



The Paradigms of Public Health Practice: Lessons for Disciplinary Public Health and Community Physicians in the Developing Countries

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ABSTRACT

Background: Public health (PH) is the application of any science or art organizationally, for the prevention of one, a few, or several diseases; as well as the promotion of health, happiness and longevity for the people at large; and efficiently. Most of these fall within the responsibility of the government to its polity; but in the modern world, individuals and groups of public-spirited people are also getting involved in these. Many paradigms for the practice of public health exist – the government (public) health services on the one hand and the other vertical public health services, covering only sanitary/environmental health or other non-clinical public health sub-specialties; preventive medicine, social medicine; or community medicine and health, and primary health care as well.

Problems: Because of the two ways of entering into the public health service, disciplinarily by primary post-professional direct and full-PH or partial specializations therein; or by the ordinary entry into the government (public health services) or by entry into any of the above six different paradigms of its practice; there is often a misunderstanding of the entire meaning, practices, relations and efficient running of these public health services.

This paper is therefore a review of these two modes of entrance and practice of PH, the distinction and relationships between all the six paradigms of practice thereof, and the benefits as well as problems associated with them. It proffers some suggestions as to their containment, especially for the disciplinary public health physicians as the ultimate community physicians in that most efficient practice paradigm of PH. The same applies also to the disciplinary public health nurse-midwives, similarly, as the statutory district or zonal community nurse-midwives.

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INTRODUCTION

Public Health (PH) has been variously defined in the past. However, as the current uninterrupted enterprise first started with seaport sanitary practices¹, the early definitions of PH were restricted to the sanitary measures against such nuisances and health hazards, which the individual was powerless to cope with; and which when present in one person, could adversely affect others. Thus in those times, PH is almost same

thing or synonymous with sanitation. The concept of PH at that time was subsequently influenced by advancements in bacteriology and immunology which emphasized disease prevention in persons¹. PH was then regarded as an integration of the sanitary and medical sciences.

However, Winslow in 1923 defined PH¹ as the science and act of preventing disease, prolonging life, promotion of health and efficiency through organized community

effort for the sanitation of the environment, the control of communicable diseases, the education of the individual in personal hygiene, the organization of *medical* and *nursing* services for the early diagnosis and preventive treatment of disease; and the development of the social machinery to insure for everyone, a standard of living adequate for the maintenance of health. Winslow immediately added that PH is not ANY single discipline or specialization in the health professions but “an area of social enterprise”¹. Public Health is therefore on the whole, a multidisciplinary endeavor or enterprise; dedicated to the attainment of the highest level of physical, mental and social well-being and longevity, consistent with available knowledge and resources at a given time and place. The field of PH, though dynamic and universal, still varies from place to place because of the diseases involved in each of the places, the paradigms of practice popular or being exercised in the place, as well as the socio-economic and political conditions of the country, state or local government areas of their application.

For the purpose of this presentation, the public health services generally refer to the government health services while the public health specializations and practices, generally and disciplinarily refer to all who after their basic tertiary or vocational education in any human discipline, decide to apply those afterwards, primarily to the prevention of diseases, the protection and promotion of health, happiness and longevity; in contrast with the exclusive clinical medical services and their specializations. These disciplinary public health practitioners do this by learning epidemiology and biostatistics at the postgraduate certificate, diploma, masters or doctoral levels; or even merely on a continuing professional educational level only. In the medical profession, they would do this

through their residency training programmes in all of public health, disciplinarily; as well as in its particular entire community, statutory and ethical paradigm of application, usually referred to as community medicine. In order to succeed in the practice of the specialization, they would correctly and optimally do this in proper combination with its counterpart community nursing and midwifery, as community health.

There is also however ALWAYS the mistaken and often bothersome tendency to put an unnecessary divide between the clinical or medical services on the one hand and PH on the other. However, currently we see the so called clinical medicine or related practices in nursing begin to orientate themselves and those practices more towards the communities of the people and to PH in general. For example, we see movements from obstetrics and gynaecology to reproductive health, paediatrics to child health, and psychiatry to mental health, to mention but a few.

