FINAL DRAFT

"HOW CAN WE ACT ON INFORMATION WE DON'T KNOW":

A study into information and communication needs and use of research information in health policy decisions in Ghana

Principal Investigator :   **Dr Sam ADJEI**

Project Co-ordinator: **Ms Patience K. COFIE**

Co-investigators: **Mr. Daniel B. ADDO**
Mr. Evans T. ESSEGBEY
Ms Esther VORDZORGBEY
Mr. Emmanuel LARBI

JULY 2001

......information in itself solves nothing. Knowledge is power only when it can be used effectively; when the social, political and cultural environment allows information to change our lives for the better. Healthy choices must become the easy choices. The path to real improvement in health status is steep and sometimes a rocky one, progressing from knowledge through understanding and changes in belief to action.
Information may only be the first step but without it we cannot even climb.

Robert Gann, 1986

CONTENT

ACRONYMS

5YPoW	5-Year Programme of Work
CHIM	Centre for Health Information Management
CHPS	Community-Based Health Planning and Services
CSIR	Centre for Scientific and Industrial Research
DDNS	Deputy Director of Nursing Services
DHMT	District Health Management Team
FGD	Focus Group Discussion
GHS	Ghana Health Service
HRU	Health Research Unit
KNUST	Kwame Nkrumah University of Science and Technology
MoH	Ministry of Health
MTHS	Medium Term Health Strategy
NGO	Non Governmental Organisation
NMIMR	Noguchi Memorial Institute for Medical Research
PNO	Principal Nursing Officer
RHA	Regional Health Administration
RHMT	Regional Health Management Team
RHTT	Regional Health Training Team
SDHT	Sub-District Health Team
SMO(PH)	Senior Medical Officer, Public Health
THB	Teaching Hospital Boards
UCC	University of Cape Coast
UGMS	University of Ghana Medical School

LIST OF CONTRIBUTORS

Data Collection Team

Ms. Esther Vordzogbey	Supervisor, Social Scientist, HRU, Accra
Mr. Emmanuel Larbi	Supervisor, Information Scientist, CHIM, Accra
Ms. Patience Cofie	Supervisor, Social Scientist, HRU, Accra
Ms. Abiba Amadu	Research Assistant, Public Health Nurse, Northern Region
Ms. David Asamany	Research Assistant, Regional Bio-statistician, Upper East Region
Mr. Richard Basadi	Research Assistant, Social Scientist, Upper West Region
Mr. Winfred Wunu	Research Assistant, Regional Nutrition Officer, Western Region
Ms. Patricia Antwi	Research Assistant, District Medical Officer, Central Region
Mr. Gabriel Etsey	Research Assistant, District Disease Control Officer, Greater Accra Region
Mr. Richard Yeboah	Research Assistant, Regional Information Officer, Eastern Region
Ms. Doreen Ahorlu	Research Assistant, Social Scientist, Greater Accra Region
Mr. Ivan T. Essegbey	Research Assistant, Regional Bio-statistician, Ashanti Region
Mr. Joseph Boateng	Research Assistant, Social Scientist, Brong-Ahafo Region
Mr. Stephen Akpey	Research Assistant, Microbiologist, Volta Region

Advisory Team

Prof. David Ofori-Adjei	Director, NMIMR, Accra
Dr Sam Adjei	Deputy-Director General, GHS
Dr John Gyapong	Acting Head, Health Research Unit, Accra
Dr A. M. Rushdy	Deputy Director-General, CSIR, Accra
Mr Daniel B. Addo	Medical Librarian, UGMS, Accra
Ms Yaa Acquah	Senior Editor, Ghana News Agency, Accra
Ms Yaa Peprah-Amekudzi	Director, CEDEP, Kumasi

ACKNOWLEDGEMENT

EXECUTIVE SUMMARY

This study sets out to establish the extent to which health policy makers and managers, health researchers and health care providers seek and use new knowledge produce from research in arriving at decisions. It examined the sources they use and the factors that influence the use of these sources. Though reference is often made to the importance of information, there is little evidence establishing use of this important element in the health delivery process. Evidence from the advanced countries indicates that though information may exist, it is not always used.

The objectives of the study are:
- To describe the decision making process and the use of health research in health policy formation.
- To identify the information needs of researchers, policy makers and health care providers.
- To identify the preferred sources and formats.
- To identify existing information networks that facilitate research and communication among health workers.

Employing qualitative methods, through in-depth interviews, the study covered 209 health workers of all categories in the 10 regions of Ghana including personnel of the national directorate of the MoH. Respondents were made up of 21% medical officers, 29% nurses, 14% health administrators, 11% researchers and 25% para-medics. The main categories of the coverage were policy makers at the national level, health managers at the regional and district levels, health researchers at the Ministry of Health, universities and the Council for Scientific and Industrial Research. Two districts were selected from each region; one well performing and the other poor performing based on 1999 performance in immunization coverage. In addition ten focus group discussions were held with 78 health workers (nurses and paramedics) at the sub-district levels in each of the ten regions.

Findings:
There is some indication that the use of research information by health policy makers in Ghana may not be as pervasive as expected due to existing basic problems at individual and organizational levels. For example, it is difficult to use available information due to poor national data on health research. There is no proactive involvement of policy makers at the onset of research process from problem identification through to implementation of research. They only get to know about the research when the theme is within their domains and only when results are ready for dissemination.
There are no structures or mechanisms available for communication and information sharing among policy makers and researchers and communicating results of new knowledge. There is no co-ordinating institution to promote networking and ensure that research results get to policy makers and other key stakeholders who influence policies.

Research results often do not get to policy makers at the right time to influence their use in policy and programmes. When the relevant information exist it may not be easily accessible because it is published in a foreign journal or confined to the principal investigator and research team.
Information provision is not given the same attention as other support services in the MoH.
Policy makers' lack the training and time to search for research reports, to read and use the new knowledge generated to make evidence-based decisions.
Research outputs particularly from universities often do not address pressing health needs and therefore not attractive to policy makers.

Traditionally Ghanaians have the custom to use information that comes their way and not information acquired through purposeful search and this attitude has in a way contributed to the passive search for information and use of information.

Though Ghanaian health workers use colleagues as source of information, most of the contacts take place during workshops, conferences and seminars and not as a result of a network of interested parties. Workshops and meetings were major source of information sharing and respondents spend an average of 12-24 weeks per year in workshops and only few people benefit from this at a time and new knowledge gained is often not shared with local colleagues.

Libraries and information centres play a minimal role as source of information and mechanism for dissemination of information particularly at the highest level, primarily because apart from the tertiary

training institutions, these facilities hardly exist in the health sector. The study found out that the media (radio, newspapers and television) is a useful source of information but media can only be used as a broker to put issues on agenda and cannot replace the need for more detailed information. Information needs differ among researchers, policy makers and health providers. The needs are more related to the areas of operations and their positions. The regional and district managers need information on health management, administration and health sector reforms as well as strategic intervention in disease prevention and control. Regional and district hospital managers, who are Clinicians, need information on patient diagnosis, quality of care and hospital administration. Health providers at the sub-district need information on community way of life and strategies for health promotion in communities. The need for information on research methods and data management was expressed at almost all the policy-making levels.

Information needs are not static therefore it is important to ascertain the information needs of health professionals periodically to enable planners to design appropriate and coherent national health information and communication strategies.

Internet services are valued source of information to policy makers, health managers and researchers. Access to information technologies among policy makers, health managers at regional level and researchers in Ghana is relatively high. Policy makers in the MoH have access to telephones, Internet and e-mail services. However, its use is often constrained by lack of computers, telephones, electricity and funds for Internet charges. The also have difficulty lies in the identification of Internet information engine sites and cost of payment of Internet services

A major medium for discussing new initiative are the local networks with professional groups as well as links with international and regional counterparts.

The district and sub-district levels have fewer computers and virtually no access to Internet and e-mail services with only 7% of district respondents having access. Many of the sub-district do not have access to telephones and electricity. They also network with their professional groups through periodic meetings at provincial and national level.

Plan for dissemination is usually an after-thought and often not adequately budgeted for to meet the desired results.

Recommendations
1. The MoH should give priority consideration to information provision as an essential support element in health delivery and there should be a separate budget line for developing a national health literature system.
2. The MoH should establish a health information service to take care of the needs of all categories of workers. This service will serve as a first point of call for all who need information and must therefore be well stocked, well staffed, using modern information technologies and proactive in its services. The services should look at issues such as:
    - Database of all health related work done on Ghana.
    - Directory of research works in progress.
    - Depository of all sponsored research reports at one central point to facilitate easy references.
    - Wide dissemination of all deposited reports to all key stakeholders.
    - Introduction of MoH staff to existing world information resources on the Internet.
    - Development of an information website to ensure wide dissemination of facilities.
3. There is the need to strengthen the capacity of HRU to package research information for health policy makers, health workers at the various levels as well as other stakeholders in decision making to facilitate use of results.
4. The HRU should form information networks with other to promote interaction between health policy makers, researchers and health care providers. This will present an opportunity for issues of research to be discussed and thus facilitate use of results.
5. Health professionals should be taught basic management and administration in the pre-service training to prepare trainees for the ultimate role of managers and service providers. But more importantly they should be provided with skills in data analysis and interpretation of data in order that they would appreciate the use of research information.
6. Health libraries should take cognisance of the needs of the various categories of health workers and address them accordingly.
7. To overcome the passive information seeking behaviour the MoH should emphasise the importance of information in its entire pre-service and in-service training programme. A concerted

effort should be made to create a culture of demand and stimulate search for information rather than the use of information that is available.

8. Regional and District Health Director should encourage communication among staff through regular in-house meeting to share information from workshops, conferences and other meetings.

9. The MoH has to start thinking along with the World Bank strategy by adopting the use of tele-conference as a channel for workshops and seminars. In this way people can remain in their stations and continue with their work and at the same time gain access to useful new knowledge.

10. Recognising the role of the media in disseminating health information to the health community and general public. It therefore becomes imperative to collaborate with the media and give them the necessary support to assist in dissemination of health research and other relevant health information in the country.

11. There should be conscious effort to train researchers in communication and dissemination skills in order that they can package information appropriately to meet the needs of the various target audience, essentially the needs of policy makers.

15. The MoH should equip all District Health Administration with computers and they should also be connected to the Internet and e-mail services by end of year 2002.

16. The MoH should identify categories of workers at the regional and district levels to be properly trained in the use of Information technology.

17. The MoH should ensure necessary budget support for the operation and maintenance of the Information Technology.

1. CHAPTER ONE: INTRODUCTION

1.1 Health Systems Development and Information Use

Over the last two decades, provision of health information in the developed world has witnessed rapid changes on many fronts. Technology and reliance on the computer and telecommunication facilities is heavily emphasised. Information work is increasingly electronic based, networked and collaborative. New concepts of information management are emerging and these have called for changes in the role and services rendered in health information units.

Health care is information intensive. The practice of public health for example is now characterized in large part by research and information gathering activities. Research and information management now constitutes a major activity of health care reforms. Activities such as deciding on best public health interventions, strengthening financing systems, selecting best diagnostic procedures, deciding on strategies for patient care, consumer awareness and health promotion, and maintaining accurate data have a large measure of research need.

As a result of rising demands, rising cost and limited resources, most countries such as Ghana, are concerned with the performance of their health systems. Consequently, the design and performance of health systems are now at the centre of national agenda. Health systems research and its application to policy issues are intrinsically complex. No country has discovered an ideal model and appropriate policies in the country settings. There is therefore the need for more inter-country sharing of experiences. This is necessary to identify the fundamental factors affecting decision making and how research knowledge is used to influence health reforms and health systems as a whole; such as the internal and external factors responsible for merits and short comings of health reforms. There is also the need for a better understanding of the determinants of performance and more accurate and targeted policy options. These efforts call for a fair amount of investigations and research in individual countries.

1.2 Research Development in Ghana

Ghana has a long tradition of research dating back to the close of the 19th century [1] with just a few research institutions involved, mainly the medical schools with focuses on clinical research aimed at understanding the causes of diseases as well as their mode of transmission.

In 1952 a commission was set to co-ordinate research in Ghana - The Centre for Scientific and Industrial Research (CSIR) with focus on biological and socio-environmental research. In 1977 the Japan Government in collaboration with Government of Ghana established the Noguchi Memorial Institute of Medical Research (NMIMR) which focuses on laboratory-based, biomedical, epidemiological and social science researches. The country's research institutions link to health delivery, and particularly their efforts to get research information into policy and programmes were weak.

---

[1] Adjei, Sam and Gyapong, John (1999) Evolution of Health Research Essential for Development in Ghana. Council on Health Research for Development. COHRED Document 99.3

Against this background the Health Research Unit (HRU) of MoH was established in 1990 as an institution to link research to policy and programmes and to spearhead the development of health research in the country. To this end, the MoH established three field stations corresponding to the ecological zones of the country (i.e. the Navrongo Research Centre representing the northern savannah, the Kintampo Research Centre for the central forest, and Dodowa Research Centre representing the coastal belt). These institutions conduct full time research on both biomedical and social science, in particular they perform health systems researches. Regional and district health stations were also established to provide local-level research agenda within the national context.

In pursuance of this goal, the HRU had to collaborate with existing medical and health related institutions and to adopt mechanisms that will make research meaningful and relevant to policy
needs. In this direction, a National Health Research Advisory Committee [2] was set up to link policy makers, health care providers, health researchers and communities together to provide collaborative support and enhance utilisation of research in programme implementation and policy development.

As part of the reform process, a policy guideline on how to strengthen research to support the reforms has been produced [3]. Even with all these mechanisms in place it seems widely accepted that findings are not being integrated into health sector policies. Even policy makers who are aware of research and its implications continue to base their decisions on traditional professional myths. There is the need to find out how researchers could be motivated to interact with policy makers and programme implementers and vice versa to facilitate the use of information and networking.

1.3 Statement of the Problem

Despite the importance attributed to research information, no conscious effort has also been made to identify information needs and information seeking behaviour of stakeholders in the health sector such as policy makers, health researchers and public health providers. Information needs of policy makers, health researchers and health providers are complex because they deal with a wide range of issues. They have little idea about the range of research information available and where to find them. This is because bibliographic control which would identify existing sources of information is generally poor.

