Workshop: Health Technology Assessment and Systematic Reviews*. From 12–14 March, attendees from policymaking, academia, medical practice, and public health received training in how to conduct and maintain systematic reviews and use Health Technology Assessment (HTA) in policymaking. The workshop's success furthered the impetus to provide such training across the region. Funding for the training was provided by Health Canada, PAHO's Caribbean Programme Coordination (CPC), and UWI-Mona.⁷ Integration with Cochrane resources catalyzed yet another significant international collaboration: the establishment of a Cochrane branch.

The following year, in June 2013, the Caribbean Branch of the US Cochrane Center (CBUSCC) was launched at UWI's Mona campus, thanks to the significant efforts put forth by UWI faculty and technical



Launch of Cochrane Caribbean at UWI Mona Campus, Jamaica, 6 June 2013. Delegates and Directives from UWI, Cochrane and PAHO. From Left: Drs. Ernest Pate, Mark Wilson, Roberta Scherer, Damian Francis, Jeremy Grimshaw, Nadia Bennett, Peter Tugwell, Luis Gabriel Cuervo, Marshall Tulloch-Reid

⁵ Host to the WHO Collaborating Center on Population Health

⁶ Further details on UWI faculty involved in exchanges appear below.

- Damian Francis was the recipient of the Emerging Leaders in the Americas (ELAP) Fellowship, endowed by the University of Ottawa (2010). It provided six months of extensive training in producing systematic reviews. Funding was provided through UOttawa and the Canadian government.
- Chisa Cumberbatch travelled as a 2011 visiting scholar to UOttawa with sponsorship from its Epidemiology Research Unit.
- Nadia Bennett received a fellowship from Johns Hopkins University from January to May 2012 and additional funding from PAHO to attend their summer program, where she worked on a Cochrane systematic review. She then received a grant from the Wellcome Trust to attend the London School of Hygiene and Tropical Medicine for the 2015/2016 academic year, before returning to Jamaica to complete a 30-month project on *Vascular Growth Factors and the Emergence of Arterial Function and Blood Pressure in the 1986 Birth Cohort*.

⁷ Source: Course Report of the *Health Systems Strengthening Workshop: Health Technology Assessment and Systematic Reviews* held at UWI's Mona Campus, Kingston, Jamaica, on 12-14 March 2012 and published that same year.

cooperation from stakeholders, including the PASB. This officially cemented the position of UWI faculty as part of the global Cochrane network of more than 37,000 research for health professionals (Skold, 2013; Cochrane, 2017). The branch has since developed and now offers direct support to country efforts across the region, including Bahamas, the Cayman Islands, Grenada, Guyana, Jamaica, Turks and Caicos, Trinidad and Tobago, Suriname, and St Lucia.⁸ Moreover, the CBUSCC launch included a symposium that examined the position of health research in the region. Since then, the CBUSCC has organized three independent annual workshops to promote and improve the capacities of dozens of attendees to produce knowledge for evidence-based medicine in the region. These workshops have been made open to all interested parties and have been integrated into the MSc in Epidemiology program during the years when it is run.⁹

Since 2013, additional training from CBUSCC faculty includes an Evidence-Based Care module at UWI, which is available to professionals from medical and public health programs. This is in addition to the support provided for a systematic review course aimed at students from Schools of Social Work, Epidemiology, and Family Medicine (Tulloch-Reid, 2015). Furthermore, branch faculty members have published numerous works of literature, a sample of which is available on the CBUSCC Publications website (Cochrane Caribbean, 2017). Scholarly contributions have also been made by the Cochrane branch to the entities listed below (with their locations indicated in parentheses)

- **Cochrane Collaboration** at universities and/or research centers
 - Wounds Group (University of Manchester, United Kingdom / UK)
 - Cystic Fibrosis and Genetic Disorders Group (University of Liverpool, UK)
 - Child Development and Psychosocial Learning Problems Group (Queen's University Belfast, UK)
 - Equity Methods Group (University of Ottawa, Canada)
 - Public Health Group (University of Melbourne, Australia)
 - Musculoskeletal Group (University of Ottawa, Canada)
 - Student 4-Best Evidence (University of Oxford, UK)
 - UK Cochrane Centre (University of Oxford, UK)

8 Berdanier AR. *Capacity Development Initiatives: Caribbean Region Report—2009–2014* [Internet]. Washington, D.C.: Pan American Health Organization / World Health Organization (PAHO/WHO); 2014. Available from: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKewjV3a65k8bVAhVX2WMKHTXaCAEQFggMAA&url=https%3A%2F%2Fhealthresearchweb.org%2F%3Faction%3Ddownload%26file%3DCapacityDevelopmentInitiativesKBR_RP%2FEnglishSpeakingCaribbean.pdf&usq=AFQjCNGa4OlvW33z-yib3OKZNe6iHWVNo6g (accessed 7 August 2017).

9 Details on the courses run appear in bullets below. Source: Course reports from the respective workshops published the year of the event.

- *Systematic Review Author Training Workshop*, Cochrane Caribbean, UWI-Mona Campus, Kingston, Jamaica (14–16 April 2014): A total of 31 participants from four countries crossed various disciplines including research, epidemiology, computer science, dentistry, policymaking, and nutrition.
- *Systematic Review Author Training Workshop*, Trinidad and Tobago (9–11 September 2015): A total of 23 competitively selected participants attended from 11 countries. Teaching focused on basic skills in how to conduct Cochrane Systematic Reviews, along with a hands-on introduction to *Review Manager software* (RevMan®). The workshop was conducted by CARPHA in collaboration with Cochrane Caribbean.
- *Systematic Review Author Training Workshop*, Cochrane Caribbean, UWI-Mona Campus, Kingston, Jamaica (18–20 April 2016): Some 11 participants attended from a variety of disciplines across the medical sciences and computer science.

- Caribbean Public Health Agency (CARPHA, Trinidad and Tobago)
- The University of the West Indies (UWI) School of Nursing (Jamaica)
- Campbell Collaboration International Development Group (London, UK)
- Pan American Health Organization / World Health Organization (PAHO/WHO, Washington, D.C., USA)

Collaborative links with INCLEN also led in June 2016 to holding workshops in implementation science at UWI's School of Nursing. These were conducted in association with the Global Alliance for Chronic Disease—An Alliance of Health Research Funders.

Research Capacity Development Programs

In 2007, the International Center for Training and Medical Research (*Centro Internacional de Entrenamiento e Investigaciones Médicas / CIDEIM*) in Cali, Colombia, became the WHO/TDR Regional Reference Center for Latin America and the Caribbean, as part of TDR's *Planning for Success* Initiative. In hindsight, the timing was ideal in that it carried momentum into the Caribbean by providing training in how to develop research project management skills through the *Effective Project Planning and Evaluation for Biomedical and Health Research (EPPE)* course that TDR had elaborated. CIDEIM adapted this EPPE training for the Region of the Americas in 2005 and subsequently hosted skills-building courses throughout the Region, including at PAHO's Washington, D.C. (WDC) headquarters in early 2007. This course anchored efforts in the Region and was opportune in that it involved attendees in the program's continuing education program, which used 'train-the-trainers'–style courses to enable cascading of the training events. The first of these in the Americas was held at UWI in December 2007.¹⁰ In 2009, CIDEIM expanded its scope under an umbrella encompassing project planning and other essential research skills (covering both clinical and laboratory practices), in response to TDR's call for a regional training center. This led in 2010 to CIDEIM becoming one in a group of now six TDR Regional Training Centers—a hub for skills

development in the Region of the Americas. This role cemented its position as a course provider in the areas of organizing, managing, and conducting health research—as well as in building capacity for researchers to improve the quality of their scientific investigations and their competitiveness in obtaining grant funding (Ogundahunsi et al., 2015).



