

Fostering global pharmacy research through international collaborations

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Global State of the HIV Epidemic

Adults and children estimated to be living with HIV | 2016

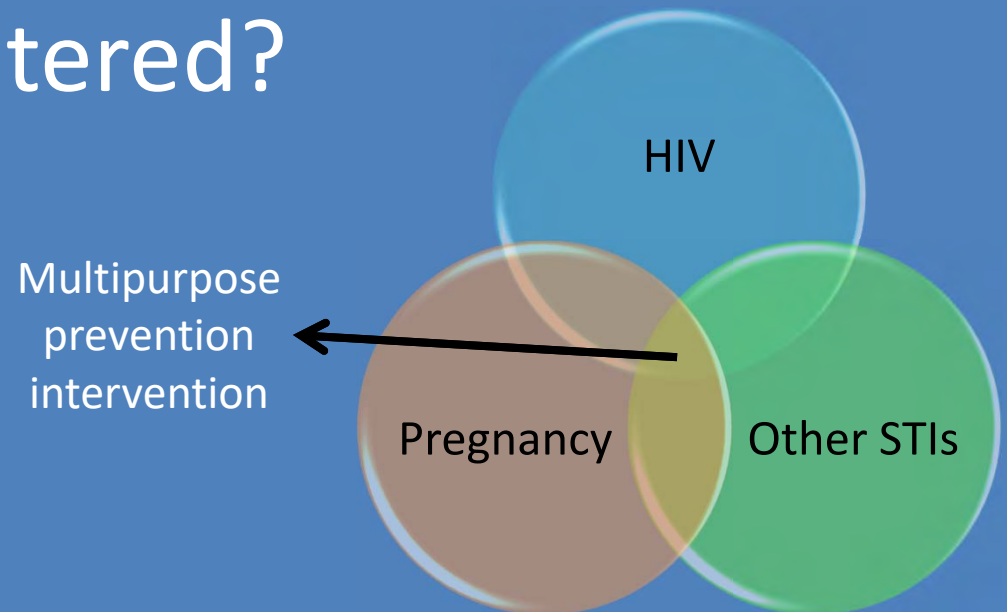


- **6th leading cause of death**
- **THE leading cause of death in women age 15-49**

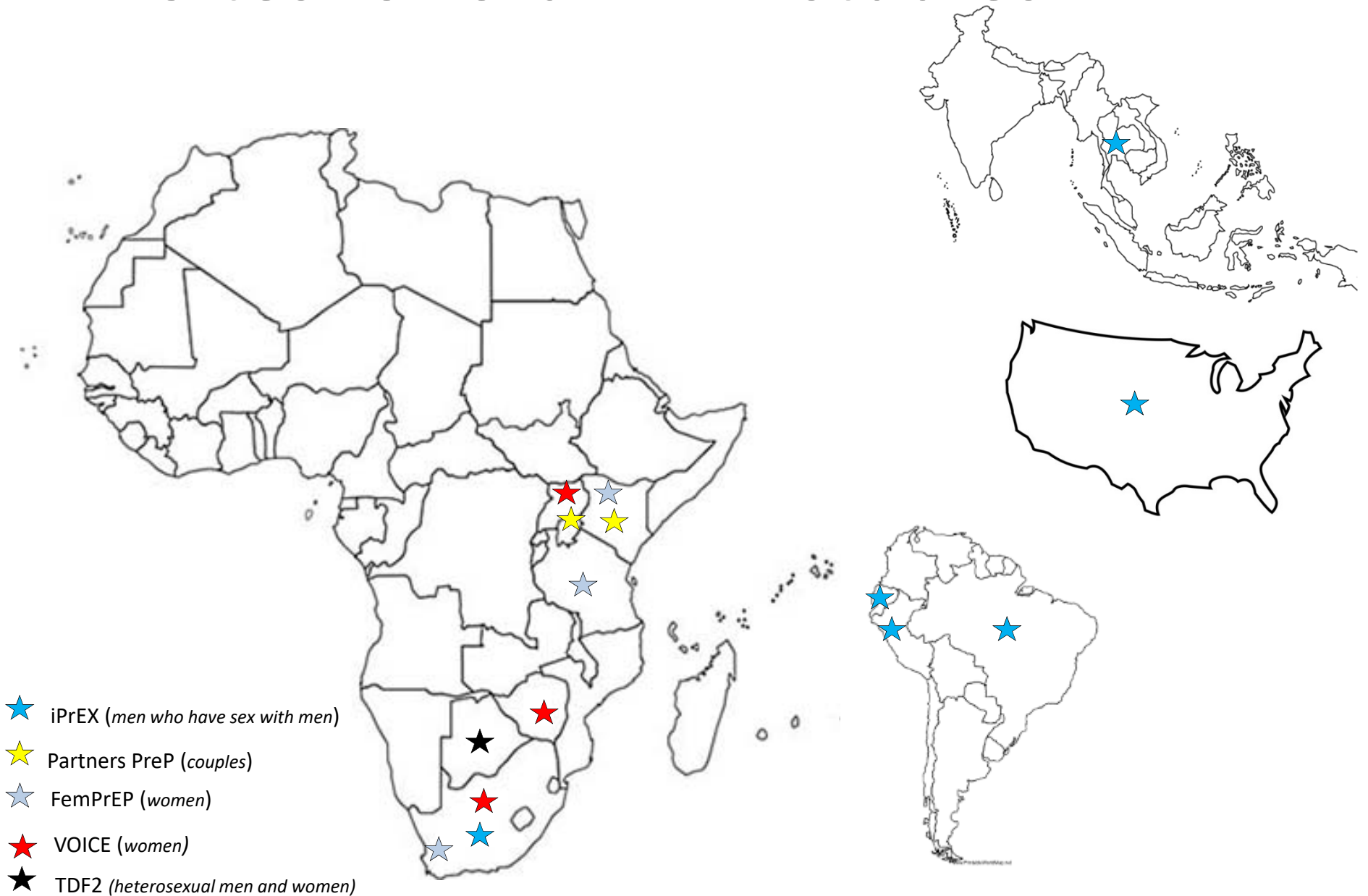
Total: 36.7 million
New infections: 1.8 million
Deaths: 1.1 million

