11-17-2015

Assessing the Deployment of Home Visiting: Learning from a State-Wide Survey of Home Visiting Programs

Robert L. Fischer
Case Western Reserve University, rlf11@case.edu

Elizabeth R. Anthony
Case Western Reserve University

Nina Lalich
Case Western Reserve University

Paul Bakaki
Case Western Reserve University

Siran Koroukian-Hajinazarian
Case Western Reserve University, sxk15@case.edu

Author(s) ORCID Identifier:

Robert L. Fischer

Recommended Citation
Fischer, R.L., Anthony, E.R., Lalich, N. et al. Assessing the Deployment of Home Visiting: Learning from a State-Wide Survey of Home Visiting Programs. Matern Child Health J 20, 674–683 (2016). https://doi.org/10.1007/s10995-015-1867-y

Assessing the Deployment of Home Visiting:

Learning from a State-wide Survey of Home Visiting Programs

Abstract

Objectives: Large-scale planning for health and human services programming is required to inform effective public policy as well as deliver services to meet community needs. The present study demonstrates the value of collecting data directly from deliverers of home visiting programs across a state. This study was conducted in response to the Patient Protection and Affordable Care Act, which requires states to conduct a needs assessment of home visiting programs for pregnant women and young children to receive federal funding. In this paper, we provide a descriptive analysis of a needs assessment of home visiting programs in Ohio. Methods: All programs in the state that met the federal definition of home visiting were included in this study. Program staff completed a web-based survey with open- and close-ended questions covering program management, content, goals, and characteristics of the families served. Results: Consistent with the research literature, program representatives reported great diversity with regard to program management, reach, eligibility, goals, content, and services delivered, yet consistently conveyed great need for home visiting services across the state. Conclusions: Results demonstrate quantitative and qualitative assessments of need have direct implications for public policy. Given the lack of consistency highlighted in Ohio, other states are encouraged to conduct a similar needs assessment to facilitate cross-program and cross-state comparisons. Data could be used to outline a capacity-building and technical assistance agenda to ensure states can effectively meet the need for home visiting in their state.

Keywords: Needs assessment, home visiting, maternal and child health, Affordable Care Act

Assessing the Deployment of Home Visiting:
Learning from a State-wide Survey of Home Visiting Programs

Home visiting programs have been identified as an important method for connecting with at-risk families to improve birth outcomes, child development, parenting behavior, and prevent child maltreatment (1, 2, 3, 4, 5, 6, 7, 8). The Patient Protection and Affordable Care Act (ACA; 9) established the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program, which provides $1.5 billion to states over five years to establish home visiting program models for at-risk pregnant women and children from birth to age five (10, 11). According to Section 511(b)(1-2) of the ACA, to receive federal funds states must conduct a statewide needs assessment that measures "the quality and capacity of existing programs or initiatives for early childhood home visitation." These data can also be used to inform large-scale planning for health and human services programming as well as evaluate the extent to which existing services meet community needs. This paper presents the results of a needs assessment conducted to determine the need for home visiting services in the State of Ohio.

In the broader research literature, home visiting programs vary greatly in terms of specific objectives, curricula, educational backgrounds of home visitors, intensity, and duration; however, they generally combine parenting education, health services, and referrals to additional resources in an attempt to improve parents' care of their young children (12). These programs are voluntary and typically targeted to high-risk, low income women (13, 14). The ACA definition of home visiting is broad, but consistent with this general conceptualization; according to Section 2951 of the ACA, home visiting programs "include home visiting as a primary service delivery strategy" and are "offered on a voluntary basis to pregnant women or children birth to age 5."

A meta-analysis of 60 home visiting programs concluded that program recipients generally demonstrate better outcomes than controls (15). In recognition of the varying quality of

programs, the Home Visiting Evidence of Effectiveness (HomVEE), created by the U.S. Department of Health and Human Services, identified 16 evidence-based home visiting models for pregnant women and young children. Not only have evidence-based models been shown to improve birth outcomes, but also promote parent understanding of child development and the needs of young children (16). First-time mothers who participated in weekly to bi-weekly 45-minute home visiting sessions facilitated by a master's level professional (nurse, educator, counselor) demonstrated increases in positive perceptions of their unborn child, parent-child bonding, and responsive parenting once they delivered their babies (17). Women who participated in a six session intervention facilitated by a clinical psychologist targeting pregnant women with anxiety and depression reported significant improvements in attachment to their unborn baby (18). States receiving MIECHV dollars must dedicate 75% of funds to evidence-based home visiting programs (19).

Evidence from longitudinal follow-up studies suggests evidence-based program effects can be sustained long after women's involvement in the program. For example, the nurse home visiting model has been found to reduce women's number of subsequent pregnancies and births, increase the duration between subsequent births, and increase economic productivity (13, 20). In regard to sustained impacts on children, nurse home visited children have shown higher intellectual functioning, fewer emotional and behavioral problems, and increased school readiness (13, 20). In a 15-year follow-up study, researchers identified a positive relationship between the incidence of child maltreatment in early childhood and early onset behavior problems for children randomly assigned to the control condition in a nurse home visiting program (21). This relationship was not present for children in the experimental condition.

The current study gathered comprehensive programmatic data via a needs assessment. Needs assessment is a systematic method to identify gaps between need and potential programmatic responses that often takes one of two approaches (22). One approach targets a specific geographic area and asks, "What are the community needs?" The focus is on an inductive approach to need, allowing methods to reveal a range of evidence in regard to presenting conditions and possible responses. Such assessments require direct interaction with the community (23, 24). This study employed a second class of needs assessment, which begins with an understanding of the need and anticipates a specific type of programmatic response. In this case, the question is, "Which community has the most need for X?" This study was conducted to gather data on home visiting services across the State of Ohio. The primary objectives were to collect information about (a) the capacity, scope, and scale of home visiting entities; (b) the characteristics of the populations served; and (c) the system's ability to meet the needs of eligible families. The data collected allow for the examination of statewide dimensions of need for the purposes of planning and targeting. This study and its methodology are offered as examples to other states looking to apply for federal funding.