EPPE training at UWI, Jamaica, Dec 2007. Courtesy of UWI.

¹⁰ Source: Course Report of the EPPE Train-the-Trainers Course held at UWI's Mona campus, Kingston, Jamaica, on 6–9 April 2010 and published that same year.

The EPPE adaptation of the ‘experiential learning cycle’ method developed by David Kolb (2014) is of significant value to researchers, due in part to the extensive training given prior to the courses that allows them to prepare their projects beforehand (WHO/TDR, 2007). This ensures that the students are ready to place their research squarely within the context of the coursework, as well as fostering collaboration and discussion with participants working on different topics in the field of research for health. Following the initiatives started in 2007 at the XL ACHR meeting, two workshops were conducted in Jamaica to promote better research management skills in the region, with participants who have since come to play important roles in skill-building processes in the region. Information on the courses follows.

- *EPPE Skill-Building Course* (UWI-Mona campus, Kingston, Jamaica, 3–5 November 2009): The course hosted 12 participants from UWI, with an observer from CHRC.¹¹ The course encompassed a mix of administrative and research concerns, identifying and training future trainers who have since developed into key persons for promoting EPPE methodologies.
- *EPPE Train-the-Trainers Course* (UWI-Mona campus, Kingston, Jamaica, 6–9 April 2010): This course hosted four participants, three of them from UWI and one from Honduras.¹²

These workshops have strengthened both capacity and sustainability in the practice of research for health, through successful incorporation into existing academic frameworks as has occurred elsewhere in the Region of the Americas.¹³ This occurred via integration into the Master’s of Public Health Program at St. George’s University in Grenada, as well as into the Master’s in Epidemiology and Master’s in Forensic Science Programs at UWI.¹⁴ By 2017, 196 students had graduated from SGU’s Master’s in Public Health Program;¹⁵ and 128, from UWI’s two aforementioned Master’s Programs.¹⁶

The skill development resulting from the UWI courses has also had spillover effects for capacity-building elsewhere. For example, the UWI faculty trained in 2010 was able to play a training role at the EPPE Skill-Building Course held in Paramaribo, Suriname, on 7–9 October 2015. This workshop hosted 32 participants, taking place after a meeting in October 2014 that focused on how to implement the PAHO Policy on Research for Health in Suriname. This learning cascade indicates how capacity-building can continue in an efficient and sustainable manner. Furthermore, an associated workshop entitled Research for Health Strengthening National Health Research Systems was held during that time,¹⁷ with additional reinforcement from a Train-the-Trainers Workshop conducted at UWI-Mona in May 2017 for attendees from Suriname, Grenada, and Jamaica.¹⁸ An EPPE skill-building workshop has been scheduled for September 2017, with facilitation by Caribbean trainees.

11 Source: Course Report from the *EPPE Skill-Building Course* held at UWI’s Mona campus, Kingston, Jamaica on 3–5 November 2009 and published that same year.

12 Source: Course Report from the *EPPE Train-the-Trainers Course* held at UWI’s Mona campus, Kingston, Jamaica on 6–9 April 2010 and published that same year.

13 Courses are now available at the National Autonomous University of Honduras (*Universidad Nacional Autónoma de Honduras*), at the Pontifical Catholic University of Ecuador (*Pontificia Universidad Católica del Ecuador*) and Del Valle University (*Universidad del Valle*) in Colombia.

14 Source: Course Summary Report from the *EPPE Skill-Building Course* held at UWI’s Mona campus in Kingston, Jamaica, in 2016 and published that same year.

15 This figure is based on faculty graduation statistics.

16 Further information on UWI Masters Programs appears below.

• **Master’s in Epidemiology** (offered 2010/11, 2013/14, 2015/16): This bi-annual course was the first to incorporate the EPPE methodologies at UWI and has hosted 18 students thus far.

• **Master’s in Forensic Science** (offered in 2011/12, 2012/13, 2013/14, 2014/15, and 2015/16): This annual course has averaged 24 participants since the integration of EPPE methodologies in 2011, with a total of 120 graduates by the end of 2016.

17 Source: Course Report from the *EPPE Skill-Building Course* held in Paramaribo, Suriname, on 7–9 October 2015 and published that same year.

18 Source: Course Summary from the *TDR Train-the-Trainer Course (EPPE)* held at UWI’s Mona Campus, Kingston, Jamaica, 2–5 May 2017 and published that same year.

Research capacity-building initiatives such as those mentioned above have increased the capacity of UWI faculty to engage in delivering workshops aimed at increasing epidemiology skills in the CARICOM countries. To date, this includes several initiatives in partnership with CARPHA. For instance, a *Data Analysis Using Epi Info 7* training workshop that took place in Grenada in June 2015 introduced participants from seven CARICOM countries to statistical and analytical techniques useful in research for health.¹⁹ A further workshop on Basic Research Skills took place in Antigua and Barbuda in October 2016, introducing 23 nursing educators and professionals from 11 countries to the fundamentals of research methodology—thus equipping participants with the key skills required to write a research protocol. This course preceded the 30th Caribbean Nurses Organization Biennial Conference and Meeting, with joint organization from the PASB and CARPHA.^{20,21}

TDR has also recently coordinated two noteworthy workshops with a focus on starting up a regional network for the surveillance and diagnosis of emerging vector-borne diseases (VBDs). Although the topic of VBDs does not fall directly under the heading of research capacity-building, the workshop's activities strengthened the participants' understanding of research for health systems and the information with which they work. First, in December 2015, there was a Workshop to Develop a Regional Network on Surveillance and Diagnosis of Emerging Vector-Borne Diseases in the Caribbean held in Trinidad and Tobago,²² followed in May 2016 by a Workshop to Develop a Regional Network on Research and Control of Emerging Vector-Borne Diseases in the Caribbean held in St. Kitts and Nevis (CARPHA, 2016). In June 2017 TDR trained a cohort of trainers on implementation research at TDR's Regional Training Center (RTC) CIDEIM. This cohort included two Caribbean participants who subsequently trained 11 professionals in Jamaica. TDR had a Caribbean representative (Dr. Shelly McFarlane) participating in their 2018-2019 strategic planning meeting for LAC. The latter meeting focused on taking stock of the developments in LAC, reviewing existing activities, defining the roles of different collaborating institutions supporting RTC, and developing a workplan for LAC that included topics such as training in Implementation Research and in Good Health Research Practices.

Sustainability and Supporting Initiatives

Initiatives coordinated by the PASB have the capacity to exploit both the momentum and the capacities existing to date. The PASB took direct action with the aim of improving the skills necessary to acquire research funding, by organizing the *Caribbean Regional Grant Writing and Peer Review Workshop* in Grenada in 2014. Some 46 attendees from nine CARICOM countries learned about methodologies to upgrade their standards of participation, strategy, and writing skills—as well as their knowledge of the review process—so as to enable them to address global health problems. The workshop was

19 Source: CARPHA Workshop Report from the Data Analysis Using Epi Info 7 Training Workshop held at St. George's University in Grenada on 22–24 June 2015 and published that same year.

20 Source: CARPHA Workshop Report from the Basic Research Skills Training Workshop held in Antigua and Barbuda on 12–14 October 2016 and published that same year.

21 The decision to conduct this workshop was in response to a 2015 Human Resources for Health (HRH) Workshop in Belize, where feedback indicated that nursing educators and professionals view research skills as a core competency. This highlights their recognition of how important it is for those working in health to understand the usefulness of research skills.

