

Program Director/Principal Investigator (Last, First, Middle): **Kiarie, James Njogu**

PROGRESS REPORT SUMMARY	GRANT NUMBER 1R24TW008889-02	
	PERIOD COVERED BY THIS REPORT	
PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR Kiarie, James Njogu	FROM 09/01/2011	THROUGH 08/31/2012
APPLICANT ORGANIZATION University of Nairobi		
TITLE OF PROJECT (Repeat title shown in Item 1 on first page) Programatic-Strengthening Medical Education for Improved Health Outcomes in Kenya		
A. Human Subjects (Complete Item 6 on the Face Page)		
Involvement of Human Subjects	<input checked="" type="checkbox"/> No Change Since Previous Submission	<input type="checkbox"/> Change
B. Vertebrate Animals (Complete Item 7 on the Face Page)		
Use of Vertebrate Animals	<input checked="" type="checkbox"/> No Change Since Previous Submission	<input type="checkbox"/> Change
C. Select Agent Research	<input checked="" type="checkbox"/> No Change Since Previous Submission	<input type="checkbox"/> Change
D. Multiple PD/PI Leadership Plan	<input checked="" type="checkbox"/> No Change Since Previous Submission	<input type="checkbox"/> Change
E. Human Embryonic Stem Cell Line(s) Used	<input checked="" type="checkbox"/> No Change Since Previous Submission	<input type="checkbox"/> Change

SEE PHS 2590 INSTRUCTIONS.

WOMEN AND MINORITY INCLUSION: See PHS 398 Instructions. Use Inclusion Enrollment Report Format Page and, if necessary, Targeted/Planned Enrollment Format Page.

UPDATE ON ADMINISTRATION AND CROSS-CUTTING ACTIVITIES

Program Advisory Committee

The Program Advisory Committee has met quarterly under the chairmanship of the Principal of the College of Health Sciences to provide policy direction to the project. Through this forum, important decisions are made on approaches to overcome challenges, team building, liaison with Ministry of Health and application of new grants linked to MEPI. Notable achievements include:

PRIME-K submitted two successful applications, including the Institutional Research and Renovation and Management (iRIM) award and a Linked Award titled "Mental Health Research Training for Improved Health Outcomes in Kenya."

PRIME-K held its first annual retreat on the 25-26 May 2012 at Enashipai at Lake Naivasha with a motto "inspiring change experientially." There were 63 participants, including the Deputy Vice Chancellor for Administration and Finance, the Principal of the College of Health Sciences, the PRIME-K Advisory Board members, PRIME-K team members and representatives from UoN administrative departments that facilitate project implementation such as grants, transport and recruitment.

PRIME-K members have attended several conferences where they have presented on our activities and gained ideas on program improvement

SECTION III.D.1 - SPECIFIC AIMS, ACTIVITIES, RESULTS AND SIGNIFICANCE

- *African Regional Consultative Workshop on Health Care Improvement* – Two PRIME-K members attended a conference on “Catalyzing and Institutionalizing Quality Improvement” held in Kampala, Uganda on 17-21 October 2011.
- *Consortium for Universities in Global Health (CUGH)* – Four PRIME-K members attended the 3rd Annual Global Health Conference held in Montreal, Canada on 13-15 November 2011 and the PI presented on the PRIME-K Program.
- *MEPI Education Conference* – Three PRIME-K members, including the PI and two aim leads, attended the MEPI Education Conference on 7-9 June 2012 in Stellenbosch, South Africa.

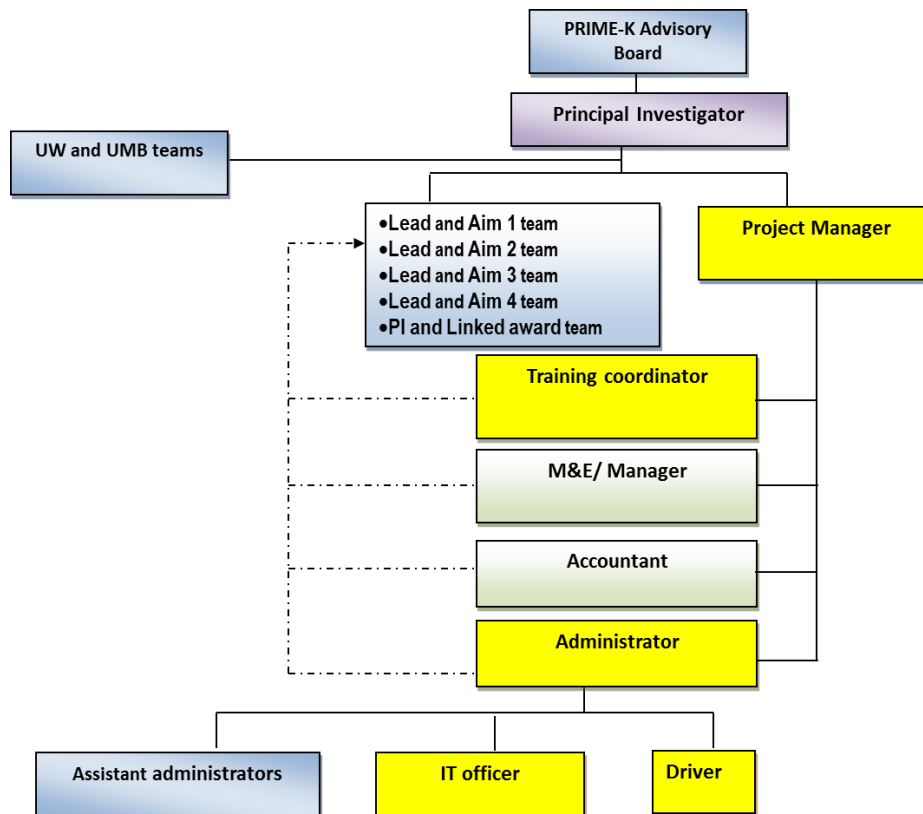
PRIME-K Aim Leads

The Aim Leads meet monthly and discuss project implementation under the chairmanship of the Principal Investigator. To date the team has approved faculty trainings, decentralized training sites, Implementation Science Fellowships, mentored seed projects, career development projects, and capacity building activities.

PRIME-K Secretariat

The secretariat includes the Project Manager, Training Coordinator, M&E Manager, Accountant, Administrator, driver and three Administrative Assistants. The project is in the process of recruiting a skills laboratory manager and Information and Technology Officer. The secretariat members meet weekly to discuss day to day project implementation.

Figure 1: Organizational structure of PRIME-K Program at the University of Nairobi



THEME 1: INCREASING THE NUMBER OF HEALTH WORKERS TRAINED

a) Progress on specific aims, strategies and activities

New training initiatives and curriculum review

PRIME-K supported four curriculums for the implementation of new courses:

- The Bachelor of Medical Laboratory Sciences (BMLS) has already started with 24 students studying at the Department of Human Pathology. PRIME-K supported the training by supporting purchase of the laboratory equipment.
- The Bachelor of Science Nursing for upgrading diploma level nurses through distance learning is expected to start in September 2012 in collaboration with African Medical Research Education Foundation (AMREF) and the Nursing Council of Kenya. This curriculum was developed through a series of workshops:

<u>Workshop</u>	<u>Location</u>	<u>Date</u>
1st Module writers workshop	AMREF Training Center	April 3, 2012
2nd Module writers workshop	Egerton University	May 7 – 12, 2012
Editors workshop	AMREF Training Center	July 5 – 6, 2012

- Curriculum development for a Master of Science (MSc) in Pharmacoepidemiology and Pharmacovigilance and for a MSc Molecular Pharmacology is planned in August 2012.

Multidisciplinary Skills Laboratory (Skills Lab)

To facilitate training of large number of students a multidisciplinary skills lab at the School of Nursing Sciences (SONS) has been equipped for use by all the schools for demonstration and skills-based practice. To date, 185 students have been trained using the skills lab. The equipment is also used in conducting Objective Short Clinical Examinations (OSCES).

Table 1: List of items purchased to equip Skills Lab at School of Nursing Sciences

5 Venipuncture Pads	2 Obstetric phantoms with fetal dolls
5 Suction Machines	2 Cervical dilation/effacement simulation
5 Blood pressure training arms	2 Episiotomy repair trainers
2 Maternity headless mannequins	5 Blood pressure cuff(manual)
2 Breast examination trainers with straps	2 Ophthalmoscope kits
2 Adult nurse training dolls	2 Lumbar puncture trainers
5 Lecats Ventrilosopes	1 Ophthalmology training simulator
1 Ear examination simulator	1 Baby Anne four pack with Ambu bags
1 Male catheterization training simulator	1 Little junior four pack and Ambu bag
1 Female catheterization training simulator	1 Little Annfour pack and Ambu bag

College of Health Sciences (CHS) Library

The CHS library has been equipped to create an e-learning resource centre. Fifty computers have been purchased and placed in the library for use by the students and the faculty, journals and various e-learning materials have also been installed in the computers to support this initiative. Resources that have already been installed include UpToDate, care and treatment guidelines and other journals previously subscribed to by the UoN.

By the end of Year 2, the seating capacity of the library will be expanded from the current 100 to 300 seats. This will be achieved by moving bookshelves and installing appropriate furniture. Space designs have been approved and we are developing specifications for the furniture.

Faculty Training

Of targeted number of 60 for Year 2, 44 members of faculty have been trained and one more faculty training course is planned for July 2012. The teacher training syllabus covers innovative teaching methods and use of IT in training.

Medical Education Seminars

PRIME-K has supported two medical education seminars with participation of faculty and students:

- On 19 October 2011, the first Medical Education seminar was held at the CHS. Letitia Robinson from the National Institutes of Health, USA presented on “Is the current training of health care professionals keeping up with the changing times? Are we ready?”
- On 1 March 2012, Professor Ruth Nduati, Lead of Aim 2, presented an overview on decentralized education and the pre- and post-elective evaluation of the students. The theme was “Decentralized Medical Education: Report on the Elective Term Experience of Undergraduate Medical Students.” Students who had participated in the training also presented their experiences.

b) Challenges

- **Skills Lab:** Full utilization of the skills lab has been delayed by slow procurement of some of the skills lab equipment. The delayed items have been identified for faster procurement by the advisory board. The Skills Lab Manager appointed in April 2012 declined the offer and we are in the process of recruiting a replacement. This has taken longer than anticipated as skilled persons in that field are few.
- **CHS Library:** Movement of the books has been delayed as storage containers took long to procure. However these are now ready for delivery.

c) Significant Changes

- **New Training Initiatives:** The Bachelor of Science Nursing for upgrading diploma level nurses through distance learning was implemented in place of the MSC midwifery course as Nursing Council identified it as a more urgent need with a potential target of over 20,000 nurses who need not leave their stations to undertake the training.
- **Curriculum review/reform:** To institutionalize and sustain curriculum review/reforms initiated by PRIME-K, establishment of a dedicated medical education unit has been proposed to spearhead advances in medical education at the CHS through PRIME-K. Through support from UMB, a medical education expert has been identified to support the modalities for the establishment of a medical education unit. The expert will be engaged for 30 days with specific terms of reference. This approach is a change from our initial approach to use consultants to support curriculum review. PRIME-K felt that a Medical Education Unit is likely to lead to more college wide and sustained reform in curriculum

d) Plans for Year 3

Medical Education Unit

Through support from UMB, PRIME-K will facilitate establishment of a medical education unit. This will include training of lead curriculum faculty members in each of the school on short course on medical education and curriculum development. Similarly, advisory/technical services on establishment and operation of the medical education unit will be offered through a hired expert. A room has already been provided at the School of Pharmacy to house the Medical Education Unit.