Improving HIV Prevention for Women

- Overlap of HIV protection and contraceptive needs
- Women in HIV prevention trials have high levels of inflammation in female genital tract
- Hormones and inflammation may modulate risk of HIV acquisition
- Is drug efficacy altered?



Sites for oral PrEP studies



MUJHU (Makerere University- John Hopkins University)

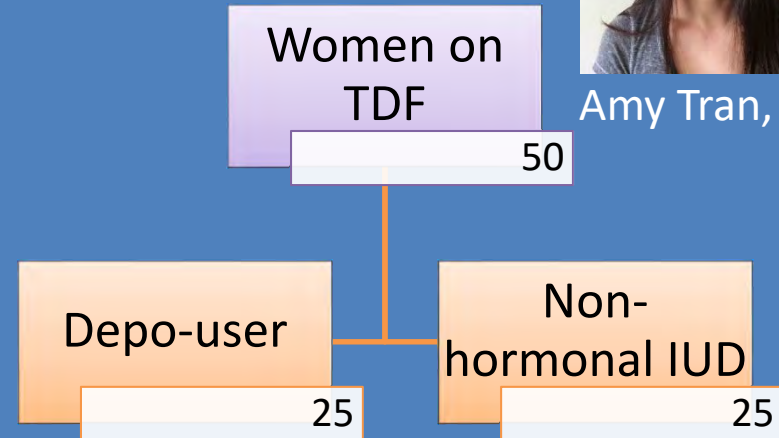


- Started in 1988 with research collaboration between John Hopkins and Makerere University
- Focus on perinatal HIV transmission and Mother-Child HIV Care

“Modifiers of tenofovir exposure in the female genital tract”



Amy Tran, PD4



Blood

- Quantify antiretroviral exposure
- Quantify hormones

Cervicovaginal Swabs

- Vaginal Microbiome
- Vaginal cytokines

Cervical Biopsies

- Quantify antiretroviral exposure
- Expression of enzymes and transporters

Roadblocks in HIV Cure Research

- Current antiretrovirals can suppress but not eradicate virus.
- Poorly understand “viral reservoir.”
 - Plasma viral load is indirect measure of viral reservoir dynamics.
- Inadequate antiretroviral penetration into potential viral reservoirs.

