

# Thematic rooms

## ROOM 2: Paediatric and Adolescent Treatment

Facilitator: Birkneh Tadesse



- **Ceri Evans:** The impact of improved water, sanitation and hygiene (WASH) on cytomegalovirus co-infection in HIV-affected mothers and children in rural Zimbabwe



- **Désiré Dahourou:** Evaluation of mental health, resistance mutations, and practices of new therapeutic regimen introduction and their tolerance in adolescents living with HIV in West Africa



- **Janan Dietrich:** The role of psychosocial resources with HIV knowledge and antiretroviral therapy (ART) exposure in a representative household study of adolescent girls and young women living with HIV in six South African districts



- **Tongdiyen Jasper:** The impact of structured caregiver peer support (CaPS) on ART adherence and viral suppression among children living with HIV in Nigeria: A randomized controlled trial, Nigeria



Elizabeth Glaser  
Pediatric AIDS Foundation  
Fighting for an AIDS-free generation



# Housekeeping Rules

- This meeting is being recorded
- All attendees are muted upon entry
- Please keep your video turned off during the event
- Please send any questions through the chat box



**Elizabeth Glaser  
Pediatric AIDS Foundation**  
Fighting for an AIDS-free generation



*The impact of improved water, sanitation and hygiene (WASH) on cytomegalovirus co-infection in HIV-affected mothers and children in rural Zimbabwe*

**Ceri Evans**

# The impact of improved water, sanitation and hygiene on cytomegalovirus co-infection in mothers and children affected by HIV in rural Zimbabwe

Ceri Evans

Zvitambo Institute for Maternal and Child Health Research, Harare, Zimbabwe



**ZVITAMBO**  
INSTITUTE FOR MATERNAL &  
CHILD HEALTH RESEARCH  
*Finding ways to help children SHINE*



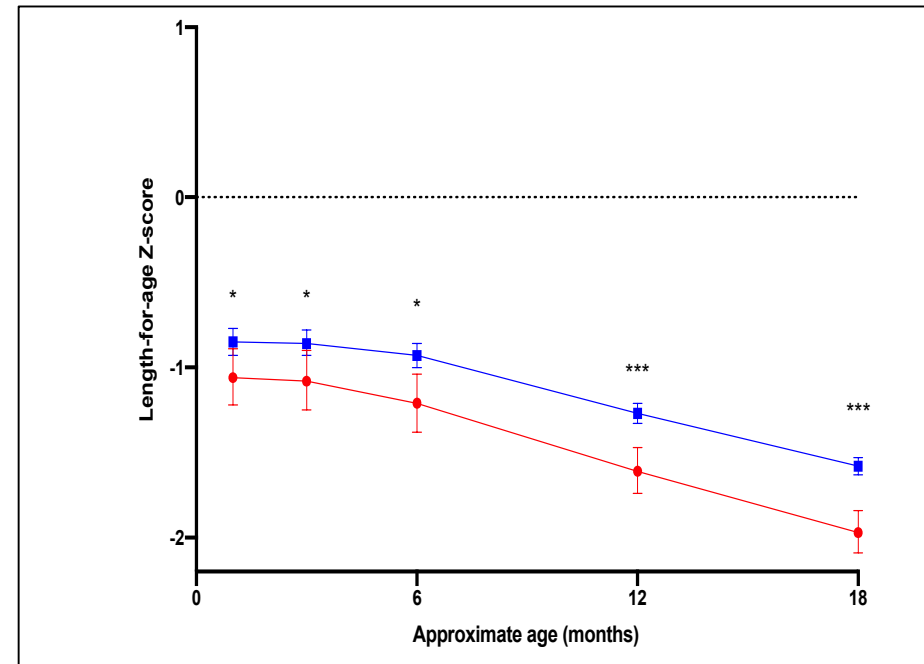
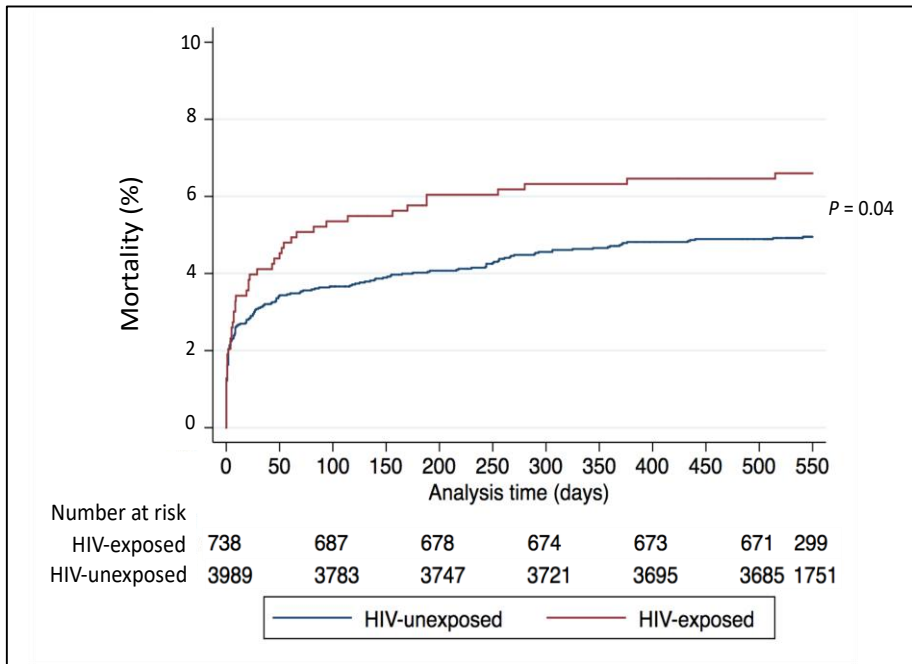
**CIPHER**  
PAEDIATRIC HIV MATTERS