New training initiatives and curriculum review

It has been identified that many postgraduate courses have similar core trainings, such as research methods, leadership and management, ethics and health services delivery. PRIME-K will provide funding to bring together departments with postgraduate programs to identify and consolidate the core courses. This will reduce the training time and facilitate team trainings sessions among the postgraduate students.

PRIME-K will support conversion of existing face-to-face trainings into e-format for distance learning so as to improve access. In Year 3, PRIME-K will focus on the development of a Post-Graduate Diploma in Research Methods (PGDRM).

The School of Dental Sciences and School of Pharmacy are planning to reform their curriculum delivery modes to a competency-based model and use e-learning models for both undergraduate and post-graduate students. The School of Pharmacy is also exploring options for post-graduate programs in Clinical and Community Pharmacy. PRIME-K will support these Schools by providing expert advice from UMB and supporting workshops to review curriculums.

With the increase in the number of health training institutions in the country, there is need to recruit qualified individuals who can join universities as teaching faculty. To meet the demand, it has been identified that the University of Nairobi needs to increase the

number of graduates with PhD level of qualification. PRIME-K aims to support schools to design their post-graduate programs to increase the number of PhD graduates. With the support of UMB, activities will include developing curriculums to enable combined postgraduate degrees such as: Masters of Medicine/PhD, Msc Nursing/PhD, and Masters of Pharmacy/PhD.

Multidisciplinary Skills Lab

PRIME-K will develop a strategic plan for the skills lab to ensure that additional equipment is identified and innovations made to meet the changing needs as use of the facility becomes more regularized in the curriculum across the different Schools of the college. The Skills Lab Manager will be trained by UMB on optimal utilization of the Skills Lab across the Schools in view of improving the quality of medical education.

PRIME-K will support recordings of procedures used in teaching anatomy physiology and biochemistry for use by both undergraduates and postgraduates. These will be collected over the next two years during real teaching sessions and saved to a server as resources for reference during training on and off campus.

College of Health Sciences (CHS) Library

After completing the development of the physical infrastructure and setting up of e-resources in Year 2, a strategic plan for e-learning will be developed in Year 3 as the PRIME-K program plans to focus on increasing utilization of library related resources. This will be achieved through targeted trainings of students and faculty that aim to increase the use of e-based resources for learning, teaching and research. We will also focus on building the capacity of departmental libraries to offer discipline-specific e-resources and reference books. PRIME-K will also focus on enabling students to access laptops through evolving collaborations with private sector partners, including Intel and Samsung.

Faculty Trainings

During the past two years, faculty trainings on innovative methods of teaching have greatly increased interest by faculty to accept new ideas and approaches to delivery of learning. PRIME-K aims to keep the momentum of change by offering this training to the remaining faculty and all new staff members. Faculty members provided feedback that focused trainings are needed in specific areas related to the implementation of curriculum reforms, student evaluations and problem-based learning.

Part of PRIME-K's contribution to curriculum reforms has been to increase the awareness among faculty and students over the power of using various technologies in delivery of learning to students. The project anticipates an increased demand for availability of resources over the e platform in the coming years. PRIME-K aims to prepare and enable faculty to use the e-platform to deliver learning by training them on content development, delivery and how to evaluate e-learning.

Medical Education Seminars

As part of advocacy and sensitization of the University Community on PRIME-K activities, we will hold quarterly Medical Education Seminars with topics focused on health professional education and regionally-relevant research. This will give an opportunity for the PRIME-K team to share their accomplishments and plans with the wider community and get feedback.

Support for innovations among students

It has been identified that students have been key to bringing change. In recognition of this potential, PRIME-K will provide supplementary funding to support student-led initiatives such as seminars, student journal clubs and workshops.

e) Subcontract institution activities

In Year 2, the University of Maryland, Baltimore:

- Provided technical support in setting up the Skills Lab
- With the CHS Library identified a list of priority e-journals and e-text books which are not currently available through HINARI and/or other subscribed mechanisms for purchase from publishers. Mechanisms for purchase of these e-textbooks and journals have now been initiated.
- Will host the CHS librarian, Assistant Librarian and IT Officer for training at the UMB Health Sciences and Human Services Library (HSHSL). The staff will undergo 7- day training on optimal utilization and management of library resources in July 2012.

In Year 3, the University of Maryland, Baltimore will:

- Support the establishment of the Medical Education Unit
- Provide a curriculum development expert to support the School of Dental Sciences in reforming its curriculum
- Train a member of the School of Pharmacy who will visit UMB for orientation on the establishment and utilization of a skills lab.
- Provide technical support in developing the library and e-learning

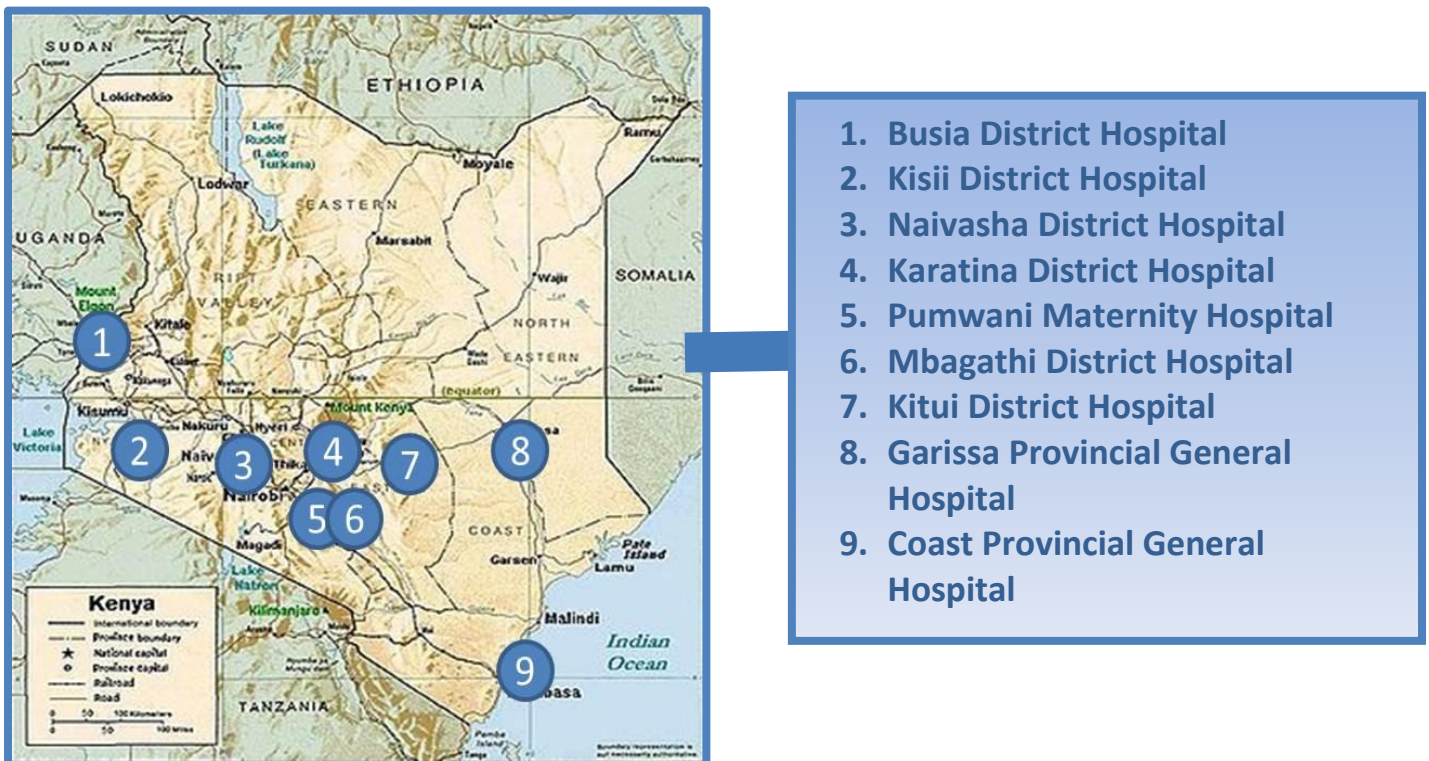
THEME 2: RETAINING HEALTH WORKERS IN AREAS WHERE THEY ARE MOST NEEDED

a) Progress on specific aims, strategies and activities

Development of decentralized sites

To improve quality of training and increase retention of Medical Graduates in the Ministry of Health, five more decentralized training sites were approved through the Ministry of Health. The new sites are Busia District Hospital, Karatina District Hospital, Kitui District Hospital, Kisii District Hospital and Pumwani Maternity Hospital. PRIME-K has now established a total of 9 sites out of a total target of 16 sites over the 5-year period. (See Figure 1 below). In April and May 2012, members of the CHS faculty and PRIME-K Secretariat visited the sites to provide an overview of the PRIME-K program and develop relationships with the staff at the sites in view of student placement. The Kenya Medical Practitioners and Dentists Board (KMPDB) and the Nursing Council of Kenya (NCK) will conduct visits starting in August 2012 to accredit the sites.

Figure 1: Map of the (9) PRIME-K decentralized training sites in Kenya



Training and supervision of students in decentralized sites

Decentralized training is led by faculty rotation leads from the University of Nairobi and clinical rotations are supervised at each site by a clinical clerkship director. By the end of Year 2, 85 students will have been trained through the decentralized training, including 29 medical students who completed 8-week rotations in either Internal Medicine, Obstetrics and Gynaecology, Paediatrics, Public Health or Surgery; 6 pharmacy students who completed 6-week rotations, 20 dental students who completed 2-week rotations and 20 nursing students who will complete 4-week rotations. The School of Nursing Sciences and the School of Dental Sciences have integrated the decentralized rotations in their curriculum (See Table 2 below). A total of 35 individual micro-projects and reports were developed by the undergraduate students from the Schools of Pharmacy and Medicine (Appendix 1).

Table 2: Details of Decentralized Training Activities in Year 2

<u>School</u>	<u>Length of Rotation</u>	<u># of students</u>	<u>Elective/Actual Rotation</u>
School of Medicine	8 weeks	29	Elective
School of Dental Sciences	2 weeks	30	Actual Rotation
School of Pharmacy	6 weeks	6	Elective
School of Nursing Sciences	4 weeks	20	Actual Rotation
Total	20 weeks	85	

Consultative meetings have been held with faculty at the School of Dentistry and PRIME-K leadership to explore how decentralized training can be extended beyond the 2 weeks allocated. In addition, the Department of Paediatrics and Child Health has embraced the use of Mbagathi District Hospital and its environs as a teaching site for child health and organized for both postgraduates and undergraduate student to rotate there.

In addition, monitoring and evaluation activities for Theme 2 have included qualitative approaches to understand the social context of decentralized medical education in Kenya. In order to understand student and faculty experiences with decentralized training, the UW supported the development of qualitative evaluation models in collaboration with PRIME-K faculty and program staff that used focus group discussions with faculty and students. The focus groups discussions collected data to measure student learning and motivation to intern in underserved areas after medical training and faculty engagement in the program. The qualitative model was implemented during the pilot to test feasibility and training was provided to program staff to build sustainable use of qualitative methods in Kenyan medical education.

Training of adjunct faculty

In all the sites adjunct faculty have been identified to train students. These prospective adjunct faculty members are now in the process of being formally appointed by the College of Health Sciences. Fifty three adjunct faculty members who currently facilitate student learning at these site have been trained (23 trainees in August 2011 and 30 trainees in November 2011). Table 3 provides an overview of the cadres of health workers trained from each sites.

