

# Exploring the multidisciplinary extent of public health career structures in 12 countries: An exploratory mapping

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## **Abstract**

### **Background**

While much is known about multidisciplinary public health (MDPH) professional practice in the UK which developed particularly in the 1990s, little is known about it in other settings especially low and middle-income countries (LMICs). This study reports on findings of a mapping review of public health career structures and an examination of how multidisciplinary they are in 12 countries.

### **Methods**

A 12-element template was used to collect data from relevant websites and key informants with public health experience in the 12 countries.

### **Results**

We found that while countries had similarities such as having MDPH professional organisations, there were differences in terms of public health specialty training programmes and openness of senior public health posts at various administrative levels to non-medical professionals.

### **Conclusion**

We conclude that there still gaps in MDPH career structures internationally. While this study provides preliminary knowledge on the subject, we recommend further research to inform debates and policies in MDPH professional practice especially in LMICs.

## Background

The importance of public health professional practice is increasingly recognised in the present era of both old and new public health challenges, with an increased emphasis on addressing the complexities of the social determinants of health and tackling health inequalities [1]. Over the years, the medical profession has made significant contributions to the development of the public health function [2]. In many international settings, public health has been regarded as a specialty of the medical profession, but with the rise of the multidisciplinary public health (MDPH) workforce, this has progressively changed. Multidisciplinary in this case refers to professionals from various backgrounds contributing knowledge and skills from their disciplines to one profession [3]. The development of the MDPH workforce is an international phenomenon, but there has been a specific and well documented shift in the UK from the 1990s to early 21<sup>st</sup> century where senior posts have been opened to public health professionals from backgrounds other than medicine [4]. A survey by Somerville and Griffiths in 1995 on the career development needs of public health professionals reported that many public health professionals with non-medical backgrounds felt undervalued and disenfranchised in working places. Findings from the survey served as a catalyst for the MDPH agenda in the UK [5]. Since then much has been documented about MDPH workforce in the UK including: the training implications for UK policy on developing the workforce [6], understanding the policy and practice of the MDPH workforce [7], a short history of the MDPH Forum which championed a multidisciplinary workforce [8] and the experiences of the first cadre of directors of public health from non-medical backgrounds [9].

Donaldson in reviewing 125 years of public health in the UK proposed that the future public health workforce should be multidisciplinary; that is, the collaboration of five categories of public health professionals: a public health specialist who is not necessarily a medical doctor,

health professionals, public health researchers, health management professionals, and non-health sector professionals [10]. Further, Beaglehole and colleagues argued that to tackle global health challenges, a multidisciplinary public workforce is needed: “a workforce with a broad view of public health, an ability to work collaboratively across disciplines and sectors” [11]. A key aspect in achieving this is by developing multidisciplinary career structures for those with non-medical backgrounds, a lack of which was identified as a barrier in the realisation of a multidisciplinary workforce in the UK [6]. MDPH career structures include but are not limited to public health professional organisations, specialty training programmes and the ability of all professionals to move up the career ladder and hold senior posts irrespective of their background.

## Methods

This exploratory mapping of public health career structures was one of the two elements of a recruitment, employability and career development project at the University of the West of England (UWE), Bristol. A template for data collection was developed as part of the UWE MSc Public Health (MScPH) teaching session on international public health workforce development and piloted with the international student group. The template consisted of 12 elements, the majority of which were closed (yes/no) questions but which allowed collection of additional brief details (see Table 2). Data were collated from relevant websites, grey literature, research articles and key informants who were contacted through email. The mapping was done in three stages as described below.

### *First stage*

Two MScPH student interns (AM and CB) carried out a web search to map national and regional public health associations in 38 countries from which UWE Bristol has recruited its international students (see supplementary information for a list of the countries). Search

terms used were the country/regional name, “public health/preventive medicine” and “association/society/foundation”. The World Federation of Public Health Associations (WFPHA) website was also searched for national public health associations. The main aim of this exploratory search was to identify relevant websites and extract contact details if present.

