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The Workforce Investment Act and Worker Shortage in Rural Health: Preliminary Evidence from Louisiana

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Abstract. The Workforce Investment Act (WIA) of 1998 proposed to make education and training of workers and the economically disadvantaged more market-driven. WIA mandates that states create one-stop career centers as an entry point for WIA services, and in Louisiana these are called Career Solutions Centers. Clients at the one-stop career centers must progress through a series of steps to get subsidized job training. If clients still have not found employment, then they may receive an Individual Training Account (ITA), which works like a voucher for education and training. Several health care occupations, including registered nurses, licensed practical/vocational nurses and home health aides currently meet the designation of "top demand." Thus, job training for those occupations is eligible for the ITA voucher. This paper will evaluate the relationship between ITA receivers and nursing employment in Louisiana.

1. Introduction

The Workforce Investment Act (WIA) of 1998 proposed to make education and training of workers and the economically disadvantaged more market-driven. WIA mandates that states create one-stop career centers as an entry point for WIA services, and in Louisiana these are called Career Solutions Centers. Clients at the one-stop career centers must progress through a series of steps to get subsidized job training. If clients still have not found employment, then they may receive an Individual Training Account (ITA), which works like a voucher for education and training.

A requirement for ITA use is that clients must pick from a list of approved training providers, and they can only receive training that meets needs for occupations in local demand. Training must apply to jobs available in the local area, as determined by the local Workforce Investment Board (WIB), or training must apply to in-demand jobs in an area to which the WIA client is willing to move. In Louisiana, WIBs provide lists of local demand jobs to clients.

Several health care occupations, including registered nurses, licensed practical/vocational nurses and home health aides currently meet the designation of "top demand." Thus, job training for those occupations is eligible for the ITA voucher. This paper will evaluate the relationship between ITA receivers and healthcare employment in Louisiana.

2. Healthcare Workforce and Publicly-Funded Training

Non-physician health care occupations like nurses, dentists, and technicians represent some of the biggest gaps in the health care workforce (Hart, Lishner and Rosenblatt, 2003). Rural communities may struggle to retain these types of providers just as they struggle to hold on to physicians (Hart, Lishner and Rosenblatt, 2003; Daniels et al, 2007). As a result, people in rural communities sometimes must travel long distances to receive health care services.

Hart, Lishner and Rosenblatt (2003) points out that healthcare workforce policies usually target deficiencies in urban areas. A policy that targets the lack of health care professionals in rural areas then needs to

reflect the particular challenges and needs of such communities. This paper evaluates whether the WIA has affected the lack of health care providers in Louisiana.

Studies have shown that several factors are important in producing health care providers that are willing to practice in rural areas. A medical student who has a rural background is more likely to practice in a rural area upon graduation; a graduate of a medical school that requires a rural practicum or rotation is also more likely to locate in a rural area (Hart, Lishner and Rosenblatt, 2003; Daniels et al, 2007).

Some federal- and state-sponsored programs have tried to improve health workforce supply in rural areas, including Medicare and Medicaid, which provide reimbursement to rural providers. Other programs provide assistance to foreign medical graduates; they receive assistance with achieving permanent residency status in return for providing a given number of years of service. However, many of these participants do not remain in rural areas once their service time has ended (Hart, Lishner and Rosenblatt, 2003). Many of these reimbursement programs and foreign physician programs depend on a rural community's designation as a health professional shortage area (HPSA) (Ricketts, 2005)

When WIA began in 1999, health workforce shortages began to emerge (Skillman, Sadow-Hasenberg and Hart, 2004). The US Department of Labor declared that health care was a high-growth industry and would have half of the fastest-growing occupations from 2002 through 2012. Unfortunately, most health care jobs require at least some associate/baccalaureate education, and the WIA only funds education and training after participants have exhausted other avenues of employment-seeking. WIA was designed for quick job placement (a work-first policy), while many health care jobs require post-graduate training. WIA does provide infrastructure for steering people into entry-level health care jobs, from which they might progress into jobs that fill the heath workforce gaps. In their review of WIA's effect on health workforce development, Skillman, Sadow-Hasenberg and Hart (2004) found that several U.S. states used WIA resources to promote health care workforce development. Louisiana was not one of these states.

