



Promising Practices

Health disparities are linked to poor birth outcomes in Memphis and Shelby County.

Health disparities refer to differences in the risk of disease, disability and death among different groups of people. Race, ethnicity, gender, age, and education are just a few of the factors which have been linked to such disparities.¹



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Across Shelby County there continue to be significant disparities among racial groups in areas such as housing, income, and education. There are also significant differences in disease, disability and death.² Memphis and Shelby County have the highest number of infant deaths in Tennessee, despite having a large university medical center and 116 primary care physicians per 110,000 citizens.³

The infant mortality rate for blacks in Shelby County is over three times that of whites.⁴ Part of this gap can be explained by differences in socioeconomic factors like income and education. Many diseases demonstrate a strong

association with socioeconomic status (SES); individuals with higher SES experience better health. This is such a robust finding across so many diseases that the Institute of Medicine has declared social factors to be critical determinants of health and emphasizes the importance of including them when designing interventions.⁵

However, research addressing health disparities has been hindered by the difficulties involved in enrolling minorities and other at-risk populations in clinical research. Many barriers to enrollment have been well documented, including language barriers, cultural differences, and lack of investigator access to these populations.⁶⁻¹¹

The BLUES Project represents a promising strategy for overcoming social and cultural barriers.

The BLUES Project (Building Lasting Unshakeable Expectations into Successes) is a culturally competent and culturally responsive approach to addressing health disparities and has shown that it can reduce health and social risk factors involved in infant mortality and other negative outcomes.

The health care goals of the BLUES Project during pregnancy include

- improving mothers' health-related knowledge, attitudes, and behaviors
- ensuring that all participants receive quality prenatal care services
- reducing risks to future pregnancies
- reducing disparities in adverse pregnancy outcomes through the provision of social support coupled with community engagement

The BLUES Project represents a paradigm shift in the delivery of health and social support services to at-risk minority populations.

The BLUES Project is an intervention targeting low-income, at-risk mothers. The program provides group-based education, individual case management, and assistance in accessing community resources and services. The BLUES Project adapts the best aspects of both traditional clinic-based prenatal classes and nurse home visitation services. Health educators, community outreach specialists, and case managers work with participants during pregnancy and throughout the child's first two years of life. The BLUES staff, whose demographics mirror those of the clients they serve, assist mothers in setting attainable life goals and taking an active role in their health and the health of their children.

BLUES features monthly clinic-based group visits for pregnant women and fathers of infants from onset of prenatal care until the infant's second birthday. Individual sessions are available

depending upon need. One-on-one case management sessions are available for addressing sensitive issues or making referrals to community resources and services. In addition, each participant receives a phone call every month to update contact information and follow up on the results of referrals to outside services.

Monthly education sessions cover a variety of topics including

- general health and nutrition
- domestic violence or sexual assault
- sexually transmitted diseases
- postpartum depression
- breast feeding
- immunization needs
- infant development

BLUES participants have better birth outcomes than other at-risk mothers.

More than 450 pregnant women enrolled in BLUES between July 2007 and December 2008 (Phase I and Phase II of the program). A total of 84 percent remained in the study through delivery, resulting in a sample of 392 mother-child pairs. When mothers completed the program (two years after giving birth) they underwent a final assessment measuring a variety of social and socioeconomic outcomes. Social measures included self-reported substance abuse, exposure to domestic violence, and risk of depression. Socioeconomic measures included educational attainment and employment status. The following is a brief summary of the results.

Comparing the birth outcomes of BLUES participants to outcomes among other at-risk Shelby County mothers provides strong

evidence of the program's effectiveness. BLUES mothers had lower rates of prematurity, low birth weight, and infant mortality compared to mothers who met the program's eligibility criteria but chose not to participate. This was particularly true for Black infants born in Memphis.

BLUES participants also made significant socioeconomic changes from enrollment through the end of the 24-month follow-up period. At enrollment, 30 percent of participants were employed. At exit, 43 percent were employed in full-time positions. At enrollment, 53 percent had less than a high school diploma. At exit, 69 percent of participants had earned a diploma or GED. Additionally, there was an increase in the number of mothers who were enrolled in or had completed a college degree program.

Group participation is an important component of the BLUES program.

