Enhancing capacity of research ethics review committees in developing countries: The Kenyan example

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Background. The increased number of clinical trials taking place in developing countries and the complexity of trial protocols mandate that local ethics review committees (ERCs) reviewing them have the capacity to ensure that they are conducted to the highest ethical standards.
Methods. The Kenya AIDS Vaccine Initiative (KAVI) Institute of Clinical Research (ICR) (KAVI-ICR) and the Kenyan National Council for Science and Technology (NCST) embarked on an exercise to enhance the capacity of ERCs in Kenya to review such protocols. This process involved conducting an audit of all ERCs in the country, and performing training needs assessments to identify knowledge and capacity gaps. Information obtained was used to develop training materials for ERC members at workshops conducted in different parts of the country.
Results. Five accredited and 13 non-accredited ERCs were identified. Four of the accredited ERCs were located in the capital city of Kenya, Nairobi. The most common challenges cited by participants during the needs assessments were excess workload, and a lack of co-ordination and/or communication between the ERCs. Subsequently, 140 ERC members from 17 institutions across the country were trained as follows: 36 from institutions in the western part of Kenya, 38 from institutions in the south-eastern coastal region, 38 from the eastern region and 44 from Nairobi.
Conclusion. The KAVI-ICR and the NCST have developed training modules for training ERC members in Kenya and are in the process of developing a manual to train members. The Kenyan experience may be used to enhance the capacity of ERCs in the East African region.

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Scientific research, including clinical trials, has evolved from being an amateur activity in the 18th century and university practice in the 19th century to an industrial activity in the 20th century.[1] However, research involving human subjects is relatively new in developing countries compared with the technologically advanced nations of the West. In particular, most randomised double-blind controlled clinical trials – which provide the best evidence for clinical practice and are the 'gateway' between research and the use of products in public health – have in the past mainly been conducted in developed countries.[2] This has in part been attributed to a lack of adequate ethical and regulatory oversight in developing countries.

However, in the past decade, the number of clinical trials conducted in developing countries has increased tremendously[3] for several reasons. These include the high cost of conducting such trials in developed countries, access to genetically diverse populations and treatment of naive patients, and the increasing difficulty of finding sufficient numbers of qualified study participants in the sponsor's home countries.[2,4] In particular, pharmaceutical companies have been shifting trials from developed to developing countries. This is a result of the increased prevalence in developing countries of some clinical conditions under investigation, allowing for faster recruitment rates – the so-called 'off-shoring' of clinical trials.[5,6] The increase in the conduct of clinical trials in developing countries has raised ethical concerns, particularly related to the involvement of populations of poor low-income countries in clinical research originating from affluent countries.[7] To this end, there have even been calls for developing countries to strengthen their ethical research conduct if they are to continue to be an attractive place to conduct clinical research.[8] These concerns are based on the perception that these populations can easily be exploited as a result of their poverty and illiteracy, thereby allowing themselves to participate in trials without fully understanding the risks involved.

To address this concern, research ethics review committees (ERCs) in developing countries need to be well trained in order to ensure protection and minimisation of risk to study participants. These ERCs should ensure appropriate selection of research participants, without

coercion, and appropriate clinical monitoring of the participants, among others. In order to achieve this, ERC members must be trained in ethics to be able to review clinical trial proposals critically to ensure that they are conducted to the highest ethical standards. Here, we present the experience of Kenya, a developing country that is endeavouring to ensure that ERCs are equipped with the necessary expertise to ensure that studies involving human participants, and in particular clinical trials, are conducted to the highest ethical standards.

In 1957, biomedical research in Kenya was conducted with the support of the East African Medical Research Council, which had oversight for research in the three countries constituting the East African community, namely Kenya, Uganda and Tanzania. After the break-up of the East African community in 1977, Kenya established the National Council for Science and Technology (NCST) to provide this oversight, with the objectives of overseeing all science, technology and innovation in Kenya, advising the government on national research and technology, and co-ordinating all research activities in the country. With respect to co-ordination of research activities in Kenya, the NCST is responsible for ethical approval of all studies involving human subjects prior to the initiation of the studies. In order to perform this role more efficiently and avoid unnecessary delays, the NCST, through its sub-committee, the National Bioethics Committee (NBC), accredits institutional ERCs to review and approve clinical research on its behalf. The NCST facilitates these ERCs to carry out their delegated responsibility by providing them with research guidelines.

