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Social, Economic and Health Costs  
of Unintended Teen Pregnancy:  
The Circle of Care Intervention  
Program in Troup County, Georgia

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Abstract

Unintended teenage pregnancy in the United States is a public health concern with ramifications that include a variety of social, economic and health costs. It has been estimated that adolescents giving birth before the age of 18 cost the United States at least \$9.1 billion dollars annually (NCPTUP, 2008). Latest available national data indicate a slight

increase in rates of unintended teen pregnancy after a 15 year period of steady decline. The unintended teen pregnancy rate in Troup County, Georgia in 2006 was 51.9/1,000 which was higher than the national average of 41.9/1,000 (Kids Count, 2008). The purpose of this study was to review the Circle of Care intervention program, a collaborative multi-agency teen pregnancy prevention program. The Circle of Care program was developed in 1997 through the efforts of multiple community partner organizations. These organizations included the local school system, the Division of Family and Children Services, Public Health, Troup County Family Connection, the local teen clinic, the local hospital and other organizations. Participants in the Circle of Care program receive multiple services, including case management, a family assessment, parenting classes, home visits from the case manager, family planning assistance, services from the teen health clinic and the Division of Family and Children Services. Preliminary data indicate that Circle of Care participants gained social, economic and health benefits from participation in the program including: higher rates of high school enrollment, no repeat pregnancies, and no reported incidences of child abuse or child neglect. Projected cost savings from these outcomes are also reported. Preliminary examination of the Circle of Care program supports the efficacy of multi-level, collaborative efforts to reduce unintended teen pregnancy and subsequent social, economic and health risks. Future research should examine longer term outcomes of this program.

## INTRODUCTION

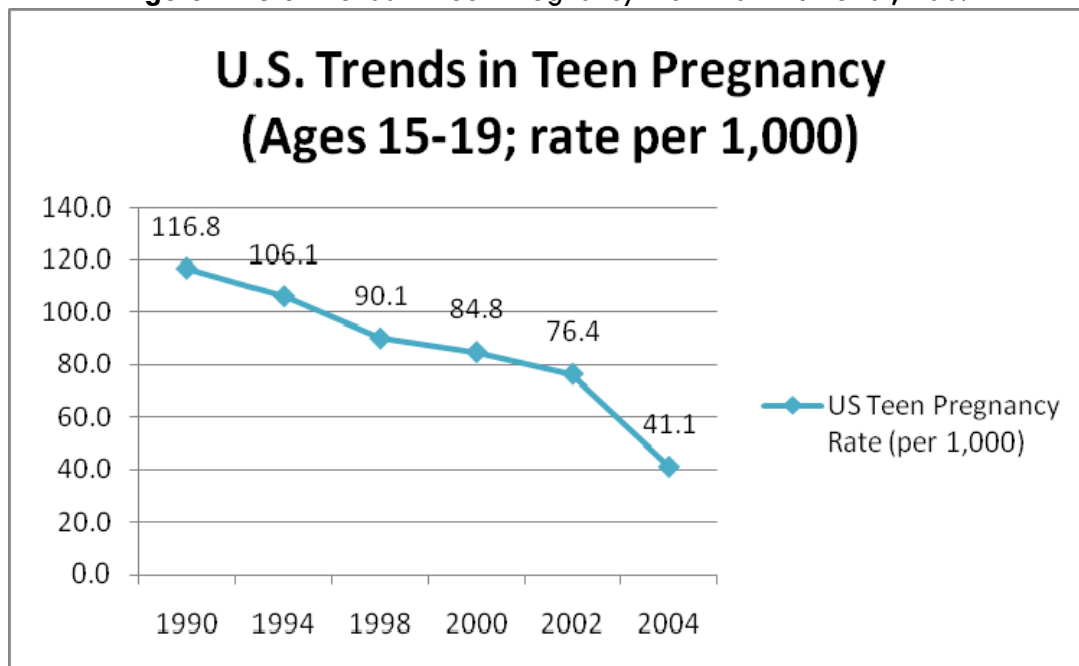
One-half of pregnancies in the United States each year are unplanned. Further, one-third of girls in the United States have been pregnant at least once by age 20 (Finer and Henshaw, 2006). Over 80% of these births were unintended (Chandra, Martinez, Mosher, Abma and Jones, 2005). Rates of teen pregnancy and teen childbirth in the United States are higher than any other industrialized nation (Singh & Darroch, 2000).

