

Maternal & Infant Health



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Leslie S. Shelhamer, M.A.
Health Data Analyst

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Leslie Shelhamer, M.A.
Health Data Analyst

Measurements and Outcomes Work Group Members

J. Dennis Murray, Ph.D.
Tammy Eberly, R.N., Ph.D.
Anne Paniccia, MHA
Francis Craig, Ph.D.
Kathleen Finsterbusch, R.N., MSN
Jeanaryl Likens

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Maternal and Infant Health in Tioga County, Pennsylvania

Table of contents

Introduction	1
Prenatal Care	1-2
Maternal Behavioral Risk Factors	2-4
Teen Pregnancy	2
Cigarette Smoking	3
Alcohol Use	3
Vitamin Use	4
Exercise	4
Risk Factors Affecting Early Infant Health	4-5
Low Birth Weight	4
Premature Birth	5
Fetal and Infant Deaths	6-7
Fetal Deaths	6
Perinatal Deaths	6
Infant Deaths	7
Conclusion	7

Introduction

In conjunction with the national program Healthy People 2010, the Tioga County Partnership for Community Health is collecting and monitoring indicator data that pertains to key health issues in the area. Healthy People 2010 is a comprehensive national health promotion and disease prevention agenda with set objectives designed to guide health agencies in improving the health of all people. The two main goals of this program are to 1) increase quality and years of healthy life and 2) eliminate health disparities.¹ Of the 28 focus areas and 467 objectives within the national program, the Tioga County Partnership for Community Health is tracking 8 focus areas and approximately 35 objectives. The selection of key indicators for Tioga County was based on priority health issues that were identified previously, appropriateness of objectives and availability of data.

The focus area for this report is maternal and infant health. Monitoring the health of these populations is of great importance when trying to assess the health of Tioga County. The health of these groups gives an indication of current health in the county as well as an outlook on future health. Topics discussed in this report include prenatal care, maternal behavioral risk factors, early infant risk factors and fetal and infant deaths. Healthy People 2010 goals addressed in this report include:

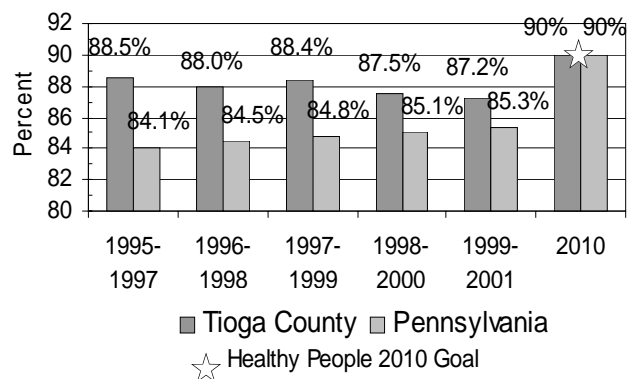
- Reduce fetal and infant deaths (16.1),
- Reduce maternal illness and complications due to pregnancy (16.5),
- Increase the number of pregnant women who seek prenatal care during the first trimester (16.6),
- Reduce the number of low birth weight and premature babies (16.10 & 16.11),
- Encourage women of childbearing age to develop healthy lifestyles including appropriate weight, folic acid consumption and proper nutrition (16.16) and
- Reduce prenatal exposure to alcohol, tobacco and illicit drugs (16.17).

Prenatal Care

The goal of prenatal care is to monitor the progress of a pregnancy and to identify potential problems before they seriously impact the health of the mother and/or the fetus. Early prenatal care can help reduce newborn illness, disability and death by identifying and reducing certain maternal behavioral risk factors that contribute to poor birth outcomes.² In addition, prenatal care visits are an opportune time to educate pregnant women on healthier lifestyles for both themselves and their infants.

In the U.S., women who receive late or no prenatal care are almost twice as likely to have babies born with a low birth weight, a major risk factor for infant mortality.³ Women least likely to receive prenatal care include adolescent mothers, those without a high school diploma, unmarried mothers, mothers below the poverty level and those living in rural areas. Tioga County has done well over the past five years, with approximately 88% of pregnant women receiving prenatal care during the first trimester. It should be noted, however, that this percentage has begun to decline gradually in recent years for Tioga County while state levels have remained fairly constant (Figure 1).⁴

Figure 1. Percent of Women Getting Prenatal Care During the First Trimester.



Source: Pennsylvania Department of Health, 2003.

