

**Measuring the Impacts of Health Care on
Rural Counties:
Hospitals and Clinics in Preston County**

By

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ABSTRACT: Quality health care systems are important to a community's health interests, but they also play an important role in a community's economic vitality. This paper reviews some contemporary challenges facing rural health care systems due to changes in the health care industry, the health insurance industry, the national economy, and reforms of social benefit programs. Using Preston County, West Virginia as a case study, the paper illustrates the link between rural economic vitality and quality, accessible healthcare systems. Furthermore, this paper demonstrates the need for active community involvement in local health care decision-making processes. It also provides a variety of methods that can be used to measure the economic impacts of health care systems in a rural county using the IMPLAN input-output program using Preston County hospitals and clinics as a case study.

OUTLINE OF CONTENTS

1. Introduction
2. Why is this issue important now?
 - a. Challenges to Rural Health Care*
 - b. The Connection to Business and Economics*
3. How does this issue affect Preston County?
 - a. Demographic and Economic Sketch of Preston County*
 - b. Primary Issues Facing Preston County Health Care System*
4. Economic Impacts of Preston County's Hospitals and Clinics
 - a. IMPLAN*
 - b. Data Collection and Research Parameters*
5. Conclusion
6. Survey
7. Brief comments on measurement process.
8. Bibliography

1. INTRODUCTION

In rural areas, the health care sector plays a variety of critical roles in maintaining or stimulating rural economic vitality. Accessible and quality health care not only adds to the community's physical well being, it also increases workforce productivity. Among other things, accessible health care is a quality of life factor considered by prospective industries and retirees in location decisions. It is often among the largest local employers and is a service exporter, attracting outside federal and state dollars that are spent locally. This research uses IMPLAN to measure the economic impacts of hospitals and clinics in Preston County.¹ Data used in the model are from a survey of the county's clinics and hospitals and from the West Virginia Bureau of Employment Programs.

This paper has both applied and academic objectives. In the face of a number of challenges to rural health care systems, community decision-makers must take an active role in maintaining quality, accessible health care services in the area. The community will be able to use the research results to motivate a more diverse and committed network in support of the county healthcare industry that links business and economic development interests directly to healthcare sector vitality. A federal program called Rural Health Works is currently funding similar impact studies and community organizing in five pilot states with an eye toward expanding the program nationally. The West Virginia University Extension Service is interested in conducting a similar program in West Virginia counties. Preston County Family Resource Network, Preston Memorial Hospital, and Preston County Economic Development Authority are among the organizations that have taken an interest in the project.

The collection of academic works that investigate the health care sector's role on local economic development is limited but growing rapidly. Frequently cited research includes the economic impacts of urban hospitals, rural hospitals, of rural physicians, and of hospital closings.² These studies consistently support the thesis that rural health care systems significantly affect rural economies. In West Virginia, Dr. Mark Thompson reported 1994 county by county impact statistics for the entire state and did a special

¹ MIG, Minnesota IMPLAN Group, Inc. Stillwater, MN. 1997.

² Doeksen, Gerald, Johnson, Willoughby. Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts. A Southern Rural Development Center Report. MSU: MS. Jan. 1997. pp. 3-19.

case study to measure the impact of a Calhoun County hospital closing.³ In his county studies, Dr. Thompson used data provided by the Bureau of Employment Programs and used IMPLAN multipliers. The same model was reused with 1997 data to generate county and state reports.

In this paper, I use employment and firm income/expenditure data collected directly from local clinics and hospitals, and data from the Department of Employment Programs where incomplete surveys left data gaps. The survey methodology has two major benefits. First, the survey approach provides data that are more accurate and can therefore more accurately be used for prediction. Second, the process of collecting the survey data and explaining the project to each county health care provider raises awareness about the purpose and goals of the study. The extensive time commitment demanded by the survey method is the methodology's primary drawback. Because of time constraints, I had to focus on Preston County hospitals and clinics. I discuss alternative approaches later in the paper. The West Virginia University Extension Service is examining different methods to identify an approach for updating impact statistics in all 55 counties that appropriately balances degree of accuracy with time and financial costs.

2. WHY THIS IS AN IMPORTANT ISSUE NOW?

Challenges to Rural Health Care

Rural healthcare institutions are facing mounting pressure to give up local decision-making power or close their doors. Public policy decisions, changes within the healthcare and insurance industries, and general economic trends toward merger and consolidation all contribute to the growing financial stress in the healthcare sector. Rural communities need to understand that both their quality of life and economic development potential are at risk when local health care industry is threatened. Community leaders need to organize and become a directional force in the sector and not allow corporate and political interests to drive changes, unchecked by those who will have to deal with the results of the decision making.