Hoffman et al (2006) identified a myriad of social, academic and economic costs for children of teen mothers including, but not limited to: higher rates of abuse and neglect, increased rates of incarceration during adolescent or early 20's, repetition of school grades, higher dropout rates, and increase risk of poor health. It has been estimated that adolescents giving birth before the age of 18 costs the United States at least \$9.1 billion dollars annually (NCPTUP, 2008).

*Prevalence of Teen Pregnancy and Teen Childbirth in the U.S., Georgia and Troup County*

Nationally, teen pregnancy rates rose in the United States in the 1980's, peaking in 1990, and then decreasing through the remainder of that decade. At its highest level, the teen pregnancy rate was 116.8 per 1000. By 2004, the rate decreased to 41.1 per 1000, as shown in Figure 1. However, in 2006, the teen birth rate increased for the first time in fifteen years, which indicates the teen pregnancy rate may have increased as well (Hamilton et al, 2007). In 2006, 435,427 births occurred to mothers aged 15-19 years, which was a birth rate of 41.9 per 1,000 women in this age group, (Hamilton et al, 2007).

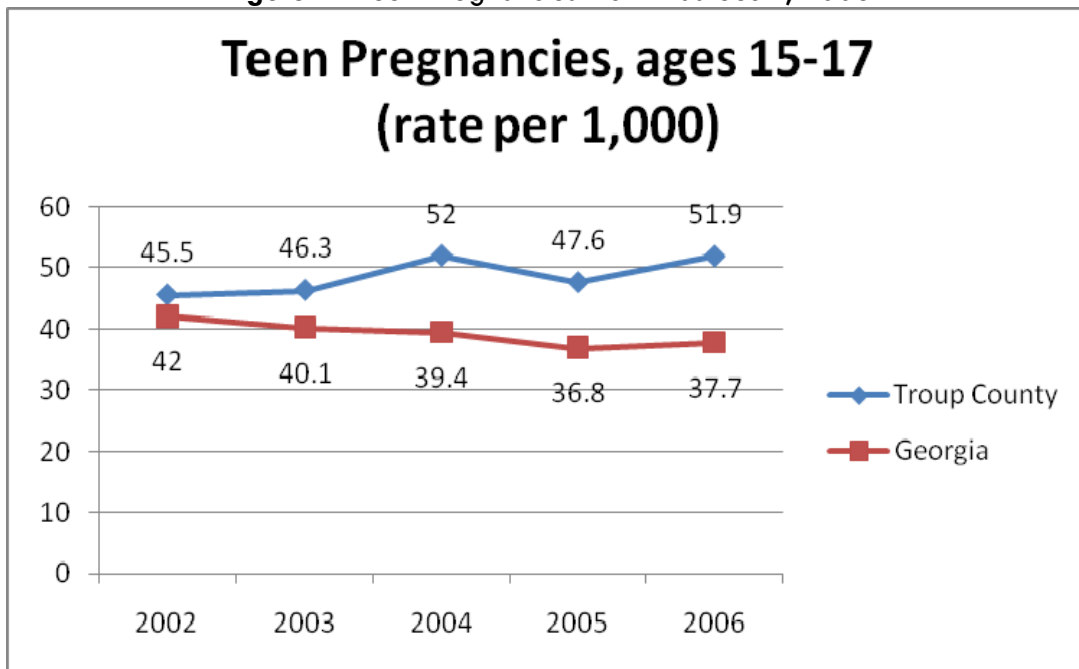
**Figure 1:** U.S. Trends in Teen Pregnancy from Hamilton et al, 2007



