

Is documentation of research  
with HIV interventions across  
community, facility, and  
policy levels consistent and  
aligned to achieve UNAIDS  
90-90-90 targets?

## A systematic review

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**LONDON**

**FAST-TRACK CITIES 2019**

SEPTEMBER 8-11, 2019 | BARBICAN CENTRE

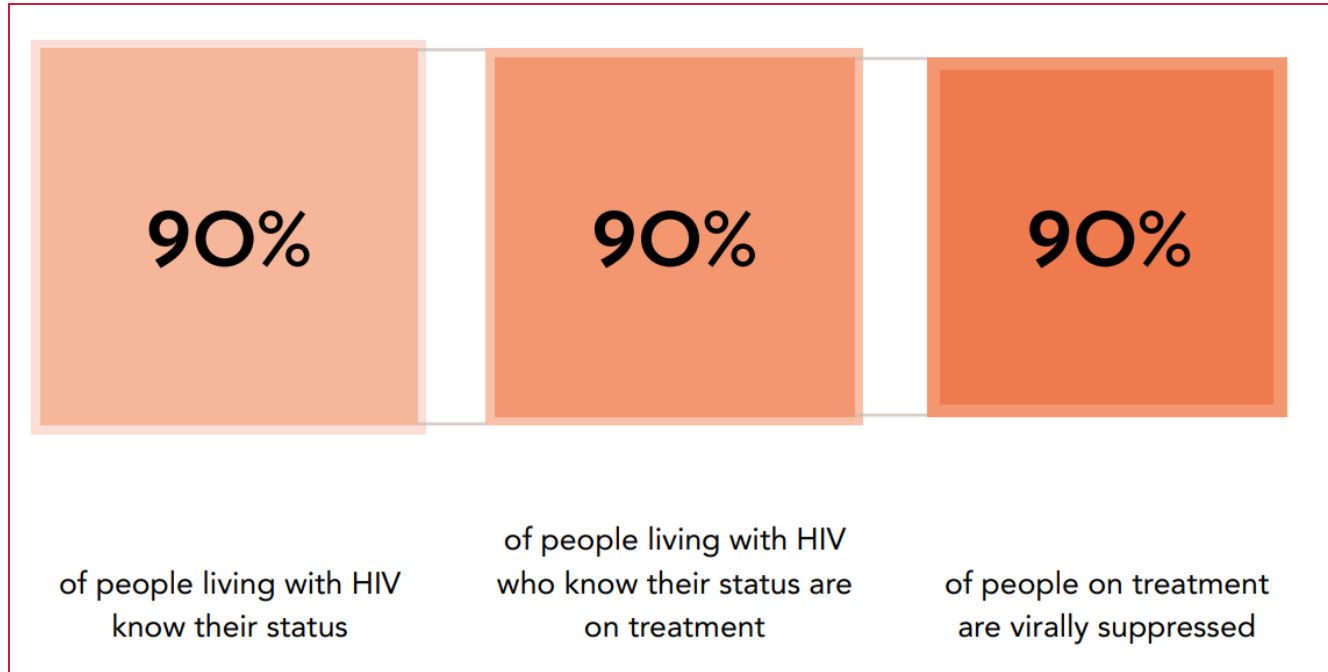
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## 2 **UNAIDS 90-90-90 Targets for 2020**



Source: UNAIDS (2017)

# Rationale

- **UNAIDS targets provide a useful framework for the reporting of data and evaluation of success towards HIV elimination across countries.**
- Effective interventions (testing, linkage and retention) are critical to achieving UNAIDS targets.
- Yet, **report of results is not aligned with 90-90-90 targets.**
- A rigorous methodological evaluation of reporting of testing/treatment/retention interventions across **community**, **facility** and of **policy** interventions was not available.
- We conducted a systematic review to fill this gap