 **Queen Mary**  
University of London

# Background

Children exposed to HIV do not survive and thrive as well as those not exposed to HIV



# Background

**The reasons for poorer clinical outcomes amongst children who are HIV-exposed and uninfected (HEU) are unclear**

- Socioeconomic differences?
- Immunological abnormalities?
- Co-infections?

# Hypotheses

**Could CMV have an important role?**

CMV co-infection is associated with adverse clinical outcomes among people living with HIV

We hypothesize a role of CMV in driving poor clinical outcomes among children who are HEU

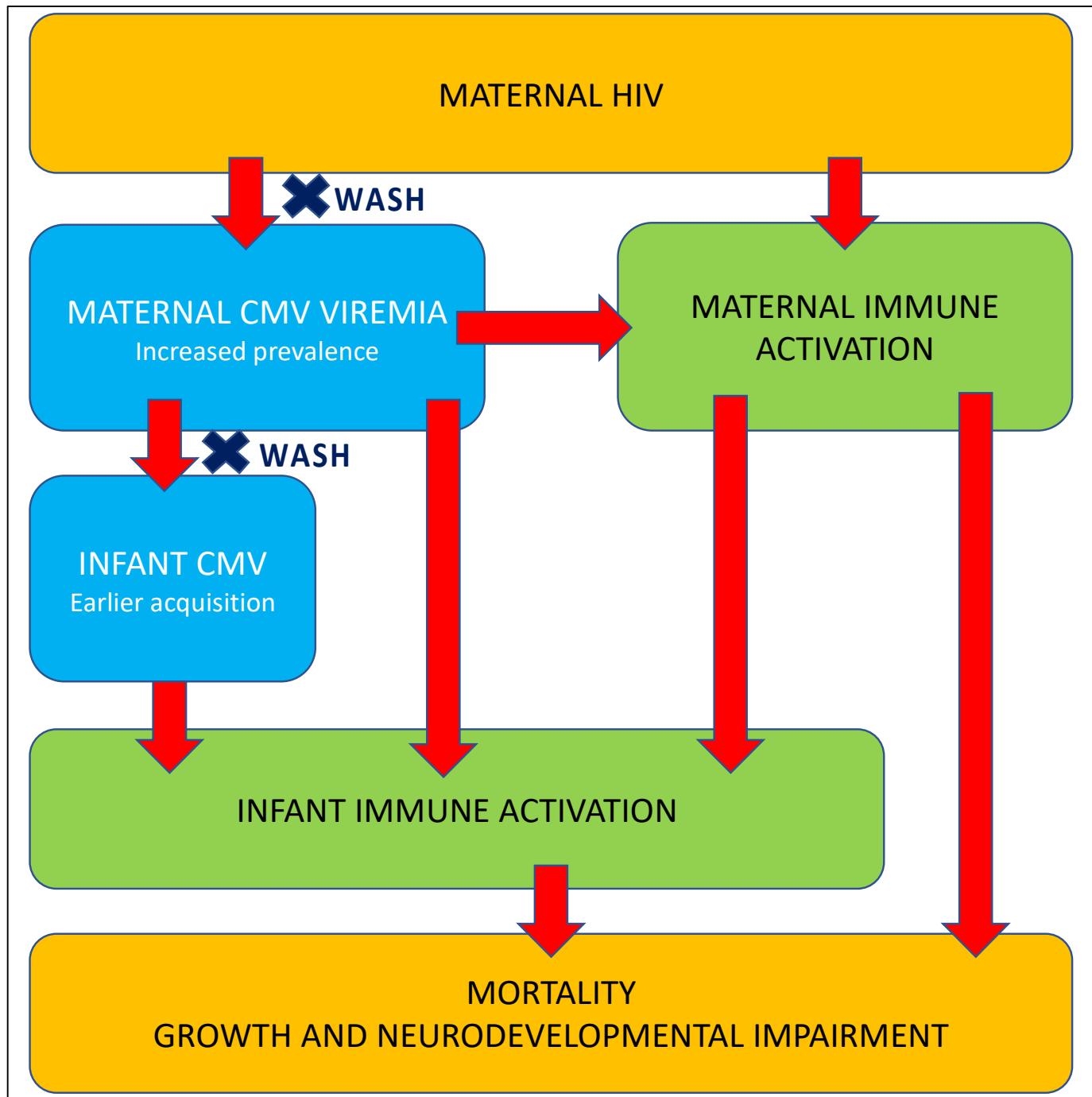
# CIPHER grant

Explore the relationship between maternal and early-life CMV and survival, growth and neurodevelopment in a rural Zimbabwean birth cohort

Test the impact of a household level water, sanitation and hygiene (WASH) intervention on reducing transmission of CMV

Embedded within the **SHINE trial**, a 2x2 factorial cluster-randomized trial assessing the individual and combined effects of improved nutrition and improved WASH on growth and early childhood development





# Aims and objectives

**Aim 1.** Explore the epidemiology of CMV amongst mother-infant dyads affected by HIV

**Aim 2.** Explore associations between CMV and clinical outcomes of children exposed to HIV

**Aim 3.** Evaluate the impact of a household level WASH intervention on CMV in mothers and children who are affected by HIV

# Impact

- Children who are exposed to HIV comprise up to 40% of all children born in some southern African settings
- Clinical outcomes are poorer than HIV-exposed children, including poorer survival, growth, and neurodevelopment
- Stunting is associated with mortality, poorer school performance, and reduced economic productivity in adulthood, and the children of stunted parents are themselves more likely to be stunted – creating an intergenerational cycle of poor clinical outcomes and poverty

# Impact

- Interventions are urgently needed to close the gap in clinical outcomes between children who are HIV-exposed and HIV-unexposed
- This project aims to (1) identify a target for interventions and (2) generate much-needed evidence as to whether one of the drivers of poor clinical outcomes of HIV-exposed children is CMV, and provide a proof-of-principle that CMV can be effectively prevented through household-level public health interventions

# Thank you!

## Collaborators

Bernard Chasekwa

Robert Ntozini

Margaret Govha

Sandra Rukobo

Kuda Mutasa

Jean Humphrey

Andy Prendergast

BILL & MELINDA  
GATES foundation



**b+tlc** BARTS  
CHARITY

**NHS**  
National Institute for  
Health Research



**ZVITAMBO**  
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CHILD HEALTH RESEARCH  
*Finding ways to help children SHINE*