Table 3: Adjunct faculty trainees from decentralized site by discipline

<u>Site</u>	<u>Cadre of Health Care Workers Trained</u>
Coast PGH	Anaesthesiologist; ENT Surgeons; Maxillofacial surgeon; Medical Officer; Nursing Officers; Obstetrician and Gynaecologist; Ophthalmologist; Pharmacists; Internal Medicine Physicians; General Surgeons;
Garissa PGH	CO-in-charge; ENT Surgeon; Laboratory-in-charge; Nursing Officer; Obstetrician and Gynaecologist; Ophthalmologist; Paediatrician; Pharmacists; Internal Medicine Physician; General Surgeon;
Mbagathi DH	Anaesthesiologist; Clinical Pharmacist; Dentist; Medical Officer; Nursing Officer; Paediatricians; Pharmacist; Internal Medicine Physician; Radiologist; Paediatric Surgeons
Naivasha DH	Administrator; Anaesthesiologist; Clinical Pharmacist; Dentists; District Medical Officer of Health; Medical Officers; Nursing Officers; Obstetrician and Gynaecologists; Paediatrician; General Surgeons;

The training on teaching methods and clinical mentorship covers the topics listed in Table 4 below. The participants were given a tool with a Likert Scale to self-assess their knowledge and skills in fourteen topic areas before and after the training. The participants self-scored an average of 2 out of 5 before training compared to 4 out of 5 after the training ($P < 0.0001$) as indicated in Table 4 below.

Table 4: Comparison of Pre- and Post-Training Self-Assessment Scores for training on Adjunct Faculty

<u>Topic</u>	<u>Pre-Training Mean Score</u>	<u>Post-Training Mean Score</u>
Understanding the basics of principles of adult learning	2.4	4.6
Comfortable with taxonomic domains and terminology	1.8	4.3
Formulating a specific learning objective	2.8	4.5
Planning, organizing and delivering an effective lecture	3.3	4.4

Topic	Pre-Training Mean Score	Post-Training Mean Score
Planning and organizing a tutorial that enhances the learning experience	3.1	4.4
Effective facilitation of a seminar, symposium or panel discussion as a means to enhance the learners experience	2.7	4.2
Creating and effectively using visual aids to teach	3.0	4.6
Describing the 5 basic principles of bedside teaching	2.3	4.5
Effective application of microteaching methods	1.9	4.5
Organizing an integrated teaching session	2.1	4.2
Understanding the basic principles of and rationale for mentorship	2.9	4.9
Describing the roles and characteristics of an effective mentor	2.9	4.9
Understanding basic knowledge and skills in mentorship	2.7	4.8
Describing characteristics of a model mentorship site	2.4	4.8

Development and implementation of distance learning technology

All Year 1 sites have now been provided with a computer for student use to access e-resources and distance learning sessions. Furniture for the CME rooms at the decentralized sites is in the procurement process. The CME rooms for all sites are being equipped for a sitting capacity of 20 people.

The UW’s Treatment Research and Expert Education (UW-TREE) engaged with PRIME-K to develop the capacity of IT staff at UoN to plan and implement four decentralized training programs for PRIME-K including:

- 1) Synchronous (real-time) case-based training of students, adjunct faculty and MOH staff at remote sites;
- 2) Asynchronous (pre-recorded) online clinical mentoring training for adjunct faculty and MOH staff at remote sites;
- 3) Synchronous webcasts of Grand Rounds sessions from UoN to clinical colleagues in other locations; and
- 4) Creation of an online archive of training videos (e.g. skills labs and faculty lectures) for students.

Students, adjunct faculty, and MoH staff participated in synchronous (real-time) case-based training from four decentralized sites. Five additional sites are to be added by the end of 2012. Recordings from these sessions will be edited for concision and may eventually form a case-based course available on-demand to eligible students. Table 5 describes the webcast presentations prepared by students and facilitated by a member of faculty. During their rotation dental students accessed their lectures online.

Table 5: Distance learning case presentations by undergraduate students at PRIME-K decentralized sites

Students	Site	Discipline	Case presentation	Facilitator
School of Medicine	Mbagathi District Hospital	Paediatrics	Malnutrition with gastroenteritis and Pneumonia	Prof. Ruth Nduati
	Garissa Provincial General Hospital	Medicine	Lower limb swelling of unknown etiology	Prof. Erastus Amayo
	Coast Provincial General Hospital	Obstetrics and Gynaecology	Severe PET with abruption placenta and hypovolemic shock	Prof. Joseph Karanja
	Naivasha District Hospital	Surgery	Appendicitis	Dr. Nyaim Opot
School of Pharmacy	Coast Provincial General Hospital	Clinical Pharmacy	Management of Nephrotic Syndrome	Dr. Evans Mwangangi
	Mbagathi District Hospital	Clinical Pharmacy	Management of Cryptococcal Meningitis in HIV infected patient	Dr. Evans Mwangangi
	Naivasha District Hospital	Clinical Pharmacy	Management of TB in HIV infected patient	Dr. Evans Mwangangi

Utilization of mobile technologies for enhancing care, training and data collection

Fifty smartphones were procured and 35 were distributed to the students. These were given to the students and loaded with digital versions of clinical care guidelines obtained from the departments within the College of Health Sciences and from the Ministry of Health (See Table 6). This has enabled the students to obtain information in the shortest time possible without relying on the

internet and provides immediate bed-side reference when students are doing their clinical rotations. Other students who were not in the decentralized rotations are now being assisted to load these guidelines onto their smartphones.

Table 6: E-resources for students available for use on smartphones

<ul style="list-style-type: none"> • Adult Clinical Guidelines Volume I-III • Paediatric Clinical Care Guidelines • Basic Paediatric Protocols 2010 • WHO handbook for Paediatric Care • Kenya clinical National manual for ART providers • Kenya Guidelines for an Integrated approach to Child Care • National Malaria Guidelines • Policy guidelines on Diarrhea in children below 5 • National Guidelines for HTC in Kenya 2010 • National manual for the management of HIV related OIs • Nutritional care of HIV-Positive children in Kenya, Malawi and Zambia 	<ul style="list-style-type: none"> • PMTCT Guidelines • PMTCT JRM report • ART Adult Guidelines • Chemotherapy Guidelines • A-Z of Paediatric Chest Radiology • TB HIV Guideline • Guidelines for Good Distribution practices • Guidelines for Product Recall • National Pharmacovigilance Guideline • DLTLD Treatment Guidelines • HBC Handbook 2006 • ANECA Handbook of Paediatric AIDS in Africa
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Improvement of Data systems for M&E:

The PRIME-K M&E Manager and the University of Washington (UW) coordinator visit the sites to assess the capacity, strengths and weakness of the sites in data collection, management, analysis and utilization. From these assessments, it became clear that different sites had different capacities and needs. For instance, Mbagathi and Naivasha District Hospitals already have an electronic medical records system which is used for outpatient records management while Garissa Provincial General Hospital did not even have internet connectivity. However, all sites required capacity building in terms of data collection techniques, data management and data utilization.

b) Challenges

- **Multi-disciplinary team training:** Because of differences in the training calendars for each School at the CHS, it is difficult to synchronize the student rotations at decentralized sites to achieve the objective of developing a multi-disciplinary team training approach.
- **Distance learning:** Capacity in the area of synchronous delivery and asynchronous recording of e-learning resources has already been developed at UoN, but leveraging that capacity has been delayed as the IT Officer left his position. UW-TREE has provided the necessary job descriptions to UoN to begin the hiring process towards a Webcast Technician/Multimedia Producer and Web Developer and the process of hiring a replacement is on course.

c) Significant Changes

- **Training of health care workers at decentralized sites:** We found it necessary to train other cadres of health workers (in addition to adjunct faculty) who will be involved in student supervision at a clinical level.
- **Use of mobile technologies:** PRIME-K has signed an agreement with Infamed to develop a chip that can be used on smartphones with point of reference software (Dynamed), Oxford e-books and Ministry of Health guidelines that is searchable and hence easier to use this will be made available to students, faculty and adjunct faculty at the decentralized sites.

d) Plans for Year 3

Develop additional sites for decentralized training

PRIME-K and the Ministry of Health will identify an additional four sites for Year 3 and prepare them to be decentralized sites of training for the University of Nairobi. PRIME-K will also equip the CME rooms at the Year 3 sites with computers and infrastructure for e-learning for use by students and healthcare workers for on-going medical education and distance learning sessions.

To ensure sustainability of the decentralized training program a strategic plan will be developed involving the stakeholders within the College of Health Sciences and the Ministry of Health. The pilot decentralized training has taught us valuable lessons on decentralized training and the next step would be to integrate multidisciplinary decentralized training into the curriculum at the schools in the CHS. The training in the decentralized sites has been during student elective term. In the coming year there will be concentrated effort to incorporate decentralized teaching into delivery of the core curriculum. A series of meetings will be constituted with the clinical departments to work out the logistics of achieving this goal.

The M&E Team will conduct baseline surveys will be carried out at each of the four sites using tools developed and modified during the first two years of the PRIME-K program to capture data on personnel, infrastructure, training, data and research needs and opportunities.

A benchmarking visit other MEPI-funded university that has successfully integrated decentralized training would give us valuable input as we develop our strategic plan. In Year 3, six UoN faculty members will visit Walter Sisulu University in South Africa and Jimma University in Ethiopia.

Training and supervision of students in decentralized sites

By the end of Year 3, PRIME-K aims to provide training opportunities for 115 students from the College of Health Sciences at a total of 13 decentralized sites. This will achieve our goal of training 200 students trained by the end of Year 3. PRIME-K will provide accommodation and transport, but will not provide a stipend to support students' living expenses. This will enable PRIME-K to test sustainability of the decentralized program beyond the funded period.

Training of adjunct faculty

The proposed adjunct faculty and other healthcare workers at the sites who will supervise and mentor the students at the Year 3 sites will undergo training on medical education, leadership and mentorship. We will implement two trainings for the Year 3 sites so as to ensure all key personnel are trained.

Development and implementation of distance learning technology

Students will continue to receive webcasts, lectures and tutorials via distance learning while at the sites. PRIME-K will purchase the web-conferencing software, Adobe Connect, which will be housed at the University of Nairobi.

Utilization of mobile technologies for enhancing care, training and data collection

The pilot decentralized training has proved that this is a useful source of information for the students for quick reference during their clinical rounds. We will continue to provide students and faculty with e-books and digitalized guidelines that can be used with smartphones.

Improvement of data systems for M&E

The baseline survey of data systems has revealed that each site has unique challenges, including the collection of clinical data and the ability of the sites to utilize this information for evidence-based clinical and management decision-making. In Year 3, we propose to conduct 3-day on-site trainings for the nine sites developed in Year 1 and 2. This will include training of health records officers and hospital managers on utilization of data for decision-making and improved quality of care. Aim 2 will link up with Aim 3 of the Programmatic Award and the Linked Award to plan short studies that use data in the electronic medical records to evaluate its potential as a research tool.

e) Subcontract institution activities

In Year 2, the University of Washington:

- UW provided in-country technical support for the decentralized training program.
- UW-TREE engaged with PRIME-K to develop the capacity of IT staff at UoN to plan and implement four decentralized training programs for PRIME-K.

In Year 3, the University of Washington:

- UW will provide in-country technical support for the decentralized training program.
- The University of Washington will continue to provide technical assistance and guidance to strengthen the e-learning platform.

THEME 3: INCREASING THE CAPACITY OF MEPI INSTITUTIONS TO CONDUCT LOCALLY RELEVANT RESEARCH

a) Progress on specific aims, strategies and activities

Implementation Science Fellowship

In the period under review, six Implementation Science Fellows, including two from the School of Pharmacy, two from School of Public Health, one from Kenyatta National Hospital and one from the PRIME-K decentralized sites, were selected out of 16 applicants through a competitive process that was guided by structured criteria outlined in the call for applications.

A 2-year curriculum for the Implementation Science Fellowship was developed and mainstreamed into the existing University of Nairobi HIV Fellowship Program as an implementation science track. The program involves didactic, practical and research project for a total of 810 hours. Three Fellows traveled to the University of Washington and to the University of Maryland-Baltimore to undertake courses which in total add up to 330 credit hours relevant to implementation science in addition to engaging with their research mentors. Three Fellows returned from UW in June from UW and two will return from UMB in July.

