



InfantSEE® Providing a Public Health Program to Infants in Diverse Populations

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Abstract

Data collected by the American Optometric Association (AOA) from 10,000 InfantSEE® assessments conducted during 2006 and 2007, indicated the overall need for vision concern has increased from one in 14 in 2005 to one in nine in 2007. This finding reveals a growing need for early vision examination in infants. The data also identified groups at greatest risk for abnormal status.

Through InfantSEE®, optometrists provide a one-time, comprehensive eye and vision assessment to infants in their first year of life, between the ages of 6 and 12 months, offering early detection of potential eye and vision problems at no cost regardless of income or access to insurance coverage.

InfantSEE® addresses the ways in which providing comprehensive eye and vision assessments will ensure that the infant vision health is developing properly while at the same time providing assurance to mothers that their infant is developing in a healthy manner with respect to their vision needs. Furthermore, InfantSEE® seeks to provide health promotion and education to mothers about vision health in hopes to decrease health disparities and reduce potential health expenditures.

Utilizing various social marketing tools to address health education and promotion, the goal of the InfantSEE® program was to gain further knowledge about what means the public uses to take advantage of a collaborative program such as InfantSEE® while at the same time providing needed vision assessments to ensure healthy vision development in the infant as well as providing reassurance to mothers that their infant has healthy vision development.

Methodology

Eight diverse geographic and socio-economic locations across the country were chosen to measure the impact of increased advertising of the InfantSEE® program in a targeted area. Utilizing various social marketing and networking tools the impact of advance notice was measured to evaluate if increased awareness of the InfantSEE® program increases the number of infants seen by InfantSEE® providers. In all of the project locations, individuals were directed to make appointments at participating InfantSEE® providers' offices. In two of the eight locations, a mobile eye clinic was used for walk-up appointments in addition to scheduled in-office appointments. Advance demographic research was conducted to evaluate media outlets that would provide the greatest amount of awareness to the target audience. The identified target population consisted of mother ages 18-35 years of age who lived within a 10 mile radius of the closest InfantSEE® provider.

Baseline data was obtained from participating InfantSEE® providers to assess the current number of InfantSEE® exams conducted prior to the activated project area. Numerical comparisons examined the number of exams conducted during the project time frame as compared to baseline examinations conducted for the same time period one year earlier. Survey data was obtained from parents/guardians of infants receiving an InfantSEE® exam as part of the Centers for Disease Control and Prevention-funded 2009 InfantSEE® project. Each parent/guardian completed a parent survey pre- and post-InfantSEE® examination and returned to the InfantSEE® provider prior to leaving the office. Survey questions asked demographic information as well as attitudes about infant vision and general vision questions. Once completed, the surveys were stapled to the exam record form and returned to the InfantSEE® office at the end of each project week for four consecutive weeks. Data was entered into a Microsoft Access Database and later analyzed for significance and exploration of modes of discovery. Follow-up InfantSEE® provider surveys were also administered after the project week to gauge activity level and attitudes regarding the overall project experience.

Statistical analysis was completed by an independent university. T-tests, FREQ as well as linear regression and statistical modeling analysis were used to analyze the data.

Chi-square analysis of contingency tables was used. For example, an association between minority status and ocular health was found: 791% of Non-Caucasians had an ocular health problem, while only 3.40% of Caucasians had an ocular health problem. Pearson Chi-square = 8.9201, 1 degree of freedom, P-value = 0.0028.

Student's t-tests, both regular and Satterthwaite (unequal variance) were used. For example, those with ocular health problems were seen at an earlier average age, 8.67 months, than those without ocular health problems, average age = 10.25 months. Unequal variance t = 3.94, 61 degrees of freedom, P-value = 0.0002. (Those with ocular health problems had smaller variation in age, SD = 2.51 months vs. 4.47 months.)

Logistic regression was used to explore relationships for intermediary explanatory variables. For example, does income explain the minority vs. ocular health relationship described above? No, minority status remains statistically significant, and income (median income of zip code) is not significant

Results

There were 1,051 exams performed in the outreach efforts. There were 536 females (50.9%) and 515 males (50.1%) in this population. Additionally, of the 1,051 infants, 145 of those infants were born prematurely (born prior to 36 weeks of gestation) and 280 infants reported non-Caucasian background. Of the 1051 exams, 180 exams expressed a cause for concern (**one in six**). Results from this project population indicate a higher rate of cause for concern than previously reported. Median household income for this project was \$36,000. The mean distance that an individual travelled for an InfantSEE® exam was 12 miles or 17 minutes.

Outreach Results

- Maternal and Child Health agencies are a powerful and trusted resource for children and mothers in communities across this country.
- State Maternal and Child Health Partnerships provide unprecedented outreach to all populations and in particular high risk populations.
- Direct mail pieces from State Maternal and Child Health Agencies play powerful role in program promotion.
- Non-traditional outreach and partnerships reach high-risk and diverse populations.
 - *Mobile Clinic Outreach with support of State MCH Agencies is powerful formula for success.*
- Customized social marketing is powerful in advance of program; social networking works to reinforce program awareness after the initial surge of program activity.

Clinical Findings

- **One in six** infants displayed a cause for concern in this project population.
 - *Within this patient population, the rate of causes for concern has increased from one in nine to one in six.*

- Premature and Minority infants have a higher rate of cause for concern than entire project population: **one in four**.
 - *Premature Caucasian infants are three times more likely to display an ocular health concern than other groups within the project population.*
- Low household income infants are at higher risk for three ocular categories: visual acuity, ocular motility and binocularity.
 - *Median reported household income is \$ 36,000:*
 - a) Of all infants receiving an exam in this project with reported household under \$36,000, the rate of causes for concern is **one in four**.
 - b) Of all infants receiving an exam in this project with reported household over \$36,000, the rate of causes for concern is **one in six**.
- Close to 60% of those completing the parent survey did not plan on taking their infant to the optometrist for an InfantSEE® exam prior to 1 year of age.
 - *8% of those who did not plan on taking their infant for an InfantSEE® exam, demonstrated a cause for concern during the examination.*

Conclusions

- State Maternal and Child Health (MCH) Agencies provide a respected outlet of information for mothers and their infants.
 - *State MCH Agencies have an opportunity to educate infants and their mothers all across the country regarding infant vision health.*
- Traditional advertising in conjunction with social networking provides success in promotion of a pediatric public health program.
- Partnerships with MCH Agencies provide optimal success for reaching diverse and high risk populations.
- Inclusion of vision health into MCH programs should be conducted.
- Social networking, in conjunction with a diverse media advertising campaign and mobile clinic outreach strategy, works in the promotion of a pediatric public health program. The opportunity to partner with community resources such as Maternal and Child Health Agencies help to expand the reach of the InfantSEE® program. Furthermore, pediatric public health programs play a vital role in the early identification and promotion of infant vision health. Further examination should be conducted in other various diverse locations to examine the clinical significance of infant vision health in this country.