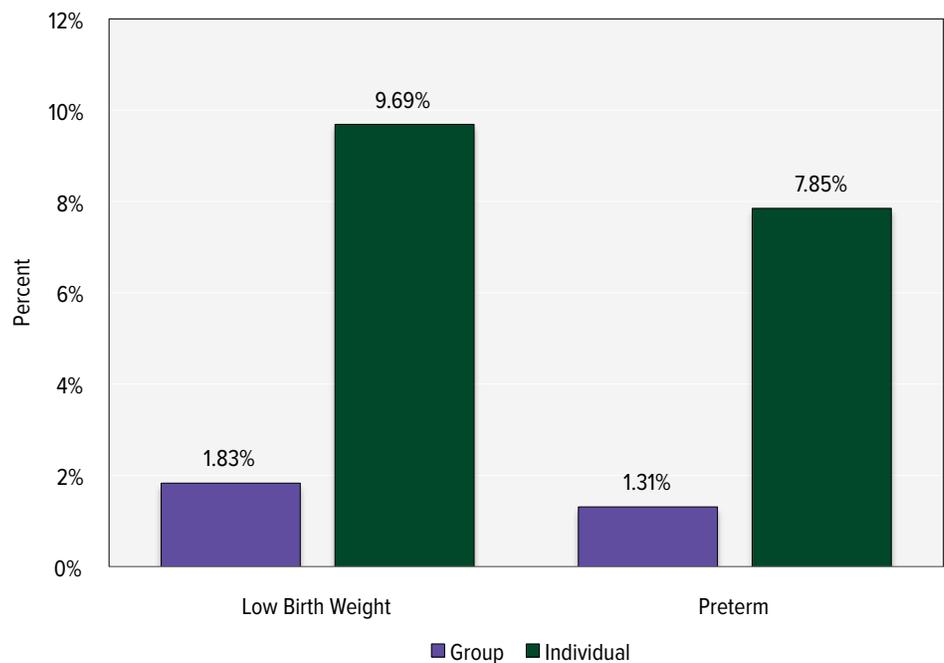
BLUES participants are encouraged to experience the 36-session curriculum in a group setting. They may, however, choose to receive individual sessions instead. Mothers who participated in group-based education had better birth outcomes than mothers who received individual instruction. They also made statistically significant improvements on some social and socioeconomic measures.

Less than 2 percent of mothers in group education had a low birth weight birth, compared to almost 10 percent of mothers in individual education (Figure 1). Similarly, 1.31 percent of group mothers had a preterm birth, compared to almost 8 percent of mothers receiving individual instruction (Figure 1).

Additionally, domestic violence exposure decreased among group mothers, from 19.4 percent at baseline to 9.7 percent at follow-up—a reduction of 50 percent. For mothers in individual education, exposure decreased by less than two percent (Figure 2). Among group mothers, reported substance abuse decreased between program entry and follow-up, from 11 percent to zero.

FIGURE 1:
Adverse Birth
Outcomes by
Curriculum
Delivery

Source: University of
Tennessee Health
Science Center,
BlueCross BlueShield
of Tennessee Health
Foundation. The BLUES
Project Data, 2011



For mothers receiving the curriculum individually, it increased from 35.3 percent to 46.4 percent (Figure 2).

Somewhat unexpectedly, risk of depression increased for both groups of mothers. Among mothers who received individual instruction, depression risk increased from 58 percent to 63.3 percent. An even larger increase occurred among mothers in group education: from 53 percent to 75 percent.

While these social measures provide only mixed evidence of the benefits of group-based education, the socioeconomic measures (not shown) are more consistent. Overall, BLUES Project mothers made significant advances in educational attainment and employment status. Those who participated in group-based education showed the biggest gains. On average, group mothers had larger increases in high school graduation and full-time employment than mothers who received individual instruction.

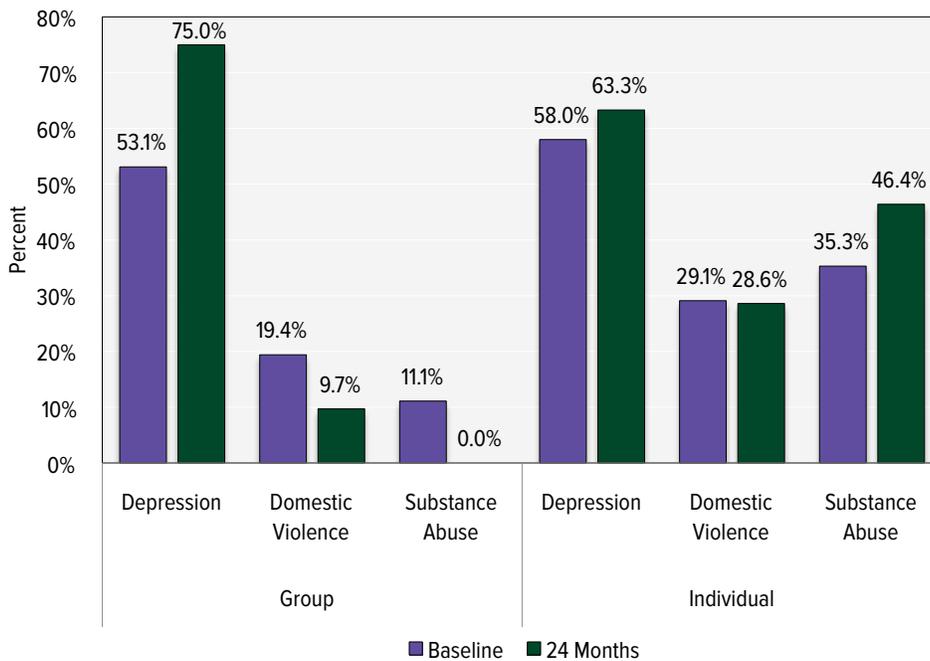


FIGURE 2:
Prevalence of
Social Risk by
Curriculum
Delivery at
Baseline and
24 Months