Method

Sample

The State Department of Health provided contact information for Ohio programs meeting the ACA definition of home visiting (definition provided in the second paragraph of the introduction). This listing included 158 programs that fell into one of five categories: 1) County operated programs funded by the state Help Me Grow (HMG) program (n=88), 2) Programs of the Ohio Infant Mortality Reduction Initiative (OIMRI; n=13), 3) Early Head Start and Head Start programs using a home-based option (n=40), 4) Directly federally funded maternal and

child health home visiting programs (n=3), and 5) Home visiting projects funded by the Ohio Children's Trust Fund (n=14). Programs offering a single home visit were excluded, as were those offering home visiting as part of the Individuals with Disabilities Education Act Part C early intervention services for infants and toddlers with disabilities and developmental delays.

Needs Assessment Survey

A survey comprised of open- and close-ended questions was developed by the study team together with representatives of the State Department of Health, and was informed by Child Trends Home Visiting Application Process: A Guide for Planning State Needs Assessments (11) and the National Center for Children in Poverty (25). The Child Trends (11) document provides specification for conducting a state-wide needs assessment of home visiting, outlining the specific types of information required to apply for MIECHV dollars. The National Center for Children in Poverty (24) document presents results from their survey of 46 states' home visiting programs. The survey developed by the study team contained original questions, but covered the same range of topics included in both guidance documents.

The self-reported data gathered are respondents' professional perspectives on their home visiting services delivered in the most recent one-year period. Survey questions primarily pertained to three areas: 1) program management (e.g., staffing, educational/training requirements, case load, frequency of visits, data collected); 2) program outreach, eligibility, reach and characteristics of the population served (e.g., eligibility criteria, outreach activities, demographic information); and 3) program goals, content, services delivered (e.g., home visiting model employed, referrals for additional services, objectives). Before answering questions in these areas, respondents reported basic information about which type of program they represent, their role, and the counties they serve.

There were also 5 open-ended questions at the end of the survey regarding community needs. Respondents were asked to comment on: 1) To what extent is your organization able to meet current demand for home visiting services? 2) Would your program expand its service area or number of clients if additional funding became available? If yes, how? 3) What is the greatest threat to the success of home visiting services in your service area? and 4) As the Ohio Department of Health assesses state-wide needs as they relate to home visiting, what recommendation would you make about where to focus particular attention in terms of need?

Procedure

Project contacts for each program were e-mailed the survey invitation along with the link to the web-based survey. The survey was hosted by a secure on-line provider. Potential respondents received a minimum of three reminder e-mails to encourage survey participation. After a minimum of three follow-up contacts, an overall effective response rate of 93% was achieved. This computation includes completed surveys (129) and partially completed surveys (18). Partially completed surveys are included here as usable if they contained a meaningful amount of data from the respondent (more than one-third of items completed). Survey respondents were aware that their data were being collected for a needs assessment required by the ACA MIECHV and that their responses would be used to inform the State's plans for addressing service gaps. The survey was voluntary and the respondent could choose to discontinue their participation at any time. The study was approved by a university Institutional Review Board and classified as exempt under human subject protection guidelines due to the organizational planning nature of the survey.

Plan of Analysis

As a needs assessment, the aims of the study were largely descriptive in nature. As such, the analyses drew heavily on aggregate data regarding the characteristics of home visiting programs. Close-ended survey items were downloaded from the web-based survey host and were analyzed in SPSS. Descriptive statistics including frequencies were run across programs, as well as by each of the main program categories. Text from open-ended survey responses was downloaded into Microsoft Word and analyzed using an open, inductive coding technique to identify themes. Three independent raters reviewed comments and used a consensus method to identify themes and representative quotes. The use of the findings, both quantitative and qualitative, was intended to draw on patterns only, and thus no statistical testing methods were needed or applied.

Results

Respondents most frequently self-identified as project director (62%), but also identified clinical/supervision roles (11%) and other program management roles (10%). The remaining respondents (17%) identified a range of job titles within their organization. All 88 counties in Ohio were represented by one or more organization. All counties were represented by a HMG respondent. Thirty-five (39.8%) were represented by a Head Start/Early Head Start entity, 13 (14.8%) by an OIMRI program, nine by an Ohio Children's Trust Fund project (10.2%), and two by a federally funded home visiting program (2.3%). Counties in more urban areas of the state showed greater representation. As demonstrated below, there was great variety in the types of programs surveyed.

Program Management

On average, programs employed seven individuals to deliver home visiting services, including five full-time staff and two part-time staff. One in six programs (16%) employed only

part-time home visiting staff, and 61% employed only full-time staff. The median values show that the midpoint of the distribution of programs reflects services relying on a relatively modest size staffing structure for delivering home visiting services. On average, 97% of home visitors held at least a high school diploma or equivalent. Slightly under half of home visitors completed an Associate's degree (45%), and a similar proportion possessed a Bachelor's degree (44%), with the remaining 11% holding a Master's degree or higher. In addition, approximately 20% of home visitors had a clinical license, and 16% had a community health worker certificate.

Statewide in Ohio in one year, respondents reported a cumulative total of approximately 29,000 new requests/referrals for service. However, given eligibility requirements used by each program (presented below), not all requests were eligible for program services. On average, 67% or 19,430 request/referrals for service were deemed eligible. According to the Ohio Department of Health, there were 139,034 live births in Ohio in 2010. The 19,430 families who received home visiting services represent approximately 14% of all live births that year. If ongoing or existing cases are combined with these new cases, nearly 40,000 clients were served in 2010 through home visiting services provided by respondent agencies.

