National Center for Rural Health Works
www.ruralhealthworks.org

August 2014
Research Study

Models to Estimate the Economic Impact of a Rural Nurse Practitioner or Physician Assistant

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Key Findings

- Consideration for increased utilization of NP/PAs for primary care delivery to address increasing demand for services presents challenges. SOP laws, regulatory protocols, reimbursement policies, clinical training, experience and patient health impact the daily patient volume of NP/PAs.
- In addition to their medical contribution, NP/PAs contribute economically to the community, and surrounding area including the hospital.
- Given four sample scenarios, a rural NP/PA can create between 4.4 and 18.5 local jobs and $280,476 to $940,892 in wages, salaries and benefits from the clinic and the hospital.
- Tools are now available that enable community leaders to estimate the economic impact of rural NP/PAs.

Background

Given the increasing emphasis that is being placed on the quality of chronic disease management within primary care and the growing patient population, increased primary care provider visits will become a fundamental challenge as we address our nation's health care needs. Many rural primary care physicians are rapidly becoming high volume appointment based ambulatory chronic care practices with more and more of their hospital admissions going through urgent care centers in urban and suburban settings.[1]

Nurse practitioners (NPs) and physician assistants (PAs), often referred to as mid-level providers or non-physician practitioners, do not replace physicians but are often utilized to augment the management of chronic diseases and prevention. However, in rural non-metro areas that are more likely to have a shortage of health professionals, they can be important providers of rural primary care services. The scope of practice laws which impact how these professionals are allowed to practice vary across states. As defined by the American Association of Nurse Practitioners, “NPs provide a full range of primary, acute and specialty health care services autonomously and in collaboration with health care professionals. They undergo rigorous national certification, periodic peer review and clinical outcome evaluations. NPs are licensed in all states and the District of Columbia and provide high-quality care in rural, urban and suburban communities, in many types of settings including clinics, hospitals, emergency rooms, urgent care sites, and in private physician or NP practices.”[2]

The National Center for Rural Health Works is the National Center for Health Impact Training and the Center for Economic Impact Analysis of selected health policies. The Center provides training and assistance on economic impact, community health needs assessment, and health feasibility studies. For more information, contact Gerald Doeksen at 405-744-9823 or email: gad@okstate.edu.

PAs, as defined by the American Association of Physician Assistants, are nationally certified and state-licensed to practice and authorized to provide medication. "The intense and uniquely designed medical school-type curriculum is geared toward primary care. Furthermore, the PA education prepares PAs to practice in a wide variety of specialties. PAs now participate in the care of patients in settings ranging from neonatal intensive care units to long-term care facilities."[3]

The National Center for the Analysis of Healthcare Data analyzed 2012 state licensure data to estimate the number of NP/PAs practicing in rural areas. The results were that 23 percent of PAs and 24 percent of NPs practiced in rural areas.[4] The increase in Americans gaining access to care through the expansion of coverage under the Patient Protection and Affordable Care Act coupled with an aging population is increasing the demand for primary care services.[5]

Physicians are seeking alternatives to reduce their total time commitment while continuing high quality care for their patients. Based on a hypothetical practice model, the traditional practice model would suggest that a primary care physician would have to spend 21.7 hours per day to deliver all the recommended care services to a patient panel (annual number of patients) of 2,500.[6-8] An alternative practice model of team-based task delegation to properly trained non-clinicians could allow physicians to continue to practice high quality care with a reasonable workday and a large but manageable panel size.[9] In addition, current workforce shortages and access to care concerns are promoting state leaders to investigate greater use of NP/PAs for primary care delivery as an alternative model of care.

