

KEMRI
BIOETHICS
REVIEW

Vol III, Issue IV - Sept-Dec 2013



Ethics of
Electronic Health
Research

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Editor in Chief:

Dr. Elizabeth Bukusi

Production Editor:

Mr. Timothy Kiplagat

Editors

Ms. Everlyne Ombati

Dr. Charles Obonyo

Dr. Sera Gitome

Dr. Stella Njuguna

Design/layout:

Timothy Kiplagat.

For questions and queries write to:
The KEMRI Bioethics Review
ADILI-The KEMRI Bioethics Center
P.O. Box 54840-00200
Nairobi, Kenya
Email: bioethics@kemri.org

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CALL FOR ARTICLES

KEMRI bioethics review is a quarterly electronic Newsletter produced by the ADILI Task force and posted on www.kemri.org. The newsletter aims to; inform, educate, entertain, and stimulate discussion on prevailing issues related to research and ethics.

THE THEME FOR THE JANUARY- MARCH 2014 ISSUE IS AUTHORSHIP ETHICS

Authorship of research papers is associated with a range of problems, not least the ethical questions about the use of explicit, transparent criteria for authorship and issues of inappropriately assigned authorship. Authorship credit has been traditionally determined by politics, whereby those with power and status decide who receives the credit. Naming authors on a Scientific paper ensures that the appropriate individuals get credit, and are accountable, for the research. Deliberately misrepresenting a scientist's relationship to their work is considered to be a form of misconduct that undermines confidence in the reporting of the work itself.

Scientists are requested to contribute an article of on ethical issues surrounding AUTHORSHIP, Please consider writing from the following topics and any other relevant areas under authorship

1. The Roles authors and Contributors
2. Author Responsibilities- conflict of interest
3. Responsibilities in the submission and peer review process

Format Guidelines: Articles should be between 2-4 pages single space; pictures/graphics are also encouraged.

Articles should be submitted by 28th February 2014 to bioethics@kemri.org

Letter from the Chief Editor

Dr Elizabeth Bukusi
Editor in Chief

It is my pleasure to introduce to you the final issue of this year. The theme of this quarter focuses on ethical issues in electronic research; we also feature articles on the new bioethics society and a glimpse of the NIH regulatory system. Kenyan society has witnessed rapid changes in the way it communicates thanks to the advancing technology. This increased use and accessibility of tools such as smart phones and the internet has led to a mushrooming of Kenyan cyber communities especially on social media interacting with much ease.

With electronic devices being integrated in most aspects of our daily activities, the research community has not been left behind. Using technology, researchers can now collect data from widely dispersed populations at relatively low cost and in less time than similar efforts in the field. Consequently, an increasing number of studies, ranging from surveys to observation and intervention are utilizing available electronic media to conduct health research.

Electronic Research (E- Research) re-introduces a focus on ethical issues such as: data privacy, data integrity and confidentiality. Many IRBs/ERCs worldwide have raised concern over subject privacy in terms of the level of link-ability of data to individuals, and the potential harm that inappropriate or inadvertent disclosure of information could pose. The rapid growth of technology has proved to be a major challenge to many institutions; tailored guidelines need to be crafted to protect subject privacy. A good example is the fact that researchers could easily collect detailed identifiable data about individuals from sources such as Mobile phones, Facebook, Twitter, blogs or public email archives with ease and minimum supervision.

As health and communication stakeholders endeavor to develop formal regulatory guidelines on ethics in electronic research, researchers must in the meantime ensure that electronic methods do not put participants in any avoidable risk through breach of privacy and loss of confidentiality. This can be achieved through a combination of research tactics and practices, including engaging in data collection under controlled or anonymous environments, the scrubbing of data to remove personally identifiable information, or the use of access restrictions and related data security methods.

As we commemorate 50 years of Kenya's independence i wish you a happy jubilee, a merry Christmas and peace and prosperity for the year 2014.

