



Real-World Utilization of HIV Pre-Exposure Prophylaxis (PrEP) by Cisgender and Transgender Individuals in the United States

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Introduction

- HIV PrEP is a highly effective prevention strategy for people at risk of sexually acquired HIV¹
 - The U.S. Food & Drug Administration approved emtricitabine/tenofovir disoproxil fumarate (F/TDF) for PrEP for adults in 2012 and expanded approval to adolescents weighing ≥ 35 kg in 2018²
 - Emtricitabine/tenofovir alafenamide (F/TAF) for PrEP was approved for adults and adolescents weighing ≥ 35 kg in 2019, excluding those who are at risk of HIV-1 from receptive vaginal sex²
- Real-world studies of PrEP utilization in those who are at risk for HIV are limited and do not characterize all definitions of gender (eg, male and female only)³⁻⁵

Objectives

- To describe the demographic, geographic, and clinical characteristics among cis- and transgender individuals who were prescribed oral PrEP regimens

Methods

- Adults (aged ≥ 18 y) without HIV receiving an oral PrEP regimen (F/TDF or F/TAF) were identified from a pharmacy claims database (IQVIA[®] Longitudinal Prescription and Diagnosis [LRxDx], IQVIA Inc., Danbury, Connecticut, USA) linked with medical claims from physicians' offices across the USA
- Gender was identified via both diagnostic and procedural codes: transgender men (TGM) and women (TGW) were identified using an algorithm that incorporated claims for gender dysphoria, and gender-affirming surgery and hormone therapy; individuals not identified as TGM or TGW were classified as cisgender men (CGM) or women (CGW)
- Demographic characteristics assessed included age, gender category, insurance type, and geographic region; clinical characteristics included metabolic, circulatory, neurologic, respiratory, and mental health conditions (mood disorders, behavioral disorders, and addiction)
 - Demographic/clinical characteristic analysis comprised PrEP prescriptions from October 2019 through March 2021
 - Trend analysis of PrEP uptake was from July 2016 through March 2021

Results

Baseline Demographics

	CGM n=94,159 (90%)	CGW n=8291 (8%)	TGM n=605 (1%)	TGW n=1299 (1%)
Median age on cohort entry date, y (IQR)	36 (28, 48)	36 (27, 47)	32 (25, 44)	29 (23, 37)
Age categorized on cohort entry date, n (%) [*]				
18–24 y	12,598 (13)	1392 (17)	147 (24)	414 (32)
25–34 y	30,342 (32)	2385 (29)	198 (33)	501 (39)
35–44 y	22,062 (23)	2120 (26)	118 (20)	215 (17)
45–54 y	16,411 (17)	1383 (17)	79 (13)	101 (8)
≥ 55 y	12,746 (14)	1101 (12)	63 (10)	68 (5)

^{*}No individuals were aged ≥ 85 y. IQR, interquartile range.