³Thompson, Mark. "The Economic Impact of the Health Industry on Calhoun County." Center for Rural Health Development, Inc.: WV. 1996.

Weiss, Chris. Prescription for Economic Development in West Virginia. Center for Rural Health Development, Inc.: WV. March, 1996.

Pressure on rural health care systems is both internal and external. Within the health care industry, health care costs are skyrocketing. The percent of the national gross domestic product in (GDP) spent on health care nearly doubled from seven percent of the GDP in 1970 to 13.5% in 1997. The sector more than tripled its employment levels over the same period.⁴ Large for-profit health care companies take over smaller ones, health care networks form among urban providers, among rural providers, and between urban and rural providers. Where there are unequal power relationships within these networks, the objectives of dominant members can undermine the missions of smaller providers – both quality and affordability may be sacrificed locally. Large companies may not spend the time or money to restructure or subsidize small rural hospitals operating on the margin or at a loss. Communities lose their decision-making power to absentee shareholders.

Externally, changes in the health insurance industry and with Medicaid policies significantly affect rural health care providers. New health maintenance organizations (HMOs) can force employees to use distant health care providers rather than local providers. While the cost of providing health care increases, HMOs pay providers a smaller and smaller percent of the costs. Medicaid and Medicare funding decisions made by policy makers are, in part, subject to the influences of the annual political climate. These decisions can greatly affect rural hospitals with large percentages of low-income clients and because of their orientation toward providing mostly primary care and emergency services rather than specialty services that generate more income. Doekson et. al. suggest that the effects of high-priced health insurance and growing health care costs interact in an upward spiraling relationship. As insurance costs increase, fewer people or small business can afford to buy health insurance. Without health insurance, people are less likely to seek preventative care or early intervention when they are sick. Treating illnesses that are more serious for people without insurance increases health care costs for everyone. The increased cost of health care is passed through insurance companies to consumers who can less and less afford to pay for the insurance.⁵

⁴ Doekson, Gerald A., and Val Schott. The Importance of the Health Care Sector on the Economy of Craig County, Oklahoma. Craig Rural Health Association of Oklahoma, Inc.: OK 1999. pp. 2.

⁵ Ibid. p. 5.

Changes in the US economy that are seemingly unrelated to the health care industry impact rural health care providers in distinct ways because of the nature of rural economies. In rural areas, people are far less likely to have health insurance than is the average American. Many more are employed in the informal economy – in childcare, car repair, mending services etc. Small farmers and small local businesses can rarely afford to include benefits with their employees’ salaries. As agricultural commodity prices fall, family farms and related small businesses suffer. The physical and mental health of those involved is strained, but the self-reliance and pride that characterizes many rural communities tend to make people deny or wait out illnesses, especially if they cannot afford services.⁶

The Connection to Business and Economics.

Rural communities derive multiple economic benefits from maintaining quality, accessible, and affordable health care. Businesses look at existing health care facilities in an area when they make location decisions. Recognizing the importance of quality health care in industrial location decisions, the Preston County Economic Development Authority states in the second sentence of its Community Overview Report, “We have the advantages of being near a major university, including quality health care at rates 20% below the national average...” Retirees also count health care among the most important factors in finding a place to live.⁷ Healthy workers are more productive workers who take fewer sick days. When facilities are local, workers need less time off for doctor appointments.

The health care industry represents a significant share of rural counties’ economic activity. In West Virginia, the health care sector provided 12% of the state’s employment in 1999, a number that increases annually.⁸ In rural areas, the sector is often the second largest employer behind schools.⁹ Also, because such a large percentage of rural health care consumers have Medicaid or Medicare coverage, the health care industry can be viewed as a service exporter, bringing significant amounts of federal and state dollars into rural areas.

⁶ Ibid. p. 5.

⁷ Doekson, *Measuring*. 1997, pp. 23. This paper reviews multiple studies on location factors for retirees and for businesses. They all consistently support the thesis that health care is an important location factor for both groups.

⁸ Bureau of Employment Services Employment and Wage data.

⁹ Doekson and Schott.