The average number of clients served annually was 267 families. However, the mean masks variability in program size (range is nine to over 4,000 families served annually). The median annual program caseload of 113 provides a more representative sense of program size. Numbers of new referrals and new clients determined eligible were similarly variable across programs. The average annual caseload for a full-time home visitor was 30 families; the median was 35. There was considerable range in staff caseloads, but there was a clustering around the sizes of 12, 35, and 45 families. Approximately 13% of programs reported average caseloads in excess of 45 clients. Respondents were also asked to report the proportion of clients by the

frequency of visits per month. The median number of home visits per month per client was one. Approximately 90% of respondents reported families received between 1 and 4 visits per month. The remaining respondents reported families they served received an average of 5 or more visits per month.

Less than two-thirds of programs surveyed reported using either a theory of change or logic model as a mechanism to frame program goals and services delivered (see Figure 2). Nearly all programs reported using a standard program report and 86% reported using a data system that allowed individual children and families to be tracked over time. Similarly, nearly all programs used a measure of program attendance or participation and a lesser proportion had defined measures of program completion. Case records were frequently used as a source of outcome information for one-quarter to one-third of programs (see Figure 3). Data were extracted from more reliable medical records by one-third to one-half of respondents. Less than 33% of programs used standardized measures to capture outcomes; client self-report was a frequent source of outcome information. Though few programs relied solely on anecdotal information to document outcomes, 10-15% of programs cited it as their primary data source on some outcomes.

Program Outreach, Eligibility, and Reach

Among all respondents, 85.7% reported that their program serves an entire county. The most commonly reported outreach activities (reported by more than 80% of programs) were flyers/pamphlets, health fairs/community events, and website. Outreach techniques rarely used included operating a mobile unit, advertising on a billboard, or creating a television commercial.

Nearly all programs used more than one eligibility criteria to determine need for service. On average, programs used M= 6.0 (*SD* = 2.0, range=1-9) criteria to determine whether families

were eligible for services. Approximately, 92% of programs used the child's age and 88% of programs used family income to determine eligibility (see Figure 4). Between 62% and 79% of respondents cited abuse/neglect history, geography, pregnancy status, military status, and first time birth as criteria for program eligibility. Less than one quarter of programs used parent's age, pregnancy trimester, or parent's race/ethnicity to determine eligibility.

Though 28% of programs reported excess demand for home visiting services, excess demand was clustered by program type: Head Start (88%), Early Head Start (75%), OCTF projects (20%), HMG (10%). Data on waiting lists may not be accurate, however, due to the wording of the survey question in relation to the policies of some home visiting entities. As a matter of policy some programs do not maintain waiting lists for service, though there are families that they cannot currently serve. As such, wait list information may not be reliable as a way to gauge the magnitude of unmet need in specific communities.

An alternative method for assessing the penetration rate of home visiting services is to examine the counts of families served as a proportion of the underlying population in need. Figure 5 shows the number of families served by home visiting in each county as a proportion of the Medicaid births in the most recent three-year period. Medicaid eligibility at 200% federal poverty was selected as a proxy for population in need of home visiting. Approximately 72% of home visiting programs surveyed reached between 0 and 35% of the Medicaid eligible population in their service area.

Program Goals, Content, Services Delivered

Nearly all programs provided parenting education and referrals to additional services and more than 80% offered developmental and social-emotional screenings for children (see Figure 1). In addition, more than two-thirds of programs provided parent support groups, care

coordination, child health screenings, and maternal depression screenings. Physical assessments of children were offered by 47% of programs. Parent health screenings were rarely offered. Respondents identified a variety of services offered to clients via referral to other agencies. Referrals were made for child care, food, medical, dental, and mental health care, housing, job training, material and public assistance, and utilities.

The most commonly reported program goals included: 1) improve knowledge of child development, reported by 88% of respondents; 2) Increase access to medical home or primary health care provider, 86%; and 3) prevent child abuse and neglect, 83%. The least commonly reported program goals included: 1) extend spacing of subsequent pregnancies, 41%; 2) decrease emergency room visits, 51%; and 3) decrease preterm births, decrease very low birth weight, reduce infant mortality rate, and decrease incidences of accidental injury, all reported by 59% of responding programs.

Qualitative Analyses

Ability to meet current demand for home visiting services. Approximately two-thirds of respondents provided a positive perspective on their ability to meet current need. However, a closer examination of the comments revealed a careful qualification of the perspective on need. Many respondents described how the need for services is currently defined by eligibility criteria that are too narrow. Therefore, on one hand, a program may be able to meet current need for home visiting under existing eligibility criteria while on the other hand, with narrow eligibility standards, many families that would benefit from home visiting services do not currently qualify for them. Two respondent comments are illustrative:

> With recent eligibility changes we are able to focus on a smaller number of children/families/age group but the children between the ages of 6 months and 3 years of

> age will not be provided support. I feel this creates a huge gap in service/support and moves us more to a reaction model instead of preventative/proactive model.
>
> At this time we adequately meet the needs of our community. However, there are many other families who have young children that do not meet the current eligibility requirements, but do have many needs. Often times these needs go without being met because of limited community resources.

Respondents also noted the stress and strain placed on home visiting staff by larger-than-desired caseloads and changes in the delivery system.

Greatest threat to the success of home visiting services in service area. Respondents were asked to address what they see as the 'greatest threats to the success of home visiting services in your service area.' More than one-half of respondents reported a lack of stable funding as the most serious threat. As a result of limited financial resources, respondents encouraged the adoption of models that use interdisciplinary teams as well as opportunities to encourage programs to collaborate. One respondent offered the following:

> Models that are interdisciplinary utilizing MDs, nurses, midwives, community health workers, social workers, office managers, behavioral health staff, and other support staff working as a team to provide integrated service for a family would be the best way to utilize funding.