So indeed, the government clinical health services are most easily and unmistakably recognized as the bedrock of the public health services, even when they are most often not preventive, social, promotive or protective health services, that constitute the body of the disciplinary PH. Therefore, a distinction must be made between all these community-oriented medical services and the disciplinary, ethical, statutory ones, which target the whole community, all-diseases and is all-time focused on the preventive, protective, promotive and early/ambulatory curative care of entire communities. This lack of understanding about the two ways of entry into the government public health as sure disciplinary public health physicians or public health physicians of the public health services is a most subtle but very disturbing issue. Disciplinary public health and community physicians must do their best to heal the public

as well as other health professionals about this unnecessary divide in the actual government health services, through mutual and proper health education. Either of these entrants to the public health services are able to be appointed to the office of the Number One PH physician of any country or state, more so, these later, adult-onset, public and/or community-oriented practice entrants from their formally entirely clinical specialties of the medical profession. That is, to the offices of the surgeon-general in presidential democracies or of the director/inspector-general of the medical and health services and chief medical adviser to the governments in the parliamentary democracies.

Thus, currently and in the modern world, PH and especially **the training** in it, has or can be divided into 5 sections:

- a. The TWO basic sciences: *epidemiology* and *biostatistics* as the basis of all certifications in PH.
- b. The FOUR major field practice areas or sub-specialties: *health policy and management; reproductive and family health; environmental health; and the prevention and control of one, a few or all diseases and ailments* (i.e., in the immediate field application of epidemiology).
- c. The remaining FIVE of the established sub-specialties of PH: *health education and promotion* as the art and social science of PH; *occupational health (and safety); public health nutrition; rehabilitative and social medicine/services; and international and port health services*.
- d. The emerging fields of PH, mostly yet in the vertical and interdisciplinary field of practice in many places; but in some, already included in the established body or sub-specialties: *(community) mental health; (community) dental health; and nature and bio-diversity conservation and*

sustainable development, mainly through inter-disciplinary cooperation and coordination.

- e. The background training fields but not field practice sub-specialization issues (except in their teaching/training institutions) of at least the FIVE subjects of: *medical sociology and the sociology of all the other health professions; medical and health service ethics (including bedside/clinical, research, community and bio-management-administrative ethics); the history of medicine and public health; demography; and primary health care* as the bottom-up management approach to the application of all of public and community health out there in the field.

Public health parasitology and microbiology (and perhaps entomology also) have from time to time also been advocated as important subject areas, especially for post-graduate public and community medicine practice training in academic/university or professional residency training.

Because all the above fourteen sub-specialties of field practice of PH, alone or in smaller groups, may be disciplinarily developed at the postgraduate level and engaged in within some of the various practice settings, there is very often confusion about the various modes of entry and/or paradigms of PH practice. It is therefore very important that the two usual ways of entry into the practice and the paradigms thereof be discussed in order to reduce, if not fully eradicate these problems. Therefore, for the purpose of this further discussion, we will be taking public health practice in the following way³:

Public health is the application of any science or art, organizationally, for the prevention of one, a few, several, or of all diseases, the protection of the health of such public, as well as the promotion of health, happiness and

longevity for the people at large, with focus and intent on equity, total coverage and efficiency, of such services.

The two ways of entry into the public health services

As already alluded to above, public health may be entered into from any areas of education or training, either disciplinarily by specialization therein ab-initio or by just joining the government (public) health services. This latter can be done right away after primary qualification in any tertiary education without any prior specialization; or post-specialization thereafter and in any possible areas of previous training. For the medical and nursing/midwifery professions, this post-specialization entry may involve only the academic diploma or master's degree training in PH; or by the residency training programme which involves all the public health sub-specializations of field practice as well as the background general education subjects². They also should advance their training in their professional clinical knowledge and skills beyond the first graduation and full certification in the professions. As the first World Health Organization Expert Committee on the health services administration observed, the pill of preventive medicine or public health services should be delivered with the sugar coating of curative care, even though in the long run, the internal (preventive) components of the pill will be found to be the more important constituent thereof⁴!

