



Ohio Infant Mortality Reduction Initiative Program Report

Ohio

Department of Health
Bureau of Maternal and Child Health







Ohio Infant Mortality Reduction Initiative Program Report 2009-2012

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“For as long as the United States has kept data on birth outcomes, the numbers have indicated that African-American babies are at greater risk of dying during the first year of life than babies from other racial/ethnic groups.”

– Arthur R. James, M.D.
Senior Policy Advisor, Ohio Department of Health
Associate Professor, The Ohio State University Wexner Medical Center

Summary Brief

The Ohio Infant Mortality Reduction Initiative (OIMRI) program was created by the Ohio Department of Health (ODH) in 1994 to respond to a significant disparity in poor prenatal and birth outcomes for African-American women and infants. OIMRI is a culturally specific, community-based, outreach and home visitation program for high risk, expectant families that utilizes the community care coordination model. The intent of the OIMRI program is to reduce infant mortality by achieving the following:

- Improve Maternal Health
- Improve Birth Outcomes
- Improve Infant and Child Health

The OIMRI program, specifically designed to address the disproportionate number of babies dying in Ohio’s African-American population, uses infant mortality data to determine where resources are to be placed. It is a requirement that the services of the program are to be provided in areas of the state that meet the eligibility and justification criteria. County areas have been identified and programs have been established in neighborhoods/communities with statistically historical high, unacceptable rates of poor birth outcomes. In these census tracts and zip codes, the disparities in birth outcomes may be represented by prematurity that usually result in low birth weight (LBW) less than 5.5 pounds, very low birth weight (VLBW) less than 3.3 pounds or infant death. In vulnerable populations at highest risk, babies are born too soon and too often, they die.



OIMRI Report Summary

KEY HIGHLIGHTS

More than

2,800

High-risk pregnant mothers reached by OIMRI
from 2009-2012 across 14 metropolitan, Appalachian, and suburban counties.

Increased healthy birth
weight of OIMRI babies

87%

From 2009 to 2012, the gestational age (weeks pregnant) of mothers at delivery increased each year from an average of 36.0 weeks to 38.8 weeks (greater than 5.5lbs), decreasing risks of serious health issues or death.

667

Mothers received timely prenatal care and referral services
through early recruitment in the OIMRI program.

7%

OIMRI clients

Homeless and/or living in poor conditions,
which makes serving the family and maintaining client communications challenging.
Less than one percent of Ohioans struggle with homelessness.

All community health workers (CHW) make home visits through the baby's second year of life to provide education and information for mother and child on general physical health, immunizations, child development, mental health. The CHW also identifies and overcome barriers to care, and provides information to reinforce risk reduction behaviors.

3

Reported infant deaths

Of the 280 patient charts sampled from the 14 OIMRI programs.

Over the period of

2009-
2012

There is a decrease in the number of unplanned pregnancies.

48

Community Health
Workers

Are culturally connected with the neighborhoods in which they live, work, learn and play. The CHWs provide a link for high risk pregnant families to the health, social services, and other agencies that will improve the likelihood of a healthy birth outcome, e.g. housing, transportation, not enough food... etc.

65%

OIMRI postpartum clients

Following delivery, reported using a family planning method compared to the national average of 62%.

219

First birthdays were celebrated with OIMRI babies. OIMRI babies are less likely to be born VLBW compared to Medicaid covered births to African American, non-Hispanic mothers.



“C.C. was not an easy client to handle, there were a lot of emotional and personal problems, but I feel that I was able to make a difference in her life....”

– OIMRI Community Health Worker

OIMRI Success Story

C.C. was unemployed, smoked two packs of cigarettes a day and was pregnant with her third child when she entered the Ohio Infant Mortality Reduction Initiative (OIMRI) program. C.C. was living with her boyfriend who was the father of the unborn child and one of her other children. The Community Health Worker (CHW) remembers when she first visited their home – little furniture to sit on, roach infested and messy. The children appeared filthy and half-dressed even in the winter time.

C.C.'s life was often tumultuous. She broke up with her boyfriend and got into an altercation with her neighbor, receiving two years' probation.

