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**Training the public health workforce we need,  
Exploring perceptions for future public health workers in Ecuador**

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**Abstract**

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This thesis explores how stakeholders in academia, central and peripheral health departments envision the training, characteristics, and competences of the public health workforce in Ecuador. Open ended, semi structured interviews with purposive sampling of informants in key positions in universities, research institutions, and government agencies were carried out in 2015. Content analysis was done to identify relevant themes on the research topic. There is a consensus of a general need for a diverse range of public health professionals. There has been a longstanding detachment between the needs of the system and the professional profiles being produced by academic institutions. The state is the main employer of the public workforce and should thus have a greater influence on determining the graduates' competencies. Two contrasting perspectives of the desired characteristics of public health professionals were evident. One sees the need for technical, focused and practical practitioners. The other desires a more comprehensive, broad-viewed but locally aware or culturally competent professional. A shift is required to align programs with the needs of the country. The state, through the Ministry of Health and higher education governing agencies, should become more involved in the training of a motivated public health workforce. There is a need for the public health professional to be the coordinator of the forces or determinants impacting health with adequate skills to transform comprehensive knowledge into relevant impact on collective health.

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## **LIST OF ACRONYMS**

NPGL – National Plan for the Good Living

MSP – Ministry of Public Health

MAIS – Model for Comprehensive Health Services

SENESCYT – Secretariat for Higher Education, Science, Technology and Innovation

MPH – Masters in Public Health

INSPI – National Public Health Research Institute

NGO – Non-Governmental Organizations

SENPLADES – Secretariat for Planning and Development

MCDS – Ministry of Coordination for Social Development

MIES – Ministry of Economic and Social Inclusion

UNDP – United Nations Development Programme

WHO – World Health Organization

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## 1. INTRODUCTION

All the resources and knowledge needed to overcome the health challenges of an emerging country like Ecuador are available and ready. However, this does not mean that these challenges will be easy to solve, especially because a shift in the way we do things is essential. Under 20<sup>th</sup> century consciousness, heir to centuries of European hegemony, knowledge is produced in the major metropolises of the world and reproduced in the peripheral ones. This process of generating knowledge has alleviated some health problems globally and some of them regionally. Globally, we are living longer than ever recorded. The gap between the powerful and the oppressed appears wider than ever before. Ecuador has seen major achievements to increase quality of life, but the country is still struggling with a legacy of poverty, inequality, and health inequities. The baseline data for the National Plan for the Good Living (NPGL) 2013 reports life expectancy at birth as 75 years (59<sup>th</sup> globally), with 27.3% of Ecuadorians living in poverty<sup>1</sup> (1). Despite reducing income inequality for almost a decade, the gap between rich and poor is still very wide with a Gini index of 0.47 (2). The current way of doing and learning may not only be reinforcing global health disparities but also preventing the development of new emancipatory alternatives.

Understanding the way our present-day system is educating those who will shape the policies guiding the country is only a first step in the construction of a new academic identity. The Latin American university is creating a 21<sup>st</sup> century identity by unifying the higher academic system, recovering the historical identity of our universities, and contributing to the achievement of the Good Living. The concept of Good Living was embedded in the Constitutions of Ecuador (2008) and Bolivia (2009) as part of political movements that achieved power through democratic processes grounded in indigenous movements (3–6). Good Living, or *Buen Vivir* in Spanish is an interpretation of the Kichwa term Sumak Kawsay. The term has been used by social movements as an alternative model of western notions of “development”, and gained momentum when confronting the neoliberal market policies imposed in Latin America in the 1990s and 2000s. “The richness of the term is difficult to translate into English. It includes the classical ideas of quality of life, but with the specific idea that well-being is only possible within a community. Furthermore, in most approaches the community concept is

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<sup>1</sup> As measured by income levels. Extreme poverty 11.2%.

understood in an expanded sense, to include Nature. Buen Vivir therefore embraces the broad notion of well-being and cohabitation with others and Nature.” (3). The new Constitution, oriented towards the Good Living, generated a reform that included, among other things, a reform of the higher education system.

From 1980 to 2008 the number of universities in the country doubled (Figure 1) (7). This growth was largely unregulated and without quality accreditation. Most of the new universities were private and

