

# Impact of Defunding Family Planning Health Centers on Gonorrhea and Chlamydia Cases in Iowa: A Spatiotemporal Analysis

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## Abstract

### Background

Fifteen states have defunded family planning health centers (FPHCs), causing thousands to be left without health services. This has accelerated in the COVID-19 era. FPHCs provide low-income individuals in rural areas with essential primary care services, including sexually transmitted infection prevention, testing, and treatment. The purpose of this analysis is to use spatiotemporal methods to examine the impact of FPHC closures in Iowa on the reported number of gonorrhea and chlamydia cases at the county level.

### Methods

This analysis investigates the association between FPHC closures and changes in the number of gonorrhea and chlamydia cases between 2016 and 2018. Iowa implemented defunding policies for family planning clinics, resulting in four FPHC closures in June 2017. 2016 pre-closure STI incidence rates were compared to 2018 post-closure rates. Gonorrhea and chlamydia rates in the four Iowa counties with clinic closures were compared to the 95 Iowa counties without closures. T tests were used to compare changes in reported gonorrhea and chlamydia rates in the two settings. Linear regression modeling was used to determine the relationship between clinic closures and changes in gonorrhea and chlamydia cases.

### Results

The gonorrhea burden in Iowa increased from 83 cases per 100,000 people in 2016 to 153.8 cases per 100,000 people in 2018. The four counties with clinic closures experienced a significantly larger increase (absolute 217 cases per 100,000 population) in their gonorrhea rate compared to counties without FPHC closures (absolute 121 cases per 100,000 population) (p = 0.0015). There was also a significant relationship between clinic closures and increasing gonorrhea rates (p = 0.0015). Over the three-year period, there was no change in chlamydia rates (p = 0.1182). However, there was a trend towards counties with more FPHC closures having a higher number of chlamydia cases (p = 0.057).