Over the next 25 months she spent with OIMRI, C.C. underwent an immense change. Together C.C. and her CHW set goals to achieve by the time her baby reached age two. C.C. made all of her prenatal visits and gave birth to a baby girl; her daughter weighed 7 pounds 7 ounces and was in very good health.

C.C. began to take better care of her children and her attitude was more positive. She made sure her children received all of their scheduled immunizations. With proper education on the effects of smoking from her CHW, C.C. decided to quit. Her CHW linked her to valuable resources to help in the development of her older children. They were enrolled in a Head Start program and her child experiencing speech delays began receiving speech and language therapy.

The CHW commented that, “C.C. was not an easy client to handle, there were a lot of emotional and personal problems, but I feel that I was able to make a difference in her life....” C.C. is now employed and she and her family moved to a new house in a good neighborhood with her two children and healthy baby girl.



Introduction

Infant mortality is the death of an infant before his or her first birthday. In Ohio, an excessive number of babies do not celebrate a first birthday. The infant mortality rate (IMR) acts as a key indicator of maternal and child health and the IMR has been called “the most sensitive indicator of overall societal health.” The IMR is the number of babies who died in the first year of life, per 1,000 live births. For African-American babies, the IMR is almost two-and-a-half times the rate for white babies. The rate in Ohio is among the worst in the United States. African-American women in Ohio are more likely than white women to experience a poor birth outcome.

Infant mortality is a community-by-community problem. Eliminating the health and racial disparities of African American babies dying will require intentional focus on reducing prematurity, LBW and VLBW. Approaches may include, but are certainly not limited to: improving the health of a woman before, during and after pregnancy, and the implementation of strategies aimed at improving the quality of prenatal care, preconception and interconception health, including underlying medical conditions.

The World Health Organization defines social determinants of health as the conditions in which people are born, grow, live, work and age that can contribute to or detract from the health of individuals and communities. An awareness of how social determinants of health such as housing, employment, transportation, access to fresh food, opportunity for quality education, poverty, and racism can be contributing factors of infant mortality is important. To effectively address infants dying, engagement of the entire community to address social determinants of health is essential.



Every baby matters and deserves a chance to celebrate a first birthday.

“I have learned so much about what is better for an infant, even my preemie when sleeping. I learned about nutrition and health tips, the total package to keep infants safe and alive.

I have joined a group in my community to help spread the facts to African-American women with infants and also to grandparents and baby sitters. Thank you so much, for it has equipped me to help keep infants, even my own infant, safe and healthy.”

– OIMRI Program Participant

Program Description

An OIMRI client is an uninsured or underinsured, high-risk pregnant African-American woman from a specific geographic or target area. OIMRI, a client-centered, goal-oriented program, is designed to assess the risks, barriers and needs of pregnant women and their families for particular health and social services, (medical appointments, food, transportation, housing, education, violence, emotional health, chemical dependency treatment and and advocacy). The program also coordinates services to avoid gaps and duplication.

Table 1. Client Demographics

Year	2009	2010	2011	2012
African-American (non-Hispanic) clients	87%	88%	92%	94%
Clients between ages 15-24	89%	89%	91%	96%
Total number of clients	681	692	713	755

To improve birth outcomes, this community based OIMRI program is structured to provide targeted outreach to recruit the high risk mother early in the pregnancy, work with her during the pregnancy, and support and engage the family through the child’s second birthday. The provision of this family focused service utilizes “the intentional practice of working with families for the ultimate goal of positive outcomes in all areas through the life course.” (Title V Block Grant)

To promote a healthy pregnancy, the OIMRI program requires employing individuals from the affected community who empower pregnant women and expectant fathers to obtain prenatal care and access local, supportive services. This certified community health worker is a trained advocate from the targeted community who empowers individuals through education, outreach, home visits and referrals. The CHW reflects the community served, thus providing a trusted cultural connection. Through the development of partnerships that are in the best interest of the high risk mothers, family-centered care is obtained.

For more information on the OIMRI program, refer to the Program Standards.

<http://bit.ly/OIMRI>



Components of Program

The OIMRI program utilizes the community care coordination model. The model includes five core components: 1) planning; 2) training; 3) supervision; 4) standardized care processes; and 5) data collection and evaluation.

