



**Geiger Gibson/
RCHN Community Health Foundation Research Collaborative
Policy Research Brief No. 12**

Community Health Centers in Indiana: State Investments and Returns

**Avi Dor, Ph.D.
Patrick Richard, Ph.D.
Ellen Tan, M.Sc.
Sara Rosenbaum J.D.
Peter Shin, Ph.D.
Lee Repasch, M.A.**

July 29, 2009

Funding for this report was provided by
the Indiana State Department of Health

Additional funding for this Policy Research Brief was provided by the
Geiger Gibson/RCHN Community Health Foundation Research Collaborative

About the Geiger Gibson / RCHN Community Health Foundation Research Collaborative

The Geiger Gibson Program in Community Health Policy, established in 2003 and named after human rights and health center pioneers Drs. H. Jack Geiger and Count Gibson, is part of the School of Public Health and Health Services at The George Washington University. It focuses on the history and contributions of health centers and the major policy issues that affect health centers, their communities, and the patients that they serve.

The RCHN Community Health Foundation, founded in October 2005, is a not-for-profit foundation whose mission is to support community health centers through strategic investment, outreach, education, and cutting-edge health policy research. The only foundation in the country dedicated to community health centers, the Foundation builds on health centers' 40-year commitment to the provision of accessible, high quality, community-based healthcare services for underserved and medically vulnerable populations. The Foundation's gift to the Geiger Gibson program supports health center research and scholarship.

Acknowledgements

We are also indebted to Kelly Kaufman from the Indiana Public Health Care Association and Ann Alley of the Indiana State Department of Health for providing useful advice and for facilitating meetings among the Indiana community health center directors. In addition, we thank all the staff of Indiana's health centers who took the time to complete the Indiana Data Summary. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the sponsors or of The George Washington University.

Overview

Indiana Community Health Centers (I-CHC), including Federally Qualified Health Centers (FQHCs) and State Funded Health Centers (SFHCs), play a vital role in caring for the state's most vulnerable populations. Although their patient base tends to be poorer and experience greater health challenges than the general population, these health centers have generated substantial health care savings while providing high quality, low cost care.

Previous research on the cost effectiveness and value generated by FQHCs nationwide suggests that Indiana's investment in health centers, both through direct grants and through the expansion of third party payments (such as those proposed under national health reform legislation), can be expected to yield similar savings and value, particularly if health insurance coverage is expanded to reach a higher proportion of low-income persons living in medically underserved communities. This research brief provides an example of the financial benefits that states can expect to reap through increased investment in their health center program. The cost savings generated by health centers both to primary health care and to the health system as a whole are considered. For purposes of this report, Indiana's FQHCs and SFHCs are referred as I-CHCs.

This brief presents key findings from a recent study that estimated cost savings and benefits generated by the state's investment in I-CHCs. The study was conducted for the Indiana State Department of Health by faculty and staff at the George Washington University. Key findings include:

- For every dollar spent on patient care at an Indiana CHC, (I-CHC) results in \$1.90 saved in overall health care spending when compared with other primary care settings.
- Indiana CHCs effectively target a population that is economically stressed and financially and medically at risk. Approximately nine in 10 CHC patients have incomes below 200 percent of the federal poverty level (FPL).
- Health care services provided at Indiana CHCs ("I-CHCs") are less costly than health care services provided at other outpatient provider settings. In Indiana, expenditures per I-CHC patient were \$1,529 compared with \$2,924 at other outpatient settings, *resulting in a savings of \$1,395 per patient.*
- Lower medical costs resulted in savings of \$473 million for Indiana's health care system; these savings were realized through the lower cost of health care in ambulatory health center settings as well as reduced spending on hospital emergency room utilization and a lower rate of inpatient hospital admission.
- In addition to direct savings to the health care system, each dollar spent by the state on I-CHCs is associated with between \$6 and \$17 of value, in terms of revenues generated from all sources for the delivery of services at I-CHCs.

Indiana Background

Between 1981 and 2004, the state of Indiana consistently spent a larger share of its gross state product on personal health care than the average U.S. state. Holmes and Wright (2009) project that healthcare spending in Indiana will absorb half of the state's income within the next 35 years and health expenditures will crowd out other essential public spending on education and public safety.¹ Additionally, the authors report that rising health care costs are a factor behind the almost nine percent reduction of employer-based coverage in Indiana between 2001 and 2005, resulting in greater numbers of uninsured and publicly-insured residents.

