

Economic and Spatial Analysis of Rural Health Clinic Closures

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Purpose

Rural Health Clinics (RHCs) are an integral part of rural healthcare infrastructure as they help to address access to care for rural Medicare and Medicaid beneficiaries by providing primary healthcare services in 45 states for over 7 million underserved rural residents.^{1,2} However, reimbursement, regulatory and policy changes have created additional challenges for new and existing RHCs. This policy brief was completed in partnership with the National Association of Rural Health Clinics (NARHC) to address and analyze the challenges RHCs face and the effects of disparate Medicare reimbursements for RHCs.

Background

In many rural communities, primary healthcare services are delivered at RHCs.³ The Rural Health Clinic Services Act of 1977 (Public Law 95-210) was enacted to address an inadequate supply of physicians serving Medicare patients in rural areas and to increase the use of nurse practitioners (NPs) and physician assistants (PAs).⁴ Today, there are 4,245 rural health clinics actively providing primary healthcare services to rural underserved communities.⁵ RHCs can be either independent (not attached to a hospital such as a freestanding physician or group owned clinic) or provider-based (attached to a hospital).^{1,2,4} Since the research conducted in 2010, there has been a significant shift in the number of independent RHCs to provider-based RHCs. Of the 4,245 rural health clinics, 39 percent are independent, and 61 percent are provider-based clinics.

Despite RHCs' historic role of serving rural communities, RHCs face challenges that impact their ability to provide health services to vulnerable rural populations.¹ One of the challenges RHCs face is disparate Medicare reimbursement rates. Presently, RHCs receive a flat-rate payment for every "visit" they receive from a patient. The flat rate payment is based on the average cost per visit.⁵ A visit is defined as a "medically necessary face to face encounter between a physician, nurse practitioner, physician assistant, certified nurse midwife, clinical psychologist, or clinical social

Key Findings

- Forty-nine percent of the 4,245 active Rural Health Clinics (RHC) are in states that did not expand Medicaid under the Affordable Care Act, but 65% of Rural Health Clinic closures between January of 2012 and June of 2018 came in states that did not expand Medicaid.
- Since 2012, there have been 388 rural health clinic closures of which 64% are independent RHCs (not affiliated with a hospital); three times the rates of provider-based RHC's
- Since 2012, 312 independent RHCs have transitioned to provider-based (hospital owned) RHCs.
- Since 2010, the number of provider-based RHC's (affiliated with a hospital) have increased dramatically due, in large part, to no cap reimbursement rates policy
- The closures impacted over 3.86 million individuals living in rural and underserved areas.
- The total estimated economic impact of rural health clinic closures since 2012 is 3,667 total jobs lost and \$284,048,661 in total payroll lost.
- 60% of closed independent rural health clinics were within five miles of an active provider-based rural health clinic.

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worker and a patient.”^{5,6} At this time, there are two different reimbursement rates for independent RHCs and provider-based RHCs with fifty or more beds and provider-based RHCs with less than fifty beds. Independent RHCs and provider-based RHCs with fifty or more beds have a reimbursement cap rate of \$83.45 in 2018, while provider-based RHCs with less than fifty beds have no reimbursement cap.^{5,6} The disparity in reimbursement rates creates challenges for independent and provider-based RHCs with more than fifty beds because the rate has not been adjusted for the significant growth in healthcare costs.⁶ This policy brief discusses and analyzes the effects of disparate reimbursement rates to determine how they have influenced RHC closures.

Methodology

Currently, no standardized or regulated data source tracks independent or provider-based RHC closures or provider-status changes. However, the Center for Medicaid and Medicare (CMS)-Point of Service (POS) file and Quality, Certification, and Oversight Reports (QCOR) actively collect data on RHC closures and transitions using program termination codes. However, the data collected by both the CMS POS file and QCOR does not explain why an RHC may receive a merged or closed program termination code. Further research into the closed/merged program termination code utilized by the CMS POS file and QCOR shows that an RHC may receive the code for the following reasons: change of address, facility name change, a change in healthcare delivery model (Fee for service, FQHC, or independent and provider-based), or facility closure or merger. Therefore, the following methodology was established to determine the number of closed RHCs and provider status changes, analyze if disparate Medicare reimbursement rates influence RHC closures or provider status changes and to measure the economic impact RHC closures have upon rural communities.

