South Carolina Department of Health and Environmental Control

Using Big Data to enhance HIV Case Management and Patient Navigation in South Carolina

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Presenter Disclosures

<Ali Mansaray>

(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

< “No Relationships to Disclose.” >

SC is Data Strong & Guided

We use Data to:

1. Identify who is at risk
2. Who is infected
3. Who is likely to be infected
4. Then . . .

HIV Positive

- *Link them into care*
- *Retain them in care*
- *Work with them to remain adherent & attain viral suppression*
- *Work with them to prevent them from falling out of care, and/or Return to care*

High Risk Negatives

- *Link them EBIs (PrEP, Condoms)*
- *Retain them in EBIS*
- *Work with them to remain adherent to EBIs and remain HIV-*

Small Data ..... data access ..... Big Data

Variables and Constants

Small Data

Big Data

Individual Data Points

Rain, Brooks, Streams

Aggregated Data Points

Rivers

The Mighty Oceans!

Data Generators: the little drops of water . . .!

Two Peas in Pod

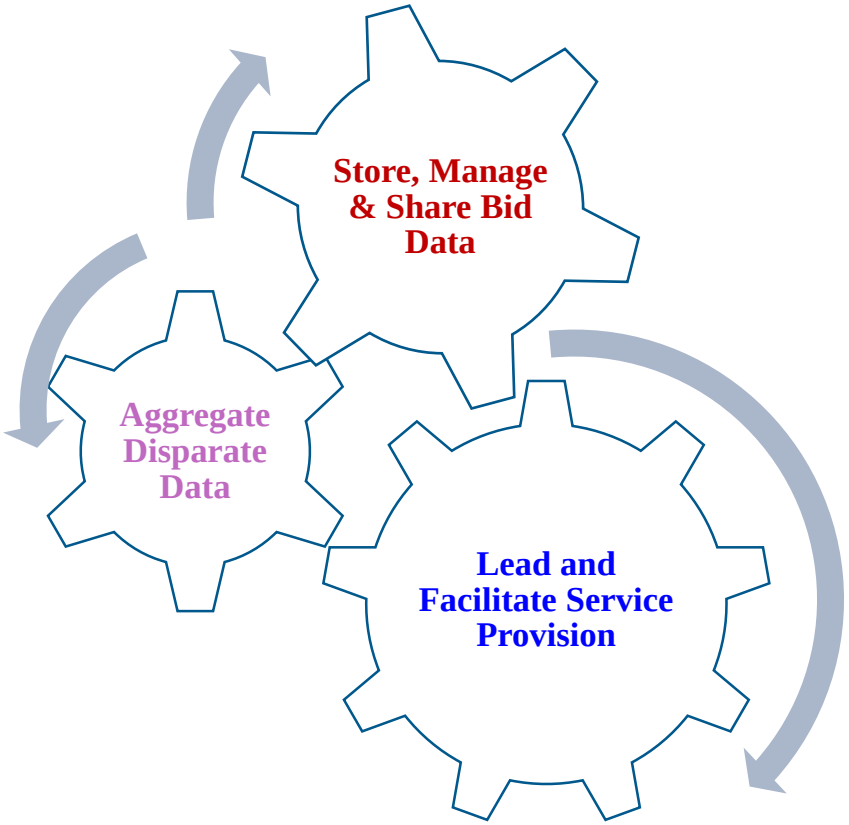
Small Data

Big Data

- Derived from DP, n & N
- Downstream
- Individual -focused
- Can be population - centric

