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## Research Article

# Population Health a Tool for Enhanced Aggregate Health performance in Emerging Economies -

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## ABSTRACT

Government of every nation of the world seeks to improve the health condition of their country aggregately. This over time induces them to adopt various health terminologies such as community health and public health for their health sector. Government of the emerging economies of the world (developing countries), often concentrate their interest on either public health or community health, but adoption of public health and community health by these governments seems to yield little in aggregate health performance in their country. In spite of this bedeviling fact, governments of emerging economies have no shifted their attention from either public health or community health. It is due to this undesirable situation that the paper sought to enlighten governments of these emerging economies on the need for them to shift their attention to population health as a means to enhanced aggregate health performance in their respective countries. The paper focused on the concept of population health; benefits of adopting population health; importance of population health as compared to community health and public health; difference in design/content of population health practices from community health practices and public health practices; how current measurements using community and public health practices deter aggregate health performance in emerging economies; reasons for adoption of population health in emerging economies; evaluating population health; global variables for measuring population health; measuring population health; measuring community health, public health and population in emerging countries; reasons for measuring population health; tracking population health; potential limitations to population health conceptual framework; and strategies for effective and efficient population health in the emerging economies. It was recommended among others that training and retraining should be encouraged among person for population health, which will assist them to be equipped with the needed skills and competencies for them to effectively/efficiently perform their duties, so as to actualize the mandate of population health.

**Keywords:** Population health; Aggregate health performance; Emerging economies; Enhanced aggregate health performance

## INTRODUCTION

In every economy of the world there is need for the citizen to have a better health on the aggregate level. Aggregate health performance can also be referred to as aggregate health achievement; it is the rate at which every individual within a given society have a proportional health satisfaction. Aggregate health performance is a product of effective facilities available, skilled-manpower, health policies of government of a given economy among others. Enhanced aggregate health performance is the agglomeration of improved health condition of patients within a country from different area of the said country. Similarly, it can be seen as a summation of different geographical health performance within a given country, which is usually an improvement from its former standard. In other words, it can be seen as a situation in which citizens of a particular country has a greater chance of having access to medical treatment as at when needed for their medical ailments. The tenet behind enhanced aggregate health performance is that every individual within a given nation, health problem is solved. Enhanced aggregate health performance of any nation has an impact on the economy of that nation.

Emerging economies are also called developing countries of the world. Emerging economies are countries of the world that are in a period of transition from highly dependent on other countries for importation to a less dependent on importation from other countries. They can also be seen as countries that are economically vulnerable to economic cycle of recession and depression. Emerging economies of the world include countries like Nigeria, Ghana, Algerian, Argentina, and Colombia among others.

### The concept of population health

Population health is a new concept that has resurfaced in the twenty-first century in the field of clinical science, epidemiology and health science among others. The concept of population health has different meaning, definition to different health practitioners, clinical practitioners and few research scholars in different field of human endeavor. Population health is defined as “an approach [that] focuses on interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applied the resulting knowledge to

develop and implement policies and actions to improve the health and well-being of those populations” [1].

The defined group of people and the health management interventions can be identified by demographic differences, health needs such as chronic diseases or disabilities, or the health needs of the underserved [2].

Population health is defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group [3]. Population health is defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group [4,5].

Brashny [2] opined that population health is taking responsibility for managing the overall health of a defined population and being accountable for the health outcomes of that defined population. Works [2] added that population health is an approach to managing the health of a population - a community, a group of employees, insurance plan enrollees, etc. - in order to improve the health outcomes of each member of that population. It requires a primary care centered model that incentivizes all providers to measure their clinical performance at the population level, and it requires interface between public and private institutions along with local community engagement [2].

According to Jensen [2] population health signifies the movement from a silo-focused delivery of medicine to a communal effort with the purpose of improving the overall health outcomes of a population. Population health encompasses the programs, services, tactics and initiatives that a population health manager (e.g., a health system or an accountable care organization) utilizes in order to assume the accountability for the outcomes of care and the cost of that care for an entire population or subpopulation of people, only some of whom may currently be patients [2]. In a related finding, Ronan [2] observed that population health involves transitioning care delivery to a model that is value based which includes focusing on better case management of those patients with multiple co-morbidities, partnering in care delivery with other providers, including previous competitors, better managing overall utilization and caring for patients in the most appropriate setting, not necessarily acute care.

