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Adolescent HIV Pre-Exposure Prophylaxis Prescribing Practices Among Family Medicine Physicians: Limited Immediate Uptake

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Introduction

In the United States, individuals aged 13-24 made up 21% of new HIV infections in 2016, with 81% of those infections occurring among young gay and bisexual men.¹ Preventing new HIV infections among adolescents is crucial to changing the current course of the HIV epidemic.² HIV Preexposure prophylaxis (PrEP) with once-daily tenofovir/emtricitabine, is currently the only FDA approved biomedical HIV prevention intervention, and high adherence has been shown to significantly reduce the risk of HIV infection.

Initial trials supported efficacy of PrEP in adults, securing FDA approval for use in adult patients in July 2012.⁶ The FDA expanded approval for PrEP to high-risk adolescents (aged 15-17 years-old) in May 2018 in response to data suggesting PrEP as beneficial in preventing HIV in this population.^{7,8} Despite low levels of awareness, PrEP is generally seen as an acceptable intervention by young men who have sex with men.^{8,9} Accordingly, evidence calls for increased youth access to PrEP in an effort to reduce the incidence of new HIV infections in this population,^{7,10,11} with the onus of PrEP implementation and expansion of access falling primarily to healthcare providers.¹⁰ Providing PrEP to this population, however, is not without challenges. The chief concerns providers raise relating to prescribing PrEP to adolescent patients include patient adherence to PrEP, concerns relating to parents, as well as concerns about safety and side effects.^{12,13} Nevertheless, physician willingness to prescribe PrEP to adolescents prior to FDA approval for this demographic (i.e. off-label) has been repeatedly documented as greater than 60%.^{12,13}

Primary care providers (PCPs) may have more opportunity than HIV specialists to prescribe PrEP to HIV-uninfected, at-risk patients.^{14,15} Among PCPs who treat adolescent patients, family medicine physicians may be uniquely situated to prescribe PrEP given their ability to continue PrEP prescriptions as adolescents age into adulthood.¹⁵ Additionally, considering the greater incidence of HIV in adult populations, family medicine physicians may also have increased comfort with HIV guidelines and antiretroviral medications as compared to their general pediatrician counterparts.¹⁶

Knowledge of the expansion of FDA approval of PrEP to adolescents and PrEP prescribing practices among family medicine providers have yet to be described since its approval for the adolescent population.

Methods

Survey Development

A survey was developed, which contained questions grouped into five main sections:

1. PrEP Prescribing Practices
2. PrEP Knowledge
3. PrEP Attitudes
4. Patient Population
5. Personal Demographics

Data Collection

In February 2019, physicians at an academic family medicine practice in Philadelphia were invited to complete an online survey regarding PrEP. Interested respondents who accessed the hyperlink were taken to the study website to begin the survey.

Analysis

Differences in PrEP knowledge, attitudes, and beliefs were assessed using independent samples t-tests. Likert scale responses were coded numerically and treated as continuous variables. All statistical analyses were conducted in SPSS, version 24.0.

Objectives

This study aims to:

- Examine the adolescent PrEP prescribing practices and knowledge of family medicine physicians.
- Begin to identify areas that might be key targets for interventions which may lead to increased adolescent PrEP prescribing uptake.

Results

- 50 out of 99 distributed surveys were completed and included in the analysis (Table 1).
- Mean age was 37.9 years old (SD = 12.9), most were white (90%) and heterosexual (84%). Of note, 86% of respondents reported treating adolescent patients and 94% reported treating HIV positive patients.

Table 1. Respondent Demographics

Characteristic	N (%)
Age (years; mean, SD)	37.9, (12.9)
Gender Identity	
Male	24 (48%)
Female	26 (52%)
Race	
White	44 (88%)
Black	2 (4%)
Asian	5 (10%)
Ethnicity	
Latino	2 (4%)
Non-Latino	48 (96%)
Sexual Orientation	
Heterosexual	42 (84%)
Lesbian/Gay	5 (10%)
Queer	2 (4%)
Bisexual	1 (2%)
Training Level	
Resident	22 (44%)
Fellow	3 (6%)
Attending, <10 years	11 (22%)
Attending, 11-20 years	3 (6%)
Attending, >20 years	11 (22%)

PrEP Awareness and Prescribing

- All respondents were aware of PrEP prior to the survey (100%).
- Most respondents (70%) reported being aware of the FDA approval of PrEP for adolescents with the remaining (30%) reporting that they were unsure.
- Most (76%) respondents had prescribed PrEP previously with few respondents (6%) reporting ever prescribing PrEP to adolescent patients.

Adolescent PrEP Prescribers vs Adult only PrEP Prescribers

- Among those who had prescribed PrEP previously, those who reported prescribing PrEP to adolescents reported greater comfort assessing for PrEP indications compared to those who had not.
- Respondents who had prescribed PrEP to adolescents also felt PrEP was safer than those who had not.
- Lastly, those who reported prescribing PrEP to adolescents reported greater PrEP knowledge than those who had not.

Conclusions

- Nine months post FDA approval, 70% of physicians in our sample reported being aware of the approval of PrEP for patients aged 15-17.
- Despite this high level of awareness, and similarly high rates of treating adolescent patients (86%), only 6% of respondents reported ever prescribing PrEP to this demographic.
- Differences seen between PrEP prescribers who had and had not prescribed PrEP to adolescents largely mirrors factors historically associated with PrEP prescribing in prior literature.¹⁷⁻¹⁹
 - Specifically, it has been repeatedly demonstrated that provider attitudes regarding safety and self-reported PrEP knowledge are associated with an increased likelihood of prescribing PrEP.¹
- In a departure from historical PrEP awareness and prescribing rates, our sample paints a picture of PrEP prescribing as a routine preventative medicine intervention with universal awareness and rates of prescribing near four times greater than the most recently published rates.
 - These data possibly signal the beginning of the end of the traditional disparity noted between PCPs and their HIV specialist counterparts as it relates to awareness of PrEP and frequency of PrEP prescribing.
- Future studies should further explore potential barriers to prescribing PrEP to adolescents.
- Continued characterization of PrEP prescribing to this demographic post FDA approval is an important task in curbing the HIV epidemic.
- Building off of promising existing interventions aimed at optimizing PrEP prescribing to adults,²⁰ interventions to optimize PrEP prescribing to this demographic appear warranted.

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