Thus, even if people enter public health practices by disciplinary training, only the disciplinary PH physicians would have trained in all the fourteen field practice sub-specialties of PH and beyond, up to at least masters' degree levels thereof. The nurse-midwives would usually also be trained generally across all these sub-disciplines as

well, but usually not compulsorily so, nor with as much rigor as the physicians. All the other disciplinary entrants into public health post basic training in their original professions or disciplines would usually do so only in those single subjects/disciplines or professions of PH specialization. Those who come to public health from the clinical medical specializations also generally only do so by simply orientating such clinical practices to the community (by outreaches, camps or such other vertical forays) or to the general PH services especially by grant or research-based applications. Even if these people then go to get some PH formal training, all they would usually do would be by the continuing education, certificate, diploma, masters or doctoral degrees of mere academic, trainings in these regards; but not by the all-compulsory-total-and-ethical residency training specializations in such disciplinary PH, as they would already have a primary specialization to which they invariably hold primary allegiance.

These later, post-clinical specialization entrants to public health would usually be people who generally have more dynamism and achieved reasonable success in those clinical specialties. Hence, they are usually favoured in the official PH leadership jobs because of greater political public presence achieved through their erstwhile clinical practice successes. Thus, often in the appointment of *the number one public health medical officer of many countries* – namely, *the surgeons-general in presidential democracies* or *the directors/inspectors-general of the medical and health services and chief medical advisers to the governments in the parliamentary democracies* at the state/regional or national levels – these previous full-clinical specialists and new entrants to PH are favoured to get the jobs; but not the erstwhile disciplinary public health and community physicians in the places.

If disciplinary PH physicians desire to be as important and valued as they ought to, in the public health of the government public health services, they will need to understand the entire scope of their specialization as well as to practice them as fully as possible. They should ensure that these services are well organized and integrated, from the national right down through the state and/or regional, to the local government comprehensive primary health care services, under the statutory medical officers of health and the complementary district or zonal community nurse-midwives, as the only way to achieve health-for-all in any such local government, state/regional or national government.

The paradigms of public health practice

In public health, paradigms are typical ways or patterns in which PH had been practiced in the past or may be practiced now. As will be seen below, these paradigms captured parts of the whole of public health until their final amalgamation after the poor law reforms of the United Kingdom in the public health legislations that followed it, through the expansion to incorporate the otherwise missing statutory community nursing and midwifery component and finally, the introduction of the bottom-up approach to all of these at the Alma-Ata conference thereof. The rest of this discussion on paradigms will now proceed virtually in the approximate chronological order of their introduction.

Sanitary public health

As alluded to earlier in this article, the present and now uninterrupted system of public health started in sea sailing ships and port health sanitation, their quarantine laws and their implementation in Venice in 1374¹. Then it moved out to market sanitation; and thereafter, onto houses of obnoxious trades. This sanitary, environmental health and legislative/health inspection paradigm of

public health was to continue from 1374 right up till the 18th century when other paradigms of the disciplinary and/or the government public health services started to arise, to include the clinical health services that were up till then only within the purview of private medical services or the missionary charity services to the poor and destitute.

The government clinical public health services of the hospitals started in 1751 with the establishment of the Pennsylvania Hospital¹. This went side by side with the erstwhile sanitary health services as disciplinary public health until their merger with essential clinical care, with sanitary public health, preventive medicine and social medicine at the end of the poor law reforms in the office of the medical officer of health in the United Kingdom¹.

Preventive medicine

Preventive medicine as a paradigm of disciplinary public health started to evolve from the work of James Lind, when he demonstrated that scurvy may indeed be prevented by the provision and consumption of citrus fruits or their juices, beginning with his work with the British merchant sailors¹. Subsequently, the prevention of small pox by the serum variolation of susceptible people with the serum from small pox survivors or those of cow milk maids who were known not to suffer from small pox diseases during such epidemics because of their believed prior exposure to the related cow pox which protected them from the disease. In the later times, these preventive medicine practices had extended to many other immunizations, to pasteurization as well as chemoprophylaxis and the early screening, diagnosis and preventive treatment of many diseases before their clinical manifestations. Specific vector control activities also became part of this preventative medical practices, even if they would on face value alone be considered to be

environmental health activities. During the early part of the 20th century, many specialists in microbiology and parasitology as well as internal medicine began to address the greater emphasis in this preventive approaches and established secondary departments of preventive medicine.

