The first confirmed transmission of HIV from mother to child was recognized in 1983. Since then, there has been a worldwide effort to protect infants from perinatal infection.

Effective use of antiretroviral medications can reduce rates of mother-to-child transmission of HIV to less than 5%. Millennium Development Goal Six seeks to reduce the number of new HIV infections in children by 90% and HIV-related maternal deaths by 50% by 2015.

To realize this ambitious goal, efforts around prevention of mother-to-child transmission have generated some of the fastest evolving World Health Organization guidelines in history.

Despite advances in prevention, a thousand babies are born each day with HIV. Dr. Abuogi is committed to further decreasing rates of transmission to newborns through her research on Option B+, the most recent World Health Organization recommended treatment for the prevention of mother-to-child transmission (PMTCT) of HIV.

Sub-Saharan Africa continues to bear the largest burden of HIV infected women. Compared to other low-and middle-income regions, only 57% of HIV positive pregnant women had access to ART in 2011.

To close this gap, there must be increased availability and uptake of a triad of medications commonly referred to as Triple ART, or HAART (highly active antiretroviral therapy).

Often times, women first learn their HIV status when they attend a prenatal care appointment. From that point forward, drug regimens are tailored to the specific phases of pregnancy, labor, delivery, and subsequent breastfeeding.

Having different drugs administered at different intervals complicates care for both health care workers and the women themselves. This historically complex regimen is one of many obstacles to retaining pregnant women in treatment.

Option B+ is different from previous guidelines in several ways. Essentially, it is a HAART protocol initiated upon diagnosis regardless of clinical stage, and continued for life. There are no

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Understanding HIV Treatment Through a Gendered Lens

Kathryn (Kate) Dovel, M.P.H., and Ph.D. candidate in the Department of Health and Behavioral Sciences at the University of Colorado Denver conducts research focusing on the relationship between gender and HIV testing in southern Malawi, a small, sub-Saharan African country located between Tanzania and Zambia.

Originally from Klamath Falls, Oregon, Kate developed an interest in international health after she completed a degree in medical anthropology and sociology from Vanguard University.

After college, Kate completed a Masters in Public Health from the University of California, Los Angeles, but aspired to understand and improve the utilization of healthcare services in low-resource communities. After working at Vanguard University as an adjunct professor in medical anthropology and as a health programs consultant in Uganda and the Dominican Republic, Kate began pursuing her doctoral degree and is expected to complete it at the end of next year.

Her dissertation, partially funded by Robinson Durst International Scholarship in 2013, is entitled “Gender Disparities in High-Risk PITC (Provider-Initiated Testing and Counseling): The Role of Policy on Provider Practices”.

Recent estimates from the Joint United Nations Program on HIV/AIDS (UNAIDS) Sub-Saharan Africa Regional Fact Sheet indicate that men comprise 42% of all Human Immunodeficiency Virus (HIV) infections in sub-Saharan Africa (2012), but will account for 70% of all AIDS-related deaths in some high-prevalence countries by 2015.¹

This relatively unexplained disparity piqued Kate’s interest: Why are men not utilizing HIV care services, and are there supply-side barriers to their use of HIV testing and treatment services?

She questioned if the logistics of clinics, HIV testing, and how services are being offered make it difficult or undesirable for men to use these necessary clinics.

Her current research, which has evolved to become the main focus of her dissertation, is titled “Gender and the provision of HIV testing in southern Malawi: Examining how models of care influence men’s use of testing services,” investigates the relationship between the increasingly feminized environment of health clinics and men’s use of HIV testing services. The findings will increase her understanding of the aforementioned statistics.

Even though her research is based in Malawi, Kate believes her research is applicable to most sub-Saharan African countries because they exhibit similar feminized healthcare infrastructures.

“I have a different perspective than most policymakers and believe that men have been sidelined in HIV testing and treatment strategies and actually represent a new vulnerable population in the HIV epidemic of sub-Saharan Africa.”