### Teen Pregnancy Rates in Georgia

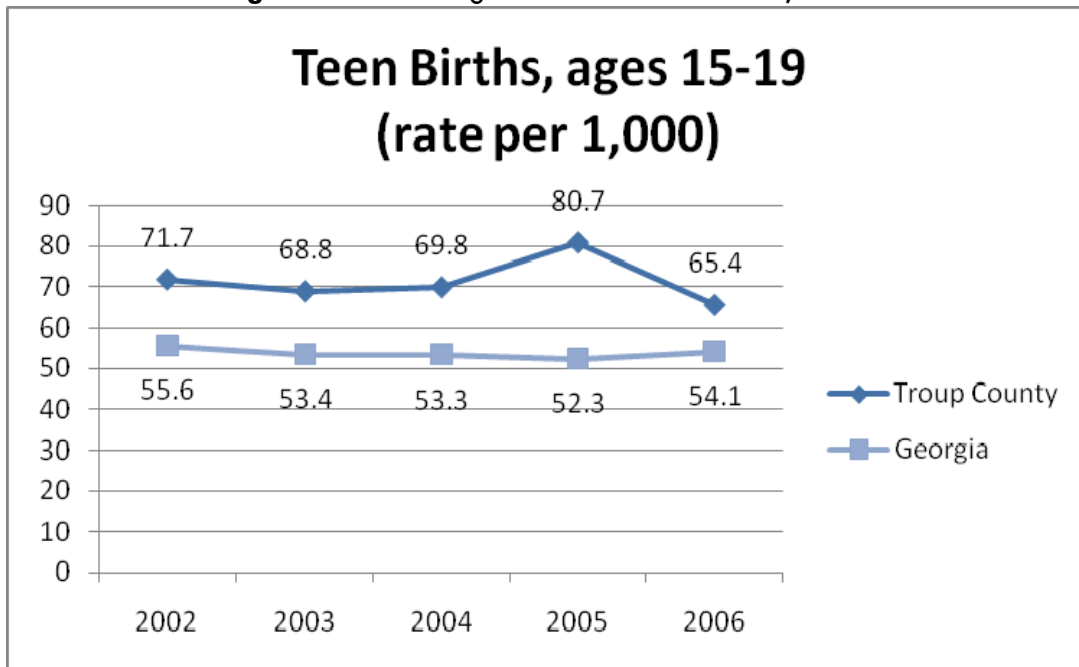
Within the state of Georgia, teen pregnancy rates are similar to those for the U.S. as a whole. In 2004, the U.S. rate was 41.1 per 1,000, while the rate in Georgia was 39.4 per 1,000. The teen pregnancy rate in 2004 in Troup County was 52 per 1,000, higher than both the statewide rate for Georgia and for the United States as a whole. The most recent data, from 2006, showed that Troup County had a teen pregnancy rate of 51.9 per 1,000, which was significantly higher than the state of Georgia rate of 37.7 per 1,000. As a result, Troup County ranks 100<sup>th</sup> out of 159 counties for teen pregnancies for ages of 15-17 (Kids Count, 2008).

**Figure 2: Teen Pregnancies from Kids Count, 2008**



### Teen Birth Rate

A similar trend can be seen regarding the teen birth rate. In 2006, as noted previously, the national teen birth rate was 41.9 per 1,000. In the state of Georgia, the rate was higher at 54.1 per 1,000, and in Troup County the rate was still higher at 65.4 per 1,000. This gave Troup County the ranking of 49<sup>th</sup> out of 159 counties (Kids Count, 2008). At first glance, there appears to be a discrepancy between the ranking of the state of Georgia regarding teen pregnancies (100<sup>th</sup> out of 159) and teen births (49<sup>th</sup> out of 159). However, teen pregnancy rates are consistently higher than the teen birth rate since pregnancies can end early due to induced terminations (abortion) or unintentional terminations (miscarriages). The difference in rankings implies that there is a high termination rate, either intentional or unintentional, among teen pregnancies in Troup County.

