SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

A COMPARATIVE ANALYSIS OF THE DEVELOPMENT OF ETHICS COMMITTEES IN THE UNIVERSITY OF GHANA AND THE GHANA HEALTH SERVICES

BY

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A DISSERTATION SUBMITTED TO THE SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH SCIENCES, UNIVERSITY OF GHANA, IN PARTIAL FULFILLMENTOF THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN CLINICAL TRIALS

JULY 2010

DECLARATION

I, Naana Ayiwa Wireko Brobby, do hereby declare that this dissertation is my own work, being the product of my research and that the same work has not been submitted anywhere for a similar purpose.

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DEDICATION

This work is dedicated to my late father Prof. Kofi Wireko Brobby.

ACKNOWLEDGEMENTS

I wish to acknowledge the following people who helped me in enormous ways:

First of all, Almighty God for seeing me through this course;

My academic supervisor, Prof John Gyapong, who in spite of his very busy schedule found the time to make valuable inputs and corrections;

Ben Andagalu, my classmate for his invaluable help and source of encouragement;

Dr Alex Osei Akoto for his immense support during the course; and

Andy Collison, for being a constant source of encouragement.

Lastly, I would like to mention my appreciation for all the Interviewees including the Directors and Deputy Directors of the various Institutions, the Administrators of the three RECs and finally all the Investigators who were kind enough to grant me interviews.

ABSTRACT

Background

Medical research involving the use of human participants has been on the increase in Ghana over the past decade. Research Ethics Committees (RECs) have the huge responsibility of protecting the safety, rights and welfare of these human participants. This role cannot be taken lightly since there is always the tendency for these human participants to be exploited, or vulnerable groups to be taken advantage of. Ghana has about seven RECs in the country right now. However, very little is known about how or why these Committees came about, their structure and function, and the challenges they face, and this study set out to find these out. A survey was also done to find out the opinions of Ghanaian investigators affiliated with the Ghana Health Service, Navrongo Health Research Center and the Noguchi memorial Institute for Medical Research, on the RECs they use.

Methods

Semi structured questionnaires were used to collect information on the structure and function of three RECs in Ghana from their respective Administrators: the Ghana Health Service REC, the Noguchi Memorial Institute for Medical Research Institutional Review Board (NMIMR IRB), and the Navrongo Health Research Center Institutional Review Board (NHRC IRB). Directors and their Deputies of the various Institutions were also interviewed on the histories of these RECs. Two checklists were used, one on Standard Operating Procedures (SOPs) and the other on Minutes, for documented reviews of their operations. Twenty-nine Ghanaian Investigators were also sampled and interviewed on their views on the RECs they use with the aid of a semi-structured questionnaire.

Results

Two of the RECs were established in the year 2000, and the third was established in 2003. The average range for the number of members on the Committees was 10-12. The backgrounds of these members were somewhat similar, and these included Medical Practitioners, Legal Practitioners, Journalists, and Reverend Ministers. Common challenges being faced by these RECs included lack of finances, inadequate office and storage space and inadequate human resources. The biggest concern for the investigators was poor administrative capacity of the RECs.

Conclusion

The introduction of RECs over the last decade has streamlined the conduct of health research in Ghana. They are all well constituted and operate under internationally acceptable guidelines; however they all have logistical and financial challenges that prevent them from operating efficiently. The legal framework for the operation of RECs needs to be discussed and fashioned out urgently.

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LIST OF ABBREVIATIONS

AMANET – African Malaria Network Trust

CIOMS – Council for International Organizations of Medical Sciences

CFR – Code of Federal Regulations

DHMT – District Health Management Team

ERC – Ethics Review Committee

FWA – Federal Wide Assurance

GCP – Good Clinical Practice

GHS – Ghana Health Service

ICH – International Conference on Harmonization

IRB – Institutional Review Board

MOH – Ministry of Health

NHRC – Navrongo Health Research Center

NHREC - National Health Research Ethics Council

NIH – National Institutes of Health

NMIMR – Noguchi Memorial Institute for Medical Research

RDD – Research and Development Division

REC – Research Ethics Committee

SAE – Serious Adverse Events

SOP – Standard Operating Procedure

UDS – University of Development Studies

USA – United States of America

WHO – World Health Organization

WMA – World Medical Association

CHAPTER ONE

INTRODUCTION

1.1 Background and Justification

Research Ethics Committees (RECs) are usually set up to protect the welfare of clinical trial subjects (ICH-GCP, 1996). In the United States of America (USA), these oversight committees are usually referred to as Institutional Review Boards (IRBs), whereas most other countries prefer to call it Ethics Review Committees (ERCs) or Research Ethics Committees (Emanuel *et al.*, 2008). RECs are responsible for reviewing protocols in an independent and competent manner with the primary intention of protecting the welfare and safety of participants, as well as to provide continuous review and monitoring services for protocols already approved (WHO, 2000).

The role of RECs is very critical now, especially in clinical trials since "human beings are being experimented on", as opposed to when experiments were only done in the laboratory; this situation puts a whole new perspective on the ethical conduct and expectations in medical research. The role of RECs is even more critical in developing countries on account of the generally low level of literacy, combined with the high level of poverty, which increases the chances of participants being coerced or even being exploited during the research process.

The WHO recommends that all countries try to develop or establish RECS at all the appropriate levels including the local, institutional and national levels. The WHO also goes on to say that the establishment of these RECs in addition to ethical guidelines put in place would not only help guarantee the utmost ethical standards of medical research in protecting human

participants, but also assure the scientific community of sound scientific practices (WHO, 2000).

In many of the developed countries, especially those that are very well versed in clinical research, RECs have been set up for varied reasons. Historically, many of these RECs, especially those in the developed world, were set up on account of atrocities that had been committed against human participants involved in research, including exploitation on the part of the researchers, and abuse of human rights (Emanuel *et al.*, 2008).

Research has revealed that about a quarter of all scientific publications come from developing countries (Gilman and Garcia, 2004), hence the rising need for more knowledge into the dealings of RECs in the developing world. In some developing countries, the development has been pretty gradual, whereas in others, their development have been very rapid, especially due to demands from foreign partners or sponsors, or as a result of requirements from the home country of the sponsor (London, 2002).

Over the past two decades or so, many developing countries have been very much involved in research, especially in clinical trials. As a result, many RECs have been springing up pretty rapidly in these countries, especially since most of these research centers and or African Investigators usually have collaborating partners or sponsors from countries who insist on protocols that have been reviewed and approved by a REC (Aceme, 2009, Falusi *et al.*, 2007).

There are varied stories or reasons behind the set up of most of these RECs in many of the countries involved in medical research. Some, if not most medical journals have made it a prerequisite that the research protocol should have been approved by a REC before the results of that study would be published in their journals (WHO, 2009).

In Ghana, the number of clinical trials that are being done have increased remarkably especially over the past few years (Clinicaltrials.gov). The number of RECs in the country has been steadily increasing alongside the growth of research in the country, and also in accordance with the expected international ethical principles that these research centers abide by. However, there is no largely recognized national REC in the country. Currently, the REC serving as the national one in some respects is the Ghana Health Service (GHS) REC. The GHS is one of the biggest arms of the Ministry of Health (MOH) Ghana. The GHS basically serves as an umbrella for all of the Government hospitals ranging from the teaching hospitals right down to the Primary health care centers in the country. The Research and Development Division (RDD), one of the divisions of the GHS was set up about 20 years ago, with the basic aim of meeting the ever expanding research needs of the Public Health sector, and also to help guide health policymaking decisions in the country (Ministry of Health, 2009). The RDD thus bears the mandate of coordinating and conducting research in order to help guide health policymaking in the country.

The GHS REC falls under the RDD. Needless to say, any research activity that goes on in all of the Government hospitals would have to pass through the GHS REC, making their coverage area very wide. The Division has 4 research field stations that it coordinates and works with, and one of them is the Navrongo Health Research Center (NHRC).