In order to analyze if disparate Medicare reimbursement rates influence RHC closures, it is necessary to determine the number of RHC closures and provider-status changes. The CMS POS file from June 30, 2018, was utilized to create a list of RHCs that had closed or had transitioned. As stated previously, the CMS POS file tracks RHC closures and provider status changes by issuing program termination codes. There are five program termination codes, which the CMS POS file uses to determine if an RHC is open, closed, or has had a recent status change. Due to significant healthcare policy changes after the enactment of the Affordable Care Act (ACA), only those RHCs that were coded as closed or merged from 2012 to 2018 were included in the study. For this study, an RHC closure is defined as a clinic that has closed at a distinct address and did not reopen at a previous or new address from 2012 to 2018. If an RHC opened in the same location as a closed/merged RHC from 2012 to 2018, it was considered an open clinic and removed from the RHC closed list. If an RHC moved locations but received a closed/merged RHC code due to an address change, it was considered an open clinic and removed from the RHC closed list. By utilizing this definition, when compared to the CMS POS file or QCOR, the number of closed/merged RHCs is significantly less (**See Appendix 1**). For example, using the above RHC closure definition, 388 RHCs that received a closed/merged program termination code were closed facilities (**See Figure 1**), and the remaining were still operating but had received the code due to an address change, facility name change, or had converted to one of two other types of healthcare facilities: 1) Provider-based RHCs, or 2) Federally Qualified Healthcare Center. Of the remaining that were still in operation, our research found that 51 had converted to an FQHC, 310 had transitioned from independent to provider-based RHC, and five had transitioned from provider-based to independent.

After compiling the list of closed and active RHCs, a QA/QC process was completed using Geographic Information Systems (GIS). Utilizing the definition of a closed RHC, a spatial analysis was conducted to determine the distance between active and closed rural health clinics. If the distance between an active and closed rural health clinic was zero miles, it was reviewed to determine if service was provided at the location. If service was provided at the location, the RHC was removed from the list of closed RHCs with a note stating why the clinic was listed as closed. Next, the remaining closed rural health clinics with a location that did not match an active RHC were compared to the active list of

Federally Qualified Health Clinics (FQHCs) using the same methodology as above. In addition to utilizing GIS for the QA/QC process, it was also utilized to determine if independent RHC closures were influenced by an active provider-based RHC with less than fifty beds within five miles.