Mentored Seed Projects

Mentored seed projects are aimed at retaining and attracting young faculty and postgraduate students in the universities. A total of 11 mentored seed projects (against a Year 2 target of 12) were selected out of 14 applicants through a competitive process that was guided by structured criteria outlined through a competitive process that was guided by structured criteria outlined in the call for applications. Nine of the recipients are from the University of Nairobi and one recipient is from Kenyatta University and Kenyatta National Hospital respectively. The 11 beneficiaries were awarded funding in the range of \$10,000-20,000. All the proposals have been submitted to the UoN-KNH Ethics and research committee and two have been approved. (See table of mentored projects)

Career Development Projects

The career development projects aim to provide mentorship to junior faculty including enhancing and expanding the level of research output for those who have demonstrated interest in research. One career development project (against a Year 2 target of 2) was selected out of seven applicants through a competitive process that was guided by structured criteria outlined in the call for applications. The program supported one faculty member from the Department of Pathology from the School of Medicine.

Support grant compliance

PRIME-K has leveraged activities of the International Extramural Associates Research and Development (IEARD) Program to streamline the processes for conducting research within UoN. PRIME-K directly supported the Offices of Grants Management and KNH-UoN ERC to increase efficiency of operations and management to the standards and regulations of USG and other donor agencies.

In Year 2, we supported the finalization of the Grants-Finance Strategic Plan as well as the KNH-UoN Ethics Review Committee Strategic Plan. Implementation of activities outlined in both Strategic Plans has commenced. The development of a new Grants Management Strategic Plan which addresses the non-financial aspects of grants management was also supported through a workshop held in March 2012. A draft Strategic Plan is under review by stakeholders.



Photo 1: Implementation Science Fellows and International AIDS Research and Training Program (IARTP) students and scholars at UW in May 2012.



Photo 1: UoN Research Grants Management Strategic Plan Workshop held 9-11 March 2012 at Maanzoni Lodge

Benchmarking for grants management practices

The Vice Chancellor of the UON, Professor George A. O. Magoha, visited the University of Washington on October 26-28, 2011. The Vice Chancellor travelled with the Deputy Vice Chancellor of Research, Professor Lucy Irungu; the Principal of the College of Health Sciences, Professor Isaac O. Kibwage; and Dr. James Kiarie. During the visit, the group met with UW President Michael Young, the Provost and Executive Vice President, Doug Wadden; and Executive Vice President for Medical Affairs, Paul Ramsey to discuss UW and UON current and future academic and research partnerships. The primary objective of the visit was to learn how to promote a University-wide research culture and diversify revenue sources for the University of Nairobi.



Photo 2: Faculty from the University of Nairobi met with senior leadership of the Office of Sponsored Programs at the University of Washington.

As part of benchmarking grants management with other global and regional institutions, we have scheduled for four senior institutional and research administrators, including the Principal College of Health Sciences, Dr. Simeon Monda, Deputy Director Clinical Services at Kenyatta National Hospital, Dr. James M. M'Imunya, Aim 4 Lead and IEARD Program PI and Mr. Bernard M. Muchoki, IEARD Program Coordinator to visit the Grants Management Unit at the University of Malawi in July 2012.

Grants Management System for UoN Grants Office

We planned to purchase a grants management system for the University of Nairobi. However, it was realized that there is need to develop specifications that will serve grants management software needs of the entire university. The Vice-Chancellor appointed a committee to write up on specifications for the Research and Grants Management Information System (R&G-MIS). The R&G-MIS Committee meets regularly to make specifications and components of the proposed R&G-MIS will be designed to meet the needs of the various Schools and Colleges at the University of Nairobi.

Initial recommendations from the R&G-MIS Committee are for the University of Nairobi to develop a customized R&G-MIS based on the findings of the comprehensive baseline assessment carried out by the IEARDA Program throughout the six colleges and the central administration offices. The final decisions are expected by mid of August 2012.

The R&G-MIS Committee also benefited from a visit in May 2012 from colleagues from the University of Washington, including Lynne Chronister, the Assistant Vice Provost for Research & Director of Sponsored Programs, and Al Marks, Training Program Manager for the Office of Sponsored Programs. Lynne met with senior leadership at the University of Nairobi and faculties from the College of Agriculture and Veterinary Sciences (CAVS) to share experiences and lessons learned regarding UW's grants management system.

Conferences

In February 2012, the PRIME-K program administrator was supported to attend the Association of Research Administrators in Africa (ARAA) Annual Conference. The agenda of this conference was "Promoting Institutional Capacity in Research" and participants were drawn from Kenya, Uganda, Tanzania, Cameroon, and Burundi.

Dr. James M. M'Imunya is scheduled to attend the Annual International Society of Research Administrators (ISRA) Conference to be held in Montreal, Canada in October 2012.

b) Challenges

- **Implementation Science Fellowships:** The Fellow selected from the decentralized site (Garissa Provincial General Hospital) was not released by the Ministry of Health as there was no immediate replacement and therefore only five (5) Implementation Science Fellows were supported.
- **Training:** To enhance faculty research skills, PRIME-K planned to deliver targeted short courses including proposal development, manuscript writing and applied and clinical research. At the time of writing this report, development of curriculum and/or modules for the short courses is underway. This activity was delayed pending results from the 2nd round of the research baseline survey that was distributed to the faculty at the School of Medicine. The first attempt generated a low response rate among the School of Medicine faculty.
- **ERC approval:** Delays in the ERC approval process have affected the timeline to award seed mentored projects and career development projects.

c) Significant Changes

- **Implementation Science Fellowships:** In the Year 2 work plan, PRIME-K proposed a one-year Implementation Science Fellowship. However, we realized that successful completion of the Fellowship will require two years, mainly because of the time required to identify and implement an implementation science research project. Therefore, we developed a 2-year curriculum for the Implementation Science Fellowship and mainstreamed it into the existing University of Nairobi HIV Fellowship Program as an implementation science track.
- **Grants Management Systems:** After benchmarking and consultation with other research institutions and universities, PRIME-K changed its initial plans to purchase an off-the-shelf grants management system and continues to explore options to implement a customized system to meet the needs of all Schools and Colleges at the University.

d) Plans for Year 3

Implementation Science Fellowships

In Year 3, PRIME-K will support 6 new Implementation Science Fellows. The 6 new Fellows will be selected competitively in September 2012 from all Schools in the College of Health Sciences, Kenyatta National Hospital and decentralized training site. Two faculty members from Aim 3 of PRIME-K will visit the UW and UMB to meet with faculty counterparts and strengthen mentorship and research collaborations.

Career Development Projects

Three faculty members from the University of Nairobi will be supported during Year 3. The faculty member funded in Year 2 will also disseminate his research findings.

Mentored Seed Projects

PRIME-K will support seven mentored seed projects ranging from \$5,000-15,000. Two of the seed mentored projects will be reserved for faculty from Maseno University to build research collaborations with a new consortium partner.

Training

Trainings will be conducted in proposal development, manuscript writing and mentorship. All Implementation Science Fellows, mentored seed project and career development project recipients will participate in these training modules in order to strengthen research skills.

1. Proposal development training: A 5-day training module will train 20 faculty members. The curriculum will be adapted from an existing training currently offered in UNITID.
2. Manuscript writing: A 2-day training module will train 30 faculty members based on a curriculum developed in Year 2.
3. Mentorship: We will conduct two, 2-day trainings for a total of 60 faculty members. The content for this training has already been identified. PRIME-K is responding to university-wide demand for training to improve the capacity of faculty to mentor students.

Benchmarking for grants management practices

The VC, Prof. George A. O. Magoha, accompanied by Prof. Isaac O. Kibwage, Principal CHS and Dr James M. M'Imunya, Aim 4 Lead and IEARD Program PI will travel to University of Washington (UW) in September 2012 to learn and share experiences with the UW team on research administration and grants management.

Grants Management System for UoN Grants Office

PRIME-K will support the implementation of the R&G-MIS through two workshops aimed to engage key stakeholders in the development of the system implementation analysis document for the R&G-MIS and to launch the R&G-MIS.

Scientific Conferences

We will continue to support senior research administrators and PIs to attend relevant local and international scientific meetings. In Year 3, we propose to support ten participants to attend the MEPI Symposium in 2013 and four participants to attend the ARAA Conference.

e) Subcontract institution activities

University of Washington – Year 2

In January through March 2012, the UW facilitated synchronous instruction from UW faculty to the PRIME-K Implementation Science Fellows in the areas of Health Economics and Health Informatics. The Implementation Fellows successfully participated in existing online coursework in which they interacted directly with UW faculty experts. The Fellows also received access to the TREE Distance Learning portal which offers an archive of asynchronous learning resources in the areas of HIV/AIDS, Health Informatics, Health Economics, Epidemiology, Biostatistics, Leadership Development, and Management.

In March 2012, three PRIME-K Implementation Science Fellows went to the University of Washington in Seattle for one academic quarter (approximately 3 months) of didactic coursework and mentored research proposal development. As part of their training program, the Fellows presented their research proposals to the weekly Kenya Research Program seminar. This seminar is attended by students, faculty and staff who are involved in research and training programs in Kenya. The Fellows appreciated the discussion and feedback generated in this forum.

All of the Fellows agreed that the training at the UW was a valuable part of their fellowship. The Fellows reported that class sessions generated fruitful and relevant discussions and the coursework, while challenging, was beneficial to their training. They also attended the 9th Annual Western Regional International Health Conference 27-29 April 2012 held in Seattle, WA. They enjoyed networking with other students and faculty and attending International AIDS Research and Training Program and Kenya Research Program seminars.

All of the Fellows took the following 4 core courses:

- **GH 541 Fundamentals of Implementation Science in Global Health** - Provides an introduction to the emerging field of implementation research by outlining various methods that are applied to improving implementations (including applied engineering, management tools, health systems, and policy research), and using experiential case studies from global health leaders. Addresses barriers to effective replication and scale-up in local settings.
- **GH 524 Policy Development and Advocacy for Global Health** - Explores complex array of factors affecting global health policy by studying contemporary health policy issues affecting developing countries. Examines how context (e.g. ideology, culture, and history) and international institutions affect the provision, financing, structure, and success of a nation's health and health system.
- **GH 521 Global Program Management and Leadership** - Focuses on management and leadership skills for complex global health settings. Includes personal leadership strengths/values; management dilemmas, data-driven decisions; program planning design and evaluation; and resource management.
- **GH 500 Global Health Seminar** - Explores issues relevant to global health; themes vary by quarter. Required course for global health MPH and global health certificate students.

Other activities:

- UW supported the adaptation of the Responsible Conduct of Research Training from a course offered at the Departments of Epidemiology and Global Health (GH 586) taught by Dr. Carey Farquhar.
- UW hosted a delegation from the University of Nairobi, led by the Vice Chancellor and senior leadership, in October 2011 to learn how to promote a university-wide research culture and diversify revenue sources for the University of Nairobi.
- The Assistant Vice Provost for Research & Director of Sponsored Programs and the Training Program Manager for the Office of Sponsored Programs visited the University of Nairobi in May 2012 to share experiences and lessons learned regarding the grants management system at UW.

University of Washington – Year 3

- The Vice Chancellor, the Principal of the College of Health Sciences and Dr. James M. M'Imunya, Aim 4 Lead and IEARD Program PI, will travel to UW in September 2012 to learn and share experiences with the UW Office of Sponsored Program on research administration implementation of a university-wide grants management system.
- UW will also modify an existing 10-session web-based course on Biostatistics and Epidemiology to be made available to students, staff and faculty at UoN and its partner institutions, such as the Ministry of Health, Kenyatta National Hospital, Kenyatta University and Maseno University.
- UW will host three Implementation Science Fellows and one UoN faculty member in March – June 2013.