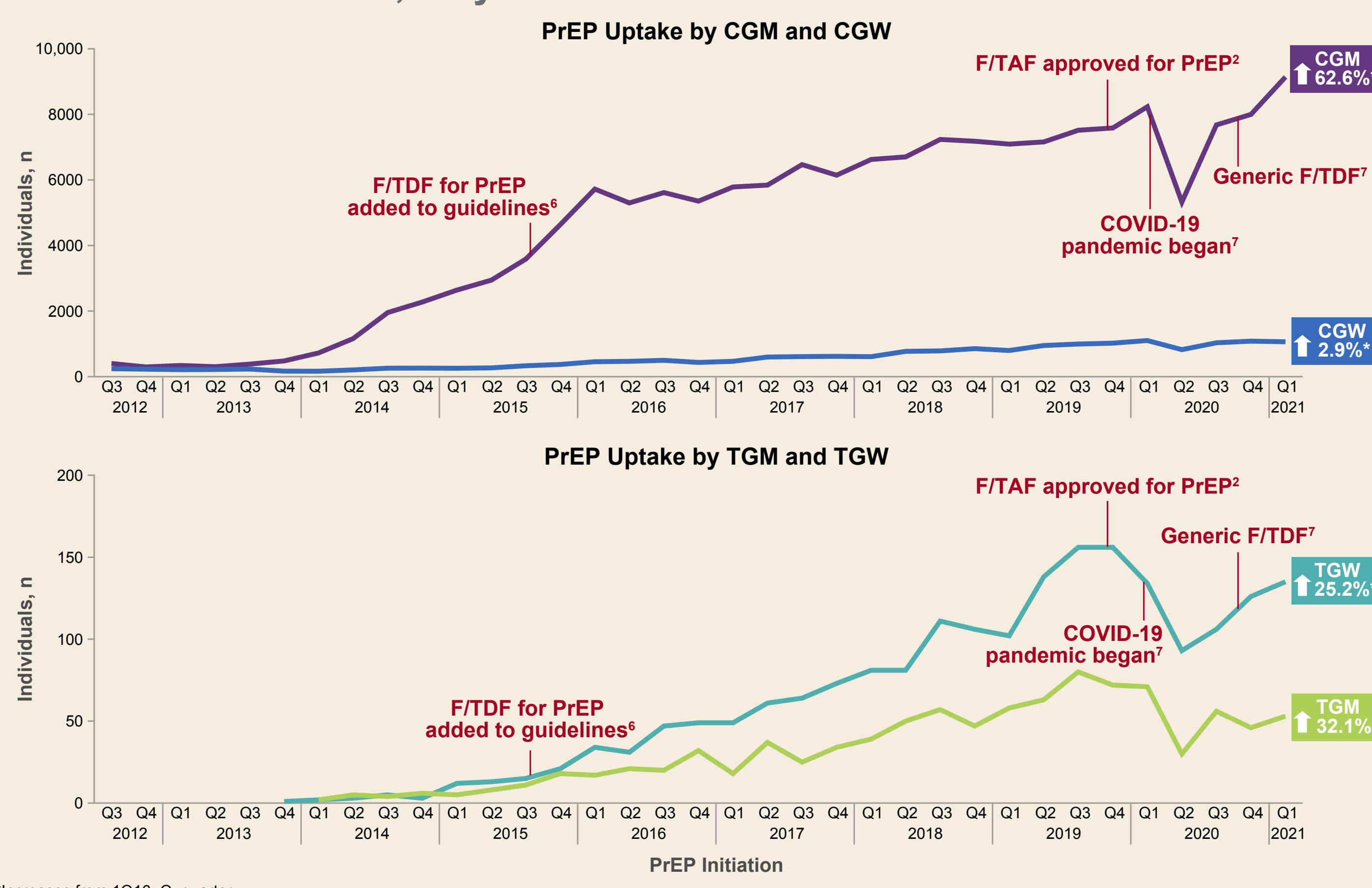
Baseline Clinical Characteristics

n (%) [*]	CGM n=94,159	CGW n=8291	TGM n=605	TGW n=1299
Evidence of sexually transmitted infection	3883 (4)	303 (4)	18 (3)	46 (4)
Alcohol or substance abuse	3276 (3)	762 (9)	33 (5)	87 (7)
Metabolic (malnutrition/disorders of lipid metabolism)	5942 (6)	421 (5)	35 (6)	70 (5)
Obesity	3791 (4)	689 (8)	34 (6)	69 (5)
Endocrine disorders/conditions	2126 (2)	439 (5)	26 (4)	34 (3)
Neurologic disorders/conditions	1849 (2)	318 (4)	22 (4)	28 (2)
Genitourinary disorders/conditions	6180 (7)	714 (9)	49 (8)	69 (5)
Mood/mental health disorders/conditions	16,366 (17)	1928 (23)	195 (32)	451 (35)
Behavioral disorders/conditions	3467 (4)	212 (3)	29 (5)	65 (5)
Smoking	2266 (2)	468 (6)	22 (4)	72 (6)
Addiction treatment	4020 (4)	1066 (13)	41 (7)	129 (10)
Musculoskeletal/connective tissue disorders/conditions	5227 (6)	701 (8)	42 (7)	59 (5)
Prescribed F/TAF [†]	27,211 (96)	725 (3)	114 (<1)	322 (1)
Prescribed F/TDF [‡]	66,948 (88)	7,566 (10)	491 (1)	977 (1)

^{*}%s of individuals with characteristic in each gender group (column %); [†]%s of individuals in each gender group prescribed F/TAF (row %; total n=28,372); [‡]%s of individuals in each gender group prescribed F/TDF (row %; total n=75,982).