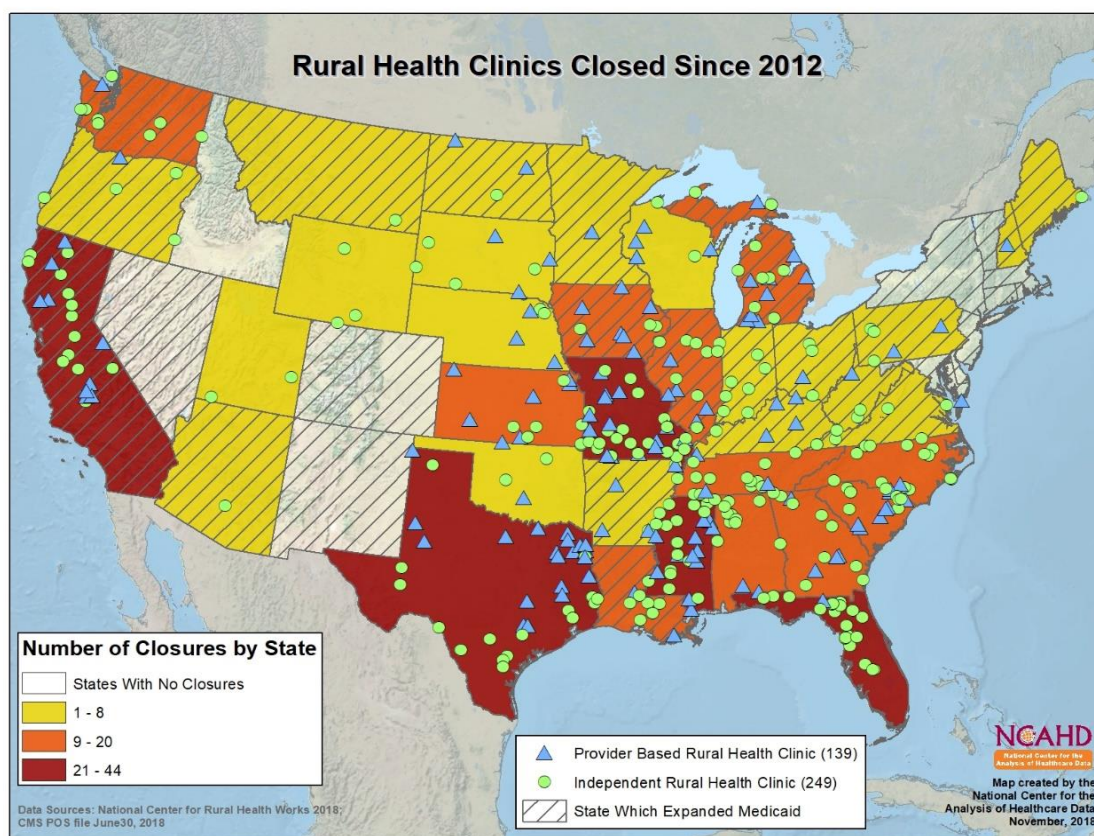


Figure 1: Rural Health Clinics Closed Since 2012

In addition to measuring how disparate Medicare reimbursements influence RHC closures, an analysis of how Medicaid expansion has impacted RHC closures must be considered as RHCs serve both Medicare and Medicaid beneficiaries.¹ A Two-Tailed Fisher's Exact Test (summing small p-values) was conducted to determine whether there was a significant interaction effect between the Medicaid expansion status of a state and the percentage of RHC closures. The Two-Tailed Fisher's Exact Test was conducted instead of a chi-squared test because it provides an exact p-value as opposed to the Chi-squared approximation.

After determining the interaction effect between the Medicaid expansion status of a state and the percentage of RHC closures, a two-sample t-test was conducted. The two-sample t-test determines if there is a statistical difference between closure rates in states that expanded Medicaid and those that did not and if there is a difference between the closure rate of independent RHCs and provider-based RHCs. Additionally, a one-sample t-test was conducted to test the significance of the difference in rates of independent RHCs becoming provider-based RHCs in states that expanded Medicaid versus states that did not. The same test was conducted to determine the difference in rates of independent and provider-based RHCs becoming FQHCs.

Finally, to measure the economic impact of RHC closures, the NCRHW's Rural Health Clinic economic impact model was utilized to measure both the financial and job loss relative to closures (See Appendix 2 – **NCRHW Economic Impact of Rural Health Clinics**).

Results

Since 2012, 388 RHCs have ceased operations impacting 3.87 million residents living in rural communities (**Table 1**). Of the 388 RHC closures, 64 percent were independent clinics (249), and 36 percent were provider-based RHCs (139). Moreover, independent RHCs make up 39 percent of active RHCs. However, 13.2 percent of independent RHCs have closed, almost three times the rate of provider-based RHC closures (5.35%). The two-sample t-test yielded a p-value of $p < 0.0001$, which indicates a significant difference in the closure rates between independent and provider-based RHCs. In addition to the significant difference in closure rates, the spatial analysis found that 60 percent of closed independent RHCs were within five miles of an active provider-based RHC.

Status	Provider-Based	Independent
Active	2601	1644
Closed	139	249

Table 1: Active and Closed Rural Health Clinics

Presently, 52 percent of active RHCs are in states that expanded Medicaid and 48 percent of RHCs are in states that did not expand Medicaid. Furthermore, 65 percent of RHC closures occurred in states that did not expand Medicaid. Additionally, the closure rate of states that did not expand is about 11 percent, which is twice the closure rate (5.8%) in states that did expand Medicaid (See **Figure 2** for state-specific detail). A t-test was conducted to determine if there was a significant difference in rates of closures in states that expanded Medicaid and those that did not. The t-test yielded a p-value < 0.0001 , which indicates there is a significant difference in the rates of closures in states that expanded Medicaid and those that did not. It is possible that the expansion of Medicaid stabilized independent and provider-based RHCs despite disparate Medicare reimbursements.