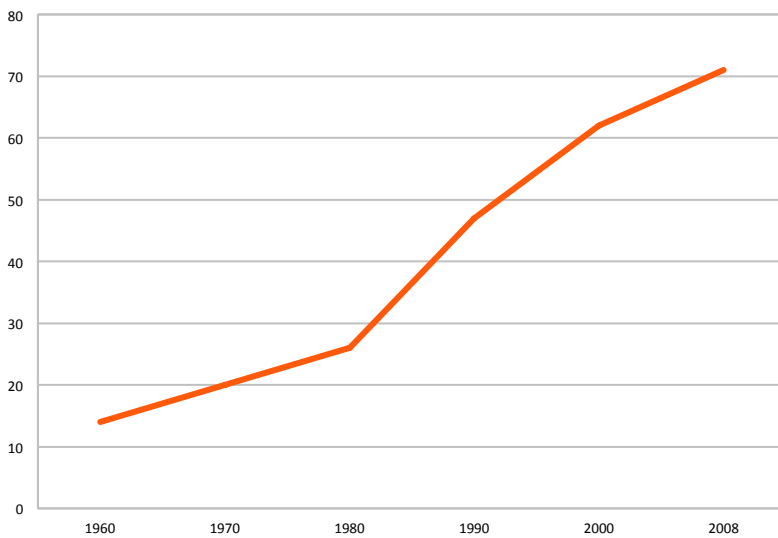


Figure 1. Number of universities 1960-2008 (7)

motivated by profit interests. The constitutional assembly of 2008 issued a mandate to evaluate all higher education institutions with the intention of purging the system. After an evaluation process universities were ranked in categories A through E. Of 71 institutions, 11 were considered category A and 26 category E. Many of these universities in category E were closed down due to low evaluations (7–9).

The evaluation report described the higher education system as a *Janus head*, and cites another report from 1992 stating: “There is no higher education system in Ecuador. There is only an ensemble of institutions (universities) independent from one another and that in a managerial level have some mechanisms for cooperation”<sup>2</sup> (9). As of 2014, there are no third level (undergraduate) programs in public health and 6 fourth level (graduate) programs in public health related areas. One of them offers a *Maestría en Salud Pública*, another a *Doctorado en Salud Colectiva, Ambiente y Sociedad*, and the others are degrees in health services management and occupational health. There are several programs

<sup>2</sup> Quote translated from Spanish by the author.

in different levels that cover health-related areas such as obstetrics, nursing, medicine, gender studies, community development, nutrition and others (10).

This unprecedented reform caught nation-wide attention and revived a debate about the role of higher education in the country. There have been several publications regarding academic programs and their “pertinence” to the national context (11,12). The vision proposed by the reforms is to actively engage academia and research in the achieving the goals outlined on the NPGL. Strong emphasis has been given to technological innovation, basic research and applications with industrial and productive potential. The academic community is relatively small and localized in the major cities. In addition, there is low production of published health-related research (13,14).

Ecuador can be considered an emerging or transitioning country for several reasons. The last report of the UNDP ranks Ecuador as a country with high human development (15). In 2011 the country's income classification by the World Bank was revised from a lower-middle income to an upper-middle income country (16). In the 2008 Constitution, health was established as a right to be guaranteed by the state. The definition of this right includes a combination of many determinants of the *Good Living* such as access to safe water, food, nutrition, education, physical culture, work, social security, healthy environments, leisure and others. The country is facing an increased burden of non-communicable diseases. In combination with road injuries and violence, they now represent the top 10 causes of death and disability for the population (17,18). The baseline diagnosis presented in the NPGL demonstrates that there has been a positive impact in areas such as reducing childhood mortality, access to basic services – safe water, sanitation, housing – and coverage of the health care and education system. The percentage of population with access to safe water is 74.5% nationally and 36.3% on rural areas. Enrollment in primary education covers 95.6% of the population, 84.8% on rural areas, while secondary education coverage is at 70.6%, 58.9% in rural areas (1)

The health care system is formed by the public and private sectors. The public sector is the largest and covers more than 80% of the population. It is subdivided in the Ministry of Public Health (MSP) and social security institutions. The MSP provides health care services and regulates the entire system. Social security institutions manage insurance schemes that fund health care for workers, army and

police. Besides these institutions, the Ministry of Economic and Social Inclusion (MIES) funds and provides specific services such as disability care, nutrition and vulnerable population services. The private sector provides health care service provision to less than 10% of the population and is not involved in regulatory or planning activities, although it is active in the production of research as well as coordinating specialized service provision with the public sector (19). In 2008 all services and products provided by the public health care system were declared free of charge, causing the demand of the health care system to increase 147% by 2011 (20). After 2011 the demand for health services has stabilized, and the efforts to improve quality and efficiency of care, health promotion, and addressing the determinants of health are becoming a priority.

In 2012 the MSP launched a model that outlined the strategies, policies and tools to tackle health challenges in the country named the Model for Comprehensive Health Services (Modelo de Atención Integral de Salud -MAIS). This model is directed to the health system of the country in both public and private sectors. While the NPGL can be seen as an approach of Health in All Policies, the MAIS is supported by the strategies of Primary Health Care. It intends to assemble health policies towards the determinants of health while integrating them with health care provision in all levels of care. The main goals of the MAIS are the redirection of health provision from a curative focus towards health promotion, cultural diversity and the strengthening of community epidemiology. Rolling out the strategies and policies of the MAIS is an ongoing process that still has many challenges to face with human resources being a major one.