Although the utilization of NP/PAs to provide primary care services has been long-standing, many physicians are expanding their utilization of NP/PAs as an additional means to increase revenue while meeting the expanding needs of their patients. A large portion of the revenues create employment opportunities and wages, salaries and benefits for clinical staff, which in turn are returned to the local economy as the clinic employees spend locally. Furthermore, the total economic impact of an NP/PA can be greater than the impact at the clinic when they increase the patient admissions at the local hospital. Often, this is done by recommending patients to their supervising physician for admittance to the hospital thereby, indirectly contributing to the local hospital's inpatient admissions and outpatient referrals. It is through this partnership that additional hospital utilization may occur, creating more jobs and income for the local economy. This report reflects the economic impact that an NP/PA has upon the clinic/hospital and ultimately the community they serve.

Emerging Models of Care

Currently, there is much debate on the best approach to manage the increased primary care demand and how to best utilize NP/PAs. There are many stakeholders currently researching and discussing scope of practice (SOP) issues that will impact health care access, quality and costs including the Institute of Medicine, National Governors Association, health care provider organizations and major consumer groups.[10-12] The American Medical Association supports emerging models of payment for physician led team-based care.[13] New innovations such as patient-centered medical homes and nurse-managed health centers could have an impact as well.[14]

PAs work as members of physician-directed teams. State laws allow providers broad delegatory authority, which fosters customized team care.[15] PAs do not work autonomously. The clinical role of NPs is governed largely by state SOP laws that determine the range of services NPs can provide,

and the extent to which they can practice independently. Many states have either adopted or are in the process of modeling their NP SOP laws to be more consistent with the Advanced Practice Registered Nurse Consensus Model.[16,17] However, state SOP laws still vary widely in the degree of autonomy granted NPs for patient treatment and prescription authority.[18]

Table 1 illustrates some of the differences in practice privileges for NPs due to state regulations. (Note: A similar table for PAs was not available at the time this report was written.) Eighteen states and the District of Columbia do not require physician involvement for an NP to diagnose, treat or prescribe. Nine states currently require only prescription authority from a physician through either a collaborative agreement or written protocols but allow NPs to diagnose and treat primary care patients. The remaining 23 states require physician involvement to diagnose, treat and prescribe.[11,19]

Authorizations as a primary care provider (PCP) and for hospital admissions can impact the volume and type of patients for a PA or NP. Public and private payer-specific laws and policies determine what services can be billed, their payment rates, whether they are designated as PCPs and assigned their own patient panels and whether they can be paid directly.[20]

Many payers set fee schedules lower for NP/PAs. For example the national NP and PA fee schedule from Medicare is 85 percent of the physician fee schedule amount.[21] NPs can be recognized in all 50 states and the District of Columbia as a PCP either by statute or the absence of prohibiting statutes. However, they may not have Medicaid authorization as a PCP. Only 34 states explicitly authorize NPs as a Medicaid PCP

Finally, states can exert some authority over hospital admitting privileges for NPs though nearly all states defer to individual hospitals to set their own policies. Furthermore, even if admission authority is granted, most times collaboration with a physician is required. According to an American Academy of Nurse Practitioners (AANP) survey, only about 43 percent of the NPs in the United States had hospital privileges and just over half of those had admitting privileges.[22,23] The actual number of states or hospitals that allowed admission authority was unobtainable.

Purpose of the Study

The objective of this study is to estimate the economic contributions to employment and labor income from the direct and secondary impacts of a rural primary care NP/PA on the community and surrounding area including the local hospital. The results will be used to create a template that local leaders can apply local data to estimate the economic impact of their NP/PA given their specific conditions and state regulations. The assessment underestimates the total value as the impact is not included from other sectors such as pharmacy and nursing homes. The study also does not reflect the costs that the physician encumbers as a part of his oversight/supervision both in the clinic and the hospital. The study includes impacts from:

- clinic employment and labor income (wages, salaries and benefits), and
- local hospital employment and labor income (wages, salaries and benefits).