**Figure 2:** Teen Pregnancies from *Kids Count*, 2008**IMPLICATIONS**

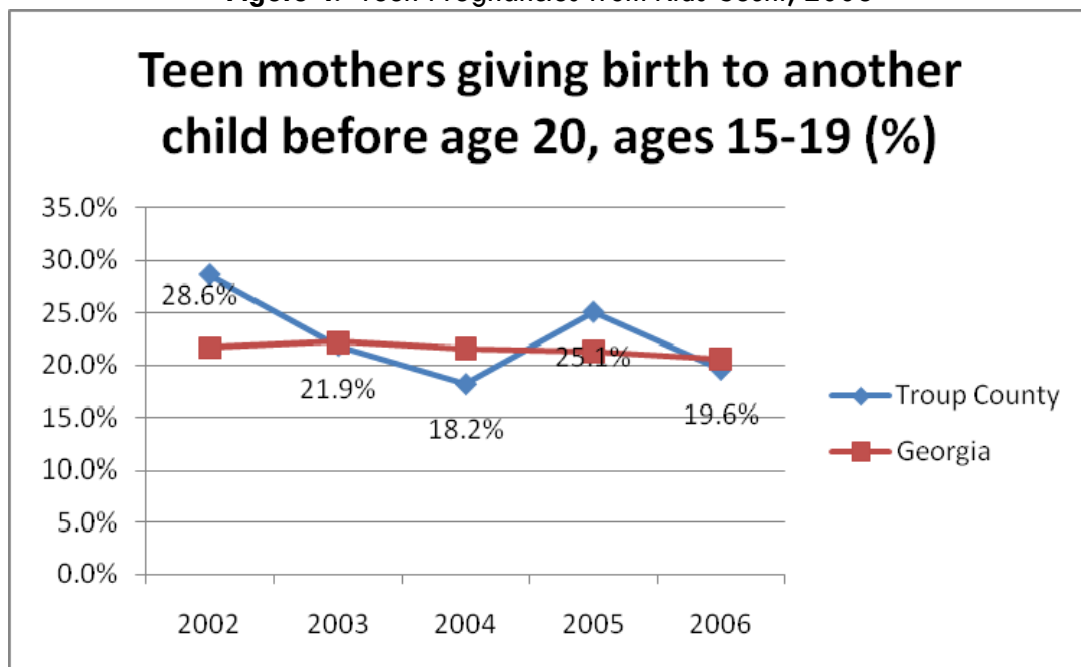
Teens who become pregnant and that have children are more likely to face economic, personal and social hardships. Teen mothers are less likely to complete high school, more likely to have subsequent pregnancies during their teen years, and their children are at a higher risk of significant learning and development problems as compared to those that delay childbirth.

It is estimated that only one-third of teen mothers receive a high school diploma (Maynard, 1996). In 2005, 23.8% of babies born in Troup County were born to teen mothers with less than twelve years of education (Kids Count, 2008). Over the course of the teen mother's life, this can significantly impact their earning potential. In 2005, the average annual salary for a high school dropout was \$17,299. For those that completed high school, the average annual salary was \$26,933, a difference of \$9,634 per year (US Bureau of the Census, 2006). The disparity is magnified when compared to those with post-secondary degrees. In addition to personal economics, it has been estimated that students who drop out of high school will cost the United States approximately \$260,000 in lost tax revenue over their lifetime (Rouse, 2005). In 2004, teen child bearing cost federal, state and local taxpayers \$344 million dollars in lost tax revenue. In Georgia, each teen 17 years or younger, that delivers a child accounts for costs of approximately \$3,562 annually (NCPTP, 2008). These figures are based on the participation of the children of teen mothers in public health care systems, the child welfare system including foster care and child protective services, the criminal justice system, and parental participation in public assistance programs (NCPTP, 2008). Estimates also include lost tax revenue of the children of teen mothers when they become adults, reduced earning capacity for teen mothers and their partners, as well as the decreased educational attainment of teen mothers and their children. The 30% decline in

the teen birth rate in Georgia from 1991 – 2004 is estimated to have saved taxpayers approximately 227 million in costs (NCPTP, 2008). High school graduates will generally live longer, healthier lives which are less dependent on government aid and health care than those who do not complete this level of education (Muennig, 2005). Additionally, high school graduates are more likely to raise healthier children who are more likely to graduate from high school themselves (Wolfe & Havemen, 2002).