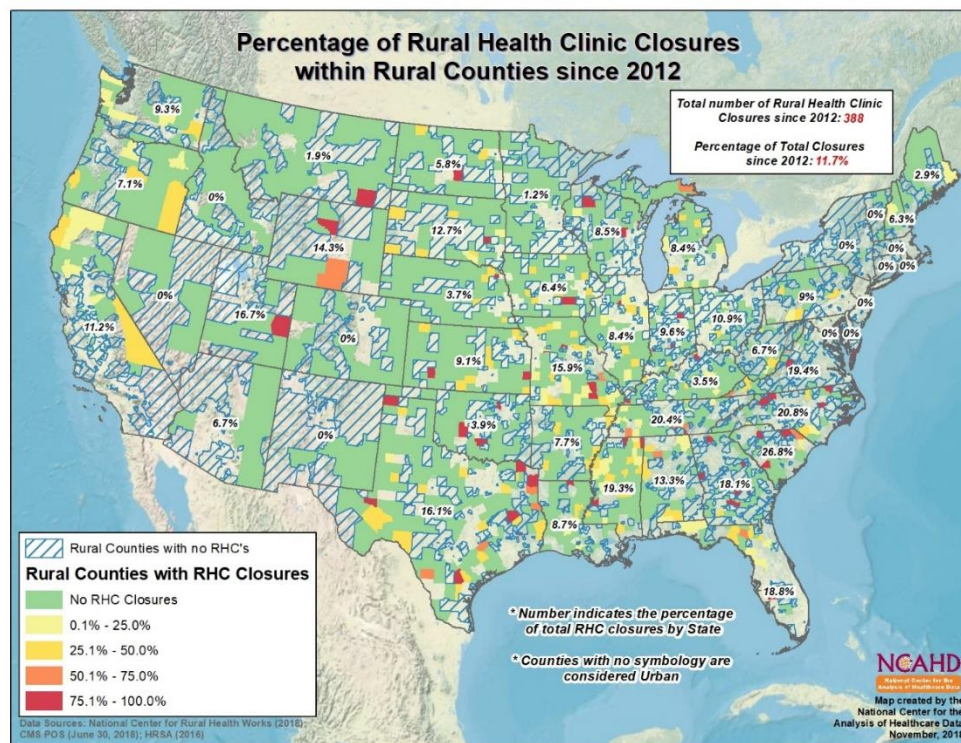


Figure 2: Percentage of RHC Closures within Rural Counties Since 2012

Moreover, 310 independent RHCs changed provider status and became provider-based clinics from 2012 to 2018 (**Table 2**). Fifty-five percent or 172 independent RHCs provider status changes occurred in states that did not expand Medicaid. A t-test was conducted to determine if there was a difference in independent RHCs becoming provider-based in states that expanded Medicaid and those that did not yield a p-value of <0.0521. The result of the t-test does not provide sufficient evidence to conclude that there is a difference in independent RHCs becoming provider-based RHC in states that expanded Medicaid and those that did not. The result suggests that it is unlikely that Medicaid expansion status is related to whether an independent RHC becomes a provider-based RHC.

	Transitioned from Independent to Provider Based	Transitioned from Provider-Based to Independent	Transitioned from RHC to FQHC
Totals	310	5	51

Table 2: Provider Status Changes

Furthermore, 51 RHCs became FQHCs from 2012 to 2018. The t-test found that FQHC transitions were significantly more common in states that expanded Medicaid, with a p-value of 0.005. However, there was no statistically significant difference between the FQHC transition rates between provider-based and independent RHCs, with a p-value of 0.1136

The Fisher's Exact Test was utilized to determine if there was an interaction effect between Medicaid expansion and the rate of RHC closures among independent versus provider-based RHCs. The Fisher's Exact Test yielded a p-value of 0.9118. The result of the test does not provide sufficient evidence to conclude that there is an interaction effect between Medicaid expansion status and the rate of RHC closures among independent clinics versus provider-based clinics. It is noted that 64 percent of the clinics that closed in states that expanded Medicaid were independent clinics, while 65 percent of independent RHC closures were in states that did not expand Medicaid. The above result suggests that Medicaid expansion impacted both independent and provider-based clinics similarly and whether or not a state expanded Medicaid does not explain the disparity in closure rates between independent and provider-based RHCs.

Economic Impact of Rural Health Clinic Closures

The closure of RHCs can have a detrimental economic impact on the communities they serve. Previous research conducted by NCRHW found that on average an RHC employs about 7.27 full-time employees (FTE); this includes physicians, physician assistants, nurse practitioners, nurses, and additional support staff such as office staff, social workers, clinical psychologists, and visiting nurses to homebound patients (**Appendix 2**).³ The average payroll impact of an RHC is \$600,069.³ A weighted average of the direct jobs and payroll impact was utilized to account for both RHCs with and without a physician. In order to calculate the job and payroll impact of RHC closures since 2012, the number of RHC closures was multiplied by the weighted average number of employees and payroll to obtain the direct employment and payroll impact of RHC closures. Utilizing the average multiplier from the previous study yielded a total economic loss of 3,667 jobs and \$284,048,661 in payroll (wages, salaries, and benefits) (**Table 2.**). This result represents a significant economic loss in communities that need jobs, revenue, and healthcare services the most.

	Direct Impact	Multiplier	Total Impact
Average # of RHC Employees	2,821	1.3	3,667.30
Average Payroll Impact	\$ 232,826,772	1.22	\$ 284,048,662

Table 3: The National Economic Impact of RHC Closures

Conclusions

When an RHC closes, a community not only loses jobs and revenue, it also loses access to healthcare services, especially in rural and underserved areas. Since 2012, 388 RHCs have closed impacting over 3.86 million residents, with a total economic loss of 3,667 jobs and \$284,048,662 in payroll.