The NHRC, located in the Northern part of the country was set up about 20 years ago to conduct studies into the prevailing diseases in Northern Ghana. The center falls under the umbrella of the Ghana Health Service (GHS). The center has its own IRB, and this IRB caters to all the many studies that take place there (http://www.navrongo.org, 2009). The Navrongo Health Research Center and the Noguchi Memorial Institute for Medical Research (NMIMR)

are both very reputable research centers in the country. The NMIMR is a recognized constituent of the College of Health Sciences of the University of Ghana, and is located on the University premises, Legon. The Institute has been in existence for the past 3 decades. One of the major mandates of the NMIMR is to conduct medical research into tropical diseases that are of public health importance to Ghana (http://www.noguchimedres.org, 2008). The center has its own Institutional Review Board that plays a major role in the conduct of all the studies that take place there. The NHRC is about a decade younger than the NMIMR.

In spite of the remarkable rate of growth of health research in Ghana in the past few years (Clinicaltrials.gov), there are few insights into the developments and operations of RECs in the country. Most of the data available on RECs worldwide are mainly from developed countries (Kass *et al.*, 2007). Very little has been done to find out the operations and the numerous challenges that the RECs in developing countries have been facing, as well as the ethical challenges that researchers in these developing countries are facing (Hyder *et al.*, 2004, Kass *et al.*, 2007). Considering the rising number of collaborations between Ghanaian Investigators and the International research community, a closer look at the histories of some of the RECs in Ghana, as well as the progress they have made so far, their modes of operations and the challenges they are facing would be useful to the International research community as a whole. In so doing, this study highlighted on the loopholes in the REC system in the country, thereby providing the opportunity for improvement in capacity building as well as identifying specific areas that need looking into.

Currently, Ghana has no legislation or national guidelines regarding the ethical conduct or expectations with regards to medical research in the country, as well as with respect to RECs in general. Therefore it can be justifiably said that there is no consistency when it comes to either

the ethical conduct of researchers in the country as well as the expectations of the various RECs since they are each established depending on which ever internationally recognized guideline(s) they deem fit to align themselves with.

1.2 General Objective

To gain an insight into the history, operations and challenges of some Research Ethics Committees in Ghana, involving:

1. The Ghana Health Service REC;
2. The Navrongo Health Research center IRB and
3. The Noguchi Memorial Institute for Medical Research IRB

1.3 Specific objectives

1. To describe the histories and modes of operation of some RECs in Ghana
2. To document the challenges they are facing
3. To document the opinions of Ghanaian investigators about RECs

CHAPTER TWO

LITERATURE REVIEW

Even though it has not necessarily been made law in many developing countries, International laws require that an independent oversight ethics committee review all research involving human participants. Gradually, many nations are beginning to recognize and appreciate the role ethics committees play in research, and are putting structures in place to set up these Committees. WHO embarked on a survey on RECs in the African region in 2005, and it was revealed that only eighteen out of the twenty eight countries that responded to the survey admitted to having RECs in their countries (Kirigia *et al.*, 2005).

The Nuremberg code, which was put in place in reaction to the Nazi war experiments, was one of the initial legal attempts of the US government to protect the safety and welfare of research participants (NIH, 2006). The Declaration of Helsinki was developed by the World Medical Association (WMA) in 1964, in a bid to set some ground rules for physicians as well as researchers on how to treat both patients and human subjects in research. The Declaration undergoes regular amendments with the most recent one occurring in October 2008 (NIH, 2006). The Belmont report was created in 1979 in reaction to the Tuskegee syphilis study (1932-1972). This report, which hinges mainly on three basic ethical principles of Autonomy, Beneficence and Justice, serves as the main backbone on which IRBs in the United States of America (USA), as well as in many other nations, fall on in their bid to protect human research subjects (NIH, 2006). It was these atrocities that culminated in the establishment of many RECs in the 1960s and 1970s in both Europe and the USA (Schuppli and Fraser, 2007). The oldest REC in Africa is said to have been established in 1966 in South Africa at the University of

Witwatersrand (Moodley and Myer, 2007). It is said that medical research involving human participants has been ongoing on the African soil for more than 50 years (Rwabihama *et al.*, 2010). However, it was only in the 1980s that RECs started being put up in many countries (Coleman and Bouesseau, 2008, Ikingura *et al.*, 2007). Needless to say, many researches involving human participants have gone on in developing countries over a long period of time without the input of RECs. A previous study done involving RECs in the French-speaking African countries revealed that Cameroon was the first to set up an REC, the National Committee of Ethics for the protection of persons in medical research, in 1983; followed by Ivory Coast which set up its National Ethics Committee in 1995; Benin established its first Committee in 1998 and Burkina Faso in the year 2002. A series of medically-affiliated bodies came together to form the Danish REC system in the late 1970s, though it was only legally established in 1992 (Holm, 2006).

The USA has a well-established system of RECs on account of having had many years of medical research experience under its belt. Under its system, there are several types of RECs and these are the Advisory, Administrative, Education, Guidance, Protocol Review and Inquiry types. Advisory Boards deal mainly with providing advice on ethical issues to the research community; with regards to guidance, these boards have the responsibility of putting in place national ethical guidelines, as well as deciding which International guidelines to adopt. One REC can have and perform the functions of more than one type. Inasmuch as these distinctions are US-based, RECs all over the world fit into a particular category. For example, Canada has RECs that fit with the Advisory, Administrative and Inquiry types. Another example is the Belgian Advisory Committee on Bioethics which is charged with both an advisory capacity and

the mandate to educate both the professional and general public about research ethics (Emanuel *et al.*, 2008).

With regards to modes of operations of RECs, several models of these RECs stand out. The research review system in the USA is very dynamic and diverse. The US models of RECs can be grouped into 3 main categories; institutional, independent and private. The structure and functions of these models overlap in some aspects but are certainly different in some other regards. The Institutional RECs are basically the ones that are affiliated to a research Institution, be it a specific research center, or an Academic Institution like a University, or a State owned REC that looks into research done by State agencies like hospitals and even prisons. The Independent RECs are usually not associated with any research institution, but rather form part of a corporate body. Board members are usually seen to be employees of the Corporation as well. These RECs usually tend to charge investigators and sponsors who employ their services. The main issue with this kind of REC is that of conflict of interest since they tend to review protocols on new drugs and new devices therefore earning most of their keep from pharmaceutical companies and therefore blurring the lines between the need for ethics and that of profit-making. The last model type is the private RECs. This model could be either for-profit or not-for-profit outfits. These are usually small RECs that are usually set up by a private research organization and funded by equally private organizations. This type of REC is usually not subject to the same regulatory oversights as the above two (Emanuel *et al.*, 2008).

The Danish system of RECs however, is more regional in nature. The argument being that the level of conflict of interest is reduced with the Regional RECs since most of the members will not be affiliated to any one particular research Institution. The Danish Central REC has the

final say and can be appealed to in the event that a research party is unsatisfied with the final ethical decision of a regional REC. The Danish laws are clear that it is punishable by law with a prison term if a researcher should start a study that has not been ethically approved (Holm, 2006). New Zealand has a system whereby their Health Research Council is responsible for accrediting all the local RECs, and research participants who are not covered by an accredited REC cannot make claims for injuries and damages during research (Coleman and Bouesseau, 2008). In Africa, most, if not all of our RECs can be described as chiefly Institutional, even though some have an element of an Independent type. Taking the fast evolving nature of medical research on the continent, it can easily be expected that in no time at all, all the various models of RECs will be represented on the continent soon.

The composition of an REC in terms of its membership is very vital in that the wider the expertise available on the Committee, the higher the quality of ethical review the Committee does. Most of the RECs in developing countries adhere to the recommendations found in the International guidelines with respect to the composition of their Committees. The WHO operational guidelines for Ethics Committees that review Biomedical Research states that "Ethics Committees should be multi-disciplinary and multi-sectorial in composition, including relevant scientific expertise, balanced age and gender distribution, and lay persons representing the interests and concerns of the community" (WHO, 2000).

