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How Should Health Departments Manage Prenatal Care?

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Wright State University, School of Medicine
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Adams County Board of Health
 Brown County Health Department
 Butler County Health Department
 Champaign Health District
 Clark County Combined Health District
 Clermont County General Health District
 Clinton County Board of Health
 Darke County General Health District
 Fayette County Health Department
 Greene County Combined Health District
 Hamilton County General Health District
 Highland County Health Department
 Logan County General Health District
 Madison County-London City Health District
 Miami County Health District
 The Combined Health District of Montgomery County
 Preble County General Health District
 Sidney-Shelby County General Health District
 Warren County Combined Health District
 Cincinnati City Health Department
 Hamilton City Health District
 Village of Indian Hill Health Department
 Middletown City Health Department
 Norwood City Health Department
 Oakwood City Health Department
 Piqua City Health Department
 Sharonville City Health Department
 Springdale City Health Department
 St. Bernard City Health Department

Abstract

Objective: To compare how health departments in the southwest district of Ohio manage prenatal care, defined as preventative care provided immediately preceding, during, and following pregnancy, to determine if there is a better management technique based on cost and/or characteristics of jurisdictions.

Design: Qualitative descriptive analysis of prenatal services at local health departments in the southwest district of Ohio for 2004.

Setting and Participants: Health Departments in the southwest district of Ohio.

Main Outcome Measures: Comparison of the types of services currently being used to provide prenatal care services (i.e., direct, contracted, combination, or no service) including budgeting and cost comparisons between services and per client as well as population comparisons.

Results: Four departments provide full service clinics, two departments do a combination of contracting and direct service, one department contracts out all prenatal services and 22 departments provide no prenatal services. The percentage of the total budget that prenatal services comprise for those departments providing service is 1.7%, 3.3%, 8.9%, 6.8%, 3.3%, and 15.8%. Departments fund prenatal services in large part through grants and general revenue. Prenatal budgets for those providing full services were \$537,000, \$200,000, and \$90,000. Prenatal budgets for those providing a combination of services and contracting were \$271,003 and \$92,048. The prenatal budget for the department that contracts services was \$237,820. Cost per client for full service clinics was \$1037, \$1923, and \$909. Cost per client for combination services was \$1,613 and \$268 and the cost per client for contract services was \$259. Five departments that provide services do so because of lack of availability of services for the uninsured and the underinsured and the 6th department does it because services are not available at all. Of the 22 departments not providing services their reasons were; lack of funding (8 departments), lack of staff (2), lack of public demand (1), lack of public need (8), and other (3). All departments that provide prenatal services conducted needs assessments. Ten of the 22 departments not providing services conducted a needs assessment. The proportion of the departments conducting needs assessments for those providing services compared to those that do not provide services was significant ($p = <0.001$). Total health jurisdiction population was not a significant factor in providing services and the percentage of the uninsured population did not appear to be a factor either.

Conclusions: The results do not indicate a better way to manage prenatal care in the southwest district of Ohio. It depends on the political climate, the availability of providers, and the financial ability of each department. Differences among health department services and cost comparisons at local health departments were unexplainable, but may be attributed to small regional variation in healthcare that has been documented in private medical care. More health departments should be conducting needs assessments as a tool for the decision making process.

Introduction:

Health departments administer primary care services in various ways ranging from providing no services to full service clinics. Local health departments are currently questioning how to carry out the three functions of public health, assessment, policy development and assurance, when it comes to primary care. Due to limited resources, many departments overlook the assessment function of public health, which is a crucial function in determining what kind of services to provide. In the current stage of evolution of public health, the role of health departments in providing primary care is being reevaluated. Primary care includes a wide range of functions; this study looks at how prenatal care is managed by health departments in the southwest district of Ohio. Health Departments have traditionally supplied prenatal care directly to individuals, particularly the uninsured, underinsured, or indigent population. As health department purse strings are being pulled tighter, many departments are being forced to cut services that provide minimal or no funding, such as primary care services compared to fee for service programs, resulting in public health officials questioning if prenatal care should be continued.

This study focuses on how departments assure prenatal care, either through direct services, contracting, or providing no services. Aspects' concerning the quality of prenatal care given by local health departments compared to that of private clinics was not considered. The purpose of this research is to determine if there is a better way for departments to manage prenatal care.

Literature Review:

The role of public health has been forced to evolve throughout history. Public health in the mid-nineteenth century was concerned with the sanitary condition of communities. However, in the late 1800's, bacteriology was developed linking infectious disease with human carriers bringing public health and individual treatment together. In the early 1900's public health clinics started to emerge across America with 538 "baby clinics" by 1915 (Starr, 1982). The role of maternal and child health has been a key aspect of public health since the implementation of the Sheppard-Towner Act of 1921. In 1939, the federal government allotted \$8 million for maternal and child health while \$9 million went for general public health and \$4 million to venereal disease control (Fee, 1994). Fee (1994) believes that the reason that many local public health departments provide the services that they do is because they have modeled their programs after availability of government funding. In 1988 three-quarters of all state and local funding for health departments went to personal health care services (Fee, 1994). Today, local health departments have become major providers of prenatal services with 22% offering direct services and an additional 19% contracting for services (Corrarino & Moos, 2004). The National Association of County and City Health Officials (NACCHO) (2002) indicated through an infrastructure study that 50% of local departments provide maternal health services.

In *The Future of Public Health*, the Institute of Medicine defined the three core functions of public health as assessment, policy development, and assurance (Institute of Medicine (IOM), 1988). Current public health officials continue to debate how to deliver

the core function of assurance. Assurance can be met by providing the services directly, assuring others provide the services, or implementing policies that mandate others provide the services (IOM, 1988). Corrarino and Moos (2004) believe that local health departments find themselves providing the services because the private sector is unable to meet the needs of the community. They also feel that local health department clinics need to be saved as they provide better services to socially at-risk women. Corrarino and Moos (2004) believe health departments are able to provide other services including interventions, counseling, and referrals to other resources during pregnancy that private practice does not provide. Blackwell (2002) conducted a study that supported Corrarino and Moos that indicated women who obtain prenatal services in public clinics are able to obtain more services in one location compared to those utilizing private practice.