For the above reasons, losing a health care institution or just losing local control over an institution can have significant economic repercussions on a community. Similarly, a struggling health care sector can drain a community of resources, emphasizing the importance of *quality* health care systems. Potter and Leak call into question analyses that measure the economic benefit of the health care sector strictly based on the amount of money generated by the sector. While health spending can stimulate economic activity in industries that provide goods and services to hospitals, “it can (also) preempt spending of otherwise disposable income for nonhealth-related goods and services.”¹⁰ Excessive health care spending could indicate problems with income or environmentally related chronic illnesses or inefficient health care providers. Involving economic development agents, health care providers, consumers, and policy makers in the analysis of the sector’s strengths and deficiencies will make it far more accurate and useful -- I-O generated data is only one part of the analysis.

Finally, not only does the health care industry influence the local economy, but local business decisions impact healthcare providers. Many providers selectively accept contracts with HMOs and insurance companies based on the percentage of service charges for which the HMO will pay. When decisions are made locally, in a cooperative atmosphere, companies can use health insurance plans that allow local employees to patronize local service providers. As larger companies buy or undercut smaller ones, and corporate headquarters leave the local area, this decision-making capacity leaves as well.

3. HOW IS THE ISSUE IMPORTANT TO PRESTON COUNTY?

Demographic and Economic Sketch of Preston County

Rural county demographics and the quality of health care services in the county, can be shown to affect each other. Policy and market decisions that affect rural communities are made with less participation from those affected and therefore are less likely to reflect their needs and interests. Low-income rural communities have less clout with policy makers when health-care budgets are designed and allocated. This is in part because of the quantity of people in rural areas, and in part because of lower

¹⁰ Potter, Margaret, and Alison Leak. “Health Cares System Change and Its Employment Impacts in Southwestern Pennsylvania.” Health Policy Institute, April 1995.

political activism correlated with populations in low-income brackets and with lower education levels – such as is characteristic of rural counties. At the same time, it is these communities where residents are more likely to be directly or indirectly employed by health sector revenue.¹¹ Additionally, studies show that poor or inaccessible health care systems limit development potential in a region by stunting the development of quality “human capital.” This is not only with respect to the productivity of workers, but also deals with creativity and critical thinking skills of community members who are responsible for leading and investing in a community to make it thrive.¹²

Preston County is a large, rural county with just over 29,000 residents spread out over 654 square miles with a per capita income of \$14,334. The population generally increases or decreases by only .1-.2 % annually. Blacks, Hispanics, and “other races” combined account for 218 residents.¹³ The total school enrollment for 1998-1999 school year was 5,178 students. The County reported drop out rate for the same year was 2.7%, though census figures predict there are closer to 9,000 school-age residents. The county per capita income is well below the national and state averages. The following table offers some other income comparisons.

	Preston County	West Virginia	United States
Average Income	\$20,631	\$25,278	\$26,412
Ave. Healthcare Wage*	17,764	28,734 ₁ / 17,105 ₂	21,164
Unemployment	7.0% **	6.6%	4.5%

*Preston County and WV₁ numbers come from WV BEP 1998 stats. US and WV₂ are Occupational Wage and Employment Statistics from the US Bureau of Labor Statistics.

**Down from 12.7 in 1992.

¹¹ Doekson. Craig County. p. 28. Also explained by Central Place Theory in Seninger, Stephen F. “Information Availability and Market Power in Export Competition: The Case of Regional Health Care Markets.” Journal of Regional Science. v39 n3 August 1999, pp. 479-95.

¹² Stillwaggon, Eileen. Stunted Lives, Stagnant Economies: Poverty, Disease, and Underdevelopment. New Brunswick: Rutgers University Press, 1998.

Thomas Homer-Dixon discusses the link between human ingenuity and resources scarcity in his article, “The Ingenuity Gap: Can Poor Counties Adapt to Resource Scarcity?” Though article written in reference to regions suffering from drought and famine, the conclusions are applicable to any scarcity. In Preston County there is a development gap relative to neighboring counties like Monongahela and Allegheny Counties. There is, however, a rich supply of human ingenuity that fuels a vibrant informal sector economy in the county. Lack of health care coverage may force some people to work at below their ‘ingenuity’ capacity in order to attain health benefits. This could drain the community’s supply of ingenuity in a period where employment is highly unstable. Homer-Dixon ascertains that many of the same conditions that increase the need for ingenuity are the same conditions that reduce its supply. This supports an argument not only for quality health care, but socialized health care in an era of unstable and scarce rural employment. Homer-Dixon, Thomas. “The Ingenuity Gap: Can Poor Counties Adapt to Resource Scarcity?” Population and Development Review. 21:3 September 1995. pp.587-612.