A survey done on RECs in Tanzania revealed that each REC had an average of 11 members, with a large proportion being biomedical researchers, medical doctors, social scientists, laboratory technologists, religious leaders, statisticians, teachers and lawyers (Ikingura *et al.*, 2007). A similar study done in Korea also revealed the average number of members on their RECs was 12.6, with the backgrounds of members ranging from physicians, medical scientists,

pharmacists to nurses (Kim *et al.*, 2003). Canada has an especially unique system whereby their REC is made up of only nonscientists (Emanuel *et al.*, 2008). The Danish REC system has a majority of its members being lay persons (Holm, 2006). Both Sweden and Germany in recent years have come up with a law requiring that there be gender considerations in the nominations of REC members so long as the proper qualifications are met (Moerman *et al.*, 2007). However, a descriptive study done of 20 African countries involving their RECs revealed that 90% of the members were male, scientists and or lawyers (Rwabihama *et al.*, 2010). This could be due to the fact that until recently the field of science and research has been mostly male-dominated.

The volume of protocols reviewed by an REC at a sitting or even per year could affect the quality of ethical analysis, especially since the reviewers usually have very busy schedules. A study done involving 12 RECs in Africa revealed that the volume of protocols reviewed by the various RECs varied from 8 – 12 to 600 per year (Kass *et al.*, 2007). Another study of one REC also showed that that particular REC reviews between less than 10 to about 40 protocols per meeting (Blunt *et al.*, 1998). Different nations have different forms and structure of RECs. Even though most of these nations have adopted International guidelines like the Declaration of Helsinki or The Council for International Organizations of Medical Sciences (CIOMS) to help guide their ethical decision-making processes, they have adapted it to fit their local and cultural context. There are several international ethical guidelines recognized by many countries and adhered to in medical research. The Code of Federal Regulations (CFR) of the US is made up of 50 titles, the title 45 and part 46 deals with the protection of human subjects in research. The CFR provides guidelines on many aspects of human protection like REC membership, review of research, REC functions and operations and REC records (NIH, 2005). CIOMS is an International non-governmental organization established in 1949. CIOMS put together a set of

guidelines for the ethical conduct of research in 1993 called the International ethical guidelines for biomedical research involving human subjects. This set of guidelines which were last updated in 2002 addresses issues on informed consent, recruitment of participants and standards of external review among others. The World Medical Association put together the Declaration of Helsinki with the intention of guiding both physicians and medical researchers in their dealings with patients and human participants respectively. One of its principles states "the research protocol must be submitted for consideration, comment, guidance and approval to a research ethics committee before the study begins. This committee must be independent of the researcher, the sponsor, and any other undue influence…" (WMA, 1996). The ICH GCP guideline is another reputable set of guidelines on the conduct of medical research involving human participants. However, the initial main aim of the ICH GCP guidelines was to provide a unified standard for research conduct for the European Union, Japan and USA, though it has been modified to embrace many more countries over the years (Macrae, 2007). Currently, most countries adhere to these guidelines either totally or have adapted it to suit their local laws and cultures.

Some countries have managed to set up a form of National Ethics Oversight Body. This oversight body could be serving in an advisory capacity, disciplinary capacity or guidance capacity. A typical example is the Tanzania National Health Research Ethics Review Committee, which has both oversight and protocol review responsibilities (Ikingura *et al.*, 2007). South Africa also has a similar system whereby their National Health Research Ethics Council has oversight responsibilities not only for the local RECs, but also for members of the entire research community (Department of Health, 2007, Moodley and L., 2007). Most of these oversight bodies usually promulgate national ethical guidelines as well.

Even though they are called ethics committees, it is expected that the scientific soundness of the protocols being reviewed are assessed, especially since one cannot separate the science from the ethics. Some Institutions prefer to have separate committees, one to look at the science and the other to look at the ethics. Regardless of how the REC is set up, the most important issue is that both the scientific and ethical aspects are each addressed (Bioethics, 2002).

The WHO guidelines recommend that all RECs have Standard Operating Procedures (SOPs) that they work with, and documentary evidence of minutes taken during review meetings. The Food and Drug Administration (FDA) and the Office of Human Subjects Research (OHRP) also recommend that all IRBs / RECs have their own SOPs that they follow to the letter. SOPs basically serve as a form of guide that ensures reproducibility and uniformity of all procedures. SOPs can be customized according to the structure and function of that particular REC. SOPs may be done for Functions and Operations of the REC, review of research, General administration, Informed consent, REC communication and notification among others. A study done revealed that 2 RECs out of 12 in Africa had no SOPs to work with (Nyika *et al.*, 2009). A similar study done also showed that 3 out of 10 African RECs had no SOPs to work with (Rwabihama *et al.*, 2010).

Ideally, minutes of a meeting should be such that any reader who was not present during that meeting should be in a position to tell exactly what happened along with the reasons why the REC made all its decisions (NIH, 2006). Minutes are supposed to be a reflection of exactly what happened during the meeting, thus, one can easily go by the assumption that whatever is not found in the minutes thereafter was not deliberated on or discussed. The Iowa State University Guidance on IRB Meeting minutes recommends that the REC should be able to rely

on the written minutes thereafter to reconstruct the discussions held at that particular meeting and arrive at the same conclusions (Iowa State University, 2009).

Concerns have been raised regarding the various challenges facing the RECs in developing countries, especially with regards to lack of finances and inadequately trained human resource, thereby resulting in the RECs being unable to adequately protect the research participants. One study showed that only 9 out of the 12 South African RECs assessed had offices committed to the work of the RECs (Moodley and Myer, 2007). Lack of office space is a major issue since it would definitely impede the organization and day-to-day running activities of the REC. As at 2005, almost 5 out of 10 African RECs had no secretariat that they could work from (Rwabihama *et al.*, 2010). There is no denying that inadequate resources, both human and non human, can certainly undermine the running of every organization, regardless of how much effort is put into it. Several factors have been mentioned as challenges facing RECs in Africa, and these include lack of funds, lack of office space and dedicated staff, and poor monitoring capabilities (Oyibo *et al.*, 2008). Budget constraints tend to affect every aspect of running an organization, and that happens to be the biggest challenge facing most RECs not only in Africa but worldwide. It is imperative that funding arrangements are put in place so that the members of the Committee will not be inclined to or have any financial incentives to approve or reject a study (WHO, 2009). Another survey also revealed that almost 40% of REC members in Africa do not receive any form of training at all, and other major constraints being faced by the RECs included lack of resources, lack of / Insufficient expertise on ethical review, pressure from researchers, and lack of active / consistent participation by members among others (Nyika *et al.*, 2009).

Less stringent ethical review, low probability of litigation, and lower costs have been found out to be some of the reasons why most researchers / sponsors would rather run studies in Africa as opposed to doing so in the developed world (Moodley and Myer, 2007). This comes as no surprise since most researchers and sponsors would definitely want to work in countries where they would not have any delays or obstacles in seeking for ethical approval.

There are several challenges being faced by RECs all over the world, and especially in developing countries. There have been many concerns that the structure, function and performance of RECs in developing countries are not adequate (Sleem *et al.*, 2010). This could probably be attributed to the high level of poverty in developing countries as it is estimated that most RECs in the developing countries are more inclined to approve a study due to the provision of jobs, medical services and infrastructure that the study is inclined to bring.