Population health is a management approach to redesigning the care for a group of people with the aims of making their care better and more efficient [2]. Similarly, Stout [2] view population health as a managing the system of activities focused on improving health outcomes for a collection of individuals [a population] by identifying care gaps based on evidence-based guidelines, understanding barriers and developing systems/teams that can help make the right thing the easy thing for individual patients and providers. According to Works [2] population health is a concept placing emphasis on addressing multiple health determinants for a group of individuals, such that the overall health of the group improves.

The working definition of population health is expressed thus; Population health is an art, process, science and a product of enhancing the health condition of a specific number of people within a given geographical area. The definition takes into consideration a number of factors. Population health as an art, simply means that it is geared towards equal health care delivery to an anticipated group of people in a particular geographical location; as a science, it implies that it adopt scientific approach of preventive, therapeutic, and diagnostic service in proffering medical treatment to the health problem of people; as a product, it means that population health is directed toward overall health performance of people through satisfaction within the said geographical area; and as a process it entails effective and efficient running of a health management system (population health management system) to cater for the health needs of the people.

Population health is a compound word use to describe the process of providing health services to a proportion of people within a specified geographical location with equal stratum of utilization by the end-utilizer (people).

### Benefits of adopting population health

The benefits of adopting population health are the goals/objectives which are anticipated to be achieved when adopted in a given country. The following are benefits of population health as shown in the definition;

**Even or equal health utilization:** Equal health utilization by a patient(s) or individual(s) is an indicator of a better health system. Kindig and Stoddart [5] added that a priority considered important in achieving the aim of population health is reducing health inequalities or disparities among different population groups due to, among other factors, the Social Determinants of Health (SODH). Similarly, Falk [6] added that population health outcome is to improve the overall health of populations by promoting health preventing disease, and addressing health inequalities. This benefit entails that population health ensures that every patient(s) is satisfied after undergoing any medical treatment giving to them. This is due to the fact that equal opportunities is giving to patients irrespective of their social standing, political affiliation, economic power or educational attainment why attending to their ailment. This benefit will help in marketing population health in the different countries of the world, giving that, it tends to remove class difference among patients on the long-run is geared toward enhanced aggregate health performance.

**Quality health:** Quality health is a pertinent health issue of interest for patients and other stakeholder in a particular health sector. It is expected of every health policy, programmes and system to deliver quality health service to a proportionate number of people of interest/concern. Quality health is a goal that pinpoint the fact

that, population health is geared towards suitable health service to the people of a given geographical location. Population health helps in improving the health of people previously undermanaged, such as the poor in terms of conditions such as diabetes, hypertension and cancer [3]. The Population health is aim to improve the health of an entire human population [3]. This pinpoint the fact that population health helps in ensuring that qualified practitioners are employed for the purpose of quality health delivery to an anticipated people of interest. Population health assists in improving outcomes of interest to the clinical care system, the government public health system, and stakeholder organizations [7].

**Cater for a patient health problem:** Patients are faced with different health problem, which they intend to cure, remedy and preventive. For a particular health system to be effective and efficient it must achieve this goal. Population health is aimed at meeting the health problems of patients. This also point out to the fact that, population health covers a wide spectrum of health practices in other to provide the needed health services to patients irrespective of their ailment. In line with the forgoing, Cohen [2] submitted that population health is a move away from reactive responses to an individual's health needs.

**Health management priority:** Effective and efficient health management is the driven force of population health. The goal of population health management is to improve patient outcomes and increase health capital [8]. In addition, population health will help according to Vakuck [9] in achieving health and wellbeing, prevention and treatment of leading causes of mortality, person and family centered care, effective communication/care coordination, patient safety, and affordable care. This is an effective health management approach in which population health is use to achieve enhanced aggregate health achievement in a given country in which it is adopted. In other words, population health is aim at proper coordination, surveillance, monitory of the health system for it to yield its expected goals to patients and on the aggregate a particular country in which it is adopted.

**Population health is research driven:** Research is a very vital in any health system. This is due to the fact that it assists in upgrading health practitioners' knowledge, improving service delivery system among other which will facilitate in raising aggregate health performance. Similarly, population health takes a pragmatic approach into problems affecting the health sector (way of operation in medical hospitals/clinic, patient, practitioners among others), with the view of providing solution to these problems. In same similitude, Goes [2] supplemented that, population health is an approach to develop research that addresses the needs of both the overall population of a state, country or region and the health of important sub-populations that can be differentiated by ethnicity, gender, health status or even economic status. This goal also pin point the fact that, it tends to bridge the gap between health practices and health performance in a given geographical location which will in the long-run pave way for enhanced aggregate health performance.

