

Reproductive and Birth Outcomes: Fertility Rate

Type of EPHT Indicator	Health Outcome
Measures	Total fertility rate
Derivation of measure(s)	TFR = sum of age-specific fertility rates * 5
Unit	Rate per 1,000 women of reproductive age
Geographic Scope	Iowa
Geographic Scale	County
Time Period	Year
Time Scale	2000-most recent
Rationale	<p>The cause of approximately 10% of fertility problems is unknown. Environmental contaminants, including endocrine disruptors, have been considered major contributors. In addition, previous case studies involving women who were prescribed diethylstilbestrol (DES) while pregnant, revealed that it can have multi-generational effects on reproduction outcomes. Several indicators have been used to track fertility on a global, national, state, and local level. Indicators most commonly used are the general fertility rate (GFR), which is defined as the number of live births divided by the total number of women of reproductive age (aged 15–44 years), and the total fertility rate (TFR).</p> <p>The TFR differs from the GFR in that it adjusts for age-specific differences in fertility. It also shows the potential impact of current fertility patterns on reproduction, allowing for more valid comparisons of rates across time and space.</p>
Use of the Measure	<p>The TFR indicates the average number of births to a hypothetical cohort of 1,000 women if the age-specific birth rates were observed in a given year. Understanding the geographic distribution and trends in fertility will provide basic descriptive clues to changes that may be influenced by environmental risk factors. As more is learned regarding the link between adverse exposures and fertility, these rates will provide important background information about how fertility varies geographically in relation to changes in potentially related environmental risk factors and how it has varied over time within the United States. Similar to the GFR, the TFR may not be specific enough to permit tracking of specific changes related to environmental risk factors. However, if the estimate of 10% is correct, this measure can be used with other measures, including ambient concentrations of pollutants, to find potential associations with population-level changes in fertility and generate some well-informed hypotheses or areas for future investigations.</p>
Limitations of the Measure	<p>The fertility measure is influenced by social/demographic choices for reproduction, maternal age, parity, and social class measures, as well as the use of contraception and infertility treatments leading to multiple births. These factors all may determine variations in overall fertility across populations and geographic locations; therefore social and demographic factors would need to be controlled for to examine any environmental effects on total fertility.</p>

Data Sources	<p>Numerator: Iowa Department of Public Health—Vital Statistics</p> <p>Denominator: U.S. Census Bureau</p>
Limitations of Data Sources	National-level data sources may differ slightly from state-level vital statistics data sources
Related Indicators	<ol style="list-style-type: none"> 1. Crude birth rate 2. Age/race-specific fertility rates 3. County-specific fertility rates 4. Cohort/TFR rates
Recommendations for Future Development of the Indicator and Measures	<p>This indicator provides a nationally consistent measure of general fertility/infertility. Future indicator development should explore other data sources that might provide more specific measures of fertility that better reflect issues of infertility than the current measure. (See Developmental Fertility/Infertility Measures)</p>