Maintaining the Independence of RECs, especially the institutionally based ones is another big challenge being faced by RECs all over (Rwabihama *et al.*, 2010). This is especially so when members feel uncomfortable criticizing or voting against proposals brought in by colleagues or close friends. Another source of conflict of interest here is the fact that most of the members of these RECs are reluctant to reject foreign proposals especially, since it would mean the rejection of jobs and other opportunities for the locals. In some developing countries, because members cannot afford to give off their time and expertise at no cost, it results in delays and inadequate reviews. On the other hand, the independence of these members could be compromised if the committees should start charging a fee for reviews in order to be able to pay their members adequately (Bioethics, 2002). Other challenges mentioned in a similar study in Egypt were the absence of national guidelines and lack of regular ethics training for its members (Sleem *et al.*, 2010).

Many criticisms have been made by researchers regarding the waste of both time and funds in seeking ethical approval as well as the with the efficiency of the ethical review process itself (Blunt *et al.*, 1998). A survey done in New Zealand among researchers revealed that their main problem areas with RECs were in the areas of the handling of the scientific validity and consent aspects of the protocol, as well as their assessment of the risks and benefits. Some of the researchers were also of the view that the RECs sometimes cause unnecessary or avoidable delays for their research (Paul, 2000). It is to be expected that many researchers will have issues with their RECs especially since their studies cannot commence without approval from these RECs, and it cannot always be guaranteed that these approvals will be given in the long run.

Ghana currently has six largely recognized RECs in the country, three of which are solely research Institution based. Due to the very recent nature of research developments in the country, very little is documented about their set ups, how they are run, the challenges they have been facing and generally their input or the role they play in the research field. Seeing as RECs are still being established and even being improved upon even in the developed countries, it would be interesting to find out how the already few established ones in a developing country like Ghana are performing with regard to international standards.

This study thus set out to do a comparative analysis of the developments of three RECs in the University of Ghana and the Ghana Health Service.

CHAPTER THREE

METHODS

3.1 Design of Study

The study was a cross sectional survey of three RECs in Ghana, as well as a survey on the opinions of Ghanaian Investigators on the RECs they use.

3.2 Participants

The Ghana Health Service REC was chosen to be part of the study on account of the fact that the REC is recognized erroneously to a large extent as the national REC. The IRBs of the NMIMR and Navrongo Health Research Center were also chosen because both Research Centers are two of the oldest in the country. Ghanaian Investigators together with the various Administrators of the respective RECs were interviewed. Personal interviews were also held with the Directors and Deputy Directors of the various Institutions who contributed in significant ways to the setting up of the various committees. Overall, 29 Investigators in total were interviewed. Three Investigators, one from each of the sites, did not respond to the questionnaires.

3.3 Study Questionnaire / Checklists

A self-administered questionnaire was developed for both the investigators and the administrators. In the development of the questionnaires and checklists, the information used was basic data that is to be expected from any standard research ethics requirements, in addition to the commonly known gaps in the research ethics system. Interviews with the aid of a semi-structured questionnaire were conducted with the administrators of the various IRBs and

Ghanaian Investigators. The questionnaire for the administrator collected information on the history and any major events that led to the set up of the committee, the composition, mode of operations, challenges. The questionnaire for the investigators collected data on their general opinions of the REC they use, any challenges they face with them, how they function, and the expectations they have of them. Two checklists on SOPs and Minutes were used for documented reviews.

3.4 Procedures

The Administrators of the respective Institutions were approached and given the questionnaires to fill. Documented reviews were also done on the Standard Operating Procedures (SOPs) and Minutes of meetings held by the Committees with the aid of checklists. Minutes were sampled (or randomly chosen) from the stock made available starting from the very first meeting held up until the last one as at the time the review was being done. Investigators known to use or to have used the services of any of the chosen RECs were approached and given the questionnaires. No identification was required from any of the respondents. A few of the questionnaires were administered with the assistance of the investigator, this allowed for improvement in clarity as well as comprehension. This face-to-face method also helped improve the response rate. After the interviews with the Investigators, the data was anonymised. The study was conducted in the months of June and July, 2010.

3.5 Data Analysis

The data was entered into Epidata, and datasets created for analysis in Stata 10.0 (StataCorp, Texas, USA). Descriptive Statistics, in the form of Frequencies and Percentages were used to summarize the responses from the Administrators and Investigators. Pearson's Chi square test

or Fisher's exact test were used to test for statistical significance for any differences detected. Responses to open-ended questions were sorted into basic categories based on perceived similarities and differences.

3.6 Ethical Considerations

Ethical clearance for the conduct of the study was granted by the Ghana Health Service Research Ethics Committee, and the Navrongo Health Research Center IRB. Ethical Approval from the Ghana Health Service Ethics Committee was acceptable to the NMIMR IRB. Informed consent was gained from the Respondents. Respondents were assured of confidentiality and information collected did not include identifiers that could link forms to the individuals.

CHAPTER FOUR

RESULTS

4.1 History of the RECs

NHRC and NMIMR

At the time of inception of both of these centers, the idea of RECs was virtually new and had not gained as much grounds at it has now. The general practice for both centers was to gain "ethical and scientific approvals" for their protocols from the then Director-General of the Ghana Health Service (GHS). The MOH-GHS was basically responsible for the official approval of protocols or studies that needed the necessary ethical requirement. In those days, the only evidence of proof of approval for a study to be conducted was a letter signed by the then Director-General of the Ghana Health Service. Originally, a researcher would send his or her proposal to the then Director-General of the GHS at the time. He would then send the proposal to about three individual experts in the required field for independent reviews, after which he would make a final decision regarding an official approval based on what conclusions the experts came to. In effect, this served as some kind of ad hoc system which had been put in place, and it had been working out well for the small but growing research community in the country at the time.

Both the NMIMR and NHRC centers applied for and were granted a National Institutes of Health (NIH) USA grant in the late 1990s for malaria studies. However, the grant came with a prerequisite that it be used for only ethically approved studies. Since the sponsors for the malaria studies were adamant that federal funds could be used for only ethically approved studies, and there was no existing REC in the country at the time, both centers were forced to

start laying down plans for the set up of their individual IRBs. Both centers each funded the setting up of their IRBs.

The then Directors and the Deputy Directors of the respective Institutions were the ones mainly responsible for appointing of potential members for the RECs / IRBs. The members were chosen from the various recommended backgrounds as per NIH / ICH GCP and other International guidelines. These included a Religious leader, a Legal Practitioner, Medical Practitioner, a representative from the Institution, and a Community Representative. Training opportunities were put in place for the members. The NIH contributed in the form of providing funds for the training of potential members of the IRBs.

The NHRC did not face any major hurdles in the setting up of its IRB. However, the NMIMR was faced with the challenge of defending to the University of Ghana Board on the need for an Ethics Committee since it was not in the Statutes of the University. The University of Ghana at the time had a protocol review committee, but its set up did not meet the necessary criteria or guidelines to qualify as a Research Ethics Committee. Eventually, the NMIMR was given the go-ahead by the University to set up its IRB.

Almost all the members of both the NMIMR and the NHRC IRBs have been exposed to either locally run workshops on Ethics, or NIH organized (or sponsored) workshops which are usually held annually. African Malaria Network Trust (AMANET) has also contributed in immense ways towards the training of the members, by way of sponsoring for the training of at least one member for every ethics training organized.

Currently, the NMIMR IRB is the only IRB on the University, although the University has put plans in place to set up an IRB of its own. The NMIMR IRB officially serves as the IRB for the

College of Health Sciences, though it serves other faculties in the University including that of Nutrition, Nursing and Public Health.

The first official meetings of the NHRC IRB and NMIMR IRB were held in the second and third quarters of the year 2000 respectively. Since then meetings have been held on bimonthly basis for the NMIMR IRB and on monthly basis for the NHRC IRB up to date. Inasmuch as both IRBs are each recognized as independent bodies, their respective Institutions bear the cost of their day-to-day running activities.