Scope of Research

In addition to providing health care, NP/PAs make economic contributions to rural communities. SOP laws, regulatory protocols, reimbursement policies, clinical training, experience and existing patient health demographics impact the daily patient volume of an NP/PA. The Centers for Medicare and Medicaid Services (CMS) full-time equivalent

Table 1
Summary of State Nurse Practitioner Scope of Practice Authority, 2012

	No Physician Involvement Required	Physician Involvement Required		Authorization
State	Treat, Diagnose Prescribe	Prescribe	Treat, Diagnose Prescribe	Medicaid PCP
Alabama			X	
Alaska	X			
Arizona	X			X
Arkansas		X		
California			X	X
Colorado	X			
Connecticut			X	X
Dist of Columbia	X			X
Delaware			X	
Florida			X	
Georgia			X	X
Hawaii	X			X
Idaho	X			
Illinois			X	X
Indiana			X	
Iowa	X			X
Kansas			X	X
Kentucky		X		X
Louisiana			X	
Maine	X			X
Maryland	X			X
Massachusetts		X		X
Michigan		X		
Minnesota			X	X
Mississippi			X	
Missouri			X	X
Montana	X			X
Nebraska			X	
Nevada			X	
New Hampshire	X			
New Jersey		X		X
New Mexico	X			X
New York			X	X
North Carolina			X	X
North Dakota	X			X
Ohio			X	X
Oklahoma		X		X
Oregon	X			X
Pennsylvania			X	X
Rhode Island	X			X
South Carolina			X	
South Dakota			X	
Tennessee		X		X
Texas			X	X
Utah	X			X
Vermont	X			X
Virginia			X	
Washington	X			X
West Virginia		X		X
Wisconsin		X		X
Wyoming	X			X

Source: National Governors Association, December 2012. Data sourced from each state's legislation statutes, administrative codes, board of nursing rules and other relevant regulations, as well as the 2012 Pearson Report.

(FTE) productivity standards for NP/PAs used to determine reimbursement in a Rural Health Clinic (RHC) or Federally Qualified Health Center (FQHC) is 50 percent of annual patient visits for a physician (2,100 vs. 4,200.)[24] Supply and demand projections for primary care practitioners through 2020 by the U.S DHHS, Health Resources and Services Administration's Bureau of Health Professionals (BHPr) applied a 0.75 FTE weight to NP/PAs relative to primary care physicians. The authors noted, "Efficient use of NPs and PAs will require patient and health system acceptance and the continued dissemination of more effective models of workforce deployment."[25] The roles of physician-NP/PA teams continue to evolve in response to physician shortages.

For this study, case studies were constructed based on CMS and BHPr productivity estimates to characterize alternative scenarios and address the regulation differences across states. As detailed earlier, numerous conditions will impact the number of patient visits that an NP/PA will manage. A previous study by Eilrich, et al estimated the economic impact of a rural primary care physician.[26] The productivity percentages will be applied to the results of that study after updating for the most current labor income estimates. ***These scenarios should not be interpreted as the only possible scenarios but rather illustrate a range representing potential differences among NP/PAs and state regulations***. More specifically, the scope of research is defined as NP/PAs practicing rural primary care in the following four example scenarios.

Scenario 1-NP/PAs working collaboratively with a rural primary care physician. Patient activity and hospital activity (economic contribution) from inpatient admissions and/or outpatient referrals is defined as 40 percent of a rural primary care physician. This scenario includes NP/PAs working directly in a primary care physician clinic or a satellite clinic managed by the physician.

Scenario 2-NP/PAs working collaboratively with a rural primary care physician. Patient activity and hospital activity (economic contribution) from inpatient admissions and/or outpatient referrals is defined as 50 percent of a rural primary care physician. This scenario includes NP/PAs working directly in a primary care physician clinic or a satellite clinic managed by the physician.

