Early Adopters and Incident PrEP Prescribers in a Public Health Detailing Campaign

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Background

- Pre- and post-exposure prophylaxis (PrEP and PEP) are effective at preventing HIV yet are under-prescribed[1,2]
- New York City (NYC) Health Department and Mental Hygiene (DOHMH) conducted a public health detailing campaign about PrEP and PEP (Figure 1)
  - DOHMH representatives visited primary care (PC) and infectious disease (ID) providers, focusing on practices that had recently diagnosed HIV and that were located in high needs neighborhoods
  - Initial and follow-up visits consisted of short, individual-level presentations using the *PrEP and PEP Action Kit*
- Initial evaluation of public health detailing demonstrated a significant increase in provider report of PrEP prescribing[3]

Objectives

Among providers who had been visited by the PrEP and PEP public health detailing campaign, we examined characteristics associated with:
- PrEP prescribing at initial visit: *early adopters*
- PrEP prescribing at follow-up visit: *incident prescribers*

Methods

Study population Potential prescribers [MDs, nurse practitioners (NPs), and physician assistants (PAs)] who received both initial and follow-up visits during the campaign

Data collection Brief questionnaire at beginning of initial and follow-up visit, before Action Kit materials were presented, administered by DOHMH representatives

Outcomes
- *Early adopters* Providers who reported ever prescribing PrEP at initial visit.
- *Incident prescribers* Providers who reported ever prescribing at follow-up visit, after report of never prescribing PrEP at initial visit

Characteristics examined
- *Practice-level* Type (community health clinic, hospital-affiliated, private practice), location (Manhattan, other), neighborhood HIV diagnosis and poverty rates
- *Provider-level* Specialty/training (MD-ID, MD-PC, NP/PA), ever prescribing PEP at initial visit, incident PEP prescribing at follow-up (incident analysis only)
- *Program-level* Detailing Round (I: Oct 2014-Jan 2015; II: Feb-Apr 2015), length of initial visit (minutes; incident analysis only)

Data analysis Bivariate and multivariate models were constructed using generalized estimating equations

Figure 1. PrEP/PEP Public Health Detailing Campaign (L to R): Action Kit, Action Kit Contents, Representatives and Providers Visited

Results

Overall early adoption and incident prescribing (Figure 2)
- 18% (155/881) were early adopters of PrEP
- 13% (89/709) were incident prescribers of PrEP

Associations with early adoption (Table 1)
In the multivariate model, early adoption was associated with:
- Community health clinic practice type vs. private practice
- Manhattan location vs. other
- MD-ID specialty vs. MD-PC
- Report of PEP prescribing at initial visit

Associations with incident prescribing (Table 2)
In the multivariate model, incident prescribing was associated with:
- MD-ID specialty vs. MD-PC
- Ever prescribed PEP (initial visit) and incident PEP prescribing (follow-up visit)
- Initial visit length ≥10 mins, with no additional increase seen ≥20 mins

Table 1. Associations with Early Adoption of PrEP Prescribing among Providers Reached by a Public Health Detailing Campaign, New York City, 2014-15