The KAVI-ICR, a research institute at the University of Nairobi, has been conducting clinical research, including HIV vaccine clinical trials, since 2001. To date, it has conducted seven HIV vaccine clinical trials (six in adults and one in infants) and one ARV drug trial (a pre-exposure prophylaxis in men who have sex with men). In 2010, the KAVI-ICR obtained a grant from the Global Health Research Initiative (GHRI) of Canada, with the broad objective of establishing the KAVI-ICR as a centre of excellence for HIV vaccine/prevention trials in the East Africa region. This grant has expanded the KAVI-ICR research and training mandate and resulted in the KAVI-ICR becoming a centre of excellence for the training and conduct of clinical trials in the East Africa region. One of the specific objectives of this grant was to enhance the capacity of local institutional ERCs to handle vaccine research and development. In order to do this, the KAVI-ICR aimed to develop a training manual for ethics review boards, conduct regional training workshops for institutional ERC members and institutional administrators, obtain evaluation of the training by participants at the end of each workshop, and utilise the feedback from the evaluation obtained in the course of the year to review and revise the training manual. This article will be confined to the process we followed to enhance the capacity of institutional ERCs in Kenya.

Methods

Upon being awarded the grant, we sought partnership with the NCST to conduct a needs assessment of the existing institutional ERCs. The objectives of the needs assessment were to find out how many ethics committees there were in Kenya, their capacity to review research proposals, and the number duly recognised by the NCST. At that time, the NCST was in the process of accrediting new institutional ERCs and re-accrediting the existing ones. In this regard, they had developed requirements and guidelines for institutional ERCs seeking accreditation. We agreed with the NCST that before rolling out an ethics training programme, it was necessary to conduct a needs assessment of the institutional ERCs in order to inform the design of the ethics training required. We then obtained from the NCST a list of currently accredited institutional ERCs and the contact details of the chairs and secretaries. Using this information, we made an inventory of all the accredited institutional ERCs in the country. We also contacted other local universities, research institutions and hospitals that we suspected were conducting research on human subjects but were not on the list provided by the NCST, and enquired if they had ERCs. We then reached out to the chairs and secretaries of the ERCs, where this information was available, informed them about the needs assessment that was due to be conducted, and proposed to host ethics sensitisation seminars for their members. Several needs assessment and sensitisation seminars were planned in different parts of the country. Each of the accredited and non-accredited ethics committees was requested to send two representatives (preferably the chairperson and secretary) to the seminar in their nearest geographical location.

Training needs assessment and ethics sensitisation seminars

Six training needs assessment and ethics sensitisation seminars were held in different regions of the country between July and September 2011. During the needs assessment, questions asked included when the ERCs were established, their membership (including gender and professional training), ethics training of each member, the ERC procedures for ethical review of protocols, and sources of funding.

Each training needs assessment exercise was followed by an ethics sensitisation seminar lasting 1 day and consisting of didactic lectures, and question-and-answer sessions. Topics covered were:

- General introduction to ethics – history perspective
- The role of ethics committees
- Clinical trials
- NCST requirements and guidelines for accreditation of ERCs
- NCST guidelines for ethical review of proposals.

Feedback from participants was obtained at the end of each ethics sensitisation seminar. Information obtained was used to improve the quality of subsequent seminars.

Training modules

The information obtained from the needs assessment seminars was used to develop a training module for ERCs in Kenya. The course materials for the training module were developed with input from experienced members of the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee, which is one of the oldest and most experienced ERCs in the country, and the NCST (the body that is legally mandated to accredit ERCs in Kenya).

The objectives of the course were to:

- Train members of ERCs on principles of bioethics
- Train members on bioethics guidelines and regulations
- Provide the trainees with the skills for proposal review
- Provide the trainees with the skills for standard operating procedures development

- Form a mentorship programme
- Create a network system of ERCs in Kenya
- Introduce a common database to reduce potential 'ERC shopping' by researchers
- Obtain feedback from trainees.

Participants were asked to evaluate the training at the end of each workshop. Feedback was obtained from participants using a seminar evaluation form, and the information was utilised to review and revise the training manual.

The training module developed was used to train ethics committee members during scheduled training workshops, each lasting 2.5 days. The inaugural training was dedicated to training of the chairs and secretaries of all the identified ERCs who had participated in the needs assessment. The training was conducted in collaboration with the NBC of the NCST. The training of chairs and secretaries provided an opportunity to test newly developed course material and get feedback from participants on how to enrich the materials before a national roll-out to train the ERCs.