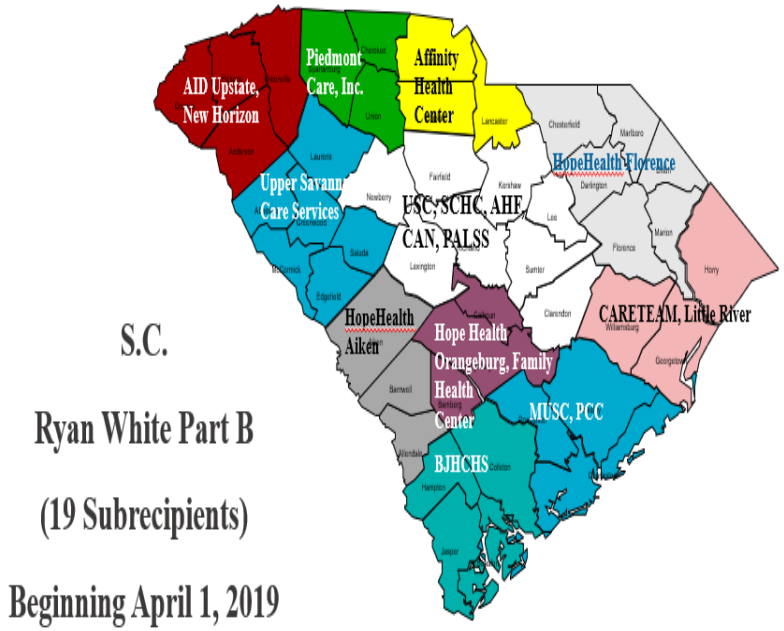
- Amalgam of SD
- Upstream
- Population
- Predictive
- Planning
- Evaluation
- Could be individualized

SCDHEC's Role



SC HIV Care System

1. SC DHEC manages the Ryan White Part B (RWB) Program with a formula (state-level) grant from HRSA since 1994.
   - **RWB includes the AIDS Drug Assistance Program (ADAP).**
   - **RWB also funds services for PLWHA via a network of providers covering the entire state.**
   - **RWB also funds the statewide Prison Discharge Program, where all HIV positive inmates receive [post] discharge planning 60-days prior to release.**
2. SCDHEC hosts the Data to Care program to link Surveillance Data to Care strategies to reduce PLWHA Not in Care (NIC).
3. The RWB program operating budget is nearly $70,000,000 per year.



SC Ryan White Rankings – Retention in Care

RSR: Retention in Care Year -to -Year Comparison

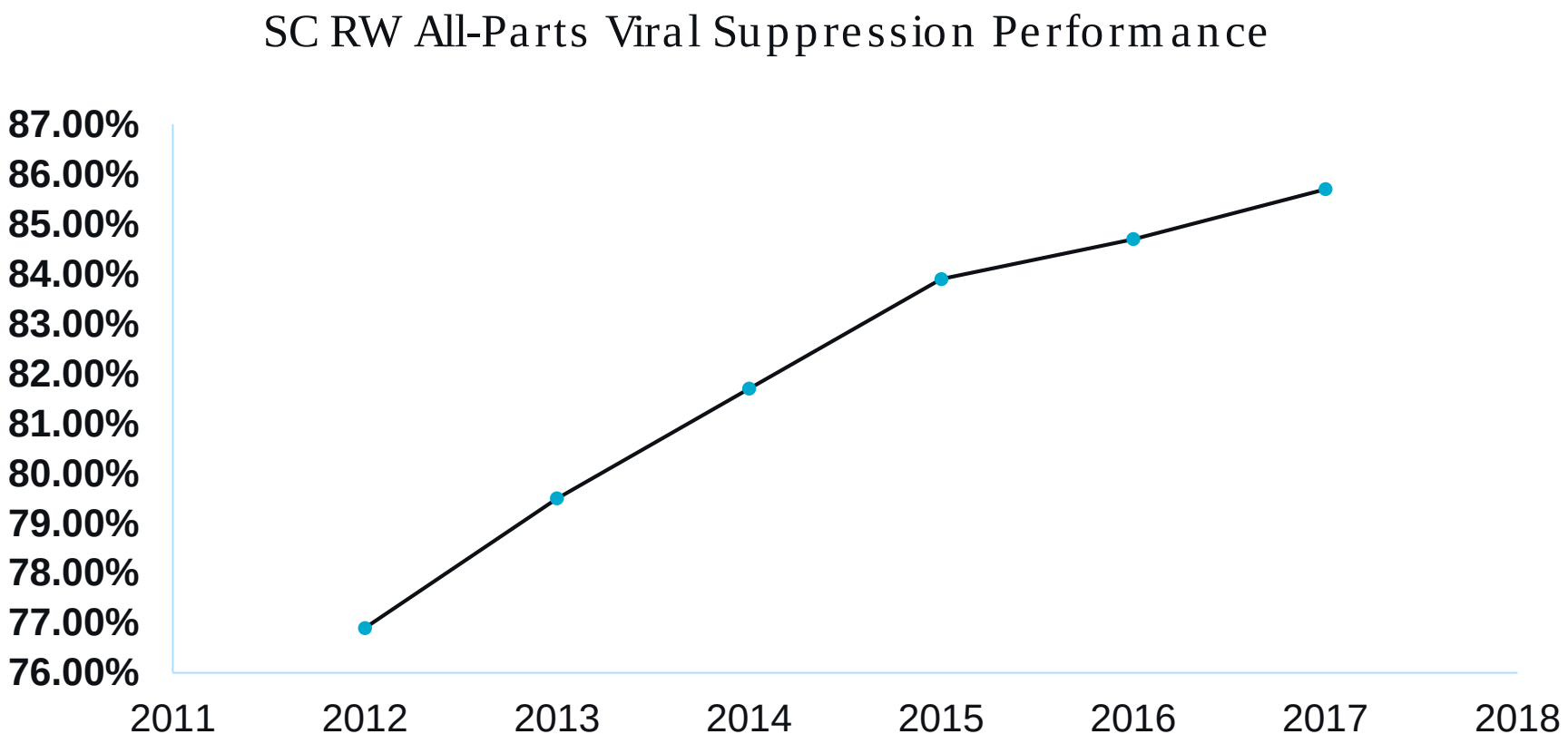
Retention	Rank	Rate	Total Clients	Total Clients Retained
2012	Unavailable	85.4%	7826	6687
2013	Unavailable	87.5%	8343	7304
2014	#2	87.1%	8266	7200
2015	#1	86.3%	8879	7663
2016	#6	85.0%	9196	7792
2017	#5	85.1%	9628	8195