**Adherence to cultural norms and values:** The cultural norms and values of any society cannot be underestimated in human daily activities. Population health takes into consideration the norms, values and ethic of a given geographical area it covers. In other words, it is targeted at looking beyond mere giving of treatment to patients who are faced with any ailment, but also taking into consideration the way of life of the patients so as to ensure that in attending to their health needs, their cultural values is not hindered.

**Less financial burden on patients:** Every government of the world desire that its citizen has access to health facilities/services to remedy their ailment irrespective of their financial capacity, level of income and social status among others. Population health plays an important role that is geared toward reducing cost of health service to patients especially poor patients. In light of this, population health helps in bridging the gap between the poor and rich patients in a given country in same similitude, Friedman [2] supplemented that population health is the acknowledgement that the goal of all health system stakeholders is to do the most good for the most people at the least amount of cost. This less financial burden on patients is an incentivizing factor for enhancing aggregate health performance.

### **Importance of population health as compared to community health and public health**

The important of population health in any country cannot be underestimated. A pertinent important of population health is that it adopted a preventive, therapeutic, and diagnostic treatment service as a health catalyst. According to Cohen [2] population health marks a fundamental shift towards outcomes-based, proactive approaches to a given population with attention directed toward larger, socially grouped needs and prevention efforts while reducing disparity and variation in care delivery. Population health helps to improve the quality of care and outcomes while managing costs for a defined group of people [2]. While public health according to Rubio-Plans [10] involves preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals. On the other hand, community health is a disciplines concerned with the study improved of the health characteristics of different communities [10]. In summary, population health improves health quality, minimize cost of medical treatments, remove health disparity, and attend to needs of different patients; while some of these attributes are lacking in community health and public health. The forgoing shows a clear comparative important of population health compared to community health and public health.

### **Difference in design/content of population health practices from community health practices and public health practices**

Population health practices differ in design/content from community health practices and public health practices based on the following findings of different institution and scholars. According to the United State Department of Veterans Affairs [11,12] population health is the practice of determining the health and health needs of a population by measuring and reporting factors that may influence an individual's health. Population health advocates improvement of the patient experience of care (including quality and satisfied), reduction in the per capita cost of health care and improvement of the health of population [13]. Additionally, population health involves medical care, public health, genetics, behaviors, social factor and environment factors [14]. While, public health adopts a collective effort to assure the conditions in which people can be healthy [15]. On the other hand, community health involves taking facts about health and wellness and applying them to initiatives such as nutrition programmes or anti-smoking campaigns [16]. In light of the above population health practices differs in design, content from community health practices and public health practices.

### **How current measurements using community and public health practices deter aggregate health performance in emerging economies**

The following are dissuading factors in community health and

public health in emerging economies that deter aggregate health performance.

**Health Disparities:** It is anticipated that in a given country, patients must have an equal opportunity to health equipment or facilities provided. The forgoing is anticipated based on the fact that, when it is usually public or communal based. In countries of the emerging economies there are case were patient are segment to different clusters due to uneven/unequal health opportunities given to them. In line with the forgoing, Ubri and Artiga [17] found that Hispanics, Blacks, American Indians/Alaska Natives, and low-income individuals are more likely to be uninsured relative to whites and those with higher income. Similarly, in Nigeria, there are cases in some communities were most patients cannot utilize public and community health service due to the unequal nature in providing preventive, diagnostic and therapeutic treatment services to patients who are having same ailment. In a related study, Janca et al. [18] found that there are high inequalities in the access to neurological care across different populations. According to Ubri and Artiga [17] disparities limit overall improvements in quality of care and health for the broader population [public]. The similitude of the forgoing portrait the fact that over the year's public and community health has given room for health disparity among patients of the emerging economies.

**High financial burden by patients:** Every health system is set-up for the purpose of catering for the medical needs of patients at a minimal cost. In public and health community health of emerging economies there is high financial pressures from patients to utilize public and community services. In light of this, Dudley and Garner [19] supplemented that a mother has to go to one clinic for family planning service and another for her children to be vaccinated. Overtime, this has continued without devoted solution by relevant stakeholders in the health sector. The resultant of this has hindered aggregate health performance of these emerging economies of the world. Similarly, due to this high level of financial burden always borne by patients, in order to receive a given treatment, some of the patients are dissuaded. This often makes most patients especially those in rural area who often patronize public and community health to resort to primitive or traditional health for their medical ailment.