Information is also not available for researchers to determine agenda for research and literature review to enhance analysis of research work. Information on research and literature review are scattered. Researchers themselves are often not aware of related works being carried out by their peers within country, in other African countries and around the globe [4]. Relatively, there is limited information to guide their own works. Researchers often do not address the health problems that are perceived as high priorities by policy makers and health managers. Most researchers are academics and

---

[2] Ibid

[3] MoH (1998) Policy Guidelines for Strengthening Research in Support of the Medium Term Health Strategy. Accra, Ghana

[4] COHRED (2000) Health Research for Development: the Continuing Challenge. A discussion paper for the international conference on health research for development, 10-13 October 2000, Bangkok.

are promoted basically for the number of scientific publications they produce which often does not relate to the needs of policy makers and health managers.

The problem is not only with the unavailability of research information, but most importantly policy makers are often not aware about the existence of studies done and their reports. In certain situations information is presented in a form that makes it irrelevant to the situation under consideration [5]. Furthermore, provision of modern information technology, Internet services is very limited and often unavailable to many health workers particularly at the implementation level. Even where it is available it is not affordable.

Many health personnel at the operational level who are even involved in data collection are also not informed of the findings [6]. Often researchers prefer to publish their findings in international journals (that are not locally available), than to local decision-makers.

A recent bibliographic listing made by the Health Research Unit revealed that over 700 health research work that had been carried out in Ghana since 1995 [7]. These documents are scattered throughout the country. Dissemination mechanisms are also not well known apart from the conventional dissemination meetings and publication in scientific journals. In particular no effort has been made to examine how research information is disseminated to policy makers, health managers and providers as well as among researchers in the health sector in Ghana. As a result of the above deficiencies health workers in Ghana are professionally isolated and are making decision, which may not always be based on informed opinion.

The need to ensure that decisions and policies are based on informed premises has therefore prompted this study to be carried out to establish the context in which health professional, health policy makers and health researchers seek information, the information sources they access, and the factors that influence the use of information particularly research information. This study will also serve as a baseline data against which future studies on knowledge production, knowledge management and use in policy can be compared to determine changes.

---

[5] Kale, R. (1994) Health information for the developing world, British Medical Journal, 309:939-942
[6] COHRED (1999) Evolution of health research essential for development in Ghana. COHRED document 99.3
[7] Agyepong, IE (2000) Bibliographic listing of health research in Ghana

2.0 CHAPTER TWO: BACKGROUND INFORMATION

2.1 Socio -economic and Demographic Characteristic of Ghana

This chapter presents the demographic and political background information of the country. It gives a brief of socio-economic and health indicators (Table 1). The chapter also describes the health system in Ghana and reviews the use of information under the health sector reforms.

Table 1: Demographic and Political Administration

Country location	Ghana is centrally located in the West African sub-region. Bounded on the North, East, West and South by Republics of Burkina Fasso, Togo, Cote d'voire and the Atalantic Ocean, respectively.
Total land Area	238,539sq kilometers
Political Administration	10 Regions- Greater Accra, Western, Central, Volta, Ashanti, Brong Ahafo, Eastern, Northern, Upper East and Upper West. 110 Districts- focal points for Decentralised Administration
Three eco-epedimiological zones	Southern Coastal belt, Middle forest belt and Northern Savannah belt
Total population	18.3 million [8] (predominantly rural population 63% with 37%living in urban centres and cities [9]).
Access to safe water	65% (rural 52%, urban 88% [10])
Infant Mortality Rate (IMR)	57/1000 live births*
Under 5 Mortality Rate (<5MR)	108/1000 live births*
Crude Death Rate	10/1000 population*
Maternal Mortality Rate (MMR)	2.4/1000 live births*
Total Fertility Rate	4.6 (5.2 rural, 7.0 Northern region)*
Contraceptive Usage	22%*
Annual Growth Rate	2.9%*
GDP	US$390 per capita [11]

*Source: GDHS 1998, Ghana Statistical Services

2.2 The Health System in Ghana

Ghana's national health system consists of three types of health delivery: the public sector, quasi government (belonging to the various religious groups and state institutions such as universities, military and police services) and the private sector. The Ministry of Health also recognises the important role of the traditional health care system and has created a division for that at the national headquarters.

---

[8] Ghana Statistical Services (1999) Demographic and Health Survey 1998, Accra. Ghana Statistical Services

[9] Ghana Statistical services (1998) 1997 Core Welfare Indicators Questionnaires (CWIQ) Survey. Accra. Ghana Statistical Services

[10] Government of Ghana (1994) National population Policy. Revised Edition. Accra, Ghana National population Council.

[11] MoH (2001) The health of the Nation: analysis of health sector programme of work 1997 to 2001.

The Ministry of Health, which oversees the government health care institutions, has a hierarchy of health care institutions from Teaching Hospitals and Regional hospitals, District Hospitals and Health Centres of which the rural health centres forms the base of the pyramid.

The district hospitals provide both inpatient and outpatient services for the surrounding population and also serve as referral hospitals for health centers. Two teaching hospitals namely Komfo Anokye and Korle-Bu Teaching Hospitals serve as tertiary institutions in the country.

The Ministry of Health also maintains public health divisions such as Nutrition, Disease Control, Family Health, Occupational Health and Health Education. It supports 40 health-training institutions that produce nurses, midwives, medical assistants, nutritionist and disease control officers, radiographers, Laboratory Technicians and sanitarians.
The chart below presents the structure and linkages in operations.

Fig. 1: Structure of Research and Decision Making
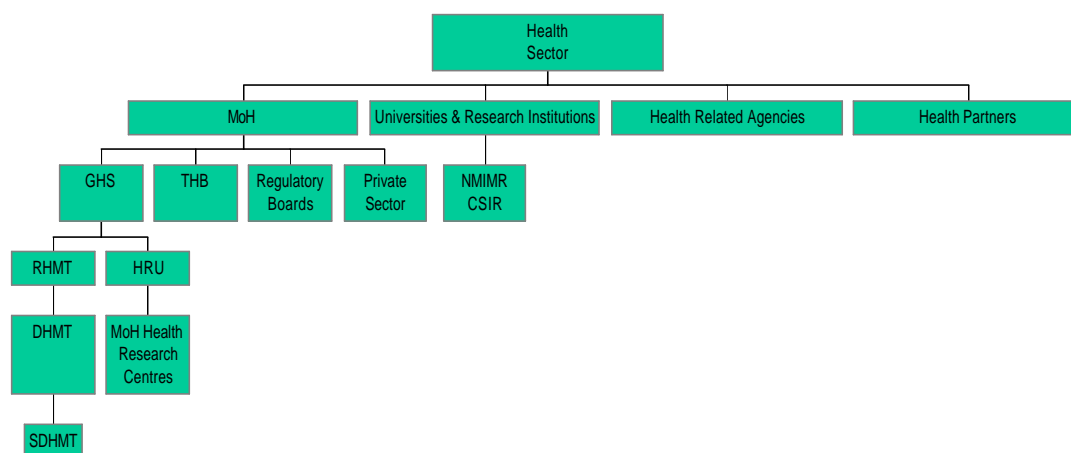
The Ministry of Health also has three levels of management administration, they are: the national (Headquarters or central), regional and district levels. The sub-district also has a managerial role but it is in a more operational capacity than administrative one.
National
The national level consist of the directorate and are responsible for the development of policies and guidelines and formulation of national plans and budgets. Its specific mandate is to:
1. Assess and monitor the country's health status
2. Advice central government on sound health polcies and health legislation.
3. Formulate strategies and design programmes to address health problems
4. Implement, monitor and evaluate all health programmes in collaboration with other health related sectors and agencies including NGOs and the private sector.
5. Provide support at levels through:

- Training and management development
- Policy analysis and research co-ordination
- Institutional support system
- Promoting private sector and intersectoral collaboration

The national headquarters organises regional directors conferences, a forum that brings all the policy makers at national level as well as policy implementers at regional level together to discuss policy and adopt policies for implementation. In recent times, there have been SMO(PH) conferences which is another policy making forum.

<u>Regional</u>
The regional level comprises of the regional health administration and the regional hospital administration. The region is the link between the national and district levels. It is responsible for translation of national policy into operational objectives which the districts then implement. The Regional Health Adminstration has a major role to re-orient and strengthen secondary and tertiary services in support of the district level (e.g. information, supplies, equipment and transport). The regions organise monthly and quarterly meetings with heads of units and divisons to discuss health issues with district officers and this forum is central to health policy and instituional development.

<u>District</u>
The District plays a vital role in the provision of primary health care. It has an important role in matching the local needs and priorities with national policies. The District Health Management Team (DHMT) co-ordinates all health activities including private sector and NGOs activities at the district level. It also has the responsibility of planning, monitoring and evaluating entire government health services. Additionally, the district manages resources, trains personnel and also gives technical support to the sub-district.

The sub-district also referred which is at the community level provides basic curative and preventive health care e.g. immunisation, community based family health services and health education. It is the link between the formal health care system and the community.

2.3 Current Health Sector Reforms and the Use of Research
Over the years, the health sector has attempted to improve health status of Ghanaians by adapting several health initiatives and developing specific health interventions and policies.
In the early 1980's two initiatives Strengthening of District Health Systems Initiative (SDHS) and Bamako Initiative were implemented with the aim of dealing with inefficiencies in organisational and management styles at all levels. But the inadequacies at the national level with its pronounced vertical programming while the wave of multi-lateral structural adjustment policies that were implemented in the early 1980's made it ineffective.

As a result in 1993 a restructuring [12] of the health sector took place based on findings from a context specific assessment of the health situation in Ghana. The evaluation revealed that:

- General improvement in health status has been slow;
- Disease pattern has changed very little; and
- Nutritional problems still exist.
- Existence of centralised administration and vertical systems of operations
- Inequities in human resource distribution
- Poor linkages between health and other health related sectors as well as the private sector.
- Major areas of policy have been ignored.

To this end, a number of targets were set to improve the overall outcomes and address key health issues identified. To achieve this, the Medium Term Health Strategy (MTHS) [13], which defines the goals and objectives of the health reforms and seek to address health care from a systematic, integrated sector-wide, multi-year programme of work was produced.

An accompanying 5Year Programme of Work (5PoW) 1997 - 2001[14], which provides the framework for planning and implementation was also developed in 1996. It reflected the growing need to tackle the fundamental challenges affecting health care provision in the face of minimal resources. The Ministry identified five main policy objectives of the reforms which needed to be examined in relations to the problems inherent in the health system including:

- Increasing **access** to health care - socio-cultural, economic, financial and geographical terms.
- Improving **quality** of health care - from client perspective, skills of providers and their working environment.
- Improving **efficiency** of service delivery- decentralisation under Ghana Health Service (GHS), focussing on planning, financial and other management as well as information systems and research.
- Fostering **partnership** with other health providers - including public and private sectors as well as the local government.
- Improving health **financing** - with focus on increasing government allocation, pooling of donor funds and improving internally generated funds (user fees).

Although, the 5YPoW recognises that access to information particularly, research information is essential and have emphasised the provision of information systems as one of its major activities at improving information sharing. This vision statement has been limited to routine data collection, analysis and distribution at the health facility level with the purpose of facilitating district planning.

The overall policy thrust of the PoW is silent on information provision and communication strategies for policy makers, health providers and other stakeholders in the health sector.

---

[12] Gyapong J. et.al (1999) Restructuring Reforms in Ghana. Ministry of Health, Accra (Unpublished).
[13] MoH (1996) Medium Term Health Strategy Towards Vision 2020 (Revised August 1999), Accra Ghana
[14] MoH (1996) Health Sector 5-Year Programme of Work. Accra, Ghana

3.0 CHAPTER THREE: LITERATURE REVIEW

3.1 Introduction

Efficient dissemination of information and incorporation of new research findings into polces and practices by health managers are some of the challenges that face health care delivery. Consequently information gathering and communication behaviour of health professionals have in recent times received the attention of ministries of health, international organizations and individuals concerned with improved health systems.

In view of the accepted role of information as an essential tool in health policy formulation and management of health systems a number of studies have been carried out to establish how, when, where and why health professionals acquire and use information. Specifically the studies have sought to establish the context in which health professionals seek information and advice, the information sources they access, and the factors that influence the particular sources that they sought.

There is a wealth of interesting and illuminating literature that offers many insights into the information needs, preferences and behaviour of health planners, policy makers and health care providers [15]. These studies cover a wide range of purposes, methodologies and target groups, and are complicated by the growing number of resources, points of access and technologies.

Results of studies indicate that health care professionals vary in their information needs, preferences, motivation and strategies for seeking information. Some common threats, however, are evident for all health professionals. Information is under used; barriers to information use are significant; and reliance on colleagues and personal libraries over bibliographic sources to satisfy information needs is preferred. Health professionals at the periphery have a number of additional barriers to information use: isolation from information centres and inadequate access to modern information technology and more importantly the poor custom of information seeking [16]. The influence of social factors such as geographic location of practice, institutional setting, experience of the individual, specialty and rank of respondents have also been documented [17].

3.2 Context of Information Seeking

Different groups of health professionals display different patterns of information-seeking behaviour. From the perspective of cognitive psychology, seeking information needed for solving a problem is the midpoint in a multifaceted, dynamic process that begins with problem recognition and ends with problem solution. An information seekers' recognition of deficiencies in his knowledge, as well as the vigour with which he attempts to eliminate the deficiencies, has a dialectial relationship with the socio-economic contexts in which he works and with the information-seeking strategies and information he uses.

Health care professionals seek information for two main reasons: to stay abreast of developments in their disciplines and to obtain answers to questions that cannot be

---

[15] Dorsch, JL. (2000) Information needs of rural health professionals: review of the literature. Bulletin of the Medical Library Association.88:4;346-54.

[16] Smith, Paul (2001) Strategic stakeholder communication for strengthening health systems; PHR Policy Primer.

[17] Strasser,TC (1978) The information needs of practising physicians in north Eastern New York state. Bulletin of Medical Library Association. 66:2; 200-09.

answered through their personal knowledge and routine data collected from health facilities. Primary care physicians, in particular prefer information that is patient-specific and diagnosis-or treatment-focused [18]. The academic medical scientist has a number of information needs; to identify up-to-date information, to obtain relevant studies or data, and to find a research topic, to keep up with current progress in a field and to find and check all relevant information on a given subject. Similarly, the health policy maker needs evidence-based information to address policy problems and make appropriate informed decisions [19]. Health managers and providers are concerned with information for improving quality of care and efficient management of resources as well as information for imparting technical skills to subordinates.

