

# Houston Primary Care Providers' Perceptions of and Willingness to Prescribe HIV Pre-exposure Prophylaxis

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# Background



HIV pre-exposure prophylaxis (PrEP) uptake requires providers to be

- Knowledgeable about safety and efficacy
- Able to identify at-risk patients
- Willing to prescribe or refer

# Methods

- Cross-sectional anonymous on-line survey January to April 2013
- Conducted among primary care providers in Harris Health System
  - largest network of public primary care providers in Texas
  - 22 locations
  - staffed by Baylor College of Medicine (BCM) and The University of Texas Health Science Center at Houston (UTHealth)
  - Thomas Street Health Center -> primary care for HIV infected patients.
    - HIV Specialists

# Methods

## Data Analysis

- Descriptive statistics
  - Frequencies for categorical variables
  - Means and standard deviations for continuous variables
- Univariate analysis for each outcome of interest
  - Independent samples t-test or nonparametric Wilcoxon Mann-Whitney test for continuous predictors.
  - Chi-square tests or Fisher's exact test for categorical predictors.
- Examined unique predictors of
  - perceived PrEP safety and efficacy
  - preferred prescriber
  - concern about promotion of risky behavior
  - ability to identify potential PrEP candidates

# Methods

## Data Analysis

- Multivariable logistic regression
  - Included variables with a p value  $\leq 0.25$  in univariate models
  - Looked for associations between predictors and excluded those strongly related to many other variables such as training and number of patients seen per week from MV models

# Demographics



VARIABLE		N	%
Age in years	25 to 30	78	41.7
	31 to 40	59	21.9
	41 to 50	34	18.2
	51+	16	8.5
Gender	Male	75	36.7
	Female	129	63.2
	Transgender	0	0
Race/Ethnicity	Asian	67	35
	AI/Alaskan, Hawaiian	2	1
	Black/Af-Am	26	13.2
	White non-Hispanic	75	38.5
	White Hispanic	18	9.2
	Other	8	4.1
Specialty	Family practice	52	26
	Infectious Diseases	22	11
	Internal medicine	68	34
	Internal medicine/Peds	20	10
	Ob/Gyn	38	19

- 210 providers
- Mean age – 36, SD = 9.26
- 63% female
- 48% white
- 34% internists

# Demographics

<b>Medical school training</b>	<b>N</b>	<b>%</b>
US medical school graduate	152	76.8
Foreign medical school	46	23.2
<b>Years since Medical School</b>		
1 to 5	94	50.8
6 to 10	31	16.8
11 to 15	19	10.3
16 to 20	19	10.3
>21	24	11.9
<b>Professional status</b>		
Intern	25	12.4
Resident	77	37.4
Fellow	13	6.3
Medical school faculty	91	44.2
<b>Years seeing patients</b>		
Mean: 5.5 yrs, SD: 6.12		
<b>Clinic</b>		
Thomas Street Health Center	34	16.3
Other	162	83.7

- 77% graduates of US medical schools
- 56% trainees

# Results

<b>Belief that PrEP is proven to be safe</b>	N	%
Yes	119	57.2
No	3	1.4
Unsure	86	41.4
<b>Belief that PrEP is proven to be effective</b>		
Yes	117	56.3
No	3	1.4
Unsure	88	42.3

- Overall, 57% believed PrEP to be proven safe and effective, most of the rest were unsure.