Ethics training workshops

The first of these workshops took place in April 2012. This was followed by more training workshops in different parts of the country. Invited participants were members of the ERCs from universities and from public and private hospitals, potential ERC members and trained ERC members who were expected to become potential facilitators for future training. Topics covered in the training included:

- Basis for ethics
- Principles of ethics
- Protection of vulnerable groups
- Informed consent process
- Components of the clinical trials proposal
- Study designs
- Legal basis for ethics
- Role of ethics research committees
- Ethical review process of research proposals, and active monitoring of the approved studies.

Although the focus of the grant that supported this exercise was geared towards capacity building of ethics committees for review of clinical trials, the scope of the training went beyond this and addressed ethical review of other studies, including social science studies. Risk assessment of studies and expedited review of studies with no more than minimal risk were also discussed.

Ethical approval for the programme, from which this information is derived, was obtained from the Kenyatta National Hospital and University of Nairobi ethics and research committee.

Results

Five institutional research ERCs had been accredited by the NCST at the time of the training needs assessment. The majority (four) of these ethics committees were located in Nairobi, the capital city of Kenya, while one was in Eldoret, a town in the north-western part of the country, about 300 km away. Thirteen institutions had functional but unaccredited ERCs. Ten (77%) of these ERCs were based outside Nairobi.

Training needs assessment and sensitisation seminars

Sixteen (89%) of the ERCs identified sent representatives to the needs assessment and sensitisation seminars. The institutions included universities (10), research organisations (2) and hospitals (4). A total of 111 (72 male and 39 female) ERC members took part in the needs assessment and sensitisation seminars.

The needs assessment identified lack of knowledge in ethics and a need for training of ERC members in the following areas: role of ERCs; accreditation process and establishment of an ERC; HIV biomedical research; general introduction to ethics and historical ethics perspective; preclinical and clinical trials; in-depth ERC review process of a proposal; skills necessary for ERC members to be effective in executing their mandate; handling proposals involving vulnerable and special groups, e.g. children and pregnant women; and biosafety. The most common challenge and/or need cited by participants was excessive workload. This was particularly more so for the accredited ERC members, who felt overwhelmed by the amount of work. Second was lack of co-ordination and/or communication between the ERCs. As a result, ERC members felt that it was possible for one ERC to reject a research proposal only for it to be approved by another. Although this may not be common, during the training a case was cited where this had happened.

Ethics training workshops

A total of 58 members attended the inaugural ethics training workshop, where the chairs and secretaries of institutional ERCs were invited. By December 2013, a total of 140 (87 male and 53 female) ERC members from 17 institutional ERCs had been trained as follows: 36 (25 males and 11 females) from institutions in the western part of Kenya, 22 (14 males and 8 females) from institutions in the coastal region, 38 (28 males and 10 females) from the eastern region of the country, and 44 (20 males and 24 females) from Nairobi. The training workshops are still on course.

Discussion

The NCST requires that before any ERC is accredited, its members or at least its chair must show evidence of having been trained in ethics. This is the first time that an audit of ERCs in Kenya has been conducted with the objective of finding out how many unaccredited ERCs exist. The purpose of the audit was to provide them with guidelines on how to seek accreditation, with the objective of streamlining the ethical review process for research involving human subjects in the country. Many countries are investing significant resources in strengthening ERCs to review proposed research involving human participants, yet comprehensive auditing and accreditation programmes require an investment of human and financial resources that is unfeasible for many developing countries.[9] At the 2004 ministerial summit on health research in Mexico City, health officials from 58 countries called for national governments to adopt regulations providing for the 'ethical oversight' of research.[10]

National accreditation of ERCs is one way of ensuring that they meet a certain minimum threshold of competence for the protection of research participants in the country. In many developed countries, national governments have responsibility for ERC oversight. In some developed countries, such as the UK, ERCs are required to go through a formal process of governmental accreditation, which

involves a combination of self-assessment and external reviews, focusing on issues such as committee membership, operating procedures, and the documentation of meetings. The step that the NCST has taken to accredit ERCs in Kenya is therefore laudable and should be emulated by other developing countries. Accreditation programmes encourage ERCs to develop standardised policies and procedures, which help promote the consistent application of ethical principles and provide a means for checking whether they actually adhere to the policies and procedures they claim to be following.[9] This will go a long way towards ensuring that standards for ethical conduct of clinical research are maintained throughout the country. At the moment, it is possible that when one ERC does not approve a research proposal, the researcher can submit the same proposal to another ERC, which may go ahead and approve it, although only one case of this was cited. It is possible that having only a few ERCs accredited in the country, as is the case at the moment, may be a deterrent. If this is the case, the anticipated increase in accredited ERCs may be associated with an increase in such cases, and therefore mechanisms need to be put in place to prevent this from happening.