NACCHO encourages the core public health function of assurance. However, they feel that “The primary responsibility of the LPHA (local public health agency) in most locations is not necessarily to deliver primary care services, but to ensure that the health needs of the community are being met” (NACCHO, 2005). NACCHO has created the Partnership Project with the support of the Health Resources and Services Administration, the Bureau of Primary Health Care, and the Maternal and Child Health Bureau to help local health agencies make strategic decisions about services. *Making strategic decisions about service delivery: An action tool for assessment and transitioning*, a comprehensive workbook, was developed through this project. The workbook walks agencies through assessment of their clinical services, transitioning services to other agencies, and assessing community and patient outcomes after services are transferred (NACCHO, 2005; Ingoglia, 2004).

NACCHO continues their efforts to support assurance by supporting the President's Initiative to Expand Community Health Services. NACCHO encourages local health departments and federally qualified health centers to work together (NACCHO, 2004). This may be crucial for the survival of services as funding for clinical care is being directed towards health centers and away from health departments. Smith and Bazini-Barakat (2004) are seeing the change from providing services to the transition of assuring services and have developed a model that aligns public health nursing with public health principles and provides a common framework. The framework consists of a group approach where public health nurses are part of a larger public health team that sets goal and objectives. Smith and Bazini-Barakat's model focuses on: entire populations, community assessments, considering all levels of prevention, looking at resource allocation that supports the maximum health gain, and considers the dominant concern to be for the greater good of all the people. The model incorporates public health nursing and the 10 Essential Public Health Services into a practice model that focuses on population-based practice (Smith & Bazini-Barakat, 2004). The 10 Essential Public Health Services include; monitoring health, diagnosing and investigating disease, mobilizing the community, developing policies and plans, informing, educating and empowering the public, enforcing laws, linking to or providing care, assuring a competent workforce, evaluating services, and conducting research (Smith & Bazini-Barakat, 2004).

Public health actions have played a vital role in reducing the infant mortality rate in the last century (The Centers for Disease Control and Prevention, 2003) indicating prenatal care is essential. However, funding for prenatal care is becoming more complex.

The idea that public health is to remain neutral of politics has become impossible (IOM, 1988). The budgeting of public health services occurs in the political realm. Decision making is often driven by hot topics, organized interest groups, natural disasters, bioterrorism, and emerging infectious diseases (IOM, 1988; Corrarino & Moos, 2004). While bioterrorism is a far stretch from primary care, the two are being increasingly discussed together as they fight over limited resources. In March 2005, NACCHO urged the Bush Administration and Congress to restore bioterrorism funding (Restore bioterrorism funds, local health officials appeal, 2005). Local health departments are being forced to reach into their own pockets to cover bioterrorism training and infrastructure to meet federal guidelines. This is forcing local health departments to trim their funding of other programs and to re-examine if primary care is an appropriate role for public health to take. NACCHO indicated that 30% of health departments were utilizing their own budgets to fund mandated smallpox vaccination programs taking monies away from other primary care programs (Health Departments Spread Too Thin?, 2003). Health department officials are concerned if primary health services are cut that the general public will be more susceptible to disease threats, including those from bioterrorism, due to diminished health.

Methodology:

Definitions:

For the purposes of this study prenatal care will be defined as preventive direct medical care provided immediately preceding, during, and following pregnancy.

Data Collection:

Three questionnaires were developed; one for departments that provide full service, one for those that contract for services, and one for those that provide no services. Initially an attempt was made to contact health departments individually to determine what type of services they offered, who their contact person was, and which questionnaire should be sent. After several weeks of attempting to obtain this information, it was determined that a more rapid means of data collection was needed. Therefore, questionnaires were distributed at a Southwest Ohio Health Commissioners Meeting to commissioners asking for either them or their appropriate representative to fill out the questionnaires. At the same time a mass e-mail was sent to commissioners with electronic versions of all three questionnaires with instructions to fill out the appropriate questionnaire depending on their services offered. After several weeks, e-mails were sent to nursing directors, when available, for those departments that had yet to respond. Phone calls were made to nursing directors that lacked e-mail and much of the data for departments that do not provide services was collected over the phone. Final phone calls were made to nursing directors several weeks after the e-mails to follow up. Data was obtained from 100% of the health departments in the southwest district over an approximate ten week period. During the data collection process it was determined that a fourth category existed, which was a combination of those departments that provide some services as well as contract portions of their services. Those departments were instructed to fill out the full services questionnaire because it asked if any services were contracted

out to other agencies. As data was collected, health departments were coded to conceal their direct identity.