Prenatal care is most effective if it begins early and continues throughout pregnancy. The American College of Obstetricians and Gynecologists recommends that women have 13 prenatal visits, with the initial visit being within the first trimester.⁵ For these reasons, the Healthy People 2010 objectives includes an indicator that measures and monitors the adequacy of prenatal care. The Adequacy of Prenatal Care Utilization Index (APNCU) is used for this purpose and it is based on whether the mother received prenatal care during the first trimester as well as her continuation of subsequent prenatal care visits. It measures the utilization of prenatal services not the quality of service. Again, Tioga County has done well in past years. On average 82% of Tioga County women received early and adequate prenatal care.⁴

Those with unintended pregnancies are less likely to receive early prenatal care. In the U.S. more than half of all births are unintended, which includes both mistimed and unwanted pregnancies.⁶ According to the Tioga County Health Survey 2000, 17.7% of those who gave birth in the past three years reported never having been advised by their health care provider about family planning.⁷

Another group unlikely to receive early prenatal care are women living in rural areas. In order to receive prenatal care, these women may have to travel farther to places with obstetricians and health centers with labor and delivery services. This additional travel results in a delay of prenatal care. There is only one obstetrician in Tioga County while there are 33 active primary care physicians.⁸ This places a large burden on primary care physicians to advise and provide women of childbearing age on preconception and prenatal care. In addition, future restrictions to these services, such as staffing cuts, may impact the care and therefore, the health of these groups.

Maternal Behavioral Risk Factors

The health of an infant is largely dependant on all aspects of the mother's health. There are many choices that a woman can make in order to promote good health for herself and her baby. This includes many behavioral and preventive factors that mothers may engage in prior to, during and after pregnancy.

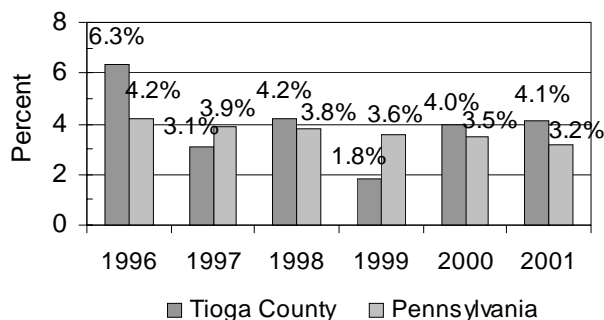
Teen Pregnancy

Early sexual activity can have long lasting effects on both the biological and social well-being of teenage girls. Because many teen mothers do not seek early and adequate prenatal care, the consequences affect both mother and child. Teen mothers are more likely to experience inadequate weight gain, anemia, hypertension, labor and delivery complications and pregnancy-related death.⁹ Infants of teen mothers are more likely to experience low birth weight, premature birth, anemia, and respiratory distress.⁹ In addition, teen mothers are more likely to drop out of school if they become pregnant, placing large burdens on the social welfare and health care systems.

Young girls who are sexually active are also at a higher risk for sexually transmitted diseases, which can have long-term effects on their fertility and overall health later in life. Untreated sexually transmitted diseases can cause complications if a teen becomes pregnant. Poor birth outcomes related to sexually transmitted disease include fetal loss, low birth weight, premature birth and congenital birth defects.⁹

Forty-three percent of Tioga County residents thought teen pregnancy was a serious problem in their community in 2000.⁷ This is down from 57% in 1995.¹⁰ While the percent of births to mothers under the age of 18 in Tioga County has fluctuated in past years, on average, the county is similar to the state at 3.9% over the past five years (Figure 2).¹¹

Figure 2. Percent of Births to Mothers Ages 17 and Under.



Source: Pennsylvania Department of Health, 2003.

Cigarette Smoking

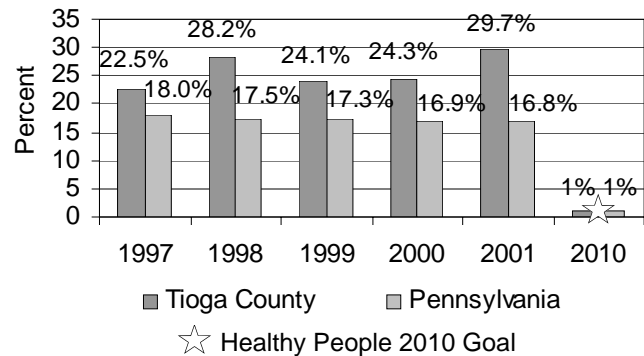
Smoking during pregnancy is the single most preventable cause of illness and death among mothers and infants.¹² In the U.S., cigarette smoking is the greatest known risk factor for low birth weight resulting from intrauterine growth retardation, accounting for 20-30% of all low birth weight births.² In addition, prenatal tobacco exposure is linked to preterm delivery, Sudden Infant Death Syndrome (SIDS), and respiratory problems in newborns.² Tobacco use prior to conception is also linked to infertility problems.¹³