Trends in PrEP Uptake in USA

IQVIA LRxDx Dataset, July 2012–March 2021



- There was a large increase in PrEP uptake by CGM and a small, but noticeable, increase in uptake by CGW
- As previously reported, PrEP uptake significantly decreased during the early stages of the COVID-19 pandemic⁷

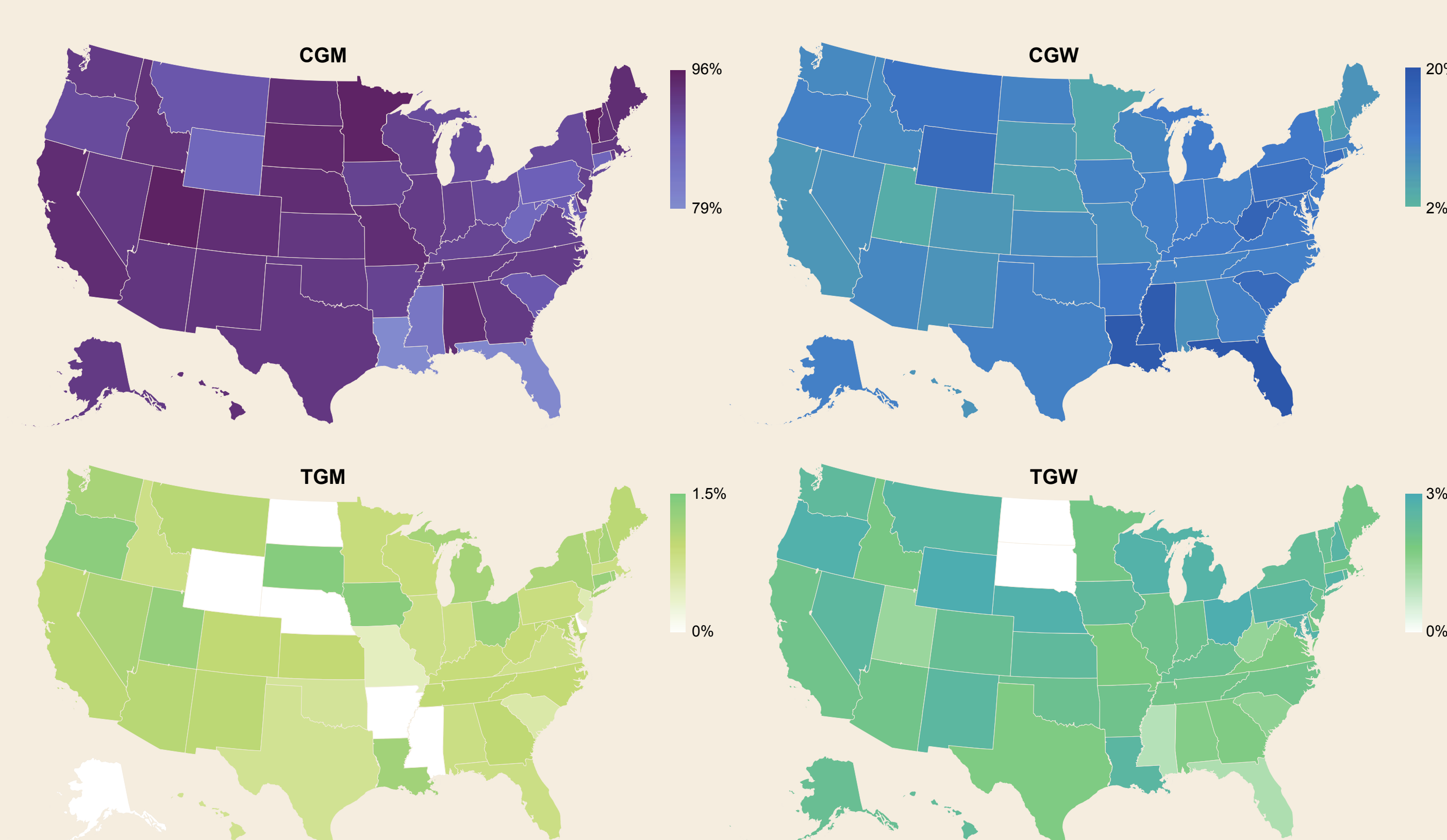
Regional PrEP Usage Patterns

Oct 2019–March 2021

Individuals Prescribed PrEP by US Census Region, n (%) [*]	CGM n=94,159 (90%)	CGW n=8291 (8%)	TGM n=605 (1%)	TGW n=1299 (1%)
Northeast	21,703 (90)	1913 (8)	154 (1)	373 (2)
Midwest	15,787 (92)	1077 (6)	106 (1)	283 (2)
South	33,597 (88)	4078 (11)	175 (<1)	327 (1)
West	22,631 (93)	1182 (5)	167 (1)	307 (1)

^{*}%s of all individuals prescribed PrEP in each region.

Gender Distribution of PrEP Users in Each State



- These maps show the proportions of PrEP users in each state for each gender group
- Among people prescribed PrEP, the proportions who were:
 - CGM ranged from 79% (Louisiana) to 95% (Utah)
 - CGW ranged from 3% (Vermont) to 20% (Florida)
 - TGM/TGW ranged from 0% (North Dakota) to 4% (Ohio)
- In states previously recognized as having high rates of HIV, the gender distribution of people prescribed PrEP varied⁸:

States With HIV Prevalence $\geq 61/100,000$ Individuals ⁸	CGM	CGW	TGM	TGW
New York	90	8	1	<1
Maryland	88	10	1	2
Florida	80	20	<1	<1
Georgia	92	7	1	<1

PrEP Use and Prescriber Specialty

PrEP Use, n (%)	CGM n=94,159	CGW n=8291	TGM n=605	TGW n=1299
F/TAF during baseline	13,752 (15)	261 (3)	44 (7)	112 (9)
F/TDF during baseline	52,798 (56)	3164 (38)	280 (46)	562 (43)
