Caribbean Oral Health Initiative

1st Summit

ENGAGING THE CARIBBEAN REGION FOR ORAL HEALTH

San Juan | Puerto Rico | November, 2013 |
English Version
Note: An early version of the report was circulated for comments. All the comments were incorporated in this final report. See Annex 1.

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Steering Committee Members: Dr. Augusto R. Elías-Boneta(Chair), Ms. Agnes Rivera (Co-Chair) Dr. Rahul Naidu, Dr. Yilda Rivera, Dr. Ramón González, Professor Gloria Nazario Pietri, Dr. Elba Díaz and Dr. Elaine Pagán.
Opening Remarks

I would like to welcome you all to the 1st Regional Summit of the Caribbean Oral Health Initiative. I would like to thank our sponsor Colgate-Palmolive for its support. This meeting would have not been possible without their collaboration.

To have this gathering has been the fulfillment of many of my thoughts and emotions. I believe that with the exchange of ideas, concerns and experiences we can learn from each other. Engaging the Region for Oral Health is the theme of our meeting; and we must engage our hearts, minds and actions, and most importantly, our imaginations, to mark a change in the pattern of our thoughts to advance oral and systemic health in the region. With a common history of slavery, plantations and colonialism, we are over 30 million strong. We are Amerindian, African, Spanish, French, English, Portuguese, Dutch, Danish, Asian, American, and Middle Eastern, and we have over 500 years’ experience learning to live together, to unify in our diversity. We have dealt with the dilemma of difference, and the legacy of separate and broken identities.

With our historic identities, our flags and our imposed borders, this is our Caribbean. So, rather than looking to other geographical regions, we are reaching to our neighbors. We have dental societies, universities, scholars, corporate partners, and we needn’t be isolated. Oral health has largely been ignored by the medical profession and government; we are often forgotten, lumped into some insignificant and meaningless category.

The major causes of death in the West Indies are non-communicable diseases, violence, Sexually Transmitted Diseases and environmental hazards.

Obesity, cardiovascular disease, Type 2 diabetes, physical, social and mental malaise linked to misuse of drugs and alcohol, these are problems common to all our nations. Oral-systemic health research has shown that diseases and disorders of the oral cavity affect general health, and that oral complications of many systemic diseases also compromise the quality of life. Oral health is orderly, related to everything.

Our priorities are no longer curative. There is a great need for social justice as a core value in order to increase the focus on health inequalities in the region. We now come together as Caribbean countries in an attempt to help ourselves and each other through synergistic partnering to improve health in the region. Life and its quality depend upon it. So, despite our great diversity, many similarities in health, illnesses and determinants exist.

For example, due to the use of fluorides, sealants, better oral hygiene practices and enhanced treatment, oral health improved dramatically. Advances in molecular biology have helped us better understand oral diseases and how they might be treated with tissue engineering. Not all segments of society have benefitted from the interventions and health promotion programs.

In Puerto Rico the incidence of oropharyngeal cancer is the highest among men in
the Americas; the fifth most frequent type of cancer among men and the sixth most common cause of mortality. Studying this inequality, we identified a deficit in biopsies for pre-malignant lesions, indicative of a late diagnosis. To further elucidate these findings, we conducted a series of Focus groups with dental professionals; interestingly, UPR alumni expressed limited training in both surgical techniques for oral cancer biopsies as well as inadequacies in communication skills as the major limitations for increasing oral cancer screening. We, then, conclude that we must carefully evaluate and adapt our dental curriculum to these research findings.

Furthermore, a collaborative and inter-professional approach with other Caribbean nations and agencies could “provide relevant information on the influence of genetic and environmental factors on disease occurrence”. Among different ethnic groups in the USA, Puerto Ricans present the highest prevalence of type 2 diabetes, after the Pima Indians in Arizona. Something worthwhile to note, and part of our dialogue here today, is that the Pima Indians residing in Mexico do not have the same situation. The change of diet, experienced by this ethnic group in Arizona, places it at higher risk of Type 2 diabetes. Puerto Ricans, as well as other Caribbean groups, both on our islands and in the United States, have incorporated new elements into our lifestyles and diets, positioning us at higher risk for the disease.

It has been demonstrated that when a group of people are dispossessed of lands, subsequent poverty, under-education, unemployment, exploitation and increased dependence on social welfare results. Sickness manifests itself in a myriad of ways.

We cannot allow any group, nationally, or globally, to bear the weight and bulk of a disease. Even if health systems automatically gravitate toward greater equity or evolve toward universal coverage, we must protect the poor and promote their help. We must be deliberate, use good science and ethical thinking.

The conditions of daily life constitute the social determinants of health and they are crucial to explaining inequalities. Conditions such as distribution of power, income, access to goods and health care - services, schools, education, work and leisure, homes, communities, rural and urban settings are structural determinants that influence how services are provided and received; and therefore, shape the outcomes and consequences. Equity in health care ideally implies that everyone in need receives it, regardless of position or other socially determined circumstances.

It is interesting to note that here, in Puerto Rico; 20 years have passed since the establishment of a government health insurance plan that provides preventive and restorative services, among others, to the medically indigent population. We see that the disease rates remain high and the utilization of services remain close to the levels before the government plan was implemented. In the area of oral health, the prevalence of dental caries was significantly reduced among 12 year olds; however, the gap between private and public school children (a proxy for socioeconomic status) increased.

Removing barriers to treatment is important, but only an oral health promotion policy that deals with the underlying causes of disease will close the gap. Pain, loss of
chewing and speech, poor aesthetics and low self-esteem should be taken seriously, and treated by culturally-sensitive curers who see oral health as a human right.

At this point, we must inquire, if the prevailing health education and intervention modalities are effective in reducing health disparities?

In synthesis, Dr. Lee Jong-wook, who served as Director of the World Health Organization stated that “interventions aimed at reducing disease and saving lives succeed only when they take the social determinants of health adequately into account”.

According to Marmot “if the major determinants of health are social, so must be the remedies”

There is a worldwide movement to examine the social and health inequalities integrally. Instead of defining health by racial and ethnic inequalities, its focus is on the socio-economic role; scientific evidence confirms the inverse relationship between the social gradient and mortality.

The Marmot Review on Health inequalities explains that most factors influencing health, such as early years, education, working life, income and environmental conditions rest external to the impact and obligations of the health system; but health professionals have an important role in tackling health disparities among their patients and community.

Dr. Watt states that “a range of complimentary public health actions may be implemented at local, national and international levels to promote oral health improvements and reduce inequalities”

On a moral level, in the 21st century, with the expansion of the universal borders, we as health professionals cannot allow for essential hopes in the area of health care to remain unattended---for this is unethical and lacks scientific integrity---- hopes that once they become realities, will translate into full and active lives.