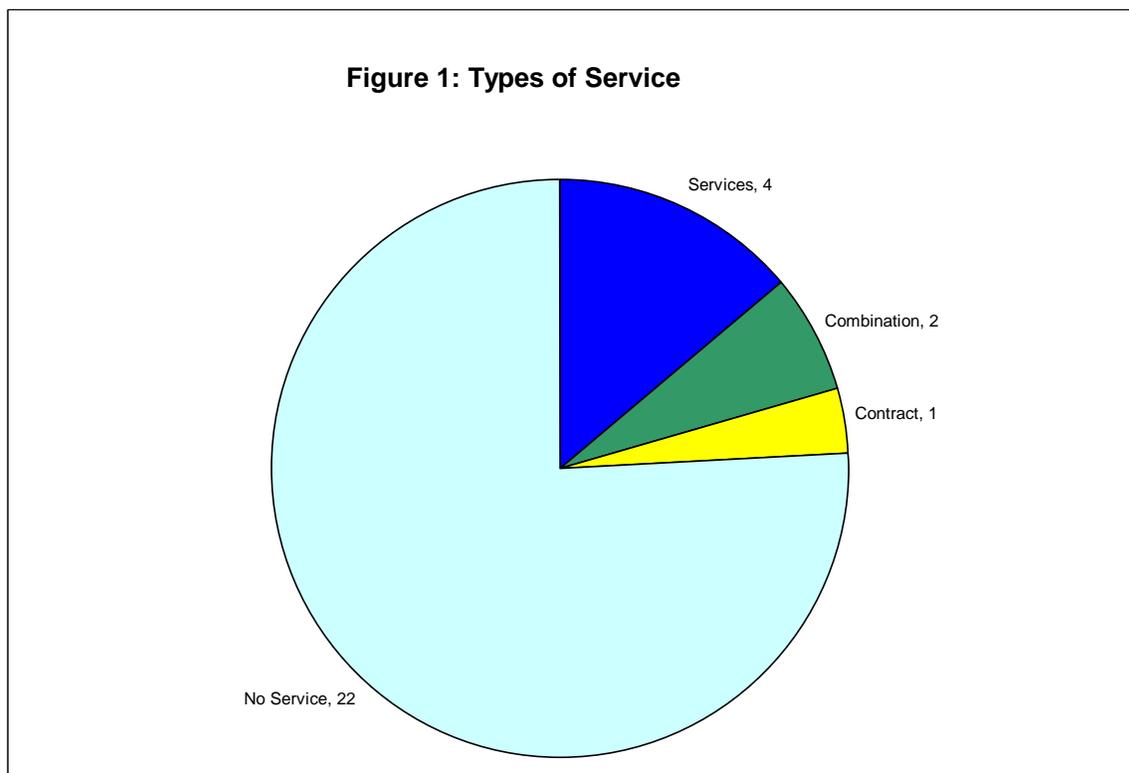
The population that each department serves was collected from the questionnaire when available as it was deemed a more accurate representation, as health districts do not always follow the normally expected city and county jurisdictional lines. Census data for departments that did not provide population information was collected from the United States Census Bureau website (United States Census Bureau, 2004). The populations of cities with their own health jurisdictions were subtracted to obtain the population of the surrounding county jurisdiction. The total population of the jurisdiction was used for the purposes of this study as the objective was to determine if population, which typically indicates if a jurisdiction is rural or urban, played a role in whether services were provided or not. The population of childbearing women could have also been used for comparison purposes, which may be advantageous if additional research were done on the number of private providers and Medicaid providers compared among jurisdictions or in determining if there is a greater need in certain areas compared to others. However, for the purposes of this study general population data was used, as the proportion of childbearing women may be disproportionate among jurisdictions unless birth rates were also taken into consideration. Data on the percentage of county populations that are uninsured was also collected from the United States Census Bureau website (United States Census Bureau, 2000).

Data Analysis:

The number of health departments providing prenatal care was compared to those that contract services, do a combination of contract and onsite service, and those that do not provide services. The percentages of budgets spent by departments that run full service clinics were compared to those that do a combination and those that contract services. Given the small sample sizes, a two sample t-test was supposed to be used to compare means; however, this did not turn out to be viable. Data was compared on how departments fund their prenatal efforts; via grants, general revenue, or other means. Cost comparisons were made between the different types of service as well as the cost per client served. Reasons for why services are or are not provided, as specified by the categories on the survey, were also compared. Information was collected on all departments as to whether assessments have been conducted to validate the services provided. The proportion of departments that provide services and conducted a needs assessment was compared to the proportion of departments that do not provide services and conducted a needs assessment. A two sample t-test was used to compare mean populations between departments that provide services (including full service, combination service, and contract service) and those that do not provide services. The percentage of clients each population serves was also compared for those providing services and the percentage of population of uninsured was compared for all counties.

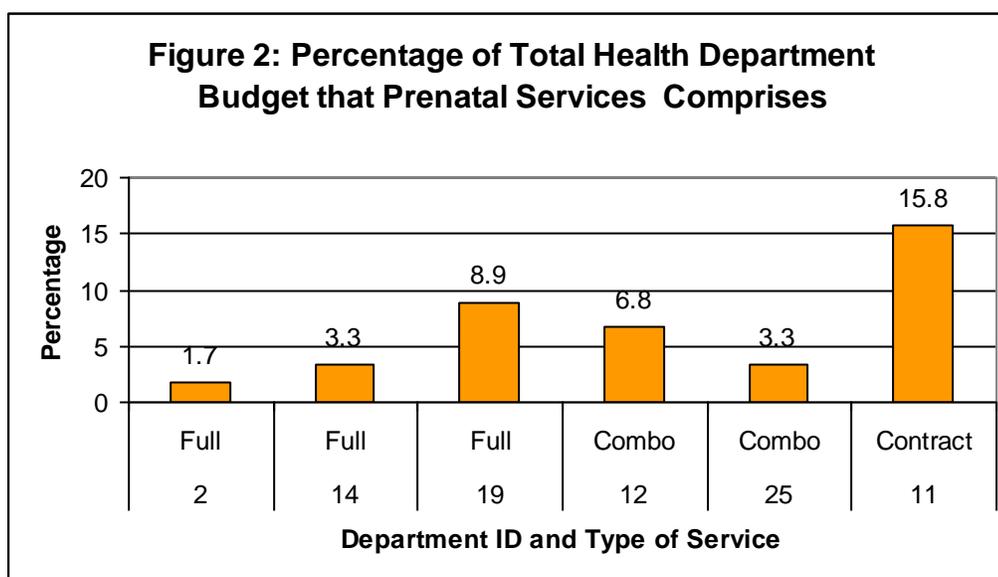
Results:

The results of the surveys from the prenatal services questionnaires are available in Table 1 in Appendix A. Four departments provide full service clinics for prenatal care, two do a combination of on site services and contract for services, one department contracts out all services, and 22 provide no prenatal services (Figure 1).