Needs assessment of other health personnel has been performed for a number of purposes. A study has revealed disparate use patterns among different groups of health professionals. It confirmed that medical staffs were most satisfied with library collections and services, while nurses and hospital executives visited the library less frequently [20]. This approach to information by non-clinical health workers may be attributed to the fact that "allied health professionals do not share the medical traditions of research, publications, and use of the literature. But it may also be true that health sciences libraries have not yet developed services that are adequately responsive to the information needs of allied health professionals."[21]. There is evidence that health workers do use external sources of information in addition to existing library facilities implying that library facilities may not always meet all the needs of health professionals.

3.3   Sources and Influences

Numerous sources have been identified as potentially relevant to help health professionals solve their information requirements. These include books, journals, colleagues, mass media, audio-visual programmes, continuing medical education programmes and computerized databases. Several studies have produced rank orderings of preferences for these sources. The orders vary depending on the sources included in the study and the nature of the study's focus.

A number of factors influence which information sources health workers use in particular situations. Some of the identifiable variables are personal characteristics such as age, experience, area of specialization; practice characteristics or type of work such as community size, practice type, setting; and the availability of specialists, colleagues, or opinion leaders. Wood [22] discovered that generally, health professionals preferred to seek information from their colleagues rather than to search for it in publications. Smith [23] also share a similar view that preference for information is either through verbal or visual communication and that sourcing

---

[18] Thompson, ML (1997) Characteristic of information resources preferred by primary care physicians. Bulletin of the Medical Library Association. 85:2;187-192.

[19] Lee, Kelley and Mills, Anne (2000) Strengthening governance for global health research. British Medical Journal **321:775**

[20] Cheng, GVT and Lam, LMC (1996) Information-seeking behaviour of health professionals in Hong Kong: a survey of thirty-seven hospitals. Bulletin of Medical Library Association. 84:1;32-40.

[21] Weitzel, R (1991) Library services for primary health care. Social Science and Medicine. 32:1;51-57

[22] Wood, FT (1985) The use and availability of occupational health information: results of a study, *Journal of Documentation Science* **9:141-151**

[23] Smith, Paul (2001) Strategic stakeholder communications for strengthen health systems. PHR Policy Primer

information from documents is rare in the health sector in some developing countries in Africa, Latin America and Asia.

A meta-analytic study of studies published between 1978 and 1992 also indicate that although physicians prefer to obtain information from journals and books, they often consult colleagues to get answers to clinical and research questions [24]. This study indicates that informal consultation with colleagues plays a vital role in medical communication and competes with books and journals for first place among preferred information sources. Even the academic research physician ranked colleagues and verbal consultation second in importance to published sources [25].

Studies of health professionals other than physicians generally show the same preference to approach colleagues and personal collections of books and journals. A study of clinical nurses indicated that discussion with colleagues was the primary way to identify and access information [26]. Dentists also expressed a preference for consulting professional colleagues and personal journal collections as sources of information, while physical therapists in private practice showed frequent reliance on personal and office collections of professional literature and virtually no use of bibliographic databases. A study of rural Hawaiian health professionals found differences in information use with physicians reporting the most use of journal articles (51%), followed by nurses (36.8%), administrators (36.1%), allied health personnel (27.5%), and social workers (26.7%) [27]. A breakdown of information needs by profession showed that physicians, nurses, and allied health workers reported greatest need for information on clinical trials and current practice information. Apart from administrators, no other group showed much preference for information on policy issues.

3.4 User Characteristics

Several factors influence the choice of information sources. Some of these are the physical, functional, and intellectual accessibility of the sources; age of the user, participation in research or educational activities, availability of information infrastructure, social context of practice and the stage of the information gathering process [28].

3.4.1 Age

The age of the information seeker is one characteristic that influences preference for information source. Younger professionals, especially physicians, appear to make greater use of literature as well as consulting with colleagues than their older counterparts. A health practitioner engaged in research or educational activities uses journals, conference proceedings, libraries and databases more often than those who only deals with patient care. Physicians in institutional practice (medical school and

---

[24] Hague, JD (1997) Physician's preference for information sources: a meta-analytic study. Bulletin of the Medical Library Association. 85:3;223-32

[25] Cohen, SI et.al (1982) Perceived influence of different information sources on the decision-making of internal medicine house staff and faculty. Social Science and Medicine. 16:14;12-6.

[26] Spat, M and Butler, I (1996) Information and research needs of acute-care clinical nurses. Bulletin of the Medical Library Association.84:1; 12-16.

[27] Lundeen, GW et.al. (1994) Information needs of rural health care practitioners in Hawaii. Bulletin of the Medical Library Association. 82:2;197-205.

[28] Cheng, GVT and Lam, LMC (1996) Information-seeking behaviour of health professionals in Hong Kong: a survey of thirty-seven hospitals. Bulletin of the Medical Library Association. 84:1;32-40

full time hospital or health centre staff), used colleagues more often than those practicing on their own. Those in group practice cited informal discussions with colleagues than their counterparts who work on their own (solo practice).

3.4.2 Accessibility

Factors, such as time and energy needed to search information are crucial factors in determining the use of information source. The most frequent used sources are those that are physically good, intellectual accessibility; relevant and those that are familiar to the user. Users would be attracted to sources that are near to them, easy to find the required information and easy to read and understand the information. Users will look for immediate, reliable and usable information.

Some of the desired characteristics of information resources for primary care workers are availability, familiarity and low cost. Resources that are readily at hand are used most often [29,30]. On the other hand, time required to use or learn to use a new resource, the mental energy required to understand and evaluate the information obtained, and the monetary cost of owning or accessing a resource can decrease a resource's perceived usefulness [31]. Reducing the cost of information systems alone will not increase use by health professional until the systems have demonstrated their usefulness to them [32].

Medical practitioners have expressed doubts about the usefulness of medical literature. It is perceived as being intended primarily for researchers. They complain that there are too many barriers in terms of time, effort and cost in the use of the published literature. The size of the journal literature is unmanageable and is still growing. The practicing physician is flooded with descriptions of exotic diseases and detailed reports of little interest except to the ultra specialist. The practitioner is looking for more definitive studies on practical problems. In two studies, clear answers to clinical questions were found in the medical literature for only about half the questions. [33]. Because of the shortcomings of the literature, practicing physicians, especially in primary care, use their colleagues to help them evaluate and validate current development about what they read. This is not too different from policy makers and health managers in the public health domain.

3.5 Colleagues and Networks

Most studies have established the importance played by colleagues as a main source of information. The essence is that most users network with other professionals to obtain information. This network may involve colleagues in the same specialty within the same institution or colleagues in the same specialty interacting with the same in other institutions. These colleagues, often identified as "opinion leaders" or " educationally influential" or "information gatekeepers" are early adopters of new

---

[29] Marshall, JG (1989) Characteristics of early adopters of end-user online searching in health professions; Bulletin of Medical Library Association. 77(1):48-55

[30] Short, MW (1999) CD-ROM use by rural physicians; Bulletin of Medical Library Association. 87(2):206-10

[31] Burnham, JF (1996) Promotion of health information access via Grateful Med and Loansome Doc: why isn't it working? Bulletin of Medical Library Association. 84 (4): 490-506

[32] Curley, SP et.al. (1990) Physicians' use of medical knowledge resources: preliminary theoretical framework and findings. Medical Decision Making. 10:4;231-41

[33] Dorsch, JL (2000) Information needs of rural health professionals: a review of the literature; Bulletin of Medical Library Association, 88(4): 346-54

techniques, stay up-to-date of advances within their disciplines, and disseminate innovations to their peers. The medical specialist has emerged as a critical source of the information used by many family practitioners.

A study of the professional social networks of clinical directors of medicine and directors of nursing in hospitals was carried out in England. The result shows that directors of nursing are more central to their networks than clinical directors of medicine and that their networks are more hierarchial. Clinical directors of medicine tend to be embedded in much more densely connected networks which is often described as "cliques". The study concludes that professional socialization and structural location are important determinants of social networks and that these factors could usefully be considered in the design of strategies to inform and influence health professionals [34]. Very little is known about the social networks of health policy makers and researchers in public health care settings.

3.6 Use of Technology
A study using diffusion of innovation theory, which examined the characteristics of early adopters of on-line literature searching found that positive correlation were more likely to fit urban practice profile. The typical user of on-line literature search was computer literate, placed a high value on formal information sources, was located in an urban centre, was in group practice, had access to a library and system training, and spent at least some time in research. Negative associations of those least likely to adopt online searching were small community size, solo practice, and large percentage of time spent on patient care [35]. A study which charted an inverse relationship between computer ownership and number of years in practice found that 80.0% of physicians in practice for less than ten years owned computers with CD-ROMs, whereas only 32% was recorded among those in practice for more than thirty years [36].

3.7 Information and Policy Formulation
The issues and priorities concerning health care are changing rapidly. Health reform process is suggesting a health policy shift from a concentration on health and diseases system to one which is more holistic and balanced, with emphasis on addressing poverty and equity as well as other social, economic and political determinants targeted not only on the individual but whole populations. The reform process creates significant opportunities for research and this emphasizes the need for dissemination of research findings.

Those seeking information for health policy formulation are not well served as those seeking clinical information. Problems inhibiting access to health policy and public health information include heterogeneity of professionals seeking the information, the distribution of relevant information across disciplines and information resources, scarcity of synthesized information useful to practitioners, lack of awareness of

[34] West, E (1999) Hierarchies and cliques in the social networks of health care professionals: implications for the design of dissemination strategies. Social Science and Medicine. 48:5;633-46
[35] Marshall, JG (1989) Characteristics of early adopters of end-user online searching in health profession. Bulletin of the Medical Library Association. 77:1;48-55.
[36] Short, MW (1999) CD-ROM use by rural physicians. Bulletin of the Medical LIBRARY Association. 87:2;206-10.

available services or training in their use, and lack of access to information technology or to knowledgeable librarians and information specialist [37].

Though health systems such as the National Health Service of Britain can easily establish a clear evidence of useful relationship between research information and policy formulation, this cannot be said of the Ghanaian situation. Very little is known about the information expectations of policy makers in the country. A publication from Nigeria gives some indication of how policy makers use information in their work.

The study [38] on information dissemination to, and its utilization by policy makers in Nigeria produced some interesting findings. This study covered the activities of the entire Federal Civil Service of Nigeria. Among the findings were:

- That subject specialists were used far more frequently as information processors by policy - makers than librarians and information officers.
- That in house memoranda, personal contacts, government documents newspapers, magazines were the most important sources of information for the civil servants in policy-making positions surveyed. The respondents did not come out as great readers of books on the development of Nigeria and no clear pattern of reading and consulting such publications emerged from the analysis. While social science periodicals were consulted more frequently, periodicals dealing with other subjects and with science generally were least consulted.
- Availability and timeliness of information was considered the most crucial quality consideration in the provision of information services.
- A large majority of respondents (73%) preferred to have maximum information support at the planning stage of a theoretically sequential four-stage policy formulation task which begins with ideas formation/rejection, followed by planning, implementation or monitoring, and finally evaluation.
- Policy makers did not have as high a level of information- consciousness as they might, but it was not as low as had been suspected.
- Generally the policy-makers themselves seemed to agree that they suffered both from an inadequate/unavailable training background to make them recognize information as a vital component in the process of policy analysis and from a lack of a tradition of integrating information analysis into policy analysis.

3.8 Barriers
While there is information overflow and access to internet in developed countries many health professionals in developing countries do not have easy access to information [39]. Several barriers to effective use of information are discussed in the literature Some of these are lack of time, isolation, lack of library facilities,

---

[37] Humphreys, BL (1998) Meeting information needs in health policy and public health: priorities for the National Library of Medicine and national network of libraries of medicine. Journal of Urban Health. 75:4;878-83.

[38] Aiyepeku, W.O (1982) The perception and utilisation of information by policy makers in Nigeria. Lagos, National Library of Nigeria. 220p.

[39] Smith, Paul (2001) Fostering a positive communication environment.; PHR Policy Primer

technology illiteracy, lack of equipment, and cost. Although many of these barriers are shared by urban health professionals, they are more prominent among rural health professionals. A number of studies have established that isolation is a major barrier to health professionals' use of information. Isolation implies geographic isolation, lack of access to health sciences' libraries, distance from specialist colleagues, and inadequate road and telecommunication infrastructures. In more recent studies lack of equipment and lack of technological skills such as computer use and searching have been listed as significant barriers.

3.9 Conclusion

The above studies cover health professionals mainly in the developed countries. There is paucity of documented large-scale studies on information needs of health care personnel in Africa and other developing countries. While the African health worker may face some of the problems already discussed, there are other factors that make the study of the African situation pertinent. The information needs and information seeking behavior of physicians and nurses have been studied more thoroughly than those of health policy makers, health researchers and other allied health workers.

A review of the literature indicates that health professionals would generally rely on their personal knowledge base to carry out their professional duties. When they seek information beyond this personal base, they frequently want information in the context of the care of a specific patient. Information resources for answering questions should be readily available, familiar and quick to use. Minimal cost in time and effort is important when knowledge is sought as part of a continuing education programme.

The current health sector reforms approach requires health systems to be effectively and efficiently managed. This calls for resource mobilization, and proper co-ordination of services within the sector at all levels including the community. These activities are to be supported by continuing health management efforts in the form of planning and evaluation, training and supervision and research and development. These activities require access to relevant and adequate information for the realization of the concept.

The designation of district health manager is a heterogeneous group with diverse educational backgrounds. The information needs and wants of these workers vary. While some need original research information, others would be better off with distilled information in the form of manuals and guidelines. There are however, pronounced information barriers faced by the rural practitioner. The barriers are multidimensional and range from lack of time to poor telecommunications and lack of computers. Removing these barriers requires substantial financial and human support from better endowed centres, public agencies, non-governmental organisations, individual philanthropist, private organizations or partnerships formed from among these groups.

Existing studies on needs assessment have been carried out through interviews, questionnaires, observations, document request analysis and critical incident techniques. These may be appropriate methods in circumstances where information is already identified as an active agent of change. These may not be instruments for

eliciting response in situations where there is a fundamental lack of appreciation for information in achieving better performance. A more positive interactive process is needed. A process that would enable the one conducting the assessment to explain the role of information and engage in a dialogue with the one whose needs are being assessed. The problem of providing information for health professionals is not only identifying their needs, but also being able to help them develop a better understanding of their information needs.

4.0 CHAPTER FOUR: STUDY METHODOLOGY

This chapter describes the objectives and methods used in collecting data as well as the data analysis process.