Reduced educational attainment and decreased earning potential are not the only problems facing teen mothers. Teen mothers are much more likely to raise their children in a single parent household (Hoffman, 2006). Studies have found that children in single parent families had a 77% greater risk of being harmed by physical abuse and an 87% greater risk of being harmed by physical neglect (Healthier You, 2008). In 2006, the rate of substantiated child abuse and neglect (CAN) cases in the state of Georgia was 16.1 per 1,000. The rate in Troup County was significantly higher at 30.9 per 1,000 (Kids Count, 2008). In addition to increased rates of CAN, the children of teen mothers are more likely to be lower birth weight than the rest of their cohort, resulting in increased health problems among these children (Wolfe & Perozek, 1997). The children are also at a greater risk for health, cognitive, behavioral and academic difficulties than children of older parents (Sims & Luster, 2002).

**Figure 4:** Teen Pregnancies from Kids Count, 2008



Teen mothers are also at a greater risk of having a subsequent pregnancy before they reach the age of 20 (Kalmuss & Namerow, 1994). Studies have shown that 25% of teen mothers have a second child before they are 20 years old. In 2004, Georgia ranked 2<sup>nd</sup> out of the 50 states and the District of Columbia in the percentage of teen births that are repeat births (Schelar et al, 2007). Trend data from Georgia reveal that the percentage

of second births to teen mothers remains consistent around 20%; however the rate in Troup County has been as high as 28.6% ( Kids Count, 2008). For those that have closely spaced subsequent births, life opportunities are significantly impaired versus when they had only one child (Schelar et al, 2007). Women that have more than one child during their teenage years are at a greater risk of poverty and federal assistance dependence later in life. Their ability to obtain employment and advance in their jobs is greatly reduced, trapping them in impoverished, dead-end jobs (Manlove et al, 2000). Studies have shown that teen mothers who are able to complete high school or earn a GED reduce the risk of a subsequent pregnancy during their teenage years (Manlove et al, 2000). Some of the costs typically associated with teenage childbearing are shown in Table 1.

**Table 1:** Personal and Public Costs Associated with Teen Pregnancy

<i>Type of Cost</i>	<i>Personal Cost (est)</i>	<i>Public Cost (est)</i>	<i>Source</i>
High-School Dropout	<ul style="list-style-type: none"> <li>• \$300,000 lifetime earnings</li> <li>• Decreased health</li> </ul>	<ul style="list-style-type: none"> <li>• \$260,000 in lost tax revenue</li> <li>• Increased dependence on government aid</li> </ul>	(Cohen, 1998) (Muennig, 2005) (Rouse, 2005)
Teen Childbearing/ Repeat Teen Childbearing	<ul style="list-style-type: none"> <li>• Increased Medical Costs (\$9,782 on avg. for pregnancy)</li> <li>• Decreased Educational Attainment</li> <li>• Decreased Wages</li> <li>• Increased CAN Rates</li> </ul>	<ul style="list-style-type: none"> <li>• \$3,562 annually</li> <li>• Increased Foster Care rates</li> <li>• \$695.00 annually</li> </ul>	(Wallace, 2002) George & Lee, (1997)
Implications for child	<ul style="list-style-type: none"> <li>• Increased Health Problems</li> <li>• Decreased Educational Attainment</li> </ul>	<ul style="list-style-type: none"> <li>• Increased use of public assistance</li> </ul>	(Hoffman, 2006)

#### *Causal Factors Contributing to Teen Pregnancy*

There are many contributing factors associated with teen pregnancy and childbearing, including risk, behavioral and social factors. Risk factors may include the fact that teens are becoming more physically mature at younger ages; use of drugs and alcohol and having risky behaviors and attitudes; sexual abuse or non-voluntary sexual experiences; and lack of proper education about reproductive health (Manlove, 2002).

