Ending HIV in Alabama: A Work in Progress

Michael J. Mugavero, MD, MHSc Professor of Medicine Co-Director, UAB CFAR January 13, 2021





Outline

- Ending the HIV Epidemic: Overview and Origins
- Ending HIV in Alabama: A Work in Progress
- A Paradigm for Population Health?: COVID-19 Case Study

Ending the HIV Epidemic A PLAN FOR AMERICA







Ending the HIV Epidemic: A Plan for America

GOAL:

reaching 75% reduction in new HIV infections by 2025 and at least 90% reduction by 2030.

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HHS will work with each community to establish local teams on the ground to tailor and implement strategies to:



Diagnose all people with HIV as early as possible after infection.

Treat the infection rapidly and effectively to achieve sustained viral suppression.



Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).

Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.





National Institutes of Health





JAMA Editorial February 7, 2019 Ending the HIV Epidemic A Plan for the United States

Anthony S. Fauci, MD; Robert R. Redfield, MD; George Sigounas, MS, PhD; Michael D. Weahkee, MHA, MBA; Brett P. Giroir, MD JAMA. 2019;321(9):844-845. doi:10.1001/jama.2019.1343









Health Resources & Services Administration



Services Administration

https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/overview

On the Origins of Ending the HIV Epidemic

NATIONAL HIV/AIDS STRATEGY FOR THE UNITED STATES JULY 2010

- 1. Reduce the number of new HIV infections
- 2. Increase access to care and health outcomes
- 3. Reduce HIV-related health disparities
- 4. Achieve a more coordinated national response



Jeff Crowley, MPH Past Director, ONAP White House





The HIV Treatment Cascade / Continuum



- Only ~20-30% of persons living with HIV in US have achieved viral suppression
- Increasing HIV serostatus awareness and medical care engagement priorities

HIV Transmissions across Care Continuum, 2016



Li Z, Purcell DW, Sansom SL, Hayes D, Hall HI. *Vital Signs:* HIV Transmission Along the Continuum of Care — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2019;68:267–272. DOI: <u>http://dx.doi.org/10.15585/mmwr.mm6811e1external.icon</u>

U=U: Undetectable=Untransmittable

nam aidsmap

HIV & AIDS – sharing knowledge, changing lives

"The scientific evidence is clear. Someone whose HIV is undetectable does not pose an infection risk to their sexual partners."



New York State Becomes the First State in the U.S. to join U=U September 28, 2017





UNDETECTABLE = UNTRANSMITTABLE

There has never been a more hopeful time in the history of AIDS. Revolutionary advances in HIV prevention and treatment can now

bring the epidemics of HIV stigma and HIV to a halt.

UNDETECTABLE UNTRANSMITTABLE

A PERSON LIVING WITH HIV WHO HAS AN UNDETECTABLE VIRAL LOAD DOES NOT TRANSMIT THE VIRUS TO THEIR PARTNERS.

I A S <mark>X</mark>

HEALTHY City of Chicago and Community Leaders Join U=U Campaign as Part of CHICAGO New Effort to Reduce HIV Transmissions to Zero

CHICAGO DEPARTMENT OF PUBLIC HEALTH

https://www.preventionaccess.org/about,

https://www.health.ny.gov/diseases/aids/ending the epidemic/.

https://www.cityofchicago.org/city/en/depts/cdph/provdrs/health_services/news/2017/september/city-

of-chicago-and-community-leaders-join-u-u-campaign-as-part-.html

to endorse the U=U consensus statement of the Prevention Access Campaign.

NATIONAL HIV/AIDS STRATEGY: UPDATED TO 2020 5 MAJOR CHANGES SINCE 2010

Since the first National HIV/AIDS Strategy was released in 2010, major advances have transformed how we respond to HIV, provided new tools to prevent new infections, and improved access to care. With a vision for the next five years, our National HIV/AIDS Strategy has been updated to leverage these achievements and look ahead to 2020.

