GEOGRAPHIC CLUSTERING AND PROGRESS IN PREP USE AMONG WOMEN IN THE US, 2012-2019

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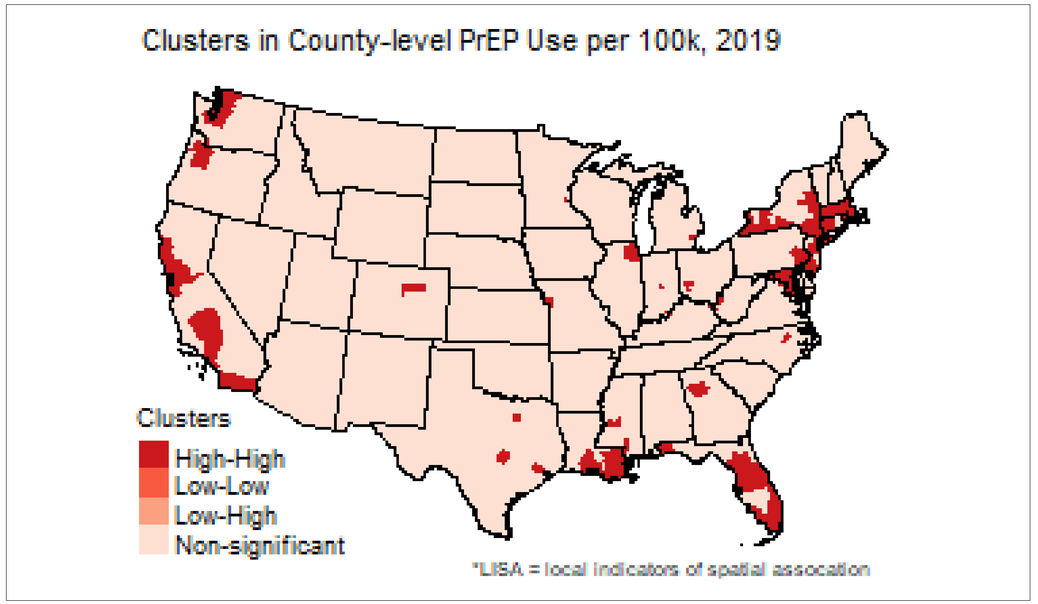
BACKGROUND

- Ending the HIV Epidemic (EHE) was launched in 2019 to all levels of government focusing on decreasing new HIV infections in the United States by 75% in 2025 and 90% in 2030.
- Although increased utilization of preventative measures, particularly Pre-Exposure Prophylaxis (PrEP), is a key tenet of EHE, numerous sociodemographic and area-level disparities in PrEP uptake have persisted since its introduction in 2012.
- In 2019, women accounted for 18% of new HIV infections in the U.S. but only 7.4% of PrEP users.

METHODS

- This study considers the spatial distribution and clustering of PrEP uptake among women in the U.S.
- We calculated the estimated annual percent change (EAPC) for PrEP use in women by geographic region and state from 2012-2019 using Joinpoint Regression Program.
- PrEP utilization/100,000 women at region, state, and county-levels were accessed through AIDSVu.org.
- We utilized global and local Moran's I statistics to determine global spatial autocorrelation and to identify clusters of counties where the PrEP utilization/100,000 were either significantly higher or lower than average rates in both the index and surrounding counties.
- Clusters were plotted in a local indicators of spatial association (LISA) map.

RESULTS



- County-level "High-High" clustering of PrEP utilization was found primarily in major metropolitan areas in CA, FL, LA, GA, WA, and the Northeast indicating areas of PrEP usage equal to or greater than surrounding counties and significant clustering through Local Moran's I.
- There were no areas of "Low-Low" or "Low-High" clustering, which indicates there are no identified counties of equal or significantly lower PrEP use per 100k compared to surrounding counties.
- There were increases in EAPC both nationally and within each region from 2012-2019.

Year	MW		NE		SO		WE		Overall	
	N	Rate per 100k	N	Rate per 100k	N	Rate per 100k	N	Rate per 100k	N	Rate per 100k
2012	639	2.00	1701	7.00	1513	3.24	838	2.15	4691	3.33
2013	937	2.75	2409	8.56	1807	3.65	1092	2.92	6245	4.12
2014	1213	3.58	3017	10.89	2717	5.53	1506	3.85	8453	5.59
2015	1898	5.75	4097	13.89	3738	7.24	2160	5.62	11893	7.65
2016	937	2.50	1721	5.33	1642	3.94	833	2.23	5133	3.41
2017	1379	3.58	2590	7.67	2341	5.35	1695	3.62	8005	4.90
2018	1616	4.17	2867	7.67	2888	6.94	1414	3.69	8785	5.59
2019	2612	7.08	4754	13.56	6135	13.82	3227	7.62	16728	10.61
EAPC	13.28		3.75		7.57		6.8		10.56	

RESULTS

- The largest REGIONAL EAPC increase was found primarily in the Midwest (13.3%) and the smallest in the Northeast (3.8%).
- The largest STATE EAPC increase was found in LA (31.2%) and largest decrease was found in MA (-10.4%).

CONCLUSIONS.

- There is significant clustering of PrEP uptake in women in major metropolitan areas, particularly those in the EHE focus counties, confirming progress in areas of high need.
- The MW region had the lowest rate of PrEP use in women but the fastest rate of growth from 2012-2019. Conversely, the NE had the highest PrEP rate/100k for women in 2012 and is second only to the SO region by 2019.
- Similar geographic and temporal trends were seen at the state level, and consideration of the overall rate must be used in conjunction with EAPC to fully understand progress in a particular area.
- Understanding where PrEP uptake is increasing relative to surrounding areas, as well as improved education about and access to PrEP, is needed to change the HIV epidemic among women in the United States and globally.
- Future studies should focus on mechanisms to better understand women's indications for PrEP use, areas where PrEP is needed and interventions to increase access and uptake, especially among the marginalized and underrepresented.