Dr Elizabeth Bukusi, MBChB, M.Med (ObGyne)
MPH, PhD, PGD (Research Ethics)
DDRT, KEMRI

Word from the Director KEMRI | *Solomon Mpoke, PhD, MBS*



on a Networked Environment further emphasizes that appropriate limits should be set on the type and amount of information collected, used, and disclosed, and that authorized persons and entities should only collect, use,

“ we hope to engage more with the regulators and other relevant government departments to ensure beneficial, safe and responsible integration of technology in medical research involving human participants”

and disclose information necessary to accomplish a specified purpose.

The use of mobile phones or other electronic media is a new increasingly common channel of conducting research. However, without more strict government regulations and vigilance by the community, the current digital age is likely to create headlines regarding cases of possible breach of privacy. Researchers must avoid breach of privacy at all times by maintaining professional and ethical standards when using electronic devices in any aspect of their research. This is notwithstanding that despite its influence on ethical issues, technology itself does not determine ethical conduct in research.

Advances in technology should facilitate researchers realize the broad mission of improving human health without compromising the wellbeing of participants.

In this regard, we hope to engage more with the regulators and other relevant government departments to ensure beneficial, safe and responsible integration of technology in medical research involving human participants, while at the same time promoting personal and social value judgments that provide solutions to many other health challenges.

The use of Computers and advances in information technology has made research easy in many ways but also raised challenges in research ethics.

These challenges include concerns of privacy, confidentiality and security. Privacy is the ability of a participant to control information about himself/ herself. A breach of privacy occurs if certain information that a participant would not wish divulged is exposed. Confidentiality is the commitment of another person or organization to the participant to control information about that participant. A breach of confidentiality occurs if information collected by researchers is exposed to other parties for whom it is not intended. Preserving privacy and confidentiality through appropriate security is one of the key challenges in electronic health research.

The privacy rule under the Health Insurance Portability and Accountability Act (HIPAA) provides protection for individually identifiable health information held by covered entities and their business associates, and gives patients an array of rights with respect to that information. At the same time, the Privacy Rule is balanced so that it permits the disclosure of health information needed for patient care and other important purposes like research.

The HIPAA Privacy Rule and Electronic Health Information

Privacy and Confidentiality Considerations in mHealth Research

By Dr Thomas A. Odeny, MBChB, MPH-KEMRI Research Scientist,
Fogarty International Clinical Research fellow.

“What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account must be spread abroad, I will keep to myself, holding such things shameful to be spoken about.” – Oath of Hippocrates¹

Mobile phone access in Kenya continues to expand rapidly. By March 2013, there were 29.8 million mobile phone connections in Kenya representing 75.8% of the population, up from 26.9 million in March 2012.² This rapid increase in mobile telephone connections in Kenya presents an affordable and far-reaching avenue to improve health outcomes. Interventions delivered via mobile phone technology (mHealth) have been found to be acceptable and efficient in supporting medical interventions.³⁻⁹ For example, telephone reminders and text messages have led to increased clinic attendance for outpatients in developed and newly-industrialized countries,⁵⁻⁹ and are acceptable for use as reminders for clinic return.^{10, 11} With the exponential increase in the number of mobile phone connections in sub-Saharan Africa, the use of mobile phone technology to strengthen HIV programs has been a promising strategy. It is supported by both patients and providers,¹² might result in cost savings,¹³ improves clinic return among men,¹⁴ and has been successful in reducing the time between sample collection for infant HIV testing and result notification.¹⁵ Furthermore, text messages sent using the



short messaging service (SMS) are successful in improving adherence to antiretroviral treatment and achieving HIV viral suppression.^{16, 17}

These exciting opportunities afforded by mHealth interventions are attended by emerging ethical considerations that researchers, practitioners, and institutional review boards need to consider. Ethical questions that may arise in mHealth research have been highlighted in the medical literature.¹⁸ This article highlights the potential risks that mHealth research may pose to participant privacy and confidentiality, with reference to studies conducted in Kenya by our research group and others.