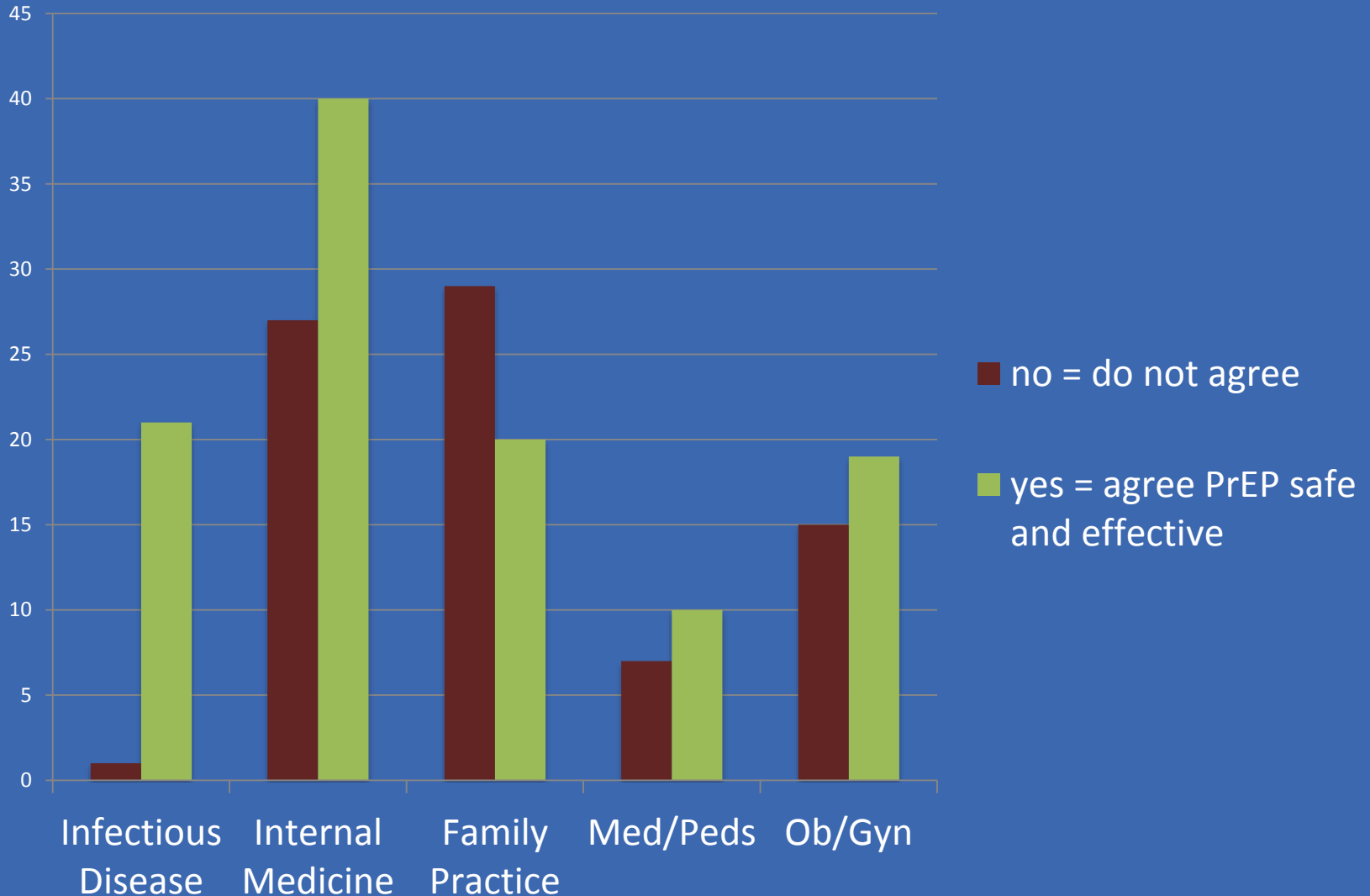
# PrEP has been proven safe / effective

## Univariate Results

VARIABLE		Frequency of Agreement		p-value
<b>Gender</b>	Male	44/70	63%	0.28
	Female	67/122	55%	
<b>Race/Ethnicity</b>	White	45/70	64%	0.19
	Other	62/114	54%	
<b>Training</b>	Foreign Medical School	84/142	59%	0.67
	US Medical School	25/45	56%	
<b>Specialty</b>	Family Practice	20/49	41%	<0.01
	Infectious Disease	21/22	95%	
	Internal Medicine	40/67	60%	
	Med/Peds	10/17	59%	
	Ob/GYN	19/32	59%	
<b>Patients Seen Per Week</b>	<5 to 10	54/91	59%	0.37
	11 to 50	32/52	62%	
	51 to >100	25/51	49%	
<b>Clinic</b>	TSHC (HIV)	31/34	91%	<0.01
	Other	81/162	50%	