Indiana health centers anchor the primary health care safety net, serving growing numbers of newly unemployed and uninsured patients. The economic downturn has resulted in a growing number of people seeking services at health centers; between 2006 and 2007, the number of patients served by health centers in Indiana grew by 2.5 percent² and in 2008, the state funded an additional six health centers to help absorb the new patient population. Altogether, Indiana has 39 community-based health centers that provide medical care to almost 340,000 people. Of these, 17 are Federally Qualified Health Centers (FQHCs) and 22 are State Funded Health Centers (SFHCs). There are no federally-qualified "look-alikes" in Indiana. In this report, Indiana FQHCs and SFHCs are referred as I-CHCs.

While all I-CHCs share a common mission, the type of health services provided by the two types of health centers varies. All I-CHCs provide primary and preventive care, and the majority of centers also provide pharmacy services, family planning, prenatal care, acute medical care, diagnostics, and nutritional counseling. All but one FQHC provides health education services, and all but two SFHCs provide pediatric care. On average, the state's FQHCs provide a wider range of health care services than SFHCs (see Table A.2 in the Appendix for more detail).

Indiana Community Health Centers

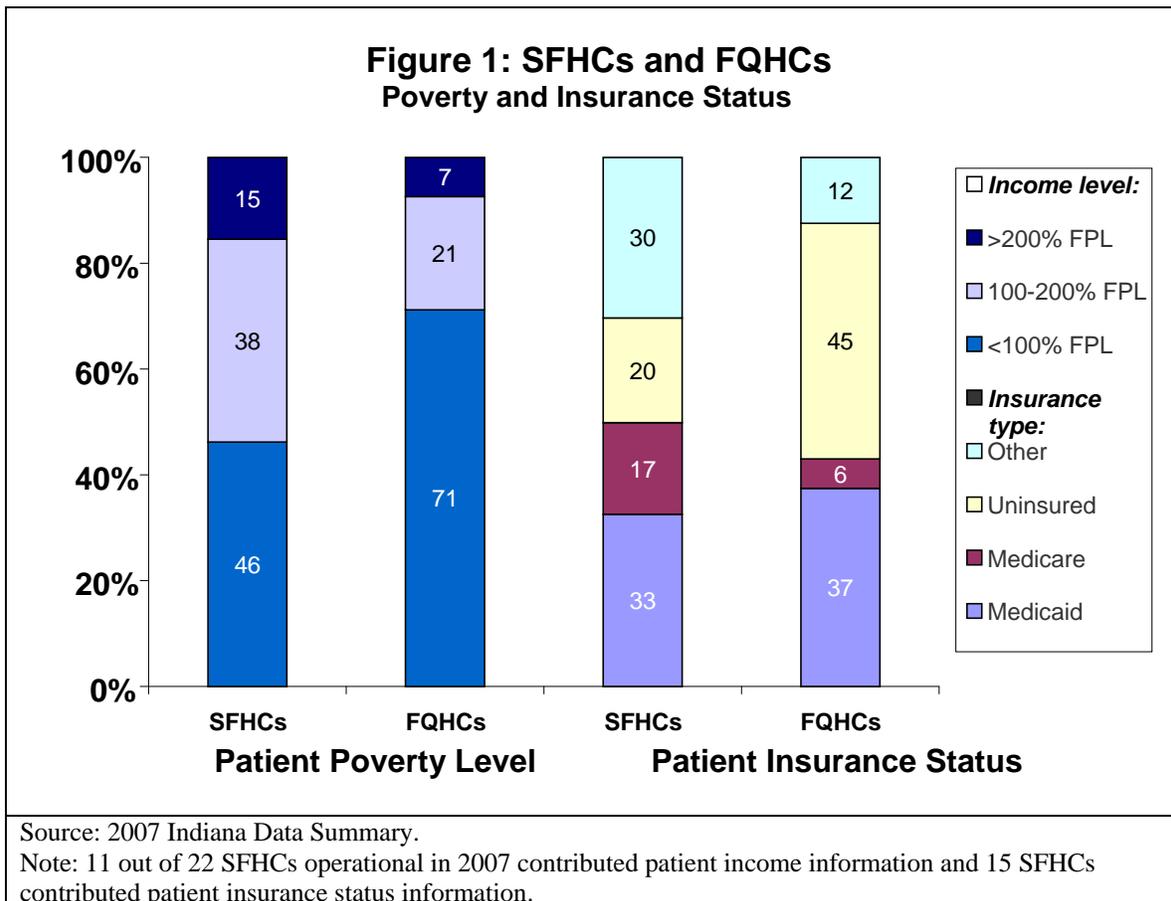
Federally-Qualified Health Centers must meet several essential requirements: (1) they must be located in or serve communities deemed medically underserved; (2) they must furnish comprehensive primary health care, including services for both preventive and acute health care needs; (3) they must prospectively adjust their fees in accordance with patients' ability to pay; and (4) they must be governed by a community board. All of