Social medicine

The field of social medicine evolved also in the 18th century, first with Bernardino Ramazzini's identification of social and legal reforms in the factories as a way to prevent occupational diseases as well as to promote health¹. Subsequently John Howard led the prison reforms¹ as a way to reduce "consumption" as devastating end-stage pulmonary tuberculosis was called. Subsequently, school health, health insurance, charity homes and other social services to relieve poverty, destitution and all the ill-health and unhappiness involved in those, came to be added to these to constitute the known body of social medicine. Subsequent progression in the social medical revolution and paradigm of practice were not introduced by medical doctors (as John Howard definitely was not) but by industrialists like Sir Robert Peel (Snr.) and Antony Ashley Cooper (seventh Earl of Shaftesbury) in the 1801 and the 1833 factory acts of the UK; and Edwin Chadwick in the poor law reforms of the UK of 1834 and its follow-up activities of the 1840s¹. Again, the earliest medical doctors who moved into this field of disciplinary public health were specialists in the other clinical specialties of medicine. Thus Professor John Ryle, previously regius professor of internal medicine at the Cambridge Medical School was in 1943 to become the first professor of social medicine (and epidemiology) there⁵.

Community medicine and health

Following the poor law reforms in England in 1834 and the continuing pressures from Edwin

Chadwick as a principal social reformer at that time, the Public Health Act of 1848 came out to establish the responsibility of the community and its local government for the health of the people, such that social inequalities are reduced⁶. Each local government, in taking responsibility for the health of the people had to appoint a medical officer of health, a sanitary engineer and an inspector of nuisances for this public health function. Eventually, apart from the sanitary or environmental health functions that were at the heart of this, all the other public and preventative health functions got incorporated in the responsibilities of the medical officer of health and the doctors and nurses who helped them in these - the fledgling factory health services, prison health services, school health services; all including the medical doctors and nurses who brought these about.

However, for the clinical nursing needs of the people in the general and non-captive communities of these local governments, it took the family experience of William Rathbone who had to look after his sick wife at home by such a nurse, to create the office of the district (health) nurse in Liverpool in 1859⁷. This office in time brought the complete paradigm of community medicine and community nursing in full practice within the local government area. Community midwifery eventually got added to yield the full community health practice whose foundation was laid at this Public Health Act of 1848⁶. But all these were however, entirely from the social reformation and public organization; and not from within the medical or health professions themselves. It was to take four years deliberation (1968 to 1972) between the interested parties in the Society of Medical Officers of Health, Society for Social Medicine and the heads of the departments teaching epidemiology, preventive and social medicine in the UK to merge all these practices to arrive

at the specialty of community medicine from within the profession itself⁸. Residency training in the specialty again only started from that year, compared with only a diploma or master of public health degree that was the only training possible for such officers to avail of in the past in this regard.

Primary health care (PHC)

Even though the whole of community health (community nursing, midwifery and medical care) services had their seed and commencement of practice in the United Kingdom, in the Public Health Act 1848 office of the medical officers of health and the 1859 district nursing as started by William Rathbone, it did not become universally and evenly practiced all over the world. There are still many countries in different parts of the world that never heard of the names “medical officer of health” or “district nurse/midwife”, nor practiced anything like it. This includes all of Nigeria for the office of the district or statutory community health nurse, and some areas of Nigeria for the office of the medical officer of health. However, it would appear that wherever this full paradigm of public and community health was ever, even in limited ways, put practically in place, the very best community health indices were invariably to result from it – such as in Sweden and the rest of the Scandinavian countries, in Ireland, Fiji islands⁹⁻¹¹, etc.

However, the universal recommendation of this community-based health system to become the universal approach to all national health systems if ever they are going to be reasonable, successful, efficient and sustainable, was to be suggested at the Alma-Ata Conference on primary health care in 1978¹². The difference between these community health services and systems as PHC, as suggested at Alma-Ata, and the ones that were started since 1848 was that it

recommended that it must be bottom-up in approach rather than any other ways that it may have been; including the top-down national government enforced ways. The description of this bottom-up approach of PHC to community health care is given below.

The PHC approach

“Primary health care is a practical approach to making essential health care universally accessible to individuals and families in the community in an acceptable and affordable way and with their full participation. This approach has evolved over the years, partly in the light of experience, positive and negative, gained in the basic health services in a number of countries. But it means much more than the mere extension of basic health services. It has social and developmental dimensions and if properly applied will influence the way in which the rest of the health system functions” – Article 7, General outline.