As with traditional research, mHealth studies are subject to some amount of risk to participants. At a minimum, there exists the possibility for breach of confidentiality. Adverse social value or direct harm can be encountered if participant privacy and confidentiality cannot be protected. For example, when delivering interventions via mobile phones, it is common to record a participant's mobile phone number for future communication with the study subject. Participant anonymity may be compromised since the phone numbers to which messages are sent are essentially personal identifiers. For this reason, researchers involved in mHealth studies should avoid sending any sensitive personal health information via mobile phones. In qualitative work done by our group in Kisumu regarding text messaging content to promote infant HIV testing, one participant was quoted saying, *“I believe that an SMS... can land anywhere... A message has no secret so if I receive a text message stating, ‘you are HIV positive kindly come for testing’, that may demoralize me and I may faint, because that is my*

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status which I wouldn't have wanted to share with another person." – 27 year old participant (antenatal clinic)

The Kenyan Parliament recently enacted legislation requiring registration of all SIM cards. The effect of these new laws is that any form of mobile phone communication can potentially be directly linked to the phone's owner. Whereas these regulations have reportedly been useful in curtailing crime, they pose a challenge with regard to maintaining anonymity of mHealth research subjects. Any personal health information exchanged via this medium could potentially be linked back to the sender/recipient. With the enactment of these regulations, mHealth researchers will find it difficult to assure study participants about protection of their privacy. The government should consider enacting legislation that would not only enable law enforcement agencies to access mobile phone information to fight crime, but also limit the ability of these agencies to access or share personal health information.

Privacy is culturally and contextually sensitive. In our experience, designing mHealth interventions that maximize protection of participant privacy and confidentiality requires involvement of the local community ab initio. For example, interventions that use text messages aimed at health behaviour change should consider formative research with potential recipients to craft message content. In one study (involving use of text messaging to improve maternal postpartum clinic attendance in Kisumu), researchers used focus group discussions with potential participants to generate the message content, revise it for clarity, determine the frequency, and even to translate the messages into local languages to ensure that intended meanings were not lost in translation.¹⁹

In the same context of privacy, there always exists the potential for exposing a participant's personal information to others when phones are shared, say between spouses, or parents and their children. In our ongoing studies on the effect of text messages to improve maternal clinic attendance among HIV-infected women in the high HIV prevalence Nyanza region, potential participants who report sharing phones are only enrolled if they have disclosed their HIV status to the person with whom the phone is shared. In addition, our formative qualitative studies have also revealed that male part-

ner involvement may determine women's ability to decide on matters of their health and that of their children. Going forward, our mHealth research teams will be adapting our interventions in ways that support the involvement of male partners, while being sensitive to the reality that HIV positive women may be at risk of domestic violence. Women who report not having disclosed their HIV status will be offered referral to a nurse-counsellor on site for counselling on assisted disclosure. Men who accompany their partners to the clinic will also be educated about the SMS messages and their content. In mHealth studies where children are involved, researchers and ethical review committees would need to ensure protection of privacy by requiring and enforcing parental consent, potentially by collaborating with mobile phone service providers.

Finally, mHealth research interventions should be subjected to the same level of security requirements as other forms of electronic technology for health. For example, data encryption on devices has been used by some researchers so that only the intended message recipients can access data using a decryption key. In a pilot study of a daily SMS survey of sexual behaviour among Kenyan HIV discordant couples in Thika,²⁰ Curran and colleagues required participants to send a confirmatory unique secret password before receiving sensitive questions about their sexual activity. In this setting, they improved accuracy of collected information by ensuring the privacy and confidentiality of participants.²¹ Similar to other personal health information, data collected using mobile technology should be de-identified to the greatest extent possible, and destroyed when no longer needed for research. Secure physical and mobile-based storage, restricted access, and other technical and organizational security measures should apply to mHealth interventions. For example, phones or mobile tablets used to store or send personal health information should be password-protected, securely stored and accessed only by authorized personnel. Generally, mHealth devices should be subject to the same technical and security arrangements that apply for computers containing personal health information.

Research institutions should actively engage
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with other stakeholders in the mHealth space to address these and other emerging ethical issues. Such stakeholders would include regulatory agencies such as the Communications Commission of Kenya, national and county-level legislators, mobile phone service providers, mobile application developers, mobile device manufacturers, health care providers, patients, and other potential recipients of mHealth interventions. This would lead to a more inclusive, safer, and sustainable approach to applying emerging mobile technologies to improve health outcomes. The words of Hippocrates ring true in this regard, as they did centuries ago: *“What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account must be spread abroad, I will keep to myself, holding such things shameful to be spoken about.” – Oath of Hippocrates!*

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The Development of Bioethics in Kenya

Dr Langat is the head of health sciences department at the NACOSTI.

