

I L L I N O I S
R M E D

A blue stethoscope graphic is overlaid on the right side of the logo. The stethoscope's tubing forms a loop that passes through the letter 'O' in 'I L L I N O I S' and the letter 'E' in 'R M E D'. The chest piece of the stethoscope is positioned at the bottom right, pointing downwards.

Evaluation of the Efficacy of an Abstinence Based Sexual Education Program in Crawford County, IL.



Introduction

- ▶ The purpose of this study is to evaluate, using public health data, the impact of the CRADLE program on teen pregnancy in the communities where it was instituted as part of the public school health education curriculum. Crawford **CRADLE** (Creating Responsible Adults Developing Life skills and Esteem) was founded as a not for profit organization in 1990 to address community concerns about teen pregnancies rate since almost 25% of the births at Crawford Memorial Hospital were to mothers age 19 and under.
- ▶ The original intent was to provide services to the teens having births, but it was quickly decided that prevention strategies needed to be put in place.

Description of CRADLE

- ▶ A pilot program geared toward education in the 5th, 7th, and 9th grades was started in Robinson school district in 1991, and was in all county schools within the next two years.
- ▶ Community volunteers provide the 5-12 day education that presents abstinence as the only 100% safe method of preventing unwanted pregnancies, STD's, and all the physical, emotional, mental, and social consequences of pre-marital sexual activity.
- ▶ Evaluation of the CRADLE education program impact is important to assessing its educational and public health impact. The study plan was approved by the UICOM-R IRB.

Program Classes

Classes are taught using different curricula in each grade:

- Emphasizing health education in the 5th grade level
- Moving more into social responsibility and abstinence promotion in 7th and 9th grades.
- The program has used an electronic doll called "Baby Think It Over" is a part of the 9th grade experience. The doll sleeps, cries, requires feeding, and electronically records the level of care provided by the "parent."

Methods

The study is a retrospective comparative time series analysis of secondary data with two control group areas. Information has been collected from IPLAN and CDC Wonder vital statistics sources available online and local health department summary birth information.

The number of babies born to teen mothers 10-17 years old post program institution, 1990-2003, have been compiled for Crawford, Clark, and Edgar Counties and the state of Illinois. These counties were chosen based on their proximity and similarities in population, demographics, social, and economic factors. Clark and Edgar Counties have no programs similar to CRADLE in place..