¹ Holmes, A., Wright, E.R. (February 2009). *The Rising Tide of Healthcare Costs in Indiana*. Retrieved March 2009 from Indiana University Public Policy Institute, Center for Health Policy
<http://www.policyinstitute.iu.edu/health/publicationDetail.aspx?publicationID=563>.

² Estimation by the authors based on comparison of 2006 and 2007 Indiana Data Summary.

Indiana’s FQHCs operate in areas designated as Medically Underserved Areas (MUAs)³ or as primary care Health Professional Shortage Areas (HPSAs), or both. State-funded Health Centers are also located in high need areas. In order to become a SFHC, a needs assessment must be completed and included in the grant application. An entity that wants to become an SFHC must demonstrate local need and meet specific state requirements.

Given their similar mission and requirements, the distribution of patient characteristics across SFHCs closely mirrors that of patients seen at FQHCs. A comparison of the 2007 Uniform Data System (UDS) and the 2007 Indiana Data Summary indicates that I-CHCs effectively target a population that is economically stressed and financially and medically at risk. Specifically, 84 percent of the patients in SFHCs have incomes lower than 200 percent of the Federal Poverty Line (FPL), compared with 92 percent of patients at FQHCs in Indiana. Excluding patients with non-reported income, only 15 percent of SFHC patients and seven percent of FQHC patients had incomes above 200 percent of the FPL (see Figure 1).