### *Second stage*

The second stage involved an attempt to fill the template with information extracted from websites of the non-UK 11 countries that were in English. While the websites were useful in answering the question on national public health organisation and membership criteria, they were generally of limited use for the rest of the questions.

### *Third stage*

In the third stage, we emailed key informants requesting them to fill the template or clarify information we had extracted from websites. The email list used at this stage included: contacts acquired in the first stage some of which were institutional/association email addresses, contacts from members of the project team who knew public health professionals in some countries, and corresponding authors of relevant articles from the review of literature in the first stage. Emails requesting participation in the mapping were sent to email addresses we were able to identify for contacts in 25 countries, in most cases more than one contact per country. Key informants from 12 countries responded and the mapping template was sent for them to fill. Templates from 17 key informants from 11 countries had been received by the end of the project. The ‘England’ template was completed by the project’s principal investigator (DE), and verified by members of the project team, all of whom were familiar with UK MDPH professional practice.

We therefore present findings from 12 countries which had at least one key informant

answering all or some of the questions in the template. According to the World Bank classification of economies the 12 countries can be split into: nine LMICs (Malawi, Cameroon, Ghana, India, Kenya, Nigeria, Bulgaria, Tanzania, and South Africa, and three high-income countries: Canada, England, and the United States of America (USA). All data sources for the countries including a brief description of the 17 key informants are shown in Table 1.

## **Findings**

Findings are clustered and presented in four subheadings namely: national department/agency responsible for public health career development, MDPH professional organisations, MDPH specialist training, and senior public health positions being open to all public health professionals at local, regional and national levels and in non-governmental organisations (NGOs). Table 2 shows the number of countries found to represent ‘yes’ or ‘no’ answers for each of the elements.

## **Development of the public health workforce**

We sought to find out if there was a national department or agency tasked with developing the public health workforce. All 12 countries had such a national department or agency, with the ministries of health (MoH) chiefly responsible for this role. While in most LMICs this was through departments in the ministry, some countries had semi-autonomous public health agencies for this role, for example, the Public Health Agency of Canada and Public Health England. To complement the MoH, some key informants felt that institutions or agencies that provided formal education in public health or continuous professional development contributed to developing the workforce in their countries: for example, the faculties of public health in Bulgarian medical universities and Health Education England. In addition,

there was mention of professional regulatory bodies such as the Public Health Officers and Technicians Council in Kenya which among its mandates is to ensure quality training and retention of public health professionals so as to continually improve work force performance.

### **How multidisciplinary are public health professional organisations?**

In all 12 countries there was at least one national public health professional organisation. We sought to find out if membership was dependent on medical registration or open to all. In all countries there was at least one public health professional organisation that was open to all professionals. In addition, two countries had professional organisations that were the preserve of medical doctors: the American College of Preventive Medicine in the USA and the Association of Public Health Physicians of Nigeria.

Further, only England had a centralised register for MDPH professionals in parallel with the medical register. Other countries only had health discipline specific registers for professionals practising public health for example, medical and nursing registers.

### **How multidisciplinary is public health specialty training?**

All key informants felt that their country had public health specialty training programmes. Such training can be categorised into two types. First, training that resulted in a PhD or the Masters in Public Health (MPH) degree (or its equivalent MScPH). In all 12 countries this was open to all professionals. Second, a specific public health specialty training programme. With the exception of England, in all the other seven countries which provided it, such programmes were the preserve of medical doctors.

### **Senior public health posts in local and regional levels**

In 11 countries senior public health posts at local level were open to professionals from non-medical backgrounds with an exception for posts that had medical responsibilities such as

Medical Officer of Health. A public health policy maker from Nigeria felt that shortage of medical doctors in local government in that country had opened senior public health posts to non-medical public health professionals

In eight countries, senior public health posts at regional level were open to public health professionals from all backgrounds except posts that had medical responsibilities. In three of the eight countries (England, Nigeria and Tanzania), although it was not necessarily policy to have public health professionals with a medical background hold these posts, it was rare to find non-medical public health professionals occupying such posts.

