

Massachusetts Early Intervention Partnerships Program (EIPP)

Program Overview

The Massachusetts Early Intervention Partnerships Program (EIPP) is a high-risk maternal and newborn screening, assessment and service system. Implemented in 2003 after a one year planning process by an Expert Working Group, EIPP provides services to women with an identified maternal or infant risk factor and links them to services to mitigate poor health and developmental. Through a variety of interventions and strategies to foster continuity of care, EIPP works to address the complex physical, emotional, and environmental health needs of pregnant and postpartum women.

EIPP provides home visiting and group services to over 550 families annually by a maternal child health (MCH) team that includes a MCH nurse, a mental health clinical professional, and a community health worker (CHW). EIPP provides maternal and infant health assessment and monitoring; health education and guidance; screening and appropriate referrals; and linkage with WIC and other resources. Programmatic performance measures and maternal and infant outcomes range from improved management of alcohol, tobacco and other drugs, improved parenting skills, improved emotional health, increased rates of exclusive breastfeeding, increased attendance at postpartum visits, and improved nutrition.

Theoretical Foundation for Program



Massachusetts has some of the best health outcomes in the United States, with infant mortality and teen birth rates that are among the lowest in the country. At the same time, there are certain health indicators that have not seen continued improvement and there continues to be significant disparities in many health outcomes among different groups of the Commonwealth's residents, in particular racial, ethnic, and geographic disparities.

With that in mind, two public health models are applied to the ongoing program development for EIPP: the Life Course Model and the Healthy Equity Model. The Life Course Model of maternal, child and adolescent health posits that a complex interplay of biological, behavioral, psychological, and social factors affect health outcomes across the span of a person's life. These factors can be either protective or harmful. Furthermore, the health and socioeconomic status of one generation directly affects the health status of the next generation. Two key components of the life course model include: 1) understanding the pathways and trajectories that lead to a multitude of health outcomes, and 2) focusing on the impact of early programming or exposure to risk that may have long-

term health consequences. The model also suggests that there are critical or sensitive periods of development that may lend themselves to interventions that are more effective.

The Health Equity Model underscores that disparities exist in individual as well as population health outcomes due to differential access to economic opportunities, community resources and social factors. Economic opportunities may include adequate income, jobs and educational opportunities. Community resources may include access to quality housing, quality schools, recreational facilities, healthy foods, transportation resources, health care and a clean and safe environment. Social factors may include social network and support, leadership, political influence, organizational networks and experience of racism. The role of public health is to establish public policy to achieve health equity and promote population based strategies.

In addition, the EIPP Model is based on the premise that it is vital to identify women early in their pregnancy and ensure that they receive high quality services. Women also need to be cared for within the context of their families, their community, and the larger environment. EIPP MCH Team members expand the traditional content-oriented protocols that focus only on the personal health and parenting skills of the mother and include aspects of environmental health, safety, social supports, and the mother's life course development.

All EIPP services are voluntary and provided in the language readily understood by the family. All EIPP MCH Team members ensure respect for individual cultural beliefs and respect for learning styles in the provision of health education by utilizing appropriate materials (videos, appropriate literacy levels of written materials, reading materials with the EIPP Participant). The MCH team generally reflects the cultural, linguistic, racial, and ethnic diversity of the population served and has the flexibility to provide support services to families in multiple locations of the families' choice. All EIPP participants enter the program either pregnant, or within two months of giving birth, and are able to remain in the program until their infant reaches one year of age.

Participant Racial, Ethnic, and Eligibility Data

Demographic data collected for all 6,290 participants enrolled between state FY03 and FY14 indicates the self-identified racial and ethnic diversity of the women serviced in EIPP as follows (mothers are encouraged to self-identify all categories they wish):

Percent	Racial and Ethnic Category
48%	White
40%	Hispanic/Latino/Spanish
14%	Black
9%	Asian

In addition, during the same timeframe, the enrollment data assessed during the first face-to-face contact included the following information on participant eligibility criteria (mothers may meet more than one):

Percent	Eligibility Criteria
84%	High level of stress
57%	Inadequate food or clothing
46%	History of depression including postpartum depression
41%	Homelessness or housing instability
22%	Tobacco use
22%	Current high-risk pregnancy
12%	Substance abuse in the home
9%	Maternal age 20 years or younger with at least two children, including the current pregnancy or infant
8%	Violence in the home
7%	Pregnant woman with a previous poor birth outcomes (still birth or neonatal death; baby less than 1000 grams)
3%	Maternal age 21 or 22 years old with at least three children including the current pregnancy or infant
2%	Pregnant woman beginning prenatal care in the third trimester
2%	Postpartum woman who had inadequate or no prenatal care (Kotelchuck Adequacy of Prenatal Care utilization Index)
1%	Hepatitis B positive

Select Lessons Learned

MCH Team: Home visiting programs often utilized only one professional in the provisions of services to high need families. For example, in Health Families Massachusetts, CHWs provide home visiting services to families while the Nurse-Family Partnerships provide home visits by a nurse. Shifting to rely on a team approach to provide comprehensive services is a challenge for some professionals and community based agencies.