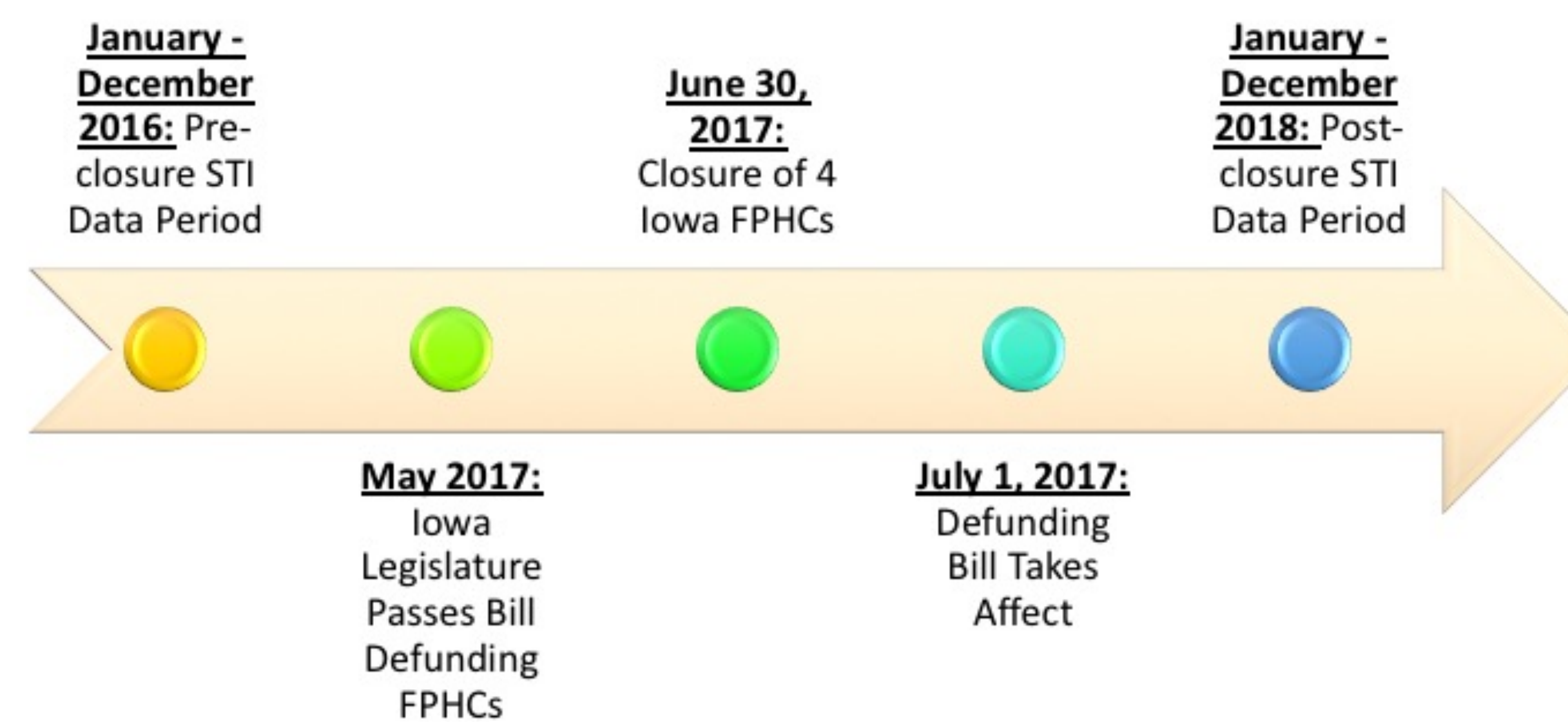
### Conclusions

Despite the fact that many STI diagnoses are made and reported by FPHCs, our data suggest that clinic closures may have contributed to an increase in gonorrhea and chlamydia cases. This is consistent with delayed diagnoses and missed opportunities for providing essential STI services to vulnerable and under-served rural residents. Legislative action is urgently needed to curtail this trend.

## Methods

- Iowa legislature defunded FPHCs in 2017, resulting in 4 health center closures in June 2017.
- 2016 pre-closure Gonorrhea/Chlamydia (G/C) incidence rates were compared to 2018 post-closure rates. Rates also compared between counties with closures vs those without.
- T tests used for incidence rate comparison. Linear regression modeling used to analyze relationship between clinic closures & changes in G/C rates.

