



Closed: What happens to health when the local health department isn't providing clinical services?

Nathan Hale, PhD, Michael Smith, MSPH, James Hardin, PhD

State and local health departments are under increasing pressure to adopt a more standard set of population-based activities focused on the core functions of assessment, policy development, and assurance. Recent recommendations outlined in the 2012 Institute of Medicine report *For the Public's Health: Investing in a Healthier Future*, coupled with the public health department accreditation movement, have codified the delivery of population-based public health services as the standard for practice, while de-emphasizing the provision of direct clinical services by local health departments.

As the public health system continues to evolve, more examples of local health departments discontinuing clinical services are emerging. A key, but largely unanswered question accompanying these transitions, is what happens to access and outcomes when local health departments discontinue clinical services?

Although the public health paradigm is shifting nationally, many state and local health departments remain active providers of clinical services – particularly for women and children. Once established as a service provider, local health departments may find it difficult to discontinue clinical services without worsening existing service voids and health outcomes. We were able to examine this issue in a single state that experienced a targeted retraction of clinical services.

Precipitated by ongoing fiscal constraints, the South Carolina Department of Health and Environmental Control (SCDHEC), the state's public health agency, experienced notable reductions in the capacity for providing reproductive health services delivered through family planning clinics. This created a natural experiment to examine the impact of clinical capacity reductions on service continuity and health outcomes.

Our findings suggest that reductions in clinical capacity did result in some level of service disruption over time, but the differences between counties were marginal. Variations in selected outcomes over time were also evident, but observed differences mirrored larger state-level trends across all counties, regardless of whether or not local health departments reduced capacity. The remainder of the research brief further details our findings.

Key Findings

- ***Some level of service disruption was evident in counties that reduced clinical capacity for family planning services***
- ***The impact of service disruptions on selected outcomes was marginal, with observed changes over time mirroring larger state level trends***
- ***Select counties were able to close clinics and successfully transition women to other sources of care***
- ***Reducing clinical capacity without closing a clinic can be as disruptive as closing a clinic***
- ***Local Health Departments fulfilling an assurance role is critical when capacity is reduced – even if a closing does not occur***

Methodology

Qualitative

A series of key informant interviews were conducted with individuals who were well situated to provide program and policy context to the research project. These interviews were conducted before and after analysis to gain additional context on study findings.

Quantitative

Study Population - A rolling panel of women enrolled in Medicaid between 2001 and 2012 was created and receipt of services/outcomes tracked.

Outcome Variables - Receipt of an annual family planning visit and occurrences of sexually transmitted infections, live births, and repeat pregnancies within 18 months of a previous live birth were examined as outcome variables of interest. An occurrence of each outcome was coded as dichotomous (yes/no) for each year of Medicaid eligibility.

Independent Variables - A typology reflecting changes in a given county's capacity for providing family planning services in local health departments was created and used for analysis. The typology was coded as a four level categorical variable reflecting counties with no significant reduction in capacity and no clinic closing during the study period (NRC/NCC), reduced capacity and at least one documented clinic closing (RC/CC), reduced capacity but no documented clinic closing (RC/NCC), and finally no reduced capacity but a documented clinic closing (NRC/CC). A threshold of a >30% reduction in caseload at the county level over the course of the study period was used to define reduced capacity.

Analysis - We estimated multivariate generalized estimating equation models (GEEs), which examined difference in the population-averaged probabilities (marginal means) for each outcome and a given set of covariates. Population-averaged probabilities reflect only those women enrolled in Medicaid in a given year. Covariates and interactions used in the analysis were consistent across the models, with time, county typology, and their interaction as the key predictor variables. The Stata margins command was used to estimate the marginal effects of county typology on the selected outcomes.

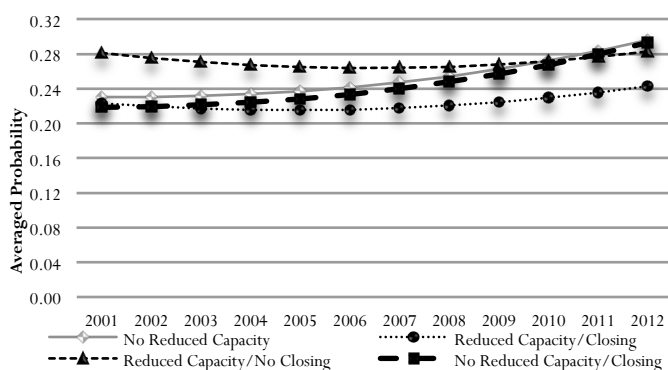
Findings

Approximately 325,269 unduplicated women were included in the panel. Representation of women across each county typology was evident. Approximately 19.13% of resided in a (NRC/NCC) county, while 17.96% resided in (RC/CC) counties. A higher proportion of women (35.86%) resided in (RC/NCC) counties and 27.05% in counties with (NRC/CC).