4.1 Objectives
The objectives includes:
1. To describe the decision making process and the use of health research in health policy formulation in Ghana
2. To identify information needs of researchers, policy makers and health care providers in the health sector in Ghana
3. To identify various sources of information and format preferred by policy makers, health researchers and health care providers for policy making, programme implementation and literature review.
4. To identify existing information networks and appropriate information technology that will facilitate health system research operations and health communication in Ghana.
5. To document best practices and recommend lessons for appropriate national policy on health communication in Ghana.

4.2 Study Area
The study covered all the 10 regions in the country. (See Appendix 1: Map of Ghana showing study areas).

4.3 Study Type
The study is an exploratory and descriptive type. The study employed mainly qualitative with very little emphasis on quantitative methods.

4.3.1.Qualitative data collection: In-depth interviews were held with policy makers, health managers at regional and district levels as well as researchers from the Medical Schools to explore the information needs, and sources of information, appropriate strategies for effective communication and dissemination of health research information. Focus group discussions were used to solicit views from sub-district health staff on their information needs.

4.3.2 Quantitative data collection: An inventory list on communication facilities was used to collect information on availability and functionality of facilities at institutional level.

4.4 Sampling Procedure
Three main category of persons were selected for the study:
- Policy makers at the national level;
- Health Managers at regional and district levels; and
- Health Researchers from MoH, University and Centre for Scientific and Industrial Research (CSIR).

In each region two districts were selected (well performing and poorly performing district), based on the immunisation coverage for 1999. Again in each region, a sub-district (where staff on duty at any time was between 8-10 persons) was also selected for focus group discussion.

4.4.1 National Respondents

A total of 9 respondents were interviewed at the national level comprising of 3 MoH Directors. Directors of health-related organisations such as the Ghana Education Service, National Population Council, and Ministry of Local Government and Rural development as well as executives of the Christian Health Association, Ghana Medical and Dental Council and the Ghana Nurses and Midwives Council were also interviewed.

4.4.2 Regional Respondents

At the regional level a total of 67 Senior Health Managers (commonly referred to as the Regional Health Management Team members) as well as members of the hospital management team were interviewed. The RHMT respondents were made up of Regional Directors of Health Service, Health Services Administrators, Senior Medical Officers (PH), Chief Pharmacist, Training Co-ordinators and Research Co-ordinators. At the regional hospital the Medical superintendents and Deputy Director of Nursing Services (DDNS) or Principal Nursing Officers (PNOs) were also interviewed.

4.4.3 District Respondents

A total of 111 Health Managers (also known as District Health Management Teams) were interviewed at the district level. In each district the core members of the District Hospital Management; the Administrator, PNO and Medical Superintendent in-charge were also interviewed. They were made up of 60 males and 51 females.

4.4.4 Researchers

Researchers are classified into three main groups: Academicians from the Universities, Researchers within the MoH and the Centre for Scientific and Industrial Research (CSIR). Three universities namely, University of Ghana including Noguchi Memorial Institute for Medical Research (NMIMR), University of Cape Coast and University of Science and Technology including Kumasi Collaborative Centre for Research were selected.

Nine (9) Research Fellows (5 from the three universities; 2 from NMIMR; and 2 from CSIR) were interviewed. Five (5) Research Assistants were also interviewed at the universities. Additionally, in the three health research stations of the MoH (Navrongo, Kintampo and Dodowa), 5 MoH Health Researchers whose work have been published within the last 5 years as well as the 3 Directors of these stations were also interviewed. The Health Research Unit was excluded from the study due to its co-ordinating role. Total number of respondents for in-depth interview was 209. Target group for in-depth interview is presented below.

Table 2:   Respondents for In-depth interviews by levels and status

National Level	No.	Researchers	No.
1. Directors of MoH	6	1. Research Fellows	9
2. Director-General of GES	2	2. Research Officers (MoH)	5
3. MoLG (Schedule officer for Health)	1	3. Research Director	3
4. Director of Policy, Training & Research, Ghana National Population Council	1	4. Research Assistants	5
Total	10	Total	22
Regional Level	**No.**	**District Level**	**No.**
Regional Directors of Health Services	9	District Director of Health service	18
S.M.O. (PH)	8	District Health Administrator	11
Regional Health Service Administrators	18	District Public Health Nurse	18
Nursing Managers	16	District Disease Control Officer	19
Regional Training Co-ordinators	4	District Nutrition Officer	14
Research Co-ordinators	3	Nursing Managers (Clinical)	16
Regional Medical Superintendents	7	Medical Superintendent	13
District Directors of Pharmaceutical Services	2		
Total	67	Total	109

4.4.5 Sub-district (FGD) Respondents

In addition, ten (10) focus group discussions (FGD) were held with 77 health workers at the sub-district level in the 10 regions. In each region a sub-district health facility where staff at post at any given time range between 8 and 10 persons, and representing all category of staff was selected.

The Table below shows the break down of staff who participated in FGDs at the sub-district level.

Table 3: Respondents at Sub-district level by status

STATUS	NUMBER
Enrolled Nurses	11
Midwives	15
Community Health Nurses	18
Ward Assistants	10
Clinic Attendants	3
Dispensing Technician/Assistant	8
Medical Records Assistant	2
Diseases Control Officer	2
Field Technician	2
Laboratory Technician	1
Environmental Officer	3
Assistant Bio statistician	2
Total	77

4.5 Data Collection Tools

In-depth interviews with semi-structured questionnaires were the main tools used for data collection. The questionnaire was divided into four main sections.

Section A: General Information
The purpose of this section was to gather information on the respondents: such as status or position and number of years of working in the current position. This section also looked at the professional qualification.

Section B: Policy Formulation and Use of Research Information
This section sought to find about how policy decisions are made and how it relates to research.
It examined the information sources being used with reference to research and policy formulation and programme implementation. It attempted to find out about sources used for new intervention strategies for specific diseases including HIV/AIDS and Malaria control.

Section C: Seeking Behaviour
This section looked at information seeking patterns among different respondents and how their reactions are in terms of meeting their information needs. Questions were included to ascertain the value for research information and attitude towards information in performing the daily activities and achieving health goals.

Section D: Information and Communication Networks and Infrastructure for Communication
This section was devoted to examining the linkages and networking among researchers, health providers and health policy makers. It also attempted to look at the existing infrastructure that facilitates effective communication at all the levels.

A focus group guide was also used for the discussions at sub-district. The discussions were led by facilitators and a recorder took notes of responses.

4.6 Data Handling and Analysis

a. Quality check- All questionnaires were crossed checked to make sure all questions had been answered properly by the team leaders. Co-investigators who also supervised the data collection accompanied Research Assistants in the regions and checked on quality of data collected at the close of each day.

b. Analysis plan- In-depth responses were collated and analysed using EPI-INFO package whilst the FGD were analysed manually. Notes taken during the FGDs were filled and audio recorded information were transcribed for analysis.

CHAPTER FIVE: RESULTS of STUDY

5.1   Profile of Respondents

The study covered all levels of the health system from national through region and district to sub-district in all the 10 regions of the country.

Medical Doctors form about a third of the total respondents and were made up of Epidemiologist, Public Health Specialist, Physician specialist, Gyaenacologist and General practitioners. All the Directors of Research and Heads of Community Health Department who were Research Fellows were also Medical Officers. Few researchers had social science background. The nurses group formed 25% and consisted of Deputy Directors of Nursing Services, Principal Nursing Officers (Public Health and Clinical), Public Health Nurses, State Registered Nurses, Community Health Nurses and Midwives. The Paramedical group consists of Disease Control Officers and Nutrition Officers and made up 21% of respondents.

Fig 2: Professional Category of Respondents
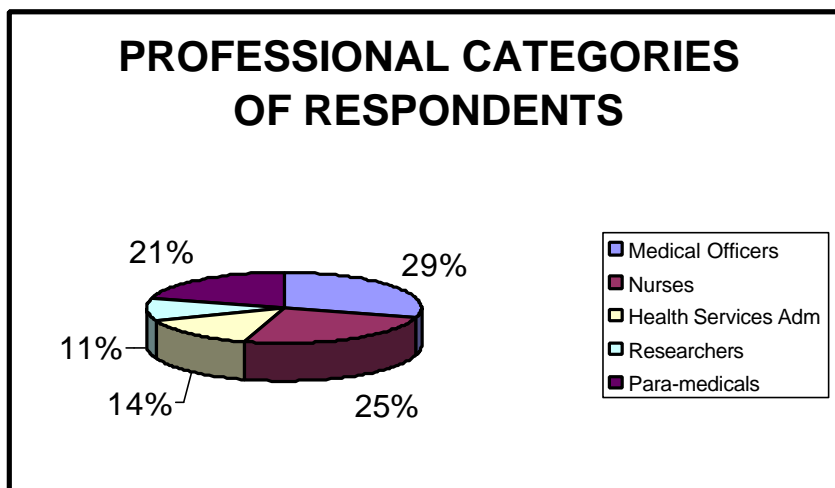
A total of 9 persons were interviewed out of 13 scheduled for interviews at the national level giving a response rate of (69%). Their ages range between 35 and 60 years. The average duration of working in their current positions was 5 years. The initial plan to interview a Minister for Health, the Director of Ghana National Planning Commission and three other directors of health did not materialised due to the transitional arrangements and the split between GHS/MoH that were taking place at the time of the study.

Majorities of respondents (62%) were DHMT members whilst the rest were made up of District Hospital staff. Their ages ranged from 29 to 61 years with an average age of 44 ($\pm$ 8sd). A fifth (20%) of the respondents were Nurses, 18% were Disease Control Officers and the rest were other professional within the ministry. They serve in various capacities comprising D.D.H.S, DPHN, DDCO, District Medical Superintendents, Hospital Matrons and others. Their length of stay of their present

post ranged between less than one year to 20 years. However, quite a number (12%) have stayed on their present jobs for about 2 years.

Ages of participants at the sub-district level ranged between 23 and 60 years and there were 23 males and 55 females. Number of years at post ranged between one month and 34 years and their status comprised Enrolled Nurses, Midwives, Community Health Nurses, Ward Assistants, Clinic Attendant, Dispensing Technician/ Assistants, Assistant Biostatisticians, Medical Records Assistants, Diseases Control Officers, Field Technicians, Laboratory Technicians and Environmental Health Officers.

A total of 22 researchers were interviewed made up of 18 males and 4 females. Their age ranged from 33 to 57 years with an average of 40. 8 years ($\pm$ 6.3sd). The duration of stay at present position ranged from 1 year to 14 years with and average of 5 years.

5.2 Roles and Responsibilities

Roles and responsibilities of respondents are varied in nature and specific to their levels of operation. At the national directorate all the respondents listed their main duties to include policy formulation and co-ordination of programmes. Specifically, those in the MoH directorate stated that their main duties involves formulation of operational policies and giving policy directives to the regions as well as playing advisory role to health partners and other stakeholders in the private sector including NGOs.

Similarly the RHMT also formulates operational policies and implement policy directives from national level as well as playing advisory role to NGOs and other health agencies within the region. It was noted that they act first and foremost in their individual capacities as professionals in their areas of expertise such as Administrators, Pharmacist, Epidemiologist and so on. But additionally, they also have the responsibility for planning, managing, and monitoring both personnel and resources in the districts within the region. The RHMT also carries out periodic evaluation and data analysis on health programmes and feed results into national plans and policies. Furthermore, they give support to the DHMTs to conduct research on health problems in the districts and use findings in improving health delivery in the districts.

Health managers based at the Regional hospitals said added to managing staff and resources they also provide clinical care services.

Unlike the national and regional directorate, members of the DHMT duties are mainly in the area of management and supervision. The management role involves general administration, planning and budgeting, manpower development, monitoring and evaluation and in-service training for sub-district staff. They supervise the sub-district level and ensure that national policies are well articulated in their activities. In deprived districts where there isn't enough staff the DHMT also provides services to the public.

There seem to be little difference in the role of researchers working in MoH and those in the two national research institutions. At the CSIR and NMIMR all respondents interviewed listed their roles to include identification of health priority areas in disease control, environmental and occupational health. They also assist in the

development of proposals to carry out research in areas identified. Similarly, MoH researchers said they usually respond to national agenda for research in the areas of disease prevention and control, health promotion and health systems development. They develop proposals to carry out research in priority areas identified by policy makers and programmers. They also disseminate findings to them.

At the universities, researchers unanimously listed their roles to include lecturing, training researchers and management of research. All the research fellows interviewed have research as their primary duty with lecturing being a supportive role. With the exception of researchers from the KCCR none of the universities related their roles to health sector reforms and priority areas of MoH. However, respondents from the two universities (UGMS and Cape Coast), revealed that there are plans to start feeding into the MoH research agenda in the light of the health sector reforms. This they noted would enable students examine practical and relevant issues in order to make their research work more meaningful and useful to planning and decision making in health delivery.

5.3 How are Policy Decisions Made?

5.3.1 National Level

Although respondents at the national directorate are in high executive positions they can not take decisions in isolation. All the directors pointed out that there are councils and boards charged with decision making of which they are members. In unison they indicated that they form part of ministerial executive and therefore meet regularly to discuss performance and make decision for implementers to act on. Two of the directors described what pertains in the MoH at the national level.

> *"In the Ministry of health directorate, policy decisions often starts with issues that comes up from the operational level. Unit's heads meet to discuss issues, which are sent to the Ghana Health Council and then policy decisions are formulated and directives are issued for implementers to take action. There is then a consultation with managers at the regional level and sometimes depending on the issue, a research is initiated or it becomes necessary to seek experts' advice internationally before policy decisions are arrived at".*

In response to their perception and use of research in policy making, 4 out of the 9 directors indicated that policy making in the MoH is often based on research results and assessment done at quarterly meeting scheduled by Chief Director who takes the lead in policy decisions. Two directors also said research is well embedded in the Ghana health system and the evidence of this is the creation of the Health Research Unit that has its main aim to feed policy with evidence. They described research as a tool for policy formulations that enable them to perform meaningful analysis and develop appropriate plans and solutions. One director added: *Routine data often does not serve as strong basis for argument particularly in convincing politicians and donors for support. You need evidence from research to support routine findings.* A probe into the use of research in decisions as individuals policy makers and managers revealed inherent limitation in the use of research in policy formulation.