Of the 388 RHC closures, 64 percent were independent RHCs (not attached to a hospital such as a freestanding physician or group owned clinic), and 36 percent were provider-based RHCs (affiliated and adjacent to hospital) with the independent RHCs closing at three times the rate of provider-based RHCs. Another important fact that was discovered through our spatial analysis was that 60 percent of the closed independent RHCs were within five miles of an active provider-based RHC. Additionally, 310 independent RHCs became provider-based RHCs between 2012 and 2018 and 51 RHCs became FQHCs.

The shift from independent to provider-based RHCs has been in large part due to the difference in Medicare reimbursement rates between independent RHCs and provider-based RHCs. Since the provider-based RHCs affiliated with hospitals that have less than fifty beds have no cap but the independent RHCs have a reimbursement cap of \$83/visit. The difference in Medicare reimbursement rates has led many independent RHCs to sell or convert their practices from independent RHCs to provider-based RHCs; this is especially apparent in states that did not expand Medicaid. In states that expanded Medicaid independent RHC closures and provider-status changes occurred at a reduced rate. This results may in part be due to RHCs increasing the number of Medicaid patient in order to subsidize Medicare patients in the community. Whereas in states that did not expand Medicaid, independent RHCs cannot increase the number of Medicaid patients to subsidize Medicare patients leading independent RHCs to close or transition to provider-based RHCs.

Our research indicates that the disparate reimbursement rates creates a strong disincentive for continued operation of provider-owned Rural Health Clinics in favor of small-hospital owned RHCs. This should be viewed as a real disincentive for healthcare workforce recruitment and retention into rural and underserved areas. Therefore we are recommending a policy that would create more equitable reimbursement rates for both provider-based and independent RHCs which would lead to a slowing of the RHC per visit growth rate from an average annual rate of approximately 10 percent to a rate closer to 3 percent.

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**Appendix 1: Comparative Analysis in the Data Differences between the
QCOR, CMS POS file and NCRHW Research**

State	QCOR Status 1-Closed or Merge (September 30, 2018)	CMS' POS Indicates Status-Closed or Merge (June, 2018)**	NCRHW Research Indicates Closed (November 2018)**	NCRHW Transitioned into a Provider-based clinic	NCRHW RHC transitioned into a FQHC	NCRHW Other (NameChange /AddressChange/Ownership Change/StillOpen/Other)
Alabama	27	25	11	7	1	6
Alaska	0	0	0	0	0	0
Arizona	2	2	1	0	0	1
Arkansas	17	15	6	1	3	5
California	68	65	22	7	8	28
Colorado	12	12	0	0	0	12
Connecticut	0	0	0	0	0	0
Delaware	0	0	0	0	0	0
Florida	34	30	24	0	0	6
Georgia	29	27	14	0	0	13
Hawaii	0	0	0	0	0	0
Idaho	7	7		1	0	6
Illinois	46	42	15	0	0	27
Indiana	22	22	7	0	0	15
Iowa	17	16	10	0	0	6
Kansas	35	35	14	6	0	15
Kentucky	20	20	5	1	5	9
Louisiana	17	17	9	2	2	4
Maine	6	5	1	3	0	1
Maryland	0	0	0	0	0	0
Massachusetts	0	0	0	0	0	0
Michigan	50	44	18	9	0	17
Minnesota	7	7	1	4	0	2
Mississippi	61	55	32	0	0	23
Missouri	99	94	44	9	1	40
Montana	3	3	1	0	0	2
Nebraska	14	14	5	7	0	2
Nevada	0	0	0	0	0	0
New Hampshire	1	1	1	0	0	0
New Jersey	0	0	0	0	0	0
New Mexico	3	3	0	0	1	2
New York	4	0	0	0	2	0
North Carolina	34	32	15	4	2	11
North Dakota	10	10	3	0	1	6
Ohio	5	5	5	1	0	0
Oklahoma	10	10	3	0	2	5
Oregon	12	12	5	0	0	7
Pennsylvania	11	9	5	0	0	4
Rhode Island	0	0	0	0	0	0
South Carolina	44	44	19	6	1	18
South Dakota	11	9	7	3	0	0
Tennessee	32	31	15	0	0	16
Texas	73	68	38	8	2	20
Utah	4	4	2	0	0	2
Vermont	5	5	0	0	2	3
Virginia	25	22	7	6	1	8
Washington	25	25	10	1	3	11
West Virginia	6	6	3	0	2	1
Wisconsin	10	8	7	0	0	1
Wyoming	3	3	3	0	0	0
National	921	864**	388	86	39	351

