Novel Post-Hospitalization Care Model to Decrease Mortality among People Living With HIV in Zambia: Pilot Study

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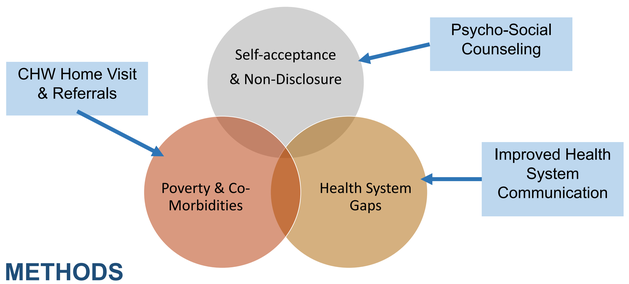
Cassidy W. Claassen[1,2,3,4], Chiti Bwalya[5], Morley Mujansi[3], Linah K. Mwango[6], Kirsten Stoebenau[5], Caitlin Baumhart[1,2], Godfrey Muchanga[3], Brianna Lindsay[1,2], Mundia Mwitumwa[4], Nyuma Mbewe[7], Wilbroad Mutale[8], Michael Vinikoor[4,9]

1. Center for International Health, Education, and Biosecurity, Institute of Human Virology, University of Maryland School of Medicine, Baltimore, MD, USA; 2. Institute of Human Virology, University of Maryland School of Medicine, Baltimore, MD, USA; 3. Maryland Global Initiatives Corporation Zambia, Lusaka, Zambia; 4. University Teaching Hospitals Zambia, Lusaka, Zambia; 5. Department of Behavioral and Community Health, University of Maryland School of Public Health, College Park, MD, USA; 6. Ciheb Zambia, Lusaka, Zambia; 7. Zambia National Public Health Institute, Lusaka, Zambia; 8. The University of Zambia, Lusaka, Zambia; 9. University of Alabama at Birmingham, Birmingham, Alabama, USA

BACKGROUND

- HIV-related mortality remains high among people living with HIV in Zambia, despite gains in HIV epidemic control.
- Post-hospitalization mortality among people living with HIV reaches 20-40% within six months due to individual, psychosocial, and systemic factors.
- We conducted a feasibility study of a community health worker (CHW) model to improve patient health outcomes and reduce mortality post-discharge.

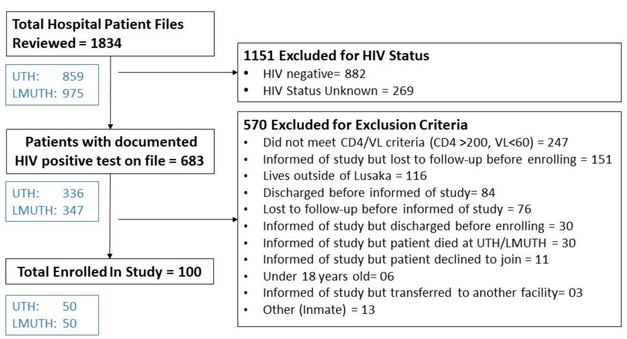
Figure 1. ReCharge Intervention Development



METHODS

- A quasi-experimental feasibility and acceptability study was conducted at two tertiary hospitals in Lusaka, Zambia, using the PRISM implementation science framework.
- Formative work among hospitalized patients and caregivers led to development of a CHW intervention (Fig 1).
- Adults hospitalized with HIV in Lusaka and then discharged were enrolled and followed up for 6 months (Fig 2).
- The control group received standard of care (SOC) with telephonic follow-up.
- The intervention group received a novel care package (Fig 3)

Figure 2. Enrollment Flowchart



CHW home visits within one week of hospital discharge have potential to reduce mortality among people living with HIV in Zambia