Our prevention toolkit has expanded.	The Affordable Care Act has transformed health care access.	HIV testing and treatment are recommended.	Improving HIV Care Continuum outcomes is a priority.	Research is unlocking new knowledge and tools.
Pre-Exposure Prophylaxis (PrEP) A daily pill to prevent HIV. When taken consistently, can reduce the risk of HIV by up to	Image: Second	Federal Guidelines now recommend routine HIV screening for people aged 15 TO 65 CDC updated recommendations	President Obama's HIV Care Continuum Initiative directed Federal departments to increase the number of people with HIV who are: diagnosed with HIV linked to HIV care retained in HIV care	 Evidence that starting HIV treatment early lowers the risk of developing AIDS or other serious illnesses New HIV testing technologies, including new diagnostic tests New HIV medications with fewer side effects, less frequent dosing, and a lower risk of drug resistance Continued investigation of long-acting drugs for HIV treatment and prevention, an HIV vaccine, and, ultimately, a cure.
Treatment as Prevention The risk of transmitting HIV is reduced by 696% in those who start treatment early.	There is no denial of coverage for pre-existing conditions, like HIV. Preventive services, including HIV testing, are covered without co-pays.	Federal HIV treatment guidelines now recommend antiretroviral therapy for all people living with HIV.	 prescribed HIV treatment virally suppressed (having very low levels of HIV in their body). 87% 87% 81% 39% 36% 30% 30% 	

NATIONAL HIV/AIDS STRATEGY for the UNITED STATES: Widesput UPDATED TO 2020



 Widespread HIV testing and
 linkage to care enabling people living with HIV to access treatment early.



Full access to PrEP services

for those whom it is appropriate and desired, with support for medication adherence for those using PrEP.



Broad support for people living with HIV to remain engaged in comprehensive care, including support for treatment adherence.



Universal viral suppression among people living with HIV.

Status Neutral Continuum of HIV Prevention and Care



https://www.nastad.org/domestic/hiv-prevention-health-equity, Slide courtesy of Hyman Scott

National HIV/AIDS Strategy: Progress since 2010



- From 2010-2015, modest increase in VS (~10%)
- From 2010-2016, modest reduction in HIV transmission rate & new cases (~15%)

- From 2010-2018, overall death rate decreased by 37%
- HIV-related death rates decreased 48%

Li Z, et al. *MMWR Morb Mortal Wkly Rep* 2019;68:267–272. DOI: <u>http://dx.doi.org/10.15585/mmwr.mm6811e1external.icon</u> Bosh KA, et al. *MMWR Morb Mortal Wkly Rep* 2020;69:1717–1724. DOI: <u>http://dx.doi.org/10.15585/mmwr.mm6946a1external.icon</u>

Ending the HIV Epidemic: A Plan for America

TEST FOR HIV GOAL: 86% of people with HIV HIV tests determine the know they have it. next prevention step, ×i >i PrEP or HIV treatment. **TARGET: 95%** reaching 75% ٣ reduction PREVENT TREAT in new HIV infections **People without People who** by 2025 know they have HIV, but at risk and at least **HIV** should take for it, can take PrEP 90% as prescribed to medicine daily to reduction prevent getting HIV. control the virus. by 2030. HAVE HIV HAVE PREP 18% 63% PRESCRIPTION **UNDER CONTROL** TARGET 50% 95% TARGET

https://www.cdc.gov/media/releases/2019/p1203-hiv-testing-treatment-prevention.html

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Birmingham U.N.I.T.E.; circa 2010



Vision: Health information exchange

- Client-level data from HIV medical and supportive service providers
- Enhanced tracking to inform services to address gaps in treatment cascade

Health Information Exchange



"Ending AIDS in Alabama"

Community Dialogue January 31, 2013

Action Plan:

- Make U.N.I.T.E. a reality
- Construct Alabama "Cascade"







Alabama Treatment Cascade, 2014



Engagement in HIV Care





<u>Goals</u>:

- 1. Improve health outcomes;
- 2. Enhance prevention, treatment and research opportunities;
- 3. Improve social and economic justice;
- 4. Foster community collaboration to achieve parity, inclusion and representation; and
- 5. Identify, evaluate, and apply for alternative sources of funding to maximize long-term sustainability.

Data to Care Meeting, August 2014, JCDH



L/43 1917

A Special Kind of Caring



JEFFERSON COUNTY DEPARTMENT OF HEALTH ALABAMA



HIV Coalition Building in Birmingham, AL



* Jefferson County HIV/AIDS COMMUNITY COALITION



ALETHEIA HOUSE A Special Kind of Caring

CDC PS15-1502 Single agency ~\$450K/yr Coalition ~850K/yr



HIV front line providers meeting, BAO, Dec 2015







Birmingham U.N.I.T.E.; circa 2021



 Universal release to allow information sharing across agencies

8

Jefferson County

- Enhanced tracking to inform service delivery to address gaps in treatment cascade
- Two collaborative CDC prevention grants
- Integrated service delivery across agencies
- 25% reduction in new HIV cases in Jefferson County, 2013-17