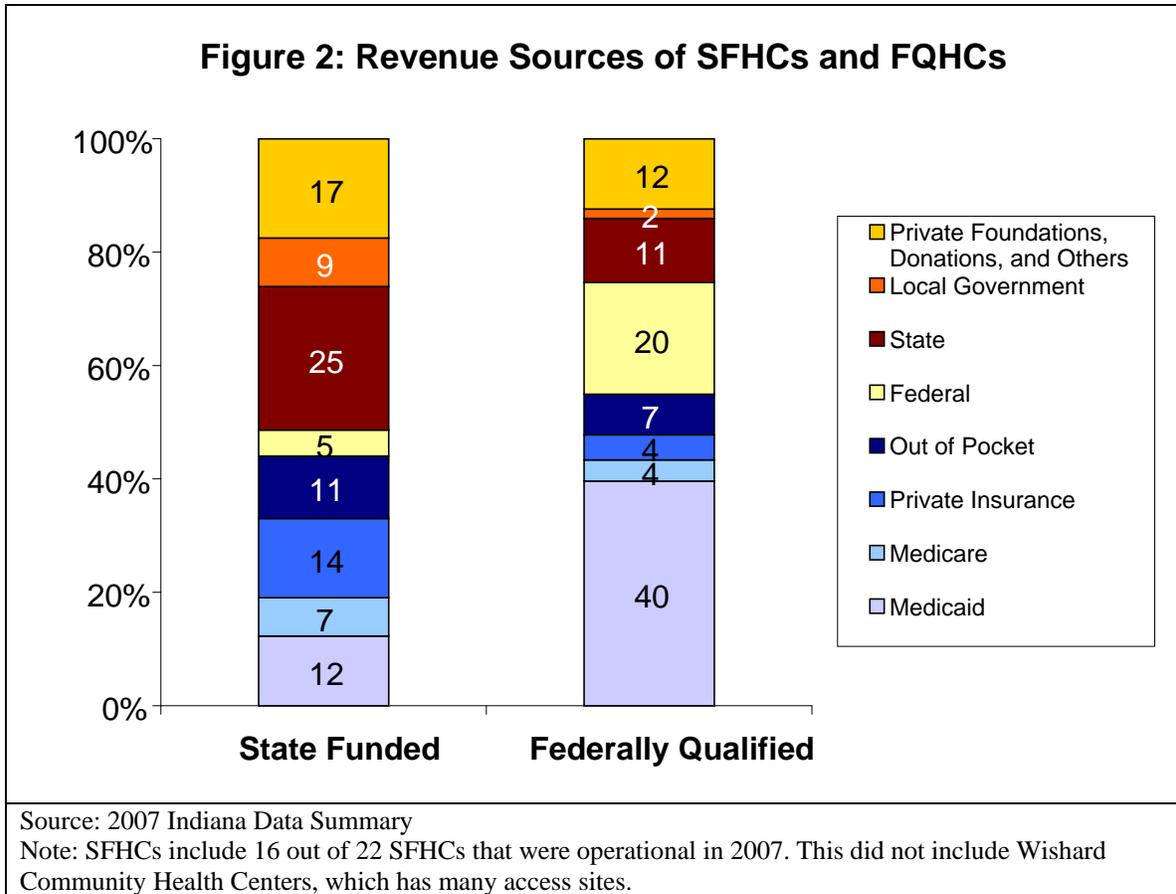


³ Medically Underserved Areas have too few primary care providers, high infant mortality, high poverty and/or high elderly population. Health Professional Shortage Areas have too few providers per population.

The data also suggest that I-CHCs are critical health care homes for the uninsured. Fourteen percent of Indiana’s population is uninsured (BRFSS, 2007). In contrast, the proportion of health center patients who are uninsured and underinsured is significantly higher. Approximately 20 percent of SFHC patients and 45 percent of FQHC patients are uninsured. Additionally, the 30 percent of SFHC patients with insurance type categorized as “other” are very likely to be underinsured with less generous coverage than the insurance coverage available to higher income groups.

Revenue Sources

Given their high concentration of low-income and uninsured patients, both FQHCs and SFHCs rely heavily on revenues from a variety of sources to fund their operations (Figure 2). In 2007, Indiana FQHCs received an average of 11 percent of their revenues from the state, (ranging from six percent to 55 percent at each center), while 20 percent of FQHC revenues was derived from federal grants and 40 percent was obtained through Medicaid payments. These figures are comparable to the revenue distribution for the average FQHC nationally.



In contrast, SFHCs are primarily dependent on state funding (25 percent), along with local and private foundations, donations, and other funding (17 percent). The majority of

the SFHCs that were operational in 2007 received no federal funding because only FQHCs are eligible to receive federal funding through the Bureau of Primary Health Care (BPHC).⁴ Federal grants accounts for only 5 percent of SFHC revenues. Local governments (both city and county level) are critical funding sources and account for nine percent of SFHC revenue.

Comparison of SFHC patient and revenue mix suggests possible under-financing issues under Medicaid. Figure 1 shows Medicaid patients account for 33 percent of SFHC patients but represents only 12 percent of revenues. In contrast to FQHCs, SFHCs are not eligible for enhanced payments under Medicaid. As a result, such costs may be shifted to other state revenue sources dedicated primarily to uninsured care.

In sum, FQHCs in Indiana rely more heavily on Medicaid and federal grants, and their distribution of funding closely resembles that of FQHCs across the nation. SFHCs rely primarily on a variety of private sources as well as state and local government funding. Both groups of Indiana health centers also rely on patient collections. Out-of-pocket payments accounted for 11 percent of SFHC revenue and 7 percent of FQHC revenue in 2007.

The increase in demand for I-CHC health care services due to the economic downturn and loss of employer-based insurance coverage provides additional pressures on already constrained resources. According to the U.S. Department of Labor, the number of unemployed residents in the state increased by 89 percent between June 2008 and June 2009 – and a 137 percent increase between June 2007 and June 2009.⁵ In June 2009, the Indiana unemployment rate was 10.7 percent, which is a 5 percentage point increase from June 2008 and a 6 percentage point increase from June 2007.⁶ With greater joblessness, the number of residents requiring access to subsidized care is likely to significantly increase.⁷

Indiana: Return on Investment

Health care services provided at Indiana CHCs are less costly than health care services provided at other outpatient provider settings. In Indiana, 2007 expenditures per I-CHC patient were \$1,529 compared with \$2,924 per patient at other outpatient settings, resulting in a \$1,395 savings per patient. This implies that:

- Every dollar spent on patient care at an I-CHC results in \$1.90 in overall health care spending savings when compared with other primary care settings.