RESULTS

- Among 124 patients (median age, 41 years; 57.8% women; median CD4, 299 cells/mm3) in the SOC group, 23 (18.6%) died within 6 months of discharge.
- From 18 August 2023 to 10 December 2023, 100 patients enrolled in the pilot intervention group.
- To date, 92/100 (92%) received at least one home visit: 65 (65%) within 1 week of discharge) and 75 (75%) received two or more home visits (Fig 4)
- 35 (35%) received a discharge summary card and 79 (79%) behavioral health screening
- At seven months, 82 (82%) were alive; 18 (18%) had died (causes of death included extrapulmonary tuberculosis, heart failure, diarrhea and vomiting, anemia and UTI and pancreatic tumor with TB), and 11 (13%) were readmitted based on CHW findings at a home visit.
- Acceptability among participants and caregivers has been high.

Figure 3. ReCharge Care Model Activities

Hospital Environment

- Study Enrollment & Informed Consent
- Discharge Card completed by clinician
  - *Diagnoses, labs, medications, follow-up instructions*
- CHW from same community assigned to patient

Community Environment

- First CHW home visit to check on patient and establish rapport within 7 days of discharge
  - *CHW home visits include vital signs check, medication adherence check, psychosocial counselling, and referrals to services as needed, including re-admission if warranted*
- Additional CHW home visits at intervals determined by need; typically ending at 3 months post-discharge
- Weekly multidisciplinary meeting with clinicians, coordinators, and CHWs to update on patients

Figure 4. Time to First Home Visit after Discharge

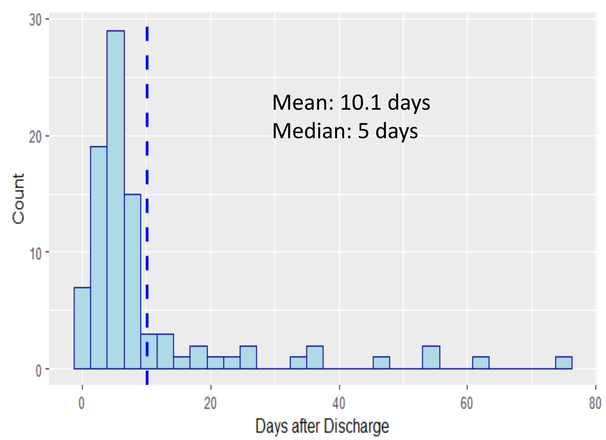


Table 1. Participant Baseline	**Overall (N=237)**
Confirmed Possession of Discharge Card	100 (42.4%)
Vital Signs Taken	176 (74.3%)
Physical Activity Assessed	235 (99.2%)
Hospital Care Understanding Assessed	233 (98.3%)
Medication Adherence Counseling Provided	233 (98.3%)
Psychosocial Counseling Provided	119 (50.2%)
PHQ9 (depression) Administered	235 (99.2%)
AUDIT-C (alcohol) Administered	234 (98.7%)
Food Insecurity Assessed	235 (99.2%)
CHW Overall Assessment	
Very well	51 (21.5%)
Well	78 (32.9%)
A bit sick/unwell	91 (38.4%)
Very sick	15 (6.3%)
Missing	2 (0.8%)
Indication for Referral	
No	187 (78.9%)
Yes	47 (19.8%)
Missing	3 (1.3%)
Of Visits with Indication for Referral	
Patient is sick and needs to be taken to hospital	13 (27.7%)
Patient is okay and interview can continue	33 (70.2%)
Missing	1 (2.1%)

CONCLUSIONS

- We developed a novel discharge model of care for people living with HIV after hospitalization, involving enhanced discharge instructions, CHW home visits, and screening and referral for behavioral health problems
- The model appeared to be feasible and acceptable in urban Zambia.
- Post-hospital CHW visits have potential to reduce post-discharge mortality among PLWH in countries with generalized HIV epidemics such as Zambia.
- Focusing on the peri-discharge period can strengthen health systems as countries move into HIV epidemic control.

ADDITIONAL KEY INFORMATION

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Dr. Cassidy Claassen
CClaassen@ihv.umaryland.edu
Dr. Mike Vinikoor
Michael.Vinikoor@cidrz.org