Appendix 2: Estimate the Annual Economic Impact of an Independent Rural Health Clinic



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October 2016
Research Study

Estimate the Annual Economic Impact of an Independent Rural Health Clinic

Fred C. Eilrich, Gerald A. Doeksen, and Cheryl F. St. Clair, National Center for Rural Health Works

Key Findings

- In addition to their medical contribution, independent RHCs contribute economically to the community and surrounding area.
- The total estimated annual economic impact of an independent RHC was 12.6 local jobs and \$1,009,299 in wages, salaries and benefits.
- Smaller RHCs often contract physician services. The total estimated impact of an independent RHC without an FTE employed physician was 6.3 local jobs and \$454,871.
- Tools are now available that enable community leaders to estimate the annual economic impact of their rural health clinics.

Background

In many rural communities, health services are delivered at Rural Health Clinics (RHCs.) The Rural Health Clinic Services Act of 1977 (Public Law 95-210) was enacted to address an inadequate supply of physicians serving Medicare patients in rural areas and to increase the use of nurse practitioners (NPs) and physician assistants (PAs.)¹ The legislation had two main goals: improve access to primary health care in rural, underserved communities; and promote a collaborative model of

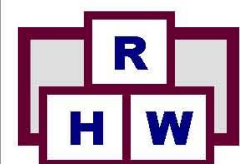
health care delivery using physicians, nurse practitioners and physician assistants. The Act authorized special Medicare and Medicaid payment mechanisms.²

There are over 4,000 RHCs nationwide providing access to primary care services in rural areas. RHCs can be either independent (freestanding owned by a provider) or provider-based (integral and subordinate part of a hospital.)³ The U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS) February 2015 report showed forty-two percent of RHCs operated as independent clinics while the other 58 percent were provider-based.⁴ Labor at many provider-based RHCs are shared with the associated hospitals and an accurate determination of the RHC portion of employment and compensation could not be attained from the CMS cost report data. Therefore, provider based RHCs were not included in this analysis.

Purpose of the Study

RHCs contribute to a strong health sector by providing necessary health services in rural areas. In addition to providing health care, RHCs contribute economically to rural communities by providing employment opportunities and labor income. Labor income is the wages, salaries and benefits paid to the RHC employees. It also includes contract

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Estimate the Annual Economic Impact of an Independent Rural Health Clinic

physician services and/or physician supervision/oversight income. Maintaining a strong viable local economy is difficult without a strong quality health sector. The objective of this study is to estimate the average direct and secondary employment and labor income impacts on a rural community from an independent RHC. The results provide a template allowing local leaders the capacity to apply local data and estimate the annual economic impact of an independent RHC given their specific conditions.

Scope of Research

For this study, estimates for two different scenarios were constructed based on CMS cost reports⁵ and data from the U.S. Department of Labor, Bureau of Labor Statistics (BLS).⁶ Data for 1,261 independent RHCs were identified in the CMS cost reports.

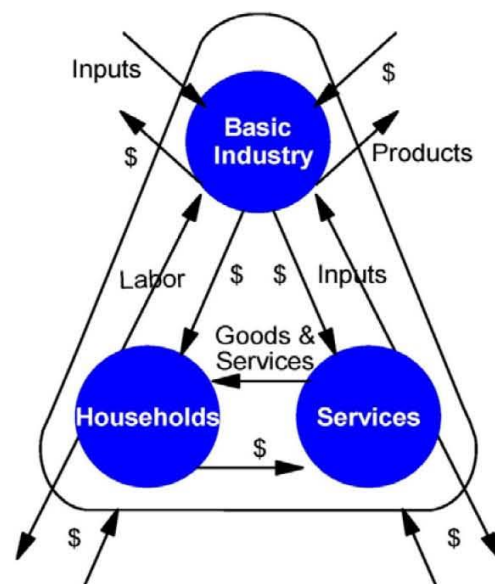
One of the objectives of establishing RHCs was to increase the use of NPs and PAs, particularly in physician shortage areas. Therefore, some RHCs do not employ a primary care physician, but instead only use physicians for supervising and oversight. In cases where primary care physicians are required, these RHCs utilize physicians on a contract basis. The CMS cost reports identify these physician services separately. Estimates for RHCs that did not employ a physician were also analyzed. CMS cost report data were available for 218 independent RHCs that utilized contracted physician services only. More specifically, the scope of research is defined as:

Scenario 1-The average economic employment and labor income impacts of an independent RHC. The sample included 1,261 independent RHCs.