National commission for science, technology and innovation (NACOSTI) hosts the National bioethics council (NBC) which develops guidelines and accredits Institutional Ethics Review Committees. NBC also provides policy and top level advice on bioethical issues in Kenya.

The vision of a group of ethicists to have a vibrant bioethics association that will reinvigorate ethical debates in Kenya is not far from being realized. The vice Chair of the Bioethics Society of Kenya, Dr Langat, was speaking during his presentation at the 53rd KASH seminar held at KEMRI. He said that “the ever changing society and growing complexity of the medical and health sector culminated in the birth of the Bioethics Society of Kenya”. Experts with interests in bioethics, drawn from different fields and institutions teamed up to form this association in October 2012.

In his presentation, Dr Langat said that the Bioethics society of Kenya is a non-profit making association which aims to promote ethics in the life sciences and facilitate forums for regular meetings to improve communication and awareness in bioethics. Membership is open to all with a membership fee on joining

and annual renewal fee. This association shall also promote and build capacity in bioethics within Kenya. According to Dr Langat, the foundation for the formation of this association was the new knowledge that raises new questions, tensions, arguments and alternatives.

“Just like in the practice of the law, where new laws are continuously formulated for unprecedented crimes, in bioethics we continually encounter incidences that have never been seen before; Through this society, we hope to shorten the time between the emergence of these new ethical issues and the time when we come up with solutions”

Dr Langat outlined the initial planned activities which included: membership and popularization drive, presentations at different

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Dr Langat During his presentation at KEMRI Training Center

institutions and the first general assembly (annual meeting). “There is obviously room for growth, we are thinking of organizing a conference to share experiences, we will also establish a journal at the right time. We are reaching to other institutions like the universities and the public through the media.”

The association will also have linkages with PABIN- Pan African Bioethics Initiative and International association for Bioethics

approval. It is only after research has begun that the real risks can be evaluated and the preliminary results used to compute the actual risk/benefit ratio; the ERC can then determine whether approval should be continued or withdrawn.

Before expiry (Approximately 6 weeks) of the approval period, researchers are required to submit a request for continuing review with a duly signed explanatory cover letter, the annual or status report and copies of publications done within the reporting period, each in four copies. All active or open studies must be renewed including:

- a) Ongoing studies with active data collection
- b) study that is closed to accrual but research participants are in the follow-up phase.
- c) A study in which direct contact with study participants is complete but data analysis, report writing or manuscript preparation are the only ongoing activities.
- d) A proposed study that has not been initiated within twelve (12) months from the date of ethical approval provided that valid reasons for not undertaking the research in the initial approval period have been provided.

Upon receiving the application, the ERC reviews the request at the next available ERC meeting provided that the request was received by the deadline for submission. The ERC review of annual renewal request will take into consideration the criteria used to grant initial approval. The committee gives priority to the actual risk-benefit ratio and well-being of the participants.

If the continuing review does not take place within the timeframe set by the ERC, the research study will automatically expire. The PI should stop all study activities. If a request for renewal is not filed on time for whatever reason, the PI will have to file a protocol violation to accompany a late request

for renewal for that study. The PI is also required to submit a list of research participants for whom the postponement of research would cause harm. The Chairperson in consultation with the ERC members issues an appropriate course of action.

PIs are notified in the outcome of review of their request within five (5) working days of the meeting at which the request was discussed. IRBs have the authority to suspend or terminate approval of research that is



not being conducted in accordance with the ERC's requirements or that has been associated with unexpected serious harm to subjects.

The ERC permits PIs to renew their studies at least once a year as long as the study is ongoing. The researcher is obligated to keep the ERC informed of unexpected findings involving risks and to report any occurrence of serious harm to subjects.