The follow-up Riga Conference in 1988, mid-way to the year 2000, after reviewing all the accusations or reservations that had erupted in the previous 10 years to PHC and providing the necessary answers to them all, concluded that PHC is going to remain the permanent approach and paradigm to community health and health for all even beyond the year 2000¹³. Since 1978, some seemingly new paradigms have been proposed for the public health services, from *global health* to *one health*, then *echo-health* and now *planetary health*¹⁴⁻¹⁷; yet it is clear that none of these is ever going to be acceptable as true paradigms for all of public and/or community health; as all of them are merely paradigms of the tertiary and international health aspects of public health alone. Indeed, as these tertiary health care paradigms of public health were being pushed around, the World Health Organization in its

2008 state of the world health report asserted that PHC was not only the permanent approach to all of public and community health and health for all; but because of its lack of full and world-wide application, as properly as needed and earlier recommended, is surely “needed now more than ever before”^{18!}

The global health paradigm of tertiary public health practice arose as a paradigm for international health, in order to expand and allow all free participation in it as possible, contrary to the seeming over-control of international health by the United Nations-related agencies and other regional multi-country organizations in that regard. The one health paradigm of tertiary and international public health arose as the veterinary epidemiologists began to think that because of the importance and threat of the new emerging diseases, many of which are zoonotic, public health will not be successful without giving them more place, if not entire and paramount leadership thereof^{15,16}. Echo-health on its own arose, seemingly to draw attention that it is not only from the zoonosis that important or new diseases are arising, but even from plant products in the plant agricultural and food hygiene fields of the entire human ecology system¹⁵. Finally, with the depletion of the ozone layer and all the other aspects of the non-sustainable development phenomenon, coupled with human travel to the moon and perhaps access to the other planets or bodies in the universe, we should be talking of planetary health at the tertiary and international public health level, rather than only global health, one health, echo-health or indeed any other possible future such paradigms of international public health.

Whither Nigeria?

Having traced public health from its sanitary and environmental health and legalistic origins, through its journey in the similarly vertical (single to only a few) components of modern day comprehensive public health, to community health and finally primary health care as the most efficient, globally recognized permanent paradigms of public and community health, the remaining question is obviously “where does all this leave us in Nigeria in these regards?” It would seem rather obvious to me that this is indeed a very big question for us all, especially those who would claim to do disciplinary public health, and so, should also be community physicians. Do we know and do we fully appreciate all these things; all these historical events? Do we know that as is shown from the old UK where it all started, through Ireland, the Scandinavian countries and to Fiji Islands, etc. if we do not establish the district medical officer (better still, as the medical officer of health for every local governments and/or extensions within the LGA districts) and similar statutory community nursing-midwifery officers within our so-called PHC system, we will be nowhere near having any national, state or local government public health system worth any value at all? Do we realize that the situation where auxiliary medical and nursing officers (but no reasonable midwifery officers at all, as the most vital of these PHC officers), so properly designated, developed and administered in other countries, but who in Nigeria are most inadequately developed, named unrelatedly to these professions that they are auxiliary to, most disorderly produced and deployed in ways that only undermine any reasonable PHC services, will only have us continue to make PHC impossible in Nigeria until properly redressed?

Conclusion

It can obviously be concluded that disciplinary public health physicians in Nigeria need to understand both public health and community medicine better. They need to learn their history and global best practices better; and most importantly, organizedly do their best to bring the best of these practices to bear in the country by their mutual and better application of these, especially those of them in the universities and the few medical officer of health positions. They will do well **also** to get themselves into both academic and professional as well as political or leadership positions to be able to pursue these needs. They will also have to educate their colleagues in all the other clinical positions on the nature of public health, which all of us eventually get into, as well as the disciplinary aspects of it which all will need to understand and cooperate in its protection and promotion. Without those, else all the combined PH efforts from all will fail to yield the relevant results efficiently and sustainably as ought. Professional and academic organizations of disciplinary PH physicians namely, the Association of Public Health Physicians of Nigeria (APHPN) and the Faculty of Public Health of the National Postgraduate Medical College of Nigeria, respectively, would seem to me to be the place to pursue these goals the best.

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