In 1996, the total health care cost in the U.S. for smoking-related problems at time of delivery was estimated to be \$366 million. In the 2001 Surgeon General’s Report, *Women and Smoking*, it was estimated that the elimination of prenatal exposure to tobacco would lead to a 10% decline in all infant deaths and a 12% decline in deaths related to perinatal conditions.¹³ According to data from the Pennsylvania Department of Health, approximately 26% of Tioga County women smoked during pregnancy in past years (Figure 3).⁴ This includes a substantial increase from 24.3% in 2000 to 29.7% in 2001. These levels are almost twice as high the state and have taken Tioga County even farther from the Healthy People 2010 goal of 1%.

Alcohol Use

Alcohol use during pregnancy is another highly preventable cause of birth defects and developmental disabilities. It is related to fetal death, low birth weight, growth abnormalities, mental retardation and fetal alcohol syndrome (FAS), which can result in disorders of the brain, growth retardation, and/or facial malformations.¹⁴ In addition, drinking alcohol during pregnancy is also related to increased risk of miscarriage and stillbirth. Over 80% percent of Tioga County women giving birth “in the past three years,” drank no alcohol during pregnancy (Table 1).⁷

Figure 3. Percent of Women Smoking During Pregnancy.



Source: Pennsylvania Department of Health, 2003.

Table 1. Percent of Women* Who Drank During Pregnancy.

Alcohol Type	Frequency		
	Never	Once/Twice	Every Few Months
Beer	81.3%	17.7%	1.0%
Wine	86.5%	13.5%	0.0%
Spirits/ Hard liquor	97.9%	2.1%	0.0%

*Women reporting giving birth “during the past three years”.
Source: The Tioga County Health Survey, 2000.

Vitamin Use

Taking a multivitamin is one of the easiest ways for women of childbearing age to make sure they are getting appropriate portions of vitamins and minerals needed for pregnancy. Critical vitamins and minerals needed during pregnancy include folic acid, iron, zinc, iodine, vitamin A, vitamin D and calcium.¹⁵ Folic acid, a type of B vitamin, can help prevent neural tube defects. However, it must be taken prior to and through early pregnancy, when the neural tube is forming, in order to be most effective. In addition, pregnant women need twice the amount of iron, from 15 milligrams per day to 30 milligrams per day.¹⁵ Iron deficiency can lead to anemia, a common condition during pregnancy. Like folic acid, most women can get an adequate amount of iron by taking a daily vitamin. According to the Tioga Health Survey 2000, 73.7% of female respondents who reported giving birth in the last three years took vitamins daily.⁷

Exercise

Unless serious medical conditions exist, pregnant women are encouraged to participate in moderate physical activity for 30 minutes a day on most if not all days of the week.¹⁶ Physical activity during pregnancy helps prevent gestational diabetes, excess weight gain and helps build stamina needed for labor and delivery. Regular physical activity also promotes overall well being by reducing stress and helps shorten the recovery time for mothers. Low-risk physical activities such as walking, biking, swimming and yoga are suggested for pregnant women. Forty-eight percent of Tioga County women who gave birth during the past three years reported they participated in physical activity on a regular basis, either everyday or every other day.⁷

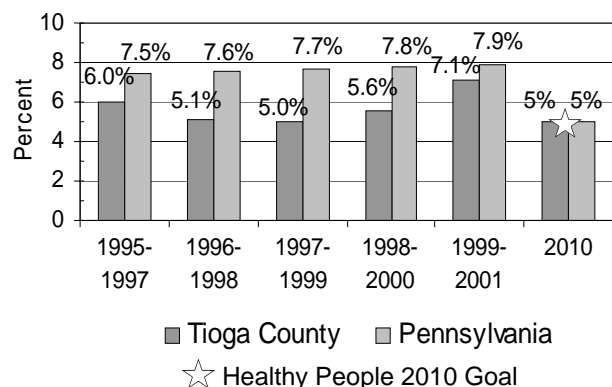
Risk Factors Affecting Early Infant Health

