NIH Public Access

Author Manuscript

J Obstet Gynecol Neonatal Nurs. Author manuscript; available in PMC 2009 September 1.

Published in final edited form as:

J Obstet Gynecol Neonatal Nurs. 2008 ; 37(5): 588–595. doi:10.1111/j.1552-6909.2008.00281.x.

EFFECTS OF HIV/AIDS ON MATERNITY CARE PROVIDERS IN KENYA

Janet M. Turan, **Elizabeth A. Bukusi**, **Craig R. Cohen**, **John Sande**, and **Suellen Miller**

Janet M. Turan, PhD, MPH, is Assistant Professor, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco, San Francisco, CA Elizabeth A. Bukusi, MBChB, M.Med (ObGyn), MPH, PhD is Principal Research Officer, Center for Microbiology Research, Kenya Medical Research Institute, Nairobi, Kenya. Craig R. Cohen, MD, MPH, is Associate Professor, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco. John Sande is Senior Community Development Assistant, Kisumu City Council, Kisumu, Kenya. Suellen Miller, RN, CNM, PhD, is Associate Professor, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco.

Abstract

Objective—To explore the impact of HIV/AIDS on maternity care providers (MCP) in labor and delivery in a high HIV prevalence setting in sub-Saharan Africa.

Design—Qualitative one-on-one in-depth interviews with MCPs.

Setting—Four health facilities providing labor and delivery services (2 public hospitals, a public health center, and a small private maternity hospital) in Kisumu, Nyanza Province, Kenya.

Participants—Eighteen (18) MCPs, including 14 nurse/midwives, 2 physician assistants, and 2 physicians (ob/gyn specialists).

Results—The HIV/AIDS epidemic has had numerous adverse effects and a few positive effects on MCPs in this setting. Adverse effects include reductions in the number of health care providers, increased workload, burnout, reduced availability of services in small health facilities when workers are absent due to attending HIV/AIDS training programs, difficulties with confidentiality and unwanted disclosure, and MCPs' fears of becoming HIV infected and the resulting stigma and discrimination. Positive effects include improved infection control procedures on maternity wards and enhanced MCP knowledge and skills.

Conclusion—A multi-faceted package including policy, infrastructure, and training interventions is needed to support MCPs in these settings and ensure that they are able to perform their critical roles in maternal healthcare and prevention of HIV/AIDS transmission.

Keywords

HIV/AIDS; maternity care providers; safe motherhood; Kenya

Correspondence Janet M. Turan, PhD, MPH, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco, San Francisco, CA, Janet.Turan@ucsf.edu..

Callout # 1: HIV prevalence has ranged from 26−35% among antenatal care patients at the provincial hospital in Kisumu in recent years.

Callout #2: The HIV/AIDS epidemic has added demands on MCPs: counseling, testing, preventing transmission, caring for ill mothers' newborns, and communicating with male partners.

Callout #3: A multi-dimensional package of interventions in policy, infrastructure, and training is required to enable MCPs to continue providing maternal healthcare and HIV/AIDS prevention.

NIH-PA Author Manuscript NIH-PA Author Manuscript NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Nurses and midwives are the major providers of health care services in sub-Saharan Africa, particularly for maternity care (Gerein, Green, & Pearson, 2006). The nursing/midwifery workforce is crucial in combating what has been called “the intersecting epidemics of HIV/AIDS and maternal mortality” in Africa (McIntyre, 2005). Nurses and midwives are now being called upon to play a key role in the prevention of mother-to-child transmission (PMTCT) of HIV, along with their regular duties of providing maternal health services (Ehlers, 2006). Their new role requires significant additional time, energy, and dedication on the part of maternity care providers (MCP).