Another recurring threat was restrictive program eligibility. For example, one respondent noted, "Limited number of eligible families with first time pregnancy or child under 6 months. Families historically do not engage until later in child's life. The first six months are often 'honeymoon' months." Two other comments echo this concern:

> My concern is the families with multiple risk factors that we can no longer serve due to the limitation to first time parents [with children] up to 6 months of age. There are a lot of children being born to parents that had previous children removed from their home. We cannot serve these children until they become a victim of abuse or neglect.

> Changing the eligibility...we realize this is evidence based...however, we have also worked with many of the families you are telling us are not willing to change. These families are thankful for our service and closing the doors on so many families is wrong. I would encourage the state to increase the referral age to at least 12 months and allow teen parents with more than one child to be automatically eligible just as those who are in the military or abused...they have got to be at an increased risk for delay...and there has to be research to back that up.

Less common but still shared were challenges in engaging parents in home visiting, issues of staff burden, and issues of program focus and overall service capacity. For example:

> We have such a high number of Part C referrals that cannot be put on a waiting list and a limited number of home visitors/service coordinators. This means the "home visiting" referrals have to be put on a waiting list or referred [elsewhere] if we have no "opening" available. OR we take on the additional referrals and because of overly high case loads, children do not get the services/supports they deserve. I believe that the greatest threat is that there is a push for quantity -- numbers -- rather than for quality. There is a goal of reducing costs -- and so the PHN [Public Health Nurse] is being looked upon as too expensive, and we are going to lose a very important component of home visiting programs. Other states have adopted the NFP [Nurse Family Partnership] as a model --

> we tend to be going the other direction. Somewhere between all community workers and all PHN's -- there is a team approach that will benefit our children and families through the integration of skills and personalities in a supportive program that cares about outcomes -- but not just about numbers. We must live on grants that come and go -- and communities that have no funding to make up the difference in the years when grants are not available!

Greatest unmet need in area among families served by home visiting. The single most frequently reported unmet need was transportation for families to make use of existing services in the community. Other categories of need related to jobs/employment programs, housing, and mental health. In addition, respondents highlighted that some unmet needs stem from the restrictions on eligibility for home visiting services. Other categories of need included teens and young parents, first-time parents, health care services, and educational services.

Discussion

Techniques for needs assessment can be driven by extant data or primary data collection. Secondary data are often useful for outlining the scope and scale of a presenting concern, but lack specificity for planning purposes. The present study demonstrates the value of collecting data directly from deliverers of home visiting programs across a state. In general, there were similarities among the home visiting programs surveyed, but programs were far more diverse in regard to program management, reach, eligibility, characteristics of the population served, goals, content, and services delivered. What was consistent, however, was the undeniable need for home visiting services and the desire to serve more families across the State of Ohio.

Consistent with the broader research literature on home visiting programs, programs surveyed also varied considerably with respect to their target population, eligibility criteria,

services provided, outcomes and data collection procedures. Though the majority of programs reported collecting data that allowed them to track children and families over time, the data being captured varied in quality and extent across programs. Though programs varied at a more granular level, nearly all programs provided some form of parenting education, referrals to additional services, and health screenings. In addition, nearly all programs focused on the goals of improved parent knowledge of child development, increased access to and utilization of a primary health care provider, and child abuse/neglect prevention.

Overall, three primary themes emerged from qualitative feedback. First, though the majority of program respondents provided a positive perspective on their ability to meet current demand, respondents consistently reported frustration with eligibility requirements that they believed narrowly defined need. As a result, programs could not serve some families that they felt could benefit from home visiting services, compromising their ability to achieve program goals. In addition, the number of families eligible for home visiting services far exceeds the number of families receiving home visiting services in most of the 88 counties in Ohio demonstrating significant unmet need.

Second, the development of more stable funding streams for home visiting was reported as crucial to program sustainability and reach. Third, methods to provide greater supports to programs and families are essential to program success. For example, transportation, subsidized housing, and mental health and substance abuse issues all impact a family's ability to participate and stay engaged in home visiting. As such, program representatives suggested that more resources are needed either to build infrastructure in communities where these services do not exist or connect families to these supports in neighboring areas.

Strength and Limitations

This study is balanced by strengths and limitations. We feel our results are representative of home visiting services across the state given our response rate of 93%; however, this study is limited in regard to the self-reported nature of data collected. Unfortunately, we do not know exactly what respondents based their responses on. For example, did program representatives look up client records, run aggregate reports, or use their best judgment to estimate answers to our questions? In all likelihood, all three methods were probably used and dependent upon the internal data collection capacity of each agency. The accuracy of data from respondents who based their answers on recall alone is questionable.

Conclusions and Implications

Geographic differences play a key role in home visiting service delivery. As services are deployed across a region, attention must be paid to variation in the underlying population of families, particularly their risk profile and geographic location. The matching of home visiting capacity to the density of need involves a crucial set of decisions by policymakers, funders, and program operators. Home visiting may be an efficient delivery method in highly dense urban neighborhoods, but less so in rural communities with greater distances between pockets of need. Other methods, such as group-based models and distance learning approaches may be more appropriate in these locales.

Home visiting programs should be encouraged to explore the possibility of aligning home visiting services with preventive care. Among the goals associated with home visiting are promoting access to a medical home, ensuring child immunizations are up-to-date, and promoting access to appropriate prenatal care. With the implementation of the ACA there is concerted interest in preventive strategies to promote child and family health. The use of multiple modalities, including home visiting, hold promise in best achieving these key outcomes

in the early childhood period, particularly where parent involvement is central to effective healthcare usage.

