Evaluating services for people living with HIV in New York City using Ryan White Part A data

Matthew Feldman, PhD, MSW

*Care and Treatment Program,
Bureau of HIV/AIDS Prevention & Control,
New York City Department of Health and
Mental Hygiene*

NYC
Health

An overview of Ryan White Part A

RYAN WHITE PART A

- Ryan White Part A (RWPA) provides assistance to Eligible Metropolitan Areas (EMAs) and Transitional Grant Areas (TGAs) that are most severely affected by HIV/AIDS

- Designed to fill gaps in medical and social services for PLWH by funding services that are not covered by other sources, such as Medicaid/Medicare or services that would not be available to people based on income or immigration status

- Individuals must live in the RWPA-funded EMA and have an income below 435% of the Federal Poverty Level to be eligible for RWPA services

NYC
Health

RYAN WHITE PART A "CORE" SERVICES (AS DEFINED BY HRSA)

ADAP	Early Intervention Services	Health Insurance Premium and Cost-sharing Assistance	Home and Community-based Health Service
Hospice	Substance Abuse Services - outpatient	Local AIDS Pharmaceutical Assistance Program (LPAP)	Medical Case Management
Medication Nutrition Therapy	Mental Health Services	Oral Health Services	Outpatient and Ambulatory Medical Care (ADAP Plus)

*Services categories in the darker shaded boxes are currently funded in the New York City EMA

NYC Health

RYAN WHITE PART A
"SUPPORT" SERVICES (AS DEFINED BY HRSA)

Case Management (Non-medical)	Child Care Services	Recreational and Social Activities	Emergency Financial Assistance (EFA)	Food Bank/Home-delivered Meals
Health Education/Risk Reduction	Housing Services	Legal Services	Linguistic Services	Medical Transportation Services
Outreach Services	Psychosocial Support Services	Pastoral care/counseling	Referral for Health Care/Supportive Services	Rehabilitation Services
	Respite Care	Substance Abuse Treatment – Residential	Treatment Adherence Counseling	

*Services categories in the darker shaded boxes are currently funded in the New York City EMA
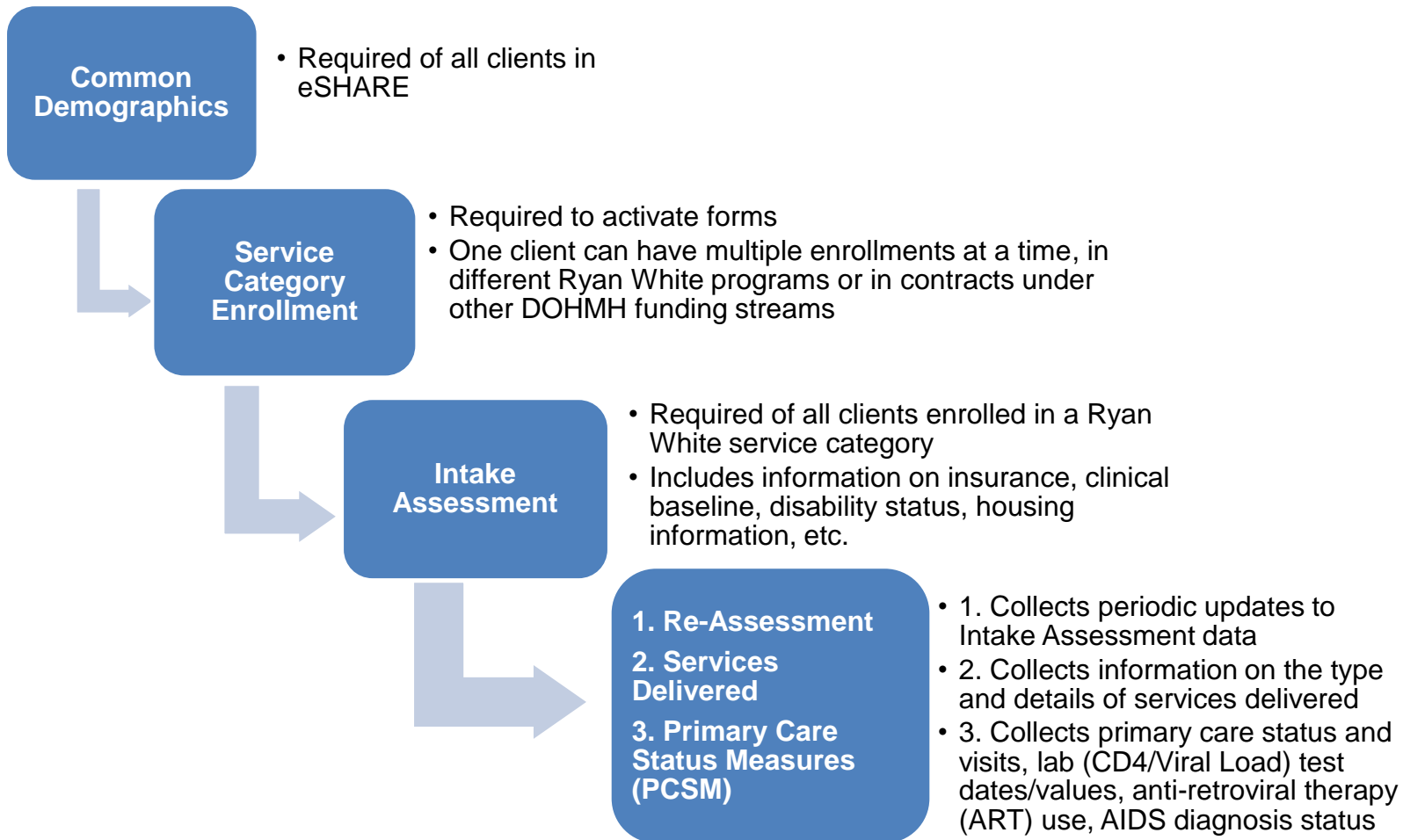
THE ELECTRONIC SYSTEM FOR HIV/AIDS REPORTING AND EVALUATION (ESHARE)