The percentage of the total health department budget that prenatal services comprises for those departments that provide full services is 1.7% for department 2, 3.3% for department 14, and 8.9% for department 19. Department 29 provides full services for prenatal care, but is unable to separate prenatal costs from other primary care in their budget. The percentage of the budget for prenatal services for combination departments

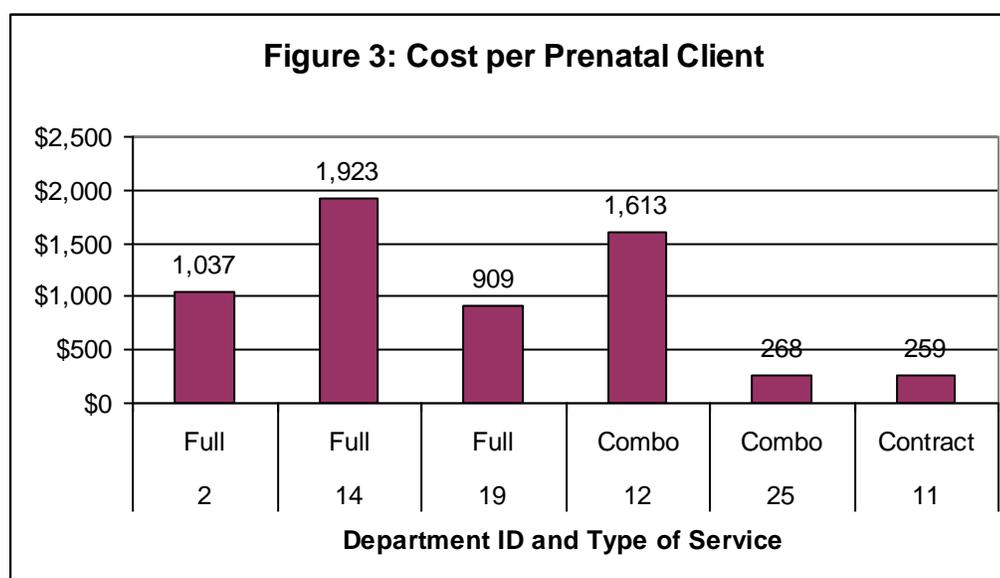
that provide some services while contracting for other services is 6.8% and 3.3% respectively for departments 12 and 25. Department 11 contracts out all of their services and their prenatal budget is 15.8% of their total health department budget (Figure 2). A two sample t-test was not conducted on the data given the addition of a third category during data collection of the combination departments and because there was only one department that fully contracted services while the other categories had only two and three data points. The quantitative comparison gave no inference; therefore, the actual data was more relevant than the limited statistical analysis it provided.



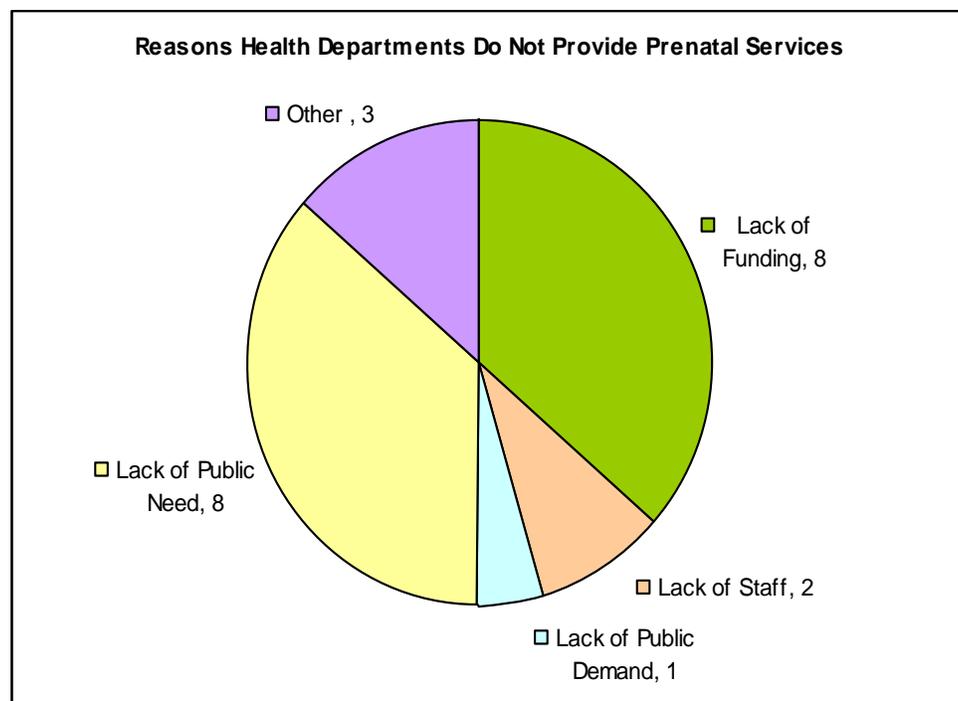
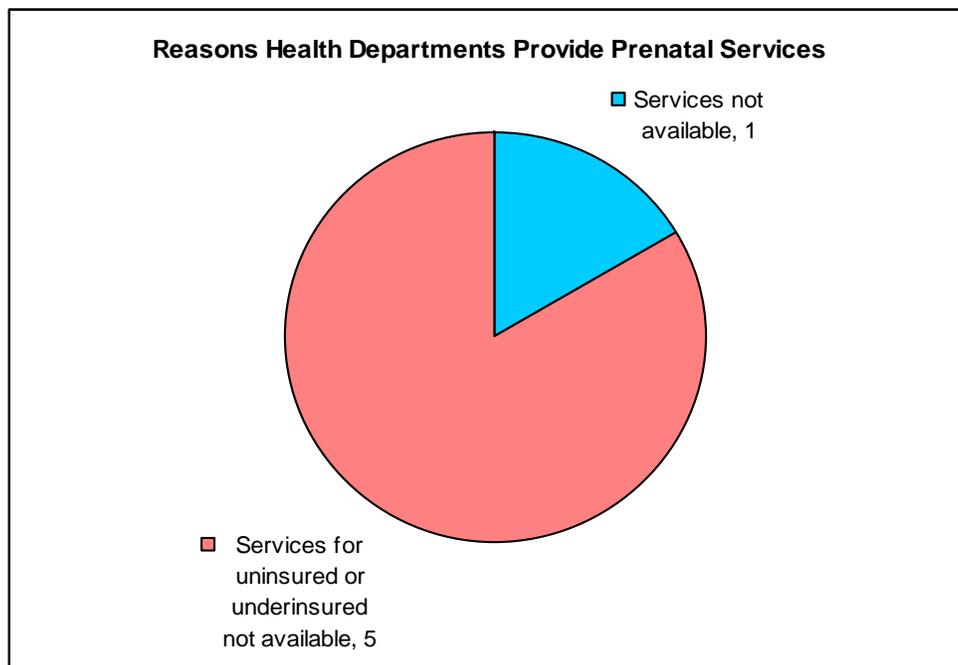
All health departments that provided services, did a combination of services, or contracted for services were funded through grants. Departments 2, 12, 26, and 29 indicated they also use general revenue funds to support services. Department 2 reported receiving Medicaid reimbursement for 33% of their budget, grants for 35%, and general revenue for 32% while department 12 reported receiving 25% Medicaid reimbursement,

15% grants, and 60% general revenue. Department 29 reported receiving funding as a Federally Qualified Health Clinic and from Ohio Primary Care Tobacco money.