Planning is the utilization of current data to target OIMRI services in specific neighborhoods and census tracts with the highest rates of poor birth outcomes and associated risk factors. It may also include conducting client surveys of prenatal care appointment waiting times; consumer surveys to determine specific barriers to care; Geographic Information System (GIS) mapping of infant mortality, low birth weight and other risk factors; and assessment of the availability of prenatal care providers in the targeted community.

Training is standardizing the education and training of CHWs and supervisors and is an important component of the model. OIMRI projects develop a local plan to address and/or eliminate barriers to early and continuous prenatal care. OIMRI projects hire and train community health workers and supervisors who are culturally and linguistically appropriate, are connected to the population of interest and can implement the OIMRI model. Required training is enrollment in a Community Health Worker Certificate Program at a college that provides core competency areas and a clinical practicum as required by the Ohio Board of Nursing for CHW certification. Also required is training in a comprehensive curriculum providing appropriate guidance for home visitors and others working with pregnant women and their families as approved by ODH such as *Partners for a Healthy Baby Home Visiting Curriculum*. Additional maternal and infant health related trainings such as safe sleep, breastfeeding, lead, poisoning prevention, child development, post partum depression and smoking cessation are strongly encouraged.

Supervision is to be conducted by an individual who has culturally and linguistically appropriate skills, and/or is culturally connected to the community and is trained in or has experience in the implementation of the community care coordination services model. This individual should have experience with, or sound knowledge about, working with high risk, low income women of child bearing age.

“I could not have asked for a more caring or respectful woman as my community health worker. I am quite sad that my time with her is up. However, if I would do the program again, I would ask for her. She is considerate and caring with everything for you and your child, making sure that a family is comfortable and has everything they need.”

– OIMRI Program Participant

The care coordination model uses a **standardized care process** that facilitates consistency of home visiting procedures and clearly delineates the expected actions of the community health worker. This is achieved through the use of the *Partners for a Healthy Baby Home Visiting Curriculum* (a curriculum of health education topics for mother, father and baby). It is a nationally recognized curriculum that is research-based and practice-informed.

Pathways is also used. It represents specific step by step guides that define the client problem, the steps towards resolution and the final positive outcome. Many OIMRI programs implement part or all of the Pathway guides.

Establishing and implementing a common **data collection and evaluation** system that documents the impact of services is vital to measuring outcomes. The OIMRI data system currently includes the trimester prenatal care was initiated, assessment of risk factors, outcome of the pregnancy, including weeks gestation, weight of the infant, the number of well child visits made in the first and second year, the immunization status at one and two years of age and death of infant. This information helps to determine if the OIMRI Program was successful in achieving its intended outcome. Local programs should use evaluation data such as satisfaction surveys and chart reviews to inform staff development and continuous quality improvement.

OIMRI functions to positively impact some of the social determinants of health to produce healthy birth outcomes.

For more information about the OIMRI program, refer to the Program Standards. <http://bit.ly/OIMRI>





Client Recruitment

OIMRI, the community-based intervention program, finds and enrolls clients through public health, social service, community outreach (business, health fairs, community centers, door-to-door), self-referral, relatives, friends, neighbors and through other means.

Home Visits and Home Visitors

The CHW provides culturally appropriate services through home visitations. Home visits are the primary mode of service provision in the OIMRI Program. Telephone, text or email communications are used as necessary. For the high risk expectant family, a home visit may occur where they reside, or in a homeless shelter, the residence of a family member or friend, a business, a clinic, or a health center. Some visits may also take place at the nearest fast food restaurant, library or a park.