- Primary data system for contracts with the Bureau of HIV/AIDS Prevention and Control at the New York City Department of Health and Mental Hygiene (NYC DOHMH), including RWPA funded contracts

- Web-based data reporting system by the NYC DOHMH

- Captures demographics, enrollments, services (individual and group), referrals, assessments and outcome measures over time

MAIN DATA COLLECTION STEPS IN ESHARE

Common Demographics
- Required of all clients in eSHARE

Service Category Enrollment
- Required to activate forms
- One client can have multiple enrollments at a time, in different Ryan White programs or in contracts under other DOHMH funding streams

Intake Assessment
- Required of all clients enrolled in a Ryan White service category
- Includes information on insurance, clinical baseline, disability status, housing information, etc.

1. Re-Assessment
2. Services Delivered
3. Primary Care Status Measures (PCSM)
- 1. Collects periodic updates to Intake Assessment data
- 2. Collects information on the type and details of services delivered
- 3. Collects primary care status and visits, lab (CD4/Viral Load) test dates/values, anti-retroviral therapy (ART) use, AIDS diagnosis status

NYC
Health

THE NYC HIV SURVEILLANCE REGISTRY

- Contains comprehensive information on HIV diagnoses and HIV-related laboratory results (CD4 counts and viral loads) from medical providers and laboratories

- Continuously updated with new deduplicated data on PLWH in NYC.

- New York State requires named reporting of all diagnoses of HIV and AIDS, HIV-related illnesses, positive HIV diagnostic tests, HIV genotypes, dates and values for viral load tests and CD4 cell counts

Research:

The association between food insufficiency and HIV medical outcomes in a longitudinal analysis of HIV-infected individuals in New York City

FOOD INSECURITY

"the limited or uncertain availability of nutritionally adequate and safe foods or uncertain ability to acquire acceptable foods in socially acceptable ways" (USDA)

Bread ruined my life.

FOOD INSECURITY AND HIV

- 14.5% (17.6 million) of 121.5 million households in the U.S. were food insecure at some time in 2012 (USDA, 2013)

- Rates of food insecurity range from 24%-71% among HIV-infected individuals in the U.S. and Canada (Anema et al., 2011; Aidala et al., 2011; Kalichman et al., 2010; Normen et al., 2005; Weiser et al.,2009; Wang et al., 2011)

- Food insecurity is associated with:
  - poor nutritional outcomes
  - ART non-adherence(Weiser et al., 2011)
  - unsuppressed viral load(Aidala et al., 2011; Wang et al., 2011; Weiser et al., 2009; 2013)

NYC Health

STUDY AIM

To examine the association between food insufficiency (FI)* and HIV medical outcomes (unsuppressed viral load, low CD4 counts) in a longitudinal analysis of Ryan White Part A-funded food and nutrition services clients