**Queen Mary**  
University of London



JOHNS HOPKINS  
**BLOOMBERG**  
SCHOOL of PUBLIC HEALTH





*Evaluation of mental health, resistance mutations, and practices of new therapeutic regimen introduction and their tolerance in adolescents living with HIV in West Africa*

**Désiré Dahourou**



# Evaluation of mental health, resistance mutations, and practices of new therapeutic regimen introduction and their tolerance in adolescents living with HIV in West Africa

**Désiré Lucien Dahourou**  
Email: [ddahourou@yahoo.fr](mailto:ddahourou@yahoo.fr)  
Twitter: @dahouroudesire





# Background



- Growing number of adolescents living HIV (ALHIV) in sub-Saharan Africa
- Higher rates of mortality in ALHIV
- Adherence issues, risk of virological failure and drug resistance mutation potentially related to:
  - Mental health disorders
  - Late and inadequate disclosure of their HIV status
- Limited evidence exists on the burden of mental health among ALHIV in West Africa (WA) and its relation with disclosing of their HIV status and few studies document their viral suppression and drug resistance mutation prevalence





# Background



- In this context, development of OPTIMIZE-WA project
  - OPTIMIZE-WA aims: To document the adolescent health outcomes according to a package of interventions promoting timely HIV-disclosure before 12 years and peer' interventions to improve ART adherence
- This CIPHER Grant propose to document as a part of this study the burden of the mental health disorders and resistance mutations of these adolescents to improve their treatment outcomes



## Specific aims



- To estimate the prevalence of mental health disorders (depression, anxiety) among ALHIV and identify its associated factors
- To study the impact of disclosing HIV status and of mental health disorders on virological response
- To measure the prevalence of resistance mutations among ALHIV experiencing virological failure and study its determinants
- To document the introduction of new ART drugs and their impact on HIV treatment outcomes (adverse events, viral suppression)



# Methods



- Study design: Multi-country cohorts (3 sites in Abidjan, 1 in Burkina Faso, Mali and Togo)
- Eligibility criteria:
  - All consenting ALHIV
  - Aged 10 to 17 years
- Data collection :
  - Baseline visit: demographic, clinical, mental health (Depression [PHQ-9], anxiety [GAD-7]), HIV status disclosure, viral load, blood sample for biobank
  - Follow-up visits (24 months) : clinical data (quarterly), mental health (yearly), viral load and biobank (yearly for virological suppressed and quarterly for virological failure)



# Methods



- Sample size : enrolment of all eligible ALHIV up to 1000 ALHIV depending on the acceptability of the study
- Data Analysis:
  - Description of mental health disorder (depression, anxiety), HIV status disclosure, virological suppression, drug resistance mutations at enrollment and 24 months of follow-up
  - Description the patterns of introduction of new ART drugs and their adverse outcomes
  - Identification of factors associated with mental health disorder, virological suppression and drug resistance mutations



## Expected outcomes



- In West Africa Context, improving evidence on :
  - The burden of mental health disorders in ALHIV
  - The disclosure of HIV status to ALHIV
  - The resistance mutations among ALHIV
- Study implications
  - Advocate with stakeholders and funders to integrate mental health services into ALHIV care to promote positive mental health, and prevent mental conditions in this population
  - Evaluate the effects of interventions designed to improve the mental health of ALHIV

# Thank you!

Mentor: Valérieane Leroy

Collaborators:

Dr Tanoh Kassi EBOUA

Dr Sylvie N'GBECHE

Dr Kouadio KOUAKOU

Pr Mariam SYLLA

Dr Elom TAKASSI

Dr Caroline YONABA

Dr Philippe Msellati

Jean Claude AZANI

Karen Malateste



*Eunice Kennedy Shriver* National Institute  
of Child Health and Human Development





The role of psychosocial resources with HIV knowledge and Antiretroviral therapy (ART) exposure in a representative household study of adolescent girls and young women living with HIV in six South African districts

**Janan Dietrich**



**The role of psychosocial resources with HIV knowledge and antiretroviral therapy (ART) exposure in a representative household study of adolescent girls and young women living with HIV in six South African districts**

**Janan Dietrich (PhD)**

**Cipher Growing the Leaders of Tomorrow  
2019 Fellow**







# Background



- Adolescent girls and young women 15-24 years living with HIV (AGYW) have poor outcomes for antiretroviral therapy (ART).
- Less than half of adolescents living with HIV know their status or adhere to treatment.