The role that future public health professionals will have on the application of the MAIS is not clear. This thesis contributes to the discussion regarding how can public health professionals fit into this transitional context of Ecuador by taking advantage of the opportunity provided by the reform of the higher education and health systems. The study was designed as a qualitative, exploratory approach to describe and discuss the perspectives and opinions of public health stakeholders in the country regarding training of public health professionals.

## 2. METHODS

The research question guiding the study was the following:

*What are the perceptions and attitudes of stakeholders in Ecuador regarding public health training in the country?*

After analyzing the national context, 5 preliminary interviews with key informants in the field were carried out to validate the research question and the sampling frame. These preliminary interviews were not used for the final analysis. This process was useful to include informants from most identified universities in the country with public health-related programs as well as from different governmental institutions and sectors of the MSP (national, zonal, and district level). Through this validation process an interview guide with the research question and specific topics was generated. Additionally, this process was used to draft an initial list of informants who were contacted via email and phone to schedule an interview.

- What are the main activities and responsibilities of public health professionals in the country, either senior professionals or recently graduated, both in the public and private sectors?
- How do the stakeholders envision the development or reform of public health training in the country?
- What types of public health professionals should Ecuador emphasize in training?
- What could be done to support recent/future public health professionals in their career development and continued education?
- How should the quality of academic programs and the work of public health professionals be evaluated?

*Box 1. Interview guide topics*

Informants were selected using purposeful sampling. They were included if involved in faculty or leadership positions (deans and program chairs) in public health related programs at universities, research institutions, Non-Governmental Organizations (NGO's), or government agencies.

Data was collected through open ended, semi structured interviews during February and March 2015. Interviews were carried out in person by the author using the interview guide, which included basic questions to focus the conversation (Box 1). Initial interviews were conducted with university leaders and senior level officials from the MSP. These initial informants initiated a snowball sampling approach to expand the range and diversity of perspectives. A total of 18 interviews were used for analysis (Box 2); 16 were recorded and transcribed by the author. Two interviews were not recorded

because they were carried out in public outdoor spaces and appropriate recording equipment was not available. The first 14 interviews were carried out in Quito and the final 4 in the Manabí province. The author wrote notes in all interviews. Memos were written periodically throughout the process. Interview duration averaged 47 minutes, ranging from 20 to 80 minutes. Audio recordings were transcribed by the author and then coded into a spreadsheet using open-coding in a first stage and subsequent axial coding identifying major themes (21–23). They were later organized into main categories for analysis. Interviews, transcriptions and analysis were carried out in Spanish and then translated into English for this document.

This study was reviewed and approved by the Bioethics Committee of the Universidad San Francisco de Quito and by the University of Washington Human Subjects Division.

<b>Institutional Affiliation</b>	
Private University	6
Public University	2
Research Institution	2
NGO	2
MSP	6
<b>TOTAL</b>	<b>18</b>
<b>Undergraduate Degree</b>	
MD	16
Nurse	1
Nutrition	1
<b>Graduate Degree</b>	
MPH	9
PhD	4
Other	5

*Box 2. Institutional affiliations and training backgrounds of informants*

### 3. RESULTS AND DISCUSSION

Throughout the data gathering and analysis process, it was evident that there is consensus about Ecuador's considerable need for a diverse range of public health professionals. Also, there was a common perception that discussing the role of public health professionals is timely given the current situation of the country. As stated in the introduction, the education reform as well as the health care system reform have increased awareness and enhanced the debate around higher education and the role of universities achieving the country's goals.

A theme that appeared in all interviewees without exception, and has implications that branch out to most of the findings presented is that the national health authority – the MSP – has played and is playing a crucial function in the creation of public health workforce. Furthermore, there was also consistent discussion of how this institution could or should guide the future public health workforce in years to come. Most of the themes identified (Box 3) bear a close relationship to this connection between the MSP and Ecuador's public health workforce. The most relevant themes will be discussed in the following section.

- a) Detachment between university programs and country's needs.
- b) Public sector's (mainly MSP) influence on programs.
- c) Disincentives for pursuing a public health career.
- d) Spread of health care management programs.
- e) Professionalization of programs

*Box 3. Themes on past and present challenges of public health training programs*

Over and above that, there are two contrasting views on how informants from the public health field envision the future public health workforce. These two approaches (termed for analysis *práctica* and *amplia*. Box 4) mark the range of a diverse and complex spectrum of perspectives that will have to come together if Ecuador wants to organize a coordinated and countrywide strategy for public health work.