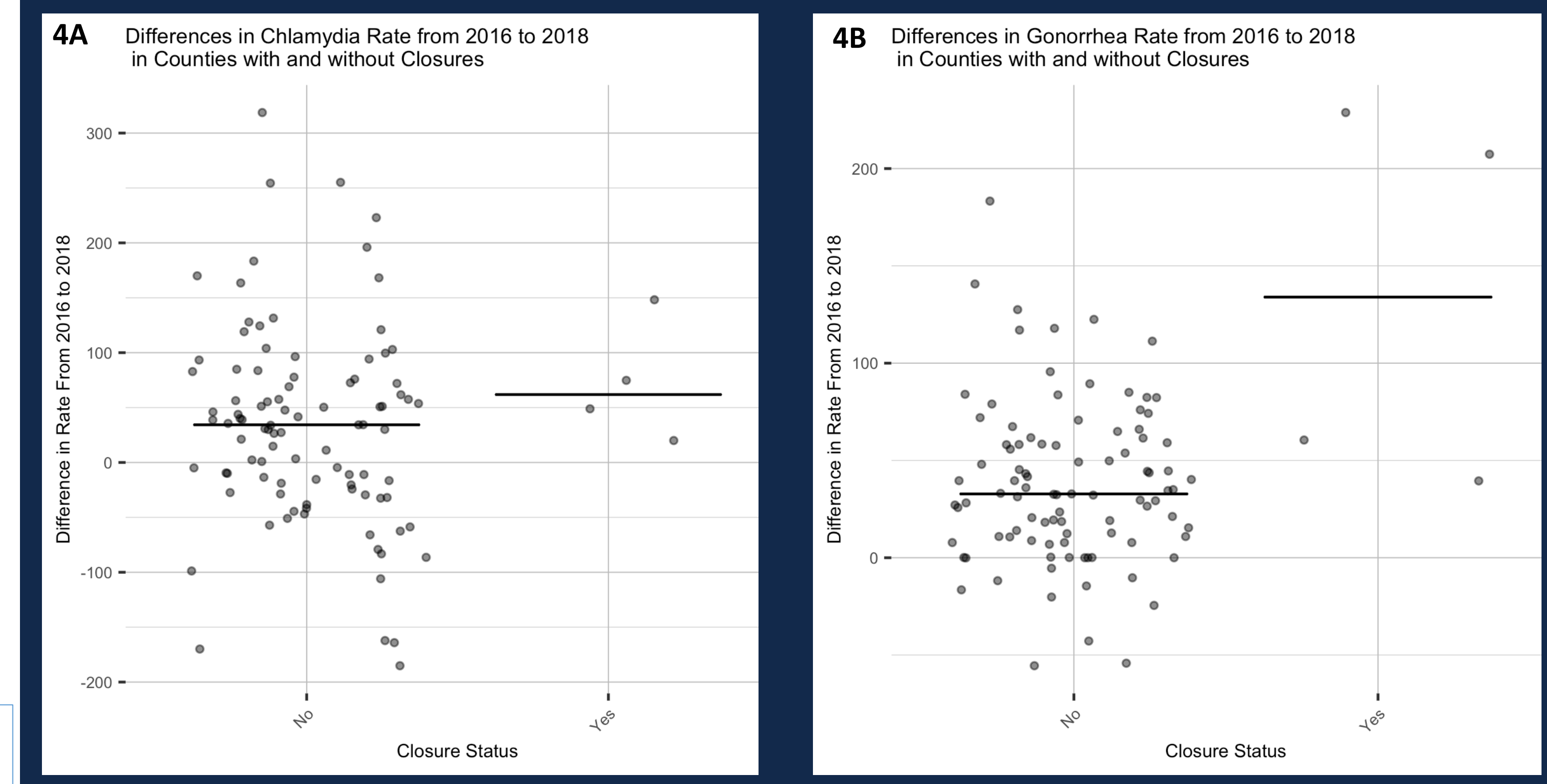
Figure 2: Timeline of Events



## Results

- Counties w/ FPHC closures had a significantly larger gonorrhea increase (217 cases per 100,000) vs counties w/o (121 cases per 100,000)
- Gonorrhea rate increase was significantly higher in counties with FPHC closures (p = 0.0015)
- There was an insignificant trend towards counties with FPHC closures having a higher number of chlamydia cases (p = 0.057)

Figure 4: Change in G/C incidence rates between 2016 and 2018 by county's FPHC closure status



## Background

- Publicly-funded family planning health centers (FPHCs) are an essential source of care for underserved & low-income populations
- 60% of female patients at FPHCs consider it their primary source of health care
- 15 state legislatures have defunded FPHCs causing closures in many areas