Low birth weight

Two of the leading causes of newborn death are short gestation and low birth weight.² Low birth weight is defined as babies weighing less than 2500 grams (approximately 5.5 pounds) at birth. Low birth weight babies usually fall into one of two categories. They are either premature (delivered prior to 37 weeks gestation) or they are full term, but are small for their age. This condition is referred to as interuterin growth retardation. Children with a low birth weight are at a greater risk of neurological disease, severe mental retardation, respiratory track infections, vision and hearing impairments as well as poor overall health.⁹

During recent years, there has been an increase in low birth weight babies at the national, state and county level. At the national level, increases in the premature births of multiples is thought to be the primary reason for this.² While Tioga County did have an increase in premature births less than 32 weeks gestation between 1999 and 2001 (see Figure 6, next page), other risk factors for low birth weight include maternal age (<17 and >34), poor pregnancy weight gain, low socioeconomic status, previous low birth weight babies or premature births, little or no prenatal care and cigarette smoking.^{4,9} Tioga County will now have to work more diligently to see that the percent of infants born at a low birth weight declines towards the Healthy People 2010 goal of 5% (Figure 4).

Figure 4. Percent of Infants Born at Low Birth Weight (<2500g).



Source: Pennsylvania Department of Health, 2003.

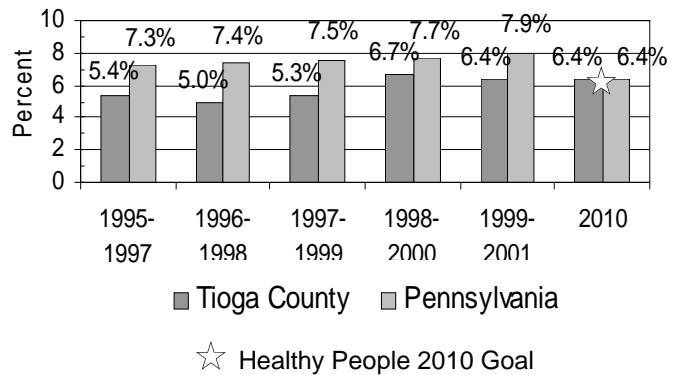
Premature Births

Premature babies are those babies born prior to 37 weeks gestation. Babies born prematurely are at an increased risk of disability and death. Together with low birth weight, premature births are the leading cause of neonatal deaths not related to birth defects.² Not only do premature babies weigh less, their organs are less developed and they are more likely to face complications. While some babies are born early because of pregnancy complications or maternal health problems that are treated by induced labor, most are born early due to non-induced pre-term labor.¹⁷ Risk factors for premature birth are similar to those of low birth weight. They include multiple births, previous premature birth, poor pregnancy weight gain, domestic violence, infections and alcohol, drug and/or tobacco use.²

Premature births are on the increase in the U.S., with rates increasing more than 10% between 1991 and 2001.¹⁸ While the cost of hospital stays for infants with any diagnosis of prematurity was estimated at \$11.9 billion in 2000, prevention efforts are not only for financial reasons. Premature infants are at a higher risk of respiratory distress, neurological problems, bleeding, jaundice, and heart and digestive problems.¹⁷ If they survive, approximately 15% of infants born between 30-34 weeks gestation and 20-30% of infants born prior to 29 weeks gestation will have serious disabilities.¹⁷

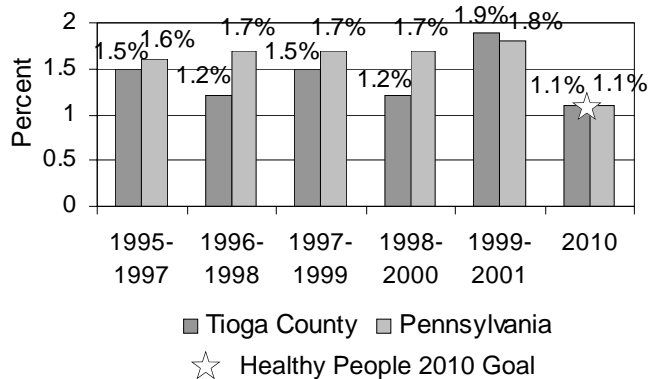
While both the county and the state have seen increases in the percentage of live births occurring at 32 to 36 weeks gestation, Tioga County returned to the Healthy People 2010 goal of 6.4% between the years of 1999-2001 (Figure 5).⁴ On average 1.5% of births in Tioga County occur prior to 32 weeks gestation. While state levels have remained fairly constant, Tioga County has fluctuated in past years. This includes a large increase from 1.2% (1998-2000) to 1.9% (1999-2001), placing Tioga County farther from the Health People 2010 goal of 1.1% (Figure 6).⁴

Figure 5. Percent of Live Births at 32-36 Weeks Gestation.