22 Source: Agenda of the Workshop to Develop a Regional Network on Surveillance and Diagnosis of Emerging Vector-Borne Diseases in the Caribbean, held by WHO/TDR at CARPHA Headquarters in Port-of-Spain, Trinidad and Tobago, on 8–11 December 2015 and published that same year. Available from: http://carpha.org/Portals/0/docs/MEETINGS/Vector-Borne/vectorborne_web_final.pdf (accessed 4 August 2017).



Caribbean Grant Writing and Scientific Peer Review workshop at St. Georges University, Grenada. 19 Sep 2014. Photo Dr. Luis Gabriel Cuervo.

hosted by CARPHA in collaboration with SGU, PAHO/WHO, and the United States National Institutes of Health through the Center for Global Health located within its National Cancer Institute (NIH/NCI/CGH). It was the third workshop of its kind globally, with previous subregional workshops conducted in Colombia (2012) and South Africa (2013) (NIH/NCI, 2014). Organizers made particular efforts to engage domestic graduates from the Master's in Public Health Program and to continue strengthening local expertise and capacity.

In 2011, PAHO and the Organization of American States (OAS) launched a joint initiative to provide scholarships for students to pursue graduate- and doctoral-level studies in health-related programs, with the aim of advancing native capacities to both carry out and implement research (PAHO, 2016). This program has since grown considerably, with over three dozen professionals having received scholarship offers for further study by June 2017. It involves professionals from across the region—Belize, Dominica, Guyana, Haiti, Jamaica, St. Vincent and the Grenadines, and St. Lucia,—who have received scholarship offers between 2014 and August 2017. New calls are expected in the second half of 2017 for studies in Mexico and Brazil.

PAHO-OAS Scholarships Offered to Applicants from CARICOM Countries

Country	Master's	Specialist	Doctorate
Belize	1		1
Dominica	2	1	2
Guyana	2		
Haiti	20		2
Jamaica	2		
St. Lucia			1
St. Vincent and the Grenadines	1		1
TOTAL	28	1	7



Caribbean Grant Writing and Scientific Peer Review workshop at St. Georges University, Grenada. 19 Sep 2014. Photo Dr. Luis Gabriel Cuervo.

The umbrella of research capacity-building over the past ten years has also been in line with efforts to strengthen research ethics in CARICOM countries, in collaboration with UWI. Following a prior meeting in 2006, Jamaica launched the National Bioethics Committee of Jamaica (NBCJ). It was inaugurated in 2008 and formally launched in October 2009, with efforts led by key practitioners at UWI and the WHO Collaborating Center in Ethics and Global Health Policy at the University of Miami. The local officials and experts involved in this endeavor came from the Ministry of Health Jamaica, the Attorney General’s department, and all the major universities of Jamaica (Pan American Bioethics Initiative / PABI, 2009). This committee provided national-level oversight, focused on protecting human subjects involved in research, and acted as a catalyst for strengthening the understanding of ethical principles in research. It also supported the efforts of institutional ethical review boards in the country. PAHO has also supported the implementation of this model elsewhere in the Caribbean region.

The bioethics relationship between UWI and the University of Miami was further strengthened by a PhD Fellow from the WHO Collaborating Center in Ethics and Global Health Policy being placed at UWI. Subsequently, the overall process also developed regional capacity by holding workshops and developing online educational modules from the virtual platform Collaborative Institutional Training Initiative (CITI), which has enabled significant access and usage within the Region. Seminars, presentations, and training events were also carried out between 2009 and 2013.²³ These built upon their own momentum by obtaining institutional approval within UWI, led by core faculty, for establishing an ethics center. Such a center would harness the value of the UWI campus network by providing a sustainable research ethics structure for the entire region (PABI, 2009). Although implementation has not yet taken place, the WHO Collaborating Centre in Ethics and Global Health Policy at the University of Miami—along with other parties involved—still believe that there is enough enthusiasm to re-institute the development process.



Workshop on Implementing the Policy on Research for Health in Suriname, Paramaribo, October 2014. Photo Dr. Luis Gabriel Cuervo

²³ These training events included the following, in order of occurrence.

- University of the West Indies (UWI). Ethics and the Academy: Universities' Duties in an Open Society; 2009 14 Aug. Kingston, Jamaica: UWI-Mona; 2009.
- Public Forum on Ethical and Social Issues Related to Research in and the Use of Genetically Modified Foods with Special Reference to a Developing Country; 2009 7 Mar.
- University of Miami Ethics Program Pan American Bioethics Initiative (PABI), Collaborative Institutional Training Initiative (CITI), University of the West Indies (UWI) Centre/Institute for Ethics Initiative. Beyond the Boundaries: Towards the Establishment of a University Ethics Centre [Internet]. CHRC Annual Meeting, 2010 23 Apr. Port-of-Spain, Trinidad; CHRC; 2010. Available from: https://umshare.miami.edu/web/wda/ethics/PABI_Agendas/jamaica/TrinidadApril2010.pdf (accessed 29 August 2017).
- University of the West Indies (UWI) Centre/Institute for Ethics Initiative, University of Miami Ethics Program Pan American Bioethics Initiative (PABI), Collaborative Institutional Training Initiative (CITI). Beyond the Boundaries: Towards the Establishment of a University Ethics Centre; 2010 22 Apr [Internet]. Cave Hill, Barbados: UWI; 2010. Available from: https://umshare.miami.edu/web/wda/ethics/PABI_Agendas/jamaica/TrinidadApril2010.pdf (accessed 29 August 2017).
- University of the West Indies (UWI). Quality Forum: Quality and the Responsible Conduct of Research, 2010 28 Oct [Internet]. Kingston: UWI-Mona; 2010. Available from: https://umshare.miami.edu/web/wda/ethics/PABI_Agendas/jamaica/jamaica10282010.pdf (accessed 29 August 2017).
- National Bioethics Committee of Jamaica, Jamaica National Commission for the United Nations Economic and Social Council (UNESCO). Beyond the Common Law Protection of Confidences in Health Care: A Seminar; 2013 18 Feb [Internet]. Kingston, Jamaica: UWI; 2013. Available at: https://umshare.miami.edu/web/wda/ethics/PABI_Agendas/jamaica/UWI-February-2013.pdf (accessed 29 August 2017).
- Goodman, KW. Medical Informatics and Confidentiality. Presentation. National Bioethics Committee of Jamaica, Jamaica National Commission for the United Nations Economic and Social Council (UNESCO). *Beyond the Common Law Protection of Confidences in Health Care: A Seminar*; 2013 18 Feb. Kingston, Jamaica: UWI-Mona; 2013.
- Goodman KW. HIPAA or not? The US Experience. Presentation. National Bioethics Committee of Jamaica, Jamaica National Commission for the United Nations Economic and Social Council (UNESCO). *Beyond the Common Law Protection of Confidences in Health Care: A Seminar*; 2013 18 Feb. Kingston, Jamaica: UWI-Mona; 2013.
- National Bioethics Committee of Jamaica, Jamaica National Commission for the United Nations Economic and Social Council (UNESCO), Pan American Health Organization / World Health Organization (PAHO/WHO), Ministry of Health Jamaica. Health Information Use & Protection: NBCJ 1st Consultation Meeting; 2013 19 Feb [Internet]. Kingston: UWI-Mona; 2013. Available from: https://umshare.miami.edu/web/wda/ethics/PABI_Agendas/not-sponsored/ja_health_info_consult_2013.pdf (accessed 29 August 2017).