Developing a partnership within each of the MCH Teams is vital for providing comprehensive services that address families' identified needs, to perform community wide outreach and education, and to support individual and family efforts in improving their circumstances. When each MCH Team member acknowledges, utilizes, and relies upon the professional expertise of each other, the MCH Team is more effective in engaging and serving high-need families. One strategy used to develop team cohesion is hosting mandatory, quarterly EIPP statewide meetings where training, networking and facilitated discussions by discipline occur.

Integration with Early Intervention (EI): EI providers have traditionally provided interventions for children, but with the introduction of EIPP, they have expanded their services to include a focus on women's health. The hiring of nurses and mental health providers with a background in community health has been associated with the successful integration of prevention-focused

perinatal services to women into the EI program's child-focused intervention activities. In addition, EIPP Team Members being dually employed as EI service providers supports a comprehensive continuum of care for families needing EI services for their infant.

Funding Diversification:

At its inception in 2003, EIPP was financially supported through four primary funding sources including federal, state, Medicaid, and third party totaling over \$1.6 million. However, due to multiple and competing interests for the same tax dollars over the first few years of operation, funding for EIPP was reduced by more than 45%. Also, there was a shift in how Medicaid purchased perinatal services, working within a primary care model to bundling perinatal services through a managed care model.

MDPH has engaged in several strategies to support ongoing funding for EIPP including accessing complementary funding (HRSA MCHB Maternal Mental Health Grants, EI, CAPTA), securing third party reimbursement from two of the four Medicaid MCOs, and shifting expectations of how funds are received as a state agency such as facilitating a financial partnership between a health plan and a vendor rather than being the direct recipient of program funding.

Integrating this program in an existing EI system of care while also diversify funding has ensured that EIPP remains an active participant in the national and state discussions around home visiting and resource allocation.

Preliminary Evaluation Data:

Because of limited funding and resources for program evaluation, a comprehensive evaluation of the EIPP program has not been undertaken. However, a number of more focused evaluation activities have been conducted.

In 2008, a quantitative analysis was conducted linking EIPP program data to birth certificate data in the Pregnancy to Early Life Longitudinal (PELL) Data System to evaluate perinatal outcomes for EIPP Participants specific to breastfeeding at hospital discharge, infant hospital stays and costs. EIPP Participants were compared with a comparison population of women matched on age, race and geographic residence. Data were analyzed for births occurring during 2003-2005.

Controlling for potential confounders, EIPP participants were more likely than non-participants to be breastfeeding at hospital discharge (adjusted odds ratio = 1.4, 95% confidence interval 1.1–1.8). In addition, there were no differences in length of infant birth hospital stay ($p=0.331$) or cost ($p=0.499$) between participants and non-participants. Results indicate that despite the known high prevalence in the EIPP population of risk factors that could not be adjusted for in the comparative analysis (e.g., depression, substance abuse, and domestic violence), comparable or better outcomes among EIPP participants may speak to the success of the program.

In early 2013, a team from the Harvard School of Public Health (HSPH) that included graduate level students developed a comprehensive evaluation plan for EIPP. This evaluation plan highlighted key focal areas for evaluation and has assisted program staff in the monitoring of internal program results. Following this, two Master's Level students from Tufts University Applied Learning Experience (ALE) began summer internships at MDPH in 2013. They examined two specific components outlined in the EIPP Evaluation Plan, breastfeeding rates and postpartum visit (PPV) attendance.

The first student who assessed exclusive breastfeeding rates among EIPP Participants found that EIPP Participants had lower rates when compared to PRAMS data. Similar to the first analysis completed in 2008, the known high prevalence in the EIPP population of risk factors could not be adjusted for in this comparative analysis (e.g., depression, substance abuse, domestic violence). The primary reasons for not exclusively breastfeeding among EIPP Participants were low prioritization of exclusive breastfeeding, discomfort breastfeeding in public, maternal depression, returning to work, and the legal status of the mother. However, when assessing exclusive breastfeeding rates by EIPP site for FY11-FY14, the program that has a full time lactation consultant on staff has almost double the rate of exclusive breastfeeding at birth (64.46%) compared to other EIPP sites (34.77%). Based on this finding, adding a lactation consultant as a fourth MCH Team Member is being explored and funding is being sought.

The second student who examined Postpartum Visit (PPV) attendance among EIPP participants found that overall, 68.4% of EIPP participants receive insurance coverage through MassHealth, and among them 87% reported having attended their PPV. In comparison, PPV participation for a random sample of women enrolled in a MassHealth managed care plan during HEDIS 2007, 2009, and 2011, showed MassHealth weighted means of 59.0%, 64.0%, and 68.7%, respectively, using medical records and claims data. Based on this comparison, EIPP appears to be an effective intervention for improving PPV attendance among mothers who are at risk for not receiving their postpartum care.

However, due to significant funding limitations, EIPP has struggled to conduct a comprehensive program evaluation to prove its effectiveness. MDPH continues to explore opportunities to conduct a full evaluation of EIPP including resources that are available through the Maternal, Infant, and Early Childhood Home Visiting Program. We expect further study will establish EIPP as a vehicle for improving healthcare access and health outcomes for EIPP participants.



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