*refers to periods of time when individuals or households have an inadequate amount of food intake because of a lack of social or economic resources (Anema et al., 2013)
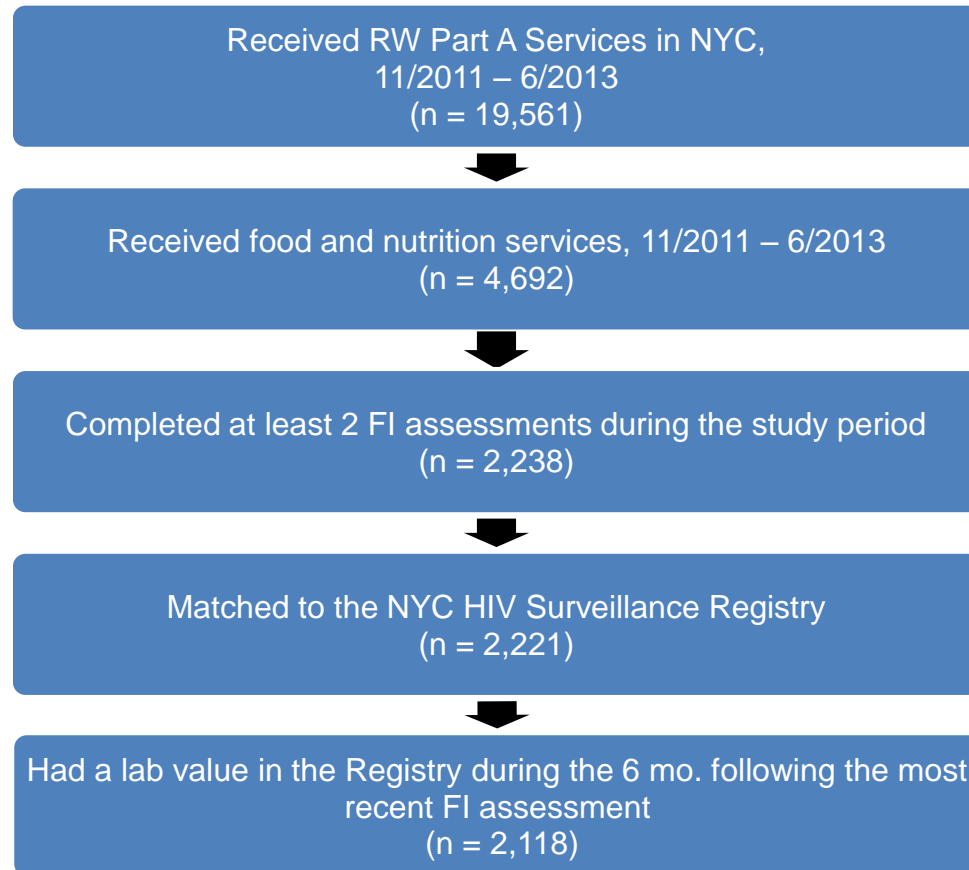
RWPA-FUNDED FOOD AND NUTRITION SERVICES FOR PEOPLE LIVING WITH HIV IN NEW YORK CITY

- Ryan White Part A funds food and nutrition services, including:
    - Congregate meals
    - Home-delivered meals
    - Pantry bags
    - Supplemental and emergency food vouchers
    - Nutritional counseling

- To be eligible for food and nutrition services, individuals must meet the income and residence guidelines for RWPA services and have a documented need for nutritional services or the inability to purchase or prepare nutritious food

NYC Health

CLIENT POPULATION

Received RW Part A Services in NYC,
11/2011 – 6/2013
(n = 19,561)

Received food and nutrition services, 11/2011 – 6/2013
(n = 4,692)

Completed at least 2 FI assessments during the study period
(n = 2,238)

Matched to the NYC HIV Surveillance Registry
(n = 2,221)

Had a lab value in the Registry during the 6 mo. following the most recent FI assessment
(n = 2,118)

FOOD INSUFFICIENCY

Items used to assess food insuffiency in eSHARE (USDA, 2000)

1. "fairly" or "very" often not having enough money for food in the past 3 months; and/or
2. "sometimes" or "often" not having enough to eat; and/or
3. going a whole day in the past 30 days without anything to eat

Food insufficiency variable

- Consistently FI (FI reported on both assessments)
- Consistently food sufficient (food sufficiency reported on both assessments)
- Inconsistently FI (FI reported on 1 assessment)

NYC
Health

HIV MEDICAL OUTCOMES

Unsuppressed viral load (VL): VL > 200 copies/mL

Low CD4 counts: CD4 < 350 cells/mm^3

- For each participant, the viral load and CD4 count closest to the date of the second eligible FI assessment (and within the 6-month period after this assessment) were selected from the Registry.