First EPPE course in Paramaribo, Suriname, 2015. October 2015. Photo Dr. Luis Gabriel Cuervo

4. Moving Forward: Expectations, Lessons Learned, and Opportunities

Expectations for Cohorts Trained in Various Aspects of Research Skills

The prospects for research for health in the Caribbean are bright indeed. Cohorts and cadres of health professionals have been both exposed to and trained in the use of research for health. Some of the expectations for their future are outlined below.

Overall, capacity-building activities have led to providing formal academic and professional education to more than 600 professionals in the region over the past decade, covering 19 CARICOM countries and providing trainees with a variety of research skills: basic analytics, project management, grant acquisition, systematic reviewing, and ethics, among others.²⁴ The outcome of all this is clear from the actions of a core group of passionate individuals around whom the project has been built, with more diffuse effects appearing at the lower echelons of both public and private organizations throughout the region. We expect these to have a significant impact, not only on a generation of practitioners, but also on the use of research for health in coming years—with its influence certain to catalyze future efforts.

Regional Outreach and Integration

Progress in the capacity of such institutions as CAIHR (formerly TMRI) to produce research and develop human capital has led to strong working relationships between policymakers and researchers, as well as with university faculty—noting the Jamaican National Health Fund’s close relationship with UWI and

²⁴ The figure provided can be considered as a baseline number. Some initiatives, such as research ethics initiatives and recent workshop events, require further review.

its work, and following its development by examining recent data from CAIHR researchers.²⁵ Examples of engagement between faculty and government include development of the *National Research Policy* and *Research Agenda for Health in Jamaica*, collaboration in the *Vision 2030 Jamaica—National Development Plan*, the work of the Cochrane Childhood Group, and assistance with the *Port-of-Spain Evaluation on Taxation Measures for Sweetened Beverages* to address the chronic disease burden. Further work with national and regional actors involved aiding policy initiatives to promote prosocial behavior, as well as operational research on the consequences of chikungunya and zika infections. Included among these extensive interactions are a number of working groups currently supported by CAIHR and involvement in a WHO drug review conducted by university faculty members.

Stakeholders noted that training workshops serve a different purpose from those carried out in more populous nations, the latter having more sizeable pools of available funding. For research teams—researchers, administrators, assistants, etc.—already engaged in research projects, these regional workshops constitute something greater than just a wholly pragmatic exercise. The participants who attended the workshops that this report covers are more varied in terms of their engagement with research. Hence, the workshops can also serve as a promotional exercise on the innate use of research itself, helping attendees understand its purpose, process, and creation. That being said, workshop facilitators ensured that all attendees involved in research projects had their concerns addressed and that they received access to mentorship and further guidance whenever beneficial to their professional development and/or their current work.

Furthermore, interviews with key stakeholders revealed that general opinions with regard to health research have changed over recent years. Nonetheless, it is noteworthy that a large proportion of regional investigation focuses on epidemiological and descriptive studies. In contrast, there is a lack of resources and expertise to carry out molecular and epigenetic research programs, as well operational and implementation research. As a result, this type of research is currently being outsourced by governments and private sector companies to external groups, the consequence of which is that a potential source of revenue is being taken away from local researchers. This opportunity, i.e. to harness and retain research for health resources, aligns with the necessity to engage practitioners and their skills in the production of up-to-date research. However, efforts thus far have been tilted toward academia rather than policymaking. Policy makers can contribute to solutions by making their research needs explicit (e.g. agendas) and allocating sectoral funds to address such agendas. Moreover, research institutions and academia can additionally contribute by offering stable employment and positions commensurate to the new degrees that professionals bring with them, and by transmitting to professionals a clear vision of their roles and accompanying opportunities to improve the entities in which they work, the countries, and the region.

²⁵ However, constraints are noted, due to budgetary concerns and focus being diverted to emergency issues.

Global Engagement

The PASB's focused use of resources has helped strengthen UWI's international links to the research for health community. With the aforementioned focal point installed at its Tropical Medicine Research Institute (TMRI), this role is expected to continue and become stronger. In so doing, it will lead regional production and teaching capacity. This point was formally addressed in August 2016 with the renaming of TMRI to the Caribbean Institute for Health Research (CAIHR), as previously mentioned (UWI, 2016). This broader view is manifest in a series of articles that UWI faculty published in the *Journal of Clinical Epidemiology* in September 2015, describing the state of research for health in the Caribbean. Alongside UWI's institutional development, the series highlights the strong ties that resulted from the institutional relationship between UWI and INCLEN, beginning in 2007 (Tricco et al, 2015).

International engagement has expanded, with UWI faculty working in research for health attending such international summits as the 2012 Campbell Colloquium *What Works Global Summit* (WWGS) in Copenhagen, Denmark, as well as the 2016 WWGS in London, UK—not to mention meetings of the *International Initiative for Impact Evaluation*. Moreover, academic relationships—including those



Damian Francis, Faculty member of the [4th WHO/Cochrane/Cornell University Annual Summer Institute for systematic reviews in nutrition for global policy-making](#). Ithaca, New York, July 2017. Photo Dr. Luis Gabriel Cuervo

with the University of Ottawa and with Johns Hopkins University—have also been developed. In addition, collaboration is being fostered with Cornell University, New York, USA, in activities focused on nutrition; and UWI faculty contributions are being included in the 2017 WHO Cornell Summer Institute in New York State.

Lessons Learned

There are strong expectations for the future of research for health in the CARICOM region. Opportunities need to be handled in the context of the experience of key stakeholders, a point that has become apparent throughout the course of elaborating this report. Lessons learned include providing support

for a number of activities that worked, addressing and overcoming unresolved barriers to progress, and taking stock of the specific capacity-building methods currently in use.

What Worked

Engaging a core group of passionate public health practitioners at UWI and SGU was essential to the success of this capacity-building project. The 40th Meeting of the ACHR presented a catalyzing opportunity for starting up this program of work; indeed, efforts would not have had the same impetus otherwise. That April 2007 meeting offered a forum where key stakeholders and experts could forge personal relationships, which in turn served to strengthen their attachment to the project. Moreover, their willingness to put in the consistent work needed to ensure sustainable efforts by allocating both human and financial resources to capacity-building in research for health was a critical factor for success. This was clearly apparent from interviews with the people involved in the project. Since then, personal relationships among a core cadre of professionals have served as key drivers for collaboration among institutions.

Efforts to integrate UWI into international collaborative networks have been essential for the coordination, provision, and sustainability of innovative opportunities either for providing or undergoing training, and then applying the new skills learned at said training. The process of assimilation into various research for health nodes—such as INCLEN, Cochrane, and TDR—has shown potential for producing significant benefits, with marginal benefits possible for external parties. Furthermore, the official extension of the TDR initiative to CIDEIM occurred at an ideal time for capacity-building, and the dissemination structure of EPPE courses has effectively leveraged both human capital and human resources.

The program has succeeded in carrying out its goals to date, and we recommend further integration and engagement with training offers.²⁶ A further avenue for development would be to bring about greater integration with expertise in programs that the other TDR network of centers are offering (WHO, 2015).²⁷ The train-the-trainers schemes established by TDR in collaboration with PAHO and local institutions has been sustainable, impactful, and has allowed a substantial scaling-up and the development of regional coordinating centers, further developing regional capacities.

26 The following lists TDR's objectives: (a) collaborate with other health research institutions (including public health research institutions) and stakeholders; (b) exchange experiences and innovative approaches to good practices in health research to ensure sustainable capacity development; (c) leverage additional activities for preventing and controlling infectious diseases of poverty; and (d) promote the translation of innovation to health impact.