Plasma \neq Tissue

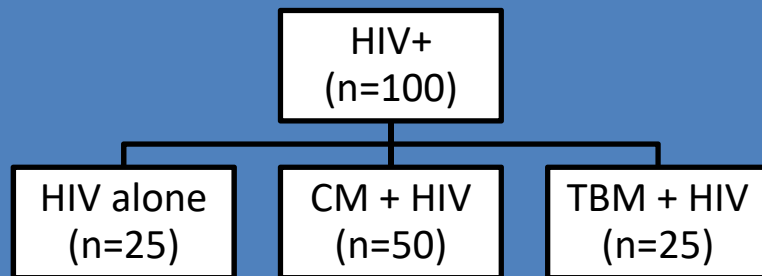
Infectious Disease Institute



- NGO, institute of Makerere University
- Mission to strengthen health systems in Africa, with strong emphasis on infectious disease, through research and capacity development
- Active research in many areas: drug interaction studies, HIV prevention studies
- Established relationship with University of Minnesota

Tissue Distribution in Ugandan Autopsy Cohort

- Tissues collected from subjects on ARVs at time of death



CM= cryptococcal meningitis
TBM=tuberculosis meningitis



Katelyn Pastick,
M1 student



Prosperity Eneh, PharmD
Master's student and Global
Engagement Fellow

Makerere University Department of Pharmacy



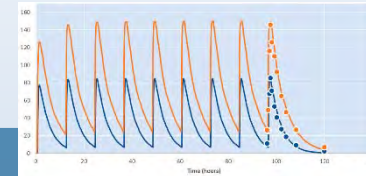
- 4 year Bachelor's program; 1 year of internship after graduation; Student centered curriculum : team based learning
- Research strengths- drugs of abuse, natural products, antiretroviral adherence

Planned Future Studies with Department of Pharmacy

- “Phenytoin Dosing Practices in the Absence of the Availability of Therapeutic Drug Monitoring”
- “Incidence, genetic susceptibility and immunological correlates of serious adverse drug reactions”
- “Advancing Pharmacy Practice in Uganda”



Opportunities for International Pharmacy Research



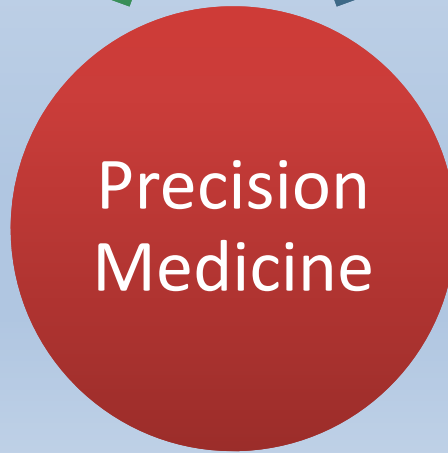
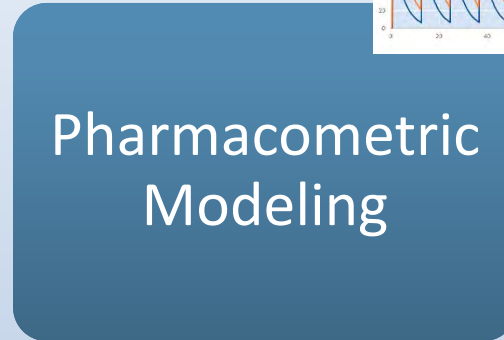
Antibiotic Stewardship

Pharmacometric Modeling

Pharmacogenomics

Medication Adherence

Precision Medicine



Take home points

- Leverage existing collaborations/ piggyback on ongoing studies (MUJHU and IDI).
- Work towards feasibility and sustainability
 - Capacity building and local engagement
- Multiple stages in research process to get involved
- Be open to opportunities (get your foot in the door)

Acknowledgements

University of Minnesota

David Boulware, MD, MPH

Katelyn Pastick, BS

Prosperity Eneh, PharmD

Amy Tran, PharmD candidate

Joseph Corbino, PharmD candidate



Current and Past Funding Sources

NIH/NIAID K08AI134262

American College of Clinical Pharmacy

UMN Academic Health Center/CGHSR

UMN Deborah Powell Women's Center

UMN College of Pharmacy

University of New York, Binghamton

KarenBeth Bohan, PharmD

Makerere University/Uganda

Flavia Matovu, MBChB, Msc. Epidemiology

Robert Lukande, MBChB, MMed

David Meya, MBChB, Mmed

Winnie Nambatya, MPharm



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