The effects of the HIV/AIDS epidemic on already overburdened health workforces in sub-Saharan Africa are widely recognized and include death of health workers, fear of infection, burnout, absenteeism, reassignment of existing health workers to provide AIDS-related services, heavy workloads, and stress (Akeroyd, 2004; Dovlo, 2005; WHO, 2005). A study conducted in Kenya in 2003−4 found that pressures of HIV/AIDS on the health workforce included attrition (resulting in a shortage of health workers), absenteeism due to a health worker's own or a family member's illness, increase in the AIDS-related workload, and shifting of health workers to AIDS-related units such as voluntary counseling and testing (VCT) centers (Munjanja, Kibuka, & Dovlo, 2005). Labor and delivery services are likely to be especially vulnerable to these factors, since as compared to some other services, they are riskier (in that they may involve contact with large quantities of body fluids), must be available 24 hours a day, and include emergency care (Gerein et al., 2006; Mathole, Lindmark, & Ahlberg, 2006). Thus, it is necessary to investigate the effects of HIV/AIDS on MCPs who staff labor and delivery units in high HIV-prevalence settings. This manuscript describes the effects of HIV/AIDS on maternity care providers (MCPs) in the city of Kisumu in Nyanza Province, Kenya.

Background

The most recent population-based survey data indicated that 6.7% of Kenyan adults were infected with HIV in 2003, and more recent estimates based on antenatal sentinel surveillance data suggest a decline to 5.1% nationally in 2006. Rates are higher in Nyanza Province, with 15.1% prevalence in adults (18.3% of women and 11.6% of men) (National AIDS and STI Control Programme of the Ministry of Health, 2005), and antenatal surveillance estimates in districts of Nyanza Province range from 2.8% to 21.0% (National AIDS Control Council & National AIDS and STD Control Programme, June 2007). HIV prevalence has ranged from 26−35% among antenatal care (ANC) patients at the provincial hospital in Kisumu in recent years (Van't Hoog et al., 2005).

In Nyanza Province as a whole, 85% of women have at least one ANC visit with a health professional, and 36% of women deliver in a health facility with a skilled attendant. In urban areas of the province, 93% of women have at least one ANC visit and 67% of women deliver in a health facility (Central Bureau of Statistics, Ministry of Health, & ORC Macro, 2004).

Maternity care providers in Kenya consist of doctors, clinical officers, registered midwives and nurses, and enrolled midwives and nurses. Clinical officers are mid-level health workers with a basic three-year diploma course in Clinical Medicine and Surgery. Registered midwives and nurse-midwives have three years of training and usually fulfill a teaching, administrative, or supervisory role. Enrolled midwives, nurse-midwives, and nurses have two years of training and comprise the majority of the labor force in all facilities. There are shortages of doctors and clinical officers across the country, particularly in rural areas and at facilities below the hospital level (National Coordinating Agency for Population and Development, Ministry of Health, Central Bureau of Statistics, & ORC Macro, 2005).

NIH-PA Author Manuscript NIH-PA Author Manuscript NIH-PA Author Manuscript

At the primary health care level (local health centers and smaller dispensaries that provide ambulatory care and are meant to be patients' first point of contact with the health system), there may be only one nurse-midwife for all patients, regardless of the reason for the encounter. The majority of nurses and midwives in Kenya earn less than $300/month and may care for up to 40 patients per 8-hour shift, compared to the 10 patients/shift recommended in international nursing standards (IRIN, October 24, 2007).

Methods

Setting

The data presented here on the effects of HIV/AIDS on MCPs were collected as part of a larger study on the effects of HIV/AIDS at four health facilities in Kisumu. The larger study involved a total of 38 individual interviews (18 MCPs and 20 clients), as well as structured observations of labor and delivery care (Turan, Miller, Bukusi, Sande, & Cohen, in press). Study sites included a provincial hospital (the main public referral and specialized-care hospital for the province; 62 maternity beds), a district hospital (provides basic in-patient and out-patient curative and preventive health care services; 21 maternity beds), a municipal health center (mainly ambulatory preventive and curative services; 20 maternity beds), and a small private maternity hospital (10 maternity beds), serving low to middle income clients. Approval for this study was obtained from the institutional review boards of the Kenya Medical Research Institute and the University of California, San Francisco, as well as from the participating facilities.