¹³ West Virginia Bureau of Employment Programs, 1999. www.state.wv.us/bep

Nearly thirty percent of the county's workforce leaves the county for work. Following the norm for rural counties in WV, the service sector provides over half of the county's employment.¹⁴ The schools and the health sector are the first and second largest employers in the county, followed by a number of natural resource extraction companies. Preston County Schools employ 625, followed by Preston Health Care Corporation (250), York Bronze (234), and Hopemont State Hospital (185).¹⁵

Primary Issues Facing Preston County Health Care System

Preston County's health care sector has one hospital, Preston Memorial (76 beds), 14 health clinics, 29 doctors, 9 dentists, and a public long term care home with 98 Medicaid beds. Other health facilities include nursing homes, substance abuse treatment facilities, and chiropractic clinics. In all, I was able to identify 75 distinct health care service providers, public and private, not including public health programs in schools or factories.¹⁶

Different community voices identify different community health care problems. Director of the Preston County Family Resource Network, Barbara Thorn explained that two critical health care issues in the community were lack of home telephones and lack of transportation services to Kingwood (home of Preston Memorial and a number of clinics including the women's clinic) and to Morgantown (Ruby Memorial, Mon. General, scores of clinics and doctors' offices).¹⁷ Another issue Thorn addressed was the gap between available services and services used. She explained that local clinics have sliding scale payment plans that consider clients' income levels when determining service fees. There are also multiple community and church organizations in the county that pay most of indigent patients' prescription costs, bringing the prescription costs down to \$2. Thorn identified high rates of illiteracy and lack of appropriate advertising as problems that contributed to a general unawareness of these programs.

¹⁴ Ibid.

¹⁵ Preston County 1999 Community Profile. Preston County Economic Development Authority. Preston County Health Care Corporation is the Preston County Hospital and a number of other clinics and health services together.

¹⁶ To find these numbers I first used the West Virginia 1998 Business Directory to make a telephone list of all the health care providers in the county. Then I worked with the county EDA and FRN to update the list.

¹⁷ Interview, Barbara Thorn, Director of the Family Resource Network (FRN), Kingwood. 10/15/99. The FRN is funded by the Governor's Academy of Children and Family Health to address health, housing, childcare, and a variety of other issues. The position is salaried, but does not come with health care benefits.

Cindy Wolfe, of Hopemont State Hospital explained that it was nearly impossible to keep expenditures within the bounds of revenue generated by the state hospital. She cited the rising costs of health care, low Medicaid payments, and the number of clients without insurance coverage or incomes that would be able to pay for the services provided.¹⁸ Wolfe also noted that the hospital usually operates at full capacity and frequently turns patients away. A cap on the number of Medicaid beds each state can support keeps the long-term care facility at 98 beds. Those clients who are turned away may have to go to Morgantown for care. Families and loved ones have to travel further for visits, and the displaced care represents a leak of dollars that would otherwise be spent locally.

Preston Memorial's Chief Financial Officer, Melissa Rowan, cited an interesting new problem with HMOs.¹⁹ As larger companies take over or push out local businesses, employer-hospital relationships suffer. Rowan offered the example of York-Bronze, the third largest employer in the county. In 1998 a New York company purchased the local company and, from a corporate office in New York, switched all 234 employees to an HMO that did not have a contract with Preston Memorial. All of these employees would have had to travel to Morgantown for even primary care services, and Preston Memorial would have lost a significant percentage of its clientele. In this case, the hospital was able to scramble at the last minute and sign a contract with the organization. Allegheny Power, on the other hand, (107 employees, the 9th largest employer in the county) changed its employers' HMO to *Etna*. Preston Memorial could not afford to sign a contract with Etna and lost all the business of the 107 employees and their families.

Aside from the special contract it has through York-Bronze and Blue Cross, Blue Shield, Preston Memorial does not accept any other non-Medicare/Medicaid HMO. Nearly 65% of the hospital's clients have Medicaid or Medicare insurance, but these programs pay a lower percentage of hospital charges. The private Medicaid HMO, Optimum Choice, pays largest percentage of costs - 75%. Unfortunately, Optimum Choice is leaving the West Virginia Medicaid program. The other option for Medicaid consumers in the state is the Health Plan, but Preston Memorial could not afford to maintain a contract

¹⁸ Interview, Cindy Wolfe. Hopemont State Hospital. 11/3/99.