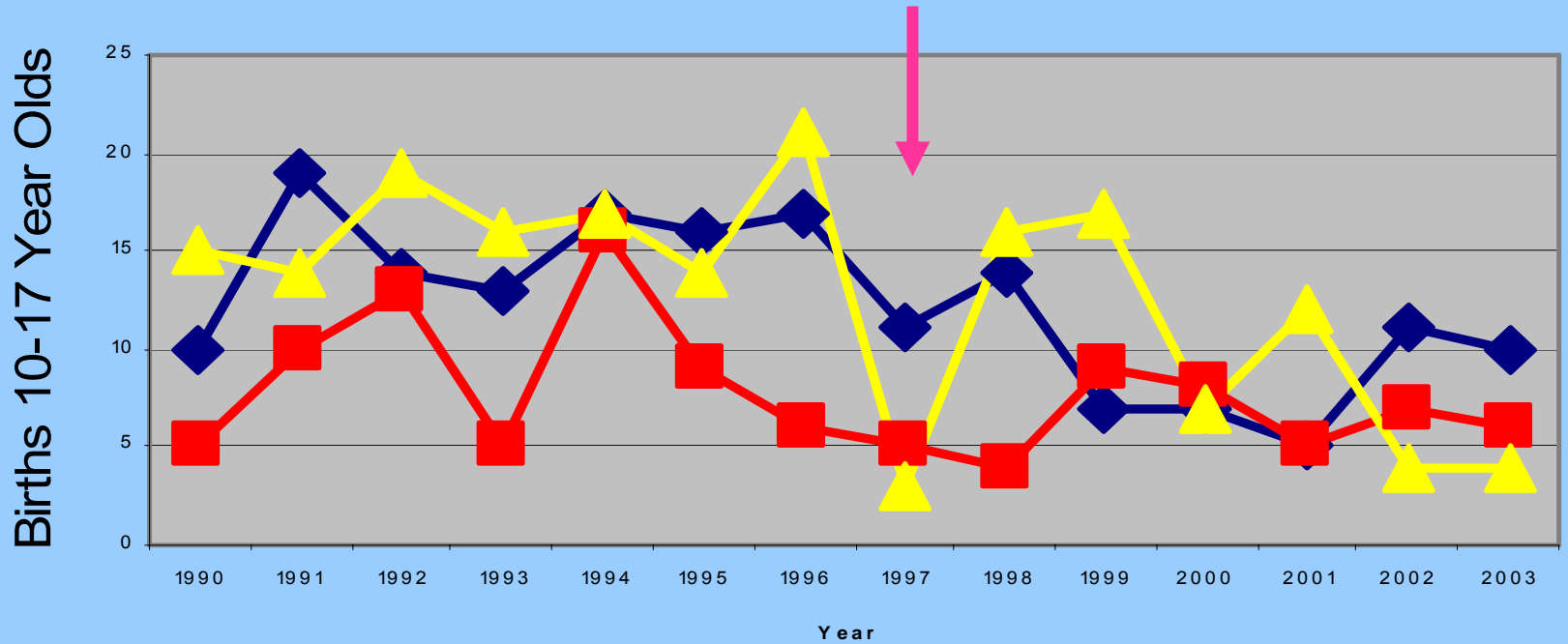
Statistical Analysis

- ▶ Teen fertility rates (rate of births per 100 females ages 10-17) were calculated for the individual counties and state as a whole. Two time periods are being compared, early program institution 1990-1996 vs. full program implementation during 1997-2003.
- ▶ Statistical testing of differences in independent rates between the time periods were calculated (Dever, A. *Community health analysis : global awareness at the local level*. Gaithersburg, MD: Aspen Publishers, 1991)
- ▶ These time periods were chosen based when teaching of CRADLE programs occurred all three grades (5th, 7th and 9th). Students who were at high risk for pregnancy during high school in 1997-2003 were exposed to the full scope of the program in comparison to those in the program in 1990-1996 who only received partial instruction due to the startup of the program

Results

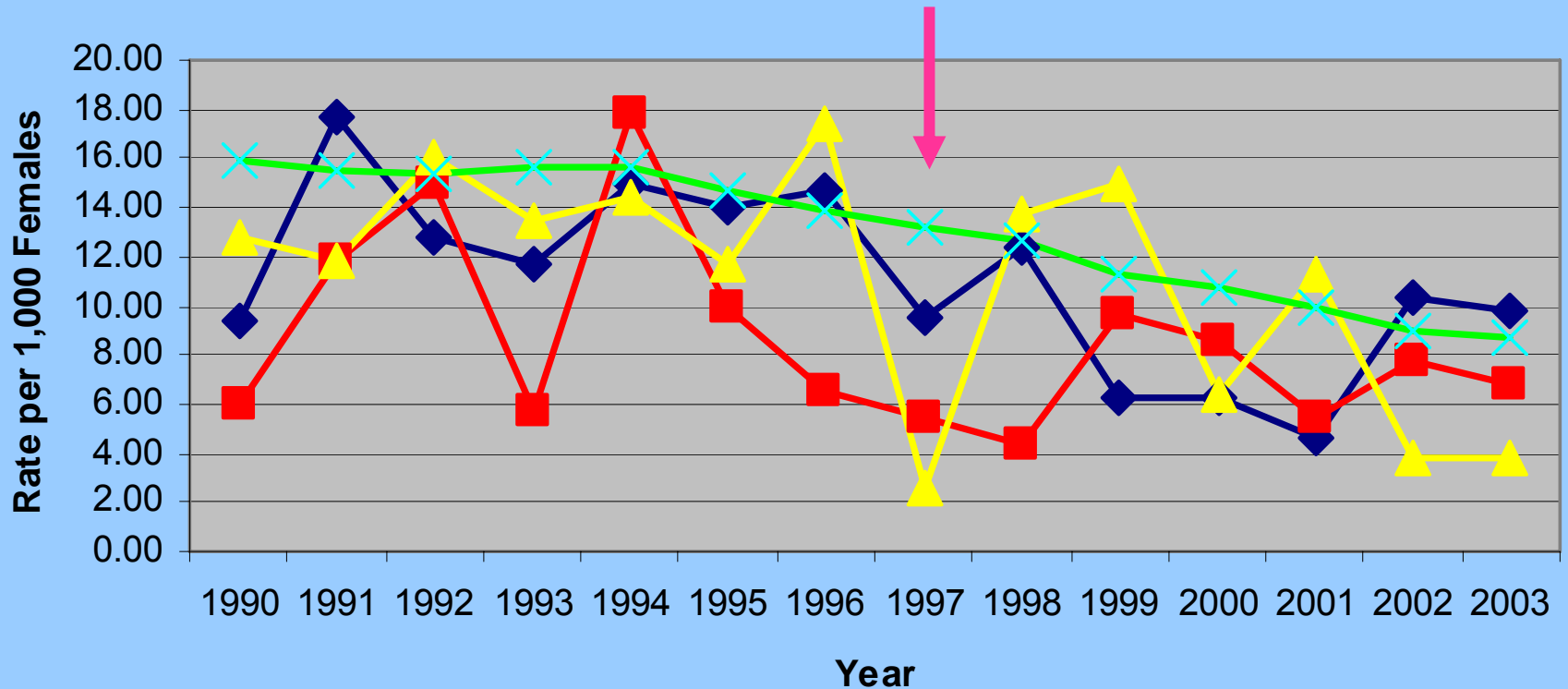
- ▶ Comparison of the two time periods examined in this study, early program institution (1990-1996) and full program institution (1997-2003) reveal statistically significant differences in the teen fertility rate of Crawford County.
- ▶ The teen fertility rate, number of births to women 10-17 per thousand women 10-17 in the county, decreased from 13.64 in the early program time period to 8.45 in the later time period; a 38% reduction in fertility. This is a statistically significant decrease at $p < .05$, meaning that there is less than a 5% chance that this reduction occurred due to chance.