Sample and Recruitment

The researchers conducted in-depth interviews with 18 MCPs, including 14 nurses/midwives, 2 clinical officers, and 2 ob/gyn specialists. Five of those interviewed were working in administrative positions. To select the participants, we first made detailed lists of all maternity providers working at the health facility. We automatically selected the main provider/administrator in charge of the maternity unit, and then went on to select a variety of other MCPs working on the units in order to obtain a variety of perspectives by profession, duties, gender, and years of experience. If a selected MCP declined participation, another participant with similar characteristics was chosen. Characteristics of these participants are presented in Table 1.

Data Collection

Interviews were conducted in English by a female UCSF investigator, a female Kenyan nurse-midwife, and a male Kenyan social scientist. The Kenyan interviewers were trained in qualitative research methods in general and in in-depth interview techniques specifically by the UCSF investigator using a qualitative data collection manual (Mack, Woodsong, MacQueen, Guest, & Namey, 2005) and materials developed specifically for the study. The purpose of the study was explained to potential participants and their informed consent was obtained and documented.

Interviews were conducted in a private room at the participating health facilities or a nearby location where privacy could be maintained. Interviewers used open-ended discussion guides and the sessions were audio-recorded. Information solicited during the interviews relevant to this analysis of effects of HIV/AIDS on MCPs included descriptions of work; changes in maternity care over the past 5−10 years; experiences with HIV/AIDS prevention and treatment for pregnant, delivering, and postpartum women; effects of HIV/AIDS on their own work; and personal experiences with HIV/AIDS.

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Data Analysis

Recordings from the in-depth interviews were transcribed by a Kenyan social scientist. Qualitative data from in-depth interview transcripts were entered and coded with the Atlas.ti program (Muhr, 2004) using a thematic analysis approach (Braun & Clarke, 2006). Initial coding of the transcripts was conducted according to major topics from the interview guides, but new codes and themes were developed as they emerged from the data. Quotations, observations, and memos regarding each topic were consolidated and analyzed to identify common themes and variant views. Measures to ensure validity of the interview findings included triangulation with other types of data collected for the larger study at the same health facilities (observations of care provided on maternity units and client interviews) and discussion of preliminary results with Kisumu maternity care workers. Meetings to discuss preliminary results were held with MCPs at each of the study health facilities and the providers gave feedback on the validity of the key themes that emerged from the data analysis.

Results

Reduction in Numbers

The most obvious and direct adverse effect of HIV/AIDS on MCPs is the reduction in the numbers of health care providers. MCPs are becoming sick and dying from AIDS. In addition, during the study period, the Kenyan government had placed a freeze on civil service employment; workers lost could not easily be replaced. Participants also mentioned a loss of productivity in those who remained in their jobs, due to absenteeism from work because of HIV-related illness, caring for sick family members, and attending frequent funerals.

We are very few now. It is growing worse, because the Council is not able to employ any more. While retiring, they are dying because of sickness and diseases, they are never replaced. (nurse-midwife-administrator, maternity unit, health center)

Another factor mentioned by participants as leading to a reduction in the maternity workforce stems from health workers leaving government positions for better paying jobs with HIV research projects or with non-governmental organizations (NGOs) working in HIV prevention and care. As an administrator points out in the quote below, after gaining work experience, some nurses also choose to leave the country.

CDC, Walter Reed, they have caused a lot of havoc because the most experienced nurses have left, not only left the government services, many of them have also left the country through those organizations. They go there and after getting some experience out they go. Off to other countries. (*physician-administrator, public hospital)*

Increases in Workload

Participants also noted that HIV/AIDS has added to their workload on maternity units. Women in labor who present with unknown HIV status are offered HIV testing on the maternity ward and those identified as HIV positive will receive additional services for PMTCT. The extra workload includes pre and post HIV test counseling (up to 30 minutes per client), testing for HIV, administering Nevirapine tablets to women in labor, administering Nevirapine syrup to newborns, recording HIV tests and results, and providing specialized counseling on the prevention of HIV transmission, infant feeding options, and family planning. These activities were viewed as additional burdens for already busy providers.