It is our wish that in this regional connection, we might identify research priorities, implement projects and programs in many collaborations, share expertise and experiences addressing similar problems, pool ideas and resources so that we can all benefit from an economy of scale. I am curious to see what each of you is doing in your respective countries, and hope that at the end of this meeting, we have a research agenda that identifies our respective needs. As Dr. Naidu points out, “Oral health care has been a low priority for most of our Caribbean governments”. This effort is a first step towards a more encompassing and sustainable initiative.

I would like to extend a special thanks to the Steering Committee members, for their wonderful and hard work planning and organizing this meeting; and to Dr. Noel Aymat, Acting Dean of the School of Dental Medicine of the UPR, for his support.

Dr. Augusto R. Elías-Boneta
Chair
**Background**

The World Health Organization (WHO) in 2010, for the first time in the organization’s history, gave high priority to oral health among emerging public health conditions. The criteria for the assignment were: that the condition presented a large aggregate burden, displays large disparities, and disproportionately affects certain populations or groups within populations.\(^1\) Oral Health conditions were categorized as an emerging epidemic by WHO. However, earlier in 2000, the United States Surgeon General (David Satcher) described oral disease as a silent problem (epidemic), especially in the underserved populations.\(^2\)

Some years in advance (2005), the Regional Oral Health Program of the Pan American Health Organization (PAHO) anticipated the sign of an ongoing health (particularly oral health) crisis in the Americas. The crisis was due to poor and inequitable health care, changing patterns of oral diseases, and a decrease in claimed funding. The integration of oral health into primary health care services was demanded.\(^3\) In the same report, PAHO highlighted many barriers on their ability to reach all the populations. These include limited or nonexistent national and provisional data for other oral and craniofacial diseases (beside prevalence of dental caries), and the need of each country to identify disadvantaged groups and develop interventions to reduce oral health status disparities in the Region. Similar barriers were identified in Healthy People 2000 and 2010 in the United States.

The barriers are consistent with what other scholars call the Caribbean population heterogeneity. They respond to inequalities in income and the capabilities of individuals and families as well as to the variation of social and environmental exposures that are directly related to infectious diseases, specific risk factors, and other health burdens in the urban or rural areas that cannot be solved only with the Conditioned Cash Transfer program.\(^4\) Although some regional oral health policies and strategies for program implementation (especially for dental

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4. Conditioned Cash Transfer (CCT) is are programs established to provide a complementary income to poor families and make them co-responsible for increasing access to basic health services and children education and nutrition. Gomes C..Family, Poverty and Inequalities in Latin America and the Caribbean.Sociology Mind.Vol 3. No 1: 25-31. 2013.
caries) were generally outlined by PAHO, the responsibility to set particular goals and outline strategies to achieve successful reductions on oral diseases burden were left to each country’s government\(^5\).

Some Caribbean scholars claim oral health in the Region has been a low priority for local governments\(^6\). In addition, concerns arose regarding the inadequate access to dental care provided by the public sector (with private practice treatment being difficult to access for the most disadvantaged groups), and the lack of oral health care personnel or inadequately trained personnel in some countries\(^4\,5\).

**Prior Regional Oral Health Efforts**

Two prior efforts are highlighted in the Caribbean Region. The first effort was a strategic oral health policy document conceptualized in 1995 in a Caribbean Atlantic Regional Dental Association (CARDA) meeting, later revised in 1997 and 2003\(^7\). The aim of the document was to provide a framework for PAHO oral health interventions in the English Caribbean with guidelines for the development and implementation of a strategy to improve oral health focusing in treatment needs, oral health promotion, disease prevention and the use of appropriate methodologies. The document was revised by two oral health leaders in the English Caribbean, Dr. Rahul Naidu and Dr. Fanny Thompson, along with feedback of the Heads of Dental Services in the area. The actions articulated in the document focused on the need of developing and using modern data gathering technologies, conducting standardized epidemiological studies and assessments in each country\(^8\).

The second effort was a workshop to draft a research agenda for the Latino community in 2004 developed by the Hispanic Dental Association (HDA) and the University of Puerto Rico - School of Dental Medicine (UPR-SDM). A group of health care providers, educators, academicians, researchers and policy experts convened to examine the status of the Hispanic oral


\(^{7}\) Supported by Pan American Health Organization, Regional Office of the World Health Organization, and the Caribbean Community Health desk.

health research and to identify gaps in the existing data and its methodology. As result, the attendees recommended the development of a multidisciplinary pipeline of researchers and a collaborative research approach to address the growing needs of the Latinos and to advance existing oral disease prevention and promotion efforts\(^9\). One of the organizers of the activity was the Assistant Dean of Research of the UPR-SDM; Dr. Augusto R. Elias-Boneta.

**Caribbean Oral Health Initiative**

The Caribbean Oral Health Initiative (COHI) idea was conceived in 2012 with initial conversations between Dr. Elías-Boneta from the University of Puerto Rico School of Dental Medicine, and Bernal Stewart, and Agnes Rivera from Colgate Palmolive about the oral health status of the Caribbean Region. The need to expand the research activities and strategies for delimiting a collaborative approach among the Region motivated the formation of the Initiative\(^10\). Colgate-Palmolive’s collaborative efforts, along with the officers in the Region and Dr. Elías-Boneta’s past experiences resulted in the formation of a Steering Committee that included educators, academicians and researchers from the UPR-SDM, and Dr. Rahul Naidu\(^11\).

In November of 2013 academicians, researchers, professionals and government officials from the Barbados, Dominican Republic, Guyana, Jamaica, Trinidad y Tobago and Puerto Rico convened in a Summit supported by Colgate-Palmolive and the University of Puerto Rico - School of Dental Medicine. The primary aim was to develop a collaborative approach to improve oral health across the Region. This report addresses the process prior to the Summit and the main results made in thematic discussions.

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\(^10\) Bernal Stewart and Agnes Rivera are two key leaders in the oral health research and promotion activities how work at Colgate-Palmolive. Bernal Stewart is the Manager of Technology at Clinical Dental Research and Development Technology Center in Piscataway, New Jersey. Agnes Rivera is the Regional Professional Relations Manager of Colgate-Palmolive Caribbean.

\(^11\) The Steering Committee members are Dr. Augusto R. Elías-Boneta(Chair), Ms. Agnes Rivera (Co-Chair) Dr. Rahul Naidu, Dr. Yilda Rivera, Dr. Ramón González, Professor Gloria Nazario Pietri, Dr. Elba Díaz and Dr. Elaine Pagán.
In preparation for the summit, delegates\textsuperscript{12} from each country were asked to prepare a comprehensive report in the form of a PowerPoint presentation. Report guidelines were distributed to ensure cross-country comparison and later analysis\textsuperscript{13}. \textbf{Table 2} presents a summary of the reports and relevant data by country. Instead of attempting to analyze the reports, the organizers divided the data, and used it as background information for the Summit’s breakout sessions. Each country’s delegate presented their reports at the beginning of the Summit.