Sources

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2. Institutional Review Board Guidebook chapter 2- Basic IRB review

Bioethics in Bethesda: A glimpse into the NIH's Research Regulation System

By Everlyne Ombati KEMRI-RCTP

Bethesda city is located in one of the affluent leafy suburbs of Maryland, northwest of the American Capital of Washington D. C. Although the leaves are almost all gone as it gets closer to winter, Bethesda is a beautiful city. For the last couple of months, I have made Bethesda my home and the National Institute of Health's (NIH)'s Bioethics department my work place.

I was one of four applicants from developing countries who were selected to take part in the NIH's Institutional Research Board (IRB) internship Program. Over the course of the program I have had an opportunity to observe meetings of several intramural IRBs, attend the NIH human subjects research ethics course, attend IRB training courses and staff meetings, and taken part in various research seminars offered by the Department of Bioethics. The experience here has been highly enriching to say the least.

NIH is the national medical research agency

composed of 27 separate institutes and centers that conduct research in different disciplines of biomedical science. It is one of eight health agencies of the Public Health Service within the U.S. Department of Health and Human Service (DHHS). NIH both conducts its own scientific research through its Intramural Research Program (IRP) and provides research funding to non-NIH research facilities through its Extramural Research Program (ERP).

As an entity of the federal government conducting research involving human subjects, NIH abides by ethical principles of the Belmont Report which were incorporated into Title 45, Code of Federal Regulations, Part 46, Protection of Human Subjects (45 CFR 46) issued by DHHS. When applicable, NIH follows the Food and Drug Administration's (FDA) Guidance for industries (21 CFR 50). Initially the 45 CFR 46 regulations were applicable only when research was supported or conducted by DHHS, but in 1991 45 CFR 46 was revised



NIH Clinical center, Bethesda, Maryland.

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and became the basic policy that now governs all federally sponsored research (referred to as "The Common Rule").

Any research institution that receives U.S. government funds to conduct research involving human participants must abide by federal requirements. The NIH's Human Research Protection Program (HRPP) has a Federal Wide Assurance (FWA) which is its written assurance to DHHS's Officer of Human Research Protection (OHRP), that it will abide by these requirements including the ethical principles of the Belmont Report and the federal regulations for the protection of human subjects (45 CFR 46). All NIH Institutional Review Boards (IRBs) are also registered with OHRP. Since KEMRI conducts some research that is funded by the US government, the KEMRI Ethics Review Committee (ERC) is also registered with the OHRP (IRB00008118) and has a FWA number (FWA 00002066), renewable after every five years.

As an FWA requirement, NIH has developed policies that detail the responsibilities for researchers who conduct, support or collaborate in research involving human subjects, NIH's Institutional Review Boards (IRBs) and the NIH's Office of Human Subjects Research Program (OHSRP). In addition, the NIH's Clinical Center has Medical Administrative Series Policies that govern medical care and the participation of the medical staff in clinical research at the Clinical Center

The NIH's HRPP is made of Institute Centers, IRBs, NIH officials, Researchers and staff who support research involving human subjects. The HRPP is divided into three arms; Governance and Advisory Entities; Regulatory/Compliance arm and Protocol Development Arm. The Governance arm oversees human research protection in the institute, the Regulatory/Compliance arm is the OHSRP which carries out the day to day operations of the HRPP. Among its mandates, Office of Human Subject Research Program(OHSRP) develops and maintains policies for the HRPP and has the sole responsibility of determining research activities that are exempted from the 45 CFR 46 regulations and therefore not reviewed by IRB. The Protocol Development Arm provides protocol development services to investigators including review

of protocols for scientific validity and training of investigators on their roles and responsibilities including Good Clinical Practices (GCP); and establishing quality assurance programs for monitoring clinical trials.

Additionally, the Clinical Center's Office of protocol Services (OPS) supports the NIH HRPP. Among its mandates, OPS maintains a protocol data repository for the IRP and provides consultation services to investigators, IRBs and IC. The office monitors protocols for compliance in conjunction with the IRB Offices and inactivates protocols in the hospital system when a lapse in continuing review occurs.