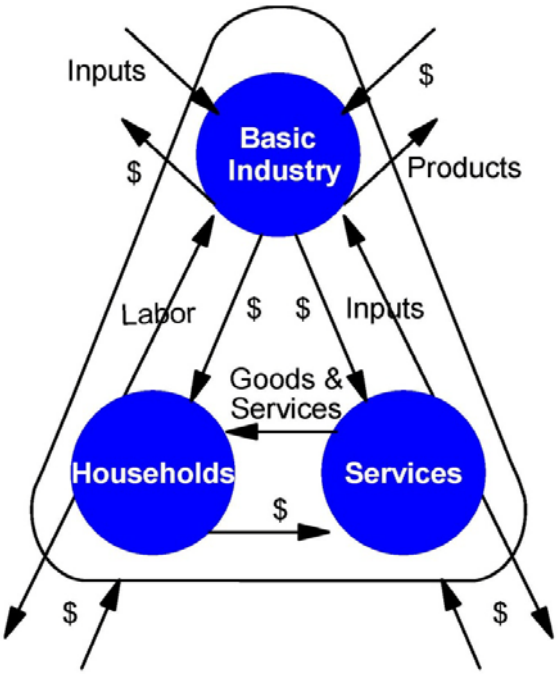
Scenario 3-NP/PAs working collaboratively with a rural primary care physician. Patient activity and hospital activity (economic contribution) from inpatient admissions and/or outpatient referrals is defined as 75 percent of a primary care physician. This scenario includes NP/PAs working directly in a primary care physician clinic or a satellite clinic managed by the physician.

Scenario 4-NPs in a rural clinic, working independently of physician collaboration, delegation or supervision, with patient activity (economic contribution) defined as 75 percent of a primary care physician. This scenario does not include hospital activity.

Approach

The methodology will estimate the economic impact for each scenario. The direct impacts include the employees and labor income at the clinic and when appropriate, the proportionate share of the hospital employees and their labor income. The secondary impacts are calculated with an input-output model and data from IMPLAN. **Figure 1** illustrates a community economic system for a primary care clinic and local hospital. The primary care clinic and local hospital generate jobs and labor income from their revenues. Additional jobs and labor income are created at the hospital through inpatient admissions and outpatient referrals. In

turn, secondary impacts are created as the primary care clinic and the hospital, and the individuals working for the clinic/hospital 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 can measure the effect created by an increase or decrease in economic activity. The multiplier not only measures the economic activity from the physician and hospital employees but also includes the economic activity from additional business spending and household spending such as the restaurant workers, equipment vendors and others.

The model calculates employment (in terms of full- and part-time jobs) and labor income (in terms of wages, salaries and benefits) multipliers. 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.

The Economic Contributions of a Rural Primary Care Physician

Economic contribution is directly related to daily patient volume. As detailed earlier, the daily patient volume of an NP or PA will depend on several factors such as state SOP laws and training. NP and PA patient treatment is normally managed with physician established protocols and collaboration. In many cases, the NP or PA will be part of the patient-care team in a primary care physician clinic. Therefore, it is important to first consider the economic contributions of the primary care physician leading the patient-care team.

The rural primary care study (Eilrich, et al) estimated the economic impacts that a primary care physician provides to a typical rural community from both clinic and hospital activity. The direct impacts from a primary care physician were estimated for the physician's clinic in terms of employment and income (wages, salaries and benefits) from the physician and staff. The staffing mix can vary, but the study assumed three full-time support staff per physician making clinic direct employment of four jobs including the physician. Wage, salary and benefits estimates were from the U.S. Department of Labor, Bureau of Labor Statistics (May 2012). The estimated direct impacts of the primary care clinic are presented in **Table 2**.

The direct impacts that a rural physician has on the community hospital are also given in **Table 2**. Hospitals are an integral part of the local health care system. The community hospital is a major provider of jobs and income in the local community and surrounding medical service area. A strong viable hospital must have support from local physicians to maintain sufficient utilization. Lack of local

Table 2
2012 Estimated Employment and
Labor Income from Rural Primary Care Physician

	Employment	Labor Income
Clinic	4.0[a]	$395,024
Hospital	13.5	$704,444
Total	**17.5**	**$1,099,468**

Source: Labor Income estimates from U.S. Department of Labor, Bureau of Labor Statistics, May 2012; Eilrich FC, Doeksen GA, St. Clair CF. "The Economic Impact of a Rural Primary Care Physician."
[a]Clinic employment includes the primary care physician and medical staff.

physician support will significantly impact the financial stability of the community hospital. In addition to the inpatient visits, physicians can generate significant outpatient activity that increases hospital net revenue.