- f) Two contrasting visions of future public health workforce:  
 “Práctica” – Practical/focused  
 “Amplia” – Broad/comprehensive

*Box 4. Themes on perspectives on future public health professionals*

**a. Detachment between university programs and country's needs**

Informants with a variety of affiliations and positions discussed how certain policies from other state institutions are having a direct influence on the work of public health professionals and training programs. The importance of coordinating the public health workforce with the *needs* of the country was widely acknowledged.

*“Universities should train what the country needs; it should not be laid out by the vision of the universities but in the vision of the country” (B. Private University, faculty)*

When asked to expand on the issue of this *detachment*, the common ideas that surged were related to poor quality and lack of empowerment of public universities, as well as the proliferation of private universities in recent decades. The following quote, for example, expressed by a leader in a private university, reflects on the lack of public health related programs in public universities:

*“Universities, including public ones as government institutions, don't demonstrate a connection with the national situation or with governmental institutions such as the INSPI, SENPLADES, SENESCYT<sup>3</sup>. Public health is the concern of the private education sector” (C. Private University, leadership)*

Surprisingly, stakeholders in private universities express a disappointment with the fact that the focus of public health training is in the hands of private universities, and that they would appreciate the articulation of public health programs with the needs of the MSP or other actors in the state.

*“It may sound as blasphemy but everything around health, even now with the vision that the government has, still the agenda is being set by private universities” (A. Private University, leadership)*

*“We should have more connection; I don't have enough connection with the Ministry [of health]. I would like to visit them floor by floor to know what are they doing, and to know*

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3 INSPI – National Public Health Research Institute; SENPLADES – Secretariat for Planning and Development; SENESCYT – Secretariat for Higher Education, Science, Technology and Innovation

*what is the focus we need to give to the public health professional for that Ministry either at central or at a regional level” (C. Private University, leadership)*

Despite being in private universities, as public health professionals they acknowledge that the MSP should organize and coordinate the focus given to students being trained in public health programs. There seems to be a unity of purpose across institutions that aspire to help create a public health workforce that serves the interests of the country, embodied through the MSP.

***b. The public sector influence – the Ministry of Health***

There are several ways in which the MSP influences public health professionals in their education and practice. The most commonly cited is that the MSP is the largest employer of public health professionals. In words of a lead officer of one of the longest standing public health programs:

*“Most of our graduates, 84%, are working in the public sector, primarily in the MSP and the social security, hospital managers, provincial offices, managing districts, health posts coordinators” (A. Private University, leadership)*

With the discussion of this perceived detachment, there were also suggestions of how the MSP and other public institutions can bring together the needs of the country with the academic focus of public-health related programs. Being the largest employer of public health professionals, as well as being the national governing agency on health policy, the MSP is recognized as a major force that could guide academic formation. This influence has already been evidenced in the expansion of health-service managers and the professionalizing focus of most programs (see below), but many informants stated that the influential power of the MSP could be used to incentivize the diversification of the public health workforce and to aligning it with the national goals and the country's challenges.

*“The MSP could set minimum standards ... obviously they don't have any legal authority to force universities to do this, but they could suggest some elements of quality in the process that generates the product they are expecting ... and that has nothing to do with the teaching methodology ... in that I say that every university has the right to train them as*

*they like ... but what I consider unprecedented is that the MSP doesn't tell to all universities in the country: I want that a professional who aspires to get a degree or a job to have this basic knowledge, there is no such thing" (D. NGO-MSP consultant)*

This quote also hints at another issue, university autonomy from the state. A part of the current debate on higher education includes voices inside universities that support the need for education reform, but do not necessarily agree with how it has been carried out.

### ***c. Disincentives for public health professionals***

Many informants were public health professionals with extensive field experience and they shared their perspectives on numerous disincentives for pursuing a public health career. The first one is financial limitation. Informants with different affiliations and backgrounds commented on how professionals with a public health degree in the MSP receive lower wages than general physicians. Since most of them also hold an MD or nursing degree, they decided to work in health care service.

*"Unfortunately we need to talk about a terrible thing, and that is how much public health workers make. Now there has been some improvement, but until 2 years ago, many had to leave their jobs as coordinators, management or leadership positions, and had to go back to doing direct service provision, nurses or doctors, because they were making more" (A. Private University, leadership)*

Public health workers in the district and zonal offices of the MSP discussed the difficulties of doing more impactful work. The following quote talks about how their work often includes a one-way transportation of data from peripheral posts to central offices without any local input on its value.

*"The public health worker in the district should stop being exclusively data typists from the health posts [health care clinics reporting to the district offices]. The analytical component that a masters program can give you to use that data is missing. It's frustrating because when data arrives in the zonal offices we do the same and send to Quito." (K. MSP, district and zonal level)*

The importance of wages and motivation in everyday work is not the only disincentive for public health professionals. A public health education is perceived to be an *easy* degree to obtain and therefore it lacks the prestige and social recognition as other areas in the health sector, especially medical practice.