(Source: As outlined in the WHO/TDR Call for Applications for a Regional Training Centre for Research on Infectious Diseases of Poverty with a Focus on Intervention and Implementation Research in the WHO Eastern Mediterranean Region (EMRO). Geneva: WHO/TDR; 2014. Available from: http://www.who.int/tdr/grants/EMRO_Call.pdf [accessed 4 August 2017].)

27 Other TDR Regional Training Centers located in other WHO Regions and their areas of expertise / specialist courses include the following:

- **South East Asia** (WHO/SEARO) (Gadjah Mada University, Indonesia): Social science and implementation research;
- **Europe** (WHO/EURO) (Astana Medical School, Kazakhstan): Bioethics;
- **Western Pacific** (WHO/WPRO) (Research Institute of Tropical Medicine, Philippines): Good clinical practice, good clinical laboratory practice, and scientific writing;
- **Africa** (WHO/AFRO) (The University of Ghana School of Public Health, Ghana): Implementation research; and
- **Eastern Mediterranean Region** (WHO/EMRO) (Institut Pasteur de Tunis / Pasteur Institute of Tunis, Tunisia): Good health research practice.

Barriers to Progress

Research as a Career for the Health Workforce

Reliable pathways for career path development and professional stability remain a regional issue as yet unresolved. This has constituted a long-lasting concern for regional capacity development in epidemiology, given the difficulties in retaining local talent and attracting extra-regional personnel capable of developing local capacity (Wilks, 2015). In the Caribbean region, countries have to deal with labor shortages in human resources for health, and members of the workforce face opportunity costs in deciding how and where to direct their productive efforts (Wilks et al, 2009). This broader issue of a regional drain of human capital has received recent attention in the specialist nursing sector in Jamaica (NPR, 2017), for example; and the issue of brain drain feeds more broadly into global concerns that led to the Global Strategy on Human Resources for Health: Workforce 2030 (WHO, 2014). The forces that underpin workforce development and movement are complex and subject to local contexts (Mackey & Liang, 2012; Murphy et al., 2014), which calls for adaptive strategies and creative solutions. In practical terms for research for health practitioners, focused efforts become more difficult as multi-tasking between administrative and professional efforts occurs in tandem with difficult career incentives. Interviews with stakeholders, as well as the literature (Ogundahunsi et al, 2015), highlight the fact that given this context, protected time for trained research professionals to conduct their work becomes even more important than in wealthier countries. This bears addressing if we wish to ensure the proper utilization and further advancement of investments in human capital.

The capacity-building initiative has drawn great strength from the relationships among key stakeholders, including those outside the Caribbean region. Yet the long-term success of cooperative activities relies on these activities evolving in such a way as to foster research capacity and leadership within the region. The existing cadre of passionate individuals needs for others to pass on the mantle as well; if so, wider involvement and a cadre of new research for health champions will confer the additional benefit of then engaging more people who have a stake in its success. Examples of successful activity rotation include the involvement of different faculty members from the US Cochrane Center at Johns Hopkins University in training on how to conduct, author, and run systematic reviews, with trained faculty from CAIHR afterwards holding regional training sessions as part of their capacity development program. Moreover, adapting to institutional change and meeting the challenges of the development process remain a concern for collaborative networks in ensuring their long-term sustainability; but with INCLen providing the tinder to fuel activities that now burn brighter with Cochrane Caribbean, the future looks promising indeed.

Funding

Lack of access to the literature, lack of human resources in research, lack of local funding, and lack of knowledge translation are among the constraining factors faced by both experienced and early-stage professional researchers in the CARICOM countries—and even more so in LMICs in general. Ultimately

a funding issue, these challenges constitute obstacles that impede the professional potential of those who receive training as part of the research capacity-building program. One example that elucidates the practical realities professionals face involves the case of producing a systematic review, for which researchers could only obtain one-third of the literature potentially eligible through Cochrane Caribbean's access licenses. To complete their preliminary research, contributions were necessary from a librarian based at the University of Ottawa. Their institutional access amounted to 80% of the relevant literature, with the remainder of requisite articles being purchased by the authors' institution (Bennett et al., 2015). This highlights the benefits of international partners but also exemplifies ongoing inequities in access and the constraints that accompany research for health (Antes & Clarke, 2012). One issue that a stakeholder noted was the insufficient number of library faculty at UWI, which hindered researchers' ability to improve their access to the literature.

Regional Collaboration

International collaboration has made significant strides, but intra-regional networks for researchers in CARICOM countries remains an area for improvement. Current professional networks—such as those forged by individuals either employed or active in Cochrane, CARPHA, the ministries of health in the region, and UWI's academic departments—lack the centralization necessary to fully harness the growing and future human resources in research for health and to ensure the best leveraging of available skills. CARPHA, and more specifically CHRC, currently play the most prominent role in the region; but their high-level focus may not be geared towards the collaborative aspirations of early-stage professionals. Moreover, although the annual CHRC meeting serves as a point of action for fostering such collaboration, lack of funding blocks engagement for some potential attendees. In the case of multi-island activities, intra-regional cooperation could benefit from direct action. The possibility of marginalization also presents a significant barrier to ensuring equitable capacity-



First EPPE Course in Guyana supported with trainers from UWI and Suriname, 18 Sep 2017. PAHO/WHO ©

building in the region. Measures to address this should focus on harnessing working group structures, so as to ensure sufficient distribution of specialty skills among island states with small populations.

Of relevance to the above-mentioned marginalization factor is yet another constraint on developing research for health in the region, one which involves the difficulties of traveling from one CARICOM state to another. The need for students and researchers to cross significant swathes of ocean to reach

courses held abroad, which involves both costs and travel time, can impede their participation in capacity-building events. These issues are exacerbated by a regional airline industry that is not geared towards regular direct travel between islands; instead, travelers are forced to reroute through the USA mainland (i.e. Miami) even if both the origin and destination lie within the Caribbean. A recent example of this impediment in action was a case where a single missed flight prevented attendance at the May 2017 Train-the-Trainers Course in Jamaica. The practical implications of this issue include greater expense and travel time for training—whether for a short course, an extended workshop, or a formal degree. This issue also hampers the effective running of research projects where collaboration among island states is a must.

Addressing the Capacity-Building Methods Used

Interviews identified sustaining post-training momentum as a common difficulty in guaranteeing the success of research projects. This is a complex issue, but some aspects are worthy of special attention. For instance, the lack of interaction with experienced funding personnel was noted as a hindrance to the progress of grant proposals. Bearing this in mind, we recommend that institutions in the Caribbean Region continue to seek out partner institutions in the USA for assistance and collaboration in research projects. Furthermore, interviewees suggested that improving the existing logistical and communications frameworks near training events might in turn offer platforms for improving participant engagement and alleviating fractured communications following these events.

The above recommendation is related to improving mentorship programs that can offer aid to researchers with the less epidemiologically focused parts of research projects. For instance, this could address grant-related concerns and is in line both with the discussions held at SGU's 2014 grant-writing workshop and the outcomes of that workshop. In addition to overarching research mentorship, there are far fewer human resources available for preparing grants in LMIC institutions than there are elsewhere. As a result, we recommend that covering the entirety of the grant application process would be of significant benefit in future training and mentorship programs. This could include such areas as administration, budget, resource mobilization, and other financial matters—covering the entire spectrum of efforts including conducting the research project, publishing reports and results, and facilitating knowledge transfer. All of these are necessary facets in completing the cycle of grant acquisition and project implementation but that may not fall within the realm of the researchers' expertise.