WIA was up for reauthorization in 2003, but Congress simply extended WIA in its current version because of debate about program changes. Among the possible changes were: providing states with greater flexibility in spending WIA funds, reducing and altering the required performance measures, and making it easier to access education and training through WIA programs (Skillman, Sadow-Hasenberg and Hart, 2004).

The Workforce Investment Act (WIA) of 1998 proposed to make education and training of workers and the economically disadvantaged more market-driven (Shaw and Rab, 2003). Under the WIA in Louisiana, local workforce investment boards (LWIBs) administer services such as occupational training, on-the-job training (OJT), job readiness, adult education and literacy, cooperative education, private sector operated training, skill upgrade/retraining, entrepreneurial training, and customized employer training (Smith, 2004). WIA mandates that states create one-stop career centers as an entry point for WIA services (Shaw and Rab, 2003; Eberts, 2005; Muhlhausen, 2005; Cohen Hall et al., 2006), and in Louisiana these are called Career Solutions Centers (Louisiana Department of Labor, 2007c).

Clients at the one-stop career centers must progress through a series of steps to get the subsidized training: core services, intensive services and training (Shaw and Rab, 2003; Grubb, Badway and Bell, 2003; Eberts, 2005; Muhlhausen, 2005). Table 1 shows the services available in each step of the WIA process. If the first tier does not lead to employment, then clients, after staff referral, can move to the second service level. If clients still have not found employment, then they may receive an Individual Training Account (ITA), which works like a voucher for education and training (Shaw and Rab, 2003). With an individual training account, WIA clients can get training from a list of approved providers (Grubb, Badway and Bell, 2003). Training must apply to jobs available in the local area, as determined by the local WIB, or training must apply to in-demand jobs in an area to which the WIA client is willing to move (Shaw and Rab, 2003).

Table 1. Service tiers at WIA-mandated One-Stop Service Centers.

Tier	Name	Services	Availability
1	Core Services	Self-service skills assessment, job search assistance	Any client
2	Intensive Services	Detailed skills assessment, case management, job counseling	Only through staff referral
3	Training	Occupational skills, remedial education, job readiness	Only through staff referral

Sources: Shaw and Rab (2003); Grubb, Badway and Bell (2003); Eberts (2005); Muhlhausen (2005).

In Louisiana, WIBs provide lists of local demand jobs to clients (Smith, 2004). Demand occupations are determined in Louisiana at two levels, the Regional Labor Market Area and locally determined (Bowman, 2007). The Louisiana Occupational Forecasting Conference determines which occupations are defined as "top demand"; "demand occupations" are those that appear in LDOL projections with at least 20 annual openings; and then three possibilities for locally determined demand: job orders (job announcements listed with LDOL, the local paper or reputable websites like Monster.com), employer surveys (by WIBs, academic institutions, LDOL, etc) to determine current or projected occupational shortages, and targeted industries (determined by WIBs and identified in economic development plans to attract or expand specific industry sectors within the region) (Bowman, 2007).

The Louisiana Department of Labor projects occupations in demand for ten year periods. Table 2 shows a list of health care occupations that the 2004-2014 LDOL occupation projections list as "Top Demand." Among them are registered nurses, licensed practical and licensed vocational nurses, and nursing aides, orderlies and attendants.

Table 2. Projected demand for select health care occupations in Louisiana.