- Data on viral load and CD4 are from the Registry as reported by June 30, 2014.

A COMPARISON OF SOCIODEMOGRAPHIC, BEHAVIORAL, AND CLINICAL CHARACTERISTICS BY FOOD INSUFFICIENCY STATUS

		Consistently food sufficient	Inconsistently food insufficient	Consistently food insufficient	P
Overall, n (%)		298 (14%)	530 (25%)	1290 (61%)	-
Gender, n (%)	*Male*	214 (71.8%)	386 (72.8%)	848 (65.7%)	0.005
	Female	84 (28.2%)	144 (27.2%)	442 (34.3%)	
Age (Mean; SD)		55.0 (10.5)	51.1 (10.1)	50.2 (9.9)	< 0.0001
Race/ethnicity, n (%)	*White*	49 (16.7%)	73 (13.8%)	152 (11.9%)	0.10
	Black	135 (45.9%)	276 (52.3%)	691 (54.2%)	
	Hispanic	105 (35.7%)	163 (30.9%)	397 (31.1%)	
	Other	5 (1.7%)	16 (3.0%)	36 (2.8%)	
Education level, n (%)	*≥ HS diploma/GED*	205 (70.0%)	345 (67.3%)	802 (63.5%)	0.06
	< HS diploma/GED	88 (30.0%)	168 (32.8%)	461 (36.5%)	
Employment status, n (%)	*Employed*	33 (11.1%)	36 (6.8%)	50 (3.9%)	< 0.0001
	Unemployed	265 (88.9%)	494 (93.2%)	1240 (96.1%)	
Income, n (%)	*≥ 100% FPL*	98 (38.4%)	112 (24.8%)	288 (24.9%)	< 0.0001
	< 100% FPL	157 (61.6%)	340 (75.2%)	871 (75.2%)	

NYC Health

A COMPARISON OF SOCIODEMOGRAPHIC, BEHAVIORAL, AND CLINICAL CHARACTERISTICS BY FOOD INSUFFICIENCY STATUS

		Consistently food sufficient	Inconsistently food insufficient	Consistently food insufficient	*P*
Housing status, n (%)	*Stable/permanent*	258 (88.7%)	426 (81.8%)	997 (78.5%)	0.0003
	Unstable/temporary	33 (11.3%)	95 (18.2%)	273 (21.5%)	
Recent hard drug use, n (%)	*No*	283 (96.6%)	498 (95.4%)	1215 (94.9%)	0.47
	Yes	10 (3.4%)	24 (4.6%)	65 (5.1%)	
Food aid, n (%)	*No food aid*	82 (27.5%)	71 (13.4%)	132 (10.2%)	< 0.0001
	Received food aid	216 (72.5%)	459 (86.6%)	1158 (89.8%)	
Body Mass Index, n (%)	*Normal weight*	118 (39.6%)	204 (38.5%)	507 (39.3%)	0.63
	Overweight/obese	168 (56.4%)	294 (55.5%)	726 (56.3%)	
	Underweight	12 (4.0%)	32 (6.0%)	57 (4.4%)	

NYC Health

A COMPARISON OF SOCIODEMOGRAPHIC, BEHAVIORAL, AND CLINICAL CHARACTERISTICS BY FOOD INSUFFICIENCY STATUS

		Consistently food sufficient	Inconsistently food insufficient	Consistently food insufficient	P
Years living with diagnosed HIV (Mean, SD)		14.9 (6.6)	14.5 (6.4)	14.3 (6.5)	0.34
ART prescription status, n (%)	*Prescribed ART*	288 (98.3%)	493 (93.9%)	1196 (93.3%)	0.004
	Not prescribed ART	5 (1.7%)	32 (6.1%)	86 (6.7%)	
Viral load, n (%)	*≤ 200*	252 (86.6%)	410 (78.1%)	900 (70.8%)	< 0.0001
	> 200	39 (13.4%)	115 (21.9%)	372 (29.3%)	
CD4 count, n (%)	*≥ 200*	258 (88.7%)	450 (86.7%)	1050 (82.7%)	0.01
	< 200	33 (11.3%)	69 (13.3%)	219 (17.3%)	