Kate Dovel, M.P.H., Ph.D. Candidate in the Department of Health and Behavioral Sciences, University of Colorado Denver

Barriers Decrease the Male Use of Services

Kate hypothesizes that supply-side barriers prevent men’s use of HIV services in clinics in Malawi (such as conflicting work schedules, and perceptions of HIV clinics as “women’s spaces”)².³.⁴.⁵

The male view of clinics as “women’s spaces” may stem from the fact that most HIV campaigns primarily target women because they account for most HIV infections (UNAIDS, 2012).

The reason why women are more likely to become infected with HIV than men is two-fold: their physiology makes them more susceptible to infection and women experience less agency and control over sex then men, making them more likely to have sex at an earlier age, as well as engage in unsafe sex.

Thus, understanding and reconciling the male perception of clinics is critical to improving men’s uptake of HIV clinical care and survival in Malawi and sub-Saharan Africa.

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variations in regimen, and there is no blood test required beforehand to begin treatment (which has been a serious challenge for countries with limited laboratory capabilities).

Option B+ is being administered through prenatal care clinics. Dr. Abuogi explains why this is important, “HIV care is considered a vertical service, which means it is delivered separately from other primary care.

“Pregnant women receive their services vertically as well. Integrating HIV services into prenatal care clinics gives women a ‘one stop shop,’ and this is much more effective than asking them to go to different places to have their needs met.”

Option B+ is intended for pregnant and breastfeeding women only. It is different from its predecessor, Option B, because the treatment is meant to be continued for the duration of the mother’s life – to help ensure the best health outcomes of the mother. It also marks a shift from previous recommendations regarding breastfeeding practices of HIV-positive mothers.

Dr. Abuogi describes some misconceptions about post-partum care, “Messages around the importance of breastfeeding have been confusing. Replacement feeding with formula and water are difficult to access, so encouraging people to breastfeed while taking the correct drugs is important.”

In her newly funded work, Dr. Abuogi along with her co-Principal Investigator, Dr. Janet Turan, and Kenyan colleagues are examining how Option B+ can be best implemented in rural communities in Kenya. It is not a study to determine whether B+ works, but rather how to retain mother-baby pairs in the treatment program.

According to Abuogi, "Our overall goal is to determine which intervention (or combination of interventions) maximizes ART adherence and retention in care in the context of Option B+ thus improving maternal and infant health outcomes."

Lisa Abuogi, M.D., M.Sc., Assistant Professor of Pediatrics in the School of Medicine, University of Colorado Anschutz Medical Campus

Apart from the mentor mothers, there will not be much additional personnel at each facility. “The government clinic staff are already on site. There will be some study coordinators that will help troubleshoot how staff are implementing Option B+. We want this to be scalable, so keeping new personnel to a minimum is really important,” explains Abuogi.

The text messaging intervention is based on an open-source web technology developed by Nyaruka Ltd., a Rwandan company. If randomized to this intervention, mothers will register their cell phones with the website, select for language, time of day they wish to receive notification. Then, based on their stage of pregnancy, they will receive tailored messages regarding their B+ medications. “mHealth is certainly becoming widespread.”
and acceptable to people in Kenya. Our Kenyan co-investigator is having talks with SafariCom and other [cell service] providers about contributing to the project. We are excited to see how technology may leapfrog our efforts and save money,” states Abuogi.

A lateral benefit of Option B+ is transitioning medication distribution from a “push system” to a “pull system.”

In a push system, medicines are sent from a higher level warehouse to the health facilities during a defined time frame. This system is often used in emergency situations where there is no adequate space to store medicine. It is also seen in newer programs when no data is available to guide the quantity and frequency of distribution.

In pull systems, medication requests are sent from lower level facilities to the supply warehouses. The pull systems require human resources to calculate consumption data, but generally afford a steadier supply of medication and therefore keep costs consistent.

“With the logistics of Option B+, supply chains are improved because whole countries can purchase drugs at a cheaper rate and distribute more easily.”

Lisa Abuogi, M.D., M.Sc., Assistant Professor of Pediatrics in the School of Medicine, University of Colorado Anschutz Medical Campus

Since mothers are on ART for life in Option B+, the demand for drugs in a given community is more stable. Dr. Abuogi comments, “With the logistics of Option B+, supply chains are improved because whole countries can purchase drugs at a cheaper rate and distribute more easily. Previously drugs were distributed through a push system, but now they are moving towards a pull system.”