NIH-PA Author Manuscript NIH-PA Author Manuscript NIH-PA Author Manuscript

It's brought us more work. In the past we were not doing that. Now you see we have to do the testing here. We have to do the dispensing here. We have to give added health education. ....With a lot of documentation. (nurse-midwife, maternity unit, public hospital)

Further, some new mothers, sick with HIV, may be unable to take care of their newborns, which means that sometimes the job of changing, feeding and washing the babies falls to the nurses.

Like now I am doing double work. Especially for those who are born of HIV mothers. .... Even now we are nursing [caring for] babies of the mothers in post-natal. They [the mothers] are just down and very sick with HIV, so we are the ones who are doing everything for these babies. So it is really a lot of work. They are too sick even to come to see their babies. We change them, we feed them, we wash them, everything. *(nurse, nursery, public hospital)*

Burnout

In some cases, the combination of the extra workload and the reduced numbers of MCPs leads to burnout among those who remain. The nurse below describes how this burnout can lead to poor treatment of clients. Others explained that providing services to so many HIV-positive women was depressing and demoralizing, also leading to irritation and lack of patience.

So you find that instead of seeing maybe five to seven clients per day, you will attend to more than twenty clients. Obviously you will get burnout so you might find yourself loosing your temper with something very simple. It can be a comment or anything and you might not want a client to ask you so many questions for clarification. You just want to finish quickly with her so she goes on to the next service. So at times nurses or those who are attending to clients become somehow negative in their attitudes towards clients. *(nurse-midwife, maternity unit, health center)*

At the end of the day you may come across so many cases, especially during counselling. And it happens that maybe out of ten you get four to five who are positive. Actually it will disturb your mind. You just put yourself into their shoes and start feeling for them. If I were the one, what could I have done? You just lose hope in life. You are very irritated. *(nurse, ANC clinic, health center)*

Infection Control Procedures

When asked about changes in maternity services over the past 5−10 years, almost all MCPs first mentioned improvements in infection control. They pointed out that, due to the risk of HIV infection, their health facilities have placed increased importance on universal precautions and the availability of supplies, such as gloves and bleach. Many MCPs had attended in-service training programs that emphasized universal precautions.

Now it is better because we are able to gown ourselves at least. We avoid contact with whatever fluid comes from a mother. We have our mask, we have our gloves, we have boots. Then we were only using gloves. It was only a pair and it was not even sterile. But now it is much better. We also have disinfection on those instruments. I think those days a set was like for maybe five mothers, now it is single use. Decontaminate and then we autoclave which we never used to do. In those days autoclave was believed to be for major surgeries, but now in our department also we do that and then we do a lot of disinfection with Jik [bleach]. *(nurse-midwife, maternity unit, public hospital)*

NIH-PA Author Manuscript NIH-PA Author Manuscript NIH-PA Author Manuscript

Despite MCPs' increased knowledge and skills in infection control, they still found that at times their workplaces did not have sufficient infection control supplies.

There are times when you find you are lacking facilities like gloves...Then you don't have gloves to use. Unless the mothers they come with theirs, they buy… Because what we are provided with at the hospital is not sufficient. *(nurse, maternity unit, public hospital)*

HIV/AIDS Training

The MCPs had attended, and were continuing to attend, a variety of HIV/AIDS-related in-service training programs. These included PMTCT, VCT, home-based care, anti-retroviral therapy, and other training programs. There is a great deal of funding for HIV/AIDS-related training programs that can last as long as a week. Health care providers see off-site training programs as a bonus; in addition to new knowledge and skills, they receive paid time off work and reimbursements for their meals and travel costs. However, some administrators pointed out that these frequent HIV-related training programs take MCPs away from service provision. This can cause serious interruptions in care at health centers and dispensaries that often have only one or two nurses on staff.