Elopre EHE PrEP Supplement (NIH) Matthews Adolescent NMAC/EHE PrEP Supplement (NIH) Elopre K23 PrEP in AA men (NIH) Kempf R34 PrEP in women (NIH) Harvard/JCDH UAB CFAR EHE PrEP Supplement (NIH) Heath DETECT (CDC) Matthews EHE Supplement Long CFAR Supplement

Community HIV Funding JCDH EHE Plan EHE Statewide Planning HIV in the Southeast Inter-CFAR Working Group Rana/Batey R01 Road to Zero (NIH) Mugavero Data 4 Care Alabama (CDC) Chapman-Lambert K23 engagement in care for AA women (NIH) 1917 Fast Track Initiative (HRSA) 1917 Intensive Case Mgmt (HRSA) 1917 Housing/B-FED/Sub Use (HRSA)







Prevent: Community-Engaged PrEP Research

- Latesha Elopre Alabama PrEP Care Continuum
- Ellen Eaton STI rates among PrEP clients
- Matt Gravett PrEP persistence & messaging
- Bulent Turan PrEP stigma scale
- Turner Overton Long-acting PrEP
- Jeanne Marrazzo PrEP microbicide
- Samantha Hill Adolescent PrEP
- Kachina Kudroff 1917 Clinic's PrEP Care Continuum
- Latesha Elopre PrEP among AA women in urban and rural Alabama



ALABAMA





Prevent: HIV PrEP Preferences, African American Women in Rural AL (n=304)



Litter at

Elopre et al. JAIDS 2017;74, Elopre et al. AIDS Pt Care STDs 2018;32

Diagnose (Test) & Treat: Time to Viral Suppression

HIV Care Visits and Time to Viral Suppression, 19 U.S. Jurisdictions, and Implications for Treatment, Prevention and the National HIV/AIDS Strategy



H. Irene Hall¹*, Tian Tang², Andrew O. Westfall³, Michael J. Mugavero^{3,4}



"The time from diagnosis to viral suppression is a novel metric that surveillance can capture, spanning the anchoring points on both ends of the HIV care continuum."

Hall et al. PLoS ONE 2013;8:e84318

Temporal & Geographic Trends: Time to VS in AL

	New HIV Cases	Time (mos) to VS Median (IQR)	Proportion w/ VS @ 12 mos
2012	671	10 (9, 13)	53%
2013	631	8 (8, 10)	60%
2014	674	6 (5, 7)	6/%
PHA 1	31	6 (4, 8)	84%
PHA 2	177	7 (6, 9)	66%
PHA 3	139	13 (9, 21)	49%
PHA 4	511	8 (7,10)	59%
PHA 5	98	7 (5, 9)	70%
PHA 6	104	6 (4, 6)	70%
PHA 7	68	5 (5, 7)	66%
PHA 8	369	6 (6, 7)	63%
PHA 9	89	10 (7, 14)	55%
PHA 10	109	6 (5, 9)	63%
PHA 11	284	13 (10, 19)	46%



Batey DS, et al. JMIR Public Health Surveill 2020;6(2)

Optimizing Time to Viral Suppression in Alabama, Mississippi & Louisiana













Aadia Rana, MD



D. Scott Batey, PhD NIAID R01 MPI

Treat: Implications of Missed Visits ("No Show")

PLWH initiating outpatient HIV medical care at UAB Clinic, 2000 – 2005 (N=543)

Characteristic	HR (95%CI) ^a		
"No show" visit in 1 st year	2.90 (1.28-6.56)		
Age (HR per 10 years)	1.58 (1.12-2.22)		
CD4 count <200 cells/mL	2.70 (1.00-7.30)		
Log ₁₀ plasma HIV RNA	1.02 (0.75-1.39)		
ART started in 1 st year	0.64 (0.25-1.62)		

^a Cox proportional hazards (PH) analysis also adjusts for sex, race/ethnicity, insurance, affective mental health disorder, alcohol abuse, and substance abuse. Missed HIV medical care visits ("no show") associated with:

- Delayed ART initiation
- Poor retention in care
- Prolonged time to viral suppression (VS)
- Greater cumulative VL burden (viremia copy-years)
- Disparities in viral suppression
- Declines in CD4 count
- Inpatient hospitalization
- Mortality





Alabama Regional Quality Management Group (AQMG)



- Statewide consortium of HRSA Ryan White funded clinics
- Quality improvement focus with quarterly sharing of aggregate data
- "This collaboration aims to continuously improve the quality of HIV care consistent with recognized national standards and current HIV research"





Data for Care (D4C) Alabama: Clinic-Wide Risk Stratification With Enhanced Personal Contacts for Retention in HIV Care via the Alabama Quality Management Group



