

County-level HPV vaccination rates and Title X clinic closures in Wisconsin

Emma Romell & Lindsay M. Cannon



BACKGROUND & SIGNIFICANCE

- Family planning clinic closures are associated with fertility and reproductive health outcomes.

Increased:

- Birth rates^{1,2,3}
- Cervical cancer mortality rates⁴

Decreased:

- Abortion rates^{1,3,5}
- Yearly breast exams⁶
- Yearly mammograms⁶
- Yearly Pap tests⁶

- Five family planning clinics in Wisconsin closed in 2013 and 2014 following a series of legislation, including targeted regulations of abortion providers (TRAP laws) and budgetary restrictions on abortion-providing entities. None of these clinics provided abortion services and all were funded through Title X.

PURPOSE

- The purpose of this study is to explore the association between increased distance to the nearest Title X clinic and county-level HPV vaccination rates for the period from 2010-2017.

METHODS

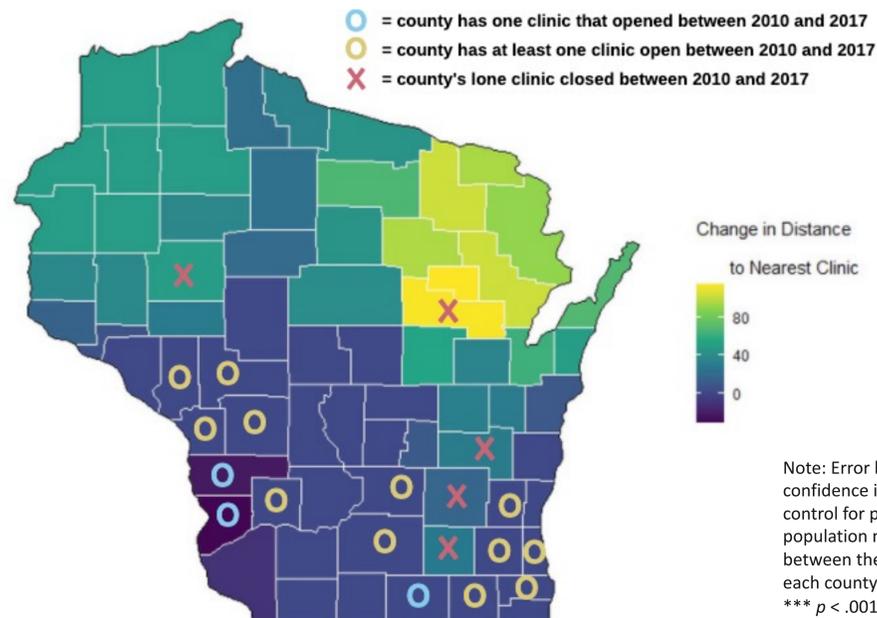
- County-level data for HPV vaccination rates were obtained from the Wisconsin Department of Health Services.
- Title X clinic location data were obtained through a FOIA request from the U.S. Department of Health and Human Services.

DATA ANALYSIS

- Descriptive statistics, frequencies, and fixed effects regression models were estimated in Stata version 16.
- P-values of less than $p < .05$ were considered statistically significant.
- Data were visualized using the tidyverse, maps, and ggmap packages in R.

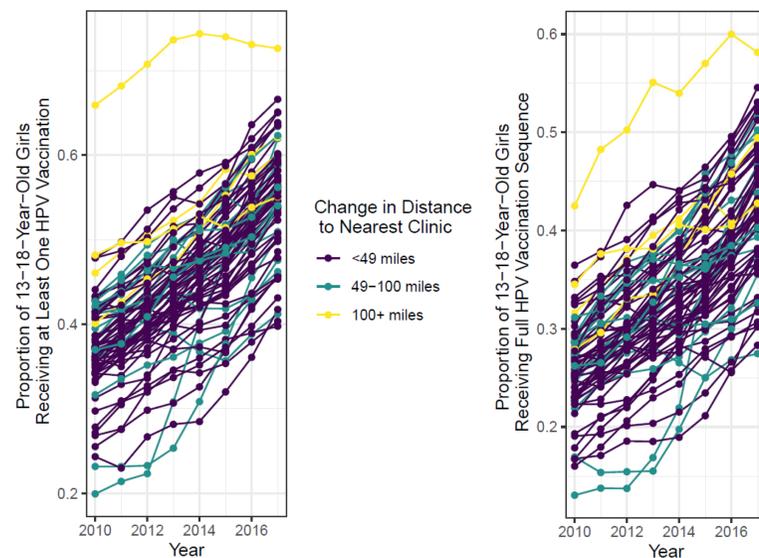
RESULTS

Change in Distance to Nearest Title X Clinic & Clinic Locations by County



Note: Error bars indicate 95% confidence intervals. All models control for proportion of the population made up of girls between the ages of 13-18 within each county. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests).

