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# BLUEPRINT *for* KENTUCKY'S CHILDREN

## ISSUE BRIEF SERIES

*The Blueprint for Kentucky's Children is a unified policy agenda for child advocates across the Commonwealth.*

*Our goal is to make Kentucky the best place to be young.*



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To learn more about the Blueprint for Kentucky's Children and current legislative priorities, visit [www.blueprintky.org](http://www.blueprintky.org)

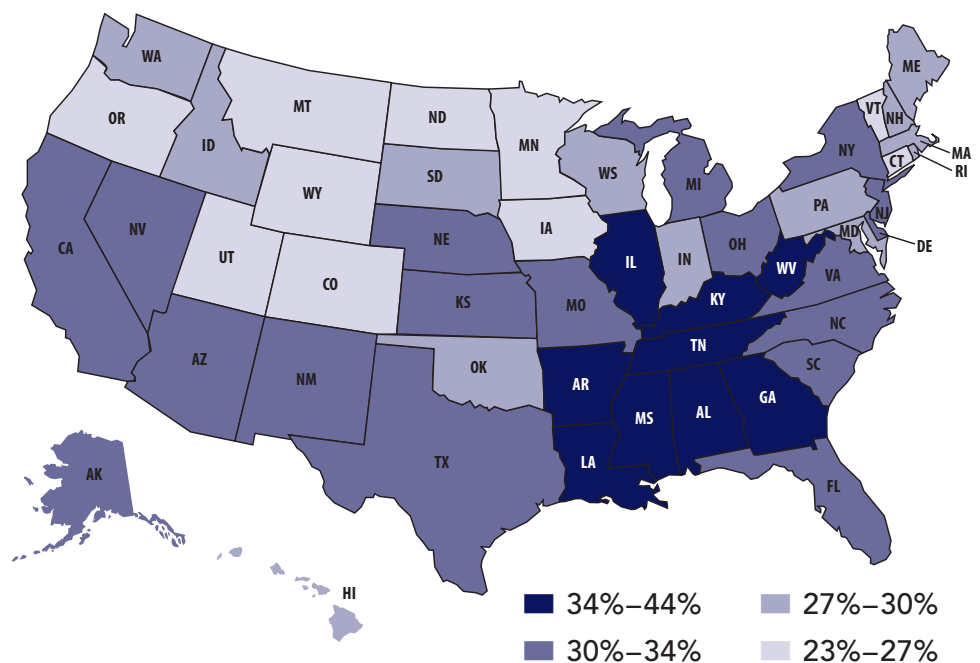
## Body Mass Index (BMI) Monitoring

*This issue brief serves as a tool to share the latest statistics, research, best practices, and the group's recommendations for action. This brief focuses on childhood obesity in Kentucky and presents a proposal for Body Mass Index Monitoring.*

All children deserve the opportunity to have the best health during their childhood so they are able to grow and develop into healthy adults. Childhood obesity puts many Kentucky children at risk and decreases overall health and wellness. Over the past three decades, rates of both adults and children who are overweight and

obese have grown. The prevalence of adult obesity in the United States increased from 15 percent in 1980 to 34 percent in 2008 based on a national survey.<sup>1,2</sup> Childhood obesity rates across the nation dramatically increased as well. For instance, the rate (for children ages 2 to 5) more than doubled (from 5.0 percent to 10.4 percent) during the past four decades.<sup>3</sup> The rate more than quadrupled for children ages 6-11 (from 4.0 percent to 19.6 percent) and the rate tripled for adolescents ages 12-19 (from 6.1 percent to 18.1 percent) during the same time period.<sup>4</sup>

**Percent of Overweight or Obese Youth – 2007**



Source: 2007 National Survey of Children's Health



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Kentucky obesity rates are also well above national averages. Self-reported surveys reveal that Kentucky has the 7<sup>th</sup> highest rate of adult obesity and the 3<sup>rd</sup> highest rate of childhood obesity in the nation.<sup>5</sup> Some 2 out of 3 adults and 1 out of 3 children are considered overweight or obese in Kentucky.<sup>6</sup>

Although the prevalence of overweight and obese children decreased slightly from 2003 to 2007, the rates are still high, comparatively. In addition, almost one-third of children ages 2 to 5 who are enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) are overweight or obese.<sup>7</sup> This growing epidemic has profound health and economic consequences now and for the future.