The GHS

Before the year 2000, research proposals in the country that required ethical approval had to go through some kind of peer review mechanism. Depending on the nature or field of the study in question, the then Director General of the GHS would consult experts in that area for advice on the scientific soundness or ethical acceptability of the protocol before officially giving the go-ahead. With the rapid growth rate in the research sector in the country and the need to keep up with International research standards, the need to set up an REC became unavoidable. In 2001, the GHS felt there was the need for a REC to be set up within its institution. The office of the Director-General of the GHS and the current chairman of the GHS REC were very instrumental in the events and requirements that led to its set up.

Prospective members of the Committee were chosen from various fields including the Medical field, Legal Profession, Religious backgrounds, and Social Scientists in accordance with International guidelines like the WHO and the Declaration of Helsinki.

Currently, most of the research that takes place in all the Government Institutions / Government affiliated institutions that already have their own IRBs go through dual ethical approval, which

is, gaining ethical approval from its own IRB, as well as from the GHS REC. The GHS funded the setting up the REC, and continues to be responsible for the running of the REC secretariat.

4.2 Modes of Operations of the three RECs

The membership range for all three RECs was between 10 and 12; the GHS REC had a membership of 10 and both the NMIMR and NHRC IRBs had 12 members each. The male – female ratios for the GHS REC, the NMIMR and NHRC IRBs were 6:4, 9:3 and 8:4 respectively. The backgrounds of the various members of the GHS REC included a Lawyer, a Public Health Specialist, an Epidemiologist, a Medical Practitioner, a Health Economist, a Publisher / Writer, a Regulatory Officer from the Food and Drug Board, a Journalist and a Reverend Minister. The NMIMR IRB had members with similar backgrounds. These included a Lawyer, a Medical Practitioner, a Representative from another IRB, a Sociologist, a Community Representative, and four Representatives from the NMIMR including the Head of the Institution who is a non-voting member. The NHRC IRB also had a wide variety where the backgrounds of their members were concerned. These included a Representative from their Regional Directorate of Health Services, a Representative from the Social Services, a Representative from the University of Development Studies (UDS), the Medical Superintendent of the War Memorial Hospital (Navrongo), a Representative from the Department of Women's Affairs, a Representative from the Traditional Authority, a Representative from the District Health Management Team (DHMT) and four Representatives from the Institution including the Head who is a non-voting member. All the members of the respective RECs were Ghanaians.

All three RECs did not have legal mandates as entities on their own. However, both the GHS REC and NHRC IRB fall under the autonomous body of the GHS and hence is covered by this overall institution. The NMIMR IRB is covered by the University of Ghana.

With regards to the use of International Guidelines, all three RECs were adhering to certain guidelines in common, with a few differences among them. All three RECs had their SOPs in accordance with the Declaration of Helsinki, the Belmont Report, CIOMS and the ICH GCP guidelines. In addition to these guidelines, the GHS REC also had their SOPs in accordance with WHO and the applicable laws and statutory regulations of Ghana. The NHRC IRB also recognized the CFR as one of its major guidelines.

The quorum requirements for all three RECs were similar, half plus one, the idea being to get a majority of the voting members being present before the commencement of review meetings. The number of meetings per year ranged from 6 to 12. Both the GHS REC and the NMIMR IRB meet about 4 to 6 times in a year, with the NHRC IRB meeting between 10 to 12 times in a year.

The Federal Wide Assurance (FWA) is a document that empowers an IRB to review and oversee a human subject research in compliance with the ethical principles of the Office for Human Research Protections. All non exempt human research that is federally supported by the Human Health Services Department of the United States Government must be reviewed by an REC that has a FWA. The NMIMR and NHRC IRBs both had federal wide assurance, while the GHS REC did not.

All three RECs do not charge for review of protocols. All three depend on their mother Institutions for their day-to-day running activities. There is also the occasional foreign aid.

4.3 Comparison of Operations to International Standards using Checklists for SOPs and Minutes

SOPs

All the three RECs had their own Standard Operating Procedures (SOPs) manual. All the SOPs had been composed and compiled in accordance with some of the International Guidelines like the Declaration of Helsinki (1996), ICH GCP (E6), the Belmont report and Council for International Organizations of Medical Sciences.

Table 1 SOPs CHECKLIST

	GHS IRB	NMIMR IRB	NHRC IRB
INITIAL REVIEW	PRESENT	PRESENT	PRESENT
CONTINUING REVIEW	PRESENT	PRESENT	PRESENT
SCREENING FOR EXEMPTION	ABSENT	ABSENT	ABSENT
NOTIFICATION OF FINAL DECISIONS	PRESENT	PRESENT	PRESENT
IRB REQUIREMENTS	PRESENT	PRESENT	PRESENT
VOTING	ABSENT	ABSENT	ABSENT
NOTIFICATION OF PROTOCOL CHANGES	PRESENT	PRESENT	PRESENT
FREQUENCY OF REVIEW	ABSENT	ABSENT	ABSENT

All three RECs had SOPs for determination of what kind of research will qualify for Full Board Review and Expedited Review. One REC specifically mentioned in its SOPs that it does not grant exemptions from reviews, one had an SOP for what qualifies for exemption, and the remaining REC had no SOP for exemption from review.

With regards to the voting process after the board has finished deliberating on a protocol, only one REC had SOPs specifying about the voting process itself. Here, the SOP specifically mentioned that it is only when a majority votes in favor that a protocol shall be approved. Another mentioned that a consensus was recommended; but voting would only be done if a consensus could not be reached, though the details of how the voting should be done were not given.

Minutes

All three RECs had most of the items on the checklists in their minutes. All three RECs had documented minutes of all meetings held starting from the very first official meeting that had been held. Two of the RECs had templates that they had recently adopted to be used to document their minutes.

MINUTES CHECKLIST RESULTS

Table 2 ATTENDANCE AND VOTING PROCESSES

	GHS REC	NMIMR IRB	NHRC IRB
ATTENDANCE AT THE MEETINGS	PRESENT	PRESENT	PRESENT
VOTING PROCESS	ABSENT	ABSENT	INITIALLY PRESENT BUT STOPPED
CONFLICTS OF INTERESTS	ABSENT	ABSENT	PRESENT

MINUTES CHECKLIST RESULTS

Table 3 MEETING PROCEDURES

	GHS REC	NMIMR IRB	NHRC IRB
SELECTION OF SUBJECTS	PRESENT	PRESENT	PRESENT
REASONS FOR DISAPPROVING OR REQUESTING FOR CHANGES	PRESENT	PRESENT	PRESENT
INFORMED CONSENT	PRESENT	PRESENT	PRESENT
CONFIDENTIALITY	ABSENT	ABSENT	ABSENT
SUMMARY OF CONTROVERSIAL ISSUES AND HOW THEY WERE RESOLVED	PRESENT	PRESENT	PRESENT
DETERMINATION OF THE LEVEL OF RISKS AND THE ANTICIPATED BENEFITS	PRESENT	PRESENT	PRESENT

All the minutes started with the list of members present, and those absent with or without permission. However, names of members with conflicts of interest were never listed with this group. All minutes of the three RECs had evidence of documentation of assessment that there is a fair selection of subjects, reasons for disapproving or requesting for changes in certain research, and documentation about changes or modifications to be made to an informed consent during the meeting. Some of the issues regarding the assessment of a fair selection of subjects included why a certain age gap was being targeted for as participants, why people from certain locations were chosen, for example, rural as opposed to urban among other issues. The minutes of the meetings of all three RECs had evidence of the members being concerned not only about the fair selection of subjects, but also showed a huge interest in the sample size. Recommended modifications by the members concerning the informed consent forms included translation issues and technicalities of the language, the voluminous nature of the informed consent documents, inclusion of the contact of the REC chairman for the potential participants, and the amount of compensation to be given to the participants. All three RECs had documented evidence of a summary of the discussion on controversial issues that arose during the meeting and how they `were resolved. There was evidence of Principal Investigators on potential studies being invited to throw more light on areas where the members were not clear on, after which they were asked to leave the room for the members to deliberate. There was also documented evidence of determination of the level of risk with respect to the anticipated benefits for all three RECs, for example, why a certain amount of blood was being drawn from the participants, especially with respect to children.