Though home visiting has often been promoted based on its potential to deliver child outcomes, the value of outcomes achieved by caregivers (mothers) should not be overlooked. The benefit of home visiting as a mechanism to provide support to mothers has been well documented. The investments in the caregiver may serve to develop capacities in the mother that persist, with benefits accruing to the child and family well beyond engagement in home visiting.

Lastly, this needs assessment confirmed that though the term 'home visiting' conveys a notion of the approach, it does not clarify the content delivered to families, the model employed, or the quality of services provided. Yet, this is not surprising given that a lack of stable funding threatens program delivery, reach and sustainability. Though there are several common denominators to home visiting as delivered by the set of providers surveyed, we find substantial variation in how the program components are configured and focused. Most programs aspire to use evidence-based approaches but still only achieve a lesser standard of evidence-informed practice. In this respect, funders play a major role in persuading providers to adopt models that have demonstrated effectiveness by either prescribing a model or the selection of a model from a menu of alternatives. The present needs assessment was not designed to explicitly assess the effectiveness of the models in use aside from program operators' perceptions in this regard.

The state-wide needs assessment methodology used in this study to capture quantitative and qualitative programmatic information is a cost-effective way to gather the type of information necessary for MIECHV. Other states could employ a similar methodology to facilitate cross-program and cross-state comparisons. Armed with that information, a policy agenda could be drafted outlining state, regional, and national outcomes that are desired in the

areas of child and maternal health and then aligned to evidence-based home visiting-based strategies designed to achieve them. State-wide needs assessments could also estimate the gap between current capacity and the level of capacity needed to achieve said outcomes to facilitate a standardized capacity-building and technical assistance agenda.

Acknowledgements

Funding for this research was provided by the Ohio Department of Health through a contract with the Center for Child Health and Policy at University Hospitals Rainbow Babies and Children's Hospital. Special acknowledgement goes to Dr. Leona Cutler (deceased) who provided key leadership to the overall work.

References

1 American Academy of Pediatrics Council on Community Pediatrics (2009). The role of preschool home-visiting programs in improving children's developmental and health outcomes. *Pediatrics, 123,* 598-603.

2 Donelan-McCall, N., Eckenrode, J., Olds, D. L. (2009). Home visiting for the prevention of child maltreatment: Lessons learned during the past 20 years. *Pediatric Clinics of North America, 56(2),* 389-403.

3 Howard, K. S., & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The Future of Children, 19(2),* 119-146.

4 Daro, D. (1993). Child maltreatment research: Implications for program design. In D. Cicchetti & S. L. Toth (Eds.), *Child abuse, child development, and social policy* (p. 331-367). Norwood, NJ: Ablex.

5 Guterman, N. (1997). Early prevention of physical child abuse and neglect: Existing evidence and future directions. *Child Maltreatment, 2(1),* 12-34.

6 Karoly, L. A., Greenwood, P. W., Everingham, S. S. Hoube, J., Kilburn, M. R., & Rydell, C. P. (1998). *Investing in our children: What we know and don' t know about the costs and benefits of early childhood interventions.* Santa Monica, CA: RAND.

7 Ramey, C. T. & Ramey, S. L. (1998). Prevention of intellectual disabilities: Early interventions to improve cognitive development. *Preventive Medicine, 27(2)*, 224-232.

8 Seitz, V., Rosenbaum, L. K., Apfel, N. H (1985). Effects of family support intervention: A ten-year follow up. *Child Development, 56(2),* 376-391.

9 Health Care Reform Act. (2010). The Patient Protection and Affordable Care Act (Health Care Reform Act H.R. 3590), Sec. 2951 Maternal, Infant, and Early Childhood Home Visiting Programs. Page 220 (d)(3)(A)(i)

10 Paulsell, D., Avellar, S., Sama Martin, E., & Del Grosso, P. (2010). Home Visiting Evidence of Effectiveness Review: Executive Summary. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Washington, DC.

11 Child Trends. (2010). Home Visiting Application Process: A Guide for Planning State Needs Assessments. Early Childhood Highlights, 1(4). June.

12 Donelan-McCall, N., Eckenrode, J., Olds, D. L. (2009). Home visiting for the prevention of child maltreatment: Lessons learned during the past 20 years. *Pediatr Clin N Am, 56*, 389-403.

13 Olds, D. L. (2002). Prenatal and infancy home visiting by nurses: From randomized trials to community replication. *Prevention Science, 3(3),* 153-172.

14 Olds, D. L. (2006). The nurse-family partnership: An evidence-based preventive intervention. *Infant Mental Health Journal, 27(1),* 5-25.

15 Sweet, M. A. & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development, 75(5),* 1435-1456.

16 Olds, D. L., & Kitzman, H. (Winter, 1993). Review of Research on Home Visiting for Pregnant Women and Parents of Young Children. *The Future of Children, 3(3),* 53-92.

17 De la Rosa, I. A., Perry, J., Johnson, V. (2009). Benefits of increased home-visitation services: Exploring a case management tool. *Family & Community Health, 32(1),* 58-75

18 Thomas, N., Komiti, A., Judd, F. (2014). Pilot early intervention antenatal group program for pregnant women with anxiety and depression. *Arch Womens Ment Health, 17,* 503-509.

19 Avellar, S., Paulsell, D., Sama-Miller, E., Del Grosso, P., Akers, L., and Kleinman, R. (2014). Home Visiting Evidence of Effectiveness Review: Executive Summary. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Washington, DC.

20 Olds, D. L., Kitzman, H., Cole, R., Robinson, J., Sidora, K., Luckey, D. W., Henderson Jr., C. R., Hanks, C., Bondy, J., Holmberg, J. (2004). Effects of nurse home-visiting on maternal life force and child development: Age 6 follow-up results of a randomized trial. *Pediatrics, 114(6)*, 1550-1559.