¹⁹ Telephone Interview, Melissa Rowan. Preston Memorial Hospital. 11/2/99.

with the Health Plan because of the low payments the HMO offered. If Medicaid consumers choose Health Plan, they have to go to Morgantown for their services. When Optimum Choice does leave the system, patients will either have to switch to Health Plan or return to a state-managed Medicaid program. For the clients who return to the state-managed insurance coverage, the hospital will receive payments directly from the state that offers a reimbursement rate in between that of the two HMOs, Optimum Choice and Health Plan.

Last year Preston Memorial underwent a strategic planning process that led to some significant changes in the hospital. The hospital hired an outside consulting firm to guide the institution through the process. One result was the hospital's decision to focus more energy on improving primary care than on attracting specialists to the rural hospital. Preston Memorial set up a number of monthly clinics with Monongahela General that bring specialists in from Morgantown to provide local specialized health services to the community. This is one example of how Preston Memorial has cooperated with larger hospitals to improve its services, but maintain its autonomy. Recently, Fairmont General, Monongahela General, and Preston Memorial joined together to increase their bargaining power in a bid to outsource their laundry services. According to Rowan, Preston Memorial is currently under little external pressure to sacrifice any decision-making power to larger Morgantown facilities.

One of the most striking issues I noticed from the interviews was the lack of coordination among the community health care agencies. The hospital was unaware that the FRN existed or what kind of services they offered – much less that the network had recently established a weekly transportation service to bring elderly patients to Morgantown for their health needs. The FRN had apparently not contacted the hospital first for assistance with a transportation program. At the same time, Preston Memorial used outside consultants in its revision process. This limits the ability for social service agencies to contribute the perspective of the community to the restructuring process; it also limits agencies' and their clients' awareness of the positive changes that have been made. Programs like Rural Health Works and WVU Extension Offices hope to improve such communication by educating and organizing community members and institutions to work more closely together to improve the county's health care system for local providers and for consumers.

Looking ahead, new state programs like Children’s Health Insurance Program (CHIPs) and debate over a national health care coverage present great possibilities for the future. The community and the health care industry need to be prepared to work together to keep in-coming state and federal money local by identifying and filling service gaps.

Preston County Health Services Employment 1998	
Average Annual Health Employment	
Preston County Real:	763 employees
Preston County Percent of Total:	12.2%
Average Annual Wages in Preston County: 1998	
Health Care	\$17,764
All Occupations	20,631

Source: WV B.E.P.

4. ECONOMIC IMPACTS OF PRESTON COUNTY HOSPITALS AND CLINICS

This research provides aggregated and detailed static analyses using Type III SAM employment and income multipliers to measure the economic impacts of Preston County’s hospitals and clinics. The data on employment represent exact numbers provided by the county institutions surveyed. Data on hospital employee compensation and output are from Preston County hospitals. Clinic employee compensation and output figures are IMPLAN estimates based on the clinics’ reports of employment levels. Below are the impact results, followed by further explanation.

<i>Hospital Impacts</i>			
Industry	<i>Output</i>	Employment	Employee Compensation
<i>Direct Effect</i>	22,136,280	405	10,598,900
<i>Direct Adjusted*</i>	15,274,033	279.5	7,313,241
<i>Multiplier</i>	1.28	1.31	1.17
Indirect + Induced	4,286,996	89.2	1,270,180
Agriculture	46,536	2.0	20,286
Mining	9,624	0.1	2,116
Construction	210,138	3.9	71,595
Manufacturing	61,839	0.7	14,328
TCPU	787,900	5.1	163,061
Trade	792,422	24.8	321,058
FIRE	693,023	6.5	89,236
Services**	1,540,568	42.8	502,517
Government	144,329	2.2	85,368

Other	616	.1	616
Total Impacts	19,561,029	367.4	8,583,421

*Direct Impacts are re-figured using a local purchasing coefficient of .69, this allows for firm's out-of-county spending and hiring.