Scenario 2-The average economic employment and labor income impacts of an independent RHC with no direct physician employment. The subset included 218 independent RHCs.

Approach

The methodology will estimate the annual economic impact for each scenario. The direct impacts include the employees and labor income at the rural health clinic. The secondary impacts are calculated with an input-output model and data from IMPLAN. (Additional details on the model and IMPLAN data are given in the Appendix.) **Figure 1** illustrates a community economic system. The RHC generates jobs and labor income from revenues. In turn, secondary impacts are created as the RHC and the individuals working for the RHC purchase goods and services within the local economy.



Community Economic System
Figure 1

Figure 1 illustrates that a change in any one segment of a community's economy will cause reverberations throughout the entire economic system of the community.

A multiplier from an input-output model measures the effect created by an increase or decrease in economic activity. The multiplier not only measures the economic activity from the RHC and employees but also includes the economic activity from

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additional business spending and household spending such as the restaurant workers, equipment vendors and others. The model calculates multipliers for employment (in terms of full- and part-time jobs) and labor income (in terms of wages, salaries and benefits). The model generates multipliers that are medical service area-specific due to differences in locally-available goods and services across different states, counties, or zip codes.

Direct Impacts of an Independent RHC

Scenario 1: The average labor incomes for employees of the 1,261 independent RHCs are shown in **Table 1**. Average income for providers (physician, NPs and PAs) was determined from total compensation and full-time equivalent employment (FTE) from the cost reports.

Table 1
Estimated Labor Incomes for
Independent RHC FTE Employees, 2014

	Labor Income
Physician	\$247,143
PA	\$115,413
NP	\$107,636
Nurse	\$54,013
Accounting Staff	\$38,070
Front Desk Staff	\$27,830
Medical Secretary	\$33,530

Source: Centers for Medicare & Medicaid Services Cost Reports, 2014; U.S. Department of Labor, Bureau of Labor Statistics, May 2014.

The CMS cost reports provide compensation but do not include employment for nursing and office staff. Therefore, income estimates for nursing and office staff were obtained from the estimates from BLS 2014 Wage and Salary Estimates.

The national average income was \$68,095 for a registered nurse and \$39,930 for licensed practical and vocational nurses for an estimated total average

income for nurses of \$54,013. Incomes could be slightly less in rural areas but rural specific data are unavailable.

Data in **Table 2** present the direct employment and labor income impacts of the independent RHCs. The number of annual visits averaged 9,654. The average RHC compensations for nursing and office staff from the cost reports were divided by the BLS 2014 Wage and Salary Estimates to estimate average employment. A small number of independent RHCs include health services from clinical psychologists, social workers and visiting nurses to homebound patients. The compensation for these services was minimal and included in additional staff with office employees. The estimated direct impacts for a rural health clinic were 9.66 jobs and \$827,294 labor income.

Table 2
Estimated Direct Impacts on Employment and
Labor Income from Independent RHC, 2014

	Employment	Labor Income
Physician	1.12	\$276,800
PA	0.41	\$47,319
NP	0.86	\$92,567
Nurse	1.83	\$98,827
Additional Staff	5.44	\$216,848
Benefits	—	<u>\$80,890</u>
Subtotal	9.66	\$813,251
Contract Physician		49,622
Physician Supervision	—	<u>44,421</u>
Total	9.66	\$827,294

Source: Centers for Medicare & Medicaid Services Cost Reports, 2014; U.S. Department of Labor, Bureau of Labor Statistics, May 2014.

Scenario 2: From the total sample, 218 independent RHCs were identified as having no employed physicians. The same methodology was applied to this group of smaller RHCs (4,753 annual visits) to

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estimate the total annual economic impacts. **Table 3** shows the estimated labor incomes for these RHCs that are typically located in less populated areas. Labor estimates for PAs and NPs were slightly less compared to the full sample. Again, BLS estimates for rural are not available so the same estimates for nurses and office staff were used.

Table 3 Estimated Labor Incomes for Independent RHC FTE Employees, 2014	
	Labor Income
PA	\$111,825
NP	\$105,795
Nurse	\$54,013
Accounting Staff	\$38,070
Front Desk Staff	\$27,830
Medical Secretary	\$33,530

Source: Centers for Medicare & Medicaid Services Cost Reports, 2014; U.S. Department of Labor, Bureau of Labor Statistics, May 2014.

The estimated direct employment and labor income impacts of an independent RHC without an employed physician are shown in **Table 4**. The results demonstrate the increased use of NPs and contracted physician services. The decreased number of office staff indicates the smaller size of these RHCs.

The estimated direct impacts were 4.88 jobs and \$372,845 labor income.