Implementing Option B+ requires a large government-level programmatic shift in how HIV-positive mothers and mothers-to-be are treated.

In settings where Dr. Abuogi has worked, these changes do not come as a surprise to patients or healthcare workers. “There is already a cultural acceptability to these changes...they are accustomed to making these adjustments,” she explains. “The World Health Organization releases new guidelines, and then they release specific advice for countries.

Representatives in-country reform national-level guidelines and help think through how they are going to get the drugs; how they are going to revise training curricula.”

The evolution of care for HIV-infected mothers has been fast-paced and adaptive. For the first time since the 1990s there are less than 200,000 new pediatric HIV infections each year, and there is a decline in pediatric infections in all low- and middle-income priority countries.

However, even if current goals are met, roughly 40,000 infants will continue to be infected each year.

With the Millennium Development Goals deadline of 2015 upon us, a thorough examination of the successes and failures of past efforts is useful for thinking through the post-2015 development agenda.

Option B+ is one example of responsive programming that has already proven efficacious if correctly implemented. Dr. Abuogi and her colleagues in Kenya and the University of Alabama investigate just how to realize the greatest impact of this modernized treatment protocol.


To learn more about Dr. Abuogi and her work, contact her at lisa.abuogi@childrenscolorado.org.
Kate believes, however, that such views cannot be changed until the structure of clinics and HIV services are changed. “Of course men will view clinics and HIV services as women’s spaces if these services predominately cater to women. From my research, we can see that time and time again men are being sidelined in HIV testing strategies and in healthcare services more broadly. The problem isn’t necessarily that men perceive clinics as women’s spaces, the problem is that clinics, and to a large extent HIV testing strategies, are women’s spaces.”

“I have a different perspective than most policymakers and believe that men have been sidelined in HIV testing and treatment strategies and actually represent a new vulnerable population in the HIV epidemics of sub-Saharan Africa,” Kate stated.

Kate’s first survey findings, carried out with patients who received services for sexually transmitted infections other than HIV, were designed to determine whether or not the healthcare provider offers HIV testing to the patient. This is called provider-initiated testing, and facilitates timely HIV testing and subsequent treatment.

In this situation, patients would be tested for HIV unless they actively refuse testing (opt-out testing) as opposed to standard testing procedures where patients must initiate testing services themselves. Exit surveys were collected from 5 local clinics over a 5-month period.

Her study documented that only 40% of both men and women who seek services for sexually transmitted infections besides HIV are offered HIV testing from the healthcare provider.

However, because women frequent the clinics more regularly, they are more likely to be offered testing than their male counterparts. This trend is especially true for pregnant women as provider-initiated testing is offered to essentially 100% of women attending prenatal services.

The second set of data involved having researchers in the clinics’ public waiting spaces write observational journals. A total of nearly 50, 80-page journals were written over a 5-month period.

These journals reflect conversations and interactions that took place in the clinics on a day-to-day basis such as: patient-to-patient interactions, healthcare provider-to-patient interactions, and other observations.

Kate’s initial findings indicate there are four specific ways that men are being neglected even before they are tested for HIV:
1.) outreach programs advocating the importance of testing are mainly targeted at women,
2.) clinic services are targeted more to women than men, in effect are increasingly likely to provide more universal women’s healthcare services than men’s, escalating the frequency of encounters that lead to HIV testing,
3.) lack of consistent provider-initiated testing when men are receiving services, and
4.) the physical location of testing services is often located in, or near, prenatal or family planning services, which are considered “women’s spaces.”

**Time to Create Change**
Kate believes that modifying clinics will be more effective and efficient than trying to adjust male behaviors. Changing the clinical setting to be more male-friendly is critical for male acceptance of the clinics.

Another study in Burkina Faso came to similar conclusions. One male participant in their study said, “To queue up with women is difficult. I’m not accustomed to being with women in groups. Of course, I chat with my wives in my courtyard. But that is different from being in a group of women. And what’s more, when you don’t see any other men, you feel uneasy.”