### **Senior public health posts at national level**

In nine countries, senior public health posts at national level were open to all public health professionals, except for posts with medical responsibilities. Further, we sought to find out the titles of the most senior public health post and whether they were open to professionals from all backgrounds. Titles of such posts included: Director General (South Africa, Ghana, Cameroon), Director of Public Health (Kenya, Nigeria), Chief Medical Officer (England, Tanzania), Chief Public Health Officer (Canada), Director of the National Centre of Public Health Analysis (Bulgaria), Secretary of Health (Malawi), and Surgeon General (USA). In four countries: Canada, Kenya, Malawi and South Africa, the senior most public health post was open to professionals from non-medical backgrounds.

### **Senior public health posts in NGOs**

In all countries senior public health posts in NGOs were open to professionals from all backgrounds except for posts with medical responsibilities. In some settings, such as India and Kenya, key informants felt that specialising in public health, often through a MPH/MScPH, was either a requirement or an added advantage for such positions.



This finding on senior posts in NGOs compares with the views of a key informant who had long working experience in international organisations including the World Health Organisation (WHO) who felt that although professionals with a medical background held senior posts in the WHO, it was not actually a requirement for most of the posts. Instead, having a PhD and working experience would contribute to holding senior posts in most international organisations rather than having a medical background.

## **Discussion**

### **Main findings of this study**

There are four main findings of this study which merit further discussion. First, this research supports the findings of other studies that globally, postgraduate public health degrees are usually open to all professionals thus providing the opportunity to develop a MDPH specialist workforce. Previous research regarded the MPH/MScPH as the most common professional entry qualification for public health [12]. This emphasises the key role played by schools of public health (SPHs) in developing a MDPH workforce. Rabbani and colleagues argued that SPHs can contribute to solving several public health challenges faced by LMICs and achievement of Sustainable Development Goals (SDGs) by developing a competent and motivated MDPH workforce. But our findings suggest that a number of public health specialty training programmes remain limited to medically qualified trainees. The opening of public health specialty training programmes to all suitably qualified professionals is important in the development and expansion of a MDPH workforce.

Second, the apparent opening of senior public health posts to non-medical professionals especially in LMICs could be due to the shortage of medical doctors. Physical ‘brain drain,’ the migration of physicians from LMICs to high income countries has been a major

contributor to shortages of doctors in LMICs [14-17]. Pang and colleagues argued that while the brain drain widened health inequities globally and contributed to depletion of healthcare resources in LMICs, it had benefits for LMICs such as: improved training, long term professional networks and financial remittances [18]. From our findings the shortage of doctors caused by brain drain, among other factors, could have had a progressive contribution to opening up opportunities for non-medical professionals to aspire to senior public health posts. McPherson argued that a public health system that allows professionals from any background to reach senior posts would attract the best professionals and there was no evidence that initial training in medicine was the best initial training for public health [19]. In response, Taylor and Saunders argued that the scientific and social content of medical training was vital as it helped develop competencies in leading public health teams [20]. The latter view has become a minority position in the UK as MDPH professional practice has been embraced by medical public health leaders in the UK government health departments, the Faculty of Public Health (FPH) and amongst other stakeholders. However, in some LMICs medical doctors are still preferred for leadership positions. For example, in Kenya a recent study reported that medical doctors are preferentially selected for leadership positions [21]. Such views that give leadership preference to medical doctors could impede the development of a MDPH workforce.

Third, only the UK had a MDPH professional registration through the United Kingdom Public Health Register (UKPHR) whose aim is to assure employers and the public of public health workforce that is competent and qualified ([www.ukphr.org](http://www.ukphr.org)). This does not come as a surprise as UK has arguably been the pioneer of MDPH professional development [22]. Multidisciplinary registration was one of the key developments towards a MDPH workforce initiated by the ‘Tripartite Group,’ a collaboration of the FPH, Royal Institute of Public

Health (RIPH) and the MDPH Forum [23], and sustained by the English Department of Health's commitment to regulate non-medical health professionals [24]. The lack of a network to champion MDPH professional development such as the MDPH Forum, the absence of strong professional body support for change similar to that provided by the FPH and/or little or no commitment by governments to regulate non-medical public health professionals could be some of the reasons behind limited development of MDPH career structures such as multidisciplinary registration in the other 11 countries. Further research might usefully explore the lack of MDPH professional development in LMIC compared to the UK.