\textit{Guidelines for the Breakout Session}

The purpose of the breakout sessions was for working groups to identify specific challenges, opportunities and to propose options/strategies to address Regional issues in four main areas. Each breakout session had specific aims, which were:

1) \textbf{Policy Options for Effective Actions}. This session fostered a discussion around the access to oral health care services, the workforce training requirements, insurance coverage, and other crucial issues as well as to compare local oral health care policies (effectiveness and challenges).

2) \textbf{Strategies for an Effective Oral Health Workforce}. This session assessed the profile of oral health workforce in the Region, how well they meet the needs of the population, what major changes are required to improve the delivery of services and how working together helps advance the implementation of these changes.

3) \textbf{Disease Prevention and Oral Health Promotion}. This session aims to promote an exchange of ideas to discuss what the Region is doing to reduce oral health diseases, what challenges are faced in the education of oral health care and the

\textsuperscript{12}Dr. Fanney V. Thompson - Senior Dental Officer, Ministry of Health (Barbados), Dr. José Manuel Saldaña – Vice-Minister at the Oral Health Department/Public Health Ministry (Dominican Republic), Dr. Shameer Ali - Principal Dental Officer, Ministry of Health (Guyana), Ms. Juliet Yolande Powell – Regional Dental Coordinator, Southern Regional Health Authority (Jamaica), Dr.VishaRamroop - Lecturer Community Dentistry/Unit of Child Dental Health (Trinidad and Tobago) and Dr. Ramón González - Professor, University of Puerto Rico School of Dental Medicine (Puerto Rico).

\textsuperscript{13} See Annex 2.
access people have to oral health services. In addition, actions to improve oral health promotion and delivery of oral health care services were evaluated.

4) **An Oral Health Research Agenda for the Caribbean** promoted a dialogue around the ongoing research activities in the Region, identified needs (policies, materials, funding, etc.) and developed a consensus for the implementation of a common agenda that addresses oral health regional issues and fosters a research culture.

By the end of the sessions, the groups presented their main results on the specific topics and provided alternatives to address the different aims. All of these discussions were recorded and transcribed in order to disseminate the session dialogues and to enhance the future development of a strategic plan for COHI.

**Findings**

It is important to note that every breakout session underwent a unique discussion process and in certain sessions they intertwined, resulting in an enriched vision of the needs in the Region. In this section we attempt to summarize the main challenges, opportunities, and proposed strategies/action to attain the different aims of the Summit. During the analysis phase a deeper literature review was conducted to foster further comparisons and fill data gaps in some relevant topics discussed in the breakout sessions. Table 1 and 3 summarize the main findings.

**Policy Options for Effective Actions**

Delegates identified many reasons for the lack of progress on effective oral health public policies among Caribbean countries. The main reasons highlighted by the group were inappropriate budget allocation, inadequate provision of resources and materials, a disarticulated regulatory framework and the need of an appropriate amount of oral health professionals along with the delimitation of specific priorities and strategies in each

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14 Public policy is defined as any course of action (law, regulation, procedure, program, administrative action, incentive, voluntary or involuntary practice) of governments that have an impact on people’s health.
country policy agenda. A significant factor in exacerbating oral health disparities in the Region is the continued lack of data to assess oral health and systemic diseases.

A consensus regarding policy-related aspects was achieved on the importance of the Caribbean governments to have robust evidence on the oral health status of the countries, existing disparities, and the development of surveillance systems to support development and implementation of effective policies. Along with a shift in the actual curative approach towards disease prevention and promotion approach was recommended. Nevertheless, incremental changes were proposed to initiate structural changes and start gathering evidence; and design effective evaluation systems to observe the specific interventions in each country. As a short-term strategy to reach children and families, some of the main incremental changes proposed were school-based interventions and social marketing.

The interactions between diverse stakeholders are a key component in the integration and discussion of particular issues of Oral Health in the political agenda at each nation. Developing a collaborative approach around all COHI members and their allies is the main strategy to achieve that interaction and influence the decision maker’s perception on the importance of oral health. Surveillance activities and data sharing is a key element for developing effective policies and strategic actions and in the long run, ensure an adequate oral health system in the Region. Even though public policy interventions are never exactly the same, they can share the same goals and objectives. The data from the pilot interventions as well as an assessment of the status of the public dental facilities (materials, personnel, equipment and others) will be crucial to evaluate the context to determine necessary changes in each country.

*We are looking towards a collaborative approach between our respective partners here and collaborative partners within the countries. So, we are looking at communities, in terms of both, we are looking at communities, work, media, commercial or private sector, along with government and non-governmental agencies.*

Public Policy Working Group Discussion
An organizational restructure is proposed creating in each country a Chief Dental Officer (CDO) position. The CDO’s responsibilities’ will include the position of Head of Oral Health Services, government’s principal advisor on dental public health, will address the workforce, facilitate and administer the budget and develop a strategic plan for the nation. The budget should be prioritized and allocated to research and development activities, services and academia. In order to achieve the CDO responsibilities and assure that the governments attend oral health issues a direct access to the Primary Health Officer or the Primary Country Officer will be needed.\(^\text{15}\)

A central office with a strategic plan that will cover all the, that will facilitate but administrate here and finance our autonomy. Here we are talking about the CDO so to speak or the Director of Dental Services being a budget holder and having the autonomy to spend as that individual see fit. Here we are also looking at the aspect in terms of public policy, that we should establish in each administrative of health in their respective country a position of Chief Dental Officer. This person is a recommendation that came in a prior Report of 2004... So we are looking here at actually and trenching in our respective country the whole aspect and concept of chief dental officers and the Chief Dental Officer shall be the professional head of oral health services and the government principal advisor on dental public health. The CDO shall independently execute or affect the corporate plan for the government’s oral health programs which includes program management, implementation, monitoring and evaluation, surveillance, web search and human resource management.

Another strategy, in the long run, is to develop a standardization practice of products and equipment used in the Region; Caribbean Standard.

We are looking under the development of documents that will guide all aspects of standardization of products... We may be purchasing different supplies in terms or radiographic unit, dental [interruption] dental materials, based on what we think we can afford but we need to have a combined policy approach to standardizing the kinds of equipment because we really don’t have the resources to be replenishing or re-equipping our dental infrastructure. So standardizing the kind of equipment we will use will enable us in terms of collecting, in terms of purchasing and determining in price is in terms of what we want to consume... But at least they’ll be one standard we call the Caribbean standard.