NYC
Health

FACTORS ASSOCIATED WITH UNSUPPRESSED VIRAL LOAD (>200 COPIES/ML), ADJUSTED ODDS RATIOS

		VL > 200 copies/mL	Adjusted OR (95% CI)
Food insufficiency status, n (%)	*Food sufficient*	39 (13.4%)	Reference
	Inconsistently food insufficient	115 (21.9%)	1.2 (0.8-2.0)
	Consistently food insufficient	372 (29.3%)	1.6 (1.1-2.5)*
Age (Mean; SD)		48.4 (9.7)	1.0 (1.0-1.0)**
Race/ethnicity, n (%)	*White*	37 (13.8%)	Reference
	Black	321 (29.6%)	2.5 (1.6-4.1)***
	Hispanic	142 (21.6%)	1.8 (1.1-3.0)*
	Other	18 (32.1%)	3.1 (1.4-6.7)**
Education level, n (%)	*≥ HS diploma/GED*	303 (22.7%)	Reference
	< HS diploma/GED	214 (30.4%)	1.3 (1.0-1.6)
Employment status, n (%)	*Employed*	20 (17.1%)	Reference
	Unemployed	506 (25.7%)	1.2 (0.7-2.2)
Income, n (%)	*≥ 100% FPL*	85 (17.4%)	Reference
	< 100% FPL	387 (28.7%)	1.5 (1.1-2.0)*
Housing status, n (%)	*Stable/permanent*	366 (22.1%)	Reference
	Unstable/temporary	154 (38.8%)	1.5 (1.1-2.0)**
Recent hard drug use, n (%)	*No*	475 (24.1%)	Reference
	Yes	46 (46.9%)	2.2 (1.4-3.6)**
Years living with diagnosed HIV (Mean; SD)		14.0 (6.4)	1.0 (1.0-1.0)
ART prescription status, n (%)	*Prescribed ART*	463 (23.7%)	Reference
	Not prescribed ART	59 (49.2%)	2.5 (1.6-4.0)***
CD4 count, n (%)	*≥ 200*	327 (18.9%)	Reference
	< 200	186 (58.7%)	5.7 (4.3-7.7)***
Body Mass Index, n (%)	*Normal Weight*	233 (28.5%)	Reference
	Overweight/Obese	254 (21.7%)	0.8 (0.6-1.0)
	Underweight	39 (39.4%)	1.7 (1.0-2.9)

*p < 0.05   **p < 0.01   ***p < 0.0001

NYC Health

FACTORS ASSOCIATED WITH LOW CD4 COUNTS (<200 CELLS/MM^3), ADJUSTED ODDS RATIOS

		CD4 < 200	Adjusted OR (95% CI)
Food insufficiency status, n (%)	*Food sufficient*	33 (11.3%)	Reference
	Inconsistently food insufficient	69 (13.3%)	1.1 (0.7-1.8)
	Consistently food insufficient	219 (17.3%)	1.3 (0.9-2.2)
Age (Mean; SD)		49.9 (9.4)	1.0 (1.0-1.0)**
Race/ethnicity, n (%)	*White*	31 (11.7%)	Reference
	Black	197 (18.1%)	1.6 (1.0-2.5)*
	Hispanic	84 (12.9%)	1.0 (0.6-1.6)
	Other	6 (10.5%)	0.8 (0.3-2.0)
Income, n (%)	*≥ 100% FPL*	62 (12.6%)	Reference
	< 100% FPL	226 (16.9%)	1.4 (1.0-1.9)*
Housing status, n (%)	*Stable/permanent*	229 (13.9%)	Reference
	Unstable/temporary	89 (22.4%)	1.5 (1.1-2.1)**
Recent hard drug use, n (%)	*No*	298 (15.2%)	Reference
	Yes	22 (22.9%)	1.2 (0.7-2.0)
Years living with diagnosed HIV (Mean; SD)		15.7 (6.2)	1.0 (1.0-1.1)***
ART prescription status, n (%)	*Prescribed ART*	299 (15.4%)	Reference
	Not prescribed ART	19 (16.0%)	0.7 (0.4-1.3)
Body Mass Index, n (%)	*Normal Weight*	158 (19.3%)	Reference
	Overweight/Obese	138 (11.9%)	0.6 (0.5-0.8)**
	Underweight	25 (25.3%)	2.0 (1.2-3.3)*

*p < 0.05   **p < 0.01   ***p < 0.0001

NYC Health

DISCUSSION

- 86% of the overall sample reported FI at 1 or more assessment, which is higher than the proportions found in other studies of food insufficiency/insecurity in the U.S.