21Eckenrode, J., Zielinski, D., Smith, E., Marcynyszyn, L. A., Henderson Jr., C. R., Kitzman, H., Cole, R., Powers, J., & Olds, D. L. (2001). Child maltreatment and the early onset of problem behaviors: Can a program of nurse home visiting break the link? *Development and Psychopathology, 13,* 873-890.

22 Witkin, B. R., & Altschuld, J. W. (1995). Planning and conducting needs assessments: A practical guide. Thousand Oaks, CA: Sage Publications.

23 Lillie-Blanton, M., & Hoffman, S. C. (1995). Conducting an assessment of health needs and resources in a racial/ethnic minority community. *Health Services Research, 30(1),* 225-236.

24 Kazda, M. J., Beel, E. R., Villegas, D., Martinez, J. G., Patel, N. & Migala, W. (2009). Methodological complexities and the use of GIS in conducting a community needs assessment of a large U.S. municipality. *Journal of Community Health, 34(3),* 210-215.

25 Johnson, K. (2009). State-based home visiting: Strengthening programs through state leadership. National Center for Children in Poverty, Columbia University. February.

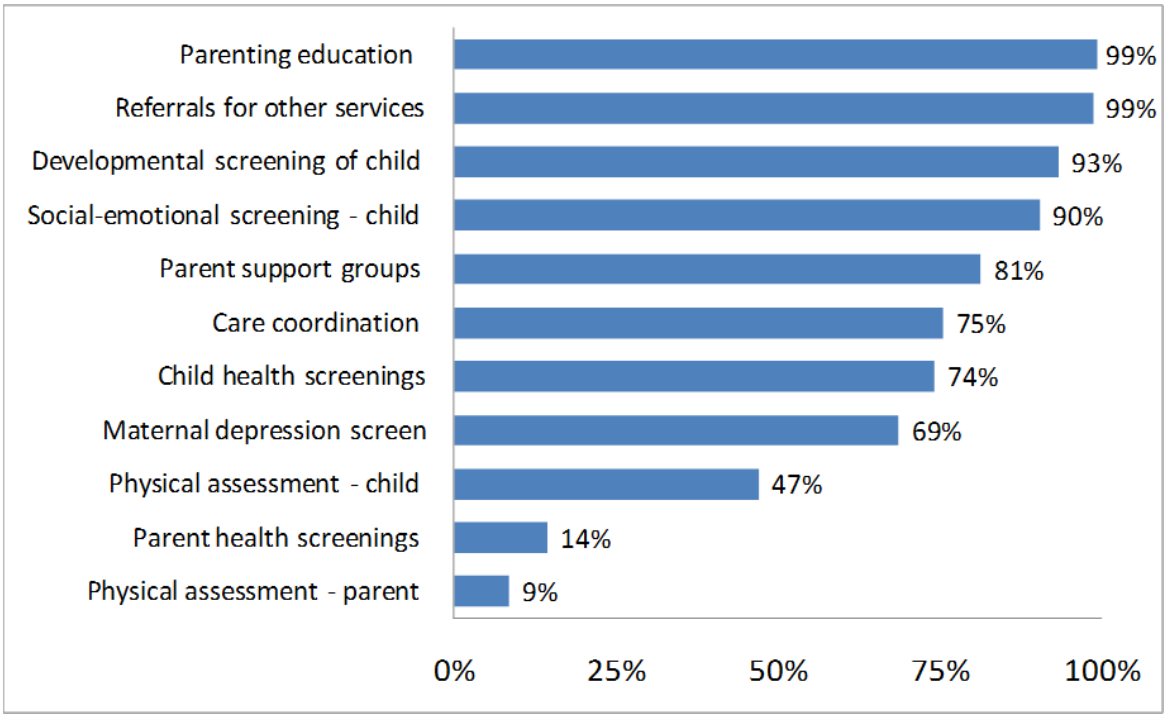

Figure 1. Home Visiting program components as reported by N=158 home visiting programs across the State of Ohio for 2010.

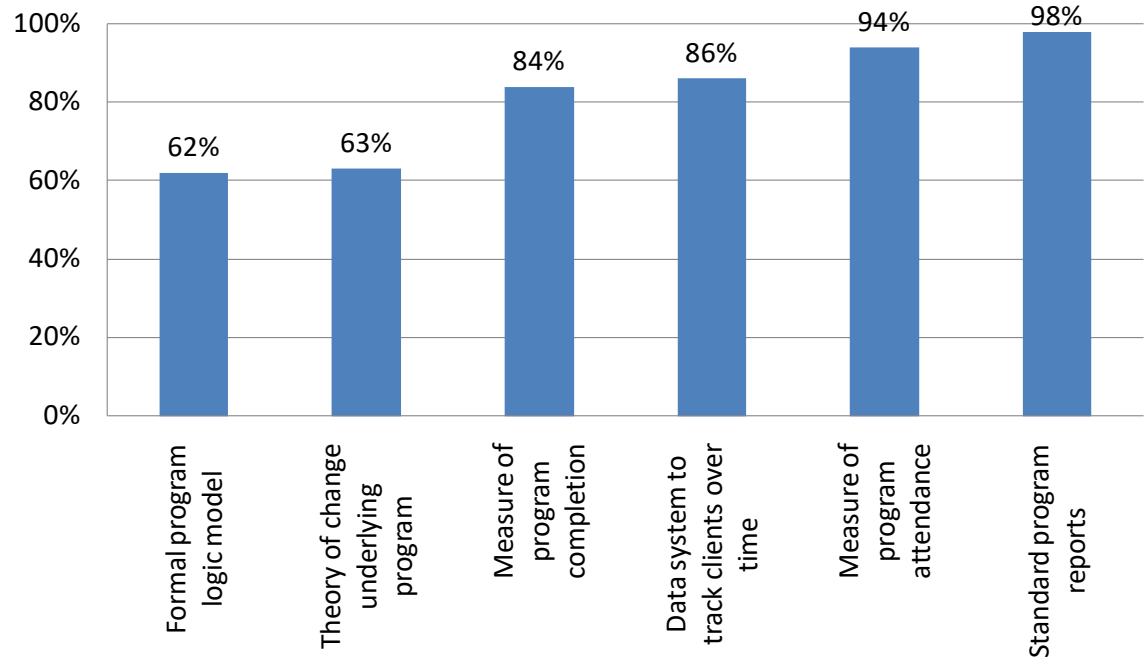

Figure 2. Program management characteristics as reported by N=158 home visiting programs across the State of Ohio for 2010.

