Background: Molecular epidemiology has revolutionized the understanding of Mycobacterium tuberculosis (MTB) transmission. Such studies require culture-based genotyping results from the majority of the study population to generate valid inferences. The present investigation aims to describe factors that influence confirmatory culture results within The Kopanyo Study, a large molecular epidemiological study of MTB in Botswana.

Methods: We performed liquid culture for MTB confirmation and isolation among patients initially diagnosed with TB in routine clinical practice. Multiple sputum samples were collected per patient to account for variability in sputum production and contaminated samples. Data were gathered via chart review from 29 clinics in Botswana for patients enrolled between September 1st 2012 and August 31st 2013. Generalized estimating equation (GEE) logistic regression modeling was used to determine factors associated with MTB culture positivity while accounting for multiple samples collected for each patient. This research was approved by the Ethics Committees and Independent Review Boards at the University of Pennsylvania, Centers for Disease Control and Prevention, Botswana Ministry of Health, University of Botswana and Princess Marina Hospital. All study participants provided informed consent.

Findings: A total of 1,338 samples collected from 574 TB patients were included in the analysis. Overall, 435 (75.8%) patients had at least one MTB positive culture. Among HIV-infected patients 197/278 (70.9%) were culture positive, whereas among HIV-uninfected patients 156/186 (83.9%) were culture positive (p < 0.01). The median time between diagnosis and initiation of culture was four days (interquartile rage 2 - 6). Among mucopurulent and salivary (clear, mucoid, blood-stained or salivary) samples, 554/738 (75.1%) and 336/548 (61.3%) were culture positive, respectively (p < 0.01). In patients who underwent sputum induction via respiratory methods or gastric aspiration 89/193 (46.1%) were culture positive, while 438/596 (73.5%) who voluntarily expectorated sputum were culture positive (p < 0.01). In multivariate analysis, HIV-infection (OR=0.53 95% CI = 0.32 − 0.88), age (21-30 years vs.

Interpretation: We found that age 21-30 years, HIV-infection, and sputum collection method are factors that must be taken into consideration in studies using MTB isolation. Improved methods of MTB culture detection are necessary for HIV co-infected populations and others with low levels of bacilli in the sputum.

Abstract #: 02CD003

Socio-economic, clinical, and behavioral factors associated with study retention among tuberculosis patients in Botswana

J. Billings[1], L. Allan-Blitz[2], O. Fane[3], M. Ogopotse[3], C. Modongo[3], S. Shin[1], J. Klausner[4], N. Zetola[5]; [1]David Geffen School of Medicine at UCLA, Los Angeles, CA/US, [2]David Geffen School of Medicine at UCLA, Santa Barbara, CA/US, [3]Botswana - UPenn Partnership, Gaborone, Botswana, [4]David Geffen School of Medicine at UCLA, Los Angeles, CA/US, [5]University Pennsylvania, Gaborone, Botswana

Background: Prospective cohort studies are crucial for expanding the understanding of tuberculosis (TB). High level of patient retention throughout the study period is vital to maintain study power and draw valid conclusions. In this study we aim to define factors associated with mid- and long-term participant retention to identify patients at risk of being lost to follow-up in a large cohort TB study in Botswana.

Methods: We conducted a nested cross-sectional study of clinical and research records of culture positive TB patients enrolled from Sep 1, 2012 − Aug 31, 2013. Participants were recruited after being diagnosed with TB at one of 32 clinics in the greater Ghanzi and Gaborone area. All diagnosed patients were eligible for enrollment. Factors studied included sex, age, location, smoking status, alcohol consumption, previous incarceration, income, previous TB, HIV status, and antiretroviral therapy use. Patient retention among the cohort is attempted at 6-month intervals. Study retention was analyzed for patients enrolled in the study for at least 12 months with complete data entry and was defined in two ways: 1) evidence of at least one follow-up visit; and 2) continued retention at 12 months after enrollment. Of the 1,092 patients enrolled during the time period, 270 fulfilled requirements for analysis. Descriptive analysis and chi-square tests were performed. This research was approved by the Ethics Committees and Independent Review Boards at the University of Pennsylvania, Centers for Disease Control and Prevention, Botswana Ministry of Health, University of Botswana, and Princess Marina Hospital. All study participants provided informed consent.

Findings: Overall, 200/270 (74.1%) participants had at least one follow-up visit and 124/270 (45.9%) participants were retained at 12 months. Female sex (69.2% vs. 78.0% among males; p=0.100) and HIV infection (69.2% vs. 84.3% among HIV-uninfected participants; p=0.011) were negatively associated with having at least one follow-up visit. Female sex (38.3% vs. 52.0% among males; p=0.025) and living in a rural setting (24.2% vs. 48.7% among participants living in an urban setting; p=0.008) were negatively associated with retention at 12 months.

Interpretation: Findings suggest that improved efforts are needed to increase cohort study retention for female, HIV-infected, and rural participants. Limitations of the current study include incomplete data entry forms that skew eligible participants to the beginning of the study period.

Abstract #: 02CD004

HIV and early hospital readmission: Evaluation of a tertiary medical facility in Lilongwe, Malawi

K. Chawla[1], N. Rosenberg[2], C. Chikhosi Stanley[3], M. Matoga[3], A. Maluwa[3], C. Kanyama[3], J. Ngoma[4], M. Hosseinipour[3]; [1]Mayo Medical School, Rochester, MN/US, [2]University of North Carolina, Lilongwe, MW, [3]UNC Project Malawi, Lilongwe, Malawi, Lilongwe, MW, [4]Kamuzu Central Hospital, Department of Medicine, Lilongwe, MW

Background: Delivery of quality healthcare in resource-limited settings is an important, understudied public health priority. Thirty-day (early) hospital readmission is often avoidable and an important indicator of quality. At Kamuzu Central Hospital (KCH), a tertiary