F/TAF on cohort entry date	27,211 (29)	725 (9)	114 (19)	322 (25)
F/TDF on cohort entry date	66,948 (71)	7566 (91)	491 (81)	977 (75)

Prescriber Specialty, n (%)	CGM n=94,159	CGW n=8291	TGM n=605	TGW n=1299
Nurse practitioner/physician assistant	33,953 (36)	3647 (44)	235 (39)	575 (44)
General and internal medicine	44,374 (47)	2623 (32)	247 (41)	496 (38)
Infectious disease	7014 (7)	636 (8)	23 (4)	65 (5)
Other specialty/missing	8818 (9)	1385 (17)	100 (17)	163 (13)

Conclusions

- This study describes the changing gender composition of people on PrEP, with CGM, TGM, and TGW accounting for increased proportions over time in a US real-world cohort assessed between 1Q16 and 1Q21
 - The majority of PrEP users continued to be CGM (90% of study population), who had a 63% increase in uptake during the study period
 - There were modest upticks in PrEP use by individuals classified as CGW (3%), TGM (25%), and TGW (32%)
 - PrEP use was highest among CGM and CGW aged 25–44 y, and among TGM and TGW aged 18–34 y
 - Nurse practitioners, and general and internal medicine physicians were the highest PrEP prescribers
- Demographic and geographic variations across genders highlight the importance of expanding educational efforts and improving access for people who would benefit from PrEP
- Real-world data are limited and cannot assess lack of PrEP adherence, how individuals use PrEP, or how many PrEP candidates may not be receiving treatment; these considerations warrant future study

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