SC RW providers (Parts A -D) ranked #7 in the nation among all providers submitting RSR data for CY2017.

1) 100% of SC-funded RW Providers (Parts A – D) completed and submitted an RSR for CY2017.
2) Retention in care was based on data for PLWH who had at least 1 outpatient ambulatory medical care visit by September 1 of the measurement year, with a second visit at least 90 days after.
3) The national average for Retention in Care (CY2017) is 81.7%

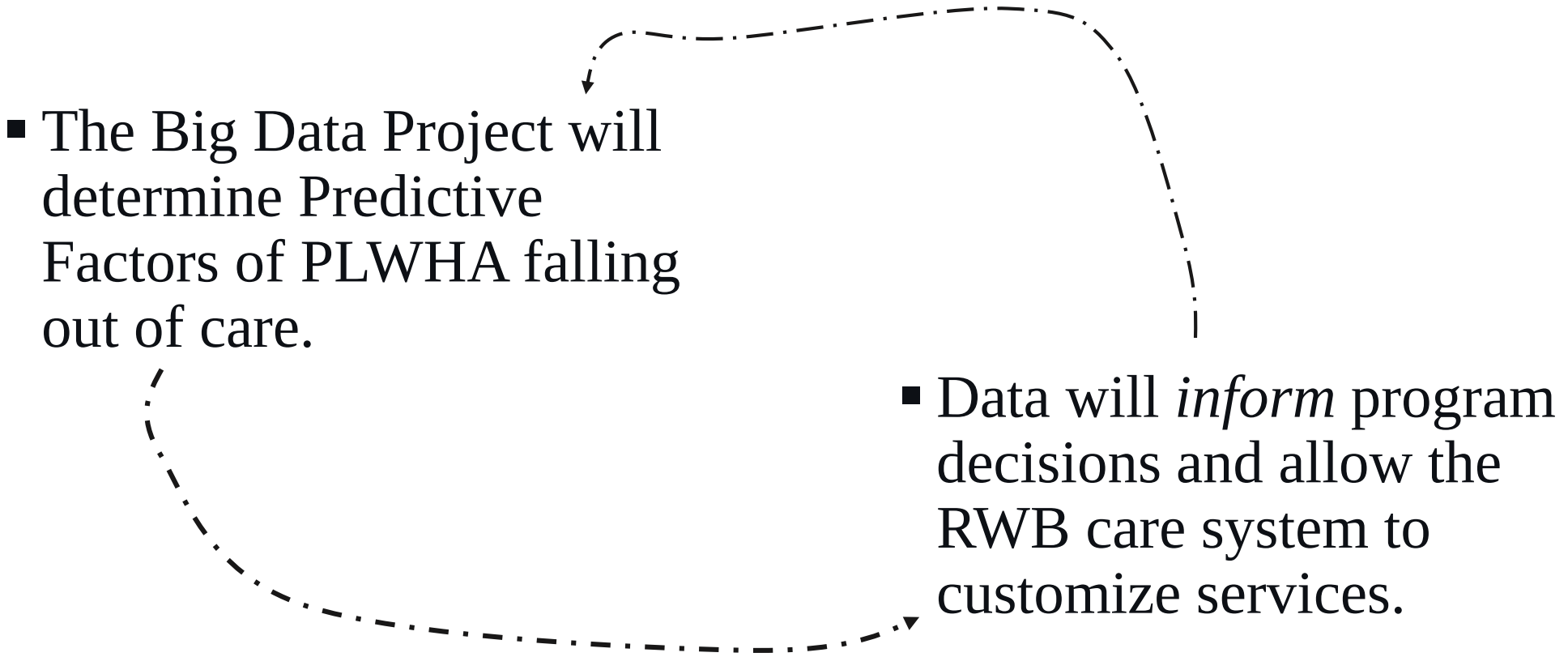
Data Source: RW HIV/AIDS Program Annual Client-Level Data Report 2017, as derived from Ryan White Services Report (RSR) data
https://hab.hrsa.gov/sites/default/files/hab/data/datareports/RWHAP-annual-client-level-data-report-2017.pdf