The budgets for prenatal services for 2004 for the departments that offer full service clinics, 2, 14, and 19, were \$537,000, \$200,000, and \$90,000 respectively. Department 29 offers full services but was unable to separate out the cost for prenatal services from their budget. Departments 12 and 25 do a combination of contracting and direct service and had budgets of \$271,003 and \$92,048. Department 11 contracts out all services and had a 2004 budget of \$237,820. The cost per person for full service clinics for 2004 was \$1,037 for department 2, \$1,923 for department 14, and \$909 for department 19. The cost comparison per client for department 29 was unable to be determined. The cost per person for departments that provided a combination of services was \$1,613 for department 12 and \$268 for department 25. Department 11, which contracts all services, had a cost per person of \$259.

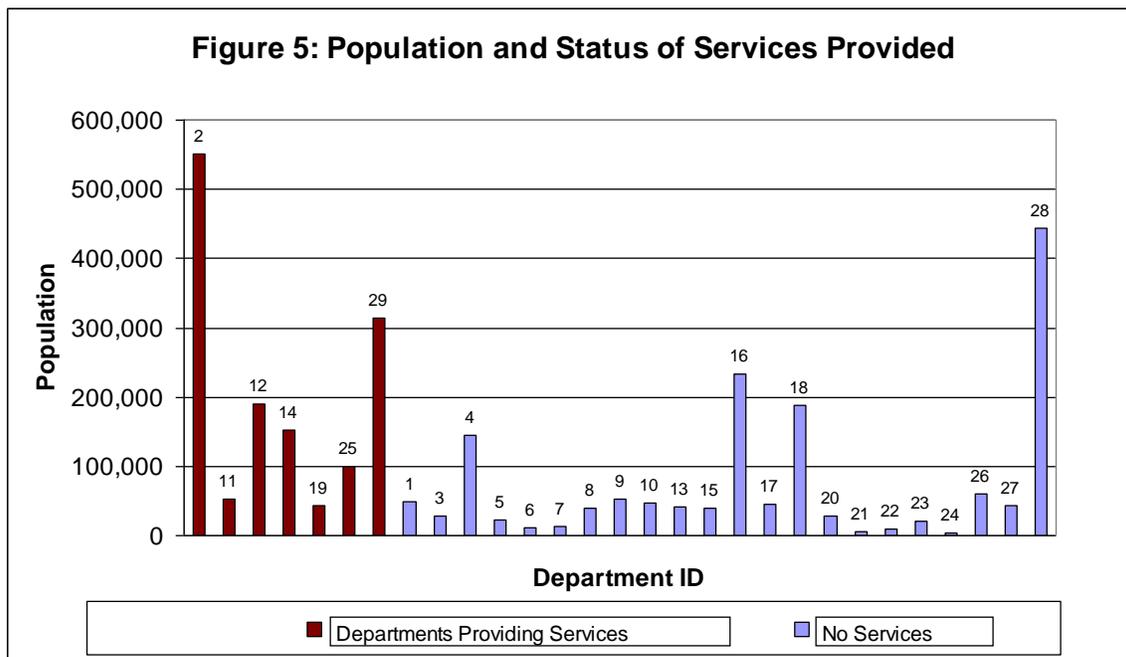


Two of the four departments that provide full services, 2 and 14, indicated their reason for providing services was because services for the uninsured and underinsured were not available in their jurisdiction. The third department, 19, indicated services were not available for any of the population and no answer was provided by department 29. Departments 12 and 25 provided combination direct/contract services and both cited that services for the uninsured or underinsured were not available. Department 11 contracts all prenatal care and also cited that services for the uninsured and underinsured were not available. Twenty-two departments do not provide any form of prenatal services. Eight of the departments, 1, 3, 5, 10, 13, 15, 16, and 20, indicated their reason for not providing prenatal services was due to “lack of funding”. An additional eight departments, 17, 18, 21, 22, 23, 24, 26, and 27, stated they do not provide prenatal services because there is a “lack of public need”. Department 6 and 7 revealed they do not provide prenatal services because of “lack of staffing”. Department 28 cited their reason for not providing prenatal service was “lack of public demand” (Figure 4). Three departments, 4, 8, and 9, stated “other” reasons for not conducting services. The other reasons were “political decision based on past history” by department 4, “local hospital provides a prenatal program” by department 8, and department 9 indicated they have a government funded facility that provides prenatal services.