There are always these trainings and until now there are some trainings after being trained. They train, then retrain, and they call them updates. There are all sorts of terminologies to justify whatever they are doing...... Sometimes it is difficult because you find that it is a place where we have less people working like in the dispensaries and the health centers. It can be very tricky....It affects health in general because you see when a centre is closed down because the nursing officer has gone somewhere, then it means the patients have to come to the district hospital. *(physician-administrator, public hospital)*

Confidentiality and Disclosure

As reported elsewhere (Turan et al., in press), MCPs described difficulties in providing confidential HIV-related services in crowded maternity wards and in deciding how to disclose an HIV-positive woman's status and to whom. This was especially the case at the two larger public hospitals where several women frequently had to share a single bed on the ward after giving birth and the one private counseling room was often unavailable.

They are always four or five on a bed. They just sit and wait for discharge because the room is too small." *(nurse-midwife, maternity unit, public hospital)*

I have said that we are offering PMCT services. But still I should say that it is not a good standard yet, in terms of confidentiality. Actually at [name of health facility] the rooms are so squeezed and we don't have enough rooms or enough space. So you find that confidentiality becomes very difficult. *(nurse-midwife, maternity unit, health center)*

Several workers also described difficulties dealing with negative reactions of male partners who found out about the woman's HIV status on the maternity ward (either because MCPs told them or they observed drugs being given to the woman and/or infant).

This problem of a mother being HIV-positive and the husband is not aware is a problem to us because it is really difficult to start telling the husband, 'Your wife has come to deliver here and she is positive. We have given her medicine.' It becomes difficult to explain... When she is asked she says 'My husband is not aware and I don't want him to know.' So it becomes difficult for us to explain to the husbands because if you say it, maybe the husband can react, even might decide to leave her here. (*nurse-midwife, maternity unit, health center*)

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Workplace Exposures

Despite the increased emphasis on universal precautions, and perhaps related to insufficient infection control supplies, MCPs reported that exposures to HIV infection do occur on their maternity units. Access to post-exposure prophylaxis (PEP) for health workers was limited and differed by workplace; those working at the provincial hospital reported the easiest access, while those at the private hospital reported that they would have to go to another health facility and pay for PEP themselves.

This midwife I was talking about, she has been sick and she shared with me then. She told me "I was pricked, but now I am even afraid to test." She has grown very thin. (nurse-midwife-administrator, maternity unit, heath center)

Fears of Infection and Resulting Stigma

Many of the MCPs described strong fears of acquiring HIV infection in the workplace through a needle-stick or other exposure and of the stigma and discrimination that accompanies an HIV-positive status in the community. In particular, participants worried that if they were infected with HIV at the workplace, people would assume they were promiscuous.

There is that fear that you may contract it. In case there is an accident, for instance, in the operating theatre. It is just that you work with a lot of fear. The problem here is that you can get infected because of the nature of our work, but nobody will understand that you got it because something pricked you. People will only see the promiscuity in you." (*nurse, private maternity hospital)*

HIV/AIDS Stigma due to Working in Maternity Care

The majority of MCPs interviewed said that they did not experience any stigma or discrimination related to their contact with HIV-positive clients in the course of their work. They explained that most people do not make a connection between work on a maternity unit and exposure to HIV/AIDS, and that on the contrary, people respect them for the selfless work they do. However, a few participants did mention being treated poorly or criticized by family members or colleagues due to their contact with HIV-positive women.

I know there is respect. They look at us differently because, anybody working in the hospital, you are considered to be a doctor. Even cleaners are doctors. ....They know we are handling HIV and we have precautions. Most people know HIV and AIDS are due to sexual relationships."(nurse-midwife-administrator, maternity unit, health center)

Some of them fear you. Even if you are married to someone who is not a health care worker, if you go back to the house you are told to remove your uniform and wash your hands before you hold your baby. They believe you have been touching the HIV patients. *(nurse, private maternity hospital)*

The only person who has ever told me something very negative is a fellow doctor. And he told me, how can you be working with such dirty--you know, such dirty things. Why is it that you people are still doing dirty procedures like manual removal of placenta? How can you expose yourselves to so much risk? To so much blood. (physician-administrator, private maternity hospital)

