

## Reproductive and Birth Outcomes: Fertility Rate

<b>Type of EPHT Indicator</b>	Health Outcome
<b>Measures</b>	Total fertility rate
<b>Derivation of measure(s)</b>	TFR = sum of age-specific fertility rates * 5
<b>Unit</b>	Rate per 1,000 women of reproductive age
<b>Geographic Scope</b>	Iowa
<b>Geographic Scale</b>	County
<b>Time Period</b>	Year
<b>Time Scale</b>	2000-most recent
<b>Rationale</b>	<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 affects 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>
<b>Use of the Measure</b>	<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>
<b>Limitations of the Measure</b>	<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>
<b>Data Sources</b>	<p><b>Numerator:</b> U.S. National Center for Health Statistics—Vital Statistics Reports</p>

	and/or state-specific vital statistics (for more recent years of data) <b>Denominator:</b> U.S. Census Bureau
<b>Limitations of Data Sources</b>	National-level data sources may differ slightly from state-level vital statistics data sources
<b>Related Indicators</b>	<ol style="list-style-type: none"> <li>1. Crude birth rate</li> <li>2. Age/race-specific fertility rates</li> <li>3. County-specific fertility rates</li> <li>4. Cohort/TFR rates</li> </ol>
<b>Recommendations for Future Development of the Indicator and Measures</b>	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)