*“We have to raise the views of health professionals so that that their education can be considered as a 4<sup>th</sup> level degree, such as medical specialization, and especially if this country wants to change the health of its people we have to increase the value of public health work, if not, it's not going to be possible” (E. Private University, faculty)*

This comparison to the *importance* of medicine relative to public health is longstanding and is influenced by several factors outside the scope of this study. However, it is important to recognize that such disincentives exist. The following quote from a public health professional holding an MD, MPH and PhD degree in Public Health and Epidemiology is illustrative of this issue:

*“When I decided to go for public health they would ask me, what did you fail at? Couldn't you be a cardiologist? There is a connotation that because of being incapable of going into clinical work, you go into public health.” (F. NGO, leadership)*

#### ***d. Spread of programs targeted at health-care management training***

When exploring some of the causes of this disconnection between the country's needs and the focus of public health workforce training, informants frequently referred to one particular example. During the late 1990's and 2000's there was an explosion of unregulated, low-quality programs in for-profit private universities, most of them directed towards health care management (8).

In this example, the influence that MSP policies can have is demonstrated. Since 2008, the MSP has increased the demand for managers and leaders in health services such as hospitals and clinics. In parallel to this increase in the job market, universities jumped in to fill this demand by focusing their public health programs in management and leadership.

*“The market game has produced bit by bit professionals for what it requires from them, therefore now you have a bunch of hospital managers and administrators ... the new logic of public health is more inserted in a market logic” (G. Public University, faculty)*

Although this can be interpreted as a synchronized process between the job market and academic offer, informants presented this example as a clear disconnection between the needs of the country, favoring market-driven profiles of professionals that in turn limited the availability of public health programs in other areas, research being the example in the following quote:

*“Hospital management was more marketable, much more sellable, but on the other hand the strength of this program has always been research” (A. Private University, leadership)*

*“They don't need public health professionals, they need managers so they train managers, and the system begins adapting to the profiles you have which is a conceptual problem” (B. Private University, faculty)*

Public health training has been increasingly perceived in the country as mainly management of health care services, and although this can be considered a largely needed type of public health work, informants also emphasized the importance for universities to diversify the training into other areas of expertise and with a different focus.

*“For example many universities have health management but they are “gerenciólogos” [unflattering term for management professionals as narrow-minded], only administration of resources. The concepts of public health: determinants of health, research, impact and all that, they see those as something that is there, know they exist and that's it” (B. Private University, faculty)*

#### ***e. Professional over academic training***

The gap between the existing workforce and the needs of the institutions, specially the MSP, has also created a phenomenon that informants termed as the *professionalization* of public health training. To increase the quality and remunerations of public workers the state is increasingly requiring that people in certain positions hold specific degrees in the areas of their work. In past years and perhaps as a

transitioning process, this was done by awarding de facto degrees to people that have been working for a long time in a specific field without formal education, or by accepting short degrees called *diplomados*, a certification degree in an area of work that was recognized as a fourth level academic degree. With the education reform, most of these programs were closed until they complied with new quality requirements established within the Higher Education Law (7). However, most of the current public health related programs follow the trend of training people that are already working in the field. This has forced universities to adapt to the profile of their applicants, making the programs focus on weekend or evening schedules.

*“The story of people that train in public health is kind of “tecnificante” [loosely translated as a program that improves your technical skills], mid-level managers or decision makers in general were not first public health professionals and then decision makers, it is the other way around. Once they are inside they go and get trained” (H. Public research institution, leadership)*

*“Most of them [students], around 80% were employees of the MSP ... so what’s done is to have class Friday evening and Saturday, we had to adapt” (A. Private University, leadership)*

#### ***f. Two contrasting visions of the public health professional***

During the interviews, informants expressed how they might envision the training of future generations of public health professionals. Sometimes they voiced their opinions unprompted when discussing other issues such as the themes previously presented, and in other situations they expressed their perspective when asked about what types of public health professionals should Ecuador emphasize in training.

Throughout the analysis of gathered data, there are two contrasting perceptions of how Ecuador's future public health workforce should be trained. On one side there are those who advise the training of skilled professionals with specific technical or *practical* skills (*práctica*). On the other hand there are advocates for a *broad-viewed* (*amplia*) professional who understands the surrounding context and has a strong theoretical background.