Worklist

Generated

TABLE 1. Clinic-Wide Risk Stratification Based on Individual-Level Missed-Visit Count in the Previous 12 Months Among 8314 Patients From AQMG Sites Participating in D4C Alabama, January 2017–March 31, 2019

AQMG Site	0 MV (4273, 51%)	1–2 MV (2882, 35%)	≥3 MV (1159, 14%)
1	2164, 55%	1231, 31%	553, 14%
2	130, 52%	82, 33%	37, 15%
3	613, 59%	354, 34%	78, 7%
4	266, 44%	246, 40%	97, 16%
5	790, 43%	722, 40%	307, 17%
6	93, 50%	68, 36%	26, 14%
7	217, 47%	179, 39%	61, 13%

Data presented as n, row %.

Risk Stratification

Previous 12 Months

Low: 0 Based on Number of Missed Visits in

High: ≥ 3

Intermediate: 1-2



FIGURE 2. D4C schema of clinic-wide risk stratification based on individual-level missed visits in the previous 12 months to develop a worklist for REPC intervention delivery.

Sohail, Rastegar et al. JAIDS 2019;82S3

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Ending the HIV Epidemic: A Paradigm for Population Health?



- Federal government prioritization, national plan & consistency
- DHHS interagency coordination and collaboration
- Data driven clinical/public health program delivery & evaluation
- Status neutral framework to guide testing, prevention & treatment
- Robust research infrastructure and targeted funding opportunities
- Local triangulation of community-clinical-public health agencies

A Paradigm for Population Health: COVID-19 Case Study

- Federal government prioritization, national plan & consistency
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Data Driven Public Health Program Delivery and Iterative Evaluation

Percent positive Map View Overview 0.0% 5.0% 10.0% 15.0% 20.0% 25.0% 30.0% OHNS HOPKINS CORONAVIRUS AK **RESOURCE CENTER** CA NF MO KY W/V тх Daily Cases Currently Hospitalized Daily Deaths Daily Tests Nov 24: 1.79M Nov 24: 166,672 Nov 24: 88,080 Nov 24: 2,028 200.000 90,000 20008 80.000 2500 70.000 150.00 1500K 2000 60,000 50,000 1500 1000K 40 000 1000 30,000 500K 20,000 500 10.000

Apr 1 Jul 1

Oct 1

Apr 1 Jul 1 Oct 1 Apr 1 Jul 1 Oct 1 **COVID-19 Integrated County View**

Reported to CDC since Ian. 21, 2020 by State or Territory



Apr 1 The COVID Tracking Project

Jul 1

Oct 1

0K

Robust Research Infrastructure and Targeted Funding Opportunities

"Now is the time for that unmatched American ingenuity to bring the best and most innovative technologies forward to make testing for COVID-19 widely available."

- NIH Director Francis S. Collins, M.D., Ph.D.

SPECIAL REPORT

Rapid Scaling Up of Covid-19 Diagnostic Testing in the United States — The NIH RADx Initiative

Bruce J. Tromberg, Ph.D., Tara A. Schwetz, Ph.D., Eliseo J. Pérez-Stable, M.D., Richard J. Hodes, M.D., Richard P. Woychik, Ph.D., Rick A. Bright, Ph.D., Rachael L. Fleurence, Ph.D., and Francis S. Collins, M.D., Ph.D.

N ENGLJ MED 383;11 NEJM.ORG SEPTEMBER 10, 2020

- Rapid Acceleration of Diagnostics (RADx)
- \$1.5B program from tech to community
- RADx-UP: "A consortium of interlinked communityengaged projects...to deploy implementation strategies to improve the reach, acceptance, uptake & sustainability of COVID-19 testing."

https://www.nih.gov/research-training/medical-research-initiatives/radx



COVID COMET AL Overview



- Two years of funding to engage with community partners statewide to conduct a total of ~36,000 COVID tests in 6 rural counties
 - Testing in 3 counties at a time for 6 months each in 2 successive waves
 - Roughly 1,000 tests per county per month doubles current testing
- Grounded in ADAPT framework with <u>Assessment</u>, <u>Preparation</u>, and <u>Implementation</u> Phases
- Provide support to local testing efforts including test kits, PPE and personnel along with training for <u>Peer Health Advocates</u>, <u>Community</u> <u>Health Workers</u>, and <u>Venue Based Testing</u>