Annual Visits

On average, 25.18% of women received an annual visit in a given year. As noted in Table 1, improvement in receipt annual visits over time was noted (0.003 95% CI=0.002|0.004, $p < 0.001$) statewide. Observed improvements were driven by changes in counties that did not reduce capacity, even when clinics (Figure 1).

Figure 1: Adjusted Average Probability of Annual Visits



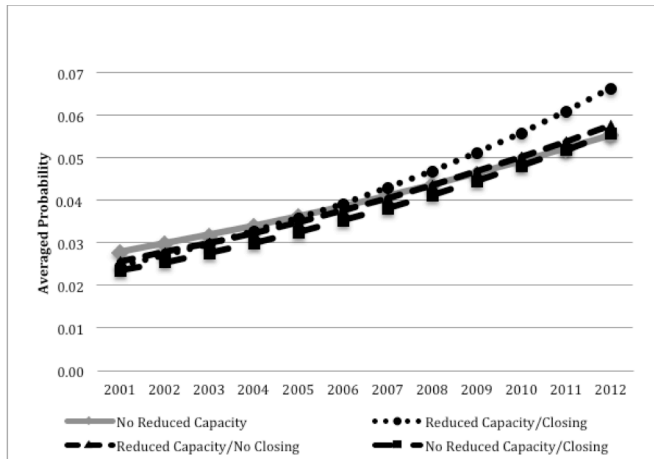
These findings suggest counties that reduced capacity for family planning services were not able to keep pace with increasing demands for services as enrollment increased with the recession, relative to their counterparts.

Sexually Transmitted Infections (STI)

Approximately 4% of the study population experienced an STI in a given year. On average, occurrences of STI have increased steadily over the duration of the study period (0.058 95% CI=0.051|0.065; $p < 0.001$). A noticeable increase in the trajectory of STI occurrences was observed in counties that reduced capacity and closed family planning clinics, relative to those with no reductions in capacity or clinic closings (0.029, 95% CI=0.017|0.042; $p < 0.001$).

Although the marginal effects reducing capacity and closing a clinic on the likelihood of STI occurrences were notable the magnitude of the difference is relatively small (Figure 2).

Figure 2: Average Adjusted Probability of STI Occurrences



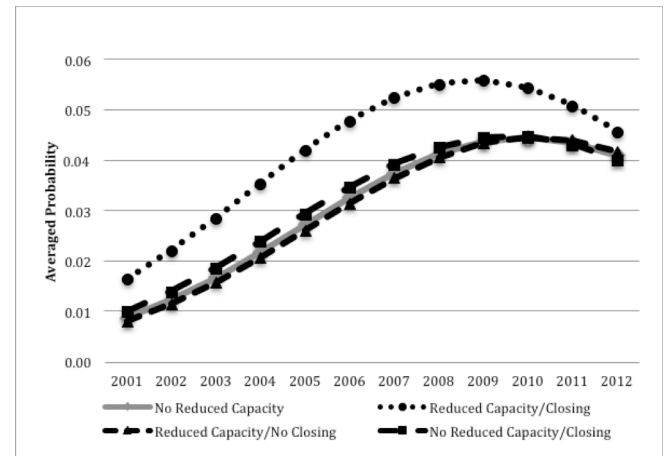
Live Births

On average, 9.2% of the study population had a live birth in a given year. Observed differences in live births among counties were not particularly compelling. Our findings suggest that as a whole, the averaged probability of having live birth increased statewide (0.079 95% CI= 0.069|0.089, $p < 0.001$), with some slowing of the trends towards the end of study period. In counties that reduced capacity and closed a clinic, occurrences of live births remained relatively stable over the duration of the study period. Conversely, averaged probabilities increased on the remaining counties, including counties that with no reduced capacity and no clinic closings.