The problems associated with obesity are well documented. For children, obesity related health issues negatively affect academic achievement and attendance rates.<sup>9</sup> Research suggests that the health risks associated with obesity are greater than those of smoking, drinking, or poverty, each of which is strongly associated with poor outcomes and early mortality.<sup>10</sup> One 2005 study proposed that high obesity rates may for the first time cause children to have shorter life spans than their parents.<sup>11</sup>

Overweight children are almost twice as likely to become overweight adults than children of normal weight, and 70 percent of obese adolescents remain obese during adulthood.<sup>12</sup> Kentucky pediatric offices are now seeing children with diseases normally attributed to adults including Type 2 diabetes, hypertension, heart disease and arthritis.<sup>13</sup> Kentucky already ranks 42<sup>nd</sup> in the nation for adult diabetes, with 1 in 10 adults having diabetes. Estimates predict that 1 in 3 children born in Kentucky in 2000 will develop diabetes at some point in their life.<sup>14</sup>

Addressing obesity is critical as the consequences affect multiple sectors both directly and indirectly. For instance, approximately 10 percent of health care costs in the United States can be attributed to obesity. This totaled \$147 billion in 2008.<sup>15</sup> From 1998 to 2000, Kentucky adults paid over \$1.1 billion out-of-pocket for obesity related health care services.<sup>16</sup> If the current obesity trend continues, Kentuckians will pay approximately \$2.4 billion in 2013 and \$6 billion in 2018 on obesity-attributable health care services.<sup>17</sup> In addition, employers often become responsible for indirect obesity related costs in the form of increased absenteeism, disability, workers that are sick while at the workplace, and workers' compensation.<sup>18</sup>

## Obesity and Overweight Defined

The terms "overweight" and "obese" are labels for ranges of weight that are greater than what is considered healthy for a given height. The tool most commonly used for measuring this is Body Mass Index (BMI), which takes into consideration the ratio of one's weight to height. For children, the BMI formula includes age and gender to present a more accurate measure of health risks. After the BMI number is calculated, it is plotted on the Centers for Disease Control and Prevention BMI-for-age

growth charts to produce a BMI percentile ranking. BMI percentiles identify weight status categories, including underweight, healthy weight, overweight, and obese. BMI-for-age weight status categories and the corresponding percentiles are shown in the table below.

BMI percentiles are used by health care professionals to indicate possible weight problems and the associated risks. It is not a diagnostic tool. On an individual basis, a high BMI percentile does not always indicate weight problems; for instance, an athlete with extreme muscle mass may have a high BMI, yet he or she is most likely not obese. However, aggregate BMI percentiles are the most accepted indicator to track weight patterns over time. Both the American Academy of Pediatrics and the Centers for Disease Control and Prevention recommend using BMI to identify possible weight issues beginning at age two.

## The Importance of BMI Monitoring in Kentucky

In order to address the problem of obesity, solutions must be informed by data. Currently, all Kentucky data related to weight is self-reported and has shown to be under-reported.<sup>19</sup> Also, no county level statistics on children's weight are collected in Kentucky, making data-based decision-making difficult.

## Body Weight Categories

Categories	Percentile Range	Interpretation
Underweight	Less than the 5th percentile	The child weighs less than 95 percent of other children their age and sex
Healthy weight	5th percentile to less than the 85th percentile	
Overweight	85th to less than the 95th percentile	
Obese	Equal to or greater than the 95th percentile	The child weighs more than 95 percent of other children their age and sex

Source: Centers for Disease Control and Prevention

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Monitoring includes the systematic collection, analysis, and interpretation of data. BMI monitoring measures the percent of children in four main weight categories: underweight, healthy weight, overweight, and obese.<sup>20</sup> County-level BMI monitoring is important for Kentucky for the following reasons:

- ▶ **BUILD PUBLIC WILL:** Reliable data increases awareness of childhood obesity among community leaders, funders, policymakers, advocates, researchers, school personnel, and health care providers. The availability of quality data also helps guide immediate action in improving public health.
- ▶ **EVALUATE EFFECTIVENESS OF CURRENT PRACTICE:** Accurate data allows for programs to be properly planned, implemented, and evaluated ensuring that resources are spent most effectively and health problems are improved. Data analysis can also detect changes in health practices and the effects of these changes.
- ▶ **IMPROVE POLICY AND PROGRAMS:** Analyzing trends allows stakeholders to make better informed decisions in supporting evidence-based practices. Looking at trends can assist in prioritizing health spending.