5. 3.2 Regional level

At the regional level respondents described the team membership and their role in decision making. The RHMT said they have subgroups (hospital management, social sector committee and regional health team) that meet to discuss issues and make important decisions without necessarily relating to the national directorate. These subgroups then come together as a team to deliberate on health issues of concern to the region and are able to formulate policy decisions peculiar to their level. For example, the RHMT during their district monitoring visits may identify some problems and discuss ways of solving those issues without necessarily making reference to the national level. They sometime have to conduct operational research to get the solutions.

5.3.3 District level

The process of making policy decision as outlined at the district level is as follows:

> *"During DHMT meetings, health care issues are deliberated on and a consensus is built on those that needed to be made into operational policies. These policy decisions are communicated to the RHMT by way of seeking approval and the sub-districts for implementation".*

Also during supervision and monitoring visits at the sub-district, issues and problems arising are discussed at DHMTs meeting and again operational policy decisions are arrived at. At the district hospitals respondents pointed out that although they are part of the DHMT they also have the mandate to make exclusive decisions to improve management in their hospitals.

5.3.4 Researchers

In the research institutions and the universities 18 (82%) out of 22 said there are governing bodies who in consultation with the academic boards, heads of department and representatives of the institution make policy decisions. The academic boards meet with representatives of the various committees to discuss the issues and arrive at policy conclusions. Over 17 (75%) of researchers said they are part of the decision making process either in their capacity as the directors, board members, departmental heads or committee members, but only 3 (17%) of them said they were regularly involved in policy discussions.

5.3.5 Constraints

Responses on difficulties arising in relation to research information use in decision making varies from one level to the other and depended on one's position in decision making. At the national directorate only a few (2) said they do not have access to research information in times it is most needed. They all mentioned that there is apparent absence of database of research done in the country as well as catalogue on subjects of investigations. *"It therefore makes it difficult for one to even be aware of the information and use".* Also, mention was made about the lack of co-ordination between policy makers and researchers at the university and even within the MoH. *" You only know about a research work when the subject relates to your divisional task".*
A director noted that the use of research is strongly influenced by perceptions of the policy maker on relevance and timeliness of research. He pointed out that researchers should make use of opportunities and act effectively in response to policy questions and produce results for policy makers when needed. Three of the directors indicated

that although interest and perception of a researcher seem important, what is crucial is the mechanism for ensuring that every individual policy maker has access to research findings in order to facilitate use of research.

At the regional and district levels the issues ranges from the fact that published research results are often found outside the country and the ultimate consumers of research are often not part of the dissemination.
" More often when researchers finish with their work they don't give feedback to health workers who assisted in data collection or even communities where the study was conducted. It therefore becomes difficult to use the findings in any policy decision".

5.4 Mechanism for Dissemination of research information/ health Policies

Various mechanisms exist for disseminating policies and research information. At the national level as stated in the process of decision making, the traditional dissemination meeting and workshops are the main channels of communicating health policies and research. The Directors monthly headquaters meetings and bi-annual health summits held between the MoH and its partners were found to be useful mechanisms for sharing and discussing health issues of concern as well as key research recommendations that require policy action. While this traditional channels promotes forum for sharing it has a limit to the number of policy makers who can participate in the meetings. Institutions and individuals who are unable to participate in these dissemination meetings are likely to miss out the information.

The sharing of information through e-mail was also mentioned by all dirtectors as a recent initiative where all the national and regional directors are connected. But this system again is not being used for research dissemination or distribution of health literature. Annual regional reports to the national level is sent through the e-mail when that region is late in meeting a dead line and also used more for individual discussions and sending circular and invitation letters for meetings. It is worth noting that the use of Internet as mechanism or channel for sharing research information was not mentioned at all.

A question on the use of media as a channel for dissemination policy and research information yielded very interesting results. Three (3) out of the 9 responses indicated that media is a powerful tool for raising awareness and should therefore be used in disseminating health policy and health research. They remarked that given that the end-user participation is essential it is worth making the public aware of research findings as well as new policies in health. This they suggested should be done through local channels such as durbars and after reactions have been received from all the stakeholders then the media can be used to get the issue on public agenda.

 Not surprising, more than half of region and district health administrations stated that they often receive policy and research information through channels such as dissemination workshops, conferences, health magazines, newsletters, circulars and the professional association meetings. About 51 (46%) of district respondents said dissemination of research is often done at seminars where few people attend. Those who participate often do not share the new knowledge from research with their colleagues.

Other channels for communication and sharing information include Annual Senior Health Managers Conferences which involves all Regional Directors of Health Services and Health Directors at national level. Annual District Directors of Health and Public Health Nurses Conferences. As many as 75% of district respondents said that at their association meetings people are invited from national directorate and other specialised areas to give presentations on new and special areas of concern in health. They listed some of the areas to include, new management procedure, new policies, standards and protocols in health care delivery and HIV/AIDS.

Channels of information dissemination include radio, TV, newsletters, circulars and superior officers.

Channels preferred also varies at different levels. At the national directorate and even the regional level almost all of them mentioned the Internet -"*the magic* " as described by a Director at the national directorate. In addition, three respondents mentioned specific Journals such as Health Planning, International Health and Social Science and Medicines, which they said were very useful but not easily available in Ghana. *" The few you come across are often personal copies"*.

And even at regional and district levels, mention was made of the Internet, as the main channel preferred. Additionally, newsletters, as well as radio and TV were mentioned.

5.5 Involvement in Research

Almost all respondents interviewed at the national directorate said they have been involved in health system research in one way or the other. However, in their current positions their involvement have been by way of prompting the HRU, RHMTs or DHMTs to address pressing issues basically emanating from operational level. However, they sometimes assist in the development of research proposals and writing of research reports.

As one director puts it:

> *".… as heads of divisions and programmes we have the mandate to request for research in specific areas, particularly in public health areas such as malaria, HIV/AIDS and nutrition".*

A few (3) respondents said that Divisional heads at the national headquarters could set an agenda for research. However, majority (6) indicated that the HRU has often been the main agency for setting research agenda which is based on priority areas identified by the "three voices"- MoH, NGOs (community) and Academic communities. They all mentioned that there is always some consultation with policy makers in discussing research questions before implementation and when results are ready the same group discuss them and in particular examine the policy implications of the findings.

More than half, 40 out of 67 (60%), of the regional respondents interviewed have been involved in research and out of this, 25 (37%) participated in research in the previous year as principal investigators and research assistants. Only 10 (16%) had actually been part of a whole research process from proposal development through data collection, data analysis and production of report. Again, over a third (37%), have never been involved in research work apart from the academic research (dissertations), which was done in partial fulfilment of their requirement for qualifications. About 2% did not respond to this question.

With regards to research agenda setting, almost all the regional respondents said that research agenda is often set by the RHMT and the hospital management committees. Where active research teams exist they were usually responsible for agenda setting for research. However, they also mentioned that the HRU is the main institution that sets agenda based on identified priority issue of national interest. They described the process as a bottom-up approach where issues start from the lowest level (Sub-district) to the highest level (regional). They also added that research questions often arise from annual reports and outcomes of performance of BMCs and other business meetings.

> *"The policy makers at the national level also prompted other researches for operational purpose as well as NGOs working in the regions"*.

For example, the World Vision International commissioned the EPI surveys in the Western and Ashanti regions. The HRU also commissioned the RHMT to carry out the Exemptions study.

Over 67 (60%) of district respondents have had some experience in research whilst the rest had no research experience. For those who have some research experience, majority 52 (77%) were involved as only data collectors. About 17 (25%) of them were principal investigators and very few 4 (6%) were involved in the design of tools for research and writing of reports. For example, they cited EPI and IDD surveys as research work in which they participated. About half of the district managers have no research experience at all.

Unlike the district managers, researchers have divergent views on how research agenda is set. All the researchers from MoH said the policy makers and the Health Research Unit set research agenda at the national level. Additionally, the regions and district are also able to come up with topics for operational research.
Six researchers from the university said that more often they set their own research agenda based on the institution's areas of operations and mission.
One researcher from the university simply puts it:

> *" Since government does not provide funds for our research activities most of the research agenda are donor driven. In order to attract funding for research activities, one is forced to develop a proposal to suit the taste of a donor"*.

 A few (5) respondents also mentioned that agenda for research comes up from previous research works that raises more questions. Additionally, they mentioned that topical issues of concern such as AIDS gets into national agenda and because of its nature it becomes a high priority area for research.

5.6 Source of Health Information
A question was asked on where respondents get information on specific areas of their work especially the current health sector reforms including quality of care, health research and interventions strategies for control of diseases. Sources of information on cross-cutting issues such as gender and poverty and community participation in health were also explored.

Generally, sources that policy makers at national level use when they need information are varied and depended on the issue they are dealing with at a particular time. It included literature from international organisations, health partners, seminars,

conferences and workshops. Majority, 6 out of the 9 directors interviewed said they get information on health sector reforms and new interventions directly from WHO and other health partners such as World Bank, DFID as well as the Internet.

> *"The local health partners are very efficient sources when it comes to information provision. They all have small libraries with very current health literature and useful local research reports you cannot find anywhere else in Ghana apart from the principal investigator".*

They also look for specific information relating to specialised areas of work from their colleagues who are responsible for those areas. As one puts it:

> *" if I need any information on HIV/AIDS I contact the NACP co-ordinator, if it is on policy I go to the Director PPME unit to find out ".*

A question was specifically asked relating to source of health research information. Almost all the respondents pointed out that the single and most popular source has been dissemination workshops usually organised by the research institution. They also revealed that sometimes 'personal' copies of reports are delivered directly to them as a result of their involvement in the development of a particular research project. Again, the health partners were mentioned as a reliable source of research reports. In response to why the partners seem to have access to even local reports rather than the Ministry, a director has this to say:

> *"Honestly many of these studies are sponsored by our health partners and therefore they are often the first to have access to the report even before the Chief Director of the Ministry".*

It also came out that researchers often do not budget adequately for dissemination and initiating policy dialogue on recommendations.

> *"In fact, they don't think about dissemination to the larger stakeholder during proposal development, until the research is completed then they realise the need to get other people informed of the useful findings which then becomes impossible".*

Institutional library was the least considered on the list of sources mentioned. Very few (3) national health directors said they sometimes use the Health Research Library in Accra. The majority, (6) responded in the negative. Several reasons were given to their lack of use of the library:

> *"It has a limited stock and does not contain the latest scientific journals. "The location is far from the office".*

One respondent said:

> *" I do not use the library because the medical text books and periodicals does not contain information relating to my job".* Another remarked that*: " the workload is too much and one can hardly find time to go to the library in search for information".*

However, they all said they have personal libraries (individual stock at home or office) where they always source for information but they find this inadequate in meeting their needs. Those who have access to the Internet used that as a first source. The health partners libraries, colleagues and the media are used in that order.

The sources used by the region and district managers are quite similar. Health managers unanimously said that basically they receive information from workshops,

meetings and from their superiors at national as well as other colleagues in specialised areas, respectively. About a third 21 (31%) of the RHMTs pointed out that they get information on health sector reforms and on interventions such as Roll-Back Malaria, Vit. A supplementation at workshops organised by the national health directorate. While almost all 108 (97%) of the district health team (DHMT) also obtained the same information through workshops organised by the Regional Health Training Team (RHTT).

On sources for disease burden, the Centre for Health Management Information (CHIM) was the most common source. At this centre they said information given reflects only hospital and institutional data. It was therefore suggested that a national survey in communities should be conducted to complement the routine data from CHIM in order to get the true reflection of disease burden in the country.

In response to sources for research reports, 5 of the national respondents mentioned the Health Research Unit as the only available source of research information but added that it is often inadequate. They revealed some of their frustrations in attempt to obtain information to accomplish their set goals and targets.

All the Directors complained absolute absence of a 'common point' where all researches or health literature produced in the country are sent to. There is also no database of all research works done as well as researchers working in health and health related areas in the country.
A director said:
> *"I can't go fishing for information when I don't even know where the information is located".*

Other reasons include that:
- A lot of people do not disseminate their findings.(Individuals receive research documents and they hide them on their shelves or in drawers)
- No libraries in the Ministry to display reports.
- Research information is often not completed and timely.
- Researchers who are outside the Ministry tend to publish their findings in scientific journals and keep copies to themselves

Almost all the regional directors 65 (97%) also share the views of the national directorate in the sense that there is no unit or institution currently 'pulling and sharing' health research and other health information. One statement that was frequently repeated by respondents at these levels was ***"You don't even know where to get the information".***
Surprisingly, they also complained that they don't often get feedback from research *(i.e. "if you are fortunate to be invited to a dissemination workshop or if the study was done in your region then you are likely to be aware").* The Regional and District Directors who have access to computers and telephones said they use the Internet as a primary source of information.

Questions on specific areas of research including, quality assurance, filariasis control, Impregnated Bed-net and Malaria control and Community-Based Health Planning Services (CHPS) studies being upscale nation-wide were used as cases to ascertain mechanisms and channels for dissemination and communication of research information at the district level.

In almost all these studies the respondents said findings were presented at workshops. In the case of Bed-net and Malaria control about a quarter (27%) said they heard it from the radio and TV (mass media) and later participated in a dissemination meeting organised by the Regional Health Training Team (RHTT).

A few 16 (14%) mentioned the Health Research Unit as a place they know they can get information but added that it was too far to reach from their stations. They resented that they often do not receive any feedback from researches that they have been involved through assisting in data collection. Some respondents remarked:

> "*Several studies have been carried out here but not a single feedback has been given to us. This demoralises us and we feel like not giving out information to anybody for research purposes*".
> "*You only hear about the study when a dissemination workshop has been given mass media coverage and you see and hear of the results on TV or radio*". Let us have feedback from this study?"

Respondents also revealed that they hardly make references to research reports. Reasons for the non-regular use of research reports included that:
1. The non-availability of such reports at the district levels.
2. The distances between the district/regional offices and the Health Research Library where they are likely to find copies of the reports are too far.
3. The lack of coherent research culture in the health sector in the past.

FGD responses from the sub-district level showed that Medical Assistants in charge and the community leaders were the main source of information for their work. Basically, they obtained socio-cultural information from community members, village health volunteers and community-based distributors in addition to their superiors at the district level.

With regards to information relating to policies on health sector reforms, majority of the health workers at the sub-district level said they had not heard about it nor seen any policy document in relation to Health Sector Reforms. However, they knew about the concept of Basic Management Committees (BMCs) and the donor pooled funds, which are all part of institutional changes under the reform. Only a few had heard and seen the published policy documents such as the 5YPoW and MTHS of the MoH. They had either heard from colleagues or they were informed about it at workshops.