Source: Pennsylvania Department of Health, 2003.

Figure 6. Percent of Live Births at Less Than 32 Weeks Gestation.



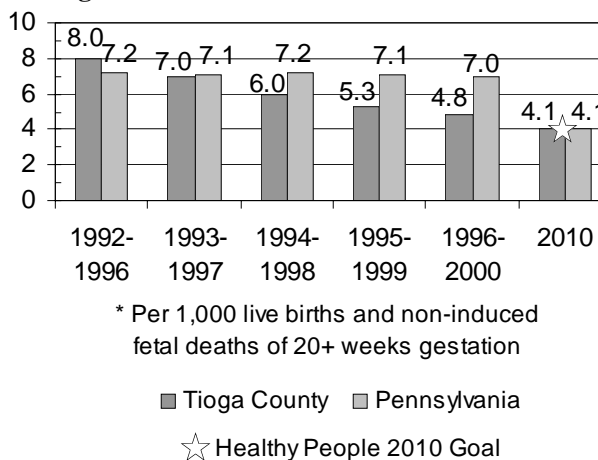
Source: Pennsylvania Department of Health, 2003.

Fetal and Infant Deaths

Fetal Deaths

The Centers for Disease Control and Prevention (CDC) indicates that fetal death statistics are collected in order to: monitor progress in pregnancy loss prevention, examine all aspects of pregnancy outcomes and risks and to measure pregnancy loss prevention efforts.⁹ Fetal deaths refer to any death at or beyond twenty weeks gestation. Early fetal deaths, less than twenty weeks, are not included as these deaths often have different causes. While risk of fetal death decreases with gestational age, causative factors for fetal deaths largely depends on whether it occurs prior to labor (antepartum) or after labor (intrapartum). As in other developed countries, most fetal deaths in the U.S. occur before labor with many of the causes being unknown.⁹ However, major causes can include preterm labor, infection, birth defects and maternal conditions. Indirect risks include maternal age, inadequate prenatal care, smoking, prior fetal loss and low socioeconomic status.⁹ For Tioga County fetal death rates have declined in past years and are on target for reaching the Health People 2010 goal of 4.1 fetal deaths per 1,000 live births (Figure 7).⁴

Figure 7. Fetal Death Rate.*

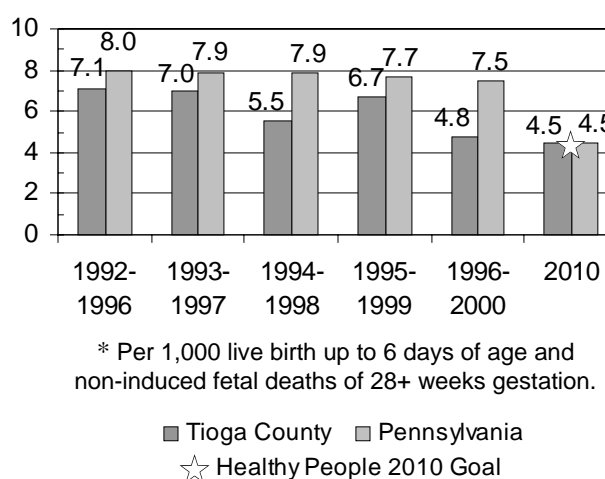


Source: Pennsylvania Department of Health, 2003.

Perinatal Deaths

If a fetal death occurs after labor, it can be, on occasion, misclassified as a live birth due to discrepancies in interpretation of the World Health Organization's definition of fetal death.⁹ In order to address the inconsistencies between fetal and infant deaths that occur very near delivery, data about the perinatal death rate are also collected and monitored. The perinatal death rate measures deaths that occur after 28 weeks gestation and through the first six days of life. This is helpful because late fetal deaths and neonate deaths (deaths within the first 27 days of life) often have similar causes. The perinatal death rate gives an overall measure of perinatal health and quality of care to mothers and newborns. For Tioga County, the perinatal death rate has been on a gradual decline with the exception of data from the period of 1995-1999 (Figure 8).⁴ The perinatal death rate for Tioga County for the years 1996-2000 puts it very near the Healthy People 2010 goal of 4.5 perinatal deaths per 1,000 live births.