On the *practical* side, some of the examples relate to currently identified weaknesses of public health programs or the lack of professionals focused on certain skills including policy making, economic evaluations, research coordination, statistics, environmental health, epidemiology, monitoring and evaluation, etc. The following quotes single out the need for research skills, cost-effectiveness analysis and program evaluations:

*“Decision makers [in public health] should be people with an academic and one hundred percent scientific backgrounds. Their decisions should be based in objectivity, in research, in real data” (I. Public research institution, leadership)*

*“I would love to go and visit the community and all that, but for example, I go there and I say: how do I create a cost-effectiveness analysis? Or how do I evaluate a service? I mean training is not that strong in that sense; it is more focused in systems and in theory” (H. Public research institution, leadership)*

As seen in the final sentence of this last quote, this vision was usually presented as an alternative to the focus that has been common in the Ecuadorean and Latin American academia. Health education in Latin America shares roots with the social medicine movement and with a strong emphasis in the social determination of health (24,25). This view also criticized the *broad* approach for having too much political influence, usually with a left-wing political ideology, as it has been common in Ecuador's public universities.

*“I would say that one of the limitations was that we buried ourselves too much in theoretical discussion, in the theoretical framework of health, in social medicine, connections with development, social inequities and more ... but there has been very little development of the practical component, some in management, but a management quite broad and focused for the MSP” (F. NGO, leadership)*

*“The vision of collective health and social determination of health have ended up being an academic school of thought, with a great [academic] production and all that, but in the practice not much” (G. Public University, faculty)*

*“Training here has gone deep into theoretical aspects of the social ... with a strong left-wing political focus” (E. Private University, faculty)*

On the other side of the spectrum we find advocates for training professionals with a *broad* perspective on public health. They insist on the need for a public health professional that is aware of the

surrounding context, of the reality of our country, continent, world, and realize as well that public health professionals have to be political agents and advocates of social changes. This perspective emphasized on the importance of including in education programs a theoretical and epistemological debate, intercultural awareness, and historical and political analysis of health.

*“What we need is a comprehensive perspective that makes connections, that contextualizes programs, that understands where and how disease is determined, why? Because then we could even provide a better clinical service” (J. Public University, leadership)*

*“The public health professional should be a systemic specialization in the first place. Then if you go and do health systems research it is one thing, or go for hospital management it is another, but in reality the basic component is that public health should be viewed as a comprehensive system” (B. Private University, faculty)*

When expressing this perception, informants criticized the *practical* approach, usually associated with the mainstream public health approach in North American schools and in international organizations, with a pragmatic epistemological paradigm. Describing its focus as reductionist and complacent with geopolitical hegemony, they claim that a merely *practical* approach disregards the socio-cultural context in which public health operates.

*“If I locate myself in the scientific tradition of pragmatism, there is nothing to explain but doing, doers, and doers don't question, don't understand” (J. Public University, leadership)*

*“We also have the public health school that is very very practical, people that finish their graduate education and go around managing hospitals, projects, very operational but without much political or epistemological background ... and that is the discourse of power, the discourse of the World Bank, WHO, philanthropy, etc. that is everywhere” (G. Public University, faculty)*

*“The absence of comprehending the cultural differences that exist across groups which play a fundamental role in what is the presence of disease, in the search for alternatives. If we look for aspects of health promotion, it implies that we need to start from that concrete reality of the problems that exist in a local level, which has lots to do with the economic arena for example” (F. NGO, leadership)*

Professionals involved in public institutions such as the MSP or research institutions as well as practicing physicians would have a tendency to advocate for the *practical* side, while people inside

universities and former or temporary MSP consultants would be more inclined to insist on a *broad-*viewed professional. While there was some pattern of what type of profile would lean towards a particular side, some informants even expressed both perspectives in different moments of the interview. Discussing these two contrasting perspectives may provide a base line for further research on how the country is envisioning the future public health workforce. The two sides presented are not absolute or mutually exclusive. Although they are presented and analyzed as contrasting, they represent two margins of the spectrum. Accordingly, these views should be looked at as a continuum of opinions across the public health community.

## 4. CONCLUSIONS

Interviewed informants from the Ecuadorean public health community identified several past and present challenges for post-secondary public health education in the country. The main challenges discussed in this study include the detachment between the training programs and the needs of the health system, and the major influence that the public sector can have in overcoming such detachment. The proliferation of health care management programs and the weakness in strong academic programs (professionalization) are examples of such detachment.

### *a. Diversification and relevance of public health programs*

The detachment between the universities and the national context is not a new problem (7). Public health needs constant evolution to address the changing health challenges of society. Diversifying the public health education is a direct step towards making public health work relevant to public health needs in Ecuador.

The first issue that arises when glancing over the lack of diversity in public health education is the close relationship it bears to medical education and health care work. It was difficult to reach public health professionals with a training background other than medicine. Most students in graduate level programs also come from a medical background. This exemplifies in some aspects the theme labeled as *detachment*, and subsequently the need to diversify public health education.

Since the publication of the Flexner report in the United States in 1910 (26) health education systems have been standardized around the authority of the biomedical model. The “setting of standards” achieved a higher quality of education, better compensation, and increased prestige of medical professionals. However it also deepened access inequalities (such as the closure of most medical schools hosting African-American students). Additionally, by establishing the biomedical model as dominant, it actively displaced alternatives with the published examples of complimentary and

alternative medicines (27,28). Consequences of implementing some of the recommendations of the Flexner report impacted medical education and health systems around the world.