Occupation	2004 Employment Estimate	Annual % Growth in New Demand	Average Hourly Wage	Minimum Education or Job Training
Pharmacists*	4,040	0.90%	$40.21	First Professional Degree
Registered Nurses*	40,730	2.40%	$24.50	Associate Degree
Physical Therapists*	2,240	2.80%	$34.01	Master's Degree
Respiratory Therapists*	2,150	2.20%	$20.16	Associate Degree
Medical/Clinical Lab Technologists*	3,410	1.60%	$20.57	Bachelor's Degree
Medical/Clinical Lab Technicians	2,540	1.70%	$14.01	Associate Degree
Dental Hygienists*	1,550	3.10%	$23.88	Associate Degree
Radiologic Technologists	2,800	2.10%	$20.34	Associate Degree
Emergency Medical Technicians/Paramedics	2,770	2.10%	$12.04	Postsecondary Vocational
Pharmacy Technicians*	4,080	1.10%	$11.00	Moderate-Term Training/Experience
Surgical Technologists*	1,710	2.40%	$15.02	Postsecondary Vocational
Licensed Practical/Vocational Nurses	19,650	0.70%	$14.84	Postsecondary Vocational
Medical Records/Health Info. Technicians*	2,500	1.80%	$11.22	Associate Degree
Home Health Aides	6,940	4.20%	$7.87	Short-Term Training/Experience
Nursing Aides, Orderlies, Attendants*	27,920	1.20%	$7.64	Short-Term Training/Experience
Dental Assistants	3,130	3.10%	$11.85	Moderate-Term Training/Experience
Medical Assistants	5,120	3.90%	$10.07	Moderate-Term Training/Experience

*License required or certificate available. Source: Louisiana Department of Labor (2007a).

3. Criticisms of the Workforce Investment Act

Shaw and Rab (2003) and Grubb, Badway and Bell (2003) say that the WIA has been ineffective and poorly linked to mainstream education. Grubb, Badway and Bell found that many adult education programs from welfare programs only led to low wage jobs, while Shaw and Rab determined that WIA restrictions actually reduced access to training and education.

First, ITAs are only available after clients have exhausted the job search and counseling services, so WIA prevents many clients from reaching the ITA tier. Furthermore, the ITAs may only be used for training from those providers who get approval from WIBs; thus, educational choice is restricted for ITA receivers. Many community colleges have opted out of participation because the eligibility requirements are so daunting (Grubb, Badway and Bell, 2003; Shaw and Rab, 2003).

Second, the one-stop centers have their own performance measures to meet. Shaw and Rab (2003) studied caseworkers at several centers and found that the job placement and wage measures encouraged caseworkers to give services only to those clients who were likely to have a positive outcome (i.e., find a job at the required wage level), called creaming. This limits access to training and subverts the market-driven unemployment assistance goals of WIA. The one-stop center performance measures also do not ac-

count for clients who may be hard to place because of extenuating circumstances such as gender, family problems or disability. (Shaw and Rab, 2003).

A final criticism of WIA concludes that the training that is accessible to participants who make it that far will only be short-term and not the kind that will allow participants to take high-wage jobs (Shaw and Rab, 2003).

4. The Healthcare Workforce in Louisiana

Every parish in Louisiana has been designated as a Health Professional Shortage Area (HPSA) for primary care, either for the entire parish, population group or for a facility. Similarly, almost all parishes have HPSA designation for dental care. Many of the parishes also have HPSA designation for mental health, particularly parishes in the southern part of the state (Louisiana Department of Health and Hospitals, 2007).

During the study period, employment of both RNs and LPNs increased by 10.5% and 11.8% respectively, and real hourly wages increased by 6.2% for RNs and 5.3% for LPNs (these data include a decline during the 2005 to 2006 period, after hurricanes Katrina and Rita). The number of health care establishments increased by 15.4%, and the unemployment rate increased from 4.7 percent to 6.7 percent. The percent of WIA completers who received ITA vouchers also increased from 18% in 2000 to 33% in 2006. Finally, Buerhaus, Auerbach and Staiger (2007) says that population aged 23 to 65 make up the potential and current nursing population. That age group population increased by 3.4% between 2000 and 2005, though after the hurricanes, Louisiana experienced a population contraction after 2005. When this contraction is included, the market population recommended by Buerhaus, Auerbach and Staiger (2007) decreased by 1.3% during the study period. Figures 1, 2, 3, and 4 illustrate the changes.

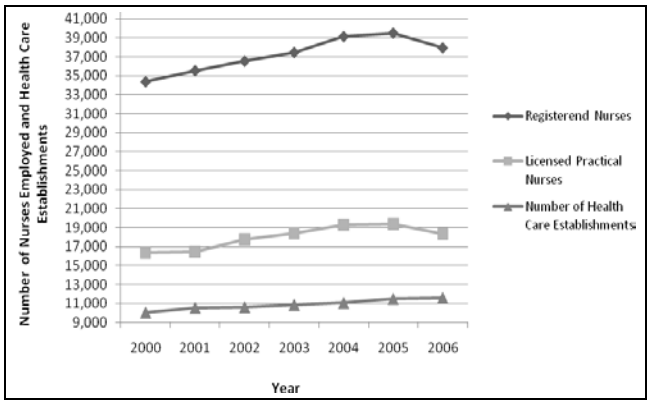

Figure 1. Number of health care establishments and employment of Registered and Licensed Practical Nurses, 2000 – 2006. Source: US Bureau of Labor Statistics, (2007); US Bureau of Labor Statistics (2008).