- Consistent FI had an independent association with unsuppressed viral load, but not low CD4 counts

- Findings underscore the need for "safety-net" services <u>and</u> services that promote long-term economic security (e.g., vocational counseling)

Evaluation:

Mental health service utilization and mental health functioning among Ryan White clients living with HIV in New York City

MENTAL HEALTH SERVICES FOR PLWH

- Elements of efficacy study designs limit the ability to reflect how mental health services function in "real-world" settings:
    - variable treatment lengths
    - less strict eligibility criteria
    - interventions implemented differently in terms of structure and/or content
    - fewer resources for ensuring intervention fidelity and participant retention(Owczarzak & Dickson-Gomez, 2011)

MENTAL HEALTH SERVICES FOR PLWH

- To date, two studies have found that higher levels of mental health services are associated with improved health and mental health outcomes among PLWH (Mkanta, Mejia, and Duncan, 2010; Winiarski, Beckett, and Salcedo, 2005)

- Studies of mental health service utilization are needed to inform the design and implementation of these services for PLWH, particularly in identifying adequate treatment dosages that will result in clinically significant improvements

NYC
Health

AIMS

1. To assess changes in mental health functioning among RWPA-funded mental health services clients

2. To examine the association between mental health service utilization and improvement in mental health functioning

RWPA FUNDED MENTAL HEALTH SERVICES FOR PLWH IN NEW YORK CITY

- Services include:
  - Individual/family/group mental health counseling
  - HIV treatment adherence counseling
  - Alcohol or drug (AOD) counseling
  - Psychiatric consultations
  - Care coordination

- Mental health services are provided by licensed clinicians (e.g., social workers, mental health counselors), psychiatrists, and certified peer workers

- To be eligible for mental health services, individuals must meet the income and residence guidelines for RWPA services and have a DSM diagnosis

NYC
Health

CLIENT POPULATION

Individuals who met the following criteria were included in our analysis:

- age 18 or older

- continuous enrollment in a RWPA-funded mental health services program at one of 11 sites in NYC for ≥ 4 months between 6/2012 and 5/2016

- ≥ 1 clinical visit (i.e., an individual or group mental health, AOD, or HIV treatment adherence counseling session or a psychiatric consultation)

- an intake assessment completed upon program enrollment

- a reassessment completed between 4 and 8 months post-intake

PRIMARY OUTCOME
MENTAL HEALTH FUNCTIONING

- Mental component summary (MCS) score data from the Short Form 12 (SF-12)[Ware et al., 1996] were analyzed at program intake and reassessment

- A clinically significant improvement in mental health functioning was defined as a ≥3.5 point increase on the MCS score from program intake to the reassessment [Maruish, 2012]

