



Invited Commentary

School meals matter: federal policy can improve children's nutrition and health (Jia *et al.* 2020)

At a time when the United States is grappling with two major public health crises, the COVID-19 pandemic and systemic racism and inequities, one might reasonably ask, 'Why care about school meals?' The answer, in part, is provided in a paper by Jia *et al.* published in this issue of the journal, titled: Changes to Dietary and Health Outcomes Following Implementation of the 2012 Updated US Department of Agriculture (USDA) School Nutrition Standards: Analysis Using NHANES, 2005–2016⁽¹⁾. The study finds that students who eat school meals daily ate less saturated fat and sugar than students not eating school meals. Further, these regular school lunch eaters had smaller increases in the prevalence of overweight/obesity.

The study by Jia *et al.* provides evidence in support of the federal nutrition policy that reaches more children in the USA than any other nutrition programme in the country – the National School Lunch Program, which is overseen by the USDA. Nearly all elementary, middle and high schools (approximately 95%) participate in the National School Lunch Program⁽²⁾. In 2018–2019, US schools served over 4.8 billion lunches to nearly 30 million children⁽³⁾. Three out of every four school lunches were provided to children from lower income families who qualify for free or reduced-price meals. As in USDA data, in the study by Jia *et al.*, students who regularly ate school meals were more likely to come from lower income families and be non-Hispanic Black or Hispanic students than those who did not participate, illustrating this programme's broad reach and potential to reduce diet and health disparities. School meals provide up to half of a child's daily energy intake and help to reduce food insecurity⁽⁴⁾. Not having enough nutritious food can interfere with children's ability to learn and succeed in school^(5–7). The USA is now experiencing historic levels of food insecurity due to the COVID-19-related economic downturn. Recent reports find that in May 2020, 41% of black families with children experienced food insecurity, compared with 24% of white families with children⁽⁸⁾.

Jia *et al.* showed how school meals can also impact child health and reduce health disparities. The study is among the first to examine the impact of the timing of implementation of the updated school meal standards that were mandated by the Healthy, Hunger-Free Kids Act (HHFKA) of 2010⁽⁹⁾ in relation to dietary intakes in a

nationally representative sample of children. The meal standards, updated to align with the 2010 Dietary Guidelines for Americans, were phased in beginning in 2012–2013 (the school year when most changes to school lunch requirements occurred). For school lunches to qualify for reimbursement, specific amounts of fruits now have to be offered daily and subgroups of under-consumed vegetables have to be offered weekly. More whole grains are required, and dietary energy is limited to ensure appropriate portion sizes. Jia *et al.* used a difference-in-difference design to compare changes in weekday dietary intakes estimated from 24-h dietary recall records collected on cross-sectional samples of students in grades K–12 (n 9172). Comparisons between students who usually participated in the school lunch programme on a daily basis and those who reported not eating lunch from school were made from before (2005–2010), during (2011–2012) and after (2013–2016) the HHFKA updates.

Students who ate school meals daily consumed less saturated fat and added sugars – sources of extra dietary energy that contribute little nutritional value – and had a lower increase in the prevalence of overweight and obesity. These relationships were significant after adjusting for student and family-level characteristics such as race/ethnicity, family income and grade level (elementary, middle of high). The difference in the prevalence of overweight and obesity (BMI at or above the 85th percentile) of 6% observed in this study between those who did and did not regularly eat school meals is substantial. To put this number into context, in the Shape-Up Somerville study, an oft-cited successful community-based intervention, resulted in a 4% decrease in the prevalence of overweight and obesity over 2 years⁽¹⁰⁾.

Although Jia *et al.* did not find an association between school lunch participation and daily fruit and vegetable intake in the overall sample, when data were examined by race/ethnicity, several associations emerged. Daily school lunch participation was associated with increases in fruit and vegetable intake of 0.37 cups/d for non-Hispanic Black students and 0.27 cups/d for students whose race/ethnicity was categorised as 'other'. Among Hispanic students, daily participation in the school lunch programme was associated with a 0.29 cup/d decrease in

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fruit and vegetable intake; no difference was observed among non-Hispanic white students. Findings from other smaller-scale or shorter-term national studies^(11–15) have come to similar conclusions: healthier school meals result in overall healthier child diets.