The CHW makes home visits on a regular basis, during pregnancy and through the baby's second year of life. The CHW provides assessments, peer-to-peer education on health and prevention, identify and overcome barriers to care, and reinforce risk reduction behaviors. The family is referred to community agencies and programs (e.g., WIC, Help Me Grow, domestic violence, housing, transportation, etc.) to assure positive pregnancy and infant health outcomes. Adhering to the Partners for a Healthy Baby curriculum, the CHW utilizes a systematic, planned sequence of critical topics to discuss with each family. <http://www.cpeip.fsu.edu/PHB/>

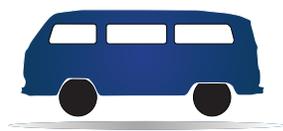
The CHW locates and works with a vulnerable population that is predisposed to experiencing a poor birth outcome—infant mortality or morbidity—through home visitations and community observations. The home visitor pays attention to the toxicity of the mother's environment that can adversely affect the outcome of the pregnancy and provides assistance as needed. The CHW provides support and information that empowers the family toward having a healthy baby.

“Your program is like a jump start in life for single moms. Your program is a need not a want. I talk with other pregnant girls that need help. They don’t know where to go. I told one girl and her mother to go to OIMRI because they will connect you.”

– OIMRI Program Participant

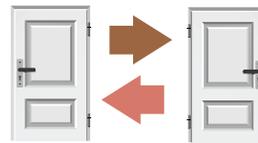
Client Recruitment

Bus Mobile Unit



2%

Door to door



10%

Faith-based organizations



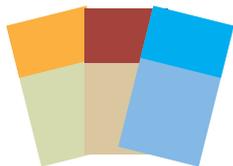
2%

Health fairs and/or community functions



10%

Flyer, pamphlets, etc.



7%

Business, health care providers, community centers



14%

Word of mouth



7%

Referrals from public health agencies and social service agencies

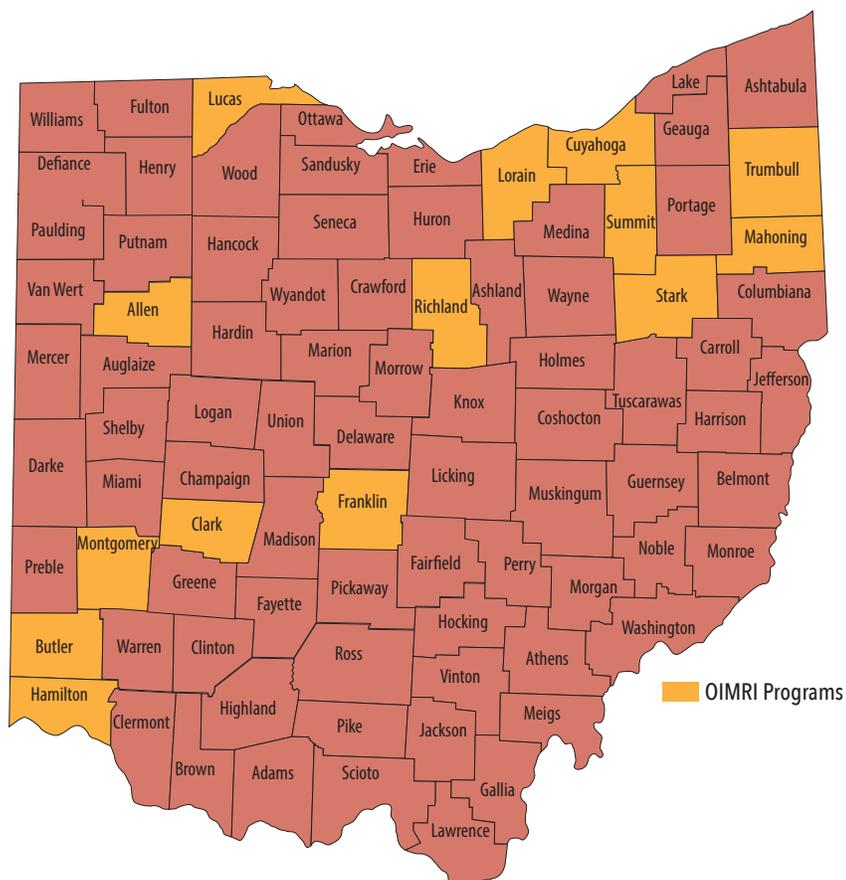


27%



Location of Programs

OIMRI programs exist in 14 counties in Ohio with exceptionally high infant mortality rates. These metropolitan, Appalachian and suburban counties are Allen, Butler, Clark, Cuyahoga, Franklin, Hamilton, Lorain, Lucas, Mahoning, Montgomery, Richland, Stark, Summit and Trumbull counties.