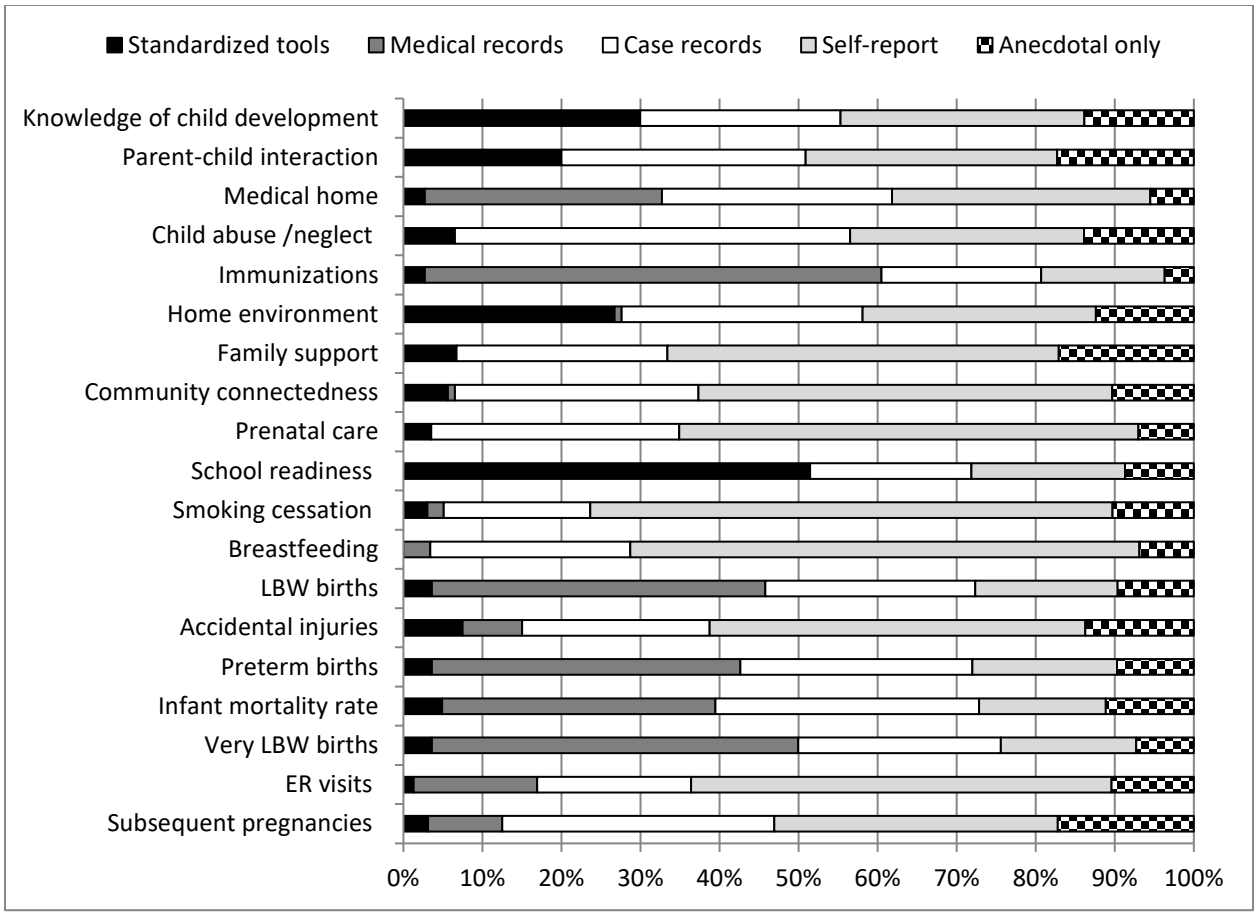

Figure 3. Percent of home visiting programs using each type of data source to document program outcome as reported by N=158 home visiting programs across the State of Ohio for 2010.