Discussion

As the main maternal care providers in sub-Saharan Africa, nurses and midwives are the front-line workers combating the intersecting epidemics of HIV/AIDS and maternal

NIH-PA Author Manuscript
NIH-PA Author Manuscript
NIH-PA Author Manuscript

mortality. Findings from this study conducted in Kisumu, Kenya, as well as studies in other high HIV prevalence areas in sub-Saharan Africa (Dieleman et al., 2007; Tawfik & Kinoti, 2006), indicate that the HIV/AIDS epidemic is taking a toll on this group and having adverse effects on health. Already overworked and underpaid, nurses and midwives are now being asked to take on a number of time-consuming tasks, but with a decreasing number of staff. Adverse effects on the workforce in Kisumu included HIV-related deaths and illness, absences due to frequent HIV training programs, and unfilled vacancies due to MCPs leaving government service for HIV-related private or NGO sector jobs. In Malawi, negative effects of HIV/AIDS on the nursing workforce were seen as contributing to the upswing in maternal mortality (WHO, 2005).

In this situation of a shrinking workforce, the HIV/AIDS epidemic has created extra demands and workload on nurses and midwives. In addition to their regular duties, nurses and midwives in labor and delivery need to provide voluntary counseling and testing services to women who present with unknown HIV status, provide prevention of mother-to-child transmission interventions, counsel HIV-positive women, dispense HIV medications to women and infants, provide care to newborns, and frequently have to deal with the negative reactions of male partners upon learning their wife's HIV-positive status. Although most nurses and midwives continue to serve their communities with dedication, others become frustrated and burned out.

Almost all nurse-midwife participants mentioned improvements in infection control. HIV training programs for MCPs in Kenya have focused on universal precautions, and there has been a significant improvement in the availability of gloves, bleach, delivery sets, autoclaves, and other infection control supplies and equipment (National Coordinating Agency for Population and Development et al., 2005). However, the facilities observed in this study still experience some shortages in these crucial items.

Despite improvements in infection control, the nurses and midwives in Kisumu and elsewhere in Kenya (Khan, 2006) continue to fear HIV infection at work. Workplace exposures to HIV continue to occur on maternity units, and workers do not always have easy access to PEP. It has been noted elsewhere in sub-Saharan Africa that health workers are often reluctant to seek HIV services at their own workplaces (Uebel, Nash, & Avalos, 2007). They may encounter HIV/AIDS stigma and discrimination, either due to their contact with HIV/AIDS patients or their own HIV status (Holzemer et al., 2007). In this study, health workers especially feared being labeled as “promiscuous” if they became HIV-positive through a workplace exposure.

Lack of confidentiality and unwanted disclosure of clients' HIV status were identified as important problems. Part of the difficulty with maintaining confidentiality has to do with insufficient private space on maternity units, but different cultural norms about individual rights and confidentiality also need to be recognized (Airhihenbuwa, 2007). In this study, many MCPs found it inconceivable that a husband would not be informed of his wife's HIV status. Because a pregnant woman is often the first person to be tested in a family due to her contact with the ANC clinic, she is particularly vulnerable to potential adverse consequences of unwanted disclosure (Mathole et al., 2006; Medley, Garcia-Moreno, McGill, & Maman, 2004). There is a need to develop culturally-appropriate understandings of confidentiality and decisions regarding disclosure of a pregnant woman's HIV status to her family members, as well as to organize services so as to avoid inadvertent disclosure due to counseling or drugs given to HIV-positive women and infants on crowded maternity wards.

A multi-faceted package of interventions is needed to support MCPs in these settings and assure that they are able to play their critical roles in prevention of maternal mortality and

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

HIV/AIDS. These interventions need to occur in the areas of policy, infrastructure, and training. It has been noted that the major health challenges in sub-Saharan Africa, including both HIV/AIDS and maternal mortality, cannot be effectively combated without strengthening the health workforce (Anyangwe & Mtonga, 2007). In the policy arena, policies and programs to strengthen the maternity workforce must focus on retention, recruitment, and training of additional nurses and midwives (Munjanja et al., 2005). In addition, special policies and programs should be developed to meet the needs of HIV-infected health workers (Uebel et al., 2007). Structural and infrastructural interventions are also needed to make sure that MCPs have the space (private counseling rooms) and supplies (gloves, bleach, PEP, etc.) to provide confidential HIV-related services and to protect themselves from infection.