Interestingly, almost all the respondents pointed out that they heard about the management of STD/HIV AIDS, Roll Back Malaria (RBM) project mainly on Radio and TV. Very few health workers at the sub-district cited workshops organised by the DHMT as a source of information on STD/HIV AIDS.

Only one person had read about RBM from a WHO Newsletter and could describe features of the project, but he quickly added that he does not have access to the Newsletter these days. In response to whether they receive any information on researches carried out in Ghana, almost all participants responded in the negative.
> " *At all, we don't have access to them*".

> *"No we don't even see them. We are in a village therefore we don't get them.*

Amidst laughter a respondent said,

> *"As for me I haven't even seen one before".*

They also used the conventional sources such as monthly meetings, quarterly community durbars quite frequently and they found them useful.

> *"The monthly meetings are the only place where we get to know about what is going on. Information is shared and if there is any new information it is explained".*

Researchers unlike policy makers and health care managers used variety of sources. Firstly, they all have their personal libraries and use them frequently. They also use other libraries including the public and other institutional libraries. Twelve (12) out of the 22 said they regularly search and use information from any library provided they would get what they need. At the libraries they usually look for Journals and other periodicals because most of the articles are research information and they found them useful. Those who have access to the Internet in their offices use that even before they look at their personal stock.

5.7 Formats for Presentation of Research Reports

Generally, respondents have divergent views on the format in which they prefer to receive their research reports and health literature on the whole. At the national level 5 out of the 9 respondents strongly felt that research reports should be presented to them in abstracts or executive summaries because they have very limited time to read whole reports. Those who prefer the abstract and executive summaries also prefer to have them on diskette. A few, (2) persons were also of the view that whole reports should be presented to them with executive summaries or abstracts. To this, the explanation was that if one comes across anything striking in the executive summary it was easier to get the details in the report since there will be no time to go looking for the report again. Additionally, they said the report could be kept for future references. Furthermore, they mentioned that they would prefer to have the reports in hard copies as well as on diskettes. They also said these reports should always outline recommendations and strategies for implementation. One director indicated that it was time for researchers to present their information on CD-ROMs and make it available to all policy makers. He added:

" *It is easy to handle and refer to it all the time. It does not take any space in your office like the hard copies".*

The views of the regional level were consistent with that of the national directorate. Majority, (90%) preferred to receive both hard copies and diskette copies of whole reports. They said executive summaries are not enough. As implementers they need to know the "*details of the whole story*" to enable them take the right decisions.

At the district level more than half (56%) of respondents said they prefer to receive local research information in the form of ' whole reports'. A few, 14% stated that they prefer them as 'executive summaries'. In probing into their preference for format of research findings majority (64%) said they would prefer to receive whole research reports on diskettes. *" When you have the information on diskette you can print out only the information you need".* Others said they preferred hard copies because they don't have access to printers and they would like to avoid all the difficulties with

printing documents such as different software, shortage of toner and papers for printing just to mention a few.

A few however said they rather prefer research reports to be published in newsletters. They said the language use in newsletter is simple and make comprehension easier.

> *"Everyone can understand the English as used in the newsletter and can then decide to apply the information to his context".*

5.8 Use of Libraries and Documentation Centres at Workplace

Eighty four percent (84%) of respondents at the regional level have libraries, a room where information is kept for reference. Majority sometimes uses the library facility but information is inadequate and not very useful. Another reasons was that most of materials needed can be provided by colleagues and of course the fact that not all that is needed can be obtained from the library and therefore they only use the facility when information needed is available and useful. However, very few (16%) regularly use the facility. For those who regularly used the library they used the library to update themselves on current health issues.

Table 4: Availability of Library/ Documentation Centres at Workplace

Availability	National	Regional	District
Yes	85	84	64
No	15	16	36

Sixty-four percent (64%) of the district managers said they have a small library or a place where reference documents are kept for the staff to use. Majority (56%) out of the 64% have at least a cupboard with shelves or cabinet with books in the DMO's office and other members of staff could have access to these information. In some facilities documents are kept in a small shelve in their conference rooms where one could sit to read or borrow some books. The third and final type described was the "Blue Trunk initiative" introduced by WHO at district level.

A further probe into frequency of use of these facilities showed that about three-quarters (75%) of respondents sometimes use them. A little over 20% said they always use the facility and only 3% never used them. Two main reasons were given for the occasional use, including that:
1. These facilities often lack the needed reference materials.
2. The rooms are often too small and uncomfortable for one to sit and read.
The journals and other documents are either sent to them free of charge or obtained on subscription. When asked how useful these journals are to them, majority (90%) found them useful. Only 10% mentioned that the journals were not useful. The majority who found them useful had various reasons including that:
- They provide current and in-depth information about the issues they cover;
- They provide a lot of useful information;
- They update one's knowledge.
Majority of the sub-district respondents do not have access to reading materials (local or international). The few who have access obtained it from the following sources:
- Workshops,
- DHMT-Superiors
- Colleagues/Friends
Only one respondent subscribes to international newsletters and had this to say:

> *' I subscribe. Once you are a subscriber your name is in a the database and the material is sent to you on schedule. I don't pay for them. Those that are to be paid for, I sometimes write to them that I can't afford it and they send them to me free'.*

It was interesting to note that this respondent has a personal hobby of reading and was interested in keeping abreast with development in health and looked for information to satisfy his ambitions.

In spite of limited access to the reading materials many of the respondents acknowledged the usefulness of health literature and are willing to read them if they are made available. Some of the reasons given are as follows:
'Things keep changing in the health area and if you don't read current reports then you will continue with those old things'
' Reading improves knowledge, attitudes and practices in health related areas'
None of the health facilities at the sub-district level had a 'library'. However they have wooden cupboard/cabinets where health records and other reading materials are kept.

> *'No we do not have a library, we only have a cupboard where we keep the returns'*

Even where these existed some mentioned that it was for the exclusive use of the In-Charge or Medical Assistant, therefore the rest of the staff have no access to it..
'But this place is for the Doctor. We do not have access to this'. *'The latest books are 1994/1996 edition, even that it was not the District that gave it to us, but colleagues.'*
> One other person however mentioned that he found materials relevant, timely and updated. This is because he personally subscribed to journals from outside the country (WHO).
> *'I have journals which are all health related and are current, to which I subscribe'*

Although majority of the respondents mentioned that the medical text books and other health literature available are not up to date, yet they found them very useful.

All the research institutions have institutional libraries, which are stocked with books, periodicals and research reports as well as access to Internet services. Researchers at the universities pointed out that library services are available at each department and a central one for the general university population.

5.9 Factors influencing choice of source
Various factors contributed to one's choice of source of information. For policymakers and researchers three main factors were identified. The most single but important factor that influence choice of source of information was credibility of source of information. This was followed by relevance, accessibility, updated and current information at a particular source.

At the national directorate, relevancy and credibility of source was the main factor. At the regional level the major influence for choosing a particular source was current and relevant information.
As to whether these sources met their information needs, about half 51 (57%) of district respondents said they sometimes get the information required. The 17(15%) affirmed that they always get the needed information and 28% who did not have libraries and therefore the question was not applicable to them.

Table 5: Availability of Relevant information

Responses	National	Regional	District
Always	15.4	14.9	15
Sometimes	69.2	61.2	57
Never	-	16.0	-
Not Applicable	15.4	17.9	28

Researchers interviewed would often choose a source based on four main factors. Majority said credibility and reliability were the most important reasons that would motivate them to rely on a particular source for information. Next to this they also said that the source should be readily accessible and information must also be relevant to them.

5.10 Areas of Information Preference
Respondents were asked to list at least five important areas of their work that they would prefer to have information. In this regard 6 broad areas were identified and that seem to cut across all the levels:
1. Public health covering areas such as reproductive and adolescent health, child health, and school health as well as disease prevention and control particularly, malaria.
2. Research methods and data management
3. Health sector reforms
4. Health management and administration
5. Socio-cultural issues in health; and
6. Epidemiology and Demographic data

Irrespective of respondents' levels and positions they preferred to receive information relating to their routine duties and profession. For example, Medical directors interviewed at regional and district levels said they needed information on health management and administration, health research and health systems development, new clinical protocols and standards for quality care, drug management and public health interventions. Table 6 below indicates the areas of information preference.

Table 6: Information Preference by Respondents

NATIONAL	REGION	DISTRICT	RESEARCH
Health Policy and health systems Management	Human Resource Management	Health management Information system and use of data	Research Methods
Disease control	Quality Assurance	Management and Administrative procedures	Data Management
Health systems research	Hospital management	STD Management & HIV/AIDS control	Demographic data
Human Resource Management	Financial Management	Disease surveillance and control	Health sector reforms
Gender issues and poverty reduction strategies	Project management and evaluation	Proposal development/ research methods	Family and reproductive health
Computer techniques and Data Management	Health Policy and health laws	Community participation	District health systems
Epidemiology and Demography	Health Insurance schemes	School health promotion	Strategies for control of diseases (TB and malaria)
Health financing	Research methods	Reproductive and child health	Community Nutrition
Private sector collaboration	Communication and human relations	Patient care and infection control	Strategies for health promotion

At the sub-district level, information preferred was also related to their daily roles. For example, the Community Health Nurses and Midwives preferred information on child health, safe motherhood, family planning, school health education, management of cold chain management/ EPI services, child nutrition and community entry skills. Similarly, the Environmental Health Assistants mentioned areas such as water sanitation, food hygiene, health education techniques and counselling on HIV/ AIDS.

5.11 Information Seeking Behaviour

The study shows how the various categories of interviewees have variety of means of responding to their information needs. Generally, people make use of information that is readily available to them. For policy makers at the national level, they used their own personal collections in their offices. If this does not meet their needs then they turn to colleagues and the health partners library respectively. With the exception of respondents from the NPC, all other respondents said there is no central library at the Ministries where most of the directors are located neither are they connected to any

information source where they could easily retrieve information as and when needed. For those who have access to computers and Internet services, they used that as their first source when they needed information and contacted colleagues only when they are unable to get the required information.

Over half (59%) of district managers used colleagues (senior persons or programme co-ordinators and managers) as first point of call when they needed information to perform their duties. District managers said they have libraries or a room where information is kept for reference. While some used that as the first point of call when they needed information to perform their duties, majority said they use this facility adhockly because information is often inadequate and not very useful. Another reason given was that most of the information needed could be provided by colleagues and of course, the fact that not all that is needed can be obtained from the 'library'. The few who have access to Internet use it as the first contact. For those who regularly used the library they did so in order to update themselves of current health issues.

Researchers first point of contact when they need information for their work are journals. For those who have access to the Internet they use it as first contact. A few use research reports they have access to and contacting colleagues for information as first option was unpopular with them.

All the participants at the sub-district notwithstanding their status sought information first from their superiors - the Medical Assistant in charge. Very few go to their District or Regional Officers.

5.12 Awareness and Use of Information Network
A question was asked relating to whether respondents have linkages, exchange and share information among themselves and with other local and international networks. All the directors interviewed at the national level are linked onto an information network locally and internationally. Six out of the 9 respondents said they had their own internal networks where directors of health share information by E-mail, through the post and through regular professional meetings. A question was specifically asked on how policy makers share health research and health policy information with academia in the universities. The majority (7) of responses indicated that they collaborate in formulating research questions on major health issues. The others mentioned that they only submit reports to the agencies that commissioned them to conduct the study.

All the regional responses clearly indicated that there is a strong network among the regional directors in the country and e-mails, telephone and faxes connect them. They also talked about their linkage with international Internet networks as well as their professional affiliations.

Over two thirds (72%) of district respondents said they are not connected to any formal information network. About a third who are connected mentioned collaboration with NGOs and international bodies as partners they share and exchange information. Others referred to their professional groupings such as the District Directors of Health Services, Public Health Nurses group, Ophthalmologist association and Public Health association. These networks operate by organising periodic meetings to share ideas and at the end of their meetings a communiqué is

often issued to the high-level decision-makers for considerations. They also share information through dissemination of their newsletters and other publications as well as circulars.

TDR-net, Malaria-net, POPLINE and Networks Centre for Communication Programmes are examples of information networks listed. Almost all of the district managers (97%) expressed their willingness to be hooked onto an information network. The few who are not connected to any information network in the district indicated that they are not aware of any existing information networks.

With regards to researchers, almost a third of them said that they are connected to at least one information network including: BNITM, International statisticians, Afro-nets, Social scientist, UN Alert, Hiv-net, SOMANET and Malaria-net just to mention a few. They indicated that their operations vary by type of membership. Where membership is scattered globally, meetings are usually held twice or thrice a year to discuss issues and share new knowledge and experiences. All the researchers stated that they communicate by e-mail.

Table 7: Respondents by Internet Access

Access	National	Regional	District	Research
Yes	92 (8)	39 (26)	7 (8)	71 (16)
No	8 (1)	61 (41)	93 (103)	29 (6)

5.13. Inventory of communication equipment

All 9 (100%) of the national respondents have access to computers and telephones that are functioning. Ninety-two percent 8 (92%) of those who have computers also have access to Internet services, e-mails and photocopy machines that are also working. With regards to fax machines, (2) said they share a common machine which is located at a central point in their secretariat.

At the regional level, all the regional directors and few (16) members of the RHTM have access to computers which are functioning. Eighty-five percent (85%) also have access to photocopiers. Internet services are also available to 26 (39%) of respondents while 35 (52%) have e-mail services. It is worth stating that the e-mail service is not necessarily at their place of work but some are able to access at private service providers' point (Internet café).

At the district level, 69% of respondents have access to computers and these are mainly the District Directors and only 7% have access to Internet and 8% with e-mails. More than half (53%) have access to photocopiers and only 11% have telephones. An inventory of communication was undertaken and the results are presented in Table (7 below).

Table 8: Availability of Communication Equipment by Respondents at various Levels

Equipment	District	Region	National	Research Institutions
	Available Functioning %	Available Functioning %	Available Functioning %	Available Functioning %
Computer	69	89	100	94
Fax Machine	11	82	62	65
Telephone	43	94	100	88
Photocopier	53	85	92	82
Internet Access	7	48	92	71
E-mail Access	8	52	92	71

When asked about equipment that facilitate access to information such as photocopiers and computers, participants at sub-districts in unison said they do not have such equipments. To stress their point one person said: *"We don't even have typewriters", a*lso ' *We don't have photocopiers or computers.*
Respondents in the Upper West region had this to say:

> *"We don't have telephones but we have Motorola/ radiophone for transmitting information in the Region only. We use it for emergencies."*

Even though one facility mentioned that they had a functioning photocopier, a few said they had only typewriters that were not even functioning.