Change in clinics must be completed with the cooperation of multilevel stakeholders. National level health officials and NGOs must come together to allocate more resources for male-focused strategies at the facility-level.

Kate believes that small changes are feasible, such as including men in clinical outreach campaigns, accommodating male work schedules for testing, and offering HIV services in more gender-neutral spaces located apart from prenatal and family planning services.

These adjustments would require minimal resources for execution. Larger changes, such as implementation of provider-initiated HIV testing for services specifically targeting men, will require additional substantial resources provided by international organizations now funding most HIV programs.

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Kate stresses the need for a wider understanding of how men are disproportionally suffering from HIV because the healthcare system is not oriented to their needed services.

**Continuing Research in Malawi**

Kate’s research in Malawi initially began when she was introduced to her advisor Sara Yeatman, Ms.C., Ph.D., who studies the influence of HIV on young adults in southern Malawi. Dr. Yeatman is an Assistant Professor of Health and Behavioral Science at the College of Liberal Arts and Sciences at the University of Colorado Denver and is also a member of the Executive Committee at the Center for Global Health.

Kate’s research in Malawi has been funded by the Robinson Durst and the Calvin L. Wilson Scholarship for Future Leaders in Global Health, Rotary International, the National Institute of Mental Health (NIMH), and the National Institute of Child Health and Human Development (NICHD).

Kate plans to continue working in Malawi after completing her Ph.D. and studying supply-side barriers to men’s use of HIV testing and treatment services—“Eventually, I hope to develop a scalable intervention to improve men’s access to these services, focusing on creating more male-friendly spaces for utilizing care,” she reflects.

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Deadline for all applications and application materials is **Monday, March 23, 2015** (end of day)!

Photo courtesy of Saskia Montes Bunge, Celgene Global Health Fellow at the Center for Global Health..
Robbie Flick, Highlighting Health

Robert Flick, currently working in Lilongwe, Malawi as a Doris Duke Research Fellow and student at the School of Medicine at the University of Colorado Anschutz Medical Campus was recently selected as one of twelve winners to this year’s Highlights photography competition sponsored by the publication, The Lancet. Below is the winning photo.

**Highlight Announcement**: see all the winning entries: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)62416-8/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)62416-8/fulltext)

Robbie’s photo **made the cover** of the December 20th issue: [http://www.thelancet.com/journals/lancet/issue/vol384no9961/PIIS0140-6736(14)X6119-2](http://www.thelancet.com/journals/lancet/issue/vol384no9961/PIIS0140-6736(14)X6119-2)

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**A link to lifesaving treatment**

A community health worker with USAID-funded Tingathe programme, Frank, prepares to provide HIV testing and counseling for couples attending Kawale Health Centre in Lilongwe, Malawi.

Frank and his colleagues offer HIV testing services to couples—many expecting their first child—and drive efforts to ensure the timely diagnosis of HIV and initiation of antiretroviral therapy.

Since it began in 2008, community health workers for Tingathe—"we can" in the local Chichewa language—have undertaken more than 50,000 HIV tests and have helped link more than 17,000 HIV-positive patients with lifesaving services in Malawi.
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February 19, 2015    Blair Gifford, Ph.D., Professor of International Health Management in the Business School and the Colorado School of Public Health    12-1 p.m., Educational Building 2 South, Room 1307, Anschutz Medical Campus
Health Opportunities for Western Organizations in China

March 12, 2015    Roger I. Glass, M.D., Ph.D., Director of the Fogarty International Center and Associate Director for International Research at the National Institutes of Health    12-1 p.m., Shore Family Auditorium, Nighthorse Campbell Building, Anschutz Medical Campus
Global Health in the 21st Century: A Perspective from the Fogarty International Center
This lecture is sponsored in partnership with the University of Colorado School of Medicine

April 22, 2015    Ed Havranek, M.D., Professor of Medicine, Division of Cardiology, School of Medicine, University of Colorado Anschutz Medical Campus    12–1 p.m., Education Building 2 North, Room 1202, Anschutz Medical Campus
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