Hospitals require inpatient admissions and outpatient referrals from physicians and allocate a significant portion of their revenues to employee compensation costs. Therefore, the study assumed that total hospital compensation could be allocated equally to the primary care physicians practicing in the hospital medical service area. Hospital employment and income data from 31 rural hospitals located in 13 different states were averaged to estimate the direct impacts of each physician to the hospital. The estimated employment generated at the hospital was 13.5 employees per physician and $704,444 wages, salaries and benefits from a rural primary care physician's patient referral activity. These data were based on a full-capacity rural primary care physician practice, providing the maximum impact on the local hospital.

Direct Impacts of a Rural NP/PA

For this study, the same approach was used to estimate the impacts of a rural NP/PA. The income estimates for the NP/PA and medical staff were from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) Wage and Salary Estimates for May 2013 and benefits were added at 40 percent from the BLS Employer Costs for Employee Compensation.[27,28]

The national average income was $94,320 for an NP and $94,890 for a PA for an estimated total average income for an NP/PA of $94,605. The estimates for the medical staff were $39,260 for a licensed practical nurse; $30,880 for a medical assistant and $28,190 for a receptionist/information clerk. Incomes could be less in some rural areas but data are unavailable for rural areas.

Four different case scenarios were derived to estimate the diverse state regulations and variation of patient volumes that a NP/PA might manage. The results from the physician study were updated to reflect the latest wages salaries and benefits from BLS and then applied to the four scenarios. The four scenarios were based upon patient volumes related to a percentage of patients managed by a rural primary care physician and when the NP/PA had an impact on the community hospital. **Table 3** presents the results of the four scenarios.

For example in **Scenario 1**, a NP/PA managing 40 percent of the patient volume of a primary care physician would require 40 percent of the staffing requirements and contribute 40 percent of the total number of hospital admissions and outpatient referrals. This approach could be applied to any proportion that best fit the actual situation. **Scenario 4** represents a NP operating a primary care clinic without hospital admission authority. Therefore, the direct impacts would only be generated at the clinic. Total direct employment for the 4 scenarios ranged from 3.3 jobs to 13.4 jobs. The total direct labor income ranged from $235,694 to $764,027.

Table 3
2013 Direct Impact on Employment and Labor Income from Rural NP/PA

	Employment[a]	Labor Income
Scenario 1		
Clinic	2.2	$187,512
Hospital	5.4	$281,778
Total	**7.6**	**$469,290**
Scenario 2		
Clinic	2.5	$201,278
Hospital	6.8	$469,290
Total	**9.3**	**$553,500**
Scenario 3		
Clinic	3.3	$235,694
Hospital	10.1	$528,333
Total	**13.4**	**$764,027**
Scenario 4		
Clinic	3.3	$235,694
Hospital	0.0	$0
Total	**3.3**	**$235,694**

Source: Labor Income estimates from U.S. Department of Labor, Bureau of Labor Statistics, May 2013; Eilrich FC, Doeksen GA, St. Clair CF. "The Economic Impact of a Rural Primary Care Physician."
[a] Clinic employment includes the NP/PA and attributed staff.
Scenario 1: 40% productivity estimate at clinic and hospital
Scenario 2: 50% productivity estimate at clinic and hospital
Scenario 3: 75% productivity estimate at clinic and hospital
Scenario 4: 75% productivity estimate at clinic only

Total Impacts of a Rural NP/PA

As stated earlier, the direct employment and direct labor income will further benefit the community by generating secondary jobs and income. As the physician clinic, the local hospital and the clinic and hospital staff purchase goods and services, 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.