Care and Treatment - WORKS



Data Source: RW HIV/AIDS Program Annual Client-Level Data Report(s) 2012-2017, as derived from Ryan White Services Report (RSR) data
https://hab.hrsa.gov/sites/default/files/hab/data/datareports/RWHAP-annual-client-level-data-report-2017.pdf

Data-sharing Purpose



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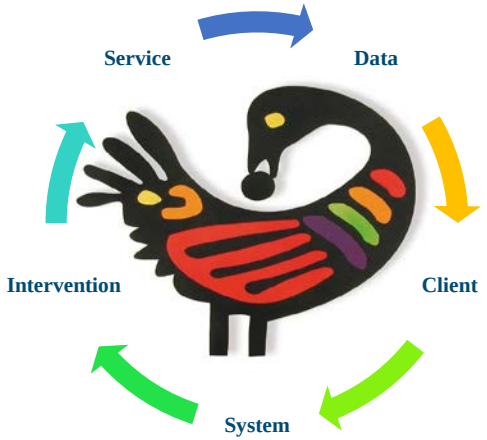
Data-sharing is Caring

DHEC Has:

- State and Federally funded programs and staff
- Services that appeal to clients
- Ability to reach PLWHA thru multiple access-points
- A focus on Evidence
- **Aggregates of Small Datasets and need for optimal utilization**

USC School of Public Health (& Medicine) Has:

- Access to innovative and cutting edge data and analytic capabilities
- A Focus on EVIDENCE
- **Big Data management, manipulation & Attribution capacity & Aptitude**



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Prevent PLWHA from Falling Out of Care

Through Medical Case Management (MCM)

85% Of RWB clients served in CY2018, 85% received Medical Case Management.