There are mechanisms currently in place to track the implementation of research capacity-building initiatives, which have the potential to overspill into better networking among training recipients—thereby offering collaborative opportunities. However, these mechanisms are insufficient for ensuring the desired overspill. Although statistics and information can be compiled from individual training courses through the use of both individual and summary reports, such information is not readily accessible for academic courses because it tends to be retained within the institution where the training was provided. For purposes of reporting and development, establishing a platform for disseminating this information for competitive and collaborative use would be beneficial to all parties involved.

Opportunities for Sustainability and Growth

The research for health initiatives outlined in this report have relied on the cohesive efforts of a passionate cadre of local professionals, committed international collaborators, and backing from funding institutions. Based on the current state of affairs, there are a number of feasible avenues open to ensure the continued growth of the existing project—and thus, its benefits for society at large. For the purposes of this analysis, these pathways are divided into two distinct categories: (1) collaborative engagement; and (2) resource development.

Collaborative Engagement

Collaborative engagement particularly refers to the committed involvement and academic exchange among research for health practitioners who work at different institutions. Opportunities to develop this include the following.

Regional Activities

- Calls for inter-sectoral collaboration in line with Health in All Policies are indeed welcome and we recommend developing further cadres of experts to carry out research for health. Engaging policymakers through collaborative engagement right from the initial stages of planning research offers a pathway that can lead to impactful engagement. An example of such cadre development at UWI would be to increase efforts to integrate SALISES, the Social Sciences Research Department, with Cochrane's sibling organization, the Campbell Collaboration. This extends to strengthening collaboration in research for health between UWI and such institutions as CARPHA and its Research Ethics Committee, the Planning Institute of Jamaica, the Scientific Research Council of Jamaica, and community stakeholders. Furthermore, tapping into national bodies could offer opportunities for broader-scope funding: for example, the Jamaican National Health Fund. Although these suggestions are specific to Jamaica, similar opportunities for action and collaboration do indeed exist throughout the Caribbean.
- Interviews with stakeholders revealed a need for partnerships with academic institutions in the grant-funding countries as a requirement for delivering the necessary capital for developing research projects. This is a significant challenge, but one that the PASB could help overcome by facilitating contacts between regional institutions and partner/funding institutions outside the region.

TDR Activities

- Facilitating cooperation in course production should take place between the TDR Regional Training Center hosted at CIDEIM and the bevy of WHO Collaborating Centers. This would offer an outlet for valuable expertise that, in turn, could have an impact on regional capacity-building. An example of this could be to initiate joint endeavors with the WHO Collaborating Centre in Ethics and Global

Health Policy at the University of Miami, to work on materials and projects related to bioethics.

- We encourage continued developments in training offers from CIDEIM's TDR Regional Training Centre (RTC) with a focus on strengthening research capacity. Organizational plans for 2017 included skill-building and train-the-trainers courses in EPPE for the Caribbean region, as well as a course on implementation research (2 trainers trained at CIDEIM in June 2017 and these subsequently were supported to train 11 participants in Jamaica) and an introductory course on clinical and epidemiological research methods in Guyana (August 2017), followed in September 2017 by a guided visit by a technical officer to PAHO HQ to explore technical cooperation including the development of a national research agenda, and by a EPPE skill building course. We applaud the planned roll-out of the Implementation Research Toolkit for its role in helping multidisciplinary research teams “to address implementation bottlenecks and to identify and disseminate appropriate solutions to stakeholders” (Ogundahunsi et al., 2015). Broader developments that offer relevant possibilities for skill-building include the continued development and provision of a ‘Massive Open Online Course’ (MOOC) in implementation research. CIDEIM has also developed training in biostatistics, data management, good clinical practice, mobile health²⁸ (mHealth) for use in health research, and budget planning—all of which could significantly benefit efforts to further the skills and capacities of researchers in the Caribbean region. In 2017 TDR, CIDEIM, PAHO and ICESI University will launch a call to identify social innovation in health projects from the Caribbean.



Dr. William Adu-Krow, PAHO/WHO Representative addresses the [Clinical Epidemiology and Research Methods workshop](#), Georgetown, Guyana. 29 Aug 2017. PAHO/WHO ©

UWI Activities

- In research for health capacity-building, UWI has the potential to play an even greater role in the Caribbean, as well as throughout the Region of the Americas. Beyond utilizing local capacity, creating further capacity elsewhere offers a clear development pathway for the university. An example of this already took place in 2015, via faculty engagement among the diverse group of trainers in the EPPE Skill-Building Course in Suriname.^{29,30}

²⁸ Mobile health entails the use of mobile phones and other wireless devices for healthcare.

²⁹ Trainers came from CIDEIM (Cali, Colombia), the Pontifical Xavierian University (*Pontificia Universidad Javeriana, Bogotá, Colombia*), the National Autonomous University of Honduras (*Universidad Nacional Autónoma de Honduras, Tegucigalpa, Honduras*), and UWI's Mona campus (Kingston, Jamaica).

³⁰ Source: Course report from the *EPPE Skill-Building Course* held in Paramaribo, Suriname, on 7–9 October 2015 and published that same year.

- As previously mentioned, there is still support for establishing a center for research ethics at UWI, following the impetus to do so that has persisted over several years. This would expand the expertise currently present at UWI and offer benefits to the rest of the region. Support for its establishment is now available from the WHO Collaborating Centre in Ethics and Global Health Policy at the University of Miami, with additional support from PAHO's Office of Knowledge Management, Bioethics and Research—enough to make a center for research ethics at UWI a reality.



Plenary session. EPPE course in Paramaribo, Suriname, 2015. October 2015. Photo Dr. Luis Gabriel Cuervo

Resource Development

Resource development encompasses a more effective use of resources that are currently either available or foreseeable. Avenues for efforts in this area include the following:

Engagement

- Engaging policymakers in the outcomes and planning of research is essential to gaining support for research priorities. An indication of the current political will to strengthen the field lies in recent developments to advance the progress of the research agenda at the Ministry of Health Jamaica, led by the National Health Research Committee. Ensuring implementation of such an agenda and integrating memoranda into other government disciplines is important for ensuring coherence both when going forward and when seeking consistency with Health in All Policies. Thematically, the agenda also offers a multi-sectoral focus to research over the coming years (Smith-Edwards, 2014).
- Engagement in health research practices and systematic reviews offers an opportunity to further position research as a viable field in the sphere of public knowledge and to develop common understanding of its value. Beyond existing methods of engagement, such as UWI's annual

Health Research Day, we recommend that both academia and government encourage and foster partnerships with local media outlets, to increase transparency and respect for evidence-based decision-making processes.

- Efforts should be made to assess and communicate the cost-effectiveness of research programs to better engage regional stakeholders, policymakers, and the private sector. This is essential for acquiring the requisite funding to further increase capacities. Necessary foundations to do so include improved monitoring processes that systematically record and report on current investments in and outputs from research within the region. Such processes include supporting actions to improve population health data. One example of this is the evolution of the Jamaican Health and Lifestyle Survey. Its first iteration was conducted at the turn of the millennium; the second, in 2007 (Ferguson et al, 2012); and the third was launched in 2016. Engagement with the continued development of this kind of cyclic data-collecting—not only in Jamaica, but also elsewhere in the region—is crucial if effective evaluations are to be carried out (Hodges, 2017).