Data in **Tables 4** and **5** present the direct and total impacts from a NP/PA at the physician clinic and the business brought to a local hospital. The multipliers from the original study were updated. The hospital and physician clinic multipliers were averaged from rural hospital medical service areas, most of which were critical access hospitals, in 31 hospitals representing the four U.S. Census regions. The clinic employment multiplier of 1.33 estimates that if one job is created by the physician clinic, then an additional 0.33 jobs are created in other businesses

Table 4
2013 Total Impact on Employment from Rural NP/PA

	Employment	Multiplier	Total Impact
Scenario 1			
Clinic	2.2	1.33	2.9
Hospital	5.4	1.40	7.6
Total	**7.6**		**10.5**
Scenario 2			
Clinic	2.5	1.33	3.3
Hospital	6.8	1.40	9.5
Total	**9.3**		**12.8**
Scenario 3			
Clinic	3.3	1.33	4.4
Hospital	10.1	1.40	14.1
Total	**13.4**		**18.5**
Scenario 4			
Clinic	3.3	1.33	4.4
Hospital	0.0	1.40	0.0
Total	**3.3**		**4.4**

Source: Labor Income estimates from U.S. Department of Labor, Bureau of Labor Statistics, May 2013; Eilrich FC, Doeksen GA, St. Clair CF. "The Economic Impact of a Rural Primary Care Physician."
[a] Clinic employment includes the NP/PA and attributed staff.
Scenario 1: 40% productivity estimate at clinic and hospital
Scenario 2: 50% productivity estimate at clinic and hospital
Scenario 3: 75% productivity estimate at clinic and hospital
Scenario 4: 75% productivity estimate at clinic only

Table 5
2013 Total Impact on Labor Income from Rural NP/PA

	Labor Income	Multiplier	Total Impact
Scenario 1			
Clinic	$187,512	1.19	$223,139
Hospital	$281,778	1.25	$352,223
Total	**$469,290**		**$575,362**
Scenario 2			
Clinic	$201,278	1.19	$239,521
Hospital	$352,222	1.25	$440,278
Total	**$469,290**		**$679,799**
Scenario 3			
Clinic	$235,694	1.19	$280,476
Hospital	$528,333	1.25	$660,416
Total	**$764,027**		**$940,892**
Scenario 4			
Clinic	$235,694	1.19	$280,476
Hospital	$0	1.25	$0
Total	**$235,694**		**$280,476**

Source: Labor Income estimates from U.S. Department of Labor, Bureau of Labor Statistics, May 2013; Eilrich FC, Doeksen GA, St. Clair CF. "The Economic Impact of a Rural Primary Care Physician."
[a] Clinic employment includes the NP/PA and attributed staff.
Scenario 1: 40% productivity estimate at clinic and hospital
Scenario 2: 50% productivity estimate at clinic and hospital
Scenario 3: 75% productivity estimate at clinic and hospital
Scenario 4: 75% productivity estimate at clinic only

due to the physician clinic and employee spending. The model calculates employment (in terms of full- and part-time jobs) and labor income (in terms of wages, salaries and benefits) multipliers. The model generates multipliers that are medical service-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 **Table 3,** an estimate of total income and employment created from a NP/PA at the primary care clinic and hospital can be made. In **Scenario 1**, the total direct employment from the clinic was 2.2. After applying the multiplier, the total employment impact from the clinic is 2.9 jobs. The same methodology used for the hospital employment yields combined employment impact of 10.5 jobs for the clinic and hospital. The direct labor income estimates will create a total income impact of $575,362 (**Table 5**) for **Scenario 1**. Again, the estimates are presented for all four example scenarios

Template to Measure the Economic Impact of Rural NP/PA

Templates have been provided to assist physicians and/or local leaders interested in estimating the economic impact of a rural NP/PA. 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.

Two versions of template 1 (**Template 1A and 1B**) have been created to reflect different scenarios. The first version (**Template 1A**) should be used if the NP/PA is employed in a physician clinic. The second version (**Template 1B**) should be used when an NP/PA at a satellite clinic will be the only attending provider at that location.