Fourth, in all countries senior public health posts in NGOs were open to professions from all backgrounds. This could be due to the independence of NGOs in their recruitment, prioritisation of skill mix rather than background so as to attract the best professionals and diversity of activities undertaken in NGOs. Previous literature has documented NGOs as independent, efficient and less bureaucratic [25] and increasingly playing a vital role in development process in least developed countries [26]. Our findings suggest that NGOs have been pace setters in the international development of the MDPH workforce.

Globally and very recently, a non-medical doctor was elected to the office of the World Health Organisation (WHO) Director General position for the first time in the organisation's history [27, 28]. Being the largest and most influential international inter-governmental organization (IGO) in the public health field, it will be interesting to see if the election of a non-medical professional to its helm will positively influence MDPH practice in NGOs, IGOs and other public health agencies internationally, and in particular in LMICs.

### **What is already known on this topic**

The World Health Report 2006 identified a multidisciplinary health workforce to be at the heart of advancing health globally [29]. Much has been documented about MDPH professional development in the UK including the role of FPH in developing MDPH career structures [30], the place of health promotion within MDPH practice [5], trainees' experiences of MDPH training programmes [31], the role of MDPH Forum [8, 32] among others. Outside the UK, the structure, opportunities and challenges of public health medical specialty training programmes have been explored in the USA, Canada, France, Japan and Italy [33, 34].

### **What this study adds**

Our study provides useful insights on MDPH career structures in 12 countries, the majority of which are LMICs. It has identified similarities, differences and gaps in public health career structures in the 12 countries for development of a MDPH workforce. Given it was the first exploratory mapping in this area, it identifies gaps in our knowledge of MDPH career structures that can be filled through further research.

### **Limitations of this study**

Our study had a number of limitations. First, there was limited time and resources to extend the mapping to more countries. Moreover, we were not able to extend our mapping to some global regions such as Latin America or to non-anglophone countries, hence it may not be representative of all LMICs or high income countries. A broader mapping would give a richer context of MDPH professional development globally. Second, non-response from 14 countries out of the 25 requested to participate in the mapping limited our sample size.

## **Conclusions**

Although this was a small scale exploratory study and we must be cautious in our claims, it is the first research to look globally at MDPH career structures and to identify that there appear to be continuing gaps in public health career opportunities for those from backgrounds other than medicine. While this study provides preliminary knowledge on the subject, we recommend further research to inform debates and policies in developing MDPH professional practice internationally, and especially in LMICs.

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## **Conflict of interest**

None declared.

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**Table 1: Mapped countries and data sources used**

<b>Country</b>	<b>Data sources</b>	<b>Further details</b>
Bulgaria	One key informant	Key informant is an academic and holds a senior position in the country's public health professional organisation
Cameroon	Two key informants and website	One key informant is a public health professional and holds a senior position in the country's Public Health Association while the other is a medical doctor who has worked with a number of NGOs in Cameroon and currently a postgraduate Public Health student in the UK.
Canada	Three key informants and websites	Two key informants working as resident physicians in Canada filled the template, which was verified by their supervisor – the third key informant working in a senior position in a health department. Key informant answered questions in all elements and provided links to websites.
England	One key informant	The key informant is an academic who had a long working experience in public health and served as a Director of Public Health
Ghana	One key informant and websites	Key informant is a Deputy Director in the Public Health Service and the plays a key role in the country's Public Health Association
India	One key informant and websites	Key informant is a director of public health services and research and has great experience of the public health system in India and other Asian countries
Kenya	Websites, two key informants and the revised scheme of service for public health assistants and public health officers (2014).	One key informant worked for the government while the other had many years of experience in the NGO sector.