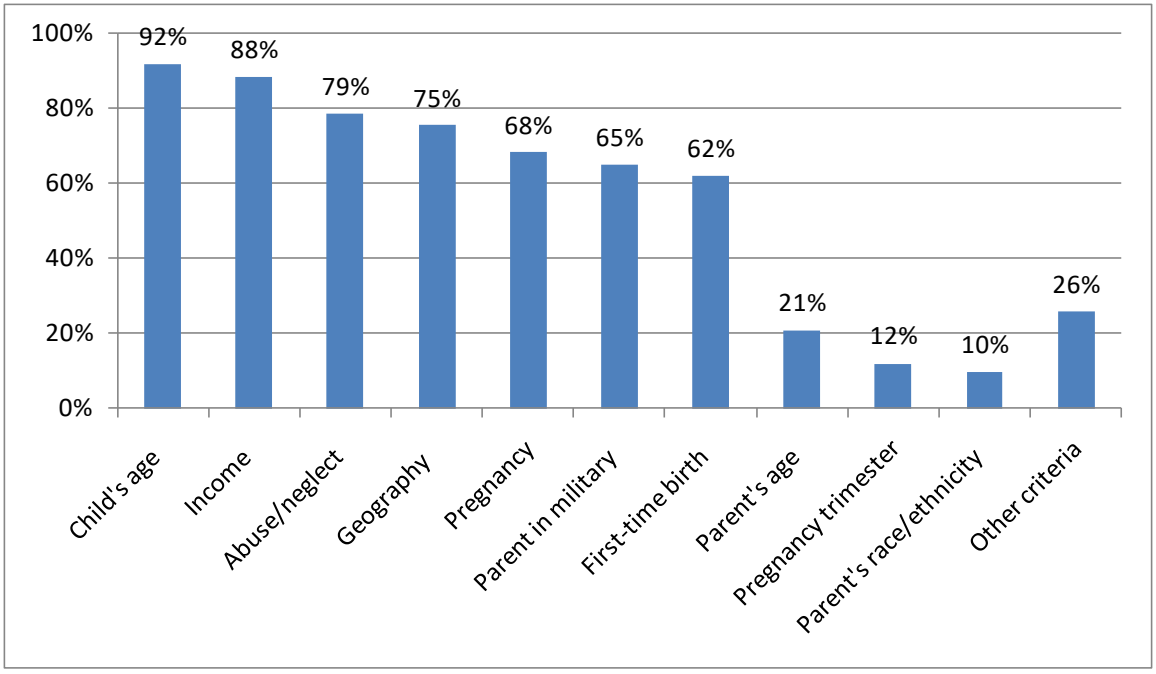

Figure 4. Percent of home visiting programs using each type of eligibility criteria as reported by N=158 home visiting programs across the State of Ohio for 2010.

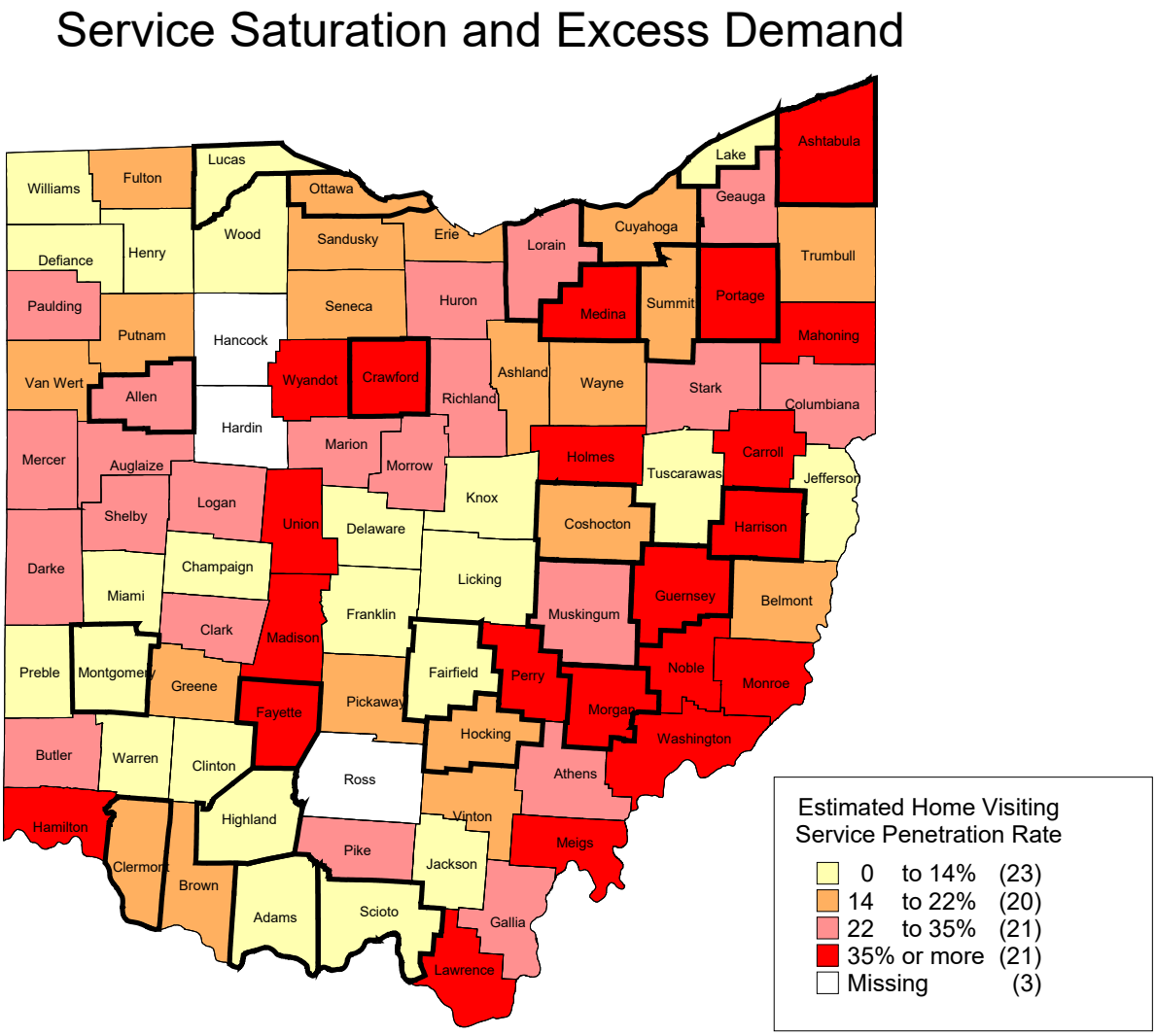

Figure 5. Estimated population in need of home visiting. Service penetration rate is the number of families served by home visiting in each county as a proportion of the Medicaid births in the most recent three year period. Number in parenthesis reflects the number of counties in Ohio with that service penetration rate range.