# Univariate Results

Belief PrEP proven to be safe and effective by specialty



# PrEP has been proven safe / effective

## Univariate Results

VARIABLE		Mean (95% CI)	p-value
Age	Agree	36.89 (35.1-38.7)	0.01
	Disagree	33.42 (35.1-38.7)	
# of Yrs Seeing Pts	Agree	5.92 (4.7 -7.17)	0.21
	Disagree	4.81 (3.6-6.0)	

## Multivariate Results

VARIABLE		Multivariate Odds Ratio (95% CI)	p - value
Race/Ethnicity	Other vs. White	0.59 (0.31-1.14)	0.11
# of Years Seeing Pts		1.02 (0.96-1.07)	0.59
Clinic	HIV Clinic vs. Other	9.2 (2.65-31.96)	<.01

# Confidence in identifying patients

<b>Would be confident to identify individuals who could benefit from PrEP</b>	<b>N</b>	<b>%</b>
Strongly agree	6	2.9
Agree	80	38.3
Disagree	118	56.5
Strongly disagree	5	2.4

- 41% of providers believed they could identify PrEP candidates in their practices.

# Confidence in identifying patients

## Univariate Results

VARIABLE		Frequency of Agreement		p-value
<b>Gender</b>	Male	34/75	45%	0.48
	Female	52/129	40%	
<b>Race/Ethnicity</b>	White	26/75	35%	0.08
	Other	57/120	48%	
<b>Training</b>	Foreign Medical School	24/46	52%	0.08
	US Medical School	57/152	38%	
<b>Specialty</b>	Family Practice	21/52	40%	< 0.01
	Infectious Disease	17/22	77%	
	Internal Medicine	26/68	38%	
	Med/Peds	6/20	30%	
	Ob/Gyn	14/38	37%	
<b>Patients Seen per Week</b>	<5 to 10	40/95	42%	0.69
	11 to 50	25/55	45%	
	51 to >100	21/35	60%	
<b>Clinic</b>	HIV clinic	24/34	71%	< 0.01
	Other	62/175	35%	

# Confidence in identifying patients

## Univariate Results

VARIABLE		Mean (95% CI)	p - value
Mean Age	Agree	36.15 (34.1-38.2)	0.38
	Disagree	34.93 (33.1-36.7)	
No. of Yrs Seeing Patients	Agree	5.44 (4.1-6.8)	0.87
	Disagree	5.58 (4.5-6.7)	

## Multivariate Results

VARIABLE		Multivariate Odds Ratio (95% CI)	p- value
Race/Ethnicity	Other vs. White	1.66 (0.90 - 3.07)	0.11
Clinic	HIV Clinic vs. Other	4.1 (1.75 - 9.42)	<.01

# Results

<b>Would be willing to <i>prescribe</i> PrEP with proper training and education</b>	<b>N</b>	<b>%</b>
Strongly agree	50	24
Agree	130	62
Disagree	23	11
Strongly Disagree	6	3

<b>Would be willing to <i>refer</i> patients for PrEP with proper training and education</b>	<b>N</b>	<b>%</b>
Strongly agree	56	26.8
Agree	140	67
Disagree	9	4.3
Strongly Disagree	4	1.9

- 94% of providers would be willing to refer patients and 86% to prescribe PrEP if trained to do so.