# Background



This study was located within the **HERStory** study:

- An evaluation of a donor-funded large-scale combination HIV prevention intervention for AGYW 10-24 years in SA.
- One of the interventions aiming to achieve the UNAIDS 90-90-90 targets and sustainable development goals to end HIV by 2030.

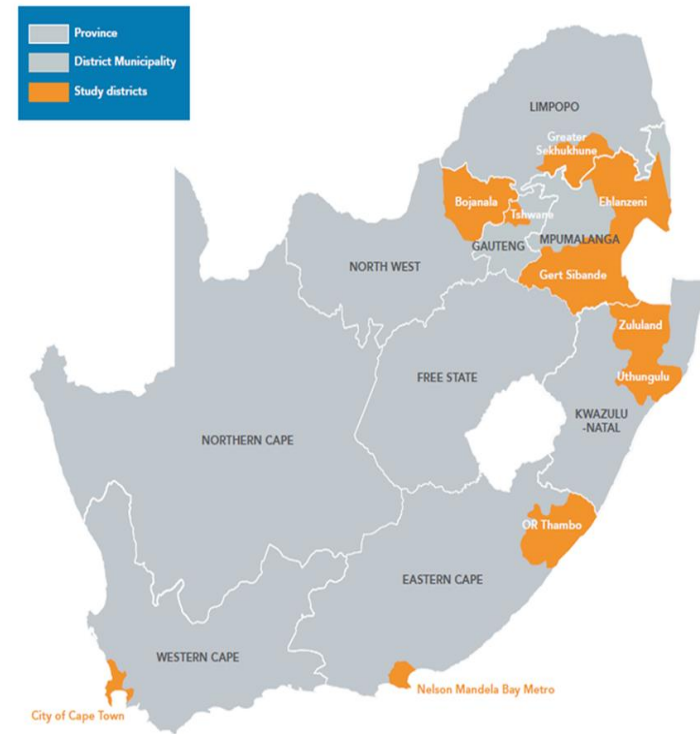


# Methods HERStory



## HERStory Quantitative Methods

- Representative household survey among AGYW aged 15-24 years living in 6 of the 10 intervention districts (these analyses 15-19 years)
- **Planned sample size:** 7300; Response rate of 61%
- **Interviewer-administered questionnaire** using a tablet
- Samples for **HIV testing**
- Data weighted for sample realization with population correction fraction
- **Measures**
  - Laboratory tests for HIV status, initiation on ARV and viral suppression
  - Psychosocial measures





# Resilience



- Interventions maximizing social support and resilience may increase knowledge of HIV status and ART use among South African AGYWHLH.
- Further research is necessary to elucidate the mechanisms that increase resilience in AGYWHLH.
- The results suggest the importance of caregiver-child interventions as adolescent girls likely to rely on caregivers for support.
- An initial solution is to integrate tailored psychosocial counselling into HIV care services for AGYWHLH.





# Study aims



**To investigate the influence of psychosocial resources on:**

- (1) knowledge of HIV positive status and**
- (2) ART exposure among AGYW 15-24 years old.**

Construct	Scale
Wellbeing Flourishing Scale	Flourishing wellbeing scale
Resilience	Connor-Davidson resilience scale
Social support	Multidimensional Scale of Perceived Social Support
Gender equity	Gender Equitable Men's Scale
AIDS-related stigma	Internalized AIDS-Related Stigma Scale



# Demographics

(n = 568/4399 HIV+ AGYW)

<b>Age (20-24 yrs)</b>	69.1%
<b>Secondary schooling</b>	88.5%
<b>Ever having had sex</b>	88.7%
<b>Ever been pregnant (of those having had sex)</b>	67.2%
<b>Knowledge of HIV status</b>	62.7%



# Methods



- A cross-sectional household study was conducted from 2017 to 2018 in six South African districts.
- Within districts, sampling was restricted to areas selected *apriori* for implementation of the combination intervention.
- Eligible AGYW were: 15-24 years and residents of the identified areas.
- HIV prevalence was 12.4% (n=568) among 4399 AGYW participants.
- Analyses are restricted to these HIV positive participants.