Characteristic	N (column %)	Early adopters, n/N (row %)	Bivariate OR (95% CI)	Adjusted* OR (95% CI)
Practice-level characteristics				
Practice Type				
Community health clinic	136 (15%)	46/136 (34%)	2.3 (1.3 - 4.2)€	1.5 (0.7 - 3.5)
Hospital affiliated	440 (50%)	69/440 (16%)	2.2 (0.97 - 4.9)	1.8 (0.7 - 5.2)
Private practice	305 (36%)	40/305 (13%)	Ref	Ref
Location (borough)				
Manhattan	197 (22%)	74/197 (38%)	4.9 (3.1 - 7.7)€	4.2 (2.5 - 7.2)€
Other	684 (78%)	81/684 (12%)	Ref	Ref
Neighborhood HIV diagnosis rate				
Top 3 quartiles	824 (94%)	154/824 (19%)	12.1 (1.7 - 89.0)€	6.8 (0.9 - 50.9)
Lowest quartile	56 (6%)	1/56 (2%)	Ref	Ref
Neighborhood poverty rate				
≥10% residents below FPL¤	782 (89%)	125/782 (16%)	0.4 (0.2 - 0.7)	0.9 (0.5 - 1.7)
<10% residents below FPL¤	98 (11%)	30/98 (31%)	Ref	Ref
Provider-level characteristics				
Provider specialty				
MD-ID¤	237 (27%)	62/237 (26%)	1.9 (1.3 - 2.9)€	2.3 (1.4 - 3.9)€
NP/PA¤	135 (15%)	27/135 (20%)	1.4 (0.9 - 2.1)	1.2 (0.8 - 2.0)
MD-PC¤	509 (58%)	66/509 (13%)	Ref	Ref
Ever prescribed PEP (initial visit)				
Yes	269 (31%)	137/269 (51%)	36.4 (20.4 - 64.8)€	34.7 (18.6 - 64.6)€
No	603 (69%)	15/603 (2%)	Ref	Ref
Program-level characteristics				
Detailing round				
I: Oct 2014-Jan 2015	641 (73%)	117/641 (18%)	0.8 (0.5 - 1.3)	1.9 (0.98 - 3.7)
II: Feb 2015-Apr 2015	240 (27%)	38/240 (16%)	Ref	Ref

*Adjusted for all other variables in table except PEP-related variables. PEP-related associations are adjusted by all other variables except the other PEP-related variable.
€ p<0.05
¤FPL= federal poverty level, ID=infectious disease, PC=primary care, NP/PA=nurse practitioners or physician assistants

Figure 2. PrEP/PEP Public Health Detailing Campaign Schematic and Description of Early Adopters and Incident Prescribers , New York City, 2014-15
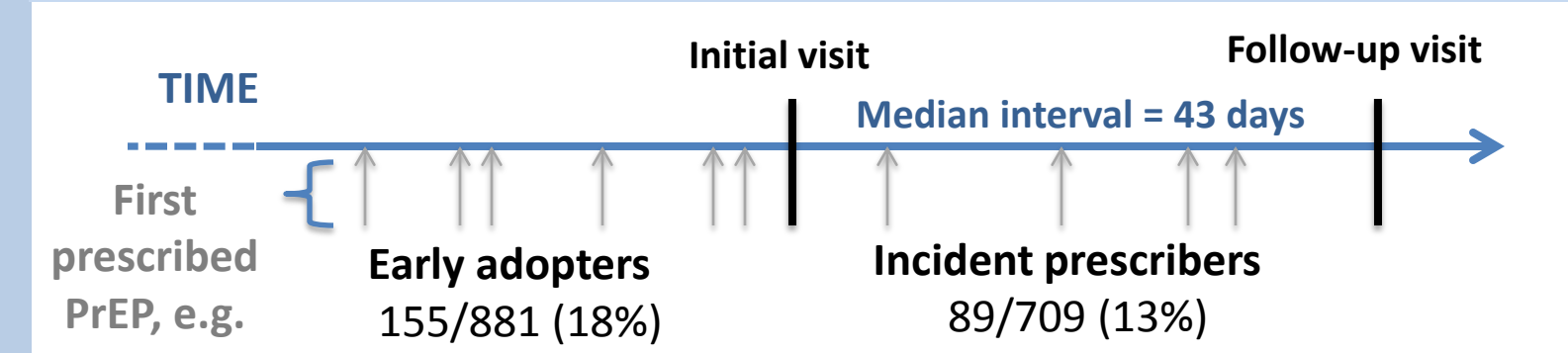

TIME
Initial visit
Follow-up visit
Median interval = 43 days
First prescribed PrEP, e.g.
Early adopters 155/881 (18%)
Incident prescribers 89/709 (13%)

Table 2. Associations with Incident PrEP Prescribing among Providers Reached by a Public Health Detailing Campaign, New York City, 2014-15 ¥