Additional training on universal precautions, informed consent, confidentiality, and disclosure, is necessary. To minimize the negative impact of these training programs on service delivery in small health facilities, we recommend that shorter, focused training programs be conducted on site at the health facilities in the late afternoon/evening, while health workers are still on duty, but when the workload is much lighter. Ideally, the Ministry of Health would have back-up workers who could take over services when their colleagues go away to training programs, but this is difficult with the current shortage of health workers. Finally, to reduce the stigma and discrimination that is still experienced on maternity wards by HIV-positive women and women who are suspected of being HIV-positive (Turan et al., in press), stigma reduction interventions for health workers, such as the curriculum developed by EngenderHealth (EngenderHealth, 2004), are needed.

Acknowledgments

Funded by UC Berkeley/UCSF AIDS ITRP and NIMH. Thanks to Gaudencia Mittow, Douglas Okelloh, Maria Jarkowiec, Roshana Rahnama, Jessica Morris, and Drs. Koech and Wamae of KEMRI.

References

Airhihenbuwa CO. On being comfortable with being uncomfortable: Centering an Africanist vision in our gateway to global health. Health Education and Behavior. 2007; 34(1):31–42. [PubMed: 17200092]

Akeroyd, AV. Coercion, constraints, and “cultural entrapments”: a further look at gendered and occupational factors pertinent to the transmission of HIV in Africa.. In: Kalipeni, E.; Craddock, S.; Oppong, JR.; Ghosh, J., editors. HIV & AIDS in Africa: Beyond Epidemiology. Blackwell Publishing; Malden, MA: 2004. p. 89-103.

Anyangwe SC, Mtonga C. Inequities in the global health workforce: the greatest impediment to health in sub-Saharan Africa. International Journal of Environmental Research and Public Health. 2007; 4(2):93–100. [PubMed: 17617671]

Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006; 3(2):77–101.

Central Bureau of Statistics, Ministry of Health, & ORC Macro. Kenya Demographic and Health Survey 2003. CBS, MOH, and ORC Macro; Calverton, Maryland: 2004.

Dieleman M, Bwete V, Maniple E, Bakker M, Namaganda G, Odaga J, et al. 'I believe that the staff have reduced their closeness to patients': an exploratory study on the impact of HIV/AIDS on staff in four rural hospitals in Uganda. BMC Health Serv Res. 2007; 7:205. [PubMed: 18088407]

Dovlo D. Wastage in the health workforce: Some perspectives from African countries. Human Resources for Health. 2005; 3:6. [PubMed: 16092964]

Ehlers VJ. Challenges nurses face in coping with the HIV/AIDS pandemic in Africa. International Journal of Nursing Studies. 2006; 43(6):657–662. [PubMed: 16436278]

EngenderHealth. Reducing stigma and discrimination related to HIV and AIDS: Training for health care workers. Engenderhealth; New York, NY: 2004.

NIH-PA Author Manuscript

Gerein N, Green A, Pearson S. The implications of shortages of health professionals for maternal health in sub-Saharan Africa. Reproductive Health Matters. 2006; 14(27):40–50. [PubMed: 16713878]

Holzemer WL, Uys L, Makoae L, Stewart A, Phetlhu R, Dlamini PS, et al. A conceptual model of HIV/AIDS stigma from five African countries. Journal of Advanced Nursing. 2007; 58(6):541–551. [PubMed: 17484748]

IRIN. Pioneering e-learning to boost nurse numbers [Electronic Version].. PlusNews, Global HIV/AIDS news and analysis. October 24, 2007 [November 29, 2007]. from http://www.plusnews.org/Report.aspx?ReportId=74962

Khan H. On the Frontlines: Kenyan health workers confront HIV related challenges at work and home. Horizons Report. 2006:9–10.