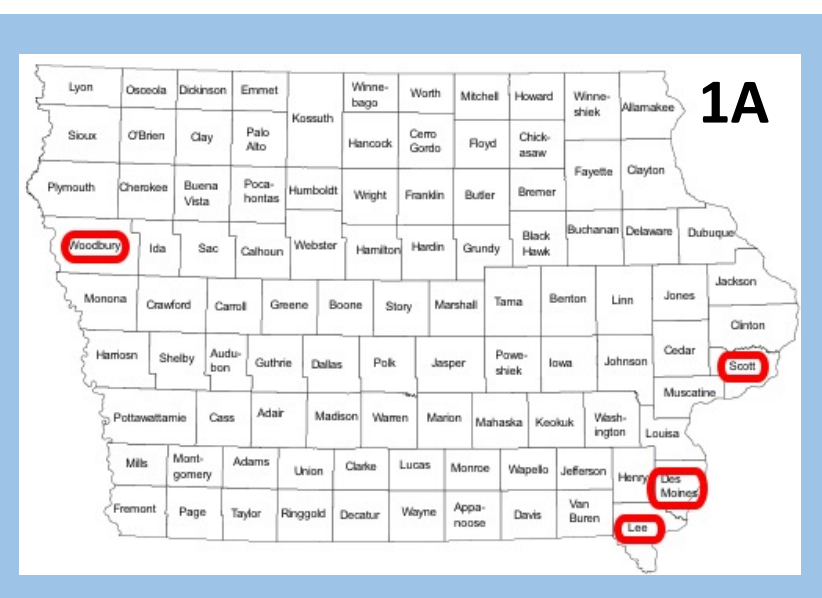
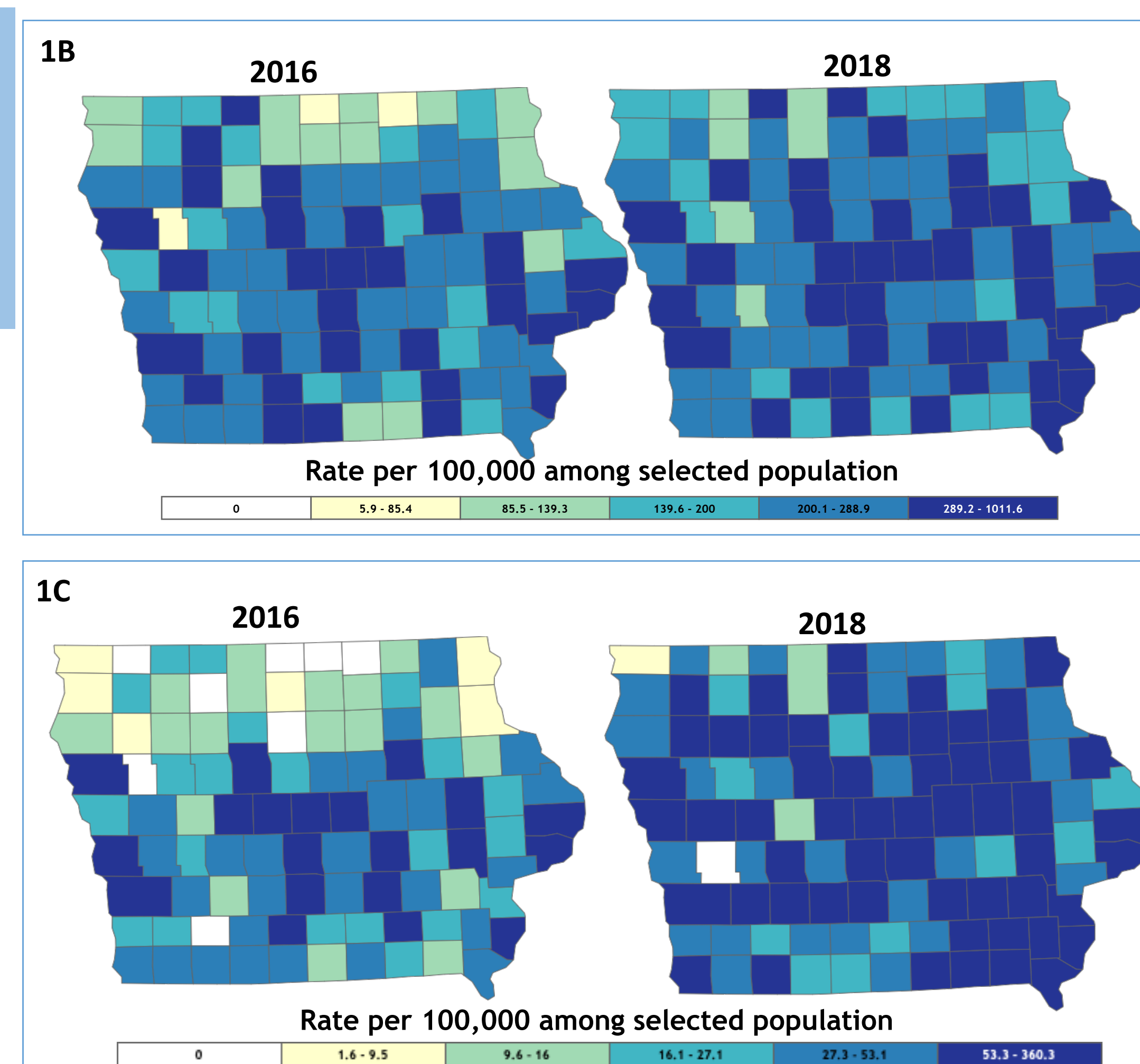