Since the 1970's Latin American countries organized their health systems around the medical profession (MSP in Ecuador was created in 1967), that in addition produced an excess of medical specialists with a deficit in other types of health professionals (29). Because the health system was created around the medical profession, physicians have traditionally held leadership and decision making positions throughout the system. For example, the first health Minister without a medical background was only appointed in 2012. The implications of the biomedical model dominating medical and public health education expanded beyond the health system to include the philosophical orientation of universities and other aspects such as the political culture of the country (30–32).

Diversification of public health workforce beyond a medical or health care perspective requires involvement of professionals with backgrounds in other fields (journalism, education, environment, engineering, social sciences, industry, etc.). However, the entry point for pursuing a public health career has been limited to those involved in the health care setting or in medical schools. Professionals from other backgrounds usually don't recognize their potential contributions to public health, feeding the cycle of training public health professionals closely related to the health care system (33). Diversifying the public health workforce is not going to happen only by diversifying the curricula of public health programs, but also by including other academic sectors and dialectical alternatives to discussion about potential contributions to public health.

In 2009, the fourteenth constitutional mandate (*Mandato 14*) ordered an evaluation of all higher education institutions in Ecuador. Its main goal was to empower the state and reorient a system that, according to the Constitutional Assembly, had drifted from national interests towards education based in market forces and cronyism (7,9). A deeper discussion into market forces and neoliberal policies creating or intensifying the detachment can lead us into global, social, and economical issues that (although very important) lie beyond the scope of this research. The higher education system was seen to have poor quality measured with criteria such as academic environment, expertise of their students,

academic production, management, and qualified faculty, among others. The reform intended to solve the *Janus head* system, improve its quality, and align science and education towards the needs of the country. The goals presented in the NPGL reflect the state's vision of these needs (1). I acknowledge that the discussion about *the needs of the country* is diverse and subjective, however a more detailed and in-depth discussion of alternative ways to envision these needs also lies beyond the scope of this paper. Despite the fact that interviewed informants may have different conceptions of *the needs of the country* they expressed the importance of using the state to connect them to public health education.

There have been important milestones by the current government to align national goals with education and research systems. A study in 2009 reported that out of 17 Latin American countries, only Brazil and Ecuador have a structured national governing policy on health research (14). From the application of the constitutional mandate this process has been led mostly by agencies in the education arena, while involvement of the health sector has not been so visible. Informants, regardless of their institutional or ideological affiliation, identified the MSP as a major influence on how professionals are being educated with the latent potential for even more influence in the field. There seemed to be a unity of purpose in encouraging the MSP to work together with higher education agencies (SENESCYT) to set standards for the skills and knowledge of the Ecuadorean public health workforce and align them with national goals.

Public health leaders, even those in the private sector (universities and NGOs), acknowledged the need to work towards a countrywide vision of public health, with the state taking the lead as organizer and regulator of the system. However, *public health* was not seen as a synonym of *state health*, indicating the importance to maintain academic autonomy of universities and to strengthen community level (nongovernmental) collective organization of health practice. The challenge for the MSP and other government institutions lies in pushing training programs to tackle national priorities without curtailing academic liberty in universities, either public or private. There has been little or no discussion about how community based public health practice, with the intercultural dimensions this implies, can contribute in the efforts towards this countrywide vision of public health.

***b. Balancing the education of public health professionals***

How does the Ecuadorean public health community envision the future public health workforce? The two contrasting visions (broad and practical) are, at first sight, symptoms of a paradigmatic debate where diverse mindsets express their view of the world and academia. Besides the philosophical debate on the epistemology of research and education, there are marked differences in the potential impact on public health workforce if one of these viewpoints would be emphasized over the other. The discussion about these different perspectives is not concerned in identifying which one to prioritize. Instead, how can the analysis of both sides provide the groundwork to achieve relevant public health work?

Recognizing past problems and current challenges of public health in the country is only the first step. The education and health reform opened an important window of opportunity to tackle the health challenges in the population through a transformation of the future public health workforce. For example, the application of the MAIS by the MSP is an example that can be used to discuss the potential role of public health professionals in the application of policies and programs of such strategy.

One of the aims of the MAIS is to redirect public health from a disease-centered and health care approach towards a health system based in the principles of Primary Health Care, and the end goal of achieving the objectives of the NPGL. This implicitly requires a professional with a comprehensive approach to health and its determinants, and aware of the local reality. Currently, there are public health workers (usually epidemiologists) at district or zonal level offices of the MSP. It is at this local level where coordination of the public health system with the community is important. Interdisciplinary and inter-sectoral approaches to policy implementation are recognized as necessary for meaningful impacts on population health (34). The MSP has been improving the application of projects towards less vertical and isolated efforts, but the coordination with other sectors is still weak and not so visible in the field.