# Results



- Among 568 participants, **356 had knowledge of their HIV status AND**
- 83.1% (n=299) had ART metabolites detected in their blood.

	Knowledge of HIV status		On ART	
Psycho-social Constructs	aOR	95% CI	aOR	95% CI
Wellbeing	1.00	0.98, 1.03	1.01	0.98, 1.04
Resilience	1.01	0.99, 1.03	1.05	<b>1.01, 1.08</b>
Support from family	1.14	<b>1.04, 1.24</b>	1.02	0.87, 1.19
Support from peers	0.90	0.83, 0.97	0.95	0.83, 1.09
Support from special person	1.12	<b>1.02, 1.23</b>	0.93	0.78, 1.11
Gender equity norms	0.98	0.95, 1.00	1.01	0.97, 1.05
HIV Stigma	--	--	0.92	0.83, 1.03





# Results



## Clinic access

### Facilitators

- Living close to clinic (37.3%)
- Having transport (28.3%)

### Barriers

- Long waiting queues (16.0%)
- Long travel distance (13.0%)
- Transport issues (12.9%)



# Implications



- Interventions maximizing social support and resilience may increase knowledge of HIV status and ART use among South African AGYW living with HIV.
- Further research is necessary to elucidate the mechanisms that increase resilience in AGYWLH.
- The results suggest the importance of caregiver-child interventions as adolescent girls likely to rely on caregivers for support.
- An initial solution is to integrate tailored psychosocial counselling into HIV care services for AGYWLH.





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**The content hereof is the sole responsibility of the authors and do not necessarily represent the official views of the SAMRC, IAS or their funders**



# Study Team and Acknowledgements



## Investigators' affiliations

- South African Medical Research Council
- Centers for Disease Control and Prevention (CDC)
- Epicentre AIDS Risk Management
- National Institute for Communicable Diseases
- University of Cape Town (UCT)
- Brown University (USA)
- Data Yarn
- Global Fund

## Collaborating partners' affiliations

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Soul City  
NACOSA  
Western Cape Government  
Kwa-Zulu Natal Government  
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University of the Witwatersrand

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**UNIVERSITY OF CAPE TOWN**  
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD



# Contact details



[Janan Dietrich](#)

[Email: dietrichj@phru.co.za](mailto:dietrichj@phru.co.za)

**Reach out on LinkedIn**





*The impact of structured caregiver peer support (CaPS) on ART adherence and viral suppression among children living with HIV in Nigeria: A randomized controlled trial, Nigeria*

**Tongdiyen Jasper**



# **The Impact of Structured Caregiver Peer Support on ART Adherence and Viral Suppression among Children Living with HIV in Nigeria**

The CaPS Study



**Dr. Tongdiyen Laura Jasper**

International Research Center of Excellence, Institute of Human Virology Nigeria  
Abuja, Nigeria

December 10, 2020





# CaPS Study Team



## Investigators

- **Dr. Tongdiyen Laura Jasper:** Principal Investigator/Study Mentee, Senior Continuous Quality Improvement Officer, Pediatrics
- **Dr. Nadia Sam-Agudu:** Mentor, Associate Professor of Pediatrics, Senior Technical Advisor Pediatric & Adolescent HIV,
- **Dr. Nguavese Torbunde:** Senior Program Officer-Pediatric HIV Program
- **Prof. Llewellyn Cornelius:** Social Scientist
- **Prof. Jean Nachega:** HIV Treatment Adherence Specialist
- **Dr. Habib O. Ramadhani:** Statistician
- **Dr. Emilia Iwu** -Community HIV Care

## Collaborating Institutions

- Institute of Human Virology Nigeria
- Institute of Human Virology, University of Maryland Baltimore, USA
- University of Pittsburgh, USA
- Stellenbosch University, Cape Town, South Africa
- University of Georgia Athens, USA.
- Rutgers University, USA