Number of Births to Teens Ages 10-17 Years by County (Crawford, Clark, & Edgar Co., IL)



Birthsto 10-17 yo Crawford Birthsto 10-17 yo Clark Birthsto 10-17 yo Edgar

Fertility Rate Females Ages 10-17 in Crawford, Clark, & Edgar Co., IL



- ◆ Teen Fertility Rate Crawford ages 10-17
- Teen Fertility Rate Clark ages 10-17
- ▲ Teen Fertility Rate Edgar ages 10-17
- × Illinois Teen Fertility Rate 10-17

County Level Results

- ▶ Edgar County and the State of Illinois also showed significant ($p < .05$) decreases in fertility among females 10-17 years old when the two time periods (1990-1996) and (1997-2003) were compared. Edgar County had a fertility rate of 13.95 in the early time period versus a 8.11 fertility rate in the later time period; a 42% reduction. The State of Illinois as a whole had a fertility rate among women 10-17 years old of 15.22 in the early time period and 10.77 in the later time period; a 29% reduction. Both of these results are statistically significant at $p < .05$.
- ▶ Clark County had a fertility rate of 10.37 in women 10-17 in the early time period and a 6.84 fertility rate in the later period; a 34% decrease in fertility. However, these results were not significant at $p < .05$ due to the small number of total births per year to women 10-17.

Discussion

There is a significant decline in the number of babies born to mothers 10-17 in Crawford County when the two time periods 1990-1996 and 1997-2003 are compared. Establishing a causal relationship between the institution of the CRADLE program and changes in teen fertility patterns is difficult because of the concomitant drop in the number of babies born to mothers 10-17 in the control counties and the State as a whole. Examination of the data for the number of babies born to mothers 10-17 in Crawford county shows a steady decline until 2001, 2002, 2003. The exact cause of this increase is unknown. The director of Obstetrics at Crawford Memorial Hospital was contacted and queried as to potential reasons for the increase discussed below.

Discussion - continued

Possible reasons for increased rates:

Potential reasons for the late increase in births to mothers 10-17 include increased percentage of unemployment, increased number of low-income families in the area and increasing prevalence of methamphetamine abuse. The CRADLE program has also experienced change in faculty and has been eliminated from one of the county's four school districts in the recent past. Evidence of more births to women 10-17 from one particular school district that might be influencing county rates is beyond the capability of this analysis due to protection of confidentiality when number of births is very low.

Although it can not be attributed solely to the institution of educational programs such as CRADLE, the fact that the number of babies born to mothers 10-17 in all counties examined and the state of Illinois as a whole is encouraging. The continuance of this trend is important to members of the health care community.

Suggestions for Future Research on about this Program

- ▶ Future evaluation of this program or others like it could include...
 - Interviews or surveys of students to get their take on program's effectiveness and methods
 - Interview students and ask if it has effected their views on sexual activity and abstinence
 - Interview students to see if they could provide some insight into recent upswing in local births
 - Local doctors and delivery room nurses could be interviewed to see if they have any insight into developing trends in teen pregnancy

Suggestions for Future Research on about this Program

- Birth certificate data could be collected to see if there are certain areas of the county have a high prevalence of teen births
- Birth certificate data and school records could be checked to see if teens who drop out of high school are more likely to become pregnant
- The same data could be used to determine how many teens who become pregnant finish high school versus dropping out