In response to whether people will be willing to pay for information majority of the participants at the sub-district said they are willing to pay should the need arise. They stated that they were willing to pay for information provided it is relevant and affordable. Their willingness to pay will also depend on their value for information in the daily activities. As a nurse put it:
" We pay for newspapers why not for information that will enhance our work".
Some thought payment for information should be the responsibility of the institution. One respondent quickly added:
"that will depend on the head of institution's value for information".
" if the centre has money then it is up to the Medical Assistant to decide".

Only 2% of the District managers stated categorically that neither they nor their institutions would be willing to pay for information because they do not generate enough money at their level. About 9% also pointed out that they are not sure if their institution will be willing to pay for information.

Some said the Headquarters and DHMT should set some funds aside for information. Furthermore, majority could not state any amount that they can afford, however, they stated that they are willing to pay at any cost within their means. A few insisted that information should be free because the sub-districts are poor.

CHAPTER SIX: DISCUSSION

Having analysed the results of the study, there is the need to critically examine the implications of the findings for effective communication of research to support health policies and programmes and have direct impact on health outcomes.

An in-depth analysis of 209 health professionals made up of health policy makers, health scientists from three universities and health care providers at the district and sub-district levels revealed the information needs and sources used to stay abreast of health advancements. Information seeking behaviour as well as existing information infrastructure was also examined. The results will be discussed vis-à-vis the set objectives.

6.1 DECISION-MAKING AND USE OF RESEARCH

Health research use in policy making requires the use of communication strategies and principles to adequately inform and influence decision makers and providers in the health sector. Decision making seem to occur at all levels of health care delivery and all the respondents from district through region to national levels were in management positions. Research information was considered very essential in the process of decision making at all levels. In describing the process of policy formulation within the MoH a variety of means were listed including routine data collection systems, monitoring visits, operational and health systems researches and annual performance evaluations all of which has some elements of research.

However, the use of research as the basis for policy formulation was very limited at all levels. Several factors have contributed to this situation including the authenticity and relevance of information, relevancy of research and timeliness of the research results. Additionally, there was a strong emphasis on accessibility of the research data, which to the majority of respondents was prime to any other factor. In their analysis of the reasons for limited use they revealed the frustrations in their work and particularly in decision making.

When the need for research has been identified the information should be available for the decision-maker to use. This implies that decision-makers should be aware of the existence of that knowledge to use but this is usually not the case. Decision makers have no organised way of knowing about the researches done and their recommendations, unless the research topic is within their work domains. For instance, the Public Health Director and the National AIDS Control Programme Manager would know and may even be part of most researches carried out in relations to HIV/AIDS and disease control in general. Research is also disseminated at workshops and conferences, which have limitation in the number of policy makers who participate in these workshops. Policy makers and Regional Directors are invited to dissemination meetings when the issue is very high on national agenda and needs consensus from all stakeholders.

Policy makers as well as health mangers are also not aware of any existing research database and cannot use the findings. ***"How can we act on information we don't know?"***. It came out strongly that there is no common point where all documents produced are put together for distribution to the stakeholders in health.

Although, the Health Research Unit which is mandated to play this role yet it is not able to perform effectively. Reasons to this includes, that:

1. It does not have any budget line for operation and consequently it has no resources to carry out this function effectively.
2. It does not have adequate capacity to reproduce and distribute information to all the key stakeholders in summaries and appropriate formats.
3. It does not have the equipment to perform this task effectively.

The apparent lack of involvement of health managers at the national and regional levels in dissemination of research results and presenting the results at the right time was a set back on the utilisation in policy formulation and programme development.

Disseminating research information to health managers is in itself a management tool that will undoubtedly improve health decision-making. It will help to raise awareness of research, modify behaviour of decision makers to accept recommendations and ultimatly influence them to use the results. However, this cannot be achieved on a silver plater. Perhaps it would be useful for researchers to adopt effective communication skills. Using non-technical terms, presenting information in a simple and concise manner through appropriate medium and ensuring credibility by providing very significant research findings to policy makers and health managers. As communicators, researchers should make findings available to public.

To this end, researchers should see themselves as being agents of change. They should be innovative in the change approach by adopting various strategies applicable to meet the needs of the different target audience. Effective communication of research should occur at various context and should involve the use of different channels that would facilitate information diffussion and reach the desired target audience. But do researchers have the requisite communication and social marketting skills that would enable them to effectively disseminate their findings to the heterogenous audience within the health sector and more importantly entice policy makers to take action on their recommendations? This calls for training in communicating research to strengthen the research capacity. Firstly, relevant courses such as effective communication and the use of marketing techniques shouldd be incorporated in the pre-service training programme for health researchers and giving orientation courses for those who are already on the field to enable them carry out effective dissemination.

While it is important for the researcher to have communication skills the onus of dissemination should not be placed entirely on individual researchers but should have an institution tasked for this purpose.

To the health sector management in Ghana, access to evidence-based research information has an additional value:
- To essentially improve existing knowledge on broader health policies and health interventions.
- To improve the competence of the various cadres of health managers who stand in the frontline of the combat for better health, and who are the main agents of health delivery to communities.

Ensuring a sustainable system of sharing information for health professional implies building the 'management-participation bridge' on a firm foundation.

Although, research information may not be reaching decision makers when needed, it is also known that many of them at national and regional levels have been involved in conducting research but they are not 'research conscious' when it comes to planning.

While decision makers will plan and budget for drugs, equipment and supplies, no budget is set aside for information and in particular health literature. This perhaps confirms Aiyepeku's [40] view that policy makers are not information conscious as they might be, particularly in Africa where research information as a basis for planning is often not the norm. This perhaps may be due to the fact that policy makers themselves suffer from inadequate training in their pre-service education to make them recognise information as a vital component in the process of programme analysis into policy decisions. A possible reason for application of research may be the inability to interpret and understand the relevance of research studies. There is the need to help policy makers acquire these skills in order to facillitate research into action.

In the past health professionals training did not include the development of research skills as a priority area in the curriculum. Only medical students and graduate nurses were taught to appreciate the impotance of research as basis for effective case management.
This sytem of training has to a larger extent influenced clinical practice and the use of research. Decision makers in clinical settings often base their practices on traditions, as standards of care and treatment are usually set and individuals feel obliged to abide by the regulations. They are therefore faced with the challenge to change procedures therefore they have not been proactive in to search for and use research information, as they should. However, with the recent demand for evidence in costing of health care, clinical effectiveness about quality of customer or client care and the constant changes in health reforms, decision makers in clinical circles need to be oriented to realise that research is integral to health development at every stage and must be fused into training as well as organisational issues.

The fact that the training of health professionals in Ghana does not emphasise information use and communication skills means they complete their studies without being taught to put value on updating the information they have received and sharing them. This lack of emphasis on use of information during their training also confirms the notion that health information is not recognised as a vital resource to health development [41] particularly in developing countries and is not accorded the same right and importance as drugs and other support functions in developing countries [42]. The health training schools (apart from Medical schools and the School of Public Health), to date have no access to computers and data published on CD-ROMs and the Internet therefore have no access to the increasing volumes of health development issues and researches results that are being published on the World Wide Web and CD-ROMS. Beyond the lack of communication infrastructure in the training institutions is the apparent attitude to searching for information for self-updating.

The concern about the non-existence of a point of reference for information on health and health research and the absence of a database of researchers and researches done in health in the country is seen as a major drawback in the use of research in decision making.

---

[40] Aiyepeku, WO (1982) The perception and utilisation of information by policy makers in Nigeria. Lagos, National Library of Nigeria. 220p
[41] Weitzel, R (1993) Essential books for health workers in the Third world. World Health Forum. 14:2;178-80.
[42] Weitzel, R (1991) Library service for primary health care. Social Science and Medicine. 32:1;51-57.

The presence of a database of health researches would for example facilitate an interactive communication not only among researchers but more importantly between researchers and health policy makers.

There is the need for health policy makers and health managers to be properly informed about the health researches available, where they can be easily located and how they can make use of new knowledge to improve the health system and thus achieve better health outcomes. This also calls for the training of health professionals in communication skills and the use of communication technologies. This should be integrated into the existing curriculum of health training schools. This has implications for reviewing training schemes for the various cadres of health professionals and providing adequate communication infrustructure for all health training schools in the country.

The problem is not so much the absence of information or communication skills but rather the inability to harness the information resources for effective use in national health development.

A major task facing the health sector is not only identifying the needs of the policy makers, health providers, health researchers and users of health care, but also useful sources, and even more importantly selecting from these sources appropriate information likely to meet the needs. If this is to be achieved there is the need to have clear strategies for collection, storage and distribution of research information and health literature among policy makers, health providers and researchers and between Ghana and other nations of Africa.

6.2   INFORMATION SOURCES AND INFORMATION SEEKING BEHAVIOUR

Information seeking and use of a particular source of information has to do with certain factors including culture of the people, credibility of source of information, ease of access and or availability of information, perceived cost and perceived trust of source and medium for transmitting information.

In the traditional Ghanaian society, information especially new knowledge is diffused into the system through story telling and town-criers. In this process, the source of information is associated with the elder of the lineage, thus age becomes an important factor as the credible source of information. Modernisation has to some extent replaced the traditional source with specialised personnel such as literature or books, video, radio, TV and now internet.

However, the strong influence of socialisation has not allowed for total changes. The communal way of seeking information from elder colleagues is more prominent than solitary confinements to literature. We are now in information age where there are numerous printed literature and electronic information on health in the Internet but few people consistently search for information and read. The method of teaching where tutors gave notes for students to copy and reproduce rather than giving reading list for student to find information and make analysis of information in the health institutions also contribute to the passive information seeking attitude.

It could be said that health professionals in Ghana make use of information that comes to them rather than taking the initiative to look for information they really need. In addition, while they make use of sources available they are also concerned about the

quality and ease of use of information.   This is clearly shown in the study when the reasons given for their choice of source was availability of source, convenience of use of source and relevance of source which is consistent with Curley's [43] findings.

The hierarchical nature of MoH organisational structure and the 'centralised' nature of policy-making 'top-down approach' makes it necessary for health professionals at various levels to be dependent on their superiors and workshops as a major source of information. The tradition of seeking information from superiors has been a long-standing which is justified by claim of time to read long and complicated reports.

Colleagues as a first contact featured prominently at all levels [44]. Even among policy makers they mentioned colleagues as an index point for information. However, workshops and conferences were the most frequently used way by which they got information. This was followed by the use of colleagues and the mass media. The use of the library as a source was the least considered. But it should be noted that in institutions where library facilities exist they used them in addition to their superiors and other colleagues.

Information keeps streaming from programme and divisional heads to the periphery through workshops and meetings on new development and this often has rather narrow focus and coverage. While conferences and workshops are a very useful medium for sharing information, the beneficiaries of these courses are very few (at most three participants from each level). They spend an average of 12-20 weeks of their working time on these workshops. This is being done at the expense of other services that need to be provided and decisions to be taken, because mostly participants are all members of the management teams as well as programme co-ordinators.

There is a limitation to numbers that can be covered through workshops and therefore the need to look for other innovative ways of updating and sharing very relevant knowledge and skills for health managers at all levels.

Apart from the long periods of time they spend on these workshops, it was clear that beneficiaries of these workshops and conferences often do not communicate the new knowledge and skills acquired at the workshop or conferences with their colleagues who may not have the privilege to participate. Furthermore, the literature or documents given to participants tend to be seen as personal properties and other staff have no access to even read and acquire some new information on their own. There is the need to look at how information generated from workshops and conferences can be shared with other staff who do not participate in these programmes.

At the sub-district level, people look for information for purposes of promotion into senior positions. Reading for new knowledge and self-updating is not the norm. They have less access to health literature of any kind not to mention journals and research information. Among the list of sources at the sub-district level newsletters were found to be the most preferred because of their 'accurateness'.   The choice of newsletters is

[43] Curley, SP et. Al. (1990) Physicians' use of medical knowledge resources: preliminary theoretical framework and findings. Medical Decision making. 10:4,231-41

[44] Hague, JD (1997) Physicians' preference for information sources: a meta-analytic study. Bulletin of the Medical Library Association. 85:3;223-32

perhaps due to the fact that they address more specific and relevant issues. Also the language used tends to be very simple, thus tending to easy understanding. All these have implications in the design when sources are being considered.

It needs to be mentioned that the media - Radio, Newspapers and Television were recognised as very useful sources by respondents at all levels particularly for information on health interventions being implemented in the country such as NIDs, IMCI and Bednet use and HIV/AIDS and STDs control. Dissemination is done in two ways, through the mass media where reporters are invited into a dissemination workshops or meetings to give coverage. Although the media is a very useful tool it is only an awareness creation and agenda setting channel and cannot be used as a source for detail information. The other way is through publications in scientific journals and newsletters which already has limitation in terms of people who can have access to these publications. The challenge is replacing this rather passive approach with a more proactive information seeking culture. How can we get research information to key stakeholders in health development without much interruptions in their normal duties as clinicians, public health managers and policy makers?

Researchers, on the other hand, tend to use the Internets services, periodicals and reports as first point when in need of information. Although, all the research institutions have libraries very few researchers actually use the libraries frequently. In addition, they also use their colleagues a lot because they can always give them the kind of information they need or give them reference to get what they need. They use colleagues despite all the resources available because they found them inadequate particularly for those in the universities who have to queue to access the Internet. As the literature review indicates the use of colleagues is world-wide.

6. 3 AVAILABILITY OF COMMUNICATION INFRUSTRURE AND NETWORKING

Generally, the proportion of policy-makers, RHMTs and researchers who have access to the Internet is relatively high. The policy makers at the MoH directorate and even those from other health related Ministries who have access to Internet use them as their primary channel of information and they often get the kind of information they need including information on Ghana. Health information or literature from the Internet was also considered to be reliable because they are usually articles from scientific journals and primary research articles in special areas of health. However, they are faced with real barriers in their effort to use the Internet. Basically, access to computers, telephones, electricity and funds to pay for cost of services underpin the use of Internet services.