Malawi	One key informant	Key informant is a current doctoral candidate in public health and policy at a UK university and has 12 years working experience in Malawi with the Ministry of Health and international NGOs
Nigeria	Two key informants and websites	Key informants are top public health policy makers who have great experiences of the public health systems in Nigeria and the West African region.
South Africa	One key informant, PhD thesis (Zweigenthal, 2015) and website	Key informant has great experience of the public health structures in South Africa and is one of the leaders of the Public Health Association of South Africa

Tanzania	One key informant	Key informant is a researcher and an experienced public health expert in Tanzania and other East African countries
USA	One key informant, journal article (Loh & Peik 2012), book chapter ( <a href="http://www.ashp.org/doclibrary/bookstore/p1725/p1725samplechapter.aspx">http://www.ashp.org/doclibrary/bookstore/p1725/p1725samplechapter.aspx</a> ) and websites	The key informant worked in Canada with some familiarity with the USA and was also an author of the article used as a reference. He provided verification to information obtained from websites for some elements.

**Table 2: The 12 element template populated with the 12 countries**

<b>Element</b>	<b>Yes</b>	<b>No</b>
Is there a national government department or agency tasked with developing the public health workforce?	All 12 countries	
Is there a national public health professional organisation?	All 12 countries	
If yes, is membership dependent on medical registration? <sup>1</sup>	NG, USA <sup>2</sup>	All 12 countries
Is there a register for public health specialists from backgrounds other than medicine?	ENG	BG, CM, CA, GH, IN, KE, NG, SA, TZ, USA, MW
Is there a training programme for public health specialists?	All 12 countries	
If yes, is the training programme open to those with backgrounds other than medicine?	BG, ENG, KE, TZ, MW	CM, CA, GH, IN, NG, USA, SA
Are senior public health posts at local government/city/district level open to public health specialists from any background (e.g. non-medical)?	BG, CA, ENG, GH, IN, KE, NG, SA, TZ (rarely), USA, MW	CM
Are senior public health posts at state/regional government level open to public health specialists from any background (e.g. non-medical)?	BG, CA, ENG, IN, KE, NG (rarely), SA, TZ (rarely), USA, MW	CM, GH

<sup>1</sup> Nigeria and the USA had more than one public health association hence appear in both yes and no sections

<sup>2</sup> Countries and abbreviations: Bulgaria(BG); Cameroon(CM); Canada (CD); England(ENG); Ghana (GH); India (IN); Kenya (KE); Malawi (MW); Nigeria (NG); South Africa (SA); Tanzania (TZ); United States of America (USA).

Are senior public health posts in national government open to public health specialists from any background (e.g. non-medical)?	BG, CA, ENG, KE, NG (rarely), SA, TZ (occasionally), USA, MW	GH, IN, CM
What is the job title of the most senior public health post in the country?	Various titles, see section on senior public health posts at national level	
Is this post open to public health specialists from any background?	CA, KE, SA, MW	BG, CM, ENG, GH, NG, TZ, USA
Are senior public health posts in non-governmental organisations open to public health specialists from any background?	All 12 countries	

**Supplementary information: List of 38 countries used in first stage of mapping (in alphabetical order)**

1. Bangladesh
2. Belgium
3. Botswana
4. Bulgaria
5. Burma/Myanmar
6. Cameroon
7. China
8. Cyprus
9. Finland
10. France
11. Gambia
12. Germany
13. Ghana
14. Iceland
15. India
16. Italy
17. Kenya
18. Malawi
19. Malaysia
20. Mauritius
21. Nepal
22. Netherlands
23. New Zealand
24. Nigeria
25. Norway
26. Pakistan
27. Poland
28. Portugal
29. Senegal
30. Sierra Leone
31. Spain
32. Somalia
33. Sudan
34. Swaziland
35. Switzerland
36. Uganda
37. United States of America
38. Zimbabwe