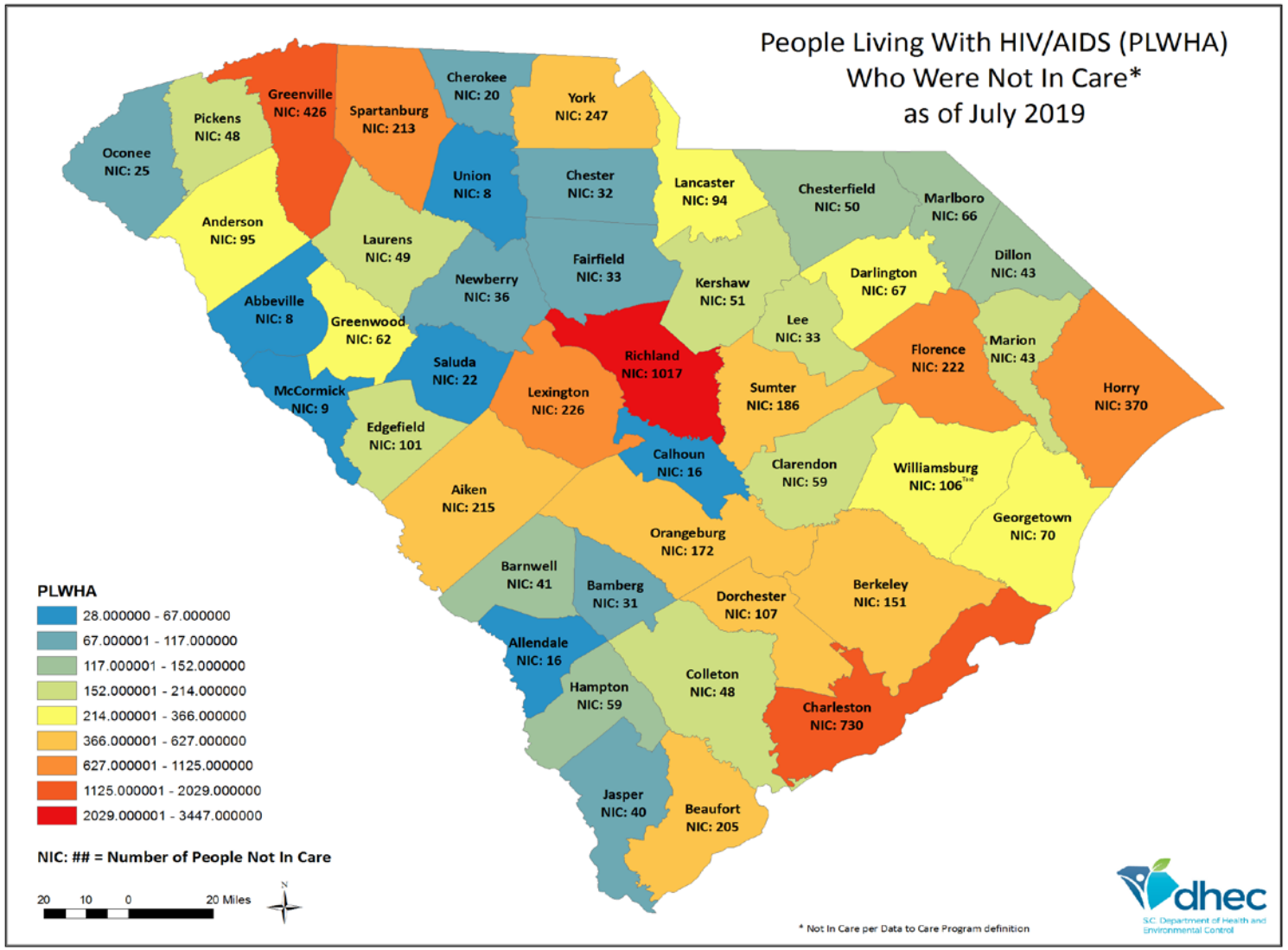
- In CY2018, more than **2,000 PLWHA received Outreach Services** .
- Between 2017 and 2018, **374 PLWHA Returned to Care(RTC**).
- The **Data to Care Program** works to convert Surveillance Data to information that returns clients to care.
- The high cost of Outreach services and the effort required for RTC Interventions means **PREDICTION and INTERVENTION are critical** .

Why We Need Big Data:

As of the end of CY 2017, 32% (6,319) of Prevalence are presumed to be NIC.

NIC is based on the absence of HIV lab results in the last 12 months. (Defined by CDC)

In Care is defined as two (2) visits each year that are at least 3 months apart. (Defined by Ryan White Funder)



Proactive vs. Reactive : Outreach to NIC is Costly!

(Cost Summary)

- $70,000 per FTE X 21 Outreach Specialists

- $1,470,000 per year

- SC ADAP Funded:
  - 19 Outreach Specialists
  - 14 Specialized MCM
  - 11 Peer Adherence Coaches
  - 5 Regional Service Coordinators

- $3,430,000 per year

Predictive Factors (Ask USC!)