We could think of the public health worker as a link and organizer across all spheres of health including health care, environment, food, sanitation, education, water, employment, etc. The MSP, MCDS<sup>4</sup>, or any other government institution could coordinate the development of a training program (not necessarily graduate level) with universities to serve this assumed role. Through dialogue and cooperation with the same vision in mind, the work of the zonal public health professional could be complimented with a team that has the knowledge and skills for an integral approach for public health policy.

Public health practice in the field should aim to overcome the limited approach of only focusing in generating health care data, but also to understand it and know what to do with it. Therefore, a public health worker within the MAIS would benefit as well of a focused skill set in data management and analysis. Combined with practical organizational and leadership skills, they can coordinate inter-sectoral approaches at a local level. Additionally, data quality would be greatly improved since those generating it would understand its value instead of helplessly witnessing how data lose its relevance by the time it reaches decision-making offices. Similarly, many institutions playing a prime role in health areas such as the National Public Health Research Institute (INSPI), the State Pharmaceutical Company (ENFARMA), the National Statistics Institute (INEC), and many others who may benefit from having highly competent professionals with specific skills (e.g. research design, pharmacoepidemiology, biostatistics) that understand the policy implications of their work.

Summarizing, a balanced education that is comprehensive and broad with practical skills can help the future public health workforce align with the health needs of the community. A strictly *unpractical* approach will lead to abundant theory production with low impact of policies and programs. On the other hand, a *narrow-minded* approach will lead to implementing unviable programs without community participation or empowerment. Education of public health professionals needs to be as diverse as the field itself. After all, it depends on what roles will this professional have. The range is wide and goes from economic analysis in city offices to program implementation in the community.

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<sup>4</sup> MCDS – “Ministerio Coordinador de Desarrollo Social”. Ministry of Coordination for Social Development is designed to coordinate actions across the Ministries of Public Health, Economic and Social Inclusion, Education, Urban Development, and Sports.

Although this argument can be used to any kind of professional in public service, future public health professionals require an education that will allow them to understand the national reality, its history and politics, as well as the immense cultural and contextual diversity that determines where and how health and disease are generated and why. That is not enough; the student also needs to master practical skills that allow her to use this understanding to the benefit of collectiveness.

## 5. RECOMMENDATIONS

Promote the development of undergraduate and graduate level public health programs through a dialogue between public institutions such as the MSP, MCDS, and the SENESCYT with universities and community stakeholders. This will permit students with a wide array of interests and skills to pursue public health careers, filling relevant roles in the health and social development system of the country.

Require future and existing public health programs to be independent of medical schools.

Encourage graduate level programs to be full time, therefore allowing them to strengthen the academic focus on research and community involvement. Existing or future distance-based, as well as weekend (blended) programs can be useful to specific professional needs but their relevance and utility need to be considered.

Ensure diversification of public health programs to cover a comprehensive range of disciplines acknowledging the rich cultural diversity of the country. This can include public health certifications for careers in other areas such as education, engineering, social sciences, economy, biology, journalism, urban planning, etc. In addition, diversification of public health programs requires the inclusion of intercultural training and practice with ancestral knowledge coming from diverse cultural and historical traditions in the country.

Incentivize students to pursue a public health career by raising quality standards and improving salaries to be equivalent to professionals with other graduate level degrees. Maintaining the constitutional right to free higher education is essential to maintain equity in access and student diversity.

## **6. LIMITATIONS AND FURTHER RESEARCH**

This thesis had many limitations resulting from the nature of the study and its design. Since informants were recruited from a limited sample, opinions collected may not be generalized to the entire country's public health community. Due to time constraints it was not possible to interview professionals from provinces besides Pichincha and Manabí. This study did not include an analysis of the diverse cultural contexts of the country and their potential differences in attitudes and perspectives on health education. Not incorporating an analysis of the perceptions from current students pursuing degrees in public health was another limitation, and might also be a relevant topic for further research. To provide more specific recommendations for stakeholders it may be useful to study public health education with a mixed-methods approach (qualitative and quantitative) reviewing academic production, retrospective and prospective follow-up of students and professionals, and studying specific programs in the country with regional and global comparisons.

The goal of this thesis was to examine the situation of the current debate on higher education in the public health field. The following questions emerge from the conclusions of this study, and discussing them can enlighten the way forward. How can a diversification of public health programs balance a workforce with a broad education and practical skills? What type of interaction is needed to foster collaboration between institutions working for collective health and those preparing the public health workforce? And finally, what steps should Ecuador take in order to align public health programs with the health needs of its people?

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