



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

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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. Nurse practitioners (NPs) and physician assistants (PAs) 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 are important providers of rural primary care services.

NP/PAs also make economic contributions to rural communities. Many rural primary care physicians (PCPs) 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 labor income (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. The assessment underestimates the total impact since pharmacy and nursing homes are not included.

Purpose of the Study

The purpose of this study is to estimate the economic impacts of a rural primary care NP/PA on the community and surrounding area including the local hospital. A template has been developed for rural communities and/or PCPs to estimate the economic impact of their NP/PA.

Scope of Research

For this study, case studies were constructed based on the Centers for Medicare and Medicaid Services (CMS)

and U. S. DHHS, Health Resources and Services Administration's Bureau of Health Professionals (HRSA) productivity estimates to characterize alternative scenarios and address the regulation differences across states. Numerous conditions will impact the number of patient visits that an NP/PA will manage. The scope of research is defined as NP/PAs practicing rural primary care in the following four example scenarios. *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.*

Scenario 1 - NP/PAs working with a rural PCP; patient activity defined as 40 percent of a rural PCP. Includes NP/PAs working in a PCP or satellite clinic. Includes hospital activity

Scenario 2 – Same as **Scenario 1** at 50 percent.

Scenario 3 - Same as **Scenario 1** at 75 percent.

Scenario 4 - NPs in a rural clinic, independent of physician collaboration, delegation or supervision, with patient activity 75 percent of a PCP. No hospital activity.

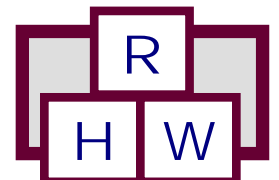
Approach

The methodology will estimate the economic impact of the employees and labor income at the clinic and when appropriate, the proportionate share of the hospital employees and their labor income for each scenario. The secondary impacts are calculated with an input-output model and data from IMPLAN. The model generates employment and labor income multipliers specific to the medical service area. No revenue impacts are presented.

Economic Impact of a Rural Primary Care Physician

The economic impact is related to daily patient volume. The NP/PA is part of the patient-care team; therefore, the economic contributions of the PCP must be

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considered. The rural primary care study (Eilrich, et al) estimated the economic impacts that a PCP provides from both clinic and hospital activity in a rural community (Table 2).

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

	Employment	Labor Income
Clinic	4.0 ^a	\$395,024
Hospital	<u>13.5</u>	<u>\$704,444</u>
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."

^aClinic employment includes the primary care physician and medical staff.

Impacts of a Rural NP/PA

For this study, the same approach was used to estimate the impacts of a rural NP/PA. An estimated average income for an NP/PA was \$94,605. The medical staff average incomes were also estimated. Incomes are based on national averages, since data are unavailable for rural areas.

Tables 4 and 5 present the impacts from a NP/PA at the PCP clinic and the local hospital. The hospital and PCP clinic multipliers were averaged from rural hospital medical service areas, most of which were critical access hospitals (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 PCP clinic, then an additional 0.33 jobs are created in other businesses due to the PCP clinic and employee spending.

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 scenarios presented 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. This study provides tools that can assist PCPs and local leaders in estimating the economic impact of their NP/PAs.

References are included in the full study, "Models to Estimate the Economic Impact of a Rural Nurse Practitioner or Physician Assistant," by Fred C. Eilrich, et al., National Center for Rural Health Works at www.ruralhealthworks.org

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	<u>5.4</u>	1.40	<u>7.6</u>
Total	7.6		10.5
Scenario 2			
Clinic	2.5	1.33	3.3
Hospital	<u>6.8</u>	1.40	<u>9.5</u>
Total	9.3		12.8
Scenario 3			
Clinic	3.3	1.33	4.4
Hospital	<u>10.1</u>	1.40	<u>14.1</u>
Total	13.4		18.5
Scenario 4			
Clinic	3.3	1.33	4.4
Hospital	<u>0.0</u>	1.40	<u>0.0</u>
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."

^aClinic 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	<u>\$281,778</u>	1.25	<u>\$352,223</u>
Total	\$469,290		\$575,362
Scenario 2			
Clinic	\$201,278	1.19	\$239,521
Hospital	<u>\$352,222</u>	1.25	<u>\$440,278</u>
Total	\$469,290		\$679,799
Scenario 3			
Clinic	\$235,694	1.19	\$280,476
Hospital	<u>\$528,333</u>	1.25	<u>\$660,416</u>
Total	\$764,027		\$940,892
Scenario 4			
Clinic	\$235,694	1.19	\$280,476
Hospital	<u>\$0</u>	1.25	<u>\$0</u>
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."

^aClinic employment includes the NP/PA and attributed staff.

Scenario 1: 40% productivity estimate at clinic and hospital

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Scenario 3: 75% productivity estimate at clinic and hospital

Scenario 4: 75% productivity estimate at clinic only