University of Maryland-Baltimore – Year 2 and 3

- Two of the Implementation Science Fellows, from the Schools of Pharmacy and Public Health respectively, travelled to UMB to undertake a training course in clinical research offered within the Masters in Clinical Research Program. The eight (8) week program consists of a 12-credit course that provides training in the core competencies in clinical research including study design, biostatistics, data management, scientific communication and the ethical, legal and regulatory issues in clinical research. It involves didactic, practical and clinical sessions for a total of about 4 to 6 hours daily. Each participant has been assigned a research mentor who will guide and facilitate them formulate their research project as well as execution of the same.

- UMB will host three Implementation Science Fellows and one UoN faculty member in June – July 2013.

SECTION III.D.2 – RESPONSIBLE CONDUCT OF RESEARCH

Responsible Conduct of Research Training

Responsible Conduct of Research is conducted by UoN faculty with experience in conduct of research or ethical review of proposals. We conducted one Responsible Conduct of Research training workshop in February 2012 that attracted 43 participants drawn from UoN, Kenyatta University, Kenyatta National Hospital, the Decentralized sites and Moi University. Participants included Principal Investigators with funded research grants, University faculty, implementation science fellows, mentored seed project recipients, the career development project recipient, research administrators and adjunct faculty from decentralized sites. Another training session will be held in 29-31 August 2012.

PRIME-K will also support the KNH-UoN ERC conduct certificate courses in bio ethics. The Aim 4 team has been discussing with the KNH-UoN Ethics team to agree on the budget, participants and other logistics. The training is scheduled in August 2012.

In the awarded application we proposed to adapt Responsible conduct of research training from the Responsible Conduct of International Research course (Epidemiology/Global Health 586) at the UW taught by Dr. Farquhar whose course objectives are: Identify key components of a successful grant proposal and describe the application and review process; discuss scientific integrity and ethical dilemmas faced by international and domestic researchers; understand major aspects of project implementation, including IRB submission, creation of study instruments, database development, data management, and management of research budgets; and demonstrate through short written assignments and an oral presentation and understanding of study design and proposal development.

Our current training is adapted from this course and covers: History/principles of research ethics, medical research and the IRB application process, ethical challenges in research, mentorship, good clinical practice, integrity in fiscal management, biomedical samples, ethical data base management and statistics in research, scientific research and the community, responsible advocacy, obligations to subjects and community, responsible authorship and plagiarism, research grants writing and institutionalization of a research culture.

The UoN faculty members that train in this course include: James Machoki M'Imunya, Christine S. Kigundu, Anastasia N. Guantai, James Kiarie, Irene Inwani, Ruth Nduati, John On'gech, C. Chuani, Walter Mwanda, E. Thaddeus, Salome Bukachi, Isaac Nyamongo and Gladys Opinya. (See Appendix 2 for course schedule)

We have not encountered challenges or made changes in the implementation of responsible conduct of research training.

Plans for Year 3

Certificate Course in Bioethics

We propose to conduct a 5-day certificate course in Bioethics with participants drawn from KNH-UoN ERC and other established and upcoming ERCs in Kenya. This course will target 30 researchers, PIs, postgraduate students and research administrators. The objectives of this course will be similar to the course established in Year 2.

Certificate Course in Responsible Conduct of Research

We propose to continue offering this course as we have not yet reached a critical mass. This course will be offered in the same way it was done in Year 2. The training will target 60 faculty members and researchers.

Certificate Course in Critical Appraisal of Research Proposals

We propose to offer two 5-day courses in critical appraisal of research proposals targeting 30 members of the KNH-UoN Ethics Committee and other established and upcoming ERCs in Kenya. The purpose of this course will be to strengthen the capacity of ERC members to critically appraise the science and methodology of research proposals submitted for approval.

We will conduct a 2-day workshop to develop the training curriculum for this course. The scope of this course will be:

- a) Types of research designs

Program Director/Principal Investigator (Last, First, Middle): Kiarie, James Njogu

- b) Methodological considerations which include sample size, measurement (classifications and misclassification), bias and confounding, randomization and blinding
- c) Interpretation of implications of research findings based on study design

Monitoring of Approved Clinical Trials

We propose to support the KNH-UoN ERC to carry out two field visits comprising of a team of 5 members each to monitor ongoing research studies particularly clinical trials. These visits will be carried out in Mombasa and Kisumu where the University of Nairobi has established study sites.

SECTION III.D.4 - PUBLICATIONS

Not applicable at this time.

SECTION III.D.5 – ALTERATIONS AND RENOVATIONS

PRIME-K has not completed alterations and renovations projects. Most of the projects are in progress and will be completed with funds allocated in Year 2. Below is a summary of incomplete projects:

1. **College of Health Sciences library:** Renovation of the library was delayed by lengthy approval and procurement process. In addition, the design for library had not been agreed upon by the University Housing and Estates Department. Procurement of renovation materials is almost complete and renovation works will commence in early August 2012. We anticipate that this project will be complete by the end of September 2012, including fitting of all equipment. We have committed a total of \$13,253 towards renovation of the library.
2. **School of Nursing Skills Lab:** The procurement of material for this has been completed and renovation works are underway. This project will be completed by end of August 2012. A total of \$4,717 has been used so far for this and \$3,200 has been committed to complete this project.
3. **Decentralized sites:** The process for renovation for the sites has been delayed by the need to obtain approval from both the University of Nairobi and the Ministry of Health. We also realized that the most of the sites did not need renovation as earlier anticipated. Renovations for all identified sites will be completed by October 2012. In Year 2, we have committed a total of \$8,434.

PRIME-K was awarded \$75,000 in Year 1 and \$63,444 in Year 2 for alterations and renovations, for a total of \$138,444. We have spent \$4,717 and anticipate that we will spend \$24,877 to complete alterations and renovations described above. We therefore expect to spend a total of \$29,604 on alterations and renovations. The unobligated balance of alteration and renovations has been re-budgeted to support other program activities proposed in the attached carryover budget.

SECTION III.D.6 – INFORMATION FOR NIH CO-FUNDING PARTNERS

PRIME-K promotes the NIH Office of AIDS Research (OAR) mission that requires a unique and complex multi-institute, multi-disciplinary, global research program by implementing:

- A multi-institution program that supports collaboration between the University of Washington, the University of Maryland-Baltimore and other universities in Kenya;
- A college-wide program that involves multiple disciplines, including medicine, pharmacy, nursing, dentistry, public health and medical laboratory sciences;
- A multi-sector approach that engages the Ministry of Health and regulatory bodies; and
- A research foundation that invests in the highest priority areas of scientific opportunity that will lead to new tools in the global fight against AIDS.

SECTION III.D.7 – MEPI GOALS FOR OGAC

PRIME-K has contributed to the human resources for health for Kenya through its new training initiative the Bachelors in Medical Laboratory Sciences that has enrolled 24 students. The program has also strengthened the capacity of adjunct faculty in mentorship and training. PRIME-K is promoting Kenya’s capacity to increase number of students trained through the online Bachelors of Science in nursing course for upgrading diploma level nurses. PRIME-K is also increasing capacity to support locally relevant research that will support improved service delivery by training MoH staff at decentralized sites to utilize monitoring and evaluation data and involving adjunct faculty in research activities.

In order to build the training and research capacity of other medical institutions in Kenya, the PRIME-K program is in the process of establishing formal relationships with Kenyatta University and Maseno University.

PRIME-K is working with the Ministry of Health, the Kenya Medical Practitioners and Dentists Board (KMPDB), the Nursing Council of Kenya (NCK) and the Kenya Pharmacy and Poisons Board (KPPB) to accredit decentralized training sites and is advocating for additional financial and human resources to strengthen the capacity of the sites. PRIME-K is also advocating for improved tracking of medical graduates by KMPDB.

The University of Nairobi is required to use 5% of total awarded costs annually towards strengthening grants and research management capacity. The total amount of the prior year’s budget that was used for strengthening grants and research management capacity is \$185,082 which accounts for approximately 10% of the total awarded costs (See Table 7).

Programmatic activities to strengthen capacity at the University of Nairobi in areas such as financial management, grants management and administration, research integrity, and ethical review are described in detail in the narrative for Theme 3 in Section III.D.1 and in the narrative for the Responsible Conduct of Research provided in Section III.D.3.

Table 7: Funds Used to Strengthening Grants and Research Management Capacity at UoN

<u>Activity</u>	<u>Description</u>	<u>Amount spent</u>
Salary support	Aim 4 lead and 3 Faculty members on Aim 4 team	\$45,400
Visit by the Principal Investigator, Vice Chancellor, Deputy Vice Chancellor (Research, Production and Extension) and the Principal of CHS to UW to learn how to promote a culture of research and diversify revenue source (October 2011)	Travel and accommodation	\$39,839
PRIME-K Program Administrator attended the ARAA conference in Tanzania (February 2012)	Travel and accommodation	\$2,532
Visit by four senior institutional and research administrators, including the Aim 4 Lead, Principal of CHS, Deputy Director Clinical Services at KNH, IEARD Program Coordinator to learn about the Grants Management Unit at the University of Malawi (July 2012)	Travel and accommodation	\$12,025
Visit by the Aim 4 Lead, Vice Chancellor, Principal of CHS to UW to share experiences and lessons regarding implementation of a grants management systems (September 2012)	Travel and accommodation	\$15,584
Aim 4 lead is s scheduled to attend the Annual International Society of Research Administrators (ISRA) Conference to be held in Montreal, Canada (October 2012)	Travel and accommodation	\$5,200
KNH-UON ERC Strategic Plan finalization	Conference costs, transport costs, consultancy costs	\$19,392
Responsible Conduct of Research (RCR) Trainings - One held in February 2012 and one scheduled for 29-31 August 2012	Travel costs for participants, facilitators allowances, conference and accommodation costs for participants from decentralized sites	\$27,406
Bioethics Training scheduled for August 2012	Travel costs for participants, facilitators allowances, conference and accommodation costs for participants from decentralized sites	\$17,704
Total		\$185,082

SECTION III.D.8 – SUSTAINABILITY

PRIME-K recognizes that it is critical to involve stakeholders in medical education to change training approaches in a sustainable manner for UoN and Kenya. PRIME-K cultivates strong relationships with these stakeholders and leverages existing programs in the PRIME-K institutions to ensure sustainability of the program after the end of MEPI funding. To ensure sustainability, PRIME-K has developed several strategies to support the MEPI themes.

Theme 1: Increasing the number of health care workers trained

- Curriculums that have been supported by PRIME-K, such as the upgrading course offered by the School of Nursing, will adopt a fee-based structure to generate revenues to support continued development and expansion.

Theme 2: Retaining health workers in areas where they are most needed

- PRIME-K previously provided stipends to medical students who train at the decentralized sites. PRIME-K will not provide stipends during Years 3-5 to ensure that stipends are not a factor in attracting students to the program. UoN and the MoH will continue to explore affordable and sustainable options for accommodations for students during their training experiences.
- The Schools of Nursing Sciences, Pharmacy and Dental Sciences have integrated decentralized training into the curriculum.
- Through collaboration with the Ministry of Health, the sites that are used for decentralized training will receive additional funds to improve facilities.

Theme 3: Increasing the capacity of MEPI institutions to conduct locally relevant research

- Strategic plans, such as the Grants Fund Management Strategic Plan, Grants Management Strategic Plan and the KNH-UoN ERC Strategic Plan, have been adopted by the UoN.
- Memoranda of Understanding with partner institutions, such as Kenyatta University and Maseno University, will be developed to ensure continued collaboration and leveraging of resources.
- PRIME-K activities that support research capacity building develop a cadre of qualified researchers who will be competitive applicants for external funding in the future.