***Services* includes the indirect and induced effects of hospitals on hospitals.

Clinic Impacts			
Industry	Output	Employment	Employee Compensation
Direct	\$7,967,326	125	\$3,000,808
Direct Adjusted*	5,497,455	86.2	2,070,558
Multiplier	1.30	1.35	1.25
Indirect + Induced	1,637,486	30.8	514,351
Agriculture	8,140	0.3	2,987
Mining	2,566	0.0	565
Construction	66,898	1.2	22,683
Manufacturing	24,807	.3	6,075
TCPU	270,509	1.7	57,538
Trade	259,326	8.0	107,206
FIRE	294,764	2.8	47,600
Services**	618,945	15.1	208,466
Government	91,302	1.3	61,002
Other	230	0.0	230
Total Impacts	\$7,134,941	117.0	\$2,584,909

*Direct Impacts are re-figured using a local purchasing coefficient of .69, this allows for firm's out-of-county spending and hiring.

***Services* includes the indirect and induced effects of clinics on clinics

Type III multipliers account for direct, indirect, and induced spending/employment (defined below). The Type III multiplier is a ratio between the direct effects of a change in sector demand and the direct, indirect, and induced effects of the spending. **Direct effect** of the hospitals and clinics refers to the output levels of the two sub-sectors or it can refer to clinic and hospital employment levels and total employee compensation. The direct effects measure how much money flows through the sector. **Indirect effects** account for the effect of money hospitals and clinics spent in other local business and industries - or - how demand for production or employees increased in other economic sectors because of the hospital and clinic spending/employment. **Induced effects** describe the demand created in all sectors because of new household income from direct and indirect employment.

Again, the *direct effects* are how much the health care sector spends/how many people it employs directly. Multiplying *direct effects* by the *Type III multiplier* produces *the Total Impact of the Health*

Sector. This total impact includes direct + indirect + induced effects of the health sector. Subtracting the *direct impacts* from the *total impacts* leaves the *indirect and induced effects*, or the how non-hospital industries and households would be affected if a local hospital closed or new clinic opened. Using Type III Social Accounting Matrix (SAM) multipliers also endogenizes inter-institutional transfers. Due to the nature of health care and its necessary involvement with institutions such as Medicare and Medicaid, and due to the high level of institutional presence in Preston County households, it made the most sense to account for these transfers.

Direct impacts, in this analysis, are adjusted by a *Local Purchasing Coefficient* or LPC. In Preston County, the LPC is .69.²⁰ This figure functions in the same way as the Regional Purchasing Coefficients found within the IMPLAN system, but is probably more accurate. The purpose of both coefficients is to remove for the portion of the firm’s demand met by suppliers from outside the county rather than by local industry before estimating local impact figures. The following table compares impact results with versus without using an LPC.

No RPC/LPC

Sector	Direct Employment	Total Employment	Direct Income	Total Income	Direct Output	Total Output
Hospitals	405	530	10,598,896	12,400,708	22,136,281	28,334,440
Clinics	125	164	4,051,518	5,064,397	7,337,655	9,389,261
Total		694		\$17,465,105		\$37,723,701
<u>LPC @ .69</u>						
Hospitals	279.5	367.4	7,313,241	8,583,421	15,274,033	19,561,029
Clinics	86.2	117	2,020,558	2,584,909	5,497,455	7,134,941
Total		484.4		\$11,168,330		\$26,695,970

Data collection and Research Parameters

The data used in IMPLAN models can come from a variety of sources. Updated IMPLAN data can be purchased as frequently as every other year. The data are derived from state and national data sets and therefore are not always accurate at the local level. State or local agencies can provide data that are

²⁰ West Virginia University Bureau of Economic Research economist, Randy Childs provided the LPC of .69 for Preston County.

more accurate. In his 1997 report on Preston County, Dr. Mark Thompson used updated data from the WV Bureau of Employment Programs Wage and Employment Data, with IMPLAN multipliers. Another approach is to collect the information directly from the study area firms. Assuming employers are willing to provide the information, this is the most accurate approach but it is also remarkably time consuming. Ideally, health care providers would report their annual employment levels, total employment compensation, and total operating costs and/or total expenses. These data can then be tallied and used to replace inaccurate IMPLAN information. For even greater accuracy, one could survey all sectors, but this would be overwhelmingly time consuming and prohibitively expensive for potentially small improvements.

In Preston County, I surveyed hospitals and clinics for expenditure/income, employment, and employment compensation information.²¹ Deciding which sub-sectors of the health sector to measure, or how to gather data should be based on the purpose of the study. The amount of time spent on improving accuracy should depend partially on the community's interest level. To measure an entire sector, it may be sufficient to produce statistics with IMPLAN data initially to generate greater interest in community organizing.