Figure 8. Perinatal Death Rate.*

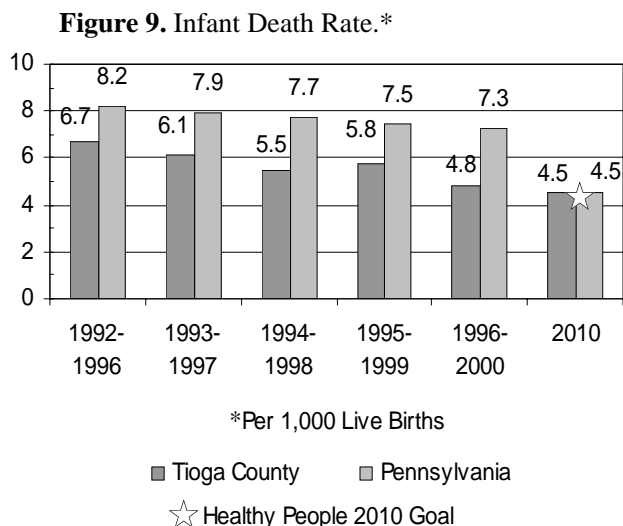


Source: Pennsylvania Department of Health, 2003.

Infant Mortality

Infant mortality is an important measure of overall health for the nation. It measures the rate of deaths for infants less than one year of age and is used to measure a number of factors including maternal health, quality and access to care, socio-economic conditions and public health. A majority of infant deaths occur during the first 27 days of life.⁹ Four causes contribute to more than half of all infant deaths. These include: birth defects, disorders related to short gestation and unspecified low birth weight, sudden infant death syndrome (SIDS) and respiratory distress.² Biological risk factors include multiple births, birth order, previous fetal or infant loss, maternal age and prenatal exposure to tobacco.⁹ Social risk factors include marital status, education level, and access to early and adequate prenatal care.⁹

While infant death rates have declined in the U.S. over the past thirty years, these declines are primarily the result of improved perinatal medical care, not prevention efforts.⁹ Furthermore, the U.S. continues to have higher infant mortality rates than other industrialized nations. Similar to state levels, Tioga County is seeing a gradual decline in its infant death rate, putting the county very near the Healthy People 2010 goal of 4.5 infant deaths per 1,000 live births (Figure 9).⁴



Source: Pennsylvania Department of Health, 2003.

Conclusion

With the exception of high smoking rates during pregnancy, the maternal and infant health of Tioga County is very good. In several instances Tioga County has either met or is very close to reaching Healthy People 2010 goals of this focus area. In order to continue to improve and maintain the health of mothers and infants, healthy lifestyles of mothers must be encouraged. Women with healthy lifestyles have healthier pregnancies and as a result have healthier babies. Many health facilities and organizations are committed to promoting healthy lifestyles for mothers and infants, but it is also necessary for the residents of Tioga County to be involved.

There are a number of activities that individuals can do to help Tioga County continue to improve the health of current and future generations of Tioga County residents. For women who are currently pregnant or thinking about becoming pregnant, the following actions are encouraged:

- Quitting smoking, if she has not done so already. Pennsylvania offers a free quit line to help encourage smokers who want to quit. The number is 1-877-724-1090.
- Seeing a physician as soon as she thinks she is pregnant or is considering becoming pregnant.
- Eating a well balanced diet, including a nutritional supplement containing folic acid.
- Exercising regularly following a physician's approval.
- Avoiding alcohol and illicit drugs.
- Protecting herself from sexually transmitted diseases and other infections.
- Seeking help if she is in a violent or abusive relationship.
- Asking for support from friends and family when trying to change her lifestyle.

Women seeking assistance in any of these areas should talk with a physician or other health care provider. Contact Guideline at 1-800-332-6718 for referral to the appropriate service.

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... to improve the health and quality of life of individuals and communities in Tioga County.

Work Groups and Committees

Charlie's Place	Community and Family Health
Elder Services	Fit for Life
Healthy Families	Planning Committee
Immunization	Kids First
Mental Health	Measurement & Outcomes
Countryside Council	Tobacco Coalition
Communities that Care (CTC)	Disability Awareness Network
Community Access Program (CAP) Operating Committee	Alcohol, Tobacco and Other Drugs (ATOD)

If you would like to learn more about these groups or would like to be a member please contact the Tioga County Partnership for Community Health.

Tioga County Partnership for Community Health
PO Box 812
5 East Avenue
Wellsboro, PA 16901

Phone: (570) 723-0520
Fax: (570) 723-0522

Email: tiogap@epix.net
www.tiogapartners.org