# Objectives

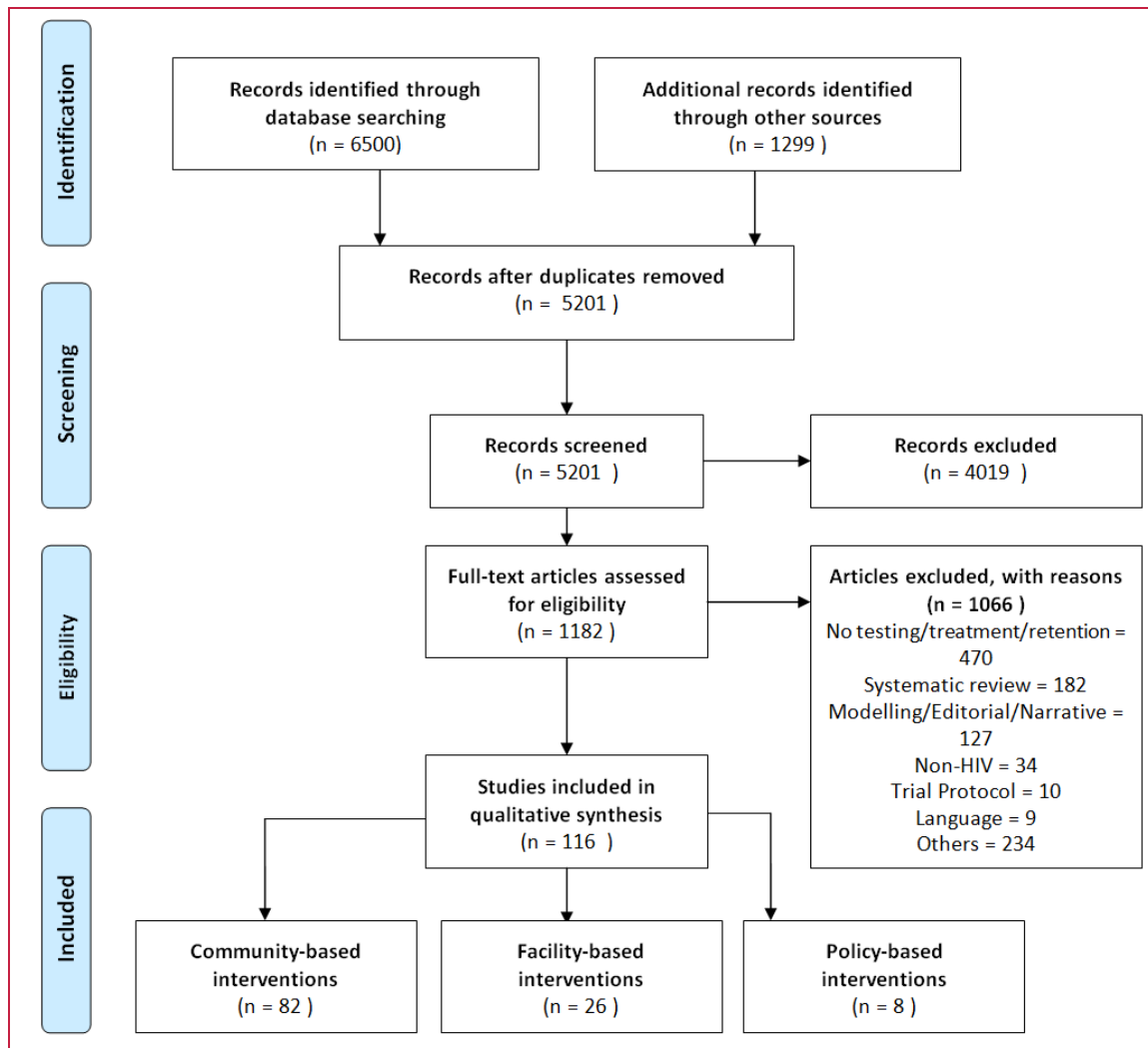
- To **determine if reporting of outcomes and/or metrics** before and after the 2014 announcement of the UNAIDS targets were consistent and in line with the care continuum.
- To **highlight successful HIV interventions** across community, facility and policy levels, that have been effective in contributing, directly or indirectly, towards the UNAIDS 90-90-90 targets.