\(^{15}\) In order to generalize the diversity in titles in each country: the term Primary Health Officer is used for the Health Secretary/ Health Minister positions; and the term Primary country Officer is used for the Governor / President positions.
Diversity and the lack of dental health professionals were acknowledged in the Region; some nations have dental therapists, dental nurses, dental assistants, or dental hygienists, along with dentists. A consensus to create a collaborative agreement was reached in order to develop a robust training program and to expand and diversify oral health workforce using the University as a leader of this initiative. The proposed program should be able to reach the expanded functions of the auxiliary personnel through online continuing education courses. The goals of the training program will be aligned by country and as a Region in order to improve the oral health workforce. Online courses in epidemiology and biostatistics should be included in the online offerings.

A “train the trainer” strategy was also recommended for the Region. The “train the trainer” program will provide the key oral health professionals the skills and knowledge to develop and provide technical support for the elaboration of programs, conduct epidemiological research, and develop capacity building activities. Liaisons with Dental schools will be fostered to set them as leaders in the effort. A curricular assessment is recommended to evaluate a promotion system of the auxiliary personnel to expand their functions in order to deal with the lack of dental professionals available in each country and to develop a strong competency based curriculum to train the Caribbean’s future dentists. The curricular assessment will promote and support interventions, research and education activities in each country. A parallel effort to develop an internet based training program to address the lack of continuing education available and to expand the offer in some countries was also proposed.

... A diversity of programs ...we saw that in terms of dental health professionals we have dental therapists, dental nurses, dental assistants, dental assistants with expanded functions...we have very diverse oral health professionals but they all contributing to the improvement of the oral health system in our countries.

Dental Schools should assume leadership in oral health. We also spoke about changes in the political areas so the academia usually remains more stable and the academia is usually the one that has the researchers and the new knowledge,
so they should play a big role in preparing the workforce that we are going to need in the future.

More research is needed in other countries, Puerto Rico can help. It was concluded that the research infrastructure of Puerto Rico is more complete and Puerto Rico can contribute to work with other countries in the region...it is important not to research the obvious, do the intervention, and see if that works...sometimes we see big problems in terms of oral health and sometimes there is no time to conduct research. Sometimes we might have to go directly into providing services and care and at the same time conduct our research program. And then make sure if later on the intervention was really working.

How can we work together? We spoke about creating affiliation agreements that we can probably work in educating other health professionals and establishing education agreements between academic institutions, visual learning activities; sometimes we might not have to travel from one country to the other.

Disease Prevention and Oral Health Promotion

The countries’ delegates concurred that oral health care was mostly focused on curative and emergency care. In order to change the current discourse and curative care culture, an oral health prevention and promotion reform is needed. The reform should be able to reach the oral health professionals, government officials, and policy makers. As part of the strategies, the reform will start with the promotion of an interdisciplinary and evidence-based education within academic institutions and continuing education providers. Diverse efforts of research activities are needed to develop a robust cost-benefit analysis focused in current government expenses. The results of this analysis are expected to influence government decisions on budget allocation for services.

The access to care is mostly curative care and emergency visits for extraction mainly... One of the strategies, well first of all the interdisciplinary education. We have to initiate a common strategy to disseminate the information to our government and to convince them about the importance of oral health promotion with evidence-based dentistry in the effectiveness in terms of money in the prevention [interruptions]. If you treat them in a preventive way, then it will cost less money...

High poverty levels, limited resources, social inequalities and cultural diversity are the main challenges in the Region. Although all the Caribbean nations share the same
vulnerable groups (children, elderly, special needs people, single parent, patients with non-communicative chronic disease) the prevalence and the geographical localization of these groups are uncertain. Launching an oral health prevention and promotion agenda that includes enacting strategies that target oral health inequalities, and raise oral cancer awareness in the Region was proposed. It is necessary to educate oral health professionals and politicians on the topic in order to develop programs that target vulnerable groups and assess their needs.

Almost the same for all the islands and for all of the countries. One of the major challenges, the first one is money, how we get the money to do oral health promotion. Lack of funding, limitations of products available an example from Jamaica, from Barbados, they don’t have the varnish for certain interventions, because they don’t have the opportunity to buy them. Poverty levels, such as economical inequalities, elderly with limited resources, and integration of local socioeconomic and cultural realities. Other challenges are: hidden areas with poor access, number and distribution of dentists and auxiliary personnel that are of adequate resources and that of oral health [interruptions] system and other health surveillance.

An Oral Health Research Agenda for the Caribbean

Epidemiological studies (prevalence and incidence) of oral health diseases (dental caries, periodontal disease, oral cancer and craniofacial disorders- cleft lip/ cleft palate) were identified has a priority for the Region. Although it is recognized that many countries do not have surveillance systems, the importance to standardize record and data gathering instruments in different age population groups was emphasized. The Caribbean standard epidemiological methodology for caries, periodontal disease reporting, among others was debated. Building a pathway and pipeline in each country will be necessary to assign priorities and develop a research agenda.

The development of standardized methodologies including qualitative research, along with epidemiological data gathering is proposed to create a research program for the Region. Many delegates expressed a desire to work with community based research methodology; and that this method should be included as an essential part of the Regional standardized methodology. In order to maximize resources it will be important to provide services and care while conducting research programs to minimize budget constraints.
Study populations and priority group we want to look is an important thing...we thought should be regional...Specially using multiple methodologies, including qualitative research along with epidemiological data collection...mechanisms for collecting and reporting accurate prevalence data and incidence data should be delimited...So going on from the study population groups, what were their real barriers to that? Was really having a standardized protocol in reporting criteria; and the debate we had was whether to introduce ICDAS as our standard epidemiological methodology for caries reporting...We need to conduct training courses to implemented this, including calibrations, so we are going to have to look at the logistics of actually developing survey teams...Later, we want to really work on community participation. Community participation in research involves people collecting information for the studies, working ground level maybe focus groups studies; but beyond that, actually taking our research findings into implementation, so we can deliver our finding back to the communities that we want to affect.

The attendees mentioned the need to develop a multidisciplinary pipeline of researchers and a collaborative research approach. Incorporating researchers from across the region and identifying collaboration points will be essential to foster the train the trainer strategy. Puerto Rico was identified as a resource for research activities due to the robust infrastructure. The island will foster the development of standardized protocols, training, and calibration. Possible replications (roll overs) of the UPR School of Dental Medicine SOALS cohort study (PI Dr. Joshipura); Oral Health Status of 12 Years Old Puerto Ricans (PI Dr. Elias-Boneta); and Oral Clefts in Puerto Rican Children Environmental and Genetic risk factors (PI Dr.Buxó) were mentioned. Grenada Project (NYU/Colgate) was also mentioned as a possible roll over.