# Prefer Management by a Specialist

<b>Prefer patient requesting PrEP be managed by a specialist</b>	<b>N</b>	<b>%</b>
Strongly agree	34	16.3
Agree	91	43.5
Disagree	77	36.8
Strongly disagree	7	3.4

- Nonetheless, 60% preferred PrEP be managed by a specialist.



# Prefer Management by a Specialist

## Univariate Results

VARIABLE		Frequency of Agreement		p - value
Race/Ethnicity	White	46/75	61%	0.85
	Other	72/120	60%	
Patients Seen per Week	<5 to 10	54/95	57%	0.66
	11 to 50	35/55	64%	
	51 to >100	35/56	63%	
Gender	Male	40/75	53%	0.12
	Female	83/129	64%	
Training	Foreign Medical School	36/46	78%	< 0.01
	US Medical School	84/152	55%	
Specialty	Family Practice	30/52	58%	< 0.01
	Infectious Disease	15/22	68%	
	Internal Medicine	47/68	69%	
	Med/Peds	5/20	25%	
	Ob/GYN	23/38	61%	
Clinic	TSHC (HIV Clinic)	25/34	74%	0.07
	Other	100/175	57%	

# Prefer Management by a Specialist

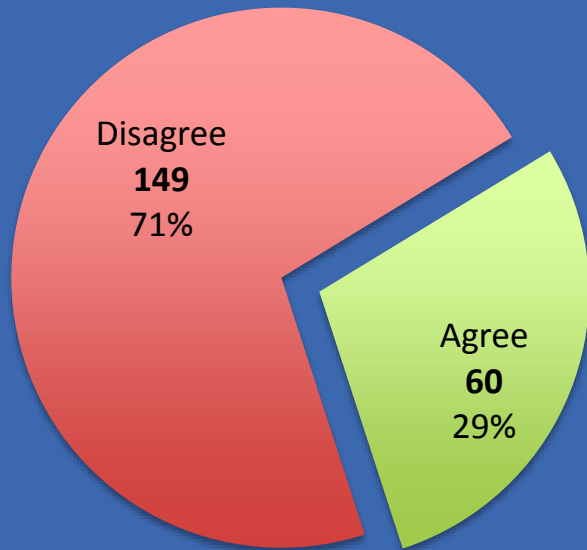
## Univariate Results

VARIABLE		Mean (95% CI)	p - value
Mean Age	Agree	35.95 (34.1-37.8)	0.38
	Disagree	34.7 (32.7-36.7)	
Mean # of Yrs Seeing Patients	Agree	5.89 (4.7-7.1)	0.3
	Disagree	5.0 (3.8-6.1)	

## Multivariate Results

VARIABLE		Multivariate Odds Ratio (95% CI)	p - value
Gender	Female vs. Male	1.68 (0.93-3.03)	0.08
Clinic	HIV clinic vs. Other	2.49 (1.05-5.90)	0.04