How do the current public health crises involving COVID-19 and systemic racism relate to the importance of school meals? Due to a long history of racial injustice, children of colour in the USA are more likely to be overweight or obese and have lower quality diets than white children^(16–20) and the differences are striking. For example, the prevalence of obesity in non-Hispanic black (22.0%) and Hispanic (25.8%) children is roughly double the prevalence in non-Hispanic white (14.1%) and Asian (11.0%) children aged 2–19 years in the USA⁽¹⁹⁾. While we continue to learn about the aetiology of COVID-19, early evidence suggests that people of colour and those with conditions related to poor diets, such as obesity, diabetes and heart disease, are more vulnerable to severe illness and death from COVID-19 infection^(21–24). It is equally clear that school meals serve high rates of low-income children who are most at risk of diet-related illness.

The dual public health crises we face provide a unique opportunity to ensure that school meals reduce rather than exacerbate health inequities. What can we as public health researchers, practitioners, advocates and decision-makers do? First, we should object to any rollbacks to the HHS standards. For example, the USDA recently sought to allow higher fat, higher energy versions of chocolate and other sugar-added flavours of milk back into school meals and to reduce the whole-grain requirements⁽²⁵⁾. Yet, studies have shown that schools are meeting the HHS school meal nutrition standards^(26–28), and food waste and meal participation rates have not appreciably changed as a result^(11,12,29–31). At a time when children of colour are suffering disproportionately higher rates of nutrition-related chronic disease, making school meals less nutritious is irresponsible. To put the health crisis of poor nutrition into perspective, in 2017, approximately 647 000 people died from heart disease, 146 000 from stroke and 84 000 from diabetes⁽³²⁾.

Second, we should make school meals available to all students as an integral part of the school day – without additional charge – like all other school services. The differences in school meal participation are part of the systemic racism and economic inequality that needs to be dismantled. Many more children would participate in school meals if eating lunch provided by the school was the norm and it was offered free to all. A ‘universal’ school meal model would reduce stigma, eliminate shaming when families have difficulty paying, and remove the administrative costs involved in documenting student eligibility and collecting student fees⁽³³⁾. To reduce the costly consequences of obesity and preventable nutrition-related disease, widespread improvements in what we eat are needed. Time is overdue to model healthy eating to all children, and there is no better place to do that than in schools.

Finally, instead of allowing less nutritious foods to creep back into school meals as the USDA has proposed⁽³⁴⁾, we should provide more funding to enable schools to serve higher quality meals. USDA reimbursement rates for school lunch did not cover the full costs of meals before the pandemic⁽²⁷⁾. COVID-19 is making matters worse. Since March 2020 when schools began closing to reduce the spread of the virus, the USDA has approved waivers allowing schools to safely distribute meals to children⁽³⁵⁾. According to a survey of school nutrition directors conducted in May, nearly all (99.4%) have continued to provide school lunch⁽³⁶⁾. However, the majority anticipate financial shortfalls from revamping school meal service (estimated at over \$600 million among 900 school districts alone), and only half of districts expect having funds in reserve to cover losses. Let’s help schools recover from feeding children during the pandemic as well as invest in child health moving forward by fully covering the costs of healthy meals for all students.

As we extend much deserved gratitude to the healthcare workers on the front lines addressing the pandemic and to the community organisers and protesters who are risking their safety to highlight the inequities that must be addressed, we should not forget the heroes in school foodservice who dedicate themselves daily to nourishing our children. Providing schools with the resources needed to ensure that all students have the opportunity to be well nourished and establish healthy patterns for life is an essential ingredient for a healthy democracy⁽³⁷⁾.

Crises, as painful as they are, can serve to sharpen our focus on critical needs and viable solutions. Let us apply these lessons learned by making permanent improvements to school meals to address both health and social equity going forward.

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