# Methods

- For the period, 2007-2018, three independent reviewers (NK, SD, CF) searched **8 databases** and **3 conferences**
  - **Databases** - BIOSIS, CINAHL, Cochrane Library, EMBASE, Global Index Medicus, LILACS, OVID, PubMed; **Conferences** - CROI, IAS, ASLM
- **Exclusion criteria**
  - Modeling studies, reviews, narratives, trial protocols, non-English papers
  - Studies with no mention of community, facility or policy-based interventions for one of the 90-90-90 targets

# Search Strategy

Database	Search String
Biosis	((("HIV" OR ("acquired immunodeficiency syndrome" OR "aids")) OR ("UNAIDS" OR "90-90-90")) AND ("youth" OR "adults") AND "viral load")
CINAHL	((("HIV" OR "acquired immunodeficiency syndrome" OR "aids") OR ("UNAIDS" OR "90-90-90")) AND ("youth" OR "adults" OR "viral load"))
Cochrane DARE	(HIV OR acquired immunodeficiency syndrome OR aids OR UNAIDS OR 90-90-90) AND (youth OR adults OR viral load)
EMBASE	((HIV and acquired immunodeficiency syndrome and aids) or (UNAIDS and 90-90-90)) and (youth or adults or viral load)
Global Index Medicus	(hiv OR UNAIDS) AND (infants OR adults OR viral load)
LILACS	(HIV OR acquired immunodeficiency syndrome OR aids OR UNAIDS OR 90-90-90) AND (youth OR adults OR viral load)
OVID	((HIV and acquired immunodeficiency syndrome and aids) or (UNAIDS and 90-90-90)) and ((youth or adults) or (viral load))
PubMed	((("HIV"[MeSH Terms] OR "HIV"[All Fields]) OR ("acquired immunodeficiency syndrome"[MeSH Terms] OR ("acquired"[All Fields] AND "immunodeficiency"[All Fields] AND "syndrome"[All Fields]) OR "acquired immunodeficiency syndrome"[All Fields] OR "aids"[All Fields])) AND ("UNAIDS"[All Fields] AND/OR "90-90-90"[All Fields] AND/OR ("youth" OR "adults") AND "viral load"))



# Methods

- Eligible studies were classified by country income level (LIC, MIC, HIC)
- Outcome metrics were stratified as per UNAIDS 90-90-90 targets
  - **Knowledge of HIV status (awareness/uptake)**, defined as any method of diagnosing/screening/testing for HIV
  - **Linkages to treatment/on treatment**, defined as any method of linking recently diagnosed HIV+ patients to healthcare services and/or initiated on ART within a reasonable time from diagnosis
  - **Viral suppression/adherence**, defined as having viral levels <1000 copies/mL, or as defined by the individual studies themselves. *(In some cases, ART adherence was a reported outcome, this was used as a precursor to viral suppression, the rationale being that sustained ART adherence will result in viral suppression).*



# Overview of Results

- Of 116 eligible studies, break up:
  - **82 (71%)** - community-based,
  - **26 (22%)** - facility-based
  - **8 (7%)** - policy-focused
  
- **62% (72/116)** of studies **reported** on interventions as **per UNAIDS** targets;
  - 52% (60/116) on HIV status knowledge/HIV test uptake
  - 29% (34/116) on treatment initiation/linkage to care
  - 39% (45/116) on viral suppression/adherence

*(Some studies reported on more than one of the targets)*

# Results: Community-based interventions

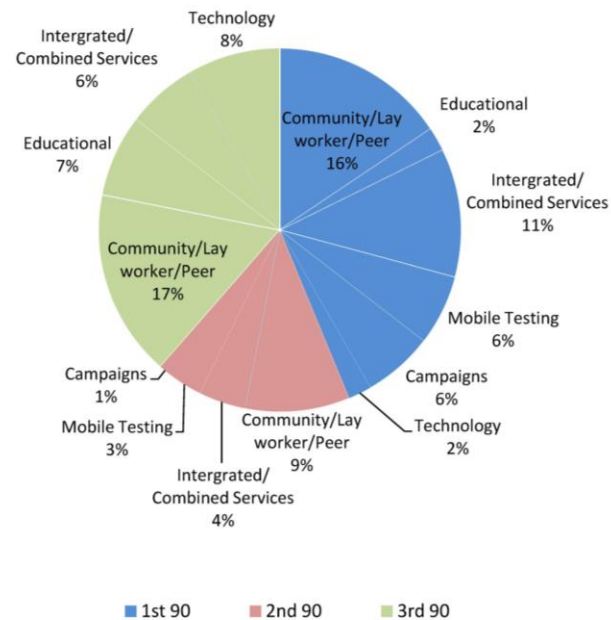
- Of 82 eligible studies, 51.2% (42/82) reported on HIV testing, 20.7% (17/82) on linkage to care/on treatment, and 45.1% (37/82) on viral suppression.
- By strategies, 36.6% deployed community workers/peers, 22% used combined test and treat strategies, 12.2% used educational methods, 8.5% used mobile testing, 7.3% used campaigns and 13.4% used technology.
- Of the studies published after 2014, **50.0% reported metrics aligned with UNAIDS targets**