Additionally, technical literacy or the ability to use the Internet was also seen as an essential factor in gaining access to information through this channel. For example, some of the Directors complained that they are not aware available of 'Internet search engines' and where they can locate specific information. They only use the e-mail systems i.e. *Yahoo* and *Hot mail* to access their mails. This again highlight the fact that the MoH does not place emphasis in information provision and therefore not giving Directors orientation on the use of Internet services and Computer use. The Ministry to date has no information officer that overlooks and assists in the use and maintenance of computers. There is the need for an IT specialist to give support to the

Ministry in order that decision makers can have access to useful information on the Internet.

The access electronic information presents an opportunity for sharing information as one can download and disseminate information to colleagues and other stakeholders in health sector, and enhance decision making. This aspect of sharing and utilisation of knowledge or networking with international institutions and bodies seem regular than with local colleagues. The ability to use the e-mail as a discussion forum to connect with regional and district managers and policy makers to deal with a range of relevant health topics to achieve health gains did not feature at all. However, reference was made to the professional grouping that met annually or periodically to review their activities and regulations. Integral to success of information sharing and effective dissemination of research to reach all intended target is devising a practical and appropriate communication strategy in the next 5 YPoW that would guide the MoH to make a sustainable impact.

Many of the district managers and almost all providers at sub-district lack access to the very useful Internet technology. Although most of the District managers have access to computers only 7% had access to internet because they cannot afford to pay the cost of service from the little fund generated from the user fees.

The issue of lack of access to telephone is very crucial and one of great concern. Currently almost all the district capitals have access to electricity power supply, but the frequent power cuts often create difficulties in the use of computers. Often those with the greatest need have the least access to information technologies. In the decision-making process it was clear that decisions are made right at the very lower level, thus community. Therefore any programme to improve research communication in the health systems should recognise the need to provide communication services at the community level. The core problem is the lack of coherent communication plans and policies to promote use of information.

6.4 INFORMATION NEEDS

The national health directorate, RHMTs and DHMTs need information support to enable them to perform a variety of tasks and functions, the most challenging of all being able to bring about improvement in the health sector reforms.

It was realised in the study that generally, information needs differ at all levels (national Health Directorate, RHMTs, DHMTs and Researchers). The needs of health directors and managers working in public health obviously differ from those based at the hospital. Similarly, the needs of researchers who are academicians vary from those in the MoH and require further study.

Generally, areas of information needs included information on health management and administration; intervention strategies for disease prevention and control; research methods; data management; epidemiology and demographic data; health care financing and health sector reforms.

Policy makers at the MoH directorate information need are relating to health policy and health system management such as private sector collaboration and issues of equity in health delivery. They also indicated the need for information on research and data management.

The RHMTs and DHMTs, due to the complex nature of their roles (as health care managers, trainers, and supervisors), their needs are directed to more operational

issues. The RHMT, for instance, need information on project management and evaluation, human resource management, financial management and research methods. In the same vein, the DHMT need information on disease surveillance, management and administration, community participation and management of health data. However, there is the need to bear in mind that needs changes as the health system evolves.

The need for information on health management and administrative procedures seems to cut across all levels, and amongst all categories of staff.   It was also considered as the most pertinent.   It is possible that while all members of RHMTs and DHMTs are charged with management responsibilities, their basic training does not emphasise the management of the health systems particularly in the implementation of the current health reforms.

Additionally, health professionals are not given orientation into administrative procedures that are necessary for effective and efficient running of health delivery before they are posted to management positions. Neither management nor administrative skills is a prerequisite to becoming a member of DHMT or RHMT. There are also no clear laid down guidelines supporting their activities, particularly in the area of administration. The absence of information to guide the management and operations of the current health systems, which is undergoing transformation, has implications to the health development at the local level and the nation as a whole.

Medical literature is doubling everyday. Considering the rate at which new knowledge and changes in health science and health care is being produced, it becomes clear that health professionals even at the lower levels need to have access to current health literature in order to keep abreast of the new developments. The need for information on intervention strategies for control of diseases and health research information becomes very crucial. For example, clinical practitioners need information on how to handle specific diagnostic or therapeutic problems in patient management.   Public health workers also need information on epidemiological data, community and hospital data. They also need information on evidence-based health research that has been undertaken in and outside the country to make meaningful decisions on appropriate interventions and evaluations.
Furthermore, the need for information on research methods and data management cannot be over-emphasised. Decision-makers need the knowledge and skills in research methods in order that they can assist and assess proposals as well as ensure that data is relevant to their specific needs and useful for their decisions. Additionally, the need for information on and data management is also very essential as it would strengthen their capacities to assess the strengths of an existing data or new data. Decision-makers would prefer to carryout their own data analysis because they believe that it will help them to understand issues better.

Community participation was another area where information is needed and this featured prominently at the district and sub-district levels. Health managers at district level find themselves playing advocacy and educational role particularly in dealing with health issues that is beyond the jurisdiction of MoH such as sanitation and population issues. Dealing directly with the health needs of the individual and communities require not only the knowledge on health issues but more importantly adopting the very practical, and appropriate methods to raise high level community

consciousness and trigger action. Innovative approaches to community education and community participation are being developed all the time and health managers and policy makers need to know the differences in approaches to be able to make critical judgement on the best strategies suitable to yield positive health outcomes in their settings.

Socio-cultural or information on communities way of life was also listed among the needs at sub-district level. Among the various categories of staff, Medical Assistants and Nurses saw the need for such information in their work. This could be explained by the fact that these groups of workers have direct contact with the communities and therefore it is important for them to know their way of life in order to determine the best approaches to health care.

If one were to design any effective communication strategies for these category of health professionals their particular information needs would first have to be considered. Information needs are, of course, not static and differ in many respects according to professional scope. It is therefore important to ascertain the information needs of health professionals periodically to enable planners to design an appropriate and coherent national health information and communication in order to make relevant information available at all levels.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

There is no doubt that information plays a vital role in health research and policy making. As indicated earlier this study sets out to investigate the decision making process and use of information in this process. It also assesses information needs and the sources that policy maker at national level, health managers at regional and district level, as well as health researchers within MoH and the Universities. The study examined the information seeking behaviour and its problems. The conclusions drawn from the study have important implications for the development of information strategy for health research into action.

7.1 Decision Making and Use of Research

Basically, decision-making to support health sector reforms and health care delivery occurs at all levels of health administration. Policy makers have acknowledged the need for research information in support of policy formulation as vital. However, the application of research in policy making and directing interventions is very limited. Several barriers have been identified in the use of research information in policy and programmes in Ghana.

- There are no structures or mechanisms available for communication and information sharing among policy makers and researchers and communicating results of new knowledge. There is lack of appropriate means of diffusing research information to policy makers. There is no co-ordinating institution to promote networking and ensure that research results get to policy makers and other key stakeholders who influence policies.
- There is no proactive involvement of policy makers at the onset of research process from problem identification through to implementation of research. They only get to know about the research when the theme is within their domains and only when results are ready for dissemination.
- Research results often do not get to policy makers at the right time to influence their use in policy and programmes.
- Information provision is not given the same attention as other support services in the MoH.
- Policy makers' lack the training and time to search for research reports, to read and use the new knowledge generated to make evidence-based decisions.

Recommendation 1

- The MoH should give priority consideration to information provision as an essential support element in health delivery and there should be a separate budget line for developing a national health literature system.
- The MoH should establish a health information service to take care of the needs of all categories of workers. This service will serve as a first point of call for all who need information and must therefore be well stocked, well staffed, using modern information technologies and proactive in its services. The services should look at issues such as:
  - Database of all health related work done on Ghana.
  - Directory of research works in progress.
  - Depository of all sponsored research reports.
  - Wide dissemination of all deposited reports.
  - Introduction of MoH staff to existing world information resources on the Internet and else.

- Development of an informative Website to ensure wide dissemination of facilities.
- There is the need to strengthen the capacity of HRU to package research information for health workers at the various levels to facilitate use of results.
- The HRU should form networks for collaboration to promote interaction between health policy makers, researchers and health care providers. This will present an opportunity for issues of research to be discussed and thus facilitate use of results.

7.2 Information Needs

Generally, information needs differ among researchers, policy makers and health providers. The needs are more related to the domains of operations and their positions. Policy makers need information relating to policy issues and in particular concerns of health reforms. The regional and district managers need information on health management, administration and health sector reforms as well as intervention, disease prevention and control. Regional and district hospital managers need information on patient diagnosis and quality of care and hospital administration. Health providers at the sub-district need information on community way of life and strategies for health promotion in community. They also need information on health policies and health sector reforms.

Researchers also need information in the area of research methods and data management using various data software for data processing and analysis. The heads of research also need information on human management.

The need for information on health management and administration and intervention strategies for disease control cut across all levels of health care delivery and even among researchers.

The basic professional training did not emphasise management of the health care system in particular managing the system under the current reform. More importantly health managers are not given orientation into administrative procedures that will enable them perform efficiently at that level.

Recommendations
- Health professionals should be taught basic management and administration during pre-service training to prepare trainees for the ultimate role of managers and service providers.
- Existing health libraries should take cognisance of the needs of the various categories of health workers and address accordingly.

7.3 Information Sources and Information Seeking Behaviour

The information seeking behaviour of policy makers and health providers tend to be more passive rather than an active search for information. They prefer to use information that is available to them through workshops, seminars, meetings and conference.

Even the media is a channel that brings information to them. This presupposes that if information is well packaged and made available directly to policy makers and health providers they are likely to use them.

People who benefited from workshops and even received research results directly or through dissemination meetings did not share information with their colleagues who did not have the privilege to participate.

- **Recommendation 3**

- To overcome the passive information seeking behaviour the MoH should emphasise the importance of information in its entire pre-service and in-service training programme. A concerted effort should be made to create a culture of demand and stimulate search for information rather than the use of information that is available.
- Recognising the role of the media in disseminating health information to the health community and general public. It therefore becomes imperative to collaborate with the media and give them the necessary support to assist in dissemination of health research in the country.
- Regional and District Health Directors should encourage communication among staff through regular in-house meeting to share information from workshops, conferences and other meetings.
- The MoH has to adopt the World Bank strategy of using Tele-conference as a channel for workshops, seminars and meetings. In this way people can remain in their stations and continue with their work and at the same time gain access to useful knowledge.

7.4 Communication infrastructure

Generally, access to information technologies among policy makers, health managers at regional level and researchers in Ghana is relatively high. Policy makers in the MoH have access to telephones, Internet and e-mail services. They also have local networks with their professional groups. They share information with international networks and their regional counterparts. The difficulty lies in the identification of Internet information engine sites and cost of payment of Internet services.
The district and sub-district levels have fewer computers and virtually no access to Internet and e-mails.
They also network with their professional groups through periodic meetings. Many of them have links with the national, regional and international networks.

Recommendations
- The MoH should equip all District Health Administration with computers and they should also be connected to the Internet and e-mail services by end of year 2002.
- The MoH should identify categories of workers at the regional and district levels to be properly trained in the use of Information technology.
- The MoH should ensure necessary budget support for the operation and maintenance of the Information Technology.

7.5 Proposed Strategy for Dissemination

There is no doubt that research is needed to guide policy formulation and programme development for better health care delivery. To achieve this effective communication is key to research use. First of all, research information should be made available to the major players such as high executive policy makers, programme managers and health providers at all levels as well as the communities who stand in the centre of health development and for whom the health sector stands for.

Managers of research should adapt businesslike and marketing techniques to enable their product reach to reach the target audience and in this case policy makers and mangers of health care. The source of research should have credibility and information itself should be seen as valid, using appropriate medium and language.

Equally important is the packaging and time of presentation of information to the various audience.

In this direction, the study proposes to use of variety of mechanisms appropriate to reach the desired audience that may influence their attitudes and to trigger action. The strategy would include the following:

- Firstly, awareness should to be created about the information. This implies the high executive policy makers will be presented with executive summaries. These include the Minister for Health and his two Deputies, the Presidential Adviser, health and Population issues, Chairman of Ghana Health Service Council and the Director -General of Ghana Health Service. A suitable date will be schedule to have a brief presentation of findings to policy makers including the politicians in health.

- All the Regional Directors and selected Directors at the MoH Directorate would be given copies of draft report for comments and this will be presented in electronic and hard copies. Final report with executive summaries will be presented to them on electronic, disk and hard copies. All regions have newsletters which is widely distributed to health staff within their catchment areas. The Regional Health Education Units, which are responsible, would be encouraged to publish the summary of the report in their newsletters.

- Copies of executive summaries of the report will be sent to the Two Teaching Hospitals and full report will be given on request. The copies will be presented to the Vice Chancellor who would then distribute to department heads.

- Draft reports will be presented to the 20 districts that participated in the research for their comments. Copies of final report with executive summaries will also be sent to them. Furthermore, executive summaries of the report will be sent to all the regional directors. Because quite a significant number of District Directors have no access to e-mails the report will be sent in hard copies.

- There are plans to encourage districts to hold durbars with sub-districts staff and share findings as well as discuss way forward in research communication and knowledge development.

- There is a public health magazine entitled "The Health Courier", a quarterly publication for health professional which already has an arrangement with HRU and had dedicated space to publish research findings. This will be used to reach the wider public including the NGOs and private sector.

- The executive summary will be made available at the MoH Ghana web site: www.moh-ghana.org for public to have access to the findings.

- The media has already been part of the study and would assist in dissemination of information in the simplest, non-technical manner to the lay public. Summary of findings would be published in two most popular daily newspapers -The Daily Graphic and Ghanaian Times.

Table 9: Summary of Dissemination Strategy

Target Audience	Position	Dissemination Mechanism
High Executive Policy Makers	Ministers of Health Presidential Adviser (Health and Population issues) Members of GHS Council Chief Director Director GHS	Executive summaries in hard and electronic copies. *Dissemination seminar will be organised to discuss findings and its implications to policy to facilitate action on recommendations.
Middle level Policy Makers	MoH Directors Regional Directors	Draft report without Executive summaries (Electronic and Hard copies). Final Report with Executive summaries (Hard and electronic copies). Regional News Letters
Health Managers	District Directors	Executive summaries in hard copies. Full report will be presented on request.
Universities/Research Institutions	Vice Chancellor Chief Administrator Medical School Library Health Research Stations Library Other Health Training Institutions Libraries	Executive summaries (Full report on request) Full report with executive summary for Libraries
Civil society Media		Executive summaries and abstracts/ Newsletters

There are plans to discuss implication of findings for how research need to be disseminated and issues of health communication and knowledge development with the Minister and the MoH Directorate.