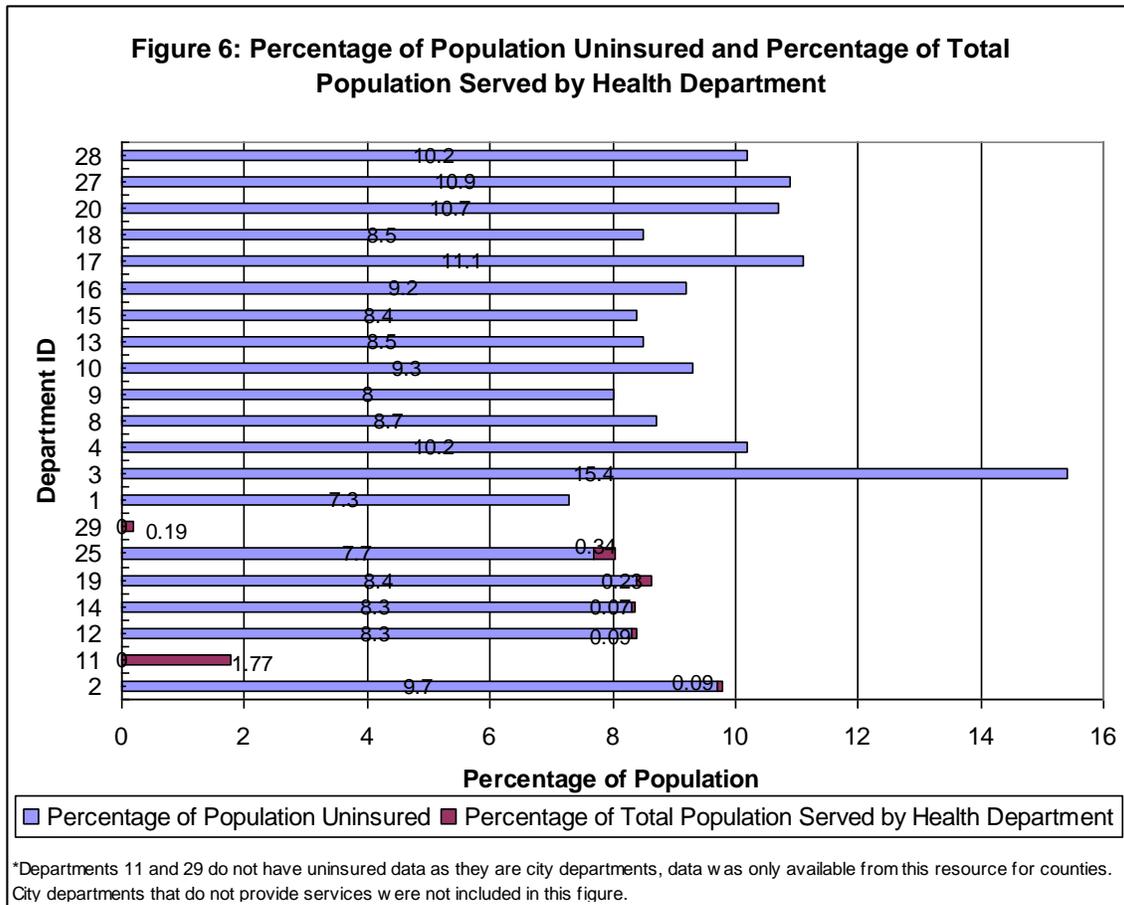
Figure 4: Reasons For or For Not Providing Prenatal Services

All departments that provide prenatal services have conducted a needs assessment within the last five years, except for department 29 that did not provide information on a needs assessment. Ten of the 22 health departments that do not provide services conducted a needs assessment in the last five years and the remaining 12 have not. Of the 22 health departments not providing services, three of the eight that indicated their reason for not providing service as “lack of funding” had conducted needs assessments in the last five years and five had not. All three that answered “other” had conducted a needs assessment in the last five years. Three of the eight stating their reason for not providing service as “lack of public need” had conducted needs assessments and five had not. The two departments that indicated “lack of staff” as their basis for not providing services had not conducted a needs assessment and the one indicating “lack of demand” had. The comparison of the proportions of departments that provide services and conducted a needs assessment to departments that do not provide services and conducted a needs assessment was found to be significant ($p = <0.001$).

The populations that each department serves were taken from either their survey results, if provided, or from census data (see Figure 5). The average population for departments providing services (full services, combination, or contract) was 200,321. The average population of departments not providing services was 71,348. The result of a two sample t-test indicates that there is not a significant difference in the means of the populations that provide services compared to those that do not provide services at a 0.05 level of significance.



The percentages of uninsured population for county health departments ranged from 7.3% to 15.4%. For the departments that provided full service the percentage of the total population that they served in 2004 was 0.09% for department 2, 0.07% for department 14, 0.23% for department 25, and 0.19% for department 29. The percentage of the total population served by departments 12 and 19 doing combination services was 0.09% and 0.23% respectively. The percentage of the total population served by department 11 for contracting all services was 1.77% (see Figure 6).



Discussion:

Statistical comparison of data is difficult given the small sample size of departments providing services and the considerable variation in the data. The additional category of combination services resulted in two departments contracting for physicians. Services were provided on site at both departments with physicians being brought in from outside. A significant variation was found in department 11 which is a small department that handles the grant process for a three jurisdiction area that contracts services through the local hospital. This explains the large percentage of the budget that prenatal services

comprise for department 11 as well as the large percentage of the population they provide services to compared to other departments. If the budgets and population of the two other jurisdictions were taken into consideration, the percentages would likely be closer to that of the other departments providing services.

Funding for prenatal services at health departments in the southwest district is in great part provided by grants. However, department 19 is losing their grant and will be funding prenatal services entirely through health department funds starting in 2006, which indicates their strong belief in the need of the service in their jurisdiction. Department 19 indicated on their survey that there is no hospital, obstetrician, or pediatrician in their county, and the health department is the only provider.

The variation in the cost per client is sizeable. Departments 14 and 12 have costs per client upwards of almost \$2,000 per person, departments 2 and 19 have costs close to \$1,000 per person, and departments 25 and 11 have costs near \$250 per person. Nothing in the data provided in the questionnaires indicated a reason for the variations in the costs. This is an area that would benefit from additional research into cost comparisons. It is recommended that comparisons be made between the exact services provided as well as a breakdown of costs per client for each jurisdiction providing prenatal care.

The answers given to the reason for providing services was consistent with services not being available, whether it is in general or for the uninsured or underinsured. The reasons for not providing services were somewhat subjective. Two of the three departments that answered "other" indicated their reason to be that someone else provided services in their county which could also be construed as "lack of public demand" or "lack of public need". When collecting the data during phone conversations

several people asked that the categories be explained, which enabled them to provide a better answer. Department 4 indicated a reason for not providing services that did not fit into one of the given categories and that was “Political decision based on past history.” Department 4 is experiencing a current day reality that public health “is defined less by what public health professionals know how to do than by what the political system in a given area decides is appropriate and feasible” (IOM, 1988, pp. 4). The ideal setting of public health is to be a politically neutral entity, but the political climate in America does not allow this happen. This is an added struggle in the decision making process for health departments. Public health has in large part been based on political decisions throughout history. Many people do not realize, but the initial implementation of the Sheppard-Towner Act in 1921 was not just because of poor outcomes in maternal and infant health but the political fear of feminine voting (Margolis, Cole, & Kotch, 1997). It was the first national political issue to come about since the institution of women voting in 1920.

