

Addressing the Decline in the Uptake of the Iowa Maternal and Prenatal Screening Program

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In 1985, the first maternal screening test was offered in the state of Iowa. The Alpha-fetoprotein (AFP) pregnancy screening tested for neural tube defects, and was conducted at the State Hygienic Laboratory (SHL) at The University of Iowa. In 1987, the Iowa Maternal and Prenatal Screening Program (IMPSP), a comprehensive maternal screening program, was established by the Iowa Department of Public Health (IDPH) to ensure quality testing and adequate follow-up services are available to all women in Iowa. The University of Iowa Hospitals and Clinics Department of Obstetrics and Gynecology collaborates with the SHL and IDPH to provide interpretation of test results and consultation.

The purpose of maternal screening is to identify women with an increased risk of having a baby with Down syndrome, Trisomy 18, or an open neural tube defect, such as Spina Bifida. It may also identify women with an increased risk of other types of birth defects, or risk to develop complications later in pregnancy. Maternal screening is minimally invasive and is conducted with a blood serum specimen that is easily collected in rural and urban facilities throughout the state.

Women receiving prenatal screening 2004-2013

Year	Iowa Births*	Women Screened	Percent of Women Screened
2004	38,368	14,694	38.3%
2005	39,275	14,395	36.7%
2006	40,592	14,120	34.8%
2007	40,835	13,389	32.8%
2008	40,221	11,797	29.3%
2009	39,662	10,928	27.6%
2010	38,514	10,362	26.9%
2011	38,204	9,518	24.9%
2012	38,686	9,511	24.6%
2013	39,013	9,082	23.3%
2014	Data not available	9,084	

*Data from Vital Statistics of Iowa

Through the IMPSP families and providers (1) learn of potential health challenges associated with pregnancies that test presumptive positive; (2) receive consultation from experts in prenatal and maternal health; and (3) are better prepared to select facilities and healthcare providers best suited to address special prenatal and neonatal health care needs. Maintaining consistent levels of participation in maternal screening is critical because early identification allows for improved pregnancy management and potentially better outcomes for neonatal health.

The IMPSP has experienced a downward trend at an average rate of 2 percent per year in the number of screens performed. In 2007, for example, there were 40,835 births and 13,389 maternal screens. In 2013, 39,013 babies were born in Iowa; yet, only 9,082 maternal screens were performed by the SHL – the designated laboratory for this program. The number of pregnant women who receive maternal screening through the state-mandated program has steadily declined, from 38 percent in 2004 to an estimated 23 percent in 2013. The risk associated with this downward trend is that presumptive positives may be undetected and serious health challenges

left unidentified if pregnant women are not participating in maternal screening either through the Iowa program or through laboratories outside of the state.

Key findings are presented in this brief, with the full report available on the University of Iowa Public Policy Center [website](#).

Primary Questions of Interest

- Is the maternal screening in decline across Iowa regardless of where the sample is tested or is there solely a decline in the use of the state program?
- Do utilization patterns differ by clinician groups?
- Are there regional utilization patterns and does the provider type influence this?
- What type of screening do clinicians order and where are samples sent for analysis?

Key Findings

- Maternal screening does not appear to be declining across the state, although the overall utilization rate of screening is low.
- Obstetricians screen more frequently than other providers.
- As the delivering provider becomes more rural, the probability that the mother received prenatal screening decreased.
- While screening is offered and ordered, the State Hygienic Lab is not consistently the lab of choice for analyzing samples among practitioners.

Summary and results

Maternal/prenatal screening rates and utilization patterns
Researchers accessed claims data from Iowa Medicaid (2006-2012) and Wellmark (2006-2011). The final Wellmark dataset included information on 36,124 full-term pregnancy (births) from 30,379 women. The final Medicaid dataset included information on 92,196 births from 73,942 women. The analyses for this report are based on each full-term pregnancy of a live birth. In both groups, a majority of women received no screening, while trimester two screening was more common than both first trimester and integrated screening. More detailed information about Medicaid data is available [here](#). More detailed Wellmark data is available [here](#).

Clinicians' practice and maternal/prenatal screening
Obstetricians, nurse midwives and advance practice nurses, family physicians, and physician assistants, were surveyed to gain insight into their decisions to offer screening and where to send samples for testing. All respondents who answered the survey provide at least one type of prenatal screen; the type of screening was selected based on when women presented for prenatal care.

the decision to screen is complex and multifaceted. Who women seek care from may also reflect her general attitude toward pregnancy and pregnancy management—other factors and attributes that may influence screening choice were not assessed in this project.

There are regional differences in the uptake of screening. We observed an interaction between provider type and geographical parameter. Metropolitan Statistical Area is perhaps a more interesting way to think about the data because our findings indicate that there may be local cultural nuances that influence maternal screening behaviors that are more complex than a simple rural/urban dichotomy. Clinicians who responded to our survey indicated that they offer screening to women and the type of screening offered depends on when a women presents for her initial prenatal visit. While most indicated that they send samples to the SHL for testing, we did find that other labs are used.

Qualitative interviews with women who had a baby in the last year are being conducted. This data will give additional insight into the reasons women choose to participate in or opt out of screening.

Reasons for sending sample to another lab

Screening type	Number who do not use the SHL for this test (n)	Reasons for not using SHL n(%):			
		Contract with a private lab	Insurance	Another lab costs less	Other
First trimester	35	12 (34)	4(11)	4(11)	13(37)
Integrated	27	10(37)	3(11)	4(14)	9(34)
Quad	27	9(33)	5(19)	4(15)	9(33)
AFP second trimester	21	7(33)	3(14)	2(10)	9(43)

While screening is offered and ordered, the SHL is not consistently the lab of choice for analyzing samples among these participants. Of the 73.7 percent of all participants who offered first trimester screen, 60.6 percent used the SHL; of the 72.8 percent of all participants who offered integrated screening, 56.4 percent used SHL; of the 94.2 percent of all participants who offered quad screening, 66.9 percent used SHL; of the 53.3 percent of all participants who offered AFP in the second trimester screen, 57.4 percent used SHL.

Conclusion

The utilization of maternal screening does not appear to be declining across the state, although the overall utilization rate of maternal prenatal screening is low. Obstetricians screen more frequently than other providers. While this may have to do with how providers approach the topic of screening,

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