Regarding deliberations on whether the confidentiality of the participants will be appropriately secured, all three RECs had some minutes that mentioned discussions on confidentiality though

these discussions were not documented into detail. The minutes of the first few meetings of the NHRC IRB had documented evidence of their voting process, how many voted for, how many voted against, and how many abstained. However, there was no documented evidence regarding the voting details for subsequent meetings. The remaining two RECs had no documented evidence of their voting procedures in their minutes. The NHRC IRB minutes had evidence of members with declared conflicts of interest leaving the room during the review and voting processes.

4.4 Survey of Investigators' Opinions

In all, a total of 29 investigators affiliated with the Ghana Health Service, the NHRC and the NMIMR were surveyed. 75.9% (22/29) of the questionnaires for the investigators was self-administered whereas the remainder 24.1% (7/29) was done as telephone interviews.

All the ten investigators from the NMIMR interviewed were of the view that the bimonthly meetings of the NMIMR IRB were adequate and had no issues with it. However, the investigators using the services of the NHRC IRB and the GHS REC were practically equally divided where the meeting schedules were concerned, the main issue being that the Committee should be meeting more often than they are now. All the ten investigators using the services of the NMIMR IRB, as well as majority of the investigators using the GHS REC and NHRC IRB (63.6% and 87.5% respectively) were convinced the submissions criteria of the Committees were justified, since they agreed that the Committees were acting in accordance with international guidelines. 84.6% (11/13) of the investigators using the GHS REC were of the view that the REC was passive where their involvement in ongoing studies and or studies they have been involved in is concerned. 40% (4/10) of the NMIMR investigators interviewed thought the Committee was passive where involvement in studies they had done was concerned, whereas 50% (3/6) of the investigators from NHRC thought the REC was neither active nor passive in their previous studies. 90% (9/10) of the investigators from NMIMR thought the response time of the Committee to their study protocols was good. About a third, 36.4% of the Investigators using the services of the GHS REC thought the response time was poor, another third thought it was average with a minority saying it was fair. 33.3% (2/6) of the investigators from the NHRC thought the response time of the Committee was good, with the rest fairly divided between fair, average and very good. Concerns about administrative

constraints came from between 80-84% of the investigators. Other concerns were mainly on the issue of lack of post approval monitoring and continuous public education about their existence and role in research, and very little emphasis on community entry issues. With respect to the need for a national REC, the responses were almost evenly divided. 46.2% (6/13) of the investigators using the services of the GHS REC graded the Committee's overall performance as average, about 80% (8/10) of the NMIMR investigators graded the performance as good and about 66.7% (4/6) of the NHRC investigators graded the Committee's performance as average to good.

Figure 1 depicts a majority of Ghanaian Investigators surveyed voting that there is the need for a national REC.

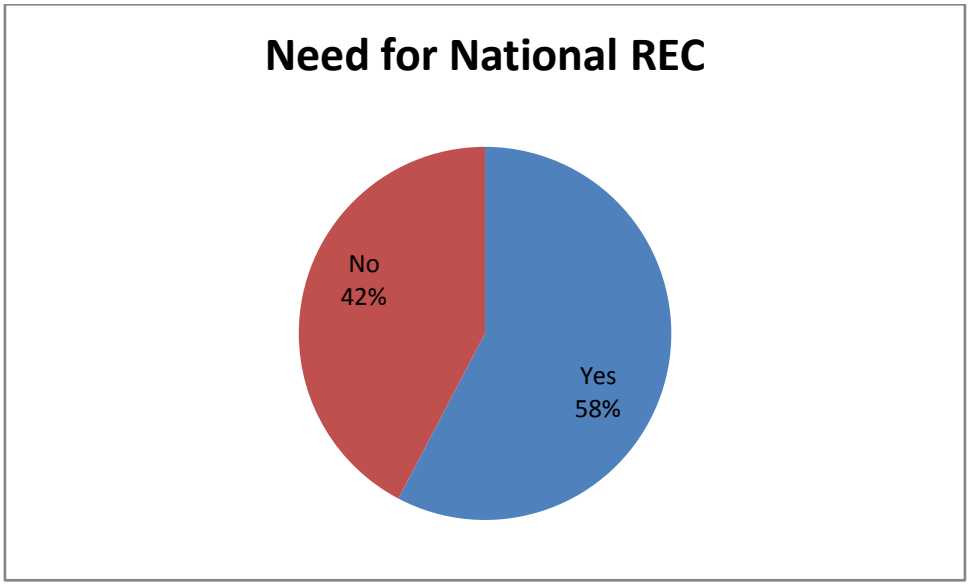

Figure 1: INVESTIGATORS'OPINIONS ON THE NEED FOR A NATIONAL REC

CHAPTER FIVE

DISCUSSION

5.1 History

Both the NMIMR and the NHRC IRBs were established in the year 2000. The GHS REC was created three years later in 2003. The NMIMR and the NHRC IRBs were both established at the time because a collaborating sponsor that both centers had in common was insistent that the research centers get ethical approval from a local REC before the study could proceed. This is in line with the finding that the reason why the first local ethics committees in Africa were created was due to the fact that the collaborating Western countries insisted on appropriate ethical review boards before the release of funds for medical research involving human participants (Rwabihama *et al.*, 2010). RECs suddenly started springing up at a very fast rate in Canada in the late 1990s when the Canadian Council for Medical Research made it obligatory and insisted subsidies will only be released for ethically approved protocols (Rwabihama *et al.*, 2010). Prior to the establishment of both the NMIMR and NHRC IRBs, an ad hoc system had been put in place that dealt with the scientific and ethical merits of potential studies. This is in line with what the WHO found in a study done on research committees in the African region (Kirigia *et al.*, 2005), where 80% of the ten countries that did not have RECs had in place some kind of ad hoc system that was responsible for reviewing protocols to assess both their scientific soundness and ethical acceptability.

The GHS REC was established as a result of recognition of the increasing need for an REC in the country. This is similar to what Kass et al found that 10 out of 12 RECs studied across Africa were established on account of the fact that there was the need to create an REC, as

opposed to the remaining 2 that were formed as a result of international collaboration (Kass *et al.*, 2007)

5.2 Modes of Operations

Membership and Composition

RECs are meant to be the "conscience" of the scientific community worldwide, whereby they ensure that all research involving human participants are done bearing the four basic ethical principles (Autonomy, Beneficence, Non-Maleficence and Justice) in mind. In order to achieve this, the composition of members of the REC should be wide enough to cover most if not all the necessary expertise that will be required to review these protocols. The number of members on the Committees ranged from 10-12. This is in keeping with what has been found in previous studies that the range of members on most of the African RECs is between 3 and 21 with an average of 11 (Nyika *et al.*, 2009). WHO also found out in a study done on RECs in the African region that the average range of members on the national RECs was between 4 and 37 with an average membership of 11 (Kirigia *et al.*, 2005). All three RECs had a broad range of expertise on their Committees. Kass et al found that most RECs in Africa had Clinicians, Pastors, Lawyers, Nutritionists, and Social Scientists on their Committees (Kass *et al.*, 2007). Another study also revealed the average number of members to be 10.3, composed of Physicians, Pharmacists, Scientists and Lawyers, and Community Representatives in the form of Journalists, Ethicist, and a Religious Leader (Sleem *et al.*, 2010). However, this revelation was an improvement on what the WHO study found that there was an obvious absence of ethicists, nurses and the appropriate qualified laymen (Kirigia *et al.*, 2005). All of the RECs bore gender balance in mind in the choosing of their prospective members, and eventually, both men and

women were fairly represented even though the scales were tilted towards the male gender. Perhaps this could be attributed to the fact that until recently the field of science has always been a male dominated area in Africa. This corroborates the findings in a case study of a South African REC which showed it to be composed of 23 members, seventeen of whom were male, even though there were no African females on the Committee (Dada and Moorad, 2001). Another study done in Europe revealed that all the RECs surveyed consciously took women into account in the acquisition of new members resulting in the presence of female members on all the Committees (Moerman *et al.*, 2007). In recent times, the recurrent theme in most discussions in bioethics revolves around issues concerning women and the problems they face, be it the babies they could be carrying or the female body in its entirety (Dickenson, 2006). Hence, there is the urgent need that women be proportionately represented on these very RECs to be assured of their interests being appreciably being brought to light. Who better to represent these women than fellow females?