When the reasons for not providing services were taken into consideration with whether a needs assessment had been conducted or not, the information was found to be disconcerting. Eight departments, 17, 18, 21, 22, 23, 24, 26, and 27, indicated they do not provide services because of “lack of public need”; however, only departments 17, 18, and 27 had conducted a needs assessment in the last five years to determine public need. It is also distressing that 43% of the departments not providing services that answered the question regarding needs assessment indicated that they had not conducted one in the last five years. While funding is always a consideration in what departments are able to do, without a public needs assessment informed decision making on what services to provide can not begin. According to the Institute of Medicine (1988), each department is

responsible for fulfilling the core function of assessment. It is the one function that is all too often neglected. Policy development and assurance cannot take place if it is not known what services are needed. However, the reality is that assessment in itself, unless coupled with some other process such as a grant or other source of funding, has limited resources available to support it. While it appears encouraging that all departments providing services conducted assessments, it is a known requirement of the grant process for funding of prenatal services through the state. While there is significance in the comparison of the proportions of departments providing services compared to those that are not when it comes to needs assessments, it is unsure if it has any effect of whether services are provided or not. It would be interesting to see the reasons why departments conduct needs assessments; because it is a core function of public health or because a grant or a specific program requires it. It would also be worthy to know if those departments that provide services originally based their decision on an assessment that indicated the need.

As seen in the data, assurance can be conducted in various ways by departments whether it is through direct services, contracting services, or assuring that another entity is providing those services. The question remains though for those departments that do not provide services and have not conducted an assessment, are the needs of the public being taken care of? Even if there is another provider, are they providing quality care to all of those in need? This brings into light what the IOM (1988, pp. 54) has previously questioned. “Are there some basic health services that should never be sacrificed, no matter what? Does a governmental obligation to assure conditions in which people can be healthy extend to *requiring* certain of these conditions?” The IOM feels that this should

be required and commend the state of Michigan as they guarantee prenatal care to all women regardless of their ability to pay. The maternal and child health field has been put on the defense for justification of their services in the public health realm. For those that are assuring services they are being asked to justify and prioritize given the fiscal restraints upon public health (Bennett & Kotelchuck, 1997).

Population data does not seem to play a major role in whether services are provided or not, though there appears to be a difference in the mean populations of those providing services, 200,321, to those that do not, 71,348. The statistical analysis was not significant and this is likely due to the small sample sizes and the large variation in the data. The percentage of uninsured in the population also did not appear to be a factor in whether services are provided or not at a county level. All department populations of uninsured ranged from 7.3 to 11.1% with the exception of department 3 which had a large portion of their population being uninsured compared to other departments at 15.4%. Compared to others, department 3 also had one of the lower total populations. This compares to an average of 14.2% of the population in United States is uninsured and 10.2 % in Ohio (United States Census Bureau, 2000).

There does not appear to be a clear explanation for variations among departments in the region when it comes to providing prenatal services. Studies have been conducted concerning regional variations in Medicare spending that highlight the differences in spending levels across regions but indicate the quality and access of care is similar while there is no change in health outcomes (Fisher, Wennberg, Stukel, Gottlieb, Lucas, & Pinder, 2003). Research concerning regional variations among health departments in the United States is lacking. However, Hauck, Rice, and Smith (2003) conducted a study in

England concerning regional and district variations within the English National Health Service. At the time of the study the responsibility for public and private health care was delegated to geographically defined health authorities. Their study looked at 14 indicators to compare the effect that the regional organization had on services provided. They concluded that the proportion of variation attributed to health authorities differed significantly across the indicators with one of those being the cost of maternal care. The idea of small area variation may be analogous to the variation among health departments in providing prenatal services.

Maternal and child health services have been one of the leading public health achievements (IOM, 1988). No one questions the need for prenatal care. In David M. Cutler's "Your Money or Your Life" (2004), he references a 1985 IOM report that estimates every dollar spent on prenatal care could save \$3.38, in caring for high risk babies. Unfortunately, the cost was not seen due to problems with the Medicaid program and lack of enrollment in early pregnancy, but the point still remains the same that prenatal care is a necessity. The question remains as to who should provide the care. That is a decision that must take into consideration the political climate, the needs of the public, and the financial capabilities of the department involved. There does not appear to be a better way to manage prenatal care services as a whole; however, there may be a better way for individual departments to manage prenatal care and this may be something that departments will be forced to look at in the future.

NACCHO (2002) reports that, as of 1999, 20% of urban departments and 9.4% of non-urban agencies have stopped providing prenatal care to women, with the majority of them doing so by transitioning services to other providers. NACCHO's "*Making strategic*

decisions about service delivery: An action tool for assessment and transitioning” (2002) is a useful tool for departments to utilize. For departments that have never conducted a needs assessment it guides you through the process. Suggestions are given on finding alternative funding and developing relationships with potential contract or outsource agencies. Examples of local health departments that chose to transition services and those that have decided not to are provided throughout the NACCHO document including two departments in Ohio; Mahoning County that transitioned services prior to 1999 and Lake County, which chose not to transition services in 2000. A supplement is also provided that helps departments with their assurance function if they choose to transition services out, *“Making strategic decisions about service delivery: Measuring performance after transitioning”* (2003). The resources provided in both documents are invaluable to departments providing prenatal services, whether considering a transition or not.

Barriers to Data Collection:

Barriers to data collection revealed itself to be a principal learning experience in the project. As stated previously, data collection was initially supposed to take place by obtaining contact information and services provided before questionnaires would be sent, as approved by the research proposal. This was done at the onset of data collection; however, it was quickly realized that the amount of time needed to make contact and get the surveys out would have well exceeded the time constraints of this project. Given my availability to make calls during limited office hours and the busy nature of all health departments the data collection process was changed. Surveys were distributed directly to

commissioners and sent electronically to them as well as followed up by sending them to nursing directors at a later date. Some departments do not have e-mail available to nursing directors and calls were placed directly to them.