**Low quality in service delivery:** Over the years, public health and community health is often faced with low quality in service delivery in countries of emerging economies of the world. Observation seems to show that in contemporary time, the quality of service delivery has been worrisome as most patients are left unattended to. This may be due to integration of care; healthcare professionals might become overloaded or not have the specialized skills to manage specific diseases, which could lead to poor quality services and poor health [19]. Similarly, most patients often experience communication barriers in community and public health services. From the foregoing, public health and community health aggregate health performance has been on a decreasing rate.

### **Reasons for adoption of population health in emerging economies**

The benefits of population health as early explained are simply the reasons for adopting population health in emerging economies of the world. For easy understanding these benefits includes even or equal health utilization; quality health; cater for a patient health problem; health management priority; research driven; adherence to cultural norms, and less financial burden on patients.

**Evaluating population health**

Population can be evaluated using the input and output model of the Institute of Medicine [20]. The input and output model shown in figure 1 is a flow model with the objective of arriving at an improved health outcome. In The evaluating process of population health, relevant stakeholders consider the health outcome at a given time which will aid them in need assessment and resource allocation to the health sector. This will be followed by a planning and prioritization section, which will help in capacity prospect. Similarly, the capacity in place assists in processes intervention policies, and further aide intermediate outcome leading to health outcome. The health outcome is often anticipated to be enhanced aggregate health performance.

**The global variables for measuring population health**

The global variables for measuring population health are social environment variables (example, health awareness level, social status, and culture); health care outcome (examples quality and care experience); biological variables (example genetics); economic variables (example level of income); physical environment variables (examples infrastructural facilities and natural endowment); accessibility variables (example availability and use of service); and health behavior variables (by an individual and a given proportion of people).

**Measuring population health**

In measuring population health, the health ranking model of [21], can be adopted as modified by the researcher (figure 2). This is due to the fact it identifies health indicator. In same relation study Etches et al. [22] found that the uses of health indicators [factors] contributes to overall population health goals, namely improving the health of populations and reducing health inequalities. Measuring population health using this model is base on certain assumptions percentage are assigned. In other words, it is expected that in the process of measuring population health, the model (Figure 2) form the platform in determining the anticipated health outcome through the percentage. Health performance/outcome is assumed to be 100% and health factors/indicator is 100%.

**Measuring community health, public health and population health in emerging economies**

In measuring community health, public health and population health different health indicators are use as enunciated in the findings of different researchers. Jacobson and Teutsch [23] found that the health of a population is measured by health status indicators, influenced by physical, biological, social cultural and economic factor in the environment, by personal health behavior, and by access to an effective healthcare services. Similarly, Valuck [9] submitted that population health is measured by health outcomes (high level indicators), access (availability and use of services), health behaviors (choices by individual and communities), prevention (screening and early intervention), social environment (health literacy and attention to disparities), and physical environment (built infrastructure and natural resources). While public health in the finding of Jacobson and Teutsch [23] health determinants that public health practitioners use are genetics, individual and clinical care behaviors, social environment, and physical environment. On the other hand, in measuring community health according to the Institute of Medicine [15] indicators such as socio-demographic characteristics, health status/quality of life, health risk factors, and health risk factors, and health resources can be used.

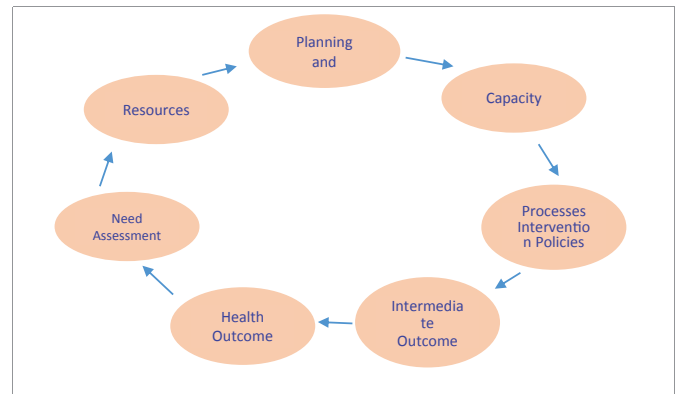


Figure 1: Evaluating population health.

