

Pandemic Pounds Are Real for Kids

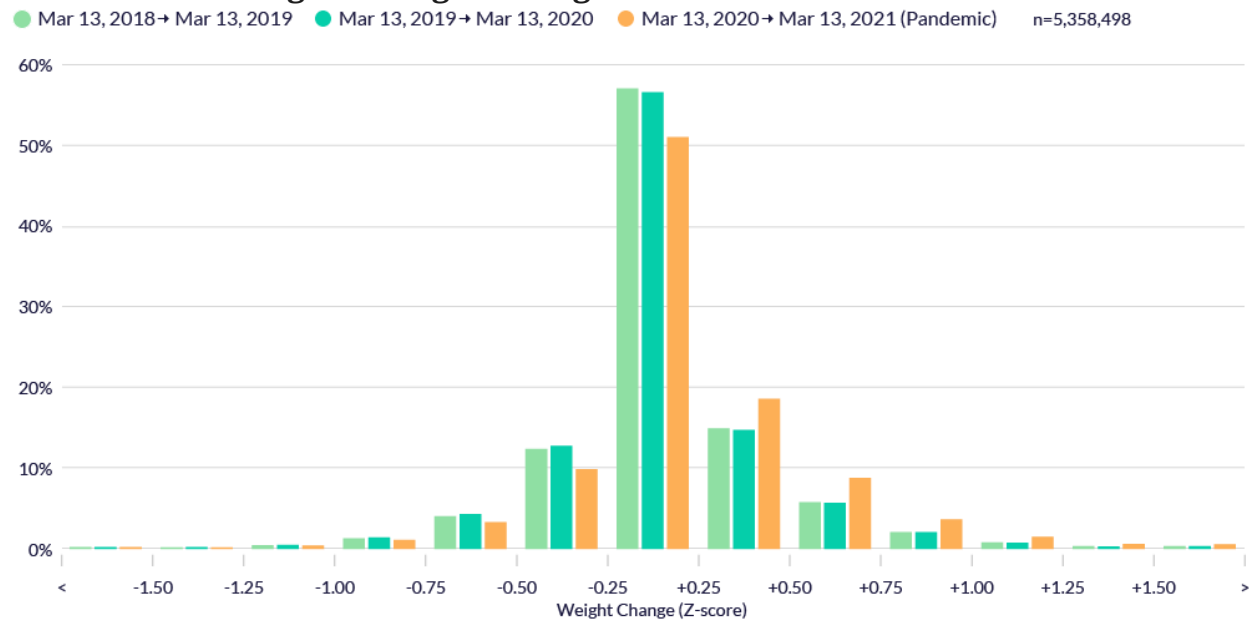
Team A: Brad Fox, MD | Joe McNitt | Lily Rubin-Miller, MPH
Team B: Christopher Alban, MD, MBA | Xander Posner, MPH
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Abstract: Pediatric patients exceeding expected weight gain increased 41% during the pandemic.

We examined 5,358,498 pediatric patient records to determine whether the patients gained more weight than expected during the COVID-19 pandemic. We found that prior to the pandemic, 23.9% of pediatric patients were above their expected weight, while during the pandemic period, 33.8% of pediatric patients were above their expected weight, a 41% increase from the pre-pandemic period.

Pediatric patients are expected to gain weight following typical growth curves. We compared the expected weight gain to actual weight gain and represented the difference as a change in Z-score to normalize the measure. A change in Z-score of zero means the patient is gaining weight as expected. A negative Z-score change means a patient has gained less weight than expected, and a positive Z-score change indicates greater weight gain than expected. Figure 1 shows the percentage of pediatric patients whose weight changed by a larger amount than expected, a smaller amount than expected, or the same amount as expected, based on relevant CDC growth curve data sets.

Year-to-Year Weight Change Among Pediatric Patients



"Year-to-Year Weight Change Among Pediatric Patients" 2021. Epic Health Research Network (EHRN.org)

Figure 1. Weight change by year for pediatric patients. The green bars represent the two measurement periods before the COVID-19 pandemic, and the orange bars represent the pandemic measurement period.

We found nearly 1 in 10 pediatric patients gained more weight than expected during the pandemic compared to the year prior. This differs from what we found for adults, who were equally [likely to gain or lose weight during the pandemic](#).¹

These data come from Cosmos, a HIPAA Limited Data Set of more than 112 million patients from Epic customers. This study was completed by two teams, comprised of clinicians and data scientists, which independently acquired and analyzed data. Overall, the two teams came to similar conclusions. Data are pooled from 105 healthcare organizations representing 536 hospitals and 9,074 clinics.

References

1. Alban C, Fox B, Posner X, Rubin-Miller L; Pandemic Pound Theories Don't Hold Weight. EHRN.org. 2 July 2021. <https://ehrn.org/articles/pandemic-pound-theories-dont-hold-weight>

Data Definitions

Term	Definition
Z-Score	A Z-score is a measure reflecting the number of standard deviations that a sample value is away from the mean. It is a measure of difference from 50th percentile (median), taking into account the various weight distributions of age and sex.
Pediatric Patient	Non-pregnant patients from ages 2 to 18.
Measurement	Documentation of weight in pounds for a patient during an encounter. If there are multiple measurements in a single encounter, we use the final measurement.
Weight Change	<p>To analyze the effect of the pandemic on pediatric patients' weight, we defined March 13, 2020 – the date of the COVID-19 emergency declaration in the U.S. – as our starting point. We then defined “baseline” and “endline” periods that we used to find patients' weight measurements and calculate weight change.</p> <p>“Baseline” is the period in which we find the patient's most recent weight on or after March 13, 2019, and before March 13, 2020. For example, a patient is seen and has weight documented on June 1, 2019, and January 30, 2020; the weight documented on January 30, 2020, is most recent and is the “baseline” weight.</p> <p>“Endline” is the period in which we find the patient's most recent weight on or after April 13, 2020, and before March 13, 2021. The 30 days between March 13 and April 13, 2020, represent the initial period in which individuals in many states were ordered to “shelter in place” or “stay at home,” so we started looking for weights documented 30 days after the initial emergency declaration.</p> <p>The two periods prior to the pandemic in green (Figure 1) follow the same logic. For the period labeled “March 13, 2018, to March 13, 2020,” baseline weight measurements are those documented on or after March 13, 2018, and before March 13, 2019; endline weights are those documented on or after April 13, 2019, and before March 13, 2020. For the period labeled “March 13, 2017, to March 13, 2019,” baseline weight measurements are those documented on or after March 13, 2017, and before March 13, 2018; endline weights are those documented on or after April 13, 2018, and before March 13, 2019.</p> <p>Weight differences greater than 200 (> 200-pound gain) and less than –200 (> 200-pound loss) were excluded, as these likely indicate errant weight measurements at baseline, end weight, or both.</p>