Guidelines

All three RECs had based their SOPs on International guidelines like the Declaration of Helsinki, ICH GCP Guidelines, the Belmont Report, and CIOMS. The adoption of these International guidelines by these RECs assures an element of Standardization to a certain extent where their structure and functions are concerned. However, Ghana currently has no national research ethical guidelines, and a national guideline that would incorporate our cultural settings into it would be even better to assure some kind of standardization and uniformity for the Ghanaian RECs.

Quorum Requirements

A quorum is necessary because an REC meeting can only be convened when the quorum requirement has been met. The NIH (Multiple Project Assurance) defines a quorum as a majority of the voting members being present including at least one member whose primary area of interest is nonscientific (NIH, 2006). All three RECs had quorum requirements before a meeting for reviews could be held. These quorum requirements of these 3 RECs are also in keeping with WHO recommendations that all RECs should have a quorum requirement before reviewing on a protocol. One of the challenges with the quorum requirement was the issue of inability to meet these requirements at times, and therefore resulting in the meeting having to be postponed. This was usually due to the extremely busy schedules of the Committee members and as such most of them not being able to make it to the meetings.

Federal Wide Assurance

Two of the three RECs had Federal Wide Assurances (FWAs) from the United States government, implying that these two had done research collaborations with US institutions or received grants from the US government. A similar study had found 6 out of 12 RECs on the African continent to have FWAs (Kass *et al.*, 2007). With the increasing rate of international collaborations involving Ghanaian investigators, it is expected that many more RECs in the country would be gaining FWAs. However, perhaps there is the urgent need for a global Quality Assurance system to be put in place. This would help ensure standardization in research practices worldwide.

Source of Funding

None of the RECs assessed were charging for their services. Mostly, these RECs depend on their mother institutions for the day to day running. This in a way could be conceived as interfering with the independent nature of the Committee, as most of the protocols reviewed by members of the Committee come directly from their mother institutions. On the other hand, RECs charging for reviews could serve as a source of income for them. A South African REC charges $ 350 for the review of protocols of sponsored drug trials, regardless of the outcome of the review. The money from these charges are then used for the upkeep and running of the REC secretariat like the purchase of electronic appliances and furniture among others (Dada and Moorad, 2001).

5.3 Comparison of operations to International Standards

SOPs

Although all of the three RECs had SOPs, some of these SOPs needed revision and new ones needed to be made for some aspects. A major shortfall was the SOP on voting, since all three RECs did not have specific details on exactly how the voting was to be done after a review. A recent study done on RECs in Africa revealed that of the 12 RECs surveyed, two of them did not have SOPs (Kass *et al.*, 2007). Due to the increasing rate of research on the African continent, accompanied by the proliferation of RECs, it has perhaps become vital that the existing RECs try to keep up with international requirements.

Minutes

All three RECs had documentation of minutes of all the meetings held. A previous study done also revealed that of 12 RECs in Africa, 11 of them had documentation of minutes (Kass *et al.*, 2007). The major shortfall for all three was in the area of documentation of the voting process, with regards to how many voted for, how many voted against, and how many abstained.

Another shortfall was on the issue of assurance of confidentiality of the subjects. Very few of the minutes had documented evidence on deliberations on how the confidentiality of the subjects could be protected. From the minutes, it was evident that only problematic areas of the protocols were discussed and deliberated on during the review meetings. However, the Office for Human Research Protections (OHRP) recommends several area topics that must be covered and evidenced in the minutes during the discussion by the Committee. These topics include the Scientific design, Risks / Benefits, Subject selection, additional safeguards for vulnerable subjects, Privacy and confidentiality, Consent document and additional considerations (NIH, 2006). Hence, the appropriate practice would be for all the various aspects that need to be deliberated on to be raised and minutes taken even if the reviewers are content with it as it is in the protocol.

5.4 Challenges faced by the RECs

Regarding the challenges being faced by the RECs, the feedback was the same for all three RECs. These included lack of finances, inadequate training, and lack of office and storage space. One of the Administrators of the RECs mentioned that they have had to discard some of their documents due to lack of storage space. All these challenges sound very familiar as several studies across Africa and even from the developed world recount these issues as the

challenges being faced by their RECs. Commonly mentioned challenges in these studies include lack of office equipment, lack of electronic data management systems, and inadequate expertise on the committees (Nyika *et al.*, 2009). Another study also found challenges to include lack of continuous training for the REC members, and lack of national research ethics guidelines (Sleem *et al.*, 2010). All of these challenges basically result from lack of money. Budget constraints being common to all 3 RECs is not a foreign issue as was found in a similar study that involved 12 RECs in Africa (Kass *et al.*, 2007). Inasmuch as these constraints are not only specific to RECs on the African continent, the issue of conflict of interests for the members is even more alarming here on account of numerous compounding factors, like high level of illiteracy, refusal of the government to allot a more appreciable piece of the national cake to health research, and the need for more jobs. All these issues go a long way in influencing not only the desired independent status of these RECs, but also how these Committees are run.

5.5 Survey of Investigators

Satisfaction of Investigators, research staff, and sponsors with the RECs they use is one of the key indicators of REC effectiveness (Emanuel *et al.*, 2008). With regards to the opinions of Ghanaian Investigators on the RECs they use, the general consensus was that the RECs could do far better. The major shortfall where Ghanaian Investigators are concerned with was in the area of Administration. It must be remembered that the work of an REC not only depends on the reviewers, but also on how well the REC secretariat is run. The running and functioning of the Secretariat also hinges solely on the Administrative capacity (Rwabihama *et al.*, 2010). Inasmuch as all the RECs had office set ups being run by administrative personnel, there was the recurrent concern that the personnel seemed overburdened by the work. The responses of

the investigators regarding the response time of the Committee concerning approvals, rejections and need for modifications, were varied, but overall, the general consensus was that the response time should be improved upon and made shorter, and this is in line with what a similar study showed that some researchers were also of the view that the RECs sometimes cause unnecessary or avoidable delays for their research (Paul, 2000). There was a similar criticism of an African REC about the delay between submission of protocols and the final response of the REC and some of the reasons found for this delay included delays on the part of the investigators in responding to queries from the REC, as well as delays from the REC members in their responses (Dada and Moorad, 2001). Perhaps, the inadequate administrative aspects of the RECs resulted in the poor impressions the investigators had with respect to the response time of the Committees.

Another major concern for the investigators was the involvement of the RECs in ongoing or previous studies. A majority thought the Committees' involvement in their studies were practically non-existent. This issue of lack of or inadequate monitoring capabilities definitely stems from budget constraints and goes to corroborate what was found in a similar study (Oyibo *et al.*, 2008).

Response to SAEs on the part of the RECs was also another concern the investigators thought the RECs should work on. These investigators were of the view that since the Committees insist on being alerted officially of every single SAE, they deserve some kind of response from the Committees. Suggestions regarding responses they expect included the statistics the Committee had received for the various categories of SAEs so far and recommendations on the modes of management of the reported SAEs. At least a response to the effect that the Committee is receiving and monitoring all the SAEs being sent to them would be reassuring.

Again, the inability of the Committees to respond to SAEs can be traced to inadequate funds, and possibly inadequate human resource and expertise.