Another option, one step better than using BEP information, would be to survey sector firms only for the number of people they employ. IMPLAN estimates of multipliers and employer productivity would then be used to generate the impacts, as I did to estimate clinic impacts. Often a receptionist will know the number of people employed in the firm or will immediately direct the call to someone who does. Particularly when the study does not already have community support, it is difficult and time consuming to convince firms to report annual expenditure and income data. This information is more sensitive and can require excessive time on the part of the clinic as well as the researcher. Greater community interest may warrant analyses that are more detailed and may provide volunteers to help make survey telephone calls and mailings. One caution with this method, in the health sector, is double

²¹ Survey is included at the end of this report. I conducted the survey by first contacting each clinic and hospital to identify the person who would be able to complete the survey. I then faxed the survey directly to these people and did a series of follow up telephone calls or cite visits to gather and review reported information.

counting medical staff who have private practices and may also be employed by a hospital or clinic. The charts below indicate how different approaches can dramatically change data outcomes.²²

Hospitals			
Data Source	# of Hospitals	# of Employees	Employee Comp.
IMPLAN	0	0	\$ 0
B.E.P.	1	186	3,103,737
Survey	2	405	10,598,896

All Health Service Providers			
Data Source	# of Offices	# of Employees	Difference w/ Employment Multiplier
IMPLAN	--	423	575
B.E.P.	26	468 (w/ hospitals)	636
Survey	51	542*	737

*I did not gather employee compensation for the entire health sector, this number counts one employee for each of the 13 offices that I did not contact.

Time is one factor that should be considered in deciding how to approach measuring the impacts of a county’s health sector. The purpose or possible uses of the research are also important. There may be a special interest group in the area that would be able to use an economic impact study beyond the community. For example, often the importance of mental health is underestimated or overlooked. Measuring just the economic impact of the mental health care facilities may serve to illustrate the economic importance of the health care sector as well as place a specific emphasis on the importance of mental health institutions. Similarly, looking at what parts of the health sector may be at risk or chronically ignored can also guide the design of a limited impact study. Including agencies like battered women’s shelters, homeopathic clinics, preventative care providers, or WIC offices may work to further progressive agendas through illustrating economic multipliers for health care dollars. Impact studies may also be used to promote business location decisions – with the business or in the community.

²² **Survey response rates:** Distributed full surveys to all Preston County 17 hospitals and clinics, totaling 11 different contacts. I received completed surveys from 5 locations, 3 contacts. I received average annual employment levels from 38 health service providers, 28 contacts, by doing a telephone survey of all providers in the county. This list included chiropractors, mental health institutions, nursing homes, etc. Again, double counting may be a problem, but survey design could help control that factor.

5. CONCLUSIONS

Revisiting the example of Allegheny Power (AP) may provide a clearer picture of the possible uses of the above data and importance of community involvement. In 1997, average annual per capita hospital expenditure was \$881. The average household size in Preston County is 3.7 people.²³ With the loss of 107 AP employee clients, Preston Memorial also lost the opportunity to provide coverage to their families, totaling 396 clients (107 x 3.7). At a per capita hospital spending rate of \$881 a year, Preston Memorial lost \$348,876 worth of spending when AP changed its coverage to Etna. Using the IMPLAN hospital multipliers with this number, the county's local businesses and households lost \$446,876 and 10.7 jobs when out-of-state corporate headquarters decided to change the company's HMO.²⁴

This research demonstrates the relationship between economic vitality and a quality rural health care system. The paper also offers a number of different ways to approach measuring the quantitative economic impacts of the health care sector. The paper illustrates why communities need to participate actively in health care decision making. Rural health care sector is changing. If the community that uses local health care does not work with providers to effectively organize for affordable, accessible, and quality health care; if health care providers do not reach out to the community for honest service evaluations and suggestions, then the opportunity to do so may be sacrificed to outside interests. When decision-making power leaves, local priorities lose – communities sacrifice their health, jobs, and economic activity.

²³ Derived from Bureau of Employment Program Data.

²⁴ This figure is mostly likely overstated. It assumes that under the old health coverage plan, all the employees chose to go to Preston Memorial and not to Morgantown facilities for health care services, and that none of the employees live in the same household. Figures are *not* reduced by LPCs.

Survey for Clinics and Hospitals

Measuring the Economic Contribution of Clinics and Hospitals in Preston County

1. *Name of Institution* _____

2. **Respondent's Name** _____

3. **Address** _____

4. **Phone Number** _____

5. **At what locations do you provide health services?**

a. Are these permanent or transient locations? _____

6. **Is this clinic/hospital a tax-exempt or taxable institution?** _____

Employment and Wages

This page asks for your firm's average employment levels and total employment costs from 1998.