The main problem identified by country delegates was the lack of funding to subsidize research activities. COHI members identified the budget reduction of the Pan-American Health Organization (PAHO) as a factor that affected oral health research activities. The decrement in Decayed/Missing/Filled Teeth (DMFT) and the achievement of oral health agenda in many countries were the reasons for the budget reduction. Nowadays, the organization invests a considerable amount in non-communicative chronic diseases. A call to insert an oral health agenda in non-communicative chronic diseases was proposed as a strategy to allocate budget to develop a research agenda.
Although Colgate is providing some funding money, other institutions should be approached to finance research activities. Approaching the International Association for Dental Research (IADR) and Public Health Agencies is a priority to allocate budget for conducting research activities. Other agencies or programs mentioned were: ADA Foundation and Fogarty Award (NIH).

In order to strengthen collaborations and increase dissemination of research projects results, between COHI members, several measures were proposed. Among them, the participation of members in the UPR Medical Sciences Campus Research Forum, IADR meetings and others.

**Follow-up Activities since the 1st Summit**

Since the 2013 Summit a diversity of activities have been conducted to embrace COHI member recommendation or the Region. The main goal was to foster a network culture that values local, national and international collaborations to facilitate COHI objectives and drive innovation. As part of the dissemination plan couple of action where made in order to advance this new collaborative effort on behalf of the Oral Health of the Caribbean.

*Strengthen Organizational Capacities*

A dissemination plan was initiated order to advance this new collaborative effort. We can highlight the following action:

- The publication of Engaging the Caribbean Region for Oral Health a short report of the Summit drafted by Professor Gloria Nazario Pietri, Dr. Rahul Naidu and Dr. Augusto R. Elias-Boneta.
- The launch of the Caribbean Oral Health Initiative new website.
Several capacity building activities discussed in the Summit were executed with the support of COHI Steering Committee and several ongoing activities were completed. These activities are:

- Participation of James Collins from the Dominican Republic on the Training and Calibration Exercise *Oral Health and nutrition Examination Survey (NHANES), and the Impact on Health Policy*. (Reference Examiner Dr. Bruce Dye)
- ECC training in Barbados with Dr. Lydia López in collaboration with Dr. Fanney V. Thompson.

A plan to standardize COHI procedures was aligned to provide members effective funding mechanisms.

- Caribbean Oral Health Initiative Guidance for products requests and Grant Proposals were drafted.
- Caribbean Oral Health Initiative Network Guidance [Draft for discussion during the 2nd Summit]
- A total of thirteen periodic meetings with the Steering Committee were conducted\(^{16}\).
- A list of Research Resources and ongoing or proposed projects has been drafted [Draft for discussion during the 2nd Summit]

*Advance internal and external partnerships*

- A collaboration between Dr. Weaisten (University of Washington) and Dr. Rahul Naidu (Trinidad y Tobago) was establish in collaboration with Dr. Lydia Lopez del Valle (Puerto Rico).
- Periodic meetings with key partners in the 2015 host country (Dominican Republic). A total of seven meetings were conducted during 2013- 2015 with researchers, government officers, academicians, oral health professional and private partners\(^{17}\).

\(^{16}\) Meeting dates: 11/06/14; 11/13/14; 01/20/15; 01/27/15; 01/29/15; 04/28/15; 05/06/15; 06/16/15; 06/25/15; 07/07/15; 07/09/15; 07/28/15; 08/05/15.

\(^{17}\) Some of the participants were: 1) academicians from the Universidad Católica Madre y Maestra (Dr. James Collins), the Instituto Superior de Especialidades Odontológicas (Drs. Virginia Laureano, Juan Manuel Aragoneses and he UNIBE (Drs. Leandro Feliz and Ninoska Abreu); officers from the Dominican Republic *Ministerio de Salud* (Drs. José Saldaña, Arturo Mena, Saulo Rosario y Claudia de los Santos; and oral health professionals and private partners also members of COHI (Drs. Carmen Hernández, Jomar Diaz, Bayardo García- Godoy, Irma Mauris and
• One day workshop (1/14/15) with Dr. Eugenio Beltrán for the development of the preliminary agenda for the 2nd Summit and evaluation of funding mechanisms.

• Several outreach action were conducted to establish collaboration with several international organization and foundations.
  o Communication with the ADA Foundation; Dr. Volpe.
  o Communication with PAHO officer Dr. Saskia Estupiñan.
  o Communication with the president of the IADR-Caribbean Section
  o Presentation on IADR 2015 Global Oral Health Inequalities Research Network (GOHIRN) in Boston. Business Meeting Report:

  “Using the IADR GOHIRA initiative to advance oral health in their regions, in November 2013, oral health leaders and delegates from Jamaica, Trinidad & Tobago, Guyana, Dominican Republic, Puerto Rico, Barbados, and Granada convened in the summit “Engaging the Caribbean Region for Oral Health” in San Juan, Puerto Rico. The Summit was centered on:

- the challenges presented by Dr. Rahul Naidu and colleges, in their paper Oral Health Inequalities in the Caribbean, and the need to identify common challenges, establish priorities, successful practices, opportunities for networking and research collaborations in the Caribbean Region.

The effort was organized by the Steering Committee of the Caribbean Oral Health Initiative (COHI) and the support of Colgate-Palmolive. The aims of COHI are:

• To identify gaps in knowledge, policies, surveillance systems and establish an oral health research agenda for the Caribbean basin.

• To support and conduct research, educational activities and to promote awareness to improve oral health among countries in the Caribbean basin.

• To develop outstanding and skillful oral health workforce among the Caribbean basin.

Many of the COHI members, also members of the IADR, acknowledged the Global Oral Health Inequalities Research Agenda (IADR-GOHIRA)initiative. We would like to have presence of the IADR-GOHIRA Task Group delegates in our second Summit (October, 2015) in Santo Domingo, Dominican Republic. We have identified in our program a space for a presentation as keynote speaker, so we can share opportunities and challenges”.

Dr. Augusto R. Eliás-Boneta (AADR Caribbean Presentation)
Traditional dentistry no longer holds all the keys for today’s oral health problems. COHI members should be the engine to start a new era of systemic oral health care for our people in the Caribbean.