## Which community-based HIV initiatives are effective in achieving UNAIDS 90-90-90 targets? A systematic review and meta-analysis of evidence (2007-2018)

Sailly Dave<sup>1</sup>, Trevor Peter<sup>2\*</sup>, Clare Fogarty<sup>1</sup>, Nicolaos Karatzas<sup>1</sup>, Nandi Belinsky<sup>1</sup>, Nitika Pant Pai<sup>1,3\*</sup>

- Interventions that made use of **community workers** (lay workers, peers, etc) were successful.
- For HIV testing and treatment/linkage to care, integrated or combined test/treat interventions were successful
- For viral suppression, technological and educational interventions were commonly deployed.

### Intervention Type By UNAIDS 90-90-90 Targets



## 12 Results: Facility-based interventions

- Of the evaluated studies, 54% (14/26) reported on HIV testing, 46% (12/26) on treatment initiation, and 23% (6/26) on viral suppression
- Eight studies published on multiple outcomes, addressing more than one of the three targets in a single initiative or using multiple metrics for a single target, totaling 36 reported outcomes.
- 15 studies were published after 2014, yet **only 53%** (8/15) reported results using outcome metrics according to UNAIDS targets

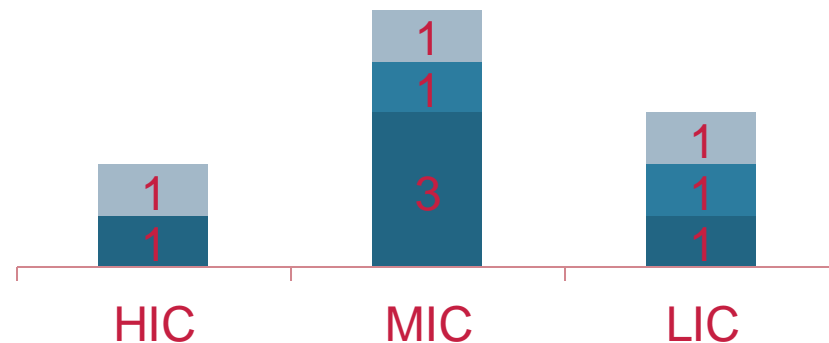
# Facility-based interventions

(undergoing peer review)

- 9 out of the 26 reviewed studies were successful in reaching their target, reporting on 10 outcomes
- Successful interventions included
  - In HICs: pre-test counseling; one-on-one ART counseling
  - In MICs: couples HIV testing/ counseling; PITC initiatives; mobile phone based case management intervention
  - In LICs: partner notification; follow-up nurse program (home visits)

## Successful outcomes by country income level and UNAIDS targets

■ 1st 90 ■ 2nd 90 ■ 3rd 90



# Policy-based interventions



RESEARCH ARTICLE

Are policy initiatives aligned to meet UNAIDS 90-90-90 targets impacting HIV testing and linkages to care? Evidence from a systematic review

Nicolaos Karatzas<sup>1</sup>, Trevor Peter<sup>2\*</sup>, Saily Dave<sup>1</sup>, Clare Fogarty<sup>1</sup>, Nandi Belinsky<sup>1</sup>, Nitika Pant Pai<sup>1,3\*</sup>

- Of the 8 eligible studies, there were 11 reported outcomes: 36.4% (4/11) on HIV diagnosis, 45.4% (5/11) on treatment initiation, and 23% (6/26) on viral suppression