To calculate *employment* levels in Preston County:

Include owners if they performed work for the company.

Include only direct employees.

Include full and part-time employees.

Exclude subcontractors' employees.

Exclude employment outside of the county.

To calculate *average employment*:

If your firm started the year with 10 workers and for the last three months of the year you added eight additional workers, the average number of employees would be:

$$(10 \text{ workers} \times 1 \text{ year}) + (8 \text{ workers} \times 1/4 \text{ year}) = 12 \text{ workers}$$

To calculate *labor costs* include all wages, salaries, payroll taxes and benefits for employees in Preston County.

Payroll taxes include workers compensation, unemployment compensation, and employer's share of Social Security.

Benefits include pensions, health care insurance, day care, and professional memberships.

7. What was your firm's average employment level in Preston County for your firm in 1998? _____

a. Does this number represent average annual employment in Preston County?

Yes _____

No _____

b. Does this number include owners if they performed work for the institution?

Yes _____

No _____

c. Does this number include only direct employees?

Yes _____

No _____

8. What were your firm's total labor costs in Preston County in 1998? _____

(Round answers to the nearest \$1,000.)

a. Does this number include all payroll taxes and benefits?

Yes _____

No _____

Receipts

This section asks for the value of the clinic's/hospital's output or the total value of receipts for services provided in Preston County for 1998.

To calculate the value of *receipts* for services provided

Include receipts from patients, insurance companies, government health care provisions programs (Medicare, Medicaid, Social Security, etc.).

9. What is the total value of receipts for services provided by your clinic/hospital in Preston County for 1998? _____

(Round answers to the nearest \$1,000.)

a. Does this number include only receipts for services provided in Preston County?

Yes _____

No _____

Operating Costs

This section asks for the operating costs of the clinic/hospital in Preston County for 1998.

To calculate the *operating costs*

Include labor costs.

Include purchased supplies and services.

Include financing costs of plant and capital equipment (e.g. mortgage).

Exclude purchases of new plant or capital equipment.

10. What was the clinic's/hospital's total operating expenses in 1998?

(Round answers to the nearest \$1,000.)

a. Does this number include labor costs?

Yes _____

No _____

b. Does this number include purchased supplies and services?

Yes _____

No _____

c. Does this number include financing costs of plant and capital equipment?

Yes _____

No _____

d. Does this number exclude purchases of new plant or capital equipment?

Yes _____

No _____

If operating costs are greater than receipts please verify that the institution lost information.

Thank You!

SOME NOTES ON MY IMPACT RESULTS.

I edited the commodity data in the Preston County model to include the hospital data I collected since the IMPLAN data indicated that there were no hospitals in Preston County. Because one of the hospitals was listed in Bureau of Employment Programs Wage and Employment Data as a state hospital, it may increase the accuracy to also edit the government sector, subtracting the state hospital employment.

I entered the hospital data in 1999 dollars and did NOT inflate the outcomes in the report stage. Different people offered different suggestions about this. Another method would be to deflate the 1999 dollar values (not the number of employees) in the commodity editing stage, then re-inflate the dollars in the reporting stage. One person suggested using 1999 dollars without deflating them would distort the impacts, another suggested that the process of deflating and re-inflating would create rounding errors.

After constructing the basic model, I ran a series of impacts on different events and event combinations or 'groups' of hospitals and clinics using RPC or not, measuring them at different Local Purchase Coefficients (LPCs), etc. In the end, as I stated earlier, I measured clinics and hospitals separately. I used LPCs and left the RPCs at 100%.

I measured clinics under 490: Doctors and Dentists. I imported the number of employees and used the IMPLAN estimate for output per employee and employee compensation. In the report I inflated the dollar numbers. If you only had output dollars and no employment estimates, you would have to deflate the dollar value first to get an appropriate employment estimate. In the report you would have to re-inflate the dollar values. I did not use this method with the hospitals because I already had exact figures for employment, employee compensation, and output.

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- Telephone Interview, Melissa Rowan, Preston Memorial Hospital Chief Financial Officer, Kingwood. 11/2/99.
- IMPLAN consulting: Randy Childs, David Greenstreet. West Virginia University Bureau of Economic Research; MIG, IMPLAN consultants.