COHI participants coincide that the Oral Health Research Agenda for the region must address oral health disparities framed on the social determinants of health. This agenda must embrace a collaborative oral/systemic and a community participatory research approach with a final goal to impact oral health policy. Participants agreed that the sustainability of the oral health research agenda demands an interdisciplinary pipeline of regional researchers and the fiscal support of local governments as well as external funding. Universities and other health training centers should play a central role in establishing and oral health research culture. This can be achieved by offering trainings and courses in systematic literature review, research methodology (epidemiology and statistics), scientific writing and by following an evidence-based curriculum.
Tables
### Table 1: Country Profile 2010-2013

Primary source: World Statistics Pocketbook | United Nations Statistics Division

<table>
<thead>
<tr>
<th></th>
<th>Barbados</th>
<th>Jamaica</th>
<th>Trinidad &amp; Tobago</th>
<th>Guayana</th>
<th>Puerto Rico</th>
<th>Dominican Republic</th>
<th>Grenada</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Urban Population (2013)</td>
<td>45.4</td>
<td>542</td>
<td>14.3</td>
<td>28.3</td>
<td>99.1</td>
<td>70.8</td>
<td>39.8</td>
</tr>
<tr>
<td>Major trading partners (% of imports)</td>
<td>-United States (31.0) -Trinidad &amp; Tobago (28.9) -Suriname (6.2)</td>
<td>-United States (35.7) -Venezuela (15.4) -Trinidad &amp; Tobago (10.6)</td>
<td>-United States (28.0) -Gabon (12.9) -Colombia (9.5)</td>
<td>-United States (26.0) -Trinidad &amp; Tobago (14.9) -Curacao (10.5)</td>
<td>--</td>
<td>-United States (38.6) -China (10.0) -Venezuela (6.3)</td>
<td>-United States (31.9) -Trinidad &amp; Tobago (25.2) -United Kingdom (4.2)</td>
</tr>
<tr>
<td><strong>Individuals using the Internet (%)</strong></td>
<td>73.3</td>
<td>46.5 Estimated</td>
<td>59.5 Estimated</td>
<td>33.0 Estimated</td>
<td>51.4 Estimated</td>
<td>88.8 (2012) Estimated</td>
<td>42.1 Estimated</td>
</tr>
<tr>
<td><strong>Mobile-cellular subscriptions7 (per 100inhabitants)</strong></td>
<td>126.4 Estimated</td>
<td>96.5</td>
<td>139.4 Estimated</td>
<td>72.2</td>
<td>81.8 Estimated</td>
<td>45.0 Estimated</td>
<td>121.6 Estimated</td>
</tr>
</tbody>
</table>

19 Statistical Institute of Jamaica
<table>
<thead>
<tr>
<th>Barbados</th>
<th>Jamaica</th>
<th>Trinidad &amp; Tobago</th>
<th>Guyana</th>
<th>Puerto Rico</th>
<th>Dominican Republic</th>
<th>Grenada</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Sector</strong>&lt;sup&gt;20&lt;/sup&gt;</td>
<td>- Dentist: 7</td>
<td>- Dentist: 60</td>
<td>- Dentists: 25</td>
<td>- Dentist: 27</td>
<td>- Dentist: 42</td>
<td>Dentist: 1,554</td>
</tr>
<tr>
<td></td>
<td>- Assistant: 15</td>
<td>- Assistant: 150</td>
<td>- Assistant: 46</td>
<td>- Assistant: 23</td>
<td>- Assistant:</td>
<td>- Assistant: 376</td>
</tr>
<tr>
<td></td>
<td>- Technician: 0</td>
<td>- Technician: --</td>
<td>- Technician: --</td>
<td>- Technician:</td>
<td>- Technician</td>
<td>- Technician:</td>
</tr>
<tr>
<td><strong>Service Delivery</strong></td>
<td><strong>Private Sector</strong>&lt;sup&gt;20&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Primary care</strong></td>
<td>- Primary care</td>
<td>- Primary care</td>
<td>- Public Healthcare Insurance&lt;sup&gt;24&lt;/sup&gt; (“La Reforma”)</td>
<td>- Primary&lt;sup&gt;25&lt;/sup&gt; care</td>
<td>- Primary care</td>
</tr>
<tr>
<td></td>
<td><strong>Secondary care</strong></td>
<td>- Secondary care</td>
<td>- Secondary care</td>
<td>- Secondary Care</td>
<td>- Secondary Care</td>
<td>- Secondary Care</td>
</tr>
<tr>
<td></td>
<td><strong>Tertiary care</strong>&lt;sup&gt;22&lt;/sup&gt;</td>
<td>- Tertiary care&lt;sup&gt;22&lt;/sup&gt;</td>
<td>- Tertiary care&lt;sup&gt;23&lt;/sup&gt;</td>
<td>- Tertiary care&lt;sup&gt;23&lt;/sup&gt;</td>
<td>- Tertiary care</td>
<td>- Tertiary care</td>
</tr>
<tr>
<td></td>
<td><strong>Tertiary care</strong>&lt;sup&gt;23&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>In Hospital: n/a</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Budgetary Allocation: Oral Health</strong>&lt;sup&gt;25&lt;/sup&gt;</td>
<td>2.5% of Primary Health Care budget&lt;sup&gt;27&lt;/sup&gt;</td>
<td>- Primary care</td>
<td>- Secondary care</td>
<td>- Tertiary care</td>
<td>- Primary&lt;sup&gt;25&lt;/sup&gt; care</td>
<td>- Primary care</td>
</tr>
<tr>
<td></td>
<td>0.7% of the annual health budget</td>
<td>- Primary care</td>
<td>- Secondary care</td>
<td>- Tertiary care&lt;sup&gt;23&lt;/sup&gt;</td>
<td>- Secondary Care</td>
<td>- Secondary Care</td>
</tr>
<tr>
<td></td>
<td>$197.18 M (0.175% of the general budget)</td>
<td>- Primary care</td>
<td>- Secondary care</td>
<td>- Tertiary care&lt;sup&gt;23&lt;/sup&gt;</td>
<td>- Tertiary care</td>
<td>- Tertiary care</td>
</tr>
<tr>
<td><strong>Private Sector</strong>&lt;sup&gt;26&lt;/sup&gt;</td>
<td></td>
<td><strong>Challenges:</strong> No private-public sector collaboration on Oral Health.</td>
<td></td>
<td><strong>Dentist:</strong> 28</td>
<td><strong>Dentist:</strong> 1,362</td>
<td><strong>Dentist:</strong> 1,554</td>
</tr>
<tr>
<td></td>
<td>Dentist: 79</td>
<td>- Dentist: 338</td>
<td></td>
<td></td>
<td>- Assistant&lt;sup&gt;30&lt;/sup&gt;: (900)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistant: 73</td>
<td>- Assistant:</td>
<td></td>
<td></td>
<td>- Hygienist: --</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hygienist: 9</td>
<td>- Hygienist:</td>
<td></td>
<td></td>
<td>- Nurse:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nurse: n/a</td>
<td>- Nurse: Very Few</td>
<td></td>
<td></td>
<td>- Technician:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technician: 7</td>
<td>- Clinics:</td>
<td></td>
<td></td>
<td>- Clinics:</td>
<td></td>
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<tr>
<td></td>
<td>- Offices: 41</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Service Delivery</strong></td>
<td><strong>Private Sector</strong>&lt;sup&gt;26&lt;/sup&gt;</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Primary care</strong></td>
<td>- Primary care</td>
<td></td>
<td>Deliver the majority oral health services through direct payment or insurance coverage.</td>
<td>Services are provided mostly by private sector.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>secondary care</strong></td>
<td>- secondary care</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Tertiary care</strong></td>
<td>- Tertiary care</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>- Offices: 41</strong></td>
<td>- Offices: 41</td>
<td></td>
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</tr>
</tbody>
</table>

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<sup>20</sup> All persons have access to emergency care (extractions) through the public sector.