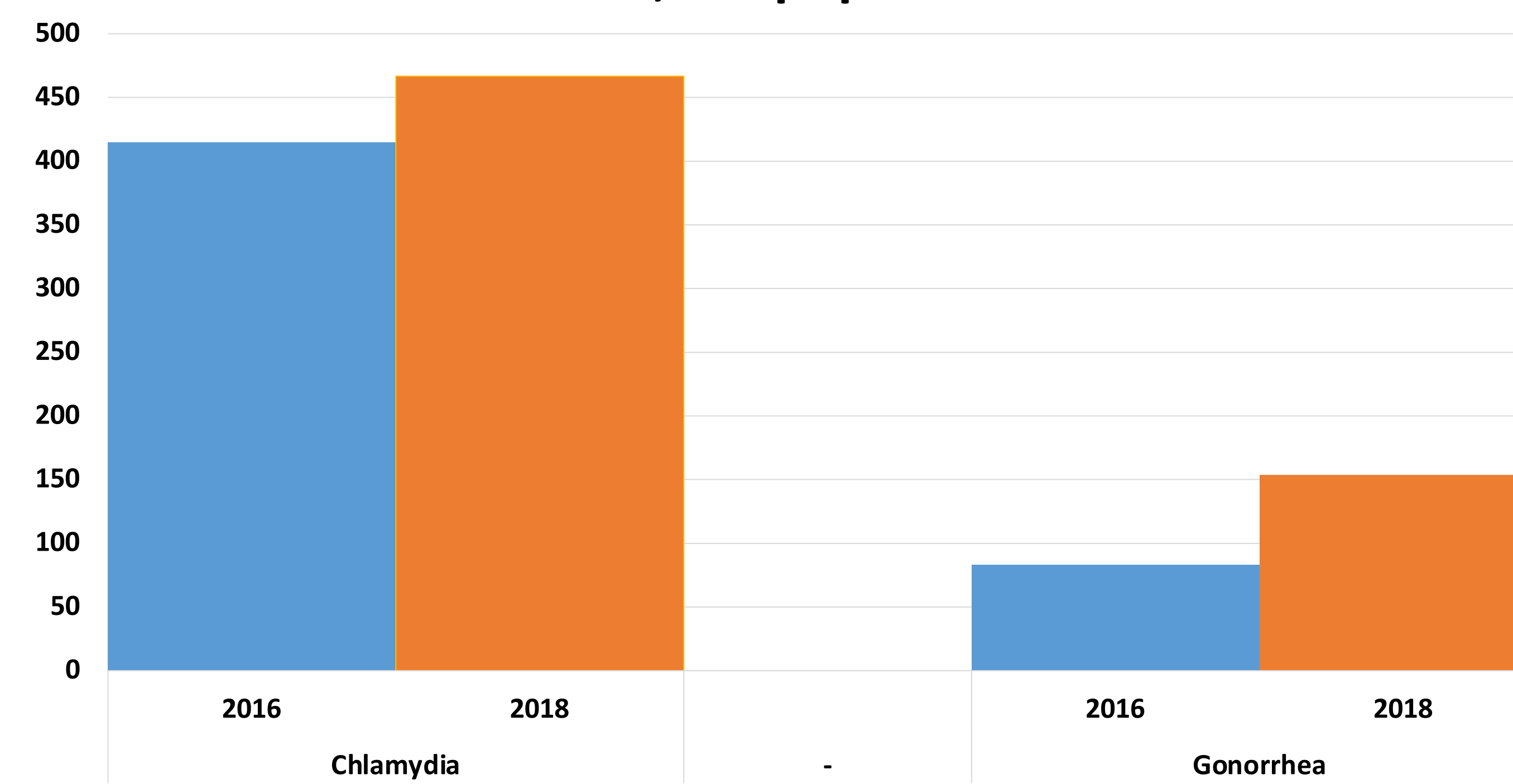
Figure 1: (A) Iowa map showing counties w/ closures in red. (B) Chlamydia incidence by county (C) Gonorrhea incidence rate by County