▶ **INCREASE UNDERSTANDING:** BMI monitoring would provide information on how weight issues affect different groups of children such as differences in income, age, sex, race, and geography to better assess and solve the problem. Quality data allows stakeholders to measure the burden of a disease, to predict children who may be at higher risk, and to identify new or emerging health concerns. It also provides a basis for research.

## Proposed BMI Monitoring Process for Kentucky

The BMI monitoring process as proposed in Kentucky represents the most feasible and low-cost option identified to date. It involves a few steps, many of which are already in place.

First, the health care provider would calculate the BMI percentile. In Kentucky, many providers already calculate a child's BMI number for their own records. To obtain the BMI percentile, the provider would plot the child's BMI number on the CDC growth charts.

Next, the provider would record the BMI percentile on the child's Preventative Health Examination form, required for school entry before kindergarten and sixth grade.

A BMI percentile field would need to be added to the current form.

After this, school personnel would enter the BMI percentile into the Kentucky Student Information System (KSIS) Infinite Campus. School personnel already record some student health data and immunization information into the system. In the current software, there is already a blank field box for BMI percentile to be inputted. The BMI percentile would be one additional piece of data to enter. This information would then be saved into the statewide Infinite Campus database, accessible by the Kentucky Department of Education.

Finally the Kentucky Department of Education would aggregate the BMI percentiles on the state and local levels and make the data publicly available.

## Cost of BMI Monitoring in Kentucky

BMI monitoring would be low cost for Kentucky. Most proposed steps in the BMI monitoring process are already in place in Kentucky. The collection of BMI percentiles by health care providers is one additional step in the Preventative Health Examination process. There are no apparent additional costs to Kentucky to aggregate BMI data using the statewide Infinite Campus database.<sup>21</sup>

## Steps in Kentucky's BMI Monitoring Proposal



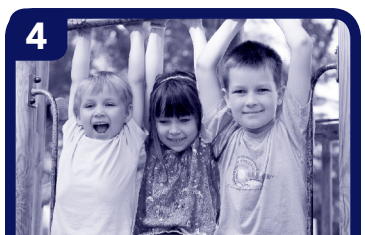
**1** The health care provider calculates the BMI percentile during a child's Preventative Health Examination before kindergarten and sixth grade and records it on the form.



**2** School personnel enter BMI percentile into Infinite Campus.



**3** Kentucky Department of Education uses Infinite Campus to aggregate BMI percentile data at the state and local level.



**4** School districts, public health officials, and policymakers use information to further prioritize students' health, to track progress in obesity prevention, and to ensure efficient use of state dollars.



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## Infinite Campus in Kentucky

Infinite Campus is Kentucky's Student Information System used by the Kentucky Department of Education. Infinite Campus is a national company providing customers with advanced student information systems. Today, Infinite Campus applications manage more than 4 million students in 43 states. Infinite Campus customers range from districts with fewer than 100 students to those with more than 100,000 as well as regional consortia, state departments of education and the federal government.

Kentucky's investment in Infinite Campus is about \$6 million and the system capabilities are vast. Kentucky is the only state that requires all districts to utilize the system to enter specific information on children. Once information is entered into Infinite Campus by districts, the information can automatically be saved into the state-level database included in the Infinite Campus software. The Kentucky Department of Education has access to this database and can use it to analyze data and create reports on state and local levels.

All necessary functions needed to do this are included in the current version of the software that Kentucky uses. This software also allows for the percentiles to be aggregated without students' names to protect their privacy. The only associated costs include minimal administrative costs to enter one additional piece of information into Infinite Campus and for the Kentucky Department of Education to aggregate the data using the statewide database.

Costs are also minimal to districts because this proposal is for BMI monitoring, not BMI screening. BMI screening programs are usually implemented at schools and are designed to assess the weight status of individual students to detect those at risk for weight-related health problems. Screening programs provide parents with personalized health information about their child including an explanation of the results and recommendations to follow.<sup>22</sup> BMI screenings have had mixed results and are not included in this proposal.<sup>23</sup>

## BMI Monitoring in Other States

The obesity problem in the United States has prompted states to find ways to accurately analyze the issue. BMI collection is the main tool states are using. To date, 20 states collect children's BMI data for various purposes using a variety of methods. Of Kentucky's surrounding states, Illinois, Missouri, Tennessee, and West Virginia collect BMI and use it on some level.

## Recommendations

Kentucky can obtain county-level BMI monitoring data by incorporating the following:

- ▶ Include BMI percentile as part of the kindergarten and sixth grade Preventative Health Examinations.
- ▶ Aggregate BMI data at the state level and by county.

## Endnotes

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