<sup>21</sup> 1.703 primary care units.150 second and third level specialized care centers (15 specialized hospitals,11 regional, 20 provincial and 104 municipal hospitals)

<sup>22</sup> Long waiting times and lack of vital equipment and medicines are reported.

<sup>23</sup> Public services limited to provision of care for children up to the age of 18 and emergency/palliative care to adults. Tertiary oral health services (specifically maxillofaciwal surgical services) are offered at three of the national’s hospitals.

<sup>24</sup> Includes: Diagnosis- Exams, Radiographs, Preventive, Restorative (Resins, Amalgams), Basic Surgery and Endodontics in Anteriors and Premolars. More than 1.6 million Puerto Rico residents are covered by the island government’s Mi Salud (Medicaid) program (Puerto Rico Health Insurance Administration, 2011)

<sup>25</sup> Dental services are deliver in academic centers and union sectors.

<sup>26</sup> Include: examinations, fillings, extractions, prophylaxis, partial services

<sup>27</sup> Primary Health Care budget represent a 27.2 % of the national budget.

<sup>28</sup>0.1 % of the General Budget for Health 0.03 % Health Budget corresponds to the Oral Health Plan

<sup>29</sup>% of MOH budget: 1.68% for the 2013

<sup>30</sup> Around 900 dental assistants are reported in the Puerto Rico Board of Dental Examiners. However, Not all of them are licensed to practice, but the Department of Health is currently working on issue.
## Table 2: Oral Health Profile 2010-2013 (Cont).

<table>
<thead>
<tr>
<th>Barbados</th>
<th>Jamaica</th>
<th>Trinidad &amp; Tobago</th>
<th>Guyana</th>
<th>Puerto Rico</th>
<th>Dominican Republic</th>
<th>Grenada</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dentists by specialty-Private Sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Pediatric: 1</td>
<td>-Pediatric:</td>
<td></td>
<td></td>
<td>-GP/Pedo: 1,202</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Orthodontist: 4</td>
<td>-Orthodontist:</td>
<td></td>
<td></td>
<td>-Other specialties: 160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Periodontist: 3</td>
<td>-Periodontist:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>-OMF Surgeon: 3</td>
<td>-OMF Surgeon: 2</td>
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</tr>
<tr>
<td><strong>Oral Health Workforce to Population Ratio</strong></td>
<td>1:3,293</td>
<td>1:17,000</td>
<td>1:3,846</td>
<td>1:14,462</td>
<td>1:2,367(^{31})</td>
<td>Not Reported</td>
</tr>
<tr>
<td></td>
<td>1:2,950 (With ADO)</td>
<td>1:9,943 (with ADP)</td>
<td></td>
<td></td>
<td></td>
<td>1,5,800</td>
</tr>
<tr>
<td><strong>Organized Dentistry</strong></td>
<td>-Barbados Dental Association</td>
<td>-Jamaica Dental Association</td>
<td>-Dental Council</td>
<td>-Colegio de Cirujanos Dentistas de Puerto Rico</td>
<td>-Dominican Dental Association</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Barbados Dental Network</td>
<td>Jamaica Association of Public Dental Surgeons</td>
<td>-Dental Association</td>
<td>-Dentistas de Puerto Rico</td>
<td>-23 Provincial Associations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Association of Dental Hygienists and Dental Therapists</td>
<td>-Jamaica Dental Nurses Association</td>
<td></td>
<td>-7 Specialized Societies</td>
<td>-Dental School Directors Association</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Jamaica Dental Assistant association</td>
<td></td>
<td>-Diverse Study Groups</td>
<td></td>
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</tr>
<tr>
<td><strong>Oral Health Ongoing activities</strong></td>
<td>-Oral Health Month(^{32}) (yearly)</td>
<td>-Sealant retention studies in Hanover.</td>
<td>The ministry of health runs several TV programs, which highlight medical and dental health topics routinely.</td>
<td>“Give Kids a Smile”: an activity to provide dental services to underserved children(^{33}).</td>
<td>“Mira y Sonríe Dominicano, Quisqueya Aprende Contigo(^{34})”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Few media marketing campaign</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Oral Surveillance System</strong></td>
<td>Oral Health system only within MOH(^{35})</td>
<td>National Health Information system is entrained(^{36})</td>
<td>Under development part of the National Oral Health Plan</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Under development</td>
</tr>
</tbody>
</table>

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\(^{31}\) A total of 1,574 dentists are active (Area Health Resource File, US Dept. of Health, 2010).

\(^{32}\) Island-wide screenings along with participation from the Barbados Dental Association.

\(^{33}\) A collaborative activity organized by UPRSDM, CCDPR and Department of Health.

\(^{34}\) Dental Assistance for adults in alphabetization.

\(^{35}\) Information not used as surveillance tool or for trends. Does not include oral health indicator data.

\(^{36}\) Monthly Summary of clinical reports and hospital clinical reports.
### Table 2: Oral Health Profile 2010-2013 (Cont).

<table>
<thead>
<tr>
<th>Barbados</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Oral Health Policy</strong></td>
<td>Rights-Based Approach to Social Protection; Public Oral Health Care System is part of a Comprehensive National Health Care System[38].</td>
<td>· The National Oral Health policy and plan have been developed to fill gaps in the key areas[39].</td>
<td></td>
<td></td>
<td>&quot;QuisqueyaSonríe&quot;: National Oral Health Plan</td>
<td>Under development[40].</td>
</tr>
<tr>
<td><strong>Dental Officer Position</strong></td>
<td>State Dental Officer recently appointed.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Continuing Education Offer</strong></td>
<td>· Jamaica Dental Association (JDA): A recognized provider of ADA CERP.</td>
<td></td>
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</tr>
<tr>
<td><strong>Training Oral Health Professional Offer</strong></td>
<td>· No formal training facilities in Barbados. Barbados Dental Association trained a small cadre of Dental Assistants. Program ended in 2000</td>
<td>· University of Technology: -BS in Dental Nursing -BS in Dental Hygiene -Diploma in Dental Assistance -BS in Dental Laboratory</td>
<td>· Mount Hope Dental School (University of West Indies): -DDS -BSc Dental Hygiene and therapy (UWI) -Certificate Dental surgery assistant</td>
<td>· University of Puerto Rico School of Dental Medicine: -DMD -Postdoctoral Programs: 6</td>
<td>-School of Dental Medicine -The Advanced Dental Implant Institute of Puerto Rico -Colegio de Cirujanos Dentistas de Puerto Rico</td>
<td>-Graduate Schools: 12 -Specialties and Master’s Program: 5 -Postgraduate School: 1 -Technical institutes for dental assistants and laboratory technicians: 2</td>
</tr>
</tbody>
</table>

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37 In collaboration with PAHO & Caribbean Atlantic Dental Association.

