

Obesity is among the greatest public health challenges of our time. According to the Center for Disease Control and Prevention (CDC), more than one third of the U.S. population is obese; which puts those individuals at risk for a number of medical conditions, including heart disease, stroke, type 2 diabetes, and cancer.<sup>1</sup> Together with overweight, obesity is estimated to be the second leading preventable cause of death killing about 300,000 Americans each year.<sup>2</sup> In addition to these health concerns, obesity places a huge economic burden on the state. In 2006, the estimated cost associated with treating overweight and obesity in Nevada was 337 million dollars.<sup>3</sup>

An even more alarming trend is the growing prevalence of childhood obesity. Between 1980-2012 obesity rates for children more than tripled. Childhood obesity causes numerous physical and mental health problems including heart disease, type 2 diabetes, asthma, sleep apnea, depression and low self-esteem, which could also have a negative effect on children's learning abilities and academic performance. Obese children and adolescents are also more likely to become obese adults, which further increases the impact of this growing epidemic.<sup>4</sup>

The latest Nevada Kindergarten Health Study (2014-2015) conducted by the Nevada Institute for Children's Research and Policy within the UNLV School of Community Health Sciences found that 31.5% of children entering kindergarten are already overweight or obese.<sup>5</sup> As statistics continue to increase and threaten the quality of life of individuals, governments at all three levels seek ways to reverse the trends. In 2010, the United States Surgeon General Regina M. Benjamin called for a nationwide grassroots effort to prevent obesity, focused not only on personal choices and behaviors, but also on the characteristics of social and physical environments. In her message, she highlighted the role of schools, among other settings, as playing a critical role in preventing obesity and encouraged the implementation of school programs promoting physical activity and healthy nutrition.<sup>6</sup> One of the latest approaches in addressing obesity that has gained national attention is the body mass index measurement of students in schools.

Body mass index (BMI) is estimated as a person's weight divided by their height squared ( $BMI = \text{kg}/\text{m}^2$ , or  $BMI = \text{lb}/\text{in}^2 * 703$ ). While BMI is not a direct measure of body fat, it does correlate with body fat, and is widely used to estimate a person's risk of weight-related health problems. There are other, more sophisticated measures, of body fat, such as skinfold thickness measurement, underwater weighing, computerized tomography (CT) and magnetic resonance imaging (MRI), but they are much more invasive and expensive to administer.<sup>7</sup> BMI is the

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<sup>1</sup> <http://www.cdc.gov/obesity/data/adult.html>

<sup>2</sup> <https://www.wvdhhr.org/bph/oehp/obesity/mortality.htm>

<sup>3</sup> [http://www.gethealthywashoe.com/fb\\_files/reports\\_obesity\\_plan.pdf](http://www.gethealthywashoe.com/fb_files/reports_obesity_plan.pdf)

<sup>4</sup> <http://www.cdc.gov/healthyschools/obesity/facts.htm>

<sup>5</sup> [http://nic.unlv.edu/files/KHS%20Year%207%20Report\\_Final\\_.pdf](http://nic.unlv.edu/files/KHS%20Year%207%20Report_Final_.pdf)

<sup>6</sup> [http://nic.unlv.edu/files/KHS%20Year%207%20Report\\_Final\\_.pdf](http://nic.unlv.edu/files/KHS%20Year%207%20Report_Final_.pdf)

<sup>7</sup> <http://onlinelibrary.wiley.com/store/10.1111/j.1746-1561.2007.00249.x/asset/j.1746-1561.2007.00249.x.pdf?v=1&t=ip3sei2i&s=a4fa242ccb738b8d2de882fe3cdd873eb33ffa04>

most basic and most common way of measuring body fat that is also inexpensive and easy to calculate. Despite its limitations, BMI has shown results comparable to the most accurate measures available, and has been proven to predict higher risk of chronic diseases and early death.<sup>8</sup>

On June 30, 2015, the requirement for school districts to collect the height and weight data from a representative sample of Nevadan students in 4<sup>th</sup>, 7<sup>th</sup>, and 10<sup>th</sup> grades sunset. This information was used to calculate the average BMI for students across the state and was used for a variety of purposes, including:

- Describing trends in weight status over time;
- Identifying demographic groups at higher risk of obesity;
- Increasing awareness on the extent of obesity among youth;
- Driving improvements in public policy and practice, as well as services aimed at preventing and treating obesity;
- Monitoring the effects of new and existing programs; and
- Measuring progress towards achieving specific goals.