“The program is very helpful because when I felt I had no support my OIMRI worker was there for me. She helped me to become a better woman and a better mother to my baby.”

– OIMRI Program Participant

Program Data

In 2014, ODH staff conducted site visits to each of the 14 OIMRI agencies to verify data entered in the ODH database to data found in the client file and found them to be consistent.

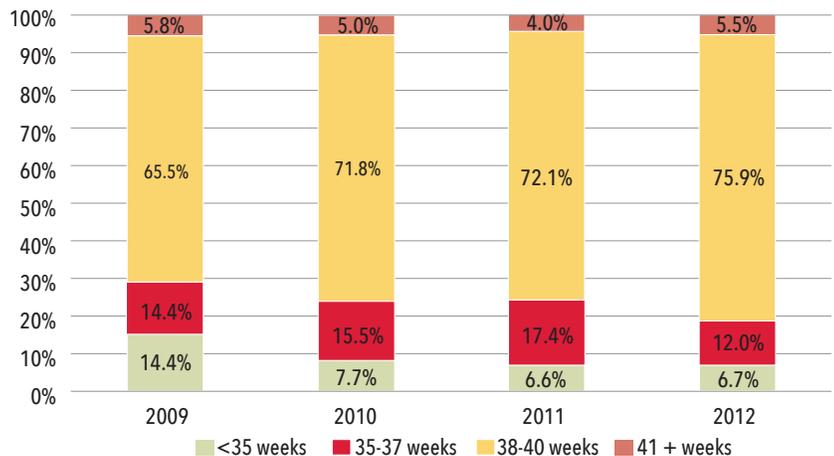
From 2009-2012, an average of 24 percent of OIMRI clients entered the program in their first trimester. The average percentage of clients who entered in their second trimester was 48 percent. The average percentage of clients who entered in their third trimester was 28 percent. Babies of mothers who do not get prenatal care are more likely to be low birth weight and more likely to die than those born to mothers who do get care. Early and regular care increases the chances of a healthy pregnancy and a good birth outcome.

From 2009-2012, an average of 8 percent of OIMRI clients delivered before 35 weeks. The average percentage of clients who delivered at 35-37 weeks was 15 percent. The average percentage of clients who delivered at 38-40 weeks was 71 percent. The average percentage of clients who delivered at 41 weeks or more was 5 percent. Infant morbidity and mortality rates are higher for infants delivered less than 39 weeks gestation.

Figure 1. Gestational Age at Entry into Program



Figure 2. Gestational Age at Delivery





Risk Factors

For enrollment into the OIMRI program, the most commonly identified risk factors illustrated in Figure 3 were “pregnancy unplanned,” “less than 18 or greater than 35 years old,” “tobacco use,” “late entry into prenatal care,” and “homelessness/poor living conditions.” Risk factors may change at various points during the pregnancy.

This high risk population tends to be very mobile. Consequently, nearly half of all clients are terminated from the program due to loss to follow-up. The data presented are program data. Therefore, the outcomes presented are for clients completing the program.

The inherent challenge in comparing OIMRI program clients to similar groups, such as African-American women served by Medicaid, is that the OIMRI program targets women in the most high-risk neighborhoods experiencing the worst birth outcomes. For example, the average homeless rate in Ohio is <1 percent. An average of nearly 7 percent of OIMRI clients from 2009-2012 were homeless and/or in poor living conditions. Therefore, the loss to follow-up rate is not surprising given the higher than average rate of homelessness and/or poor living conditions; these are social determinants of health.

From 2009-2012, the average percentage of OIMRI clients using a family planning method all the time following delivery was 65 percent, higher than the national average of 62 percent of women of reproductive age using a family planning method. Pregnancy unplanned was the most common risk factor. Therefore, during 2014 the OIMRI program implemented reproductive life planning to help address this common risk factor.