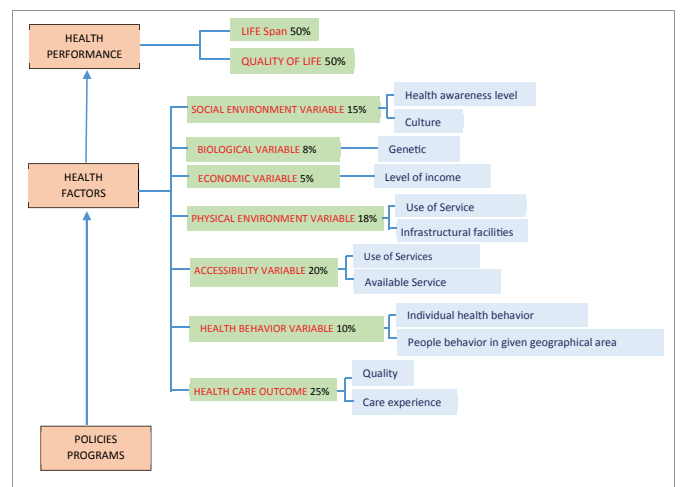


Figure 2: Measuring population health.

**Reasons for measuring population health**

The reasons for measuring population health are expressed thus. Firstly, the major reason for measuring population health is to ascertain the extent to which the goals and objectives of population health are achieved. Secondly, to assist in proper management of the health system (population health system) and arose the needed collaboration from relevant stakeholder within an economy (internally) and externally (internationally) for an enhanced aggregate health performance. This will help in fast tracking some of the shocks observed in the health performance or outcome. Lastly, it helps in proactive decision making for an enhanced aggregate health performance.

**Tracking Population Health**

Tracking population health is an effective means of ensuring an enhanced aggregate health performance. The figure 3 shows a flow diagram on how to effectively track population health. The system work sequentially, the tracking modulator unit is responsible for collection, analysis, integration, accountability, surveillance, strategizing of data relating to health issues such as exposure, hazard, and effect. Additionally, the tracking modulator disseminate the data so received in the form of information to the stakeholders (government, non-governmental agencies, private individuals, academia, and health practitioners) for assessment, intervention, policy making, supply of needed resources which will assist clinical and health practitioners in the treatment of patients within a given geographical area, with

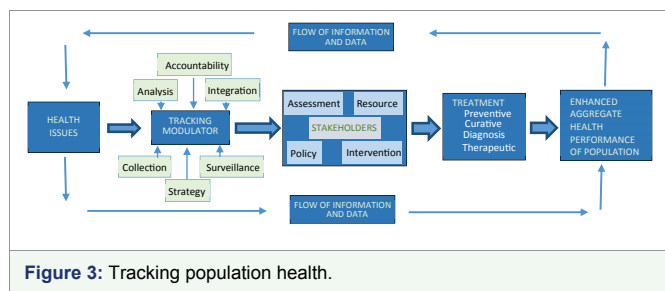


Figure 3: Tracking population health.

the aim of inducing an enhanced aggregate health performance in population health. The tracking process involves in population health is continuous in nature.

**Potential limitations to population health conceptual framework**

The potential limitations to population health conceptual framework are expressed thus.

**Lack of sufficient skill manpower:** It pertinent to pinpoint that for any health policy/program (be it community health, public, or population health) to achieve its predetermined goals and objectives, manpower readily available must be vastly skilled. Population health is a novel health policy/program in the twenty first century, due to this fact, manpower for its implementation is anticipated to insufficiently skilled.

**Measuring population health:** Measuring a given health program is a vital venture for offshore and onshore decision making for a better health outcome. Researcher scholars, academician, expertise in different field of human endeavor are yet to come out with a stable measurement tool for population health. But notwithstanding, the proven evaluation and tracking instrument for population health is able to assist in ascertaining the goals and objective (benefits) of population.

**Strategies for effective and efficient population health in the emerging economies**

The following are some of the strategies for effective and efficient population health to achieve its goals in the emerging economy.