# Background



- Children living with HIV (CLHIV) are less likely to achieve viral suppression, and have high morbidity and mortality
- Major issue is “by proxy” nature of pediatric anti-retroviral therapy (ART) adherence: children depend on caregivers
- Unfriendly/confusing drug formulations and dosing; and poor caregiver knowledge are major barriers to CLHIV adherence.
- Peer support has been shown to improve ART adherence and viral suppression among pregnant women and adolescents
  - Includes research from our study group in Nigeria
- Peer support for caregivers presents a feasible and impactful approach to improve ART adherence and viral suppression among children



# Study Aims



**Aim 1:** To evaluate the effectiveness of structured peer support to caregivers in **achieving viral suppression** among CLHIV

**Aim 2:** To evaluate the effectiveness of structured caregiver peer support in **improving drug pick-up rates** (adherence proxy) for CLHIV

**Aim 3:** To establish the baseline cohort prevalence of nucleoside reverse transcriptase inhibitor (NRTI)-, non-NRTI (NNRTI)- and protease inhibitor (PI) **drug resistance** among CLHIV

**Aim 4:** To explore the **facilitators and barriers to pediatric ART administration and adherence** from the perspective of stakeholders including CLHIV caregivers, healthcare workers, community members/leaders, and policy makers.



# Study Methodology



**15 Secondary Health Facilities**  
in Federal Capital Territory and Nasarawa State  
PEPFAR-supported through IHVN  
High Volume:  $\geq 500$  PLHIV enrolled;  $\geq 35$  unsuppressed 6 mo-10 y/o children;  $\geq 1$  adherence counsellor

Random Selection

6 facilities

Cluster Randomization

Structured  
caregiver peer  
support from  
Champion  
Caregiver

**Intervention Arm**  
3 facilities

66 unsuppressed CLHIV  
66 adult caregivers

**Control Arm**  
3 facilities

66 unsuppressed CLHIV  
66 adult caregivers

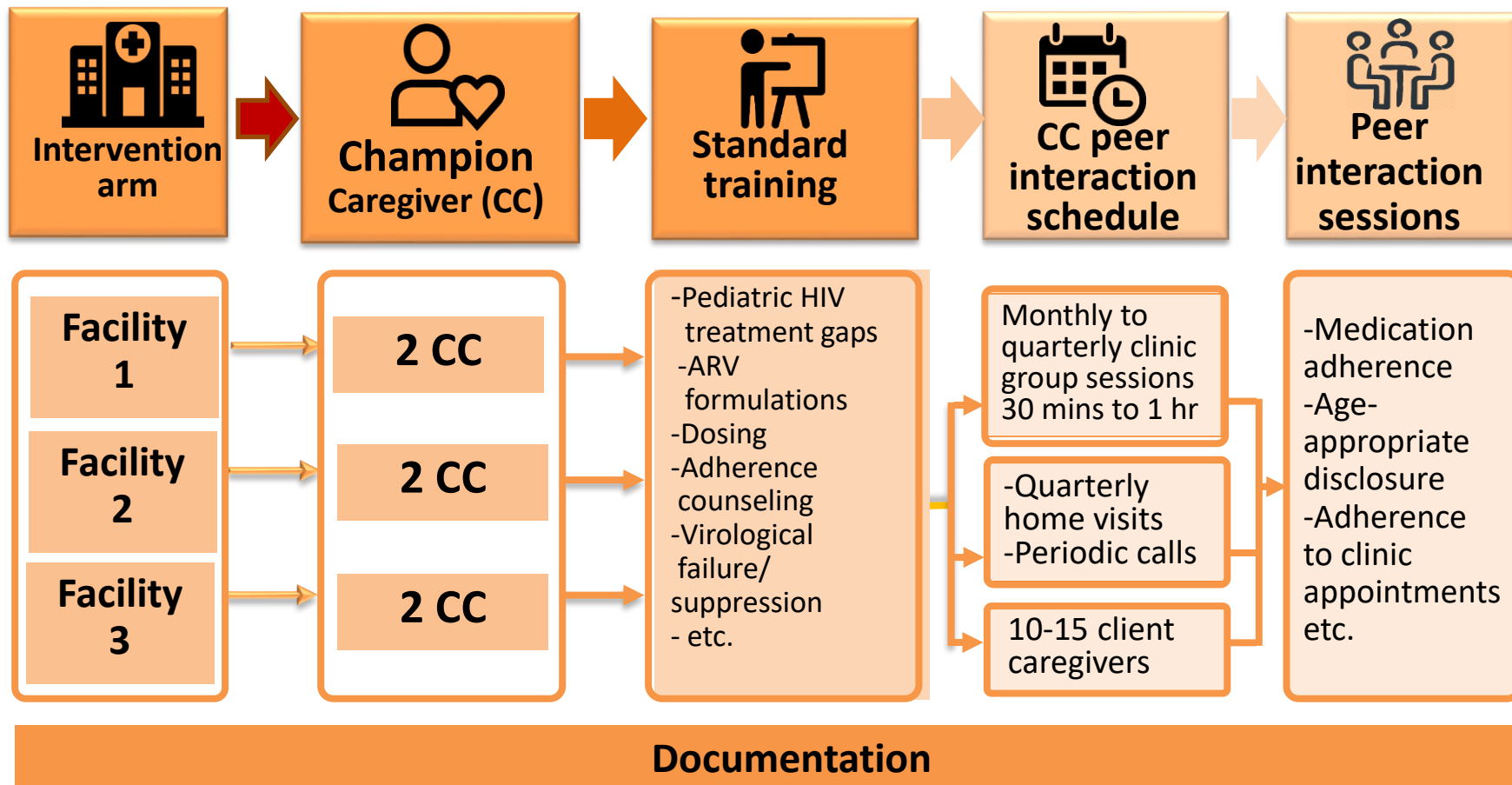
Standard of care;  
no structured  
caregiver peer  
support