Behavioral factors include teenage sexual activity and the use of contraceptives. Trends in teen sexual activity show that while the percentage of sexually active teens is decreasing, approximately 25% of never-married teenagers had sexual intercourse

before the age of 16 and by 18 years of age, more than half of them have had sexual intercourse (Terry-Humen et al, 2006). The percentage of teens using contraceptives has increased although teens often use contraceptives inconsistently, increasing their likelihood of a teenage pregnancy (Franzetta et al, 2006).

Social factors such as single-parent and low-income households increase risk of unintended teen pregnancy (Rosengrad et al, 2006; Sullivan, 1993). Low parental education levels as well as membership in a peer group in which friends are sexually active or pregnant also influence teen pregnancy (Manlove, 2002). Studies also indicate that some teens don't recognize any disadvantages associated with teen motherhood and have babies so that they will have something to possess or someone who loves them (Rosengrad et al, 2006).

### *Intervention Programs Impacting Teen Pregnancy Rates*

Intervention programs commonly aim to increase protective factors with the goal of reducing the teens risk for pregnancy and reducing the impact that the pregnancy will have on their long-term life outcomes. These interventions may include curriculum-based sexuality education programs that promote abstinence or contraceptive use, early childhood programs including high quality child care and pre-school, community service learning, and youth development approaches. Multi-year, intensive programs offering comprehensive services may have the strongest long-term outcomes (Manlove, 2002).

Intervention programs can also work with teens after they have become pregnant, arming them with parenting skills, resources to stay in school, supplying them with contraceptives and education to prevent them from becoming pregnant again during their teen years (Corcoran & Pillia, 2007). Programs can be community based or school based, provided by both the private and public sector. Minimal outcome data are available regarding the impact of intervention programs on preventing subsequent pregnancies; however data are available regarding home visiting programs. Some forms of home visiting programs that target high-risk youth and or low-income mothers have been effective, returning \$6,000 to over \$17,000 per youth served (Aos et al, 2004). One study documents that a school based parent support program offers promising opportunities for teen mothers and their children. The program offers training in parenting skills, support to the mother to stay in school and prevent subsequent pregnancies, while keeping their children in a safe environment (Sadler et al, 2007). Additional research indicates that on average intervention programs have the largest effects on pregnancy prevention for participants that have been receiving services for at least 19 months. Longer-term interventions do not seem to have as great of an effect (Corcoran & Pillia, 2007).

### *The Circle of Care Program*

In 1993, the Troup County Collaborative Planning Committee (predecessor of TFCA) published a comprehensive community assessment, which detailed the results of a nine-month information gathering process on community risk factors, community protective factors, and gaps in community services. A number of needs and gaps were identified. One major gap was the lack of support services for teen mothers.

In response to these concerns, the Troup Family Connection Collaborative and the Georgia Children's Trust Fund opted to develop and implement a program to reduce the subsequent teen pregnancy rate and the incidence of child abuse and neglect within the county. The Circle of Care program was developed in 1997 through the collaborative efforts of multiple community partner organizations. These organizations included the local school system, the Division of Family and Children Services, Public Health, Troup County Family Connection, the local teen clinic, the local hospital and other organizations. In 2002, increased educational attainment was added as a third indicator to target among Circle of Care participants. (Twin Cedars, 2008).

The Circle of Care strategy provides both intervention and prevention services to pregnant or parenting teen mothers in Troup County, Georgia. The intervention services begin with the identification, referral, and delivery of services to teen families through partner agencies. These intervention programs are designed to work together to reduce the likelihood of repeat pregnancy and improve education outcomes. Additionally, these programs address child abuse prevention through parent education and home visitation. Parent support groups are an additional component that strengthens families and prevents child maltreatment.

Participants may be referred to the program from a variety of sources, including their school, doctor, DFCS, family, friends, or by self-referral. The program can serve 30 teen mothers at one time, and acceptance into the program is based on the availability of space and the imminent need of the pregnant or parenting teen.