Total Impacts of an Independent RHC

As stated earlier, the direct employment and direct labor income will further benefit the community by generating secondary jobs and income. Data in **Table 5** present the total annual employment and labor income impacts of the RHC that occur throughout the local area as the RHC and staff purchase goods and services. The secondary employment and labor income are created in other businesses. The additional employment and labor

income can be estimated with multipliers from an input-output model using data from IMPLAN.

Table 4
Estimated Direct Impacts on Employment and Labor Income from Independent RHC w/o employed Physician, 2014

	Employment	Labor Income
PA	0.24	\$26,838
NP	1.02	\$107,911
Nurse	0.78	\$41,917
Additional Staff	2.84	\$119,457
Benefits	—	<u>\$32,418</u>
Subtotal	4.88	\$328,502
Contract Physician		32,418
Physician Supervision	—	<u>11,925</u>
Total	4.88	\$372,845

Source: Centers for Medicare & Medicaid Services Cost Reports, 2014; U.S. Department of Labor, Bureau of Labor Statistics, May 2014.

Table 5
Estimated Total Annual Impact on Employment and Labor Income from an Independent RHC, 2014

	Direct Impact	Multiplier	Total Impact
Aggregate (n=1,261)			
Average Visits = 9,654			
Employment	9.66	1.30	12.56
Income	\$827,294	1.22	\$1,009,299
w/o FTE Physician (n=218)			
Average Visits = 4,752			
Employment	4.88	1.30	6.34
Income	\$372,845	1.22	\$454,871

Source: Centers for Medicare & Medicaid Services Cost Reports, 2014; U.S. Department of Labor, Bureau of Labor Statistics, May 2014.

For this analysis, the employment and income multipliers were averaged from 414 rural counties

Estimate the Annual Economic Impact of an Independent Rural Health Clinic

in 17 states representing the four U.S. Census regions. The RHC employment multiplier of 1.30 estimates that if one job is created by the clinic, then an additional 0.30 full- and part-time jobs are created in other businesses due to the RHC and employee spending. The model calculates multipliers for employment (in terms of full- and part-time jobs) and labor income (in terms of wages, salaries and benefits). The model generates multipliers that are medical service area-specific due to differences in locally-available goods and services across different states, counties, or zip codes.

Using the direct employment and labor income data from **Tables 2 and 4**, an estimate of total labor income and employment created at the RHC can be made. The total direct employment from an independent RHC that employs a physician was 9.66. After applying the multiplier, the total employment impact from the clinic is 12.56 jobs. An independent RHC contracting physician services has an estimated direct employment impact of 4.88. The total employment impact including secondary impacts is 6.34 full-and part-time jobs

The same methodology can be used to estimate total impact to labor income. The RHC labor income multiplier of 1.22 estimates that every dollar of labor income created at the RHC creates an additional \$0.22 of labor income in other business throughout the local area. After applying the multiplier, the total estimated labor income impact for an independent RHC is \$1,009,299 and \$454,871 for an independent RHC with only contracted physician services.

Summary

The importance of an RHC and the medical contribution that it makes to the community can be evident with improvements in residents' health and increased access to primary care services. However, the economic contribution is not typically quantified. The two scenarios presented yielded

estimates of approximately 6.34 to 12.56 local jobs and \$454,871 to \$1,009,299 in labor income (wages, salaries and benefits) from an independent RHC providing primary care to local residents. (Note: these estimates represent economic impacts on jobs and labor income only.)

Template to Measure the Annual Economic Impact of a Rural Health Clinic

The research results provide a template to assist local leaders interested in estimating the annual economic impact of an independent RHC. Local data should be utilized to derive the most realistic estimates for the local community. If local data are unavailable, the national estimates from the previous tables can be used. All assumptions should be closely examined by local decision-makers to verify that they reflect local conditions.

TEMPLATE Estimating the Total Employment and Labor Income Impacts of an Independent Rural Health Clinic

	Direct Impact	Multiplier	Total Impact
Employment	_____	_____	_____
Income	\$ _____	_____	\$ _____

The first step is to estimate the direct employment and labor income from the clinic. After the direct impacts have been determined, the total impacts including secondary impacts can be estimated. Specific county or zip code multipliers are available through IMPLAN and can be generated and utilized to make the results community specific. The State Offices of Rural Health or County/State Extension Offices might be able to assist with county-specific multipliers. If local data are unavailable, the national estimates provided are the average of 414 rural counties located in 17 states representing the four U.S. Census regions. All assumptions should be closely examined by local decision-makers to verify that they reflect local conditions.

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