Data Driven Public Health Program Delivery and Evaluation





County	Test Sites/100 k	3M % pos	3M # cases/10 0k	Case fatality	14D %pos	14D # Cases/10 0k	% AA	Population	% povert
Clarke	4.2	13.51	58.00	1.41	17.81	510.03	44.33	23,920	18.40
Clay	7.5	20.33	59.97	1.99	27.00	610.17	13.83	13,275	14.80
Franklin	3.2	18.49	71.05	1.63	26.50	436.82	3.88	31,363	14.80
Lawrence	3.0	16.96	27.17	4.04	22.85	379.28	10.83	32,957	13.40
Dallas	7.8	10.37	51.63	1.67	10.09	120.07	70.06	38,310	24.80
Conecuh	16.3	14.99	49.37	2.77	13.08	114.03	45.66	12,277	17.40
Russell	3.5	12.97	36.36	0.17	12.89	169.61	44.76	57,781	15.40
Montgom.	5.3	13.09	48.08	2.09	16.96	265.32	58.55	225,763	16.30
Lowndes	10.0	14.71	76.20	3.77	26.40	330.86	71.94	9,974	23.40
<mark>DeKalb</mark>	8.4	16.05	50.78	0.88	31.42	745.25	1.45	71,385	17.00
Washington	6.1	13.03	41.59	2.12	19.12	317.50	23.33	16,378	16.30
<mark>DeKalb</mark>	8.4	16.05	50.78	0.88	31.42	745.25	1.45	71,385	17.00
Limestone	3.1	14.05	32.67	1.02	26.25	421.11	13.49	96,174	10.20
Chilton	9.1	17.20	46.18	1.71	17.17	332.93	9.97	44,153	15.30
Morgan	2.5	12.63	37.31	0.84	21.72	389.62	12.66	119,089	12.50
Randolph	4.4	15.39	39.62	1.81	26.27	409.24	19.36	22,725	14.30
Lamar	7.2	13.52	36.60	0.75	25.73	382.84	10.39	13,844	15.20

Courtesy of Lynn Matthews and Aim 1 Team

Local Triangulation of

Community-Clinical-Public Health Agencies



1 / 4 =

Acknowledgements: COVID COMET AL Team

Program Leaders	Science Leaders & Contributors	Community Partner Program	Community and Scientific Advisory Board
 Overall Study Coordination Michael Mugavero, MD Infrastructure Coordination Aadia Rana, MD Science Coordination Lynn Matthews, MD Study Coordination Thomas Creger, PhD Infrastructure Leaders Testing Capacity Unit Michael Saag, MD Consortium Data Reporting Unit David Redden, PhD Community Partner Program Latesha Elopre, MD*^ Human Subjects Unit Faith Fletcher, PhD*^ 	 AIM 1: Assess: Lynn Matthews, MD Dustin Long, PhD* Suzanne Judd, PhD Sonya Heath, MD AIM 2: Prepare: Allyson Hall, PhD^ Faith Fletcher, PhD*^ Latesha Elopre, MD*^ Bisakha "Pia" Sen, PhD AIM 3: Implement: Michael Mugavero, MD William Curry, MD Andrea Cherrington, MD Jeffery Walker, PhD Emily Levitan, ScD David Redden, PhD AIM 4: Evaluation: Larry Herald, PhD Eric Ford, PhD Bertha Hidalgo, PhD*^ 	 UAB Lead Latesha Elopre, MD*^ Alabama Quality Management Group Jitesh Parmar (THRIVE, Huntsville) Ashley Tarrant (MAO, Montgomery)^ Alabama Area Health Education Center William Curry, MD Glenda Stanley UAB Lead: Public health ethics Faith Fletcher, PhD*^ Social Work: Community engagement Dione King, DO*^ Medicine: Social determinants of health Trisha Parekh, MD* Stephen Sodeke, PhD^ Acclinate Genetics: Development Officer Tiffany Jordan^ 	 <i>Each region is represented by an academic and a community representative.</i> North Alabama David Hooks, MPA Martha Lavendar, PhD^A Central Alabama Ron Bayles^A Max Michael, MD (Co-Chair) West Alabama Felecia Lucky^A Mercedes Morales-Aleman, PhD^{*A} East Alabama Angela Burke^A Chippewa Thomas, PhD^A South Alabama Porsche Blount (Co-Chair)^A Martha Arrieta, MD, PhD
 Community/Scientific Advisory Boards Max Michael, MD 	Barbara Van Der Pol, PhD * Early Stage Investigator; ^Under-Represented Minority	COMET-AL	

COVID-19 COMMUNITY-ENGAGED TESTING STRATEGY IN ALABAMA CFAR CENTER FOR AIDS RESEARCH

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Birmingham HIV front line providers meeting, BAO, Nov 2016









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Management Group