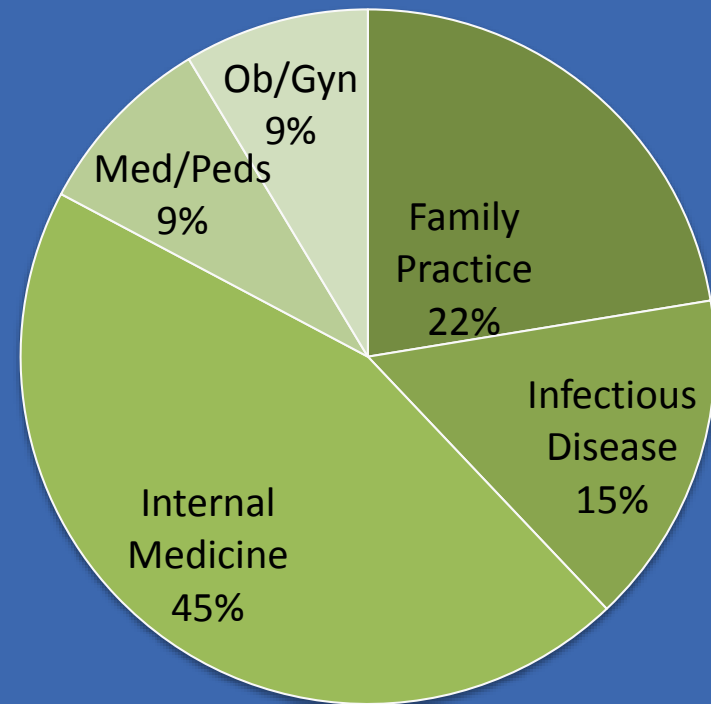
# PrEP might promote risky behavior



- Overall 29% of providers believed PrEP might promote risky behavior.
- FMGs more likely than US trained clinicians  
 $\chi^2(1) = 9.54, p < .05$
- Significant difference by specialty  
 $\chi^2 = 11.3(4), p < .05$

Specialty	N	%
Family practice	52	26
Infectious Diseases	22	11
Internal medicine	68	34
Internal medicine/Pediatrics	20	10
Ob/Gyn	38	19

## Agree PrEP might promote risky behavior by specialty (n=60)



# PrEP might promote risky behavior

## Univariate results

VARIABLE		Frequency of Agreement		p - value
<b>Gender</b>	Male	26/75	35%	0.13
	Female	32/129	25%	
<b>Race/Ethnicity</b>	White	21/75	28%	0.67
	Other	37/120	31%	
<b>Training</b>	Foreign Medical School	21/46	46%	<.01
	US Medical School	34/152	22%	
<b>Specialty</b>	Family Practice	13/52	25%	0.02
	Infectious Disease	9/22	41%	
	Internal Medicine	26/68	38%	
	Med/Peds	5/20	25%	
	Ob/GYN	4/51	11%	
<b>Patients Seen per Week</b>	<5 to 10	34/95	36%	0.05
	11 to 50	14/55	25%	
	51 to >100	10/56	18%	
<b>Clinic</b>	HIV clinic	10/34	29%	0.92
	Other	50/175	29%	

# PrEP might promote risky behavior

## Univariate results (cont' d)

VARIABLE		Mean (95% CI)	p - value
Age	Agree	33.98 (31.6-36.4)	0.17
	Disagree	36.05 (34.4-37.7)	
# of Yrs Seeing Patients	Agree	4.41 (3.0 -5.9)	0.10
	Disagree	6.0 (4.9-7.0)	

## Multivariate Results

VARIABLE		Multivariate Odds Ratio (95% CI)	p - value
Gender	Female vs. Male	0.59 (0.31-1.11)	0.10
# Yrs Seeing Pts		0.95 (0.90-1.01)	0.11

# Overview of Results

- 40% of providers surveyed were uncertain PrEP had proven safe and effective
  - In MV analysis, HIV specialist 9.2x odds of believing
- Only 40% felt confident could identify patients
  - In MV analysis, HIV specialists 4x odds of being confident
- 60% preferred PrEP be managed by a specialist.
  - In MV analysis, HIV specialist most likely to agree PrEP should be managed by specialist.
- 29% believed PrEP might promote risky behavior
- Despite few patient inquiries (18%), 80% would be motivated to prescribe PrEP by patient requests.
- 94% of providers would be willing to refer patients and 86% to prescribe PrEP if trained to do so.

# Conclusions

- These findings highlight the need for additional training for primary care providers to enhance
  - Knowledge of PrEP safety and effectiveness
  - Ability to identify potential candidates
  - Confidence in PrEP prescribing/referral
  - Willingness to engage patients in the use of PrEP.
- A potential role for a referral based process
- Concerns about safety/effectiveness (~40%) and risk compensation (~30%)
- Importance of patient influence as although only 18% of providers had received a patient inquiry about PrEP, 80% would be motivated to prescribe PrEP by patient requests.

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## Study participants