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#### *Services and Component Programs*

Participants in the Circle of Care program receive multiple services, including case management, a family assessment, parenting classes, home visits from the case manager, family planning assistance, services from the teen health clinic and the Division of Family and Children Services. Following is a description of the intake process and a detailed description of each service:

The initial activity occurs when the case manager interviews each potential participant, conducts a needs assessment, and completes an intake form if they are eligible to participate in the program. The intake form requests the following information: demographics on the mother and child (if born to date), current school and employment status, pregnancy information including term of delivery, prenatal treatment, health of baby at delivery, drug and alcohol use during pregnancy, etc. In addition, the intake form requests information regarding any current services the teen is receiving, and any referrals or services they may need.

Following the initial intake into the program, the case manager contacts and follows up with each participant on an as needed basis based on their individual need and the goals laid out in their case plan. The case manager logs all contacts with each participant on a case notes document which tracks the time spent with the participant, the reason for the contact, any referrals that were made and any notes about the contact.



The case manager schedules bi-monthly meetings that all participants and their children are invited to attend. She provides transportation to those that need it, and a meal is supplied. The meetings generally have a guest speaker that discusses a topic important to the teen mothers and their children. Past topics include car-seat installation and safety, good dental care, voter registration, continuing education information from the local technical college, etc. The meetings allow time for the participants to update the group on their own personal experiences, and they allow the participants to share suggestions about how to deal with these events. The major components of the Circle of Care program include:

### **Case Management**

The primary focus of the case manager is to ensure that the teen mother stays in school, re-enrolls in school, or re-enters school after her baby is born. The key to the educational attainment of these mothers is this focus on school completion. An essential need for the educational attainment of the mother is having stable child care for the child(ren). The case manager assists the mothers with obtaining child care through family members or within the community. The case manager performs home visits, offers transportation assistance, delivers center-based parent education, and links the participants to additional community services including abstinence training, contraceptive services, pregnancy tests, STD exams, education, and treatment (Twin Cedars, 2008). Participants in the program are linked to organizations including the Division of Family and Children Services, local schools, area hospitals, local health departments and clinics, private physicians, concerned family, friends and community agencies (Twin Cedars, 2008).

### **Family Assessment**

The family assessment determines the specific needs of each individual family. These needs may include child care, transportation to doctor appointments, remediation, housing, financial support, employment, etc. When the assessment is completed the case manager helps the teen mother develop her own personal goal plan that has sequential, attainable goals for the family.

### **Parents as Teachers (PAT) Parenting Classes**

The parenting classes use the "Born to Learn" curriculum which was designed specifically for teen mothers. These classes are held monthly and child care is provided. Various community volunteers and agencies are involved in the delivery of these classes. The classes focus on child development, "Better Brains for Babies," and other important parenting skills such as behavior management and family systems.

### **Home Visits**

The case manager conducts home visits if the assessment indicates that closer monitoring of the mother and her baby is necessary. This may be because of instability in the teen

mother's living situation, family members who live with the teen, or suspected evidence of domestic violence, child abuse or child neglect.

### **Family Planning**

The case manager is able to refer the teen mothers to the teen clinic, called "The Spot," or to the health department. The Spot is a division of the Troup County Health Department that only offers services to teens. The services offered are: abstinence training, contraceptive services, pregnancy tests, STD exams, education, and treatment as well as pelvic exams. When the participants reach the age of 20, they are no longer eligible to receive services from The Spot. The Spot provides the case manager with the number of contacts each participant has had with the clinic, and their reason for visit. Most of the visits are as a result of a referral made by the program coordinator.

Based on financial data from fiscal year 2007 (July 1, 2006 through June 30, 2007), 39 teen mothers (ages 14 to 23 years) and their families were served by the Circle of Care Program. There were eleven new participants that entered the program during 2007 and fifteen girls that exited the program in 2007. Thirteen of these participants were enrolled in the program during previous years (Twin Cedars, 2008). The total cost to provide case management services to the participants in FY07 was \$48,750, a per capita cost of \$1250.00 per teen mother (Twin Cedars, 2008). Outcome data from FY07 revealed that there were zero repeat pregnancies among participants and zero substantiated cases of child abuse and neglect (Twin Cedars, 2008). Of the 39 participants, nine graduated from high school or earned their GED. Three of these nine participants were enrolled in post-secondary education. In addition, 33% of the participants were enrolled in high school or a GED program. Overall, 16 of the participants had quit school; however seven of them were employed. Nine participants (24%) were unemployed and not enrolled in school (Twin Cedars, 2008). With additional case management services, the goal is to have these participants re-enroll in school to graduate or obtain their GED.

