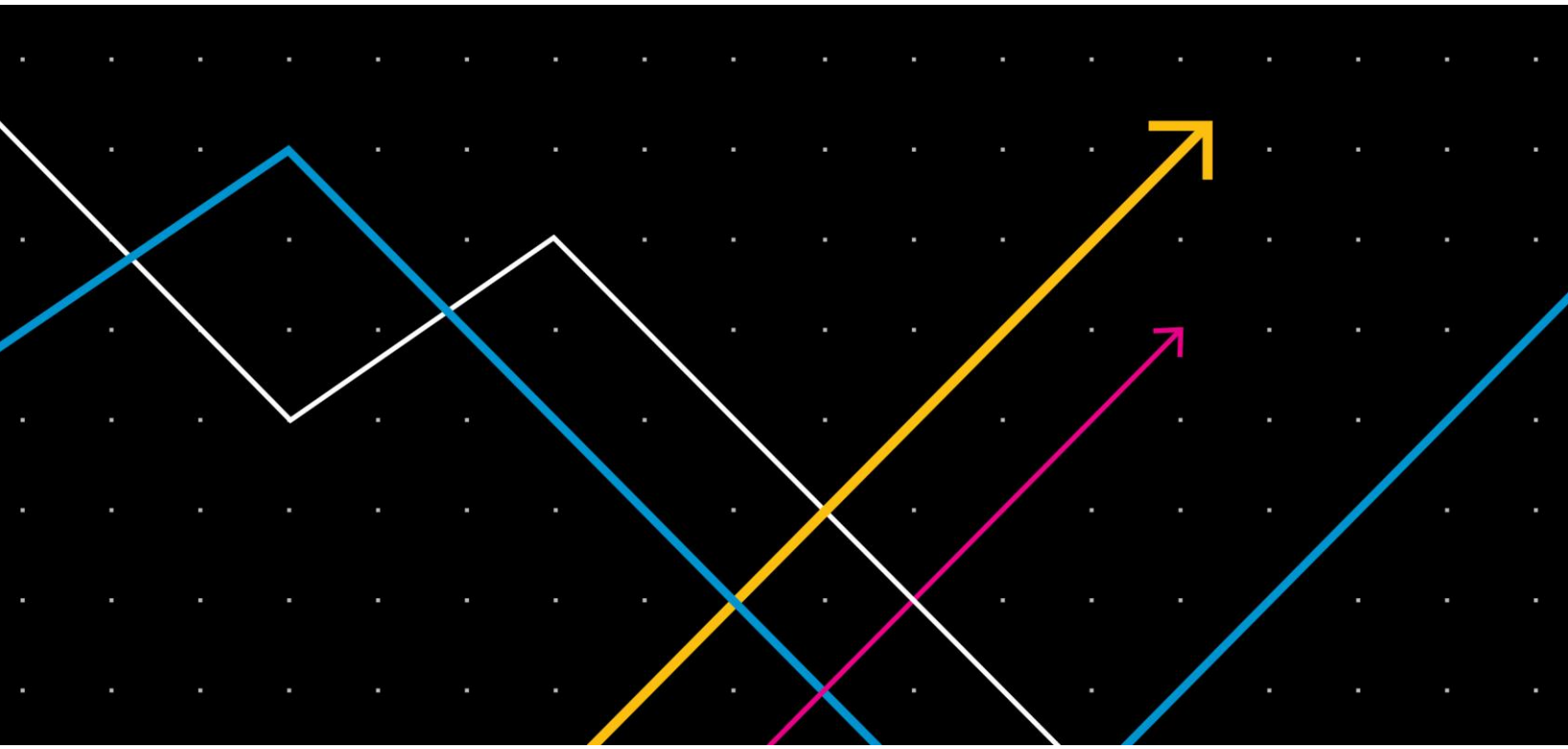

RESEARCH REPORT

Identifying a New "At-Risk" Measure

Building a Measure That Will Facilitate School District Funding and Increase Access to School Meals

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December 2021

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Contents

Acknowledgments

This report was funded by the Colorado Legislative Interim Committee on School Finance. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

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We are grateful to Kim Reuben, Matthew Chingos, and Richard Auxier for their thoughtful feedback and input on our work. We are also grateful to Tomás Monarrez for his thorough statistical code review. This report would not have been possible without those who gave our research team time to learn from their expertise. We thank Kate Bartlett, Amber Egbert, Crystal FitzSimons, Jessica Gould, Tim Kahle, Alice Larson, Leo Lopez, Bret Miles, Michelle Murphy, Zoe Neuberger, Robert O'Donnell, Dan Schaller, Eric Valcheff, Michael Wiltfong, and others for their contributions.

Executive Summary

Colorado allocates additional school district funding for "at-risk" students, currently defined as students eligible for free and reduced-price meals. But this measure may not fully capture economically disadvantaged students who need extra academic support, and it hinders some school districts from adopting universal meal programs. This report summarizes information and feedback collected from Colorado stakeholders and national experts, as well as Colorado-specific data, to assess seven proposed at-risk measures.

The measures we assess are as follows:

- **Identified student percentage (ISP).** Share of students directly certified or categorically eligible for free meals
- **ISP with Medicaid expansion.** Share of students directly certified or categorically eligible for free meals, supplemented by an expansion of the direct certification link to Medicaid and Child Health Plan Plus (CHP+) program participation
- **Share below a given poverty level, as determined by tax records.** Share of students below a given federal poverty level, as determined by a link to state and federal tax records
- **Neighborhood Socioeconomic Status (SES) Index.** Student needs weighted based on five SES neighborhood factors, linked to each student's census block group