The need for a national REC seemed to generate a bit of debate, but generally, the final opinion was tilted more towards the affirmative. For those belonging to the school of thought that there is no need for a national REC, the main concern was that first of all, a national REC will be very much overwhelmed, and also bring about bottlenecks, as well as cause even more delays in the research system. The other school of thought was of the view that the national REC could serve as a form of regulatory body that would have oversight responsibilities like accreditation, provision and revision of national guidelines, and the organization of training for the local RECs, and not necessarily deal in the review of protocols. This would be similar to the South African research System where the National Health Research Ethics Council (NHREC) serves a form of oversight and disciplinary body for the local RECs as well as for the research community in general (Department of Health, 2007, Moodley and L., 2007)

5.6 Strengths & Weaknesses of the study

Strengths

There was a high response rate from the investigators and a 100% response rate from the Administrators.

Weaknesses

This study describes only 3 RECs in Ghana. The selection of only three RECs constitutes a weakness since ideally the survey should have covered all the RECs in Ghana. Hence, the results of this study may not represent all the RECs in Ghana, or speak for the overall ethical framework in the country.

The study could not interview all the people who contributed in various ways to the formation and history of the RECs, since some were unavailable or retired.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Recommendations

The RECs should employ more hands and train them so they can help out with the administrative work, this could help reduce the burden on the administrators resulting in more efficiency and a reduction in turnaround time.

All aspects of the protocol should be raised and discussed during a review meeting regardless of whether any of the aspects meet the expectations of the reviewers or not. This would result in the documentation of comprehensive minutes.

SOPs must be done to cover all possible aspects of medical research and revised at regular intervals to keep up with the ever-growing demands and expectations of the research world, and international standards.

There is the need for national ethical guidelines to be compiled bearing the Ghanaian culture in mind. This would serve as a form of standardization tool for all the RECs, as well as serve as a guide for all Ghanaian researchers.

Instead of a national REC, a body can be set up that could serve as an umbrella for all the RECs in the country. This body could be in charge of accreditation of all RECs and serve the function of a go-to REC only when the local RECs cannot handle a case or a research team is unsatisfied with the final decision of a local REC.

Many of the RECs in the country nominate very experienced high profile persons onto their boards. Although this practice is laudable, the inevitable result is that many a time, these people

tend to have extremely busy schedules and as such are easily overwhelmed and are unable to thoroughly prepare for meetings or are unable to make it to the meetings at all. As a recommendation, the members could review the protocols in their own time, type out their views and comments and send them to the IRB Administrator. In this event, the Chairman and the Vice Chair could easily collate and review the results without having to have the entire board to physically convene all the time.

6.2 Conclusions

In conclusion, the three RECs involved in this study are comparable to what other similar studies have revealed other RECs on the African continent to be. With the ever increasing burden of disease on our continent, and increasing interest of international collaborators in conducting research here, as well as the insistence of most international journals on ethically approved protocols, it behooves on these RECs to try and keep up with the recognized international standards.

It must also be borne in mind that since there is a high level of illiteracy and unemployment on our continent; it makes the African human participant even more vulnerable to exploitation. In this light, the RECs must be able to maintain and sustain their integrity in order to be able to protect these participants.

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APPENDICES

Title: A comparative analysis of the development of Ethics committees in the University of Ghana and the Ghana Health Service

Checklist for Minutes

1. Attendance at the meetings :

(1) List of regular members present

(2) List of primary members absent with replacing alternates if any

(3) Those who declared conflicts of Interest

2. Documentation of assessment that there is a fair selection of subjects

3. The reasons for disapproving or requesting for changes in certain research

4. Documentation about changes or modifications to be made to an Informed consent during meetings

5. Deliberations on whether the confidentiality of the participants will be appropriately secured

6. A written summary of the discussion on controversial issues that arose during the meeting and how they were resolved.

7. Determination of the level of risk (significant or non significant), with respect to the anticipated benefits.

8. With regards to the voting process, it should be indicated the number that voted for, the number that voted against, the number that abstained, and the number that recused themselves, with reasons.

9. Indication of whether members with declared conflicts of interest left the room during the voting process.

10. Indication of how long the approval of that particular study is to last for.

Title: A comparative analysis of the development of Ethics committees in the University of Ghana and the Ghana Health Service

SOPs checklist

1. Procedures for initial review of research
2. Procedures for continuing review of research
3. Procedures for determinations of what kind of review will be applied to what kind of research, and which ones qualify for exemption
4. Procedures for notification of final decisions to relevant parties
5. Procedures on the requirements IRBs expect from the Sponsors and Investigators from the start of the trial to its completion
6. Procedures on voting
7. Procedures for ensuring that any changes made in an approved protocol is immediately reported to the IRB, and that these potential changes may be put into effect only after it has been given approval by the IRB
8. Procedures in place to determine which research would need to be reviewed more often than annually

Title: A comparative analysis of the development of Ethics committees in the University of Ghana and the Ghana Health Service

QUESTIONNAIRE

Administrator

1. When was the Committee set up?
2. Reason for its set up

(1) An atrocity involving human participants

(2) Your mother Institution initiated the set up

(3) It was a requirement by a collaborating potential research partner

(4) It was passed as a law

(5) Other

3. How many members were on the first Committee set up?
4. What was the Male – Female ratio in the first Committee?
5. What were the backgrounds of these members?

(1) Lawyer

(2) Medical Officer

(3) Priest / Pastor / Reverend Father

(4) Community Representative

(5) Other

6. How many members are currently on the team?
7. What is the male – female ratio of the current members?
8. What are the backgrounds of these current members?

(1) Lawyer

(2) Medical Officer

(3) Priest / Pastor/ Reverend Father

(4) Community Representative

(5) Other

9. Does the Committee have a legal mandate?

10. Does the Committee have its own set of guidelines or it adheres to a particular recognized source? If so, which one?

11. Do you have a quorum requirement for your meetings? If yes, what is the requirement?

12. How often does the committee meet in a year?

13. On the average, how many new projects does the Committee review at each meeting?

14. Does the Committee have Federal Wide Assurance (FWA)? If yes, when was it attained?

15. What is the source of funding for the Committee?

16. How much do you charge per protocol?

17. What are some of the challenges the Committee has been facing?

(1) Lack of finances

(2) Inadequate training

(3) Inadequate human resources

(4) Members not keeping up with the workload

(5) Other

Title: A comparative analysis of the development of Ethics committees in the University of Ghana and the Ghana Health Service

QUESTIONNAIRE (This questionnaire applies only to the Ethics Committee / IRB you use)

Investigators and Members of Staff

1. Are you satisfied with the accessibility to the Committee's calendar or schedule for their meeting days?

(1) Yes

(2) No

2. Do you think the criteria for submissions to the Committee is

(1) Excessive

(2) Justified

(3) Misplaced

3. Response time of the Committee where approvals / rejections / need for modifications are concerned

(1) Poor

(2) Fair

(3) Average

(4) Good

(5) Very good

4. What is your opinion on how the Committee interacts with Investigators where modifications pending protocol approvals is concerned?

(1) Fair

(2) Too long a process with a lot of back and forth

(3) Justified

5. How do you see the involvement of the Research Ethics Committee in ongoing trials or studies you have been involved in?

(1) Passive

(2) Active

(3) Not too Passive, not too Active

6. How would you grade the overall performance of the Research Ethics Committee?

(1) Poor

(2) Fair

(3) Average

(4) Good

(5) Very good

7. Which area(s) of the Research Ethics Committee would you like to see an improvement in capacity?

(1) Scientific validity aspect of submitted protocols

(2) Informed consent aspects of the protocol

(3) Response to Serious Adverse Events

(4) Administrative aspects

(5) Other

8. Do you think there is the need for a national REC?

(1) Yes; If Yes, could you explain your reasons?

(2) No; If No, could you explain your reasons?