Two known questionnaires were accidentally discarded by the Warren County Combined Health District as they were returned to a Nursing Director instead of to me. This caused additional phone calls to be made to try to collect the data again. Additional problems resulted when the contact person would reply back to the e-mail, which simply returned it to the person who sent it to them, not necessarily to me. Several departments that do not provide services did not fill out the information even when instructions specifically asked them to fill out the questionnaire for “No Services”. This resulted in phone calls to collect data from these departments. Other problems occurred due to the lack of precision in questions on the surveys. “Total department costs for 2004” on the survey was meant to be for the entire health department and many construed it to be nursing department budgets. Again, calls were made to obtain the correct data. Overall, the data collection was considered a success as data was attained from all 29 health departments in the southwest district; however, the time period for data collection took approximately ten weeks.

Additional Research:

Additional research is recommended in the cost comparisons per client between departments to determine the cause of the large variation. Given the small number of departments that provide services in the southwest district it may provide better data if a

survey was done on all departments in Ohio that provide prenatal services. It may also be useful if a complete breakdown of how funding is provided could be compared for all departments similar to the information department 2 and 12 provided. The differences in health outcomes among high-risk infants between health departments that provide services and those that do not may also be useful.

Public Health Competencies:

The following public health competencies were achieved from this research project:

Analytic assessment skills:

- Identifies relevant and appropriate data and information sources.
- Evaluates the integrity and comparability of data and identifies gaps in data sources.
- Applies ethical principles to the collection, maintenance, use, and dissemination of data and information.
- Makes relevant inferences from quantitative and qualitative data.
- Applies data collection processes, information, technology applications, and computer systems storage/retrieval strategies.
- Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues.

I feel each of these competencies was achieved in the data collection process, analysis of the data collected, and through the interpretation of the data.

Policy Development/Program Planning Skills:

- Collects, summarizes, and interprets information relevant to an issue.

This skill was obtained in doing the literature review and data collection for the project.

Communication Skills:

- Communicates effectively both in writing and orally, or in other ways.
- Solicits input from individuals and organizations.

Communication skills were demonstrated in obtaining information from the various health departments as well as collaborating with individuals and other departments on the project.

Community Dimensions of Practice Skills:

- Identifies how public and private organizations operate within a community.
- Describes the role of government in the delivery of community health services.

These competencies were obtained through research for information on the project and through information obtained through data collection.

Basic Public Health Science Skills:

- Understands the historical development, structure, and interaction of public health and health care systems.
- Identifies and applies basic research methods used in public health.
- Identifies and retrieves current relevant scientific evidence.
- Identifies the limitations of research and the importance of observations and interrelationships.

These skills were performed in development of the project, doing the literature review and determining relevant and appropriate resources and references, and analyzing the data collected.

Leadership and Systems Thinking Skills:

- Identifies internal and external issues that may impact delivery of essential public health services (i.e., strategic planning).

Internal and external issues were considered in looking at why some departments deliver prenatal services and others do not.

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Appendix A

Table 1: Data Set of Answers from Prenatal Services Surveys

| Department ID | Population Served | Services | Service/ Contract | Contract | No Service | Clients | Prenatal Budget | Total budget | Reason | Needs Assessment | Type of Funding |
|---------------|-------------------|----------|-------------------|----------|------------|---------|-----------------|--------------|--------|------------------|--|
| 1 | 48,517 | | | | 1 | | | | LOF | Y | |
| 2 | 552,000 | 1 | | | | 518 | 537000 | 32,000,000 | SUUNA | Y | Medicaid 33%, Grants 35%, General Fund 32% |
| 3 | 28,398 | | | | 1 | | | | LOF | N | |
| 4 | 144,000 | | | | 1 | | | | Other | Y | |
| 5 | 21,675 | | | | 1 | | | | LOF | Y | |
| 6 | 10,500 | | | | 1 | | | | LOS | N | |
| 7 | 13,840 | | | | 1 | | | | LOS | N | |
| 8 | 40,000 | | | | 1 | | | | Other | Y | |
| 9 | 53,000 | | | | 1 | | | | Other | Y | |
| 10 | 47,000 | | | | 1 | | | | LOF | N | |
| 11 | 51,804 | | | 1 | | 918 | 237,820 | 1,507,340 | SUUNA | Y | Grants |
| 12 | 189,276 | | 1 | | | 168 | 271,003 | 3,990,530 | SUUNA | Y | Medicaid 25%, Grants 15%, General Fund 60% |
| 13 | 41,113 | | | | 1 | | | | LOF | N | |
| 14 | 152,233 | 1 | | | | 104 | 200,000 | 5,837,342 | SUUNA | Y | Grants |
| 15 | 39,600 | | | | 1 | | | | LOF | N | |
| 16 | 233,388 | | | | 1 | | | | LOF | N | |
| 17 | 44,239 | | | | 1 | | | | LOPN | Y | |
| 18 | 188,614 | | | | 1 | | | | LOPN | Y | |
| 19 | 42,553 | 1 | | | | 99 | 90,000 | 1,012,763 | SNA | Y | Grants/2006 Heath District will fund |
| 20 | 28,134 | | | | 1 | | | | LOF | Y | |
| 21 | 5,653 | | | | 1 | | | | LOPN | N | |
| 22 | 8,817 | | | | 1 | | | | LOPN | N | |
| 23 | 20,774 | | | | 1 | | | | LOPN | N | |
| 24 | 4,583 | | | | 1 | | | | LOPN | N | |
| 25 | 100,230 | | 1 | | | 343 | 92,048 | 2,836,246 | SUUNA | Y | Grants/General Revenue |
| 26 | 60,996 | | | | 1 | | | | LOPN | N | |
| 27 | 42,610 | | | | 1 | | | | LOPN | Y | |
| 28 | 444,206 | | | | 1 | | | | LOD | Y | |
| 29 | 314,154 | 1 | | | | 598 | * | | * | * | Grants/General Revenue/FQHC |
| Totals | | 4 | 2 | 1 | 22 | | | | | | |

*Data was unavailable.

LOF = Lack of funding, SUUNA = Services of uninsured or underinsured not available, LOS = Lack of staff, LOPN = Lack of public need, LOF = Lack of funding

LOD = Lack of public demand, SNA = Services not available in community