38 The first Oral Health Policy focus on the development: a Center of Excellence, the CDO position, Oral Health Services Branch in the MOH, Regional Dental Surgeons and Workforce training.

39 The national Oral Health policy and plan have been developed to fill these gaps by addressing several key areas: integration of oral health into primary health, decentralization of dental services, human resource development and improving oral health services including the development of national health information and surveillances systems (Trinidad and Tobago Report; 2013).

40 Supported by PAHO.
Table 2: Oral Health Profile 2010-2013 (Cont).

<table>
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<tr>
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<th>Dominican Republic</th>
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</tr>
</thead>
</table>
| **Research Agenda** | **Needs** | - Studies with adult population.  
- Asses the association of diabetes/cardiovascular disease with periodontal disease.  
**Infrastructure**  
- Biostatican: 1 (MOH)  
Data collection and training: previously done  
**Budget Allocation**  
Funding for research is dependent on specific requests within the MOH (usually through PAHO). | **Needs** | - CPITN & DMFT 33-44 age cohort  
- DMFT 18yr-olds  
- Oral Cancer screening  
- Fluorosis screening  
- Prevalence studies for enamel erosion and oral mucosal lesions  
- KAP studies targeting parents knowledge of fluoride exposure  
- HPV driven Oral and Pharyngeal Cancers  
- Prevalence of head & neck related intentional and unintentional trauma | **Needs** | - National Health survey for the adult population.  
- Assess the oral health needs of the elderly & Special needs population.  
**Infrastructure**  
Staff of UWI has presented various pieces of in CARPHA’s annual scientific meetings.  
**Needs**  
- CPITN & DMFT 33-44 age cohort  
- DMFT 18yr-olds  
- Oral Cancer screening  
- Fluorosis screening  
- Prevalence studies for enamel erosion and oral mucosal lesions  
| **Infrastructure** | - A research pipeline exists at UPR-SDM that starts at the secondary school level to the postdoctoral level.  
- The UPR-SDM mainly conducts corporate clinical and public health research with emphasis on oral health disparities.  
**Budget Allocation** | - National Health survey for the adult population.  
- Assess the oral health needs of the elderly & Special needs population. | **Needs** | - HPV driven Oral and Pharyngeal Cancers  
- Prevalence of head & neck related intentional and unintentional trauma  
- Fluorosis screening  
- Prevalence studies for enamel erosion and oral mucosal lesions | **Infrastructure** | - A research pipeline exists at UPR-SDM that starts at the secondary school level to the postdoctoral level.  
- The UPR-SDM mainly conducts corporate clinical and public health research with emphasis on oral health disparities.  
**Budget Allocation** | - National Health survey for the adult population.  
- Assess the oral health needs of the elderly & Special needs population. |

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41 Data available from a 2004 study by Naidu et al. on 410 special Olympic athletes reported a high prevalence of untreated molar decay (43.7%) and gingival signs (34.6%); 27.6% had urgent treatment need.

42 The Research themes at the School of Dentistry (UWI) are Oral health of children and people with special needs; oral health promotion; Management of tooth wear and restorative dental care in adults; dental materials; dental education; and oral and maxillo-facial pathology.
## Table 3: Oral Health Diseases and other Related Diseases

Primary source: World Health Organization - Noncommunicable Diseases (NCD) Country Profiles

<table>
<thead>
<tr>
<th></th>
<th>Barbados</th>
<th>Jamaica</th>
<th>Trinidad &amp; Tobago</th>
<th>Guyana</th>
<th>Puerto Rico</th>
<th>Dominican Republic</th>
<th>Grenada</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevalence of Diabetes</strong>&lt;sup&gt;46&lt;/sup&gt;</td>
<td>14.8%&lt;sup&gt;3&lt;/sup&gt;</td>
<td>10.8%</td>
<td>14.2%</td>
<td>14.3%</td>
<td>15.5%</td>
<td>10.7%</td>
<td>8.4%</td>
</tr>
<tr>
<td><strong>Prevalence of HIV &amp; AIDS</strong>&lt;sup&gt;47&lt;/sup&gt;</td>
<td>0.9%&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.8%</td>
<td>1.7%</td>
<td>1.4%</td>
<td>N/A</td>
<td>0.7%</td>
<td>Males: 17.3% Females: 16.9% (2005)&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Population Based Cancer Registry</strong></td>
<td>YES&lt;sup&gt;1&lt;/sup&gt;</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

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<sup>43</sup> PAHO. Regional Core OH Indicators DMFT with links to country reports - last updated 2012.

<sup>44</sup> Trinidad & Tobago report on 1<sup>st</sup> COHI Summit.


<sup>46</sup> 2014 International Diabetes Federation (20-79 years) (%). ADD webpage

<sup>47</sup> UNAIDS 2013 (Adults aged 15 to 49 prevalence rate)


Annex 1: Summited Comments

8/6/2015. **General Comment.** “Thank you for sending me this draft report. It reads very well and addresses all the important issues”. Summited by Dr. Rahul Naidu

8/7/2015. **Follow up Activities.** The collaboration between Dr. Weistein (University of Washington) and Dr. Naidu (University of West Indies) is missing. Summited by Dr. Lydia López (Puerto Rico)

8/12/2015. **Policy Options for Effective Actions.** “What all countries agreed to have in common is the need of access of the CDO to the governor and or Health Minister, to assure that oral health issues are attended by the governments”. Dr. Elaine Pagán (Puerto Rico)

8/12/2015. **Policy Options for Effective Actions.** Is necessary to distinguish public policy meaning. Some minor edits in text are attached. Summited by Dr. Elba Diaz.

8/12/2015. **Background.** Is necessary to explain the Conditioned Cash Transfer program. **Caribbean Regional Oral Health Initiative.** Is necessary to separate the organizers from the delegates. Some minor edits in text are attached. Summited by Prof. Gloria Nazario.