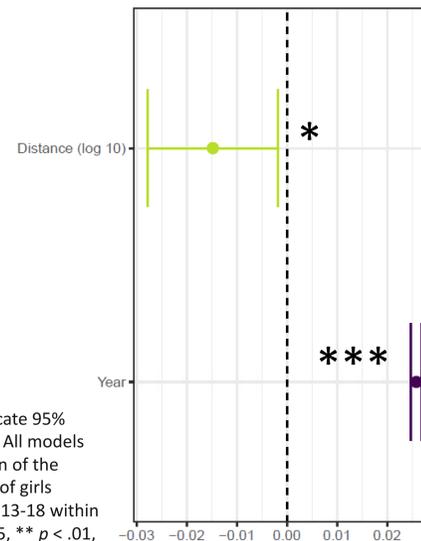
Proportion of 13-18-Year-Old Girls Receiving HPV Vaccinations by County, Year, and Change in Distance to Nearest Clinic



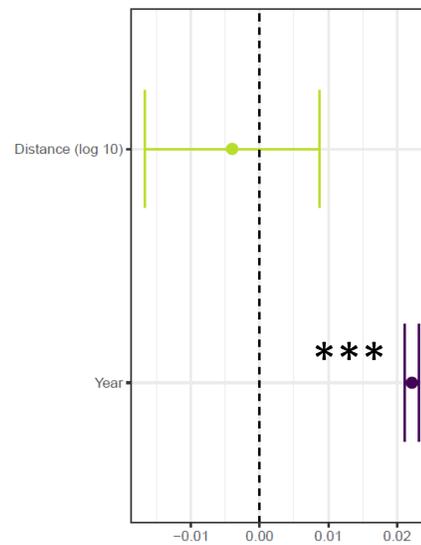
REFERENCES

- Fischer, S., Royer, H., & White, C. (2018). The impacts of reduced access to abortion and family planning services on abortions, births, and contraceptive purchases. *Journal of Public Economics*, 167, 43-68.
- Lu, Y., & Slusky, D. J. (2019). The impact of women's health clinic closures on fertility. *American Journal of Health Economics*, 5(3), 334-359.
- Venator, J., & Fletcher, J. (2019). Undue burden beyond Texas: An analysis of abortion clinic closures, births, and abortions in Wisconsin (No. w26362). National Bureau of Economic Research.
- Srivastava, A., Barnes, J. M., Markovina, S., Schwarz, J. K., & Grigsby, P. W. (2019). The Impact of the Closure of Women's Health Clinics on Cervical Cancer in the United States. *International Journal of Radiation Oncology • Biology • Physics*, 105(1), S98.
- Lindo, J. M., Myers, C. K., Schlosser, A., & Cunningham, S. (2017). How far is too far? New evidence on abortion clinic closures, access, and abortions. NBER Working Paper, (w23366).
- Lu, Y., & Slusky, D. J. (2016). The Impact of Women's Health Clinic Closures on Preventive Care. *American Economic Journal: Applied Economics*, 8(3), 100-124.
- Fowler, C. I., Gable, J., Wang, J., & Lasater, B. (2018, August). Family Planning Annual Report: 2017 national summary. Research Triangle Park, NC: RTI International.

Fixed Effects Model of Proportion of Girls Aged 13-18 Receiving One HPV Vaccine by Distance and Year



Fixed Effects Model of Proportion of Girls Receiving Full HPV Vaccine Sequence by Distance and Year



CONCLUSIONS

- County-level average increase in distance to the nearest Title X clinic is significantly negatively associated with county-level rate of HPV vaccination **initiation** among girls aged 13-18. Increase in distance to the nearest clinic is not associated with change in county-level HPV vaccination **completion** rates.
- Legislation associated with the closure of Title X-funded clinics may have negative implications for HPV vaccination initiation. Closures may be especially impactful for low-income populations. 58% of individuals served by Title X clinics in Wisconsin in 2017 had household incomes at or below the federal poverty line.⁷

LIMITATIONS

- Vaccinations are counted in the county in which the individual currently lives. If unvaccinated individuals were more likely to move to counties that experienced increases in distance during the study timeframe, our results would overestimate the true relationship between distance changes and HPV vaccination initiation rates.
- Our analyses examine change in distance to Title X clinics. Primary care clinics, federally qualified health centers, or other healthcare providers also provide HPV vaccination services. Future research should account for changes across the full landscape of county-level healthcare services.

ACKNOWLEDGEMENTS

This research was supported by the Collaborative for Reproductive Equity, the National Institute of Child Health and Human Development (NICHD) Traineeship through the University of Wisconsin-Madison Center for Demography and Ecology, and the Graduate School, part of the Office of the Vice Chancellor for Research and Graduate Education at the University of Wisconsin-Madison, with funding from the Wisconsin Alumni Research Foundation and the UW-Madison.