Summary of Study Characteristics

Country	Income Level	Measure/Metric	Intervention Type
USA	HIC	HIV Diagnosis	Expansive partner services policy
USA	HIC	Initiation to Care	Expanded HIV treatment policy
Canada	HIC	HIV Diagnosis	Expanded partner notification
South Africa	MIC	Initiation to Care	Same-day diagnosis CD4 count guidelines
Rwanda	LIC	Initiation to Care Achieving Vial Suppression	National HIV program
Rwanda	LIC	Initiation to Care HIV Diagnosis	ART initiation policy
Malawi	LIC	Initiation to Care Achieving Vial Suppression	<i>Médecins Sans Frontières</i> related program
Rwanda	LIC	HIV Diagnosis	Community-based health insurance policy and performance based financing

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## ***Findings: community based***

- Community-based interventions demonstrated success when their implementations were tailored to country or community context
- Use of community healthcare/peer workers is recommended
  - This type of intervention was successful in middle and low income countries for reaching the HIV status knowledge and viral suppression targets
- Exploration of innovative interventions for linkage to care and to engage first time testers is encouraged

## *Findings: facility based*

- Successful facility- based intervention in LICs highlighted the importance of resource level-tailored interventions, when employed in innovative ways
  - Eg. Harnessing the impact of nurse-led programs
- MICs initiatives showed the success of counseling based efforts led by lay healthcare workers to test, treat and maintain viral suppression
- HICs facility-based interventions improved their testing and treatment service outcomes when they were adapted to the needs, language and literacy levels of their at-risk populations



## ***Findings: policy based***

- There was a positive correlation between implementation of policies and programs that resulted in an increase in patient awareness and an increase in partner notification with services
  - Together these resulted in increasing testing rates, and deployment of linkage/retention programs that improved retention in care
- Implementation is essential, though monitoring is equally important to establish the country/state/province specific interventions that are effective within each country/region

# Conclusions

- Outcome metrics (for targets) were inconsistently reported across the three levels
  - Only **53% of facility-based interventions** and **50% of community-based interventions** reported outcomes as per UNAIDS targets, following the announcement in 2014.
  - Inconsistent Outcome reporting impedes comparisons/ implementation of successful interventions in other similar resource settings
- Successful deployment of community health care workers improved viral suppression (community and facility); nurse or lay health care workers (in LICs) and peers (in MICs), improved testing and retention. In HICs, policy interventions increased patient serostatus awareness, partner notification and adherence.

# Conclusions

- Innovation interventions were successful if adjusted to resource limitations
- Adapting and scaling successful interventions by income levels in similar settings could facilitate reaching UNAIDS targets
- Policies that encourage a standardized reporting of outcome metrics and data as per UNAIDS targets could aid a greater comparability, monitoring and assessment of progress towards the UNAIDS 90-90-90 targets.

# Acknowledgements

- IAPAC ( Dr Jose Zuniga, Jonathan Hess)
- Dr. Trevor Peter (CHAI)
- Saily Dave
- Clare Fogarty
- Nicolaos Karatzas
- Nandi Belinsky
- Dr. Angela Karellis



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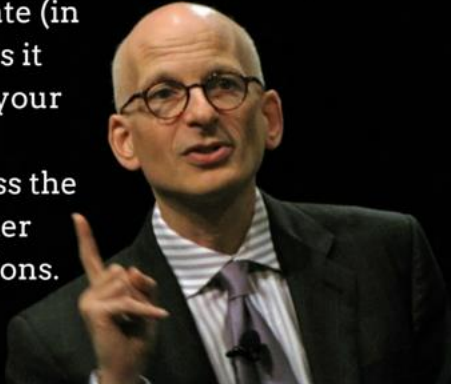
# 90-90-90

—○—

A useful metric is both accurate (in that it measures what it says it measures) and aligned with your goals.

Don't measure anything unless the data helps you make a better decision or change your actions.

~ Seth Godin

A photograph of Seth Godin, a man with glasses, wearing a suit and tie, pointing upwards with his right hand. He is speaking, and the background is dark.

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