PRIMARY EXPOSURE
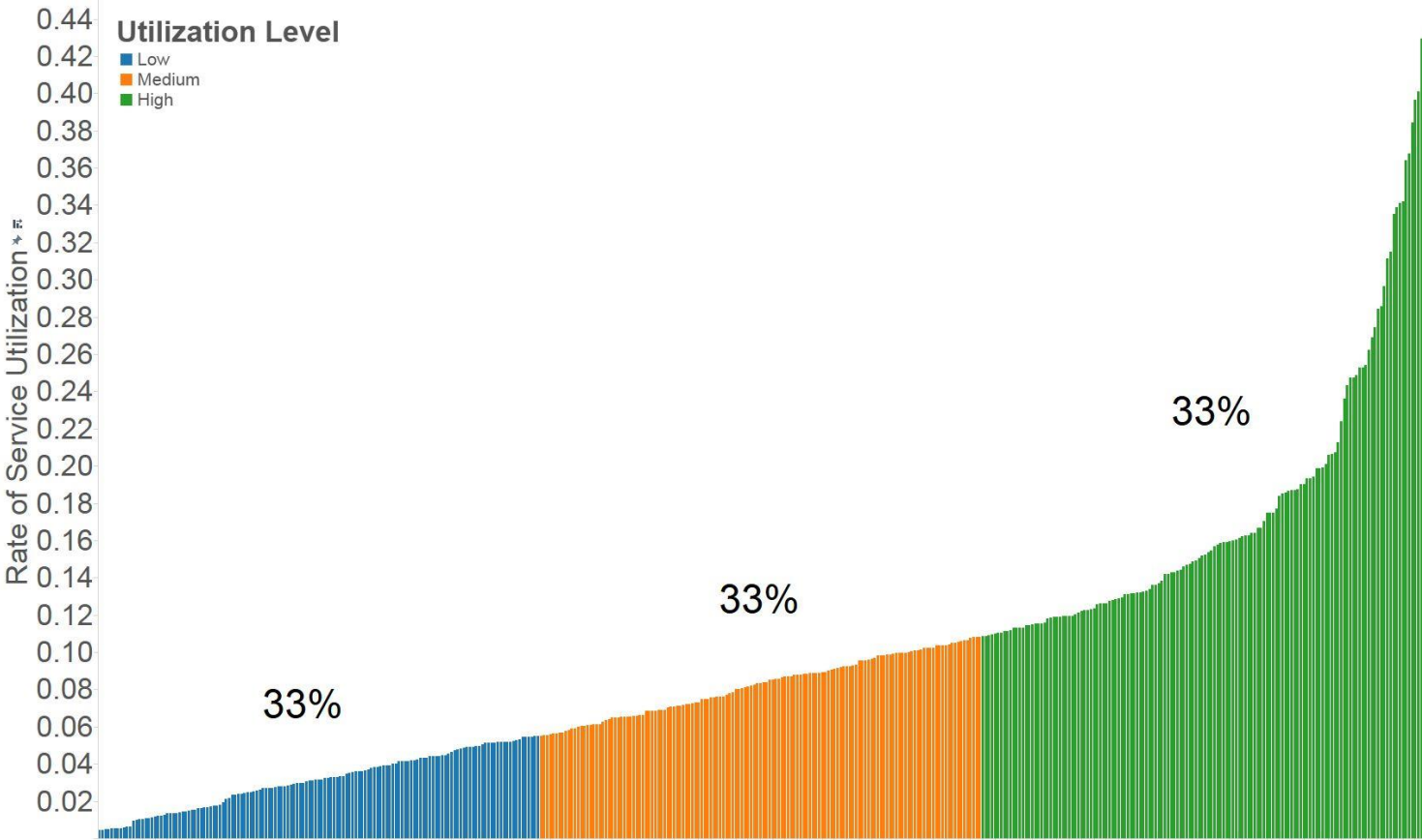## LEVELS OF MENTAL HEALTH SERVICES UTILIZATION

- Calculated using the number of clinical services received per day between the intake and reassessment

- Three categories were created based on the terciles of the distribution of the average number of clinical services utilized per day:

Low	0.004 - 0.05 services/day
Medium	0.05 - 0.1 services/day
High	>0.1 services/day

CLIENT POPULATION (N= 429) CHARACTERISTICS

		n (%) or M (SD)
Gender	*Male*	
	Female	130 (30.3%)
	Transgender	13 (3.0%)
Age		47.3 (11.1)
Race/Ethnicity	*Black/African-American*	
	Hispanic	121 (28.2%)
	Other	19 (4.4%)
	White	80 (18.7%)
Primary Language	*English speaking*	377 (87.9%)
Country of origin	*Born outside USA/US territory*	47 (11.0%)
Education	*≥ HS diploma/GED*	274 (63.9%)
Employment Status	*Unemployed*	379 (88.3%)
Income	*< 100% Federal Poverty Level*	310 (72.3%)
Housing Status	*Unstable housing (intake)*	112 (26.1%)
Improved housing status (from intake to reassessment)		22 (5.1%)
Lifetime history of incarceration		187 (43.6%)
Cigarette smoking (past 3 months)		223 (52.0%)
Hard drug use (past 3 months)		93 (21.7%)
Lifetime history of IDU		94 (21.9%)
IDU (past 3 months)		34 (7.9%)

CLIENT POPULATION (N= 429) CHARACTERISTICS

		n (%) or M (SD) or Median (range)
Years living with diagnosed HIV*		14.4 (8.7)
Current ART prescription		382 (89.0%)
Suppressed viral load (≤200 copies/mL)*		317 (73.9%)
Improved viral load status (from intake to reassessment)*		42 (9.8%)
Previous mental health treatment**		287 (66.9%)
Location of mental health services received	*Non-AIDS CBO*	62 (14.5%)
	Healthcare facility	32 (7.5%)
	AIDS CBO	335 (78.1%)
Type of mental health services received**	*Treatment adherence*	399 (93.0%)
	AOD	211 (49.2%)
	Mental health counseling/psychiatric consultation	270 (62.9%)
Counseling sessions received		15 (1-93)
Treatment length (days)		182 (122-243)