Table 2. Reason for Termination from Program

	2009	2010	2011	2012
Baby turned 1 year	19.8%	17.7%	41.1%	3.1%
Infant death	1.5%	1.4%	0.5%	0.8%
Pregnancy ended	2.7%	3.8%	2.8%	3.1%
Lost to follow-up	35.4%	42.9%	32.2%	62.5%
Client not interested in participating	18.3%	15.5%	9.8%	11.9%
Client moved out of service area	8.3%	10.7%	7.9%	8.6%
Client no longer needs assistance	6.2%	6.0%	2.8%	5.1%
Second pregnancy in 12 months	4.4%	2.2%	2.8%	4.7%

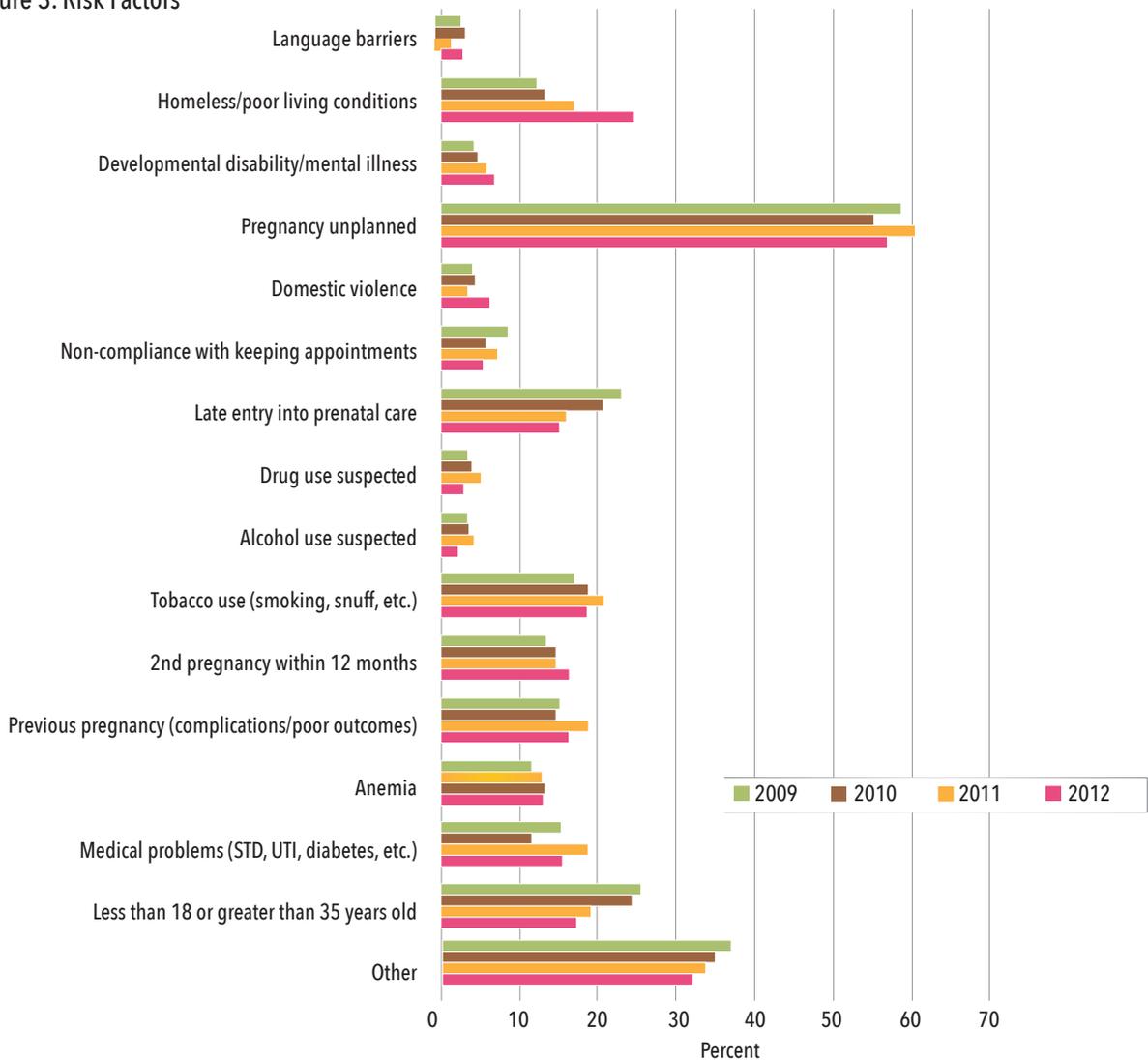
Table 3. Using Family Planning Method all the Time

	2009	2010	2011	2012
Yes	72.8%	68.1%	61.1%	58.3%
No	27.2%	31.9%	38.9%	41.7%

“I was hesitant about the program. I thought it was someone else to be inside your business, but I found the program beneficial in teaching me the best ways to cope with being a single and first and last time mother.”