**Health insurance policy:** Health insurance is a strategy for ensuring that the nationals (patients/individuals) of a given country are under health coverage. In other words, health insurance is a contractual arrangement between an individual (patient) and any health institution (hospital, clinical centres among others) which is legally binding in which the individual is expected to undertake any medical preventive, therapeutic and diagnostic measure for his health problem when the need arises. Thus, health insurance is a way of ensuring an effective attainment of the goals of population health. Institutionalising health insurance policy by governments of these emerging economies will help to secure the health of people in their respective countries. This policy is based on the tenet that every person within a given population of a country is to have access to medical treatment as at when due or when the need arises. The light of this will make people (patients) to undergo medical treatment not minding their present financial capacities to undertake such treatment. This will help in accelerating the actualization of the benefits associated with population health.

**Awareness campaign:** Awareness campaign is a marketing

strategy that is geared towards informing people about a given issue of interest, which will pave way for them to be rational in their decision making. From the perspective of population health, awareness campaign is an avenue in which a given proportion of the people are enlightened on preventive, therapeutic, and diagnostic measures for their ailment. Awareness campaign is driven through agents of communication such as radio, television, internet among others. When people are enlightened on a given health issues, they tend to work out modalities in ensuring healthy condition. This will positively influence the health of every individual within the population in which the awareness is given. Health Catalyst [24] enunciated that population health strategies will extend beyond the current episode-based framework of patient care, through building means that organisations will have to invest in people, then measure how well that investment is affecting the health of the person and the level of that person’s engagement in his/her own health, this will be achieved through awareness. Additionally, such awareness will help to inculcate on people/patients simple treatment for ailments such as malaria, headache, fever among others, and also on how they could effectively use their first-aid-treatment. This will in the long-run raise aggregate health performance.

**Subsidizing cost of medical treatment:** Subsidizing cost is a means of reducing the initial selling price of a goods and services to anticipated consumers by making it more affordable to them. Subsidizing the cost of a medical treatment is a suitable podium for ensuring that patients within an estimated population attend to their medical needs (treatment of their ailment) without much financial burden to be borne by them. Subsidizing cost of medical treatment is an effective means of incentivizing people to get the needed medical treatment as at when needed. Similarly, people with HIV, AIDs and other critical medical ailment, if giving subsidy/freelance will help to accelerate the purpose of population health. In addition, freelance health services should also be given by government of these emerging economies through relevant agencies in their health sector to the patients during outbreak of a severe disease as it affects a given proportion of people.

**Institutionalising Population Health Management System (PHMS):** Population health management is the aggregate of patients’ data across multiple health information technology resource, the analysis of that data into a single, actionable patient record, and the actions through which care providers can improve both clinical and financial outcomes [25]. The Population Health Management (PHM) is defined as the technical field of endeavour which utilizes a variety of individual, organisational and cultural interventions to help improve the morbidity patterns (that is, illness and injury burden) and the health care use behaviour of the defined population [3]. Population health management system assists in coordination, direction and ensuring the actualization of a better population health a particular country. The population health management system is manned by persons for population health management [26]. The population health management system undertakes in surveillance of a geographical area health performance so as to obtain the necessary data for the purpose of making an improvement in the health condition of that geographical area. On their surveillance process they tend to obtain information from people (patients alike) within that geographical location on cases of outbreak of any infectious disease, climatic condition and environmental condition that affects their health. The persons for population health management offer free medical test for people and health education among others to people which in the long-run pave way for a better health system.

## CONCLUSIONS AND RECOMMENDATIONS

Population health as a novel avenue has a great benefit on any countries of emerging economies of the world, if it is adopted as a health agenda. Similarly, application of the strategies for effective/efficient population health as expressed in the study will in the short-run and long-run facilitates the achievement of a better health system in these emerging economies. In other words, the strategies will help in the attainment of enhanced aggregate health performance.

Based on the findings of the study, it was recommended that;

- Government of these emerging economies should endeavor to collaborate with international organization such as World Health Organization (WHO) among others; similarly, partnership should be encouraged among health practitioners. This will ensure that the goals/benefits of population health are achieved.
- Training and retraining should be encouraged among persons for population health management. This will assist them to be acquainted with the needed skills and competencies for effective/efficient performance of their duties, so as to actualize the mandate of population health in these emerging economies of the world.
- Government of these emerging economies should make adequate budgetary provision for population health to achieve its' desired goals. This will help to incentivize health practitioners to contribute their quota in the process of rendering health service to patients; and similarly it will assist in provision of needed health facilities.

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