**Outcomes at 6, 12 and 18 mos**

1. Viral suppression rates ( $<1,000$  copies/mL)
2. ART drug refill rates



# Champion Caregiver (CC) Intervention Model





# Inclusion Criteria



## Inclusion Criteria:

- **Children living with HIV:**
  - Age 6 months to 10 years
  - On ART for  $\geq 6$  months
  - Most recent viral load (VL)  $\geq 1,000$  copies/ml, in last 6 months. Viral suppression defined as  $< 1,000$  copies/ml
- **Caregivers:**
  - Adult  $\geq 18$  to 65 years old (regardless of gender, HIV status or education)
  - Caring for study-eligible child as the primary caregiver



# Expected Outcomes



Improve knowledge  
and skills of  
caregivers in HIV  
care and treatment  
to enhance  
medication  
adherence for their  
CLHIV

Help close the  
viral suppression  
gap among CLHIV

Support the  
evidence base for  
formal integration  
of structured  
caregiver peer  
support into HIV  
policy and  
programmes



# Study Progress



Study Timeline-Year 1

Activities	Dec 19	Jan 20	Feb 20	Mar 20	April 20	May 20	June 20	July 20	Aug 20	Sept 20	Oct 20	Nov 20
Site assessment/selection												
Development of CC curriculum/study tools												
Baseline FGDs/KIIs, Qualitative data analysis												
Adaptation of CC curriculum/study intervention to context												
Champion caregiver recruitment												
CC Training												
Participant recruitment /Baseline VL and DRT testing												
Site monitoring and data reporting												

Key	
Proposed Activity Timeline	
Implemented within timeline	
Delayed Implementation	
Yet to Commence	





# Thank You, Mungode!



- IAS-CIPHER, for funding and learning opportunity
- IHVN-IRCE, for institutional support
- Research team and collaborators for technical support and mentoring
  - Dr. Nadia Sam-Agudu for her overall mentorship
  - Specialized learning in social/behavioral research
  - Implementation science approaches and frameworks
  - Statistical methods eg assumptions for sample size estimations
  - Project management and planning, logistics
  - IRB applications





## Q&A

**Please introduce yourself and briefly ask your question through**

- The chat box – note if direct at one specific speaker
- By raising your hand and waiting your turn



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# THANK YOU



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