⁴ Only three of the 16 SFHCs reporting information in the Indiana Data Summary received any federal funding.

⁵ Bureau of Labor Statistics. Local Area Unemployment Statistics. Retrieved July 22, 2009 from http://data.bls.gov/PDQ/servlet/SurveyOutputServlet?series_id=LASST18000003&data_tool=XGtable.

⁶ Bureau of Labor Statistics. Economy at a Glance. Retrieved July 22, 2009 from http://www.bls.gov/xg_shells/ro5xg02.htm#rate.

⁷ Dorn, S., Garrett, B., Holahan, J., and Williams, A. (2008). Medicaid, SCHIP and Economic Downturn: Policy Challenges and Policy Responses. *Kaiser Commission on Medicaid and the Uninsured*. Retrieved from www.kff.org/medicaid/upload/7770.pdf.

- I-CHCs generate significant savings of \$473 million in direct medical expenditures for the state population.⁸ SFHCs alone contribute potential savings of \$214 million in direct medical costs.⁹

Potential savings associated with CHC care in Indiana vary by type of service. A significant portion of these savings include averted hospital emergency room use and hospitalizations. Indiana's adjusted savings are significantly higher than national average savings for both emergency care and inpatient care. Emergency care savings in Indiana were \$77 while the national figure was \$71. This implies that in addition to direct patient benefits, one dollar spent on CHC care results \$0.05 in averted hospital ER costs. Savings for inpatient care in Indiana were \$779 compared with \$591 nationally. Thus, in addition to direct patient care, every dollar spent on I-CHC care results in \$0.51 in averted hospitalization costs in Indiana. Major chronic conditions, such as diabetes and asthma, are common conditions seen in Indiana CHCs. Health care services provided for diabetes and asthma at I-CHCs are less expensive than the same services provided at other outpatient care facilities. Indiana saves around \$3,679 per diabetic patient and \$2,467 per asthmatic patient per year.

Stable state funding is not only important to ensure access to health care services for underserved Indiana residents, but also serves as leverage funding to increase the availability of quality care. In addition to direct savings to the health care system, each dollar spent by the state on I-CHCs is associated with between \$6 and \$17 of value, in terms of revenues generated from all sources for the delivery of services at I-CHCs. (*see Appendix for methodology*).

Conclusion

Community health centers provide an alternative modality of health care delivery to counter rising health care expenditures and reductions in access to care occurring nationwide. The anticipated increase in demand for health care services provided at Indiana's CHCs due to the economic downturn and the resultant loss of employer-based insurance coverage will put additional pressure on already constrained resources. Not every person who loses his or her insurance will be covered through Medicaid or the State Children's Health Insurance Program (SCHIP), and unemployment is rising in the state.

Recent analyses concluded that the current economic downturn is putting more strain on available local government funding. The American Reinvestment and Recovery Act (ARRA) is expected to provide 19 I-CHCs (18 FQHCs and one SFHC) with \$4.9 million in grant funding to expand and improve their health care services.¹⁰ ARRA grant funding is projected to increase the state's FQHC revenues by 4.7 percent and its SFHC revenues

⁸ Total savings \$473.4 million is calculated from the number of patients in 2007 multiplied by savings per patient (i.e. 339,386 multiplied by 1,395).

⁹ State-funded Health Center savings of \$279.7 million equals 200,514 multiplied by \$1,395.

¹⁰ Inside Indiana Business. (29 March 2009). Stimulus to Expand Community Health Centers. Retrieved May 8, 2009 from <http://www.insideindianabusiness.com/newsitem.asp?ID=34751>

by 2.2 percent. However, while the need for health care services in Indiana is increasing, certain private revenue sources, such as private foundation support, donations, and employer-based health insurance, are facing growing pressures in the current economic environment. Thus, the infusion of additional public funding through ARRA is not likely to offset the anticipated reduction in private revenues faced by SFHCs.