SECTION III.D.9 – MENTORED RESEARCH PROJECTS REPORT

The Mentored Research Projects Table completed (attached) provides information on each mentored research project supported by PRIME-K. The summaries below provide additional information on the objectives and status of each study.

Seed Mentored Projects:

1. ***Factors influencing nursing research among nurses in critical care units at Kenyatta National Hospital and Aga Khan University Hospital in Kenya*** (Kyalo Albus, Kenyatta National Hospital)
This project aims to: 1) determine the extent of utilization of research results in nursing practice; 2) establish the status of nursing research activities and number of nurses involved at KNH; 3) identify the factors that facilitate and/or inhibit undertaking and utilization of nursing research; and 4) compare research activities of nurses working in different specialized areas. Status: Received ERC approval.
2. ***Assessing the feasibility of integration of screening for and management of gender based violence into focused antenatal and post natal care*** (Dr. Karanja Wanyoro, Kenyatta University)
This project aims to: 1) assess the feasibility of integrating screening for and management of gender based violence in pregnant women and in puerperium into the existing focused antenatal care and post natal care in Kenya; 2) determine prevalence of gender based violence in pregnancy and puerperium; 3) determine current level of screening and management of GBV in FANC and PNC and to intervene by training health workers to fill in the gaps in knowledge; and 4) find out the attitudes and practice in screening and management of gender based violence in pregnancy and puerperium. Status: Submitted proposal to ERC and working on corrections suggested.

- 3. *Determinants of Malaria at the Community Level*** (Dr. Dismas Ongore, School of Public Health)
This project aims to: 1) determine the prevalence including sero-prevalence of malaria at the community level; 2) determine the social, economic, environmental and health systems determinants of malaria at the community level and within the health services; and 3) suggest an integrated malaria control strategy including vaccination. Status: Awaits submission to ERC.
- 4. *Staff knowledge and involvement in relation to disaster preparedness among selected health facilities in Nairobi County, Kenya*** (Dominic Charles Okero, Kenyatta National Hospital)
This project aims to: 1) determine knowledge, attitudes and practice of staff on disaster management; 2) draft a basic disaster management plan for the hospital; and 3) conduct a sensitization training program specific to the disaster management plan. Status: Submitted proposal to ERC and awaiting response.
- 5. *Evaluation of the effectiveness of oral health education on teething on infant and child health*** (Dr. Regina Mutave, School of Dental Sciences)
This project aims to: 1) develop training materials suitable for in-service nurses stationed at MCH clinics on teething; 2) train nurses at MCH clinics on teething, including the relationship of teething with common childhood illness; 3) determine the impact of the nurse's training through assessment of knowledge and practices of mothers attending MCH clinics about teething of their children. Status: Submitted proposal to ERC and awaiting response.
- 6. *Prevalence of rheumatic diseases in Nairobi, Kenya: a stage 1 copcord study*** (Dr. Paul Ekwom, Kenyatta National Hospital)
This project aims to: 1) determine reduction in community burden of musculoskeletal pain and rheumatic disorders; 2) determine identification of common musculoskeletal rheumatic diseases; 3) determine Identification of their modifiable risk factors; 4) development of evidence-based strategies for their primary and secondary prevention and advocate for these strategies to policy makers. Status: Submitted proposal to ERC and awaiting response.
- 7. *Mucosal and systemic Human Herpes Virus-7 is protective against HIV-1 infection among HIV-1 resistance Persons*** (Dr. Julius Oyugi, UNITID)
The project aims to: 1) determine the prevalence of mucosal and systemic HHV-7 among HIV-1 resistant persons; 2) assess the impact of mucosal and systemic HHV-7 on the expression of HIV receptors(CD4<CXCR4 andCCR5) on CD4+T cells among HIV-1 resistant persons; 3) Assess the impact of mucosal and systemic HHV-7 on IL-16 secretions among HIV-1 resistance persons. Status: Submitted proposal to ERC and awaiting response.
- 8. *Impact Evaluation of Kenyatta National Hospital (KNH) lactation management education training program on infant and young child feeding practices.*** (Dr. Waithira Mirie, School of Nursing Sciences)
This project aims to: 1) review the KNH Lactation Management Education Program documents and resources; 2) determine the knowledge, attitudes and skills of health care providers and mothers about breastfeeding; 3) establish the implementation of Ten Steps to Successful breastfeeding at Kenyatta National Hospital. Status: Submitted proposal to ERC and awaiting response.
- 9. *Current Radiographic practices in the investigation of maxillofacial trauma*** (Dr. Eunice Kihara, School of Dental Sciences)
This project aims to: 1) determine types of images taken by trauma patients; 2) record findings and fracture patterns; 3) establish the etiology of maxillofacial trauma; 4) establish teleradiology services; and 5) publish a trauma imaging manual. Status: Submitted proposal to ERC awaiting and response.
- 10. *Impact of genetic polymorphisms of drug metabolizing enzymes on nevirapine plasma levels and impact on clinical outcomes*** (Dr. Faith Okalebo, School of Pharmacy)
This project aims to: 1) determine inter-patient and intra-patient variability; 2) determine population pharmacokinetic parameters; 3) determine the influence of mutations of Cytochrome P450 B6 and other host factors; 4) determine the association between plasma levels and virology failure and adverse drug reactions. Status: Submitted proposal to ERC and awaiting response.
- 11. *Multi-parametric analysis of sickle cell homozygous patients in Kenya*** (Dr F. K. Abdallah, School of Medicine)
This project aims to: 1) determine the parameters (age, sex, ethnic group and environmental factors in our sicklers; and 2) determine what other measurable parameters influence these features. Status: Awaits submission to ERC.

Career Development Project:

- 12. *The role of Endogenous and Exogenous Female Sex Hormones in HIV-1 Shedding*** (Major Dr. C.S. Gontier, School of Medicine). ERC approval has already been obtained for this project.

Implementation Science Fellowship:

- 13. *The quality, availability, and price of antimalarial medicines in Embu County, Kenya*** (Dr. Stanley Ndwigah, School of Pharmacy)
This project aims to: 1) determine the number of health facilities (hospitals, pharmacies, drug shops, and health centers) that provide antimalarials and their staffing in Embu County; 2) assess the available antimalarial medicines dispensed in the health facilities to determine if they conform to WHO recommendations and using the international pharmacopeia test the products to determine their identity plus their disintegration, dissolution and assay profiles in order to determine their quality; 3) determine the availability and price of ACTs in Embu County. Status: Awaits submission to ERC.
- 14. *Evaluating and improving quality of obstetric and neonatal care using near miss audit at Kenyan urban and rural health care facilities*** (Emmy Talam Yatich, Kenyatta National Hospital)
This project aims to: 1) determine the prevalence of maternal and neonatal near miss, the proportion of women with maternal complications, near miss, and maternal deaths, neonatal near miss and neonatal deaths at Level 3 and 4 health facilities in Nairobi, Kenya; 2) describe the characteristics of each health facility and their ability to identify and manage severe maternal and neonatal complications; 3) identify the provider characteristics related to better completion of the maternal and neonatal near miss tool, how much information is filled, complete, or incomplete; and 4) evaluate the quality of care, before and after training by the health care providers. Status: Awaits submission to ERC.
- 15. *Contribution of students' research to inform National HIV policies and practice in Kenya: a research project in the College of Health Sciences, University of Nairobi*** (Mary Kinoti, School of Public Health)
This project aims to: 1) create awareness to the research end-users of the amount of health research generated by students dissertations on HIV/AIDS; 2) explore the challenges to the flow of HIV/AIDS research knowledge from the researchers to policy makers and the NGOS; and 3) adopt a strategy for enhancing utilization of research knowledge generated by masters and PHD study. Status: Awaits submission to ERC.

The Implementation Science Fellows who are currently at UMB, Dr. Richard Ayah (School of Public Health) and Dr. David Nyamu (School of Pharmacy), are currently developing their proposals with support of faculty mentors from UoN and UMB.

SECTION III.D.9 CONTINUED – OTHER PROGRAMS

AFYA BORA CONSORTIUM FELLOWSHIP IN GLOBAL HEALTH LEADERSHIP

Final Progress Report

The primary goal of this award was to pilot the Afya Bora Consortium Fellowship in Global Health Leadership (see Appendix 4). We have included below the specific aims and our progress towards achieving these aims:

Aim 1: Recruit highly-qualified fellows from African and US collaborating institutions into a pilot fellowship and conduct case-based, interactive modules.

We received 102 applications and selected 22 fellows from four US institutions and four African partner countries. The final Afya Bora cohort was highly multidisciplinary with 11 medical post-graduates and post-residency physicians, and 13 nurses with graduate degrees: among these six have a public health degree and two are PhD candidates. Qualified applicants were required to have an advanced degree and 45% of the selected fellows exceeded the minimum requirements, having multiple advanced degrees, as well as an array of leadership experiences. Table 1 lists the selected cohort for the pilot program.

In January 2011, the first three 1-week didactic sessions were held at the University of Nairobi in Kenya and included: Leadership Skills; Project and Program Management; and Implementation Science and Health Systems Research. In April 2011 a 2-day meeting was held in Dar es Salaam, Tanzania. During this meeting fellows had an opportunity to present on their attachment site projects and provide oral feedback on the program. Following the meeting the second three 1-week didactic sessions were at Muhimbili University of Health and Allied Sciences (MUHAS) in Dar es Salaam, Tanzania and included: Monitoring and Evaluation; Technology and Bioinformatics; and Communications and Media Skills.

Table 1: Afya Bora Consortium Fellows 2011

Country	Name	Position at time of recruitment
Botswana	Opelo Rankopo, MSN,BSN	Clinical Practice/Inspectorate Officer, Nursing & Midwifery Council of Botswana, MoH
	Lillian Segwagwe, MS, BSN	Head, Dept. of Adult Health Generalist, Kanye SDA College of Nursing
	Onalenna Lemo, MS, MPA	Project Coordinator, Care of Careers, Nurses Association of Botswana
	Hildah Molate, MPH, BSN	Senior Nursing Officer, Princess Marina Hospital
Kenya	Sara Bett, MPH, MSc, BSc	Nursing Officer, Kenyatta National Hospital
	James Gitau, MBChB, MMed	Pediatrician, Garissa Provincial General Hospital
	Lucy Kabare, MBChB, MMed	Senior Medical Officer & Honorary Lecturer, University of Nairobi
	Eddah Karijo, MPH, BSN	Nursing Officer, Kenyatta National Hospital
	Nerry Kittur, BSc, MPH	Nursing Officer, Kenyatta National Hospital
	Samuel Ndungu, MBChB, MMed	Obstetrician & Gynecologist, Mbagathi District Hospital, Ministry of Medical Services
	Kenneth Ngure, BSc, MSc, MPH	Study Coordinator, Partners in Prevention Study, PhDc in Public Health, Jomo Kenyatta University of Agriculture and Technology
Tanzania	Mucho Mizinduko, MD	Site Leader, Mwanza Intervention Trials Unit, National Institute for Medical Research
	Hawa Nyange, MD	Site Manager, HIV/AIDS Care & Treatment Program, MDH
	Riziki Ponsiano, MD, MPH	Site Coordinator, Mwanza Intervention Trials Unit, National Institute for Medical Research
	Alice Simwinga, MD	Site Manager, HIV/AIDS Care & Treatment Program, MDH
Uganda	Joyce Nankumbi, RN, BSN, MSc	Teaching Assistant, Dept. of Nursing, Makerere University
	Benson Tumwesigye, MBChB, MPH	National Coordinator HIV Counseling & Testing, STD/AIDS Control Program, MoH
	Richard Muhindo, BSN, MPH	Lecturer, Dept.t of Nursing, Makerere University
	Ziadah Nankinga, RN, BSN, MSc	Teaching Assistant, Dept. of Nursing, Makerere University
United States	Lisa Gatti, MSN, BSN	PhD Candidate in Nursing, University of Pennsylvania
	SoSon Jong, MS, MS, BSN	PhD Candidate in Nursing, University of California, San Francisco
	Aliza Monroe-Wise, MD, MSc	Resident, Internal Medicine, University of Washington

Since the Pilot ended in August 2011 we have been working to revise the curriculum for these 6 modules based on input that was received during the pilot program, both from instructors, fellows, and from I-TECH's evaluation report. This last year we have also been developing an additional 6 new modules that will be included in the full fellowship program. The new modules are: Effective Writing and Grant Proposals, Human Resources and Budget Management, Global Health Policy and Governance, Challenges in HIV/AIDS Care and Prevention, Applied Epidemiology and Basic Biostatistics, and Responsible Conduct of Research. The final curriculum will ensure continuity across modules, avoid duplication of material, integrate educational principles into the design of the curriculum, include an integrated facilitator's guide and be made available as an open access document.