- Location?
- Insurance Status?
- Year of Diagnosis?
- Age?
- Service Gaps?
- Service Quality?

MCM as Access Point

Proactive Results:

- Once Predictive Factors are known, services that prevent attrition will be rapidly implemented via MCM.

MCM as KEY Access Point

RWB Service Category	Served	In Care	Marginally Engaged
Oral Health Care	12.1%	15.9%	9.1%
Mental Health	13.8%	20.3%	9.7%
Substance Abuse	20.2%	26.8%	23.5%
Transportation	29.6%	33.8%	28.9%
Health Education/Risk Reduction	67.5%	77.7%	64.8%
Medical Case Management	**88.2%**	**89.9%**	**85.7%**

Who Are We Studying from RWB?

Note: Absence of visits (entirely) must be confirmed by Client-level Match to the state CDC Surveillance program, via the University/Health Department research partnership/project

General Population

- **RWB Newly Diagnosed CY 2005 - 2018**
- **Reflects only clients known to RWB**
- **Includes clients served by non-RWB providers using the state system**

"In Care"

- **RWB served receiving 2 Medical Care visits in 1 year (w/prescriber)**
- **Visits are at least 3 months apart**
- **Does not include "lab-only" visits, telephone and nurse visits, or vaccines**

Marginally Engaged (Presumed)*

- **RWB Served receiving a Medical Care visit in the year, but only 1 half of the year and not the other**
- **Excludes clients Out of Care (OOC) entirely and those whose 1st Medical Visit was after July 1st**

PLWHA defined as "Never Linked" are determined from the dataset availed from Surveillance (not RWB). These PLWHA may or may not know their HIV Status and were not linked to care, as measured by the absence of HIV Viral Load results more than 90 days after diagnosis.

Data's Pointers and Directions!

- 16% of about 20,000 PLWH remain undiagnosed!
- About 6,000 PLWH are presumed to be out of care (30%)!
  - 46% of PLWH are unaccounted for!
- 54% are diagnosed and in continues care
  - Goal to 75% in 5 years: 21%
  - Goal to 90% in 10 years: 36%
  - **Goal to 100% all time: 46%!!**

✓**South Carolina ranked 11th among all U.S. states, District of Columbia, and U.S. dependent areas with an AIDS case rate of 7.4 per 100,000 population. (CY2011)**

✓**Incidence rate in SC for 2017 is 15.8 per 100,000 population.**

Source: SC 2018 Epi Profile

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Ending the HIV Epidemic (EtHE)

Is in Reach!

Routine & Targeted Testing

Rapid access to Care and ART

(Treat)

Rapid access to EBIs (Prevent)

Return NIC and Retain All in Medical Care

(Cyclical Testing & Linkage/Referral

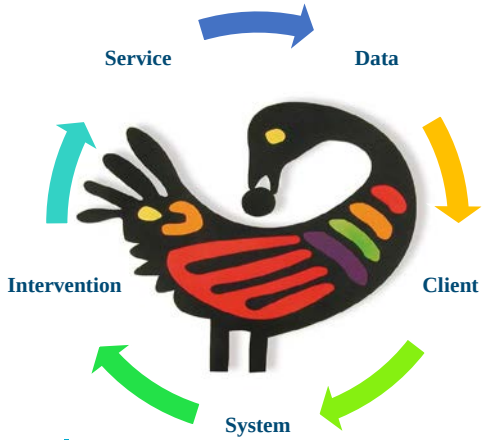
(Equal Access and Quality)

Address and Stop Stigma

(Access & UTILIZATION Barrier)

Sustained VS

Sustained HIV -



Unboxing: DATA | SERVICES | INTERVENTIONS | SYSTEMS | PROGRESS

90, 90, 90 (Care Continuum Challenges & Opportunities)

The Evidence-based Pursuit of Excellence . . . And not Perfection!