Community health centers in Indiana, both SFHCs and FQHCs, achieved significant benefits to the state in terms of the value of health services delivered at these sites, and in terms of health care costs averted elsewhere in the health care system. Savings are realized despite the fact that health centers tend to serve patients with a more severe mix of chronic conditions compared with other outpatient settings. In addition, both SFHCs and FQHCs in Indiana provide services to predominantly low-income and near-poor families, thereby improving access to needed services. Continued funding by the Indiana state government will assure that the close to 340,000 patients who are served by community health centers will retain access to these services while yielding significant annual savings in overall health care costs.

This study has important nationwide implications as national health reform expands insurance coverage of low income and medically underserved populations. The study findings underscore the importance of investments in health centers, such as those earmarked under ARRA. Moreover, in the midst of the current health reform debate, policy makers increasingly have shown an interest in spurring the establishment and growth of patient-centered medical homes, primarily through community health centers, as a means to improving the quality of primary care, preventing or alleviating the long-term consequences of chronic illness, and bringing greater efficiency to the health care system. Thus, this study also underscores the need to develop sustainable revenue mechanisms at the federal, state, and local levels to enhance the ability of health centers to meet these growing needs.

Technical Appendix: Data Sources and Methods

The Appendix lists both the data sources and methods used to present and support the findings. Due to data limitations, some analyses could not be used to assess both FQHC and SFHC impacts. However, we include in this appendix additional findings based on FQHC data that may readily apply to SFHCs given their similarity in function and patient mix.

I. Data Sources

Medical Expenditure Panel Survey (MEPS)

The 2005 MEPS is a set of large-scale surveys of families and individuals and their medical providers and employers across the United States. MEPS is a nationally representative survey of health care use, insurance coverage, medical expenditures, sources of payment, demographic and socioeconomic variables for the civilian non-institutionalized population. It is a stratified multistage area probability design with oversampling of African Americans and Hispanics and has three major components: Household, Insurance, and Medical Provider. The Household component is the core component of the survey and collects demographic characteristics, health conditions, health status, medical services utilizations, charges and source of payments, access to care, satisfaction with care, health insurance coverage, income, and employment data for each person in the household. In 2005, MEPS included 32,320 individuals including 1,084 CHC users and 21,645 non-CHC users.

Behavioral Risk Factor Surveillance System (BFRSS)

The BFRSS is the world's largest, on-going telephone health survey system, which has tracked health conditions and risk behaviors annually in the United States since 1984. Publicly available MEPS files do not disclose the state in which a respondent resides. To perform an analysis within Indiana, national comparisons were adjusted by Indiana population characteristics taken from the BFRSS.

Uniform Data System (UDS)

The UDS collects data from all federally-funded health centers and providers who are officially enrolled in one of the following programs: Community Health Centers, Migrant Health Centers, Health Care for the Homeless, and Public Housing Primary Care. The unaudited self-reported data covers patient demographics, services provided, utilization rates, costs, and revenues and allows for review of the operation and performance of FQHCs. The UDS is maintained by the Health Resources and Services Administration ("HRSA"). No look-alikes are included in the UDS. A full explanation of the UDS can be found at <http://bphc.hrsa.gov/uds/>

2007 Indiana Data Summary

The 2007 Indiana Data Summary is the result of an annual survey collected in January 2008 by the Indiana Primary Care Association (IPHCA). The data collected follow the format of the UDS data; however, while UDS includes FQHCs, it does not capture

information about SFHCs. This data summary covers all 17 FQHCs and 16 out of 22 SFHCs that provided health care services in 2007. For the purpose of this exercise, dental clinics or clinics providing mainly dental services (i.e., LaPorte Dental Clinic) as well as school-based clinics (i.e., Learning Well), were excluded. For specific details on variable availability see Table A.1 and A.2.