Without this information, Nevada may struggle to qualify and compete with other states when applying for federal funding or philanthropic grants. Many grant awards, such as those funded by the Centers for Disease Control and Prevention (CDC), increasingly require proof that their resources are making a positive impact on public health. This would put further strains on Nevada, which, according to a Trust for America's Health and Robert Wood Johnson Foundation report, ranked 31<sup>st</sup> in the nation for the amount of funding received by the CDC.<sup>9</sup>

Some of the grants that have been awarded to Nevada in the past, which used BMI data to apply for funds, include:

- CDC grant funding the Communities Putting Prevention to Work (CPPW) initiative designed to tackle obesity and tobacco use throughout 50 different communities in Nevada;<sup>10</sup>
- The Partnerships to Improve Community Health (PICH) grant (\$2,650,555) awarded to the Southern Nevada Health District to drive down chronic diseases in Clark County;<sup>11</sup>
- \$1.3 million grant received by the Lincy Foundation that was used mainly to fund the Healthy Schools Program, which aims to improve schools in the areas of nutrition, physical activity and staff wellness.<sup>12</sup>

Although we do not currently have an exact estimate of the total cost associated with school-based BMI measurements in the state of Nevada, we anticipate that all costs would far outweigh the benefits of implementing the program. For example, in 2014 the Nevada Wellness issued a report on the BMI Data Collection Status in Nevada for the period between 2011-2012 (during that time only two counties, Washoe and Clark, conducted BMI measurements and only on a sample of students). The report provided the following estimate annual costs associated with BMI data collection: \$128,554 for equipment (one-time cost), \$116,999

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<sup>8</sup> <http://onlinelibrary.wiley.com/store/10.1111/j.1746-1561.2007.00249.x/asset/j.1746-1561.2007.00249.x.pdf?v=1&t=ip3sei2i&s=a4fa242ccb738b8d2de882fe3cdd873eb33ffa04>

<sup>9</sup> <http://www.rwjf.org/en/library/research/2010/03/shortchanging-america-s-health.html>

<sup>10</sup> [http://www.cdc.gov/nccdphp/dch/programs/communitiesputtingpreventiontowork/communities/profiles/both-nv\\_clark-county.htm](http://www.cdc.gov/nccdphp/dch/programs/communitiesputtingpreventiontowork/communities/profiles/both-nv_clark-county.htm)

<sup>11</sup> <http://southernnevadahealthdistrict.org/news14/092514-snhd-awarded-2-mil-to-drive-down-disease-in-clark-county.php>

<sup>12</sup> [https://schools.healthiergeneration.org/\\_asset/xk4xez/](https://schools.healthiergeneration.org/_asset/xk4xez/)

for labor (including salaries and training), and \$870 for materials, for an initial cost of \$246,423.<sup>13</sup> Deducting the one-time cost of equipment, the average yearly cost would be \$117,879.

### Recommendations:

The Children's Advocacy Alliance recommends that the Nevada Legislature mandate the annual collection of BMI data in school for surveillance purposes. We also recommend that legislators ensure the following elements:

- **Anonymity** – Students' data must be collected, analyzed, and interpreted anonymously, and without sharing individual children's weight status to avoid potential negative outcomes, such as privacy breach, bullying, or lowering students' self-esteem;
- **Privacy** – Height and weight measurements must be taken in private and by a trained technician to ensure that children do not suffer any adverse effects in the process.
- **Opting-out** – Parents must be notified in advance about the measurements taking place in schools and also be given an opportunity to opt their children out of the program if they wish do not want their child to participate.



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<sup>13</sup><http://dpbh.nv.gov/uploadedFiles/dpbhnavgov/content/Boards/CWCD/Meetings/2014/Exhibit%20C%20BMI%20Data%20Collection%20Nevada%20School%20Districts.pdf>