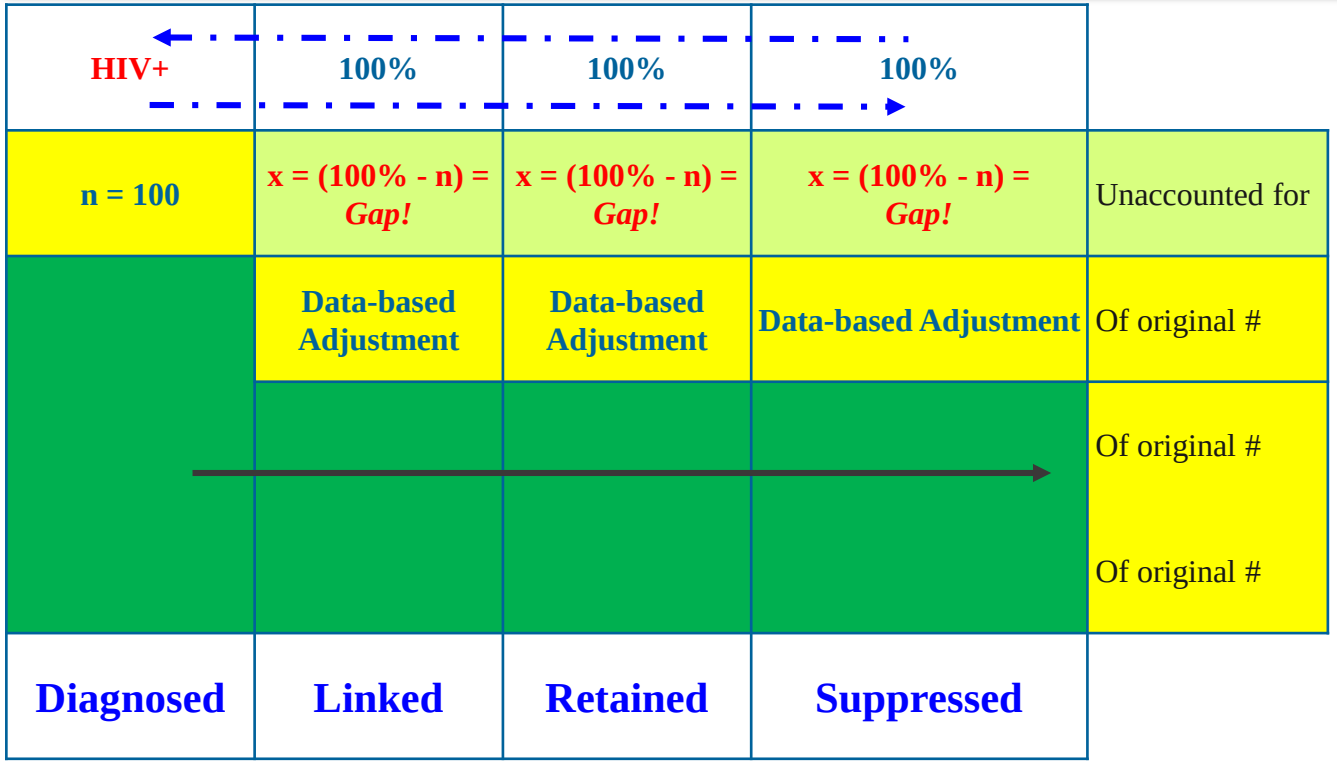
HIV+	90%	90%	90%	
n = 100	10% (n=10) *Gap!*	19% (n=19) *Gap!*	27.1% (n=27) *Gap!*	Unaccounted for
	90% (n=90)	*Gap!*	*Gap!*	Of original #
		81% (n=81)	*Gap!*	Of original #
			72.9% (n=73)	Of original #
Diagnosed	**Linked**	**Retained**	**Suppressed**	

NOTE:
The point is not to discredit the care continuum and the associated EHE goals, but to acknowledge inherent challenges and advocate for complementary strategies to account for such and related challenges.

How Do we fill the gaps/voids?
That is the Question!

100, 100, 100 (Care Continuum Challenges & Opportunities)

The "Innovatively Disruptive" Pursuit of Perfection!



NOTE:
The point is not to aim for the ceiling, and use process and outcome monitoring data/evidence to adjust efforts along the way

How Do we fill the gaps/voids?

That is the Question!

" . . . We will chase perfection, and we will chase it relentlessly, knowing all the while we can never attain it. But along the way, we shall catch excellence."

- Vince Lombardi Jr.

"Together We Will"