Source: University of Tennessee Health Science Center, BlueCross BlueShield of Tennessee Health Foundation. The BLUES Project Data, 2011

BLUES provides further evidence of the importance of social support for improving outcomes among at-risk mothers.

This analysis of BLUES Project outcomes suggests that support provided by friends, family members and peers is beneficial and that social support skills training may be especially useful in improving health, social outcomes, and socioeconomic prospects among at-risk mothers.

Although there were positive effects for both the individual and group interventions, group participants appeared to reap the greatest benefits from the program. By contrast, mothers preferring individualized education had more adverse birth outcomes and showed fewer social and socioeconomic gains on some measures.

This pattern is consistent with previous research, which typically reports favorable psychological and medical outcomes of support group interventions. Social support has been linked to positive long-term health outcomes, including better immune function, lower blood pressure, and reduced mortality.¹² Self-help groups provide an arena where participants can both provide and receive emotional support, and this reciprocity appears to promote well-being. Furthermore, peer support groups provide members an opportunity to develop friendships and build lasting social networks.

Why BLUES Works

- BLUES is a culturally competent, community responsive approach to addressing risk factors of infant mortality and poor maternal/child health outcomes.
- BLUES demonstrates the huge impact that social support can yield, not only in terms of birth outcomes, but also for overall health and quality of life for at-risk mothers.
- The BLUES model is holistic in scope compared to other programs, and empowers women to overcome social and economic barriers adversely affecting their health and that of their children.
- BLUES does not set priorities for participants: Mom sets goals; BLUES helps her to achieve!
- BLUES does not simply make referrals: it is designed to help families navigate the community for effective resource utilization.

In conclusion, the BLUES Project is proving to be an effective model for reducing infant mortality, premature and low birth weight deliveries, particularly for Black infants. The program is now in its third funding phase and continues to be a driving force in the delivery of education and support services to at-risk mothers. BLUES is a cost-effective, collaborative approach to health care that holds promise for improving the health and social outcomes of our mothers, children, families, and communities.

References:

1. Centers for Disease Control and Prevention. Health disparities experienced by black or African Americans - United States. *Morbidity and Mortality Weekly Reports*. 2005; 54(1): 1-3.
2. Tennessee Department of Health, Office of Policy, Planning and Assessment and Office of Minority Health. *Populations of Color in Tennessee: Health Status Report*. 2006. Available at: http://health.state.tn.us/dmhde/pdf/Populations_of_Color.pdf Accessed May 1, 2011.
3. U.S. Department of Health Resources and Service Administration. *Area Resource File*. 2005. Available at: <http://arf.hrsa.gov/> Accessed May 1, 2011.
4. Corniola C, Croom F, Dwivedi P, et al. *Tennessee's racial disparity in infant mortality*. Tennessee Department of Health. 2006. Available at: <http://health.state.tn.us/statistics/PdfFiles/IM2006.pdf> Accessed April 29, 2011.
5. Institute of Medicine. *The future of the public's health in the 21st century*. Washington, D.C.: National Academy Press; 2003
6. Gamble VN. A legacy of distrust: African Americans and medical research. *American Journal of Preventive Medicine*. 1993; 9(6 Suppl): S35-S38.
7. Shavers VL, Lynch CF, Burmeister LF. Factors that influence African- Americans' willingness to participate in medical research studies. *Cancer*. 2001; 91:233-236.
8. Shavers VL, Lynch CF, Burmeister LF. Racial differences in factors that influence the willingness to participate in medical research studies. *Annals of Epidemiology*. 2002; 12:248-256.
9. Noah BA. The participation of underrepresented minorities in clinical research. *American Journal of Law and Medicine*. 2003; 29:221-245.
10. Hussain-Gambles M, Atkin K, Leese B. Why ethnic minority groups are under-represented in clinical trials: a review of the literature. *Health and Social Care in the Community*. 2004; 12:382-388.
11. Smedley BD, Stith AY, Neslon AR, eds. *Unequal treatment: confronting racial and ethnic disparities in healthcare*. National Academies Press; 2003
12. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychological Bulletin*. 1985; 98: 310-357.