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Of the cohort, 17 fellows participated in a 3-6 month mentored project-based experience at an academic, local government or non-governmental health-related organization in each of the four African countries: six in Kenya, three in Botswana, three in Uganda, and five in Tanzania. Attachment Sites placements are illustrated in Figure 1.

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institutions. This meeting was held in Entebbe, Uganda, on August 11-12. During this meeting fellow also participated in a 1-day manuscript writing workshop.

Aim 3: Establish a monitoring and evaluation system

The International Training and Education Center for Health (I-TECH) was engaged to conduct evaluation and ongoing quality improvement activities for the Afya Bora Consortium Fellowship pilot program. The evaluation framework and logic model was developed in consultation with Afya Bora Working Group members from all 8 participating universities. Implementation of the evaluation progressed according to the evaluation plan, including conducting observation of didactic modules and provision of feedback to program staff. After the first didactic session, the evaluation report was shared with working group members as well as a briefing on key areas for improvement. Recommendations were then incorporated into the second didactic session.

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Ongoing Activities and Future Plans

We are providing a mechanism for ongoing support and networking among the fellows after completion of their training. We utilize social networking mediums such as Facebook to provide day-to-day connectivity for graduates, mentors, and working group members. The Afya Bora Consortium Fellowship website (<https://afyaboraconsortium.org>) is being rebuilt and will include a message and discussion forum, materials for the mentoring program, and core curriculum.

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Based on the success of the Pilot fellowship, the Afya Bora Consortium anticipates being awarded funding for the next 5 years to support implementation of the full fellowship program. Recruitment and Selection of 2012-2013 Fellows took place in January-April 2012. We received 62 applications and selected 20 fellows from 2 US institutions and 4 African partner countries to participate in full fellowship program. The Afya Bora cohort is highly diverse and multidisciplinary with 10 women and 10 men selected. Among the fellows, 8 were in the Nursing field and 12 were in the medical field, and 10 have advanced degrees in Public Health. At the time of the application Fellows had positions in academic institutions (13), Ministry of Health (5), and non-governmental organizations (2).

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One manuscript describing the Afya Bora Consortium Fellowship in Global Health Leadership pilot program was published:

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Inclusion of Women and Minorities:

15 (68%) of the 22 fellows were women and 20 (91%) of 22 fellows were African.

SECTION III.E – MONITORING & EVALUATION

The monitoring and evaluation activities for PRIME-K are supported by I-TECH at the University of Washington. The PRIME-K M&E Team based in Nairobi is led by Francis Njiri, M&E Manager from the University of Nairobi and Mara Child, the Program Manager for

the University of Washington, as well as members of the PRIME-K Secretariat and PRIME-K leadership. Over the past year, the monitoring and evaluation activities established data collection processes that align with the PRIME-K themes.

A significant step is the development of a program theory of change. Gabrielle O'Malley, PhD, Director of Implementation Science at I-TECH, and Joseph Daniels, PhD worked with PRIME-K program leadership to develop a program theory of change. The draft program theory of change (See Appendix 3) uses the themes of PRIME-K to guide the monitoring and evaluation activities over the long-term. Using the program theory of change, a Monitoring and Evaluation Plan that outlines evaluation questions, indicators, data needed, timeline and instruments used to collect the data is being developed. There are multiple evaluation questions per theme, and this document will be used to complete the NIH M&E requirements for 2013.

The monitoring and evaluation demands for PRIME-K involve two broad categories of data:

1. Records of events/training (e.g., date, title, topics covered, location, trainers/facilitators, etc.) and the participants who attended these trainings/events;
2. Detailed data derived from questionnaires, pre- and post-training evaluations, baseline and site surveys, and other quantitative and qualitative data.

Based on a comprehensive survey of available options for managing these data conducted by Brandon Guthrie, PhD from the Department of Global Health at UW, the PRIME-K M&E team concluded that no one system would allow us to handle both of these categories of data. In response, we have selected two database systems to address these two data sources, with the ability to merge these data using shared identifiers. We propose to use two online database systems to manage the monitoring and evaluation data generated by PRIME-K. These databases were chosen based on the following 5 criteria:

1. Online data entry allowing simultaneous entry by multiple users at multiple locations
2. User-friendly design for both customization of the system by administrators and data entry and retrieval by end users
3. Strong access control to tailor the level of access to the needs of the user (e.g., administrator, data entry, program oversight, etc.)
4. Professional support for the underlying programming code
5. Free license (open source)

We will use TrainSMART to manage the first category of monitoring and evaluation data. TrainSMART was developed by I-TECH to track training information, with a focus on trainings for health professionals. The data model and hierarchical structured used in TrainSMART is a good match to the demands of PRIME-K. We will define categories of events/trainings and specific titles of trainings/events. We will then create individual instances of a training, to which participants and trainers can be assigned.

TrainSMART has a powerful query and reporting function that allows the user to dynamically query the database to produce summary reports. Unfortunately, TrainSMART has limited ability to store detailed data that is specific to a participant/training combination (e.g., a pre- or post-training evaluation survey).

To address this limitation, we will use REDCap to manage the detailed evaluation data. REDCap is an electronic data capture system developed by Vanderbilt University. At UW, ITHS manages a version of REDCap that is free to UW affiliated investigators. REDCap is designed primarily to capture study data, either from cross-section or longitudinal study designs. It has a high degree of flexibility to collect questionnaire/form data, program skip patterns, and to summarize the progress of data entry. REDCap also has an excellent interface and export data as pre-formatted datasets (Stata, SAS, SPSS, or comma separated text file). By combining these two systems, we will be able to efficiently collect, manage, and analyze monitoring and evaluation data. These systems do not require a high degree of IT support to maintain, and therefore will be far more sustainable than custom designed databases.

In addition, monitoring and evaluation activities have included qualitative approaches to understand the social context of decentralized medical education in Kenya. One of the objectives is to develop decentralized training sites for medical students in order to improve clinical skills for medical practice in underserved areas. In order to understand student and faculty experiences in this new approach to medical education in Kenya, qualitative evaluation models were developed. In collaboration with PRIME-K faculty and program staff, Joseph Daniels, PhD, designed a model that used focus group discussions with faculty and students. The focus groups discussions collected data to measure student learning and motivation to intern in an underserved area after medical training and faculty engagement in the program. The qualitative model was implemented during the pilot to test feasibility and training was provided to program staff to build sustainable use of qualitative methods in Kenyan medical education.

The qualitative report outlining the pilot program was used to develop an article for publication. The article is titled, "Motivating factors for choice of internship site among fourth year medical students: An Evaluation of a Community-Based Training Program." The authors of the article include PRIME-K leadership in Kenya and collaborators in the US. The report is being completed.

We requested staff and student data for use to track training activities and have initiated a request for ethical approval from the KNH-UoN Ethics Committee to allow us use this data for development of publications.

Plans for Year 3

During Year 3, the PRIME-K M&E team plans to carry out the following activities:

1. Finalize the Monitoring and Evaluation Plan with input from all stakeholders and submit to NIH in the first quarter of Year 3.
2. Continue to migrate all data that had been entered into Microsoft Access database into TrainSmart and RedCap and transition to online data entry systems at the central M&E office as well at decentralized training sites;
3. Conduct assessments for all trainings as well as conduct follow up surveys for previous trainings;
4. Initiate and support development of abstracts for conferences and manuscripts for publication based on data collected in PRIME-K;
5. Conduct and/or support training for data management and utilization for existing sites; and
6. Continue to monitor program progress and conduct evaluation for short term performance.

Mentored Research Projects Table: Annual Update
Grant Number NIH-5R24TW008889-02
July 1, 2011 to July 1, 2012

	<u>Mentored Research Project Title</u>	<u>Person(s) Involved</u>	<u>Title & # of grant</u>	<u>Name of Mentor(s)</u>	<u>Information on IRB</u>	<u>Education on protection of human research participants</u>
<u>Mentored Seed Projects</u>						
1	Factors influencing nursing research among nurses in critical care units at Kenyatta National Hospital and Aga Khan University Hospital in Kenya	Mr Kyalo Albanus	NIH-5R24TW008889-02	Prof. Anna Karani	Review Board KNH-UON ERC	Attended and completed
2	Assessing the feasibility of integration of screening for and management of gender based violence into focused antenatal and post natal care	Dr. Karanja Wanyoro	NIH-5R24TW008889-02	Mr. Wilson Liambila	Review Board KNH-UON ERC	Attended and completed
3	Determinants of Malaria at the Community Level	Dr. Dismas Ongore	NIH-5R24TW008889-02	Prof. Francis Onyango and Prof. J. Wang'ombe	Review Board KNH-UON ERC	Attended and completed
4	Staff knowledge and involvement in relation to disaster preparedness among selected health facilities in Nairobi County, Kenya	Dominic Charles Okero	NIH-5R24TW008889-02	Dr. John Kinuthia	Review Board KNH-UON ERC	Attended and completed
5	Evaluation of the effectiveness of oral health education on teething on infant and child health	Dr. Regina J. Mutave	NIH-5R24TW008889-02	Dr. Grace Omoni and Prof. Loice Gathece	Review Board KNH-UON ERC	Attended and completed
6	Prevalence of rheumatic diseases in Nairobi, Kenya: a stage 1 copcord study	Dr. Paul E. Ekwom	NIH-5R24TW008889-02	Dr. George Omondi Oyoo	Review Board KNH-UON ERC	Attended and completed
7	Mucosal and systemic Human Herpes Virus-7 is protective against HIV-1 infection among HIV-1 resistance Persons.	Dr. Julius Oyugi	NIH-5R24TW008889-02	Prof. Omu Anzala	Review Board KNH-UON ERC	Attended and completed
8	Impact Evaluation of Kenyatta National Hospital (KNH) lactation management education training program on infant and young child feeding practices	Dr. Waithira Mirie	NIH-5R24TW008889-02	Prof. Rachel Musoke	Review Board KNH-UON ERC	Attended and completed