	Federally Qualified Health Center	State Funded Health Center
Total	17	16
Race and ethnicity	17	15
Age	17	15
Income	17	11
Insurance	17	15
Funding Sources	17	13
Services provided	17	16
Expenditures	15	16
Encounters	15	15

	FQHC	SFHC	I-CHC
Primary and Preventative Care	17	16	33
Health Education	16	16	32
Pediatric Care	17	14	31
Pharmacy Services	14	13	27
Family Planning	15	10	25
Prenatal Care	15	9	24
Acute Medical Care	11	12	23
Diagnostic Lab & X-ray	14	9	23
Nutritional Counseling	11	11	22
Dental Care	16	5	21
Care Coordination	13	7	20
Women's Health Project	10	4	14
HIV Counseling	10	4	14
On-Site WIC Services	4	6	10
Optometry	4	6	10
Podiatry	5	3	8
HIV Early Intervention Services	5	2	7
Infant Car Seat Distribution	4	2	6
Mental Health Service on site	1	0	1
Eligibility Enrollment	1	0	1
Case Management	1	0	1
On-Site Medicaid Enrollment	0	1	1
Counseling	0	1	1
Chronic Disease Management	0	1	1
Family Life Center	1	0	1
Take Charge Lite Program	0	1	1

Source: 2007 Indiana Data Summary.
 Note: 17 FQHCs and 16 out of 22 SFHCs.

II. Calculation of Savings

In 2007, both SFHCs and FQHCs in Indiana provided health care at lower costs than the national average FQHC per-patient expenditures of \$378. Per-patient expenditures at SFHCs are lower than per-patient expenditures at FQHCs, regardless of overhead costs. SFHCs spend relatively less on overhead costs than FQHCs both in Indiana and nationwide. Nevertheless, despite SFHCs' spending one fifth of their total costs on overhead, those costs remain significant (Table A.3). FQHCs need to comply with several federal regulations in order to maintain their status, and, as a result, this increases their overhead costs. FQHCs require more staff to treat a higher risk population. In addition, compared to SFHCs they must comply with more detailed reporting regulations for chronic disease management and other requirements.

	SFHC	FQHC	National FQHC
Per patient expenditures (w/o overhead)	\$256.79	\$325.29	\$378.10
Per patient expenditures (including overhead)	\$315.45	\$480.21	\$561.99
Overhead costs as a share of total expenditures	18.6	32.3	32.7
Note: Per patient expenditures represents 17 FQHCs (from 2007 UDS) and 7 SFHCs (2007 Indiana Data Summary).			

MEPS data were used to obtain estimates of overall health care expenditures associated with I-CHC users¹¹ and patients who primarily use other sources of care. Potential savings associated with care in Indiana FQHCs were obtained in two steps. The first step consists of running a statistical model (OLS regression) to estimate differences in health care expenditures between FQHC users and non-FQHC users in MEPS, adjusting for all patient demographic, socio-economic and health characteristics. The second step consists of using the model to predict expenditure differences in Indiana by replacing national patient characteristics with Indiana characteristics as reported in the BFRSS and U.S. Census data. For statistical accuracy, we used 5000 replications to sample the range of individuals in Indiana.

These estimations suggest that withdrawal of state funding could result in a loss of \$84 million as shown in the following examples. We calculate two scenarios: A) withdrawal of state funds results in a proportionate decrease in patients receiving care at all CHCs, and B) withdrawal of state funds results in the closure of the SFHCs, while FQHCs continue to operate with reduced patient loads. The estimated losses are \$83.5 million under scenario A and \$242.9 million under scenario B. From the vantage point of the state government, investment ensures a substantial return in terms of savings (i.e., averted

¹¹ CHC users were defined as those receiving the majority of their primary care services at FQHCs and neighborhood clinics. Non-CHC users were defined as those using primary care services in non-CHC settings, such as private physicians' offices and other medical settings.

losses) for the medically needy and low-income patients who use CHCs. *For every dollar invested in health centers by the Indiana state government creates \$5.70 in health care value under scenario A and \$16.60 under scenario B* (Table A.4). At best, reduced funding would lead to reduced access. State-funded Health Centers that rely heavily on state government funding could face closures due to revenue shortfalls.