The next step would be for the NCST to develop a database of the proposals that have been submitted to the various institutional ERCs in the country, with an indication as to what decision the ERCs have made.

The fact that most of the accredited ERCs were in Nairobi, the capital city, poses a problem. This implies that protocols have to be sent long distances for review if they are to be submitted to an accredited ERC. There is, therefore, a need to encourage ERCs outside the capital city to seek accreditation. The additional accreditation of ERCs outside the capital city will not only resolve the need for transporting protocols long distances for review, but will also relieve the existing accredited ERCs from carrying excess workload, leading to an overwhelming amount of work as claimed by members.

The present audit revealed a large proportion of ERCs that were reviewing studies but which were not accredited by the national authority. This seemed to be out of ignorance. During the training-needs assessment and ethics sensitisation workshops, a number of ERC members indicated the need to know the process for accreditation and establishment of ERCs. It is apparent that measures to deter operations of ERCs that are unaccredited need to be enforced. In New Zealand, if a study proceeds without the approval of an accredited ethics committee, participants who suffer injuries may not be eligible for compensation.[12] Besides, approval by an accredited ERC is necessary for researchers to obtain access to data held by the New Zealand health information service database.[13]

Many ERC members expressed the need for capacity building in the ERC review process of proposals and skills necessary for ERC members to be effective in executing their mandate and handling research proposals involving vulnerable and special groups. Training and certification programmes for ERC members can complement the accreditation process by promoting a common base of knowledge about applicable ethical and regulatory principles.[9]

Lack of training of ERC members is not unique to Kenya. A study on health research ethics review and needs of institutional ERCs in Tanzania showed that 49% of 45 respondents had not had any training in health research ethics review.[14] Similarly, a case study of 12 African ERCs identified inadequate training of members as a major challenge faced by the committees.[15] In a study of ERCs in Africa, Nyika *et al*.[16] found that the majority of committees (92%) cited scientific design of clinical trials as the area needing the most attention in terms of training, followed by determination of risks and benefits, and monitoring of research. This study also found that 38% of the ERC members had not received any form of training. The authors concluded that in light of increasing complexity and numbers of health research studies being conducted in Africa, this deficit requires immediate attention.

There was a large gender disparity in attendance at the ethics sensitisation seminars and training workshops. The total number of males who attended these seminars and training workshops was almost twice that of females. The low number of female ERC members in developing countries has been observed previously. A study of several ERCs in Africa conducted by Nyika *et al*.[16] observed that overall, females constituted only 33% of ERC members.

Crucial in ensuring ethical conduct of studies beyond ethical review of the proposal is the issue of monitoring and/or auditing the approved studies. This can be achieved by visiting selected clinical research sites to get first-hand information on how these studies are proceeding. However, this requires both time and financial resources, which remain a challenge in most resource-constrained countries.

Conclusions

This study identified a lack of standardisation across ERCs in Kenya. Almost all the accredited ERCs are in Nairobi, making it difficult for researchers in other parts of the country to access the services of these accredited ERCs. There were several unaccredited ERCs in Kenya. The NCST is in the process of ensuring that they all become accredited once the guidelines are developed for accreditation of ERCs in the country. For ERCs to be strengthened, their members need to undergo ethics training. It is also important that accredited ERCs network to ensure that a proposal rejected by one ERC is not presented to another ERC for review, thereby preventing the concept of 'ethics committee shopping'.

The way forward

The KAVI-ICR and the NCST are in the process of developing a manual for the training of ethics review boards in Kenya. In the meantime, the developed training modules are being used to train ERC members. The Kenyan experience may be used to conduct needs assessment sessions in other countries in the region (Uganda, Tanzania, Rwanda and Burundi) and to train ERC members in these countries. At the time of writing this report, the NCST had accredited a total of 14 institutional ERCs. The fast-changing landscape is partly a result of the establishment of new universities around the country and an improved legal framework for science and technology.

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