Continued Innovation in Capacity Development

- Skill shortages and insufficient capacity to carry out research for health remain persistent problems. In cases where there are limited pools of population available, we encourage increasing local capacities for multi-island studies and ensuring skill coverage in public health, epidemiology, monitoring, and implementation science in a structured manner, over an area that would otherwise not have the population to support such expertise. One way to address this could be through the creation of diploma courses, ensuring that some basic native research capacities exist in island states for purposes of assisting in research projects. Broader coordination could then take place through international working group structures, such connections being essential for both existing and future professionals. Another aspect of this issue has been noted with respect to the structure of Master's in Public Health degrees, where general training is provided to students but without the necessary supportive expertise in any particular area. Unfortunately, such efforts—albeit well meant—lessen any possibilities for specific capacity-building.
- Information and communications technologies have tremendous scope, and thus the potential to increase the capacity of development projects and training events, enabling them to transcend geographical boundaries. As we have noted before, movement within the Caribbean can require extra-regional travel for flight connections—a point that travel bursaries address whenever possible; but e-training platforms, with their greater scope, offer significant potential for improving accessibility. Investing in e-platforms could turn out to be an efficient investment indeed, and we encourage efforts to develop online resources, web conferences, and webinars. Indications of the desire for a better online presence are already apparent, including the Evidence Portal maintained by CARPHA. One program already in place that should be engaged and supported is

UWI's Open Campus project. Currently, the project extends institutional reach beyond the physical campuses in Jamaica, Barbados, and Trinidad and Tobago—thus maintaining a virtual campus alongside nearly 50 physical sites in 17 English-speaking Caribbean countries (UWI, 2017). Born from a desire to address the natural and financial barriers to higher education in the region, the Open Campus project is an example of success that capacity development in research for health could well harness beyond the current dissemination of the EPPE online course. Extended distance learning programs also facilitate offers for shorter and more intensive in-person training events, thus allowing mid-career professionals to engage in essential skill development that would otherwise be inaccessible due to domestic responsibilities.

- Cochrane Caribbean should continue to develop its self-reliance in training and research, building on past workshops that it facilitated in conjunction with the US Cochrane Center. We encourage the development of sufficient local capacity to run the workshops independently, with oversight mechanisms in place. This will also help with sustainability.

Support Structures

- Managing temporal resources as well as monetary ones becomes increasingly important with the rising demand for training and expertise in research for health, in response to the increased skill supply. For academia, we support and commend structures to provide protected time and mentorship, which will allow early-career researchers to develop sustainable skills. Key faculty who have received training and now play an active part in research capacity-building in the Caribbean have benefited significantly from such provision.³¹ It is essential to promote retention by offering these faculty adequate conditions to enable them to thrive in their work, along with a clear and viable vision for their career path.
- We also recommend strengthening post-training mentorship with a view to bolstering grant acquisition skills. This will ensure adequate completion of supporting tasks beyond the research project itself, such as administrative matters and budget development. The need to address this is, in part, clear from the agenda of previous peer review workshops, which gave particular weight to idea translation and proposal construction—but perhaps at the expense of some of the more administrative issues.

³¹ Source: Caribbean Public Health Agency & Pan American Health Organization / World Health Organization (CARPHA-PAHO/WHO). Biennial Work Plan (BWP) 2014–2015. Programmatic Report Output “4.4.5 Countries enabled to strengthen their capacity to generate and apply scientific evidence.” Washington, D.C.: PAHO/WHO.

Funding

- Funding insecurity for research for health has been a common theme in this report, and we encourage implementing mechanisms to improve both the acquisition and sustainability of financing. Mobilizing funds is a complex issue, though there have been proposals indicating that developing and allocating specific resources that will target and engage young researchers' attendance at training sessions could be a straightforward method to improve the efficiency of available funds.
- Differential habits exist in the size and frequency of grant acquisitions by Caribbean research for health centers when compared to their more sizeable and established counterparts in the United States. As a result, more sustainable cash flows are present in US-based institutions, due to higher application capacities that allow for more frequent applications for grants of lower value. In comparison, the tighter scope of grant access in the Caribbean can lead to job insecurity and periods of discontinuity in employment. The region might address this issue by creating strong networks of co-investigators and more advanced analytical methods, which ultimately improve research quality overall and lead to stronger funding applications.³²
- At the regional level, the CHRC has been crucial to sustaining research priorities across the English-speaking Caribbean. However, the lack of funding mechanisms to secure financing for implementation currently hampers the progression of research agendas (Becerra-Posada et al., 2014). As a result, we recommend developing regional funding mechanisms. During interviews, stakeholders noted an increase in overall grant acquisition over time; however, they also observed that the lack of a coherent and dedicated regional body hampered sustainable access to project financing. Such a body would provide better access to potential funding than mere reliance on success, given the rigorous competition for resources coming from extra-regional donors. Furthermore, stakeholders indicated a need to continue strengthening those systems that produce the capacity to carry out research, as well as those that conduct the research—a balance that has noticeably shifted since the assimilation of the CHRC into CARPHA.
- There should be a focus on the adaptability of research capacity, so as to ensure its capability to respond to the expectations of funding agencies. This particularly relates to restructuring current training programs. In Grenada, it has been visible since 2014 in the shifting focus of research for health, with the need to address concerns revolving around vector-borne diseases. It has also been evident in the movements of CARPHA and NIH funding (CARPHA, 2015; SGU, 2016).

³² Source: Caribbean Public Health Agency & Pan American Health Organization / World Health Organization (CARPHA-PAHO/WHO). Biennial Work Plan (BWP) 2014–2015. Programmatic Report Output "4.4.5 Countries enabled to strengthen their capacity to generate and apply scientific evidence." Washington, D.C.: PAHO/WHO.



PAHO's Director, Dr. Carissa Etienne opens the 46th Session of PAHO's Advisory Committee on Health Research. Washington DC, 28 Nov 2017. PAHO/WHO©.

5. Conclusions and Recommendations

Conclusions

Efforts made by the PASB have acted as a catalyst, providing regional impetus to improve research in CARICOM countries. Over the past decade, PAHO/WHO's funding and advisory role has been essential by virtue of both increasing and sustaining capacity-building in activities related to research for health. This report particularly focuses on the efforts of UWI and SGU and the activities they carried out, as a reflection not only of their own capacities but also of the multi-national influence that they exert in the Caribbean region. There is a bright future for further collaborative endeavors between the PASB and academic, public, and private institutions in the region, as existing capacities have been harnessed and further capacities have been developed. The momentum of this work is clearly visible in scheduled efforts that will continue through 2017, such as additional training and UWI faculty contributions to the 2017 WHO



*Damian Francis PhD (cand), Co-Director of Cochrane Caribbean, July 2017.
Photo Dr. Luis Gabriel Cuervo*

Cornell Summer Institute for Systematic Reviews in Nutrition for Global Policy Making. Several more are planned for the future.

The success of this capacity-building project was eloquently and succinctly stated in a passage from the article by Professor Rainford Wilks in the *Journal of Clinical Epidemiology* series in 2015. Professor Wilks, who has devoted decades to expanding and strengthening research for health activities in Jamaica as well as in the broader geographic region, described the current situation as follows:

The ethos of epidemiology has definitely taken root in the Caribbean, and this has been recognized and affirmed by regional governments, academic institutions, the international epidemiology community, and international donor agencies. This must be sustained with continued support by regional and international stakeholders, the creation of career paths for persons in the specialty, epidemiologists justifying their relevance by investigating and solving regional health issues, and the creation of a sustainable regional source of research grant funds.

(Wilks, 2015)

Recommendations

As Section 4 outlines, interviews with key stakeholders highlighted the great potential of research for health in the region and chose two areas that require particular focus when developing further activities: (1) collaborative engagement; and (2) resource development.