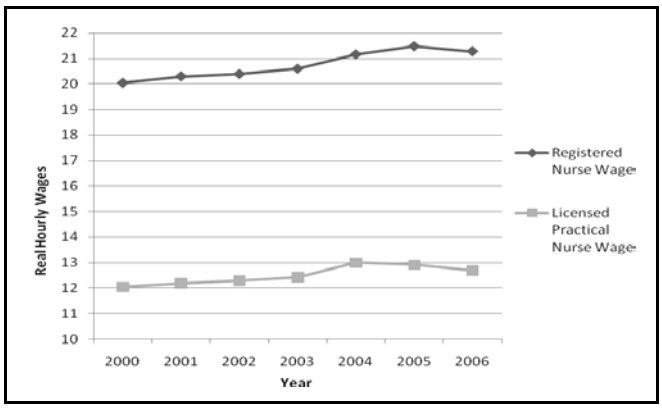

Figure 2. Real hourly wages of Registered and Licensed Practical Nurses (Year 2000 $).
Source: US Bureau of Labor Statistics (2007).

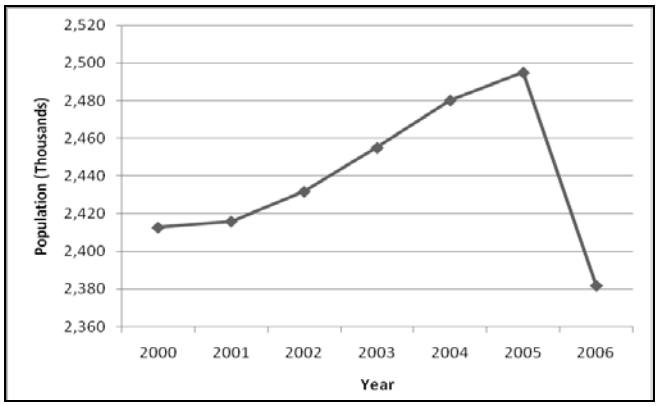

Figure 3. Louisiana population aged 23 to 65, 2000-2006. Source: US Census Bureau Population Estimates (2009).

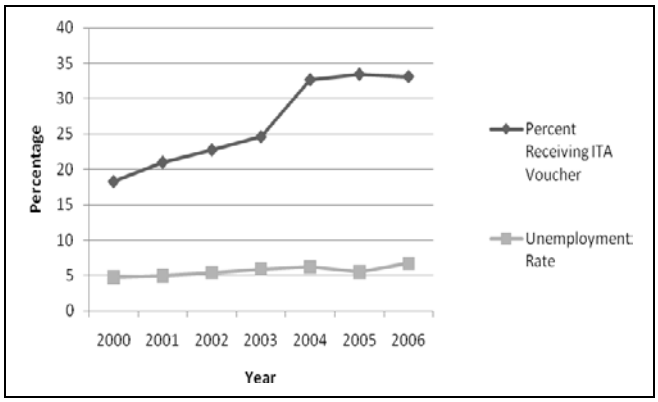

Figure 4. Louisiana unemployment rate and percentage of WIA program exiters receiving ITA vouchers, 2000-2006. Source: US Department of Labor (2010); Louisiana Department of Labor (2007b).

5. Methods and Data

It is difficult to quantify WIA's impact on the health care workforce because WIA's mandated performance measures do not record which sector eventually employs WIA beneficiaries (Skillman,

Sadow-Hasenberg and Hart, 2004). Because ITA training tends to be targeted at programs of two years or less, two occupations are chosen for this study: Registered Nurses (RNs) and Licensed Practical/Vocational Nurses (LPNs). Table 2 shows that these two occupations require either an associate's degree or vocational degree, respectively, which would fit the short-term nature of training provided by WIA.