The data required and the steps to complete the estimation process are similar for both versions. The first step is to calculate the direct employment at the clinic and the hospital, if applicable. For the physician clinic, the number of medical staff for the NP/PA can be determined by estimating the productivity standard of the NP/PA related to the physician. For example, if the current patient volume for the clinic is 6,300 (4,200 for the physician and 2,100 for the NP/PA) then the total number of medical staff for the NP/PA can be assumed as 33 percent (2,100/6,300) of the current medical staff. Similarly, it can be assumed that a new NP/PA estimated to add 50 percent more

patients would require 50 percent more medical staff than is currently working for the physician. The total direct employment at the physician clinic is the number of medical staff attributed to the NP/PA plus one for NP/PA. For the NP/PA in a satellite clinic the total direct employment is 100 percent of the medical staff plus one for the NP/PA.

The same methodology can be applied to the hospital employment. However, acquiring the local data to estimate the direct hospital employment per physician can be more challenging. If local data are unavailable, the national estimate from the study (13.5) can be utilized. The total direct hospital employment impact for the NP/PA is again determined by the patient volume managed by the NP/PA. For an NP/PA with a 50 percent productivity standard, the direct hospital employment impact would be 6.75 (50% x 13.5). If there is no local hospital, there will be no direct hospital employment impact. The National Center for Rural Health Works can also provide assistance.

The direct labor income (wages, salaries and benefits) impacts at the clinic and hospital can be estimated on the bottom half of the two versions of **Template 1**. The first step is to determine the actual salaries plus benefits for all the medical staff. The total direct labor income for the physician clinic is based on the percent patient volume for the NP/PA, or 100 percent of the actual salaries and benefits for the satellite clinic. Similar to the direct hospital employment, the direct hospital labor income, if there is a local hospital, can be estimated by utilizing the national estimate of $704,444.

After the direct impacts have been determined, the total impacts can be estimated with **Template 2**. Specific county or zip code multipliers are available through IMPLAN and can be generated and utilized to make the results community specific. However, the multipliers provided are the average of 31 rural medical service areas located in 13 states across all four Census regions. The multipliers from the study are presented in the footnotes. Transfer the direct employment and labor income results from **Template 1A or 1B** and complete the form.

Summary

The importance of a NP/PA and the medical contribution that he or she makes to the community can be revealed with improvements in residents' health through increased access to primary care services. However, the economic contribution is not typically quantified. The four sample scenarios presented yielded estimates of approximately 4.4 to 18.5 local jobs and $280,476 to $940,892 in labor income (wages, salaries and benefits) from a rural NP/PA providing primary care to local residents. (Note: these estimates represent economic impacts on jobs and labor income only. They do not characterize total revenues and therefore, do not account for any additional costs to the physician/hospital associated with administering the NP/PAs.) This study clearly demonstrates that there are now tools that can assist physicians and local leaders interested in estimating the economic impact of NP/PAs.

TEMPLATE 1A
Estimating the Direct Employment and Labor Income Impact of a NP/PA in a Rural Primary Care Physician Clinic

DIRECT EMPLOYMENT ESTIMATES ATTRIBUTED TO NP/PAs FROM RURAL PRIMARY CARE PHYSICIAN CLINIC AND COMMUNITY HOSPITAL

	Clinic Medical Staff per PCP[1]		% Patient Volume of NP/PA[2]		Clinic Medical Staff per NP/PA		NP/PA	Direct Clinic Employment
Clinic	_____	x	_____%	=	_____	+	___1___	= _____
	Hospital Staff Employment per PCP[3]		% Patient Volume of NP/PA[2]		Hospital Staff Employment per NP/PA			Direct Hospital Employment
Hospital	_____	x	_____%	=	_____			= _____