Collaborative engagement refers particularly to joint activities among research for health practitioners from different institutions. On a regional scale, efforts to build inter-sectoral cadres of experts in line with the Health in All Policies approach offers an opportunity to involve existing capacity, with the PASB facilitating connections with extra-regional institutions and thereby offering a pathway to opening up more funding opportunities. This focus also offers an opportunity for Caribbean countries to work towards a shared research agenda with specific funding and with the spotlight on providing the knowledge necessary to achieve and maintain the United Nations Sustainable Development Goals (a.k.a. Agenda 2030). Moreover, cooperation between TDR programs and capacity-strengthening activities in the region offers additional potential for increasing existing resources. Actions include further engagement with the length and breadth of the activities emanating from CIDEIM and fostering connections with WHO Collaborating Centers, with the aim of helping advance initiatives both current and potential: for example, with the WHO Collaborating Centre in Ethics and Global Health Policy at the University of Miami. We encourage UWI to focus its potential on increasing its international collaborative role in research for health and establishing an ethics center.

Our recommendations for **resource development** focus on the effective use of both available and future resources. Engagement with domestic policy institutions is essential from the very early stages of planning, in order to achieve their buying into not only scheduled but also ongoing work. Additionally, we recommend active communications strategies to achieve transparency and gain respect from the general public for evidence-based decision-making processes. Better monitoring of activities and outcomes will also bring about deeper cost-effectiveness analysis, which in turn will entice support from regional stakeholders, policymakers, and the private sector. Such efforts would support the funding necessary to spur further innovations in capacity development and address the skill shortages present within the region.

Recommended methods to deal with population and financial constraints include introducing novel programs of study and working group structures, so as to achieve better baseline capacity in human-resource-constrained small island countries. In addition, the tremendous scope that information and communications technologies have shown for overcoming geographical boundaries is significant when it results in offering distance-learning programs and facilitating shorter, more intensive, in-person training events. Support structures outside of actual study can also better facilitate individual development, through efforts to offer protected time for research and mentorship programs that revolve around training courses. Finally, the reality of persistent funding insecurity in the region represents a significant issue in this report—one that is common to all the countries of the region. Yet targeted mechanisms to focus on such key demographic groups as young researchers and to foster better co-investigator networks could improve the potential success of grant applications. Moreover, we recommend expanding all available regional funding mechanisms, with support from activities involving political engagement—all the while bearing in mind the reality that researchers tend to respond in adaptive fashion to the aims of funding agencies, such as we witnessed with the recent focus on addressing vector-borne diseases in the region.

Ultimately, the capacity of both public and private institutions and practitioners to carry out research activities in the Caribbean region will depend on the funds available to train and maintain a base of well-skilled individuals and well-functioning collaborative networks. This challenge also presents an opportunity to innovate unique solutions beyond that to which wealthier counterparts might have to resort. Creative thinking and grit have become characteristics by necessity; and the resourcefulness of islanders is well known. Over the coming years, we also recommend further work to map and evaluate the long-term research impacts of this investment in capacity-building, and to provide a more expansive picture of interdisciplinary engagement across research for health issues—for example, in the area of research ethics.

One thing that has become clear from our interviews with the people involved in this process is that barriers will always be present. Equally evident is the need to perceive these barriers as a challenge, one that provides the incentive to work efficiently and flexibly to develop the context-specific research necessary to deal with local conditions and the epidemiological shifts that are characteristic of public health. Without local capacity for research for health, opportunities to improve the health and wellbeing of the people are irretrievably lost—and thus potentially broader-based benefits are lost, too.



Headquarters of the Pan American Health Organization, Washington DC. PAHO/WHO ©.

••••• Appendix 1: References

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Art for Research Project, exhibition Research on the Move. Photo by Jane Dempster. 2009. PAHO/WHO ©.

..... Appendix 2: Data Tables

Table 1: Workshop Occurrence* and Attendance

Course	Location	Date(s)	Attendance
EVIPNet Trinidad and Tobago launch and training on evidence-informed policymaking	University of Trinidad and Tobago (UTT)	October 2009	20
EPPE Skill-Building Course	UWI Mona Campus, Kingston, Jamaica	3-5 November 2009	12
EPPE Train-the-Trainers Course	UWI Mona Campus, Kingston, Jamaica	6-9 April 2010	4
EPPE Incorporated into Research Methods: Module for Master's in Epidemiology	UWI	2010/11, 2013/14, 2015/16	18 (total)
EPPE Incorporated into Research Methods: Module for Master's in Forensic Science	UWI	2011/12, 2012/13, 2013/14, 2014/15, 2015/16	24 per year (average)
EPPE Incorporated into Master's in Public Health (MPH) Program at St. George's University, Grenada	SGU	2011/12, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17	196 (total)
EVIPNet: Preparing Policy Dialogues and Policy Briefs	University of Trinidad	8-12 August 2011	34

* Because of the unavailability of complete data on the TDR research courses on vector-borne diseases (VBDs), we have not included information on them in this table.

Course	Location	Date(s)	Attendance
Health Systems Strengthening Workshop: Health Technology Assessment and Systematic Reviews (Jointly organized by WHO and Cochrane)	UWI Mona Campus, Kingston, Jamaica	12-14 March 2012	34
Translating Research for Policy Impact and Practice: An Evidence-Based Approach	Cochrane Caribbean, UWI Mona Campus, Kingston, Jamaica	6-7 June 2013	26
Systematic Review Author Training Workshop	Cochrane Caribbean, UWI Mona Campus, Kingston, Jamaica	14-16 April 2014	25
Caribbean Regional Grant-Writing and Peer Review Workshop	St. George's University, Grenada	17-19 September 2014	46
Implementing the Policy on Research for Health	Paramaribo, Suriname	7-10 October 2014	32
EPPE Skill-Building Course	Paramaribo, Suriname	7-9 October, 2015	32
Data Analysis Using Epi Info 7 Training Workshop	St. George's University, Grenada	22-24 June 2015	10
Systematic Review Author Training Workshop	Trinidad and Tobago	9-11 September 2015	24
Systematic Review Author Training Workshop	UWI Mona Campus, Kingston, Jamaica	18-20 April 2016	11
Basic Research Skills Training Workshop	Antigua and Barbuda	12-14 October 2016	23
EPPE Train-the-Trainers Course	UWI Mona Campus, Kingston, Jamaica	2-5 May 2017	5
Implementation Research for trainers (TDR)	CIDEIM, Cali, Colombia	5-9 June 2017	2
Implementation Research Skill-Building (TDR)	UWI Mona Campus, Kingston, Jamaica	19-22 June 2017	11
EPPE Skill-Building Course	St. Georges University, Grenada	11-14 July 2017	11
Structured Operational Research and Training Initiative (SortIT) (TDR)	Paramaribo, Suriname	17-28 July 2017	9
Introduction to Clinical and Epidemiological Research Methods	Georgetown, Guyana	29-31 August 2017	51
EPPE Skill-Building Course	Georgetown, Guyana	18-22 September 2017	35

Table 2: Training Breakdown by Discipline

Type of Training	Number of Persons Trained*
Effective Project Planning and Evaluation (EPPE) for Biomedical and Health Research**	398
Training-the-Trainers on Effective Project Planning and Evaluation (EPPE)	8
Grant-Writing	46
Systematic Review Authoring and Implementation	44
EVIPNet Skills	34
Other Essential Research Skills	214
Total	744

* Some participants attended multiple training activities.

** Estimate; the total figure may be higher as not all students in graduate programs at UWI and SGU taking EPPE in their programs are accounted for



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