Characteristic	N (column %)	Incident prescribers, n/N (row %)	Bivariate OR (95% CI)	Adjusted* OR (95% CI)
Practice-level characteristics				
Practice Type				
Community health clinic	87 (12%)	12/87 (14%)	2.2 (0.97 - 4.9)	1.8 (0.7 - 5.2)
Hospital affiliated	367 (52%)	56/367 (15%)	2.3 (1.3 - 4.2)€	1.5 (0.7 - 3.5)
Private	255 (36%)	21/255 (8%)	Ref	Ref
Location (borough)				
Manhattan	121 (17%)	26/121 (21%)	2.8 (1.5 - 5.0)€	1.7 (0.8 - 3.4)
Other	588 (83%)	63/588 (11%)	Ref	Ref
Neighborhood HIV diagnosis rate				
Top 3 quartiles	655 (93%)	86/655 (13%)	2.9 (0.9 - 9.5)	1.6 (0.4 - 5.8)
Lowest quartile	53 (7%)	3/53 (6%)	Ref	Ref
Neighborhood poverty rate				
≥10% residents below FPL¤	641 (91%)	73/641 (11%)	0.4 (0.2 - 0.8)€	0.5 (0.2 - 1.1)
<10% residents below FPL¤	67 (9%)	16/67 (24%)	Ref	Ref
Provider-level characteristics				
Provider specialty				
MD-ID¤	171 (24%)	37/171 (22%)	2.4 (1.4 - 3.9)€	2.3 (1.3 - 4.3)€
NP/PA¤	104 (15%)	7/104 (7%)	0.6 (0.3 - 1.4)	0.5 (0.2 - 1.1)
MD-PC¤	434 (61%)	45/434 (10%)	Ref	Ref
Ever prescribed PEP (initial visit)				
Yes	128 (18%)	38/128 (30%)	3.7 (2.3 - 5.9)€	3.5 (2.2 - 5.6)€
No	575 (82%)	51/575 (9%)	Ref	Ref
Incident PEP prescribing (follow-up visit)				
Yes	80 (11%)	42/80 (53%)	10.4 (5.9 - 18.2)€	10.3 (5.4 - 19.6)€
No	619 (89%)	47/619 (8%)	Ref	Ref
Program-level characteristics				
Detailing round				
I: Oct 2014-Jan 2015	515 (73%)	73/515 (14%)	0.4 (0.2 - 0.8)€	0.67 (0.3 - 1.7)
II: Feb 2015-Apr 2015	194 (27%)	16/194 (8%)	Ref	Ref
Length of initial visit				
≥20 minutes	352 (50%)	53/352 (15%)	3.4 (1.3 - 8.6)€	3.3 (1.3 - 8.3)€
≥10-<20	235 (33%)	30/235 (13%)	2.8 (1.1 - 6.9)€	3.2 (1.2 - 8.1)€
<10 minutes	122 (17%)	6/122 (5%)	Ref	Ref

¥ Incident prescriber analysis excludes early adopters
*Adjusted for all other variables in table except PEP-related variables. PEP-related associations are adjusted by all other variables except the other PEP-related variable.
€ p<0.05;
¤FPL= federal poverty level, ID=infectious disease, PC=primary care, NP/PA=nurse practitioners or physician assistants

Limitations

- Prescribing data (PrEP and PEP) rely on provider self-report and therefore could be subject to recall error and social desirability bias
- Data were not collected on patient-level characteristics, including information that could help determine whether providers saw potential PrEP/PEP candidates
- Data were collected in the context of a specific detailing campaign and during a citywide increase in support for PrEP implementation; in this context, generalizability and interpretation of causality are limited

Discussion

- We observed early adoption and incident PrEP prescribing at NYC practices presumed to be serving at-risk and potentially low-income populations
  - Nearly 1 in 5 potentially prescribing providers was an **early adopter**
  - Nearly 1 in 8 potentially prescribing providers was an **incident prescriber**
- Early adoption and incident PrEP prescribing were both more likely among MD-ID
  - Suggests a higher level of willingness to prescribe PrEP among MD-ID
  - However, both outcomes were also observed among MD-PC and NP/PAs
- Early adoption was associated with concurrent report of ever prescribing PEP; incident PrEP prescribing was associated with PEP prescribing at initial visit and with incident PEP prescribing
  - Supports the promotion of PrEP and PEP in tandem
  - PEP prescribing may be a gateway to PrEP prescribing
- Findings suggest that detailing may have influenced PrEP prescribing, particularly if the initial presentation to providers was ≥10 minutes
  - Results will inform future rounds of detailing in NYC and elsewhere

References

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Acknowledgements