DIRECT LABOR INCOME ESTIMATES ATTRIBUTED TO NP/PAs FROM RURAL PRIMARY CARE PHYSICIAN CLINIC AND COMMUNITY HOSPITAL

	Medical Staff Labor Income per PCP[4]		% Patient Volume of NP/PA[2]		Medical Staff Labor Income per NP/PA		Annual Labor Income per NP/PA	Direct Clinic Labor Income
Clinic	$_____	x	_____%	=	_____	+	_____	= $_____
	Hospital Staff Labor Income per PCP[5]		% Patient Volume of NP/PA[2]		Hospital Staff Labor Income per NP/PA			Direct Hospital Labor Income
Hospital	$_____	x	_____%	=	_____			= $_____

[1] Physician needs to estimate the total number of full- and part-time clinic medical staff.
[2] Physician estimates the patient volume the NP/PA provides or will provide (% of total physician office visits and/or hospital admissions).
[3] Can assume hospital staff employment of 13.5 per primary care physician from study, if there is a local hospital. If no hospital, there would be no hospital impact.
[4] Physician needs to estimate the total wages, salaries, and benefits of the medical staff.
[5] Can assume hospital staff labor income of $704,444 from study, if there is a local hospital. If no hospital, there would be no hospital impact.

TEMPLATE 1B
Estimating the Direct Employment and Labor Income Impact of a NP/PA in a Rural Satellite Clinic with No Physician OnSite and Local Hospital (If Applicable)

DIRECT EMPLOYMENT ESTIMATES ATTRIBUTED TO NP/PAs FROM SATELLITE CLINIC AND COMMUNITY HOSPITAL (If Applicable)

	Satellite Clinic Medical Staff[1]				NP/PA		Direct Satellite Clinic Employment
Clinic	_____			+	___1___	=	_____
	Hospital Staff Employment[2]		% Patient Volume of NP/PA[3]				Direct Hospital Employment
Hospital	_____	x	_____%			=	_____

DIRECT LABOR INCOME ESTIMATES ATTRIBUTED TO NP/PAs FROM SATELLITE CLINIC AND COMMUNITY HOSPITAL (If Applicable)

	Satellite Clinic Medical Staff Labor Income[4]				Annual Labor Income per NP/PA		Direct Clinic Labor Income
Clinic	_____			+	_____	=	$_____
	Hospital Staff Labor Income[5]		% Patient Volume of NP/PA[3]				Direct Hospital Labor Income
Hospital	_____	x	_____%			=	$_____

[1] Physician needs to estimate the total number of full- and part-time satellite clinic medical staff.
[3] Can assume hospital staff employment of 13.5 per primary care physician from study, if there is a local hospital. If no hospital, there would be no hospital impact.
[3] Physician estimates the patient volume the NP/PA provides or will provide (% of total physician office visits and/or hospital admissions).
[4] Physician needs to estimate the total wages, salaries, and benefits of the satellite clinic medical staff.
[5] Can assume hospital staff labor income of $704,444 from study, if there is a local hospital. If no hospital, there would be no hospital impact.

TEMPLATE 2
To Estimate Total Employment and Labor Income Economic Impacts
of NP/PA from Rural Primary Care Physician Clinic OR Rural Satellite Clinic

EMPLOYMENT IMPACT

	Direct Employment		Employment Multiplier*		Total Employment Impact
Direct Clinic Employment	_____[a]	x	_____[b]	=	_____
Direct Hospital Employment	_____[a]	x	_____[c]	=	_____
Totals	_____				_____

LABOR INCOME IMPACT

	Direct Labor Income		Labor Income Multiplier*		Total Labor Income Impact
Direct Clinic Labor Income	$_____[a]	x	_____[d]	=	$_____
Direct Hospital Labor Income	$_____[a]	x	_____[e]	=	$_____
Totals	$_____				$_____

* If available, use a multiplier specific to your local medical service area. If not, multipliers from the study can be utilized.
[a] These numbers should be transferred from either TEMPLATE 1A or TEMPLATE 1B.
[b] The clinic employment multiplier from the study is 1.33.
[c] The hospital employment multiplier from the study is 1.40.
[d] The clinic labor income multiplier from the study is 1.19.
[e] The hospital labor income multiplier from the study is 1.25.

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