Reinier et al. (2005) evaluated definitions of common workforce indicators such as vacancy rate and turnover rate for measuring the size of the registered nurse (RN) workforce. A common definition and formula for these measures had not been widely adopted in employer surveys. Therefore, a comparison of vacancy and turnover rates across studies and regions had little meaning. National RN workforce surveys also suffered from such issues, and the authors determined that state-level workforce databases may provide more reliable information about the supply, distribution and use of health care personnel. Measuring the impact of WIA legislation on vacancy rates and occupational demand will require an accurate definition of vacancy. The authors make recommendations of both an accurate vacancy rate and an accurate turnover rate.

Buerhaus, Auerbach and Staiger (2007) looked at factors that influence both long-run and short-run supply of RNs. Major factors that affect long-run RN supply include size of population of potential RNs, the propensity of people to choose nursing as a career, the price of nursing tuition, the attractiveness of other careers, nursing wages and the capacity of nursing programs. The authors suggest that capacity is the most important because of coincident shortages of faculty and classroom space, meaning that many RN applicants are turned away by programs. Short-run RN supply is affected by RN job characteristics, workplace climate, whether the RN has children or aging parents in their care, RN age, participation in an education program, and income of the RN's spouse. The authors also explain income and substitution effects that impact RN supply. These factors must be included in any econometric analysis of workforce development policy impacts.

Given the WIA goal of matching job seekers with in-demand occupations, the question is: did WIA influence the number of nurses employed once WIA services became available? Another option would be to see if WIA had an effect on vacancy rates. Nursing occupations, along with many other health care related jobs, are consistently high-demand jobs in Louisiana, particularly in rural areas. Other factors that influence nursing employment include spouse employment, nursing wage, population of potential nursing workers, and the number of health care establishments that employ nurses.

The ad hoc model for this study, estimated by OLS, is:

$$NurseEmployment = \beta_0 + \beta_1 realmedianwage + \beta_2 \%ITAreceivers + \beta_3 Healthestablisments + \beta_4 Unemploymentrate + \varepsilon. \quad (1)$$

where *NurseEmployment* is the number of nurses employed per person aged 23 to 65, *real median wage* is the hourly wage of nurses converted to 2000 constant dollars using the BEA Personal Consumption Expenditures index, *%ITAcompleters* is the percent of WIA services completers, by program year of exit, who received a training voucher, *Healthestablishments* is the number of health care establishments in Louisiana (US Bureau of Labor Statistics, 2008), and *Unemploymentrate* is the Louisiana lagged unemployment rate (Louisiana Department of Labor, 2007b).

Buerhaus, Auerbach and Staiger (2007) suggest using unemployment rate to represent spouse income because data on the spouses of nurses are not available. It is lagged to reflect the time between termination of employment, the decision by the nurse to return to work, and the time of employment. The number of health care establishments serves as an indicator of the market for nursing labor, which Buerhaus, Auerbach and Staiger (2007) defines as hospitals, home care, long-term care, clinics/physicians offices and schools; each of these categories is contained in the data from U.S. Bureau of Labor Statistics (2008), which captures both public and private establishments. The authors also suggest that the population that best represents nurses/potential nurses is the age group 23-65, so employment for both registered nurses and licensed practical nurses is converted to per capita basis using that population designation.

OLS regressions were performed for registered nursing employment per capita and licensed practical nursing employment per capita. Specification tests showed no heteroskedasticity and no autocorrelation.

6. Results

Table 3 shows the results of the regression of RN and LPN employment on wage, number of establishments, unemployment rate, and program exiters who received an individual training account. The expectation was that ITA would have no positive impact on the number of nurses employed, and while the coefficient carries a positive sign on that variable, it is not statistically significant for RNs. For LPNs, the ITA coefficient carries a negative sign but is not statistically significant. This could reflect that RN requires an

associate's degree while LPN requires only postsecondary/vocational achievement (see Table 2); ITA receivers might use their vouchers to train at the higher level, which would also come with higher real wage. The coefficient for number of establishments has the expected positive sign as does unemployment rate, but neither is statistically significant. Wage has the expected, positive sign for LPN employment (though not significant), while wage has a negative sign (not significant) for RN employment. Perhaps healthcare establishments hire greater numbers of LPNs rather than RNs as wage rates increase (this study does not evaluate such a choice).