At the end of fiscal year 2007, 23% of the participants had graduated and 34% of the participants were enrolled in school. This equates to 58.9% of the participants working towards or achieving the programmatic goal of educational attainment, therefore participants of the Circle of Care program are reducing their potential economic strain on the local community. As stated previously, on average only 33% of teen mothers earn a high school diploma (Maynard, 1996). With 58.9% of the participants currently enrolled in high school or have already graduated, program participants are faring better than the general population of teen mothers. Additionally, there were zero substantiated cases of child abuse and neglect, further minimizing the impact that participants have on the economy. Finally, participants had zero incidents of repeat pregnancy, while on average 25% of teen mothers have a second child before they turn 20 (Kalmuss and Namerow, 1994). Statistically speaking, ten participants should have become pregnant again based on trend data. The average annual cost of teen childbearing in Georgia was \$1,391 per teen birth according to 2004 figures, although average annual costs associate with children born to mothers 17 years and younger is much higher, at an estimated \$3,526 (NCPTUP, 2008). Though data are limited to only one year, the findings are encouraging. Table 2 summarizes these findings and compares them against the general population statistics of teen mothers not

participating in the Circle of Care program. Further analysis of long-term outcomes will provide a better understanding of the program.

CONCLUSION

Teen pregnancy continues to be a chronic problem in the United States that has a significant impact on society, teen parents, and the children of teen parents. Society ends up bearing the financial burden of caring for most teen moms and their children, and teen moms and their children have decreased life outcomes as well. Intervention programs can educate teens about the risks of teen pregnancy, providing the teens with

**Table 2:** Initial Outcomes for Participants in Circle of Care Intervention

Implication	2007 Circle of Care Participants (N=39)	Teen Mothers not in Circle of Care (General Population Estimate)	Estimated Cost Savings
High School Drop-Out Rate	16 (41%)	66%	Cost society average of \$200,000 per person (Saving Money, Saving Youth, 2003) (66%-41% = 25% ~10 Participants) 10*200,000 = 2 million dollars potential decreased cost to society
High School Completion Rate	9 (23%)	33%	Increase of \$300,000 in lifetime earning potential per person (Cohen, 1998) (56%-33% = ~23% ~10 Participants) 10*300,000 = 3 million dollars potential increased earnings
Enrolled in High School/ GED	13 (33%)	N/A	
High School Enrollment/ Completion Combined	56%	33%	
Incidence of Child Abuse	0%	77% greater risk in single parent home	No financial info available, however significant benefits for both children, their families and society as a whole.
Incidence of Child Neglect	0%	87% greater risk in single parent home	
Repeat pregnancy Rate	0%	25%	\$4257 savings annually per person Wallace, (2002) & George & Lee, (1997) If 25% had a 2 <sup>nd</sup> pregnancy, = 10 participants. 10* 4257 = \$42,570 annually.

information to make educated decisions regarding their behavior. For teens that have a child, interventions are available to promote healthy life outcomes for both themselves and their child.

The teen pregnancy rates nationally are high, then higher still in Georgia, and even higher in Troup County. The current trends resulted in the creation of the Circle of Care program in Troup County which targets reducing the subsequent teen pregnancy rate, promotes high school completion among teen mothers, and teaches parenting skills to ensure the children of teen mothers have a safe and healthy start in life. Preliminary results indicate that the cost of providing the Circle of Care program services is both beneficial to society as well as the teen mother and her child. During fiscal year 2007, program participants had zero incidents of child abuse and neglect, zero incidents of repeat pregnancies, and 56% were enrolled in school or had already graduated. These results indicate that Circle of Care program participants are achieving more favorable outcomes when compared to the general population of teen mothers.

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