Mack, N.; Woodsong, C.; MacQueen, KM.; Guest, G.; Namey, E. Qualitative Research Methods: A Data Collector's Field Guide. Family Health International; Research Triangle Park, North Carolina: 2005.

Mathole T, Lindmark G, Ahlberg BM. Knowing but not knowing: providing maternity care in the context of HIV/AIDS in rural Zimbabwe. African Journal of AIDS Research. 2006; 5(2):133–139.

McIntyre J. Maternal health and HIV. Reproductive Health Matters. 2005; 13(25):129–135. [PubMed: 16035606]

Medley A, Garcia-Moreno C, McGill S, Maman S. Rates, barriers and outcomes of HIV serostatus disclosure among women in developing countries: implications for prevention of mother-to-child transmission programmes. Bulletin of the World Health Organization. 2004; 82(4):299–307. [PubMed: 15259260]

Muhr, T. Atlas-ti (Version 5.2.9). Atlas-ti Scientific Software Development GmbH; Berlin, Germany: 2004.

Munjanja, OK.; Kibuka, S.; Dovlo, D. The nursing workforce in sub-Saharan Africa (Issue paper 7). International Council of Nurses; Geneva, Switzerland: 2005.

National AIDS and STI Control Programme of the Ministry of Health. AIDS in Kenya. 7th ed.. NASCOP; Nairobi, Kenya: 2005.

National AIDS Control Council, & National AIDS and STD Control Programme. National HIV Prevalence in Kenya. NACC and NASCOP (Kenya); Nairobi, Kenya: June. 2007

National Coordinating Agency for Population and Development, Ministry of Health, Central Bureau of Statistics, & ORC Macro. Kenya Service Provision Assessment Survey 2004. National Coordinating Agency for Population and Development, Ministry of Health, Central Bureau of Statistics, ORC Macro; Nairobi, Kenya: 2005.

Tawfik, L.; Kinoti, SN. The impact of HIV/AIDS on the health workforce in developing countries. World Health Organization; 2006.

Turan JM, Miller S, Bukusi EA, Sande J, Cohen CR. HIV/AIDS and maternity care in Kenya: How fears of stigma and discrimination affect uptake and provision of labor and delivery services. AIDS Care. (in press).

Uebel KE, Nash J, Avalos A. Caring for the Caregivers: Models of HIV/AIDS Care and Treatment Provision for Health Care Workers in Southern Africa. Journal of Infectious Diseases. 2007; 196(Suppl 3):S500–504. [PubMed: 18181701]

Van't Hoog AH, Mbori-Ngacha DA, Marum LH, Otieno JA, Misore AO, Nganga LW, et al. Preventing Mother-to-Child Transmission of HIV in Western Kenya: Operational Issues. Journal of Acquired Immune Deficiency Syndromes. 2005; 40(3):344–349. [PubMed: 16249710]

WHO. Word Health Report 2005: Make Every Mother and Child Count. WHO; Geneva, Switzerland: 2005.

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Table 1

Characteristics of MCP participants in in-depth interviews (N=18)

Characteristic	Category	N
Health worker type	Health administrator	5 (2 ob/gyn specialists, 1 clinical officer, and 2 registered nurse/ midwives)
	Non-administrator registered nurse-midwife	2
	Non-administrator enrolled nurse-midwife	10
	Non-administrator clinical officer	1
Workplace	Health center	4
	District hospital	7
	Provincial hospital	4
	Private maternity hospital	3
Main responsibility	Administration/supervision	5
	ANC/MCH/FP clinic	2
	Maternity unit (labor, delivery, and/or postpartum)	8
	Postnatal/nursery unit	2
	General nursing (all units)	1
Gender	Female	15
	Male	3
Age	≤ 30 years of age	3
	31−40 years of age	8
	≥ 41 years of age	7
Marital status	Married	13
	Unmarried	3
	Widowed	2