Repeat Pregnancies

For approximately 3.5% of the study population, a repeat pregnancy within 18 months of a previous live birth occurred. Interestingly, the likelihood of having a repeat pregnancy in counties with reduced capacity and a clinic closing over time decreased, compared to counties with no reduced capacity or closings (-0.048 95% CI= -0.063|-0.033; $p < 0.001$). However, the marginal effects tell a somewhat different story. During the middle years of the study period the averaged predicted probabilities of experiencing a repeat pregnancy increased substantially relative to the other counties, but converged by the end of the study period.

Figure 3: Average Adjusted Probability of Repeat Pregnancies



Summary

As the national paradigm for public health services continues to shift towards a more population-based model, there is a tremendous need to understand what happens to access to care and outcomes when local health department are no longer providing clinical services.

As expected, we found a decrease in the receipt of annual visits among women residing in counties with notable reductions in clinical capacity for family planning services, regardless of whether a clinic was closed as part of the reduction strategy. It is important to note that the maximum difference in population-averaged probabilities of having an annual visit between across the counties at any point during the study period was approximately 6%. The degree to which this value is practically relevant warrants consideration.

We also found some evidence of differences in population-averaged probabilities for selected outcomes over time, particularly in counties experiencing both reduced capacity and a clinic closing. Importantly however, the observed patterns for all outcomes over time are very similar across across all the counties, which tends to present a less compelling case for reduced capacity having a direct influence on observed outcomes.

With the exception of STIs, averaged probabilities in across counties tended to converge by the end of the study period, which could reflect more stable service equilibrium statewide.

Local Health Departments and Clinical Services for Family Planning

Policy Implications

State and local health departments are under increasing pressure to adopt a more population-based services delivery model focused on the core function of assessment, policy development, and assurance. Many state and local health departments actively providing direct clinical services may find the transition to be difficult, particularly in underserved communities. The complete abandonment of clinical services may not be feasible in some communities. Selected retraction of clinical services, as observed in our study, may reflect a more probable scenario for many local health departments. Our research provides important contributions to policy discussions on the organization and delivery of public health services.

- Our findings suggest that selected reductions in capacity for clinical services will likely have an effect on service utilization, but the impact of these changes on population-based health outcomes may not particularly compelling when examined in the context of larger trends.
- It is important for local health department's to fulfill an assurance role even when capacity is reduced – not just when clinics close.
- Distinct guidance on the competencies necessary for state and local health departments to adequately assume an assurance role within the larger healthcare system as these transitions occur is needed – particularly in rural areas and medically underserved areas.

Table 1: Results from Multivariate Analysis of Outcomes by County Family Planning Capacity Typology

	Annual Visits	Sexually Transmitted Infections	Live Births	Repeat Pregnancies
	Coef (95% CI)	Coef (95% CI)	Coef (95% CI)	Coef (95% CI)
Year	0.003 (-0.004 – 0.010)	0.063 (0.049 – 0.078)	0.079 (0.069 – 0.089)	0.414 (0.393 – 0.435)
Year ^2	0.003 (0.002-0.004)	0.000 (-0.001 – 0.001)	-0.003 (-0.004 – -0.002)	-2.011 (-0.022 – -0.020)
County Typology				
NRC/NCC	Reference	Reference	Reference	Reference
RC/CC	-0.021 (-0.063 – 0.020)	-0.159 (-0.255 – -0.063)	0.518 (0.463 – 0.572)	0.686 (0.563 – 0.809)
RC/NCC	0.321 (0.291 – 0.351)	-0.099 (-0.164 – -0.035)	-0.036 (-0.079 – 0.007)	-0.096 (-0.196 – 0.005)
NRC/CC	-0.079 (-0.112 – -0.045)	-0.197 (-0.270 – -0.124)	0.061 (0.015 – 0.108)	0.151 (0.043 – 0.259)
County Typology*Year				
NRC/NCC	Reference	Reference	Reference	Reference
RC/CC	-0.022 (-0.028 – -0.017)	0.029 (0.017 – 0.042)	-0.037 (-0.045 – -0.030)	-0.048 (-0.063 – -0.033)
RC/NCC	-0.032 (-0.037 – -0.028)	0.012 (0.003 – 0.020)	0.002 (-0.004 – 0.008)	0.009 (-0.003 – 0.020)
NRC/CC	0.005 (0.001 – 0.010)	0.017 (0.008 – 0.027)	-0.011 (-0.018 – -0.005)	-0.015 (-0.028 – -0.002)
Intercept	-1.203 (-1.236 – -1.170)	-4.077 (-4.148 – -4.005)	-3.077 (-3.124 – -3.029)	-5.191 (-5.299 – -5.083)

Bold significant at p<0.05

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