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9	Current radiographic practices in the investigation of maxillofacial trauma	Dr. Eunice Kihara	NIH-5R24TW008889-02	Prof. Evelyn Wagaiyu	Review Board KNH-UON ERC	Attended and completed
10	Impact of genetic polymorphisms of drug metabolizing enzymes on nevirapine plasma levels and impact on clinical outcomes	Dr. F.A. Okalebo	NIH-5R24TW008889-02	Prof Anastasia Guantai and Dr. Scott McLelland (UW)	Review Board KNH-UON ERC	Attended and completed
11	Multipara metric analysis of sickle cell homozygous patients in Kenya.	Dr. F.K. Abdallah	NIH-5R24TW008889-02	Prof. Walter Mwanda	Review Board KNH-UON ERC	Attended and completed
<u>Career Development Project</u>						
12	The role of Endogenous and Exogenous Female Sex Hormones in HIV-1 Shedding (PhD).	Major Dr. C.S. Gontier	NIH-5R24TW008889-02	Prof Christine Kigonda, Dr Angela Amayo and Dr Nyagol	Review Board KNH-UON ERC	Attended and completed
<u>Implementation Science Fellowships</u>						
13	The quality, availability, and price of antimalarial medicines in Embu County, Kenya	Dr. Stanley Ndwigah	NIH-5R24TW008889-02	Dr. Kennedy Abuga, Prof. Isaac Kibwage, Prof. Andy Stergachis (UW)	Will be submitted to Review Board KNH-UON ERC	Attended and completed
14	Evaluating and improving quality of obstetric and neonatal care using near miss audit at Kenyan urban and rural health care facilities	Emmy Talam Yatic	NIH-5R24TW008889-02	Dr. Zahida Quereshi and Dr. Dilys Walker (UW)	Will be submitted to Review Board KNH-UON ERC	Attended and completed
15	Contribution of students' research to inform National HIV policies and practice in Kenya: a research project in the College of Health Sciences, University of Nairobi	Mary Kinoti Ringera	NIH-5R24TW008889-02	Dr. James Kiarie, Aaron Katz (UW) and Dr. James Pfeifer (UW)	Will be submitted to Review Board KNH-UON ERC	Attended and completed
16	Proposal under development	Dr. Richard Ayah	NIH-5R24TW008889-02	Not chosen mentor	Will be submitted to Review Board KNH-UON ERC	Attended and completed
17	Proposal under development	Dr. David Nyamu	NIH-5R24TW008889-02	Not chosen mentor	Will be submitted to Review Board KNH-UON ERC	Attended and completed

Appendix 1 – Micro-projects of CHS students during decentralized training

Mbagathi District Hospital		
Kagasi Travor and Edwin Onsongo	Surgery	Common causes of surgical interventions in Mbagathi District Hospital
Simon Momanyi Ogeto	Public Health	Project Financing for New Maternity Unit at Mbagathi District Hospital
Edwin Muriithi	Pharmacy	Suspected adverse drug reactions to antiretroviral drugs reported at Mbagathi District Hospital and the Interventions taken
Richard Kagia Njunge	Pharmacy	Incidence of proprietary prescribing in Mbagathi District Hospital

UNIVERSITY OF NAIROBI

COLLEGE OF HEALTH SCIENCES

MEPI-KENYA PROGRAM ACTIVITY

(IN COLLABORATION WITH UNIVERSITY OF WASHINGTON, USA)

RESPONSIBLE CONDUCT OF RESEARCH COURSE

Workshop Schedule: 20th to 22nd February, 2012

TIME	8.00 - 9.15 AM	9.15 - 10.30 AM	10.30 AM 11.00 AM	11.00 AM - 12.00 NOON	12.00 NOON - 1PM	1.00 PM 2.00PM	2.00 - 3.45PM	3.45 PM 4.00 PM	4.00 - 5.00 PM
Monday (20/02/2012)	<ul style="list-style-type: none"> • Introductions/ Course Overview/Opening • Pre-course Questionnaire (JM M'Imunya & I. Inwani) 	History/Principles of Research Ethics (Prof. C. S. Kigundu)	HEALTH BREAK	Medical research and the IRB Application Process. (Prof. AN Guantai)	<i>Small Group Discussion:</i> Ethical Challenges in Research (JN Kiarie/ Inwani)	LUNCH	Ethical Responsibilities to Mentorship (Prof. Nduati)	HEALTH BREAK	Good Clinical Practice (Ongech)
Tuesday (21/02/2012)	Integrity in Fiscal management (C. Chuani)	Biomedical Samples (Prof. Mwanda)		Ethical Database Management and statistics in Research (E. Thaddeus)	<ul style="list-style-type: none"> • Scientific Research & the Community • Responsible Advocacy and Obligation to Subjects and Community (Case Discussion) (Dr. S. Bukachi/ Prof. Nyamongo) 		Responsible Authorship/Plagiarism (Prof. Nduati)		
Wednesday (22/2/2012)	Overview: Research Grants writing (JM M'Imunya)			Institutionalization of research culture and ethical practices in institution of higher learning and research Kiarie/Prof. Opinya	<ul style="list-style-type: none"> • Post course questionnaire • Course Evaluation • Closing Ceremony (IEARDA & MEPI-K Teams) 				
Venue: Olive Garden Hotel, Nairobi									

PRIME-K Program Theory of Change

Activities

- New Training Initiatives
- Faculty teacher training
- Curriculum workshops
- Multi-disciplinary Skills Lab
- CHS Library Development
- Enhance MNCH leadership capacity to harness emerging implementation science strengths
- Establishment Medical Education Unit

- Medical student training at decentralized sites
- Development and training of adjunct faculty
- Distance-learning training
- Utilization of mobile technologies for enhancing training and care

- Implementation Science research training
- Mentored seed projects and career development awards
- Strengthening data systems at decentralized sites
- Training to improve research capacity
- MNCH IS Research, Leadership and Management Training

- Improve processes and infrastructure for research and grants management
- Training in research and grants management
- Support research dissemination activities

Short-term Outcomes

- Staff use innovative teaching methods
- Course syllabi and curriculum reviewed
- Integration of Skills Lab into curriculum
- Increased utilization of library and electronic learning resource
- Increased number of medical education experts at UoN

- Exposure of undergraduate students to underserved populations
- Expand reach of expert instruction
- Accredited UoN adjunct faculty at decentralized sites
- Improved teaching and mentoring skills of adjunct faculty

- Locally relevant research projects implemented at decentralized
- Increased research mentorship capacity by UoN and adjunct faculty
- Increased motivation to adjunct faculty to conduct research

- Strengthen infrastructure for research and grants management system
- Strengthening research administration and regulation
- capacity of the UoN

Intermediary Outcomes

Established Centers of Excellence in Medical Education and MNCH at UoN

Improved capacity of decentralized training sites to train students from UoN's CHS

Increased opportunities for Ministry of Health staff to engage in teaching and research

National policy influenced by research conducted by UoN faculty and students and adjunct faculty at decentralized sites

Long-term Program Impact

Increasing quantity and quality of health care workers trained

Retaining health care workers over time and in areas where they are most needed

Investing in regionally relevant research.

Final Progress Report

The primary goal of this award was to pilot the Afya Bora Consortium Fellowship in Global Health Leadership. We have included below the specific aims and our progress towards achieving these aims:

Aim 1: Recruit highly-qualified fellows from African and US collaborating institutions into a pilot fellowship and conduct case-based, interactive modules.

We received 102 applications and selected 22 fellows from four US institutions and four African partner countries. The final Afya Bora cohort was highly multidisciplinary with 11 medical post-graduates and post-residency physicians, and 13 nurses with graduate degrees: among these six have a public health degree and two are PhD candidates. Qualified applicants were required to have an advanced degree and 45% of the selected fellows exceeded the minimum requirements, having multiple advanced degrees, as well as an array of leadership experiences. Table 1 lists the selected cohort for the pilot program.

In January 2011 the first three 1-week didactic sessions were held at the University of Nairobi in Kenya and included: Leadership Skills; Project and Program Management; and Implementation Science and Health Systems Research. In April 2011 a 2-day meeting was held in Dar es Salaam, Tanzania. During this meeting fellows had an opportunity to present on their attachment site projects and provide oral feedback on the program. Following the meeting the second three 1-week didactic sessions were at Muhimbili University of Health and Allied Sciences (MUHAS) in Dar es Salaam, Tanzania and included: Monitoring and Evaluation; Technology and Bioinformatics; and Communications and Media Skills.

Table 1: Afya Bora Consortium Fellows 2011

Country	Name	Position at time of recruitment
Botswana	Opelo Rankopo, MSN,BSN Lillian Segwagwe, MS, BSN Onalenna Lemo, MS, MPA Hildah Molate, MPH, BSN	Clinical Practice/Inspectorate Officer, Nursing & Midwifery Council of Botswana, MoH Head, Dept. of Adult Health Generalist, Kanye SDA College of Nursing Project Coordinator, Care of Careers, Nurses Association of Botswana Senior Nursing Officer, Princess Marina Hospital
Kenya	Sara Bett, MPH, MSc, BSc James Gitau, MBChB, MMed Lucy Kabare, MBChB, MMed Eddah Karijo, MPH, BSN Nerry Kittur, BSc, MPH Samuel Ndungu, MBChB, MMed Kenneth Ngure, BSc, MSc, MPH	Nursing Officer, Kenyatta National Hospital Pediatrician, Garissa Provincial General Hospital Senior Medical Officer & Honorary Lecturer, University of Nairobi Nursing Officer, Kenyatta National Hospital Nursing Officer, Kenyatta National Hospital Obstetrician & Gynecologist, Mbagathi District Hospital, Ministry of Medical Services Study Coordinator, Partners in Prevention Study, PhDc in Public Health, Jomo Kenyatta University of Agriculture and Technology
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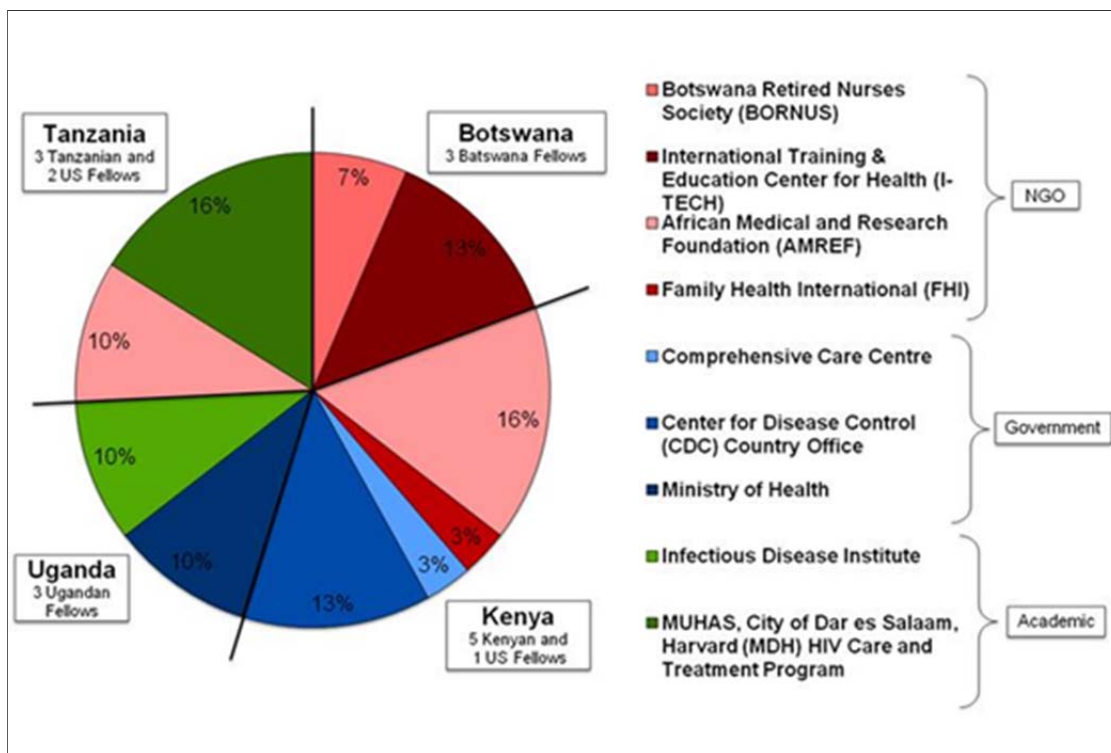
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Figure 1: Attachment Site by Country and Organization Type



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