– OIMRI Program Participant

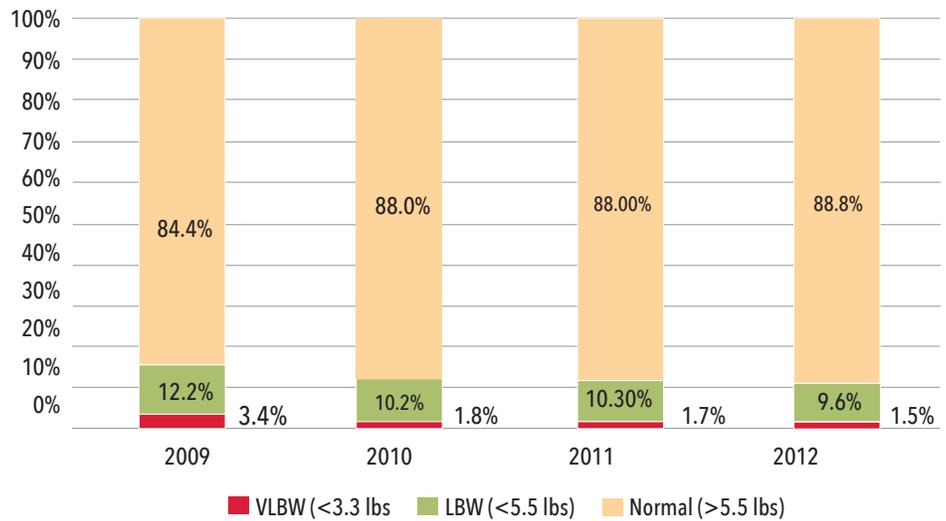
Figure 3. Risk Factors





From 2009-2012, the average percentage of OIMRI clients experiencing VLBW was 2 percent. The average percentage of OIMRI clients experiencing LBW was 11 percent. The average percentage of OIMRI clients experiencing a normal birth weight birth was 87 percent. Low birthweight can increase the risks for serious health issues for the baby both long and short term, including infant death. Babies born at very low birthweight are at most risk. Babies born to non-Hispanic African-American women have the highest rates of low and very low birth weight. OIMRI babies are less likely to be born VLBW compared to Medicaid covered births to African-American, non-Hispanic mothers. The differences in VLBW babies between OIMRI babies and Medicaid covered births to African-American, non-Hispanic mothers are significant given that infant mortality rates decrease between VLBW and LBW babies.

Figure 4. Birth Weight



“The program didn’t just provide links to services, but also my worker gave me continuous words of encouragement that helped me get through many hard times, which was sometimes needed more than any physical link.”

– OIMRI Program Participant

Conclusion

Agencies funded for OIMRI must document client data. The OIMRI system collects: 1) client intake data, including basic demographics, pregnancy status, risk factors and referral sources; 2) birth outcome data including basic demographics, prenatal care information and birth outcome information; 3) client exit data including basic demographics, risk factors and well child health care information; and 4) caseload analysis data including staff and home visit information, infant mortality and data on reasons clients exited the program. The data for the OIMRI system are collected through hard copy or electronic forms. The agencies submit their collected data quarterly to ODH. The data are verified and manually added to a master OIMRI data system at ODH.

It is imperative that the OIMRI program integrate into a Web-based data collection system to provide timely reporting of program data. With the implementation of a web-based data collection system, the program should conduct an evaluation of comprehensive comparison to programs in similar demographic groups.