*Data are based on information reported to the Registry as of 6/30/16
*n= 376 (due to missing data on an optional question in eSHARE)
**≥1 visit

NYC
Health

MENTAL HEALTH FUNCTIONING (N= 429)

		n (%) or M (SD) or Median (range)
Baseline MCS Score		37.6 (12.1)
Mental health status (intake to reassessment)	*Improvement (≥3.5 point increase)*	170 (40.0%)
	Deterioration (≤3.5 point decrease)	108 (25.2%)
	No change	151 (35.2%)
Improved mental health status from intake to reassessment (among clients with an MCS < 37.0 at intake, n= 195)		114 (58.5%)

FACTORS ASSOCIATED WITH IMPROVEMENT IN MENTAL HEALTH FUNCTIONING

		Improvement in MH functioning n (%) or M (SD)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Employment Status	*Unemployed*	142 (85.5%)	0.52 (0.28-0.98)	0.59 (0.28-1.09)
Baseline MCS		31.7 (10.9)	0.93 (0.91-0.94)	0.92 (0.91-0.94)
Level of mental health services participation	*Low*	42 (24.7%)	Reference	Reference
	Medium	65 (38.2%)	2.0 (1.23-3.26)	1.90 (1.11-3.24)
	High	63 (37.1%)	1.89 (1.16-3.09)	1.82 (1.06-3.12)

DISCUSSION

- Importance of understanding mental health service utilization in planning these services for PLWH (e.g., performance-based contracts)

- Need to examine utilization patterns across different mental health services (i.e., funded by RWPA, Medicaid, etc.)

- Prevalence of recent tobacco use (52%) underscores the need to address it in the context of mental health services

THE IDEA

- Are there clients who <u>only</u> access RWPA services that focus on meeting basic needs (e.g., housing)?

- Do these clients have challenges in achieving/maintaining VLS?

- Do the relationships that these clients have with their RWPA providers represent an untapped opportunity to provide HIV care and treatment adherence support?

THE DATA

Population of interest was PLWH who:

- had 1 or more visits in RWPA ancillary services (i.e., food/nutrition, housing, legal, and/or substance abuse treatment services)

- were not enrolled in an RWPA service offering ART treatment adherence support (medical case management, mental health, or psychosocial support services)

THE DATA

- Of the 14,267 PLWH who received RWPA services in NYC from 3/1/2014-2/28/2015, 41% fit this description

  - Of these, 98% (N= 5731) had ≥1 viral load value in the Registry

    - Of these, 36% (N= 2046) were **virally unsuppressed*** at some point in this time period

      - Of these, 60% had at least 1 additional unsuppressed viral load

*Viral load data are from NYC HIV/AIDS Surveillance Registry as reported by 6/30/16. Clients were counted as unsuppressed if they had ≥ 1 VL value that was >200 copies/mL.

NYC Health

THE PROPOSED PROJECT

- Government-academic collaboration between NYC DOHMH and the HIV Center for Clinical and Behavioral Studies at the Columbia University Medical Center and the New York State Psychiatric Institute

- Purpose: to develop feasible and acceptable interventions that leverage ancillary service providers to promote HIV care and treatment adherence in this RWPA client population

- Design: a *concurrent mixed methods design* will be used that analyzes existing data on:

  (a) Clients: The Registry (viral loads), eSHARE (RWPA client data), the Salient Information Miner (Medicaid enrollment and services), qualitative interviews

  (b) Providers (qualitative interviews)

  (c) Agencies (RWPA program administrator questionnaire)

POTENTIAL IMPACT

- Based on this formative research, brief, low intensity, cost-effective interventions would be developed that would:

  - Improve health outcomes among RWPA clients who might not otherwise be reached

  - Leverage the ancillary service infrastructure that exist at many RWPA agencies

ACKNOWLEDGMENTS

- Ryan White providers for providing mental health services and reporting client assessment and services data

CONTACT INFORMATION

Matthew Feldman, Ph.D., MSW

Senior Research Analyst

Care and Treatment Program Research & Evaluation Unit

Bureau of HIV/AIDS Prevention & Control

New York City Dept. of Health & Mental Hygiene

E-mail: mfeldman3@health.nyc.gov