		Loss from withdrawing state funding (millions)¹³	Return on State Investment (per \$1)
Scenario A: proportionate decrease in SFHC and FQHC patient load	state revenues	\$83.5	\$5.7
	state and local government revenues	\$106.1	\$6.1
Scenario B: closure of SFHC and reduced FQHC patient load	state revenues	\$242.9	\$16.6
	state and local government revenues	\$247.2	\$14.2

Note: State and local government revenue share is based on 16 SFHC reports

These are conservative estimates based on the assumption that other revenue sources are relatively fixed and not affected by a withdrawal of state funding. In fact, federal funding for FQHCs might actually be reduced if the withdrawal of state funds results in fewer patients seen, as Section 330 grants that make up the bulk of federal funding are determined largely by the number of uninsured patients served.¹⁴ Local government and private contributions would have to be tapped to make up for shortfalls in state revenues, but SFHCs’ reliance on these types of revenues is already relatively high, and they are likely to be severely strained during the present economic downturn.

The estimates are consistent with other health center valuation studies, which highlight the increased access and use of preventive health center care that reduce morbidity and mortality, offsetting future health care costs. Hypertension and cancer screening rates for Medicaid and uninsured population are higher among FQHC patients than patients in other outpatient settings.¹⁵ Nationally, FQHCs are widely recognized for the quality of care they provide, their ability to reduce disparities in health outcomes and health care, and their demonstrated ability to meet or exceed national benchmarks in terms of quality

¹² Return on state investment equals the savings divided by total state funding. Savings are equal to losses averted.

¹³ Under scenario A the loss is calculated from $S_1 * Q_1 * 1,395 + S_2 * Q_2 * 1,395$, where:

S1 = State revenue share in SFHCs; S2 = State revenue share in FQHCs

Q1 = Number of patients in all SFHCs; Q2 = Number of patients in all FQHCs

Under scenario B care for all patients at SFHCs is withdrawn the loss is calculated from $Q_1 * 1,395 + S_2 * Q_2 * 1,395$.

¹⁴ Dor, A., Pylpchuck, Y., Shin, P., Rosenbaum, S. (2008). Uninsured and Medicaid Patients’ Access to Preventive Care: Comparison of Health Centers and Other Primary Care Providers. *Geiger Gibson Research Brief* (4).

¹⁵ Ibid.

performance.¹⁶ Through the provision of a regular source of care, FQHCs can significantly reduce the likelihood of hospitalizations and ER visits, two important sources of expensive care.¹⁷ One study found that FQHCs demonstrate the ability to maintain chronic disease management programs that effectively reduce the risk of complications from chronic conditions.¹⁸ Although FQHCs nationwide provide services to women with higher risks, women who receive prenatal care at community health centers deliver fewer children with inappropriately low birth weight than women at the national level.¹⁹ As a result, health centers generate system-wide cost savings and are able to leverage additional resources for the prevention and management of illnesses and chronic conditions.²⁰

¹⁶ Shin, P., Markus, A., Rosenbaum, S., and Sharac, J. (January 2008). Adoption of Health Center Performance Measures and National Benchmarks. *Journal of Ambulatory Care Management*, 31(1): 69-75.

¹⁷ Falik, M., Needleman, J., Wells, B., Korb, J. (2001). Ambulatory Care Sensitive Hospitalizations and Emergency Visits: Experiences of Medicaid Patients Using Federally Qualified Health Centers. *Medical Care*, 39(6):551-561.

¹⁸ Chin MH, Drum ML, Guillen M, Rimington A, Levie JR, Kirchhoff AC, Quinn MT, Schaefer CT. (2007). *Improving and Sustaining Diabetes Care in Community Health Centers with the Health Disparities Collaboratives*. *Medical Care* 45 (12):1135-1143

¹⁹ Politzer, R.M., Yoon, J., Shi, L., Hughes, R.G., Regan, J., and Gaston, M.H. (2001). Inequality in America: The Contribution of Health Centers in Reducing and Eliminating Disparities in Access to Care. *Medical Care Research and Review*, 58 (2): 234-248.

²⁰ Russell, L.B. (2007). *Prevention's Potential for Slowing the Growth of Medical Spending*. Retrieved from www.nchc.org/nchc_report.pdf; Cohen, J.T., Neumann, P.J., Weinstein, M.C. (2008). Does Preventive Care Save Money? Health Economics and the Presidential Candidates. *New England Journal of Medicine*, 358(7): 661-663; Shin, P., Finnegan, B., Rosenbaum, S. "[How Does Investment in Community Health Centers Affect the Economy?](#)" Issue No. 1. Geiger Gibson/RCHN Community Health Foundation Research Collaborative, Feb 2008.