The OIMRI Program is working to eliminate racial disparities in the death of babies. The program client data demonstrates positive strides in factors that contribute to the reduction in infant mortality, a low number of infant deaths and positive client feedback. More families in Ohio are able to celebrate the first birthday of their child due to the contributions of OIMRI to high risk African-American families.



Supporting Data

Gestational Age at Entry into Program

	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
<12 weeks	145	21.9	165	24.3	160	22.8	197	26.4
13-26 weeks	332	50.2	339	49.9	319	45.4	348	46.6
27-40 weeks	184	27.8	175	25.8	224	31.9	201	26.9
Total	661	100.0	679	100.0	703	100.0	746	100.0

Gestational Age at Delivery

	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
<35 weeks	57	14.4	34	7.7	28	6.6	31	6.7
35-37 weeks	57	14.4	68	15.5	74	17.4	55	12.0
38-40 weeks	260	65.5	316	71.8	307	72.1	349	75.9
41+ weeks	23	5.8	22	5.0	17	4.0	25	5.5
Average	36.0 weeks		37.4 weeks		37.8 weeks		38.8 weeks	

Birth Weight

	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
VLBW (< 3.3 lbs)	13	3.4	8	1.8	7	1.7	7	1.5
LBW (< 5.5 lbs)	46	12.2	44	10.2	43	10.3	44	9.6
Normal (≥ 5.5 lbs)	319	84.4	381	88.0	368	88.0	405	88.8
Total	378	100.0	433	100.0	418	100.0	456	100.0

Reason for Termination from Program

	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
1: Baby turned 1 year	67	19.8	56	17.7	88	41.1	8	3.1
2: Infant death	5	1.5	4	1.3	1	0.5	2	0.8
3: Pregnancy ended	9	2.7	12	3.8	6	2.8	8	3.1
4: Lost to follow-up	120	35.4	136	42.9	69	32.2	159	62.4
5: Client not interested in participating	62	18.3	49	15.5	21	9.8	30	11.8
6: Client moved out of service area	28	8.3	34	10.7	17	7.9	22	8.6
7: Client no longer needs assistance	21	6.2	19	6.0	6	2.8	13	5.1
8: 2nd pregnancy in 12 months	15	4.4	7	2.2	6	2.8	12	4.7
9: Unknown/data entry error	12	3.5	0	0.0	0	0.0	1	0.4
Total	339		317		214		255	

Table 6. Risk Factors

	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
A: Less than 18 or greater than 35 years old	174	25.6	169	24.4	137	19.2	131	17.4
B: Medical problems (STD, UTI, diabetes, etc.)	105	15.4	81	11.7	135	18.9	117	15.5
C: Anemia	80	11.7	90	13	94	13.2	99	13.1
D: Previous pregnancy (complications/poor outcomes)	104	15.3	102	14.7	134	18.8	123	16.3
E: Second pregnancy within 12 months	92	13.5	102	14.7	105	14.7	124	16.4
F: Tobacco use (smoking, snuff, etc.)	116	17	131	18.9	148	20.8	141	18.7
G: Alcohol use suspected	24	3.5	25	3.6	31	4.3	17	2.3
H: Drug use suspected	23	3.4	28	4	36	5	22	2.9
I: Late entry into prenatal care	157	23.1	144	20.8	114	16	115	15.2
J: Non-compliance with keeping appointments	58	8.5	40	5.8	51	7.2	41	5.4
K: Domestic violence	28	4.1	31	4.5	25	3.5	48	6.4
L: Pregnancy unplanned	400	58.7	383	55.3	432	60.6	430	57
M: Developmental disability	29	4.3	33	4.8	42	5.9	51	6.8
N: Homelessness/poor living environment	83	12.2	92	13.3	122	17.1	187	24.8
O: Language barriers	22	3.2	26	3.8	14	2	21	2.8
P: Other	252	37	241	34.8	240	33.7	243	32.2
Using Family Planning Method All the Time								
	2009		2010		2011		2012	
	#	%	#	%	#	%	#	%
Yes	187	72.8	203	68.1	143	61.1	56	58.3
No	70	27.2	95	31.9	91	38.9	40	41.7
Total	257	100	298	100	234	100	96	100

“If you save one life, you make a difference in the world.”

– Anonymous



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