Table 3. OLS results for Registered Nurse employment, Licensed Practical Nurse employment per capita population aged 23 to 65.

Explanatory Variables	Dependent Variable: Registered Nurse Employment	Dependent Variable: Licensed Practical Nurse Employment
Real RN Wage	-0.0002	0.001
	(-0.09)	(-1.17)
Healthcare Establishments	0	0
	(-0.55)	(-0.6)
Unemployment	0.0001	0.0002
	(-0.4)	(-1.09)
%ITA Receivers	0.0001	-0.0001
	(-0.43)	(-0.57)
Constant	0.01	-0.01
	(-0.34)	(-0.78)
R^2	0.982	0.934
Adjusted R^2	0.945	0.801
F-Statistic	14,454	2,072.79

*Indicates statistical significance at the α=0.05 level. T-statistic values appear in parentheses.

A second regression was performed with unemployment rate computed as number of unemployed (Louisiana Department of Labor, 2007b) divided by population aged 23 to 65, to reflect the unemployment rate in the population that would be in the labor market for nursing jobs. This puts unemployment rate on the same scale as per capita employment. The results, shown in Table 4, are similar to those of Table 3.

Table 4. OLS results for RN and LPN employment per person aged 23 to 65.

Explanatory Variables	Dependent Variable: Registered Nurse Employment	Dependent Variable: Licensed Practical Nurse Employment
Real Wage	-0.001	0.007
	(-0.49)	(-1.32)
Healthcare Establishments	0	0
	(-0.96)	(-0.7)
Unemployment	0	0.0003
	(-0.23)	(-1.15)
%WIA completers	0.0001	-0.00009
	(-0.84)	(-0.73)
Constant	0.025	-0.018
	(-0.74)	(-0.95)
R^2	0.98	0.936
Adjusted R^2	0.94	0.809
F-Statistic	13,365	2,158

Notes: Unemployment scaled per person aged 23 to 65. *Indicates statistical significance at the α=0.05 level. T-statistic values appear in parentheses.

It appears that, as expected, access to ITAs, the third tier of WIA services, does not help with the shortage of nursing employees in Louisiana. It may be that, as WIA critics have said, the restrictive rules for reaching the ITA tier are preventing potential nurses from affording training. WIA does not help with the rural health care shortage in Louisiana.

The results are preliminary due to a lack of ITA data. The seven years of available data is very limiting for regression analysis. Reviewers suggested cross-sectional data based on the designated labor market areas in Louisiana, but the authors were unable to get cross-sectional information on program exiters who received ITA vouchers. Such analysis might be possible at the national level, with states as cross-sections, but that would not provide insight into WIA's impact on rural health worker shortage.

6. Potential changes in WIA

Much of Louisiana's workforce development effort has focused on recovery from the hurricanes of 2005. After the hurricanes, the Healthcare and Social Assistance sector lost 21,000 jobs due to hospital closures

and a loss of physicians along the gulf coast (LDOL, 2007c). LWIBs have collaborated with recipients of National Emergency Grant funds funneled through the Recovery Workforce Training Program, a $38 million program to train workers for high demand jobs, including health care.

Nationally, the WIA is up for renewal again, and the U.S. Department of Labor's Employment and Training Administration has proposed some reforms. Key to addressing the health care workforce shortage is increased support for education and training. ETA's proposal includes creating a Career Advancement Account (CAA) for job seekers. The CAA would provide a worker with $3,000 for one year, and the money may be used for education and training expenses such as tuition, fees and textbooks. A worker could renew the account for a second year and another $3,000 (ETA, 2007). Additionally, the proposal dedicates more funding for education and training, and it also streamlines the process for certifying training programs and measuring accountability of the one-stop career centers. The CAAs are supposed to increase opportunities for workers to participate in post-secondary education and training, which many health care occupations, such as nursing, require. The increased flexibility, if accepted when WIA comes up for renewal, may increase any positive impact the program has on the supply of nurses and other health-care providers.

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