The NIH Intramural Research Program (IRP) is comprised of intramural programs embedded in 23 of the NIH Institutes and Centers. NIH has 12 IRBs that review and approve research conducted in the Intramural Research Program. The IRBs sometimes review research activities of NIH staff who are involved in extramural research. Research that involves only specimens/data without individually identifiable information, or that meets 45 CFR 46 regulatory exemption criteria and is not FDA-regulated, may be excluded from the requirement for IRB review and approval. In this case, the PI is required to make an application for exempt determination through the OHSRP.

IRBs report to OHSRP director and follow the requirements of NIH's FWA, the HRPP Policies, the NIH Standard Operating Procedures (SOPs) for IRBs and the Clinical Center MAS Policies. The IRBs have a chair and a vice-chair. The Vice Chair, in the absence of the Chair, takes over the responsibility ordinarily performed by the Chair. The IRBs membership is consistent with the requirements of 45 CFR 46.107 and 21 CFR 56.107. Membership is renewable after every 1-3 years with no limit to membership terms.

The NIH regulatory system is a two-tiered system. Prior to IRB review, research protocols involving human subjects undergo review of scientific content by a Scientific Review Committee (SRC) established by the Institutes and Centers (ICs). The SRC membership includes institute scientists, clinical directors and staff members from the extramural programs. A copy of the IC scientific review and approval is part of the electronic application submitted by PIs

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for initial review by the IRBs. Research involving the testing in humans of materials containing recombinant DNA developed with NIH funds must first be reviewed by the Recombinant DNA Advisory Committee (RAC). Research involving animals is reviewed by an Institutional Animal Care and Use Committee (ACUC). IRBs review protocols to insure that the design and conduct of research is in accordance with the institution regulations and guidelines for protecting the rights and welfare of NIH human research subjects. Approved protocols are con-

electronically. Nine of the IRBs use Protocol Tracking and Management System (PTMS) while 3 use the Integrated Research Information System (iRIS). The systems are secured and designed to make protocol submission, review and approval processes more efficient, well organized, and accurate throughout the life cycle of a research protocol.

The PTMS system enables the principal investigators to initiate, track and organize any types of clinical studies, monitor review processes, view status changes, and quickly respond to



NIH Clinical Center Building

tinually reviewed at least annually, although in some cases IRB may require continuing review more often than annually to ensure subject protection.

Institutes and centers that do not have an IRB may rely on any of the 12 IRBs, depending on the nature of the protocol and the expertise needed for its review. This determination is made by the PI in consultation with the IC director and the IRB chair.

Once the PI has submitted their protocols for review, an IRB administrative staff member will review the initial review application to assure completeness before its review by the convened IRB. PIs are expected to make an in-person presentation to the IRB for initial review applications. This shortens the back and forth communication between the PIs and IRBs and ultimately the review time.

Submission and review of protocol is done

reviewers or Institutional Review Board (IRB) requests for additional information. In addition, it allows the protocol coordinators from different institutions to centrally track and manage the entire review and approval processes as well as regulatory reporting requirements. The dynamic generated IRB meeting agenda and minutes, auto-generated IRB memos and electronic signatures completely eliminate the need for paper process and enable IRB office to fully automate the clinical protocol review processes from its initial submission, review to final approval.

Human subjects are essential to the conduct of research aimed at improving human health and therefore the NIH continues to develop and review its human research protection policies in tandem with the ever increasing complexity of human subject research.

ACKNOWLEDGEMENT

ADILI - The KEMRI Bioethics Center is a project funded by the following grants:

- A Capacity Building Grant for the establishment and the strengthening of African National Ethics

Committees or Institutional Review Boards from the European and Developing Country Clinical

Partnership (EDCTP), Project Code: CB.2010.41302.016,

- International Research Ethics Networks for Southern Africa (IRENSA), a Fogarty International

center supplementary grant through the University of Cape Town (UCT), Contract No.

3R25TW006057-08S2 and;

- NIH stimulus grant via the University of California, San Francisco (UCSF), Grant No.

1S07TW008843-01.

We would like to express our sincere gratitude to all of our collaborators and partners. Your support will enable capacity building for bioethics within KEMRI.