## Results

- Statewide gonorrhea burden significantly increased from pre-defunding in 2016 (83 cases per 100,000) to post-defunding in 2018 (153.8 cases per 100,000)
- Statewide chlamydia did not significantly change from pre-defunding in 2016 (414.7 cases per 100,000) to post-defunding in 2018 (466.7 cases per 100,000)

Figure 3: Chlamydia & Gonorrhea Incidence per 100,000 population



## Conclusions

- Closures may be contributing to increasing G/C rates
- FPHC closures are likely delaying diagnoses (increasing Ro for each infection) and decreasing access to preventive services/resources
- Legislative defunding targeting abortion providers is impeding access to overall sexual & reproductive health care

## References

- State Family Planning Funding Restrictions. Guttmacher Institute, 2020. (Accessed March 28, 2020, 2020, at <https://www.guttmacher.org/state-policy/explore/state-family-planning-funding-restrictions>.)
- Gold RB. Title X: Three Decades of Accomplishment. The Guttmacher Report on Public Policy 2001.
- Gold RB, Hasstedt K. Publicly Funded Family Planning Under Unprecedented Attack. American journal of public health 2017;107:1895-7.
- Frost JJ, Gold RB, Bucek A. Specialized Family Planning Clinics in the United States: Why Women Choose Them and Their Role in Meeting Women's Health Care Needs. 2012;22:e519-e25.
- Daniel H, Erickson SM, Bornstein SS, Health ft, Physicians PPCotAcO. Women's Health Policy in the United States: An American College of Physicians Position Paper/Women's Health Policy in the United States: An ACP Position Paper. Annals of Internal Medicine 2018;168:874-5.
- Kinsler JJ, Wong MD, Sayles JN, Davis C, Cunningham WE. The Effect of Perceived Stigma from a Health Care Provider on Access to Care Among a Low-Income HIV-Positive Population. AIDS Patient Care and STDs 2007;21:584-92.
- Whitehead J, Shaver J, Stephenson R. Outness, Stigma, and Primary Health Care Utilization among Rural LGBT Populations. PLOS ONE 2016;11:e0146139.
- Martinez G, National Center for Health S. Use of family planning and related medical services among women aged 15-44 in the United States: National Survey of Family Growth, 2006-2010. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2013.
- Stevenson AJ, Flores-Vazquez IM, Allgeyer RL, Schenkkan P, Potter JE. Effect of Removal of Planned Parenthood from the Texas Women's Health Program. New England Journal of Medicine 2016;374:853-60.
- Jennifer J. Frost AS, Mia R. Zolna, Lawrence B. Finer. Return on Investment: A Fuller Assessment of the Benefits and Cost Savings of the US Publicly Funded Family Planning Program. The Milbank Quarterly 2014;92:696-749.
- Lu Y, Slusky DJG. The Impact of Women's Health Clinic Closures on Preventive Care. American Economic Journal: Applied Economics 2016;8:100-24.
- Srivastava A, Barnes JM, Markovina S, Schwarz JK, Grigsby PW. The Impact of the Closure of Women's Health Clinics on Cervical Cancer in the United States. International Journal of Radiation Oncology • Biology • Physics 2019;105:598.
- AtlasPlus - Maps. Centers for Disease Control and Prevention. <https://gis.cdc.gov/GRASP/NCHHSTAtlas/maps.html> (accessed Oct 20, 2020).
- AtlasPlus - Tables. Centers for Disease Control and Prevention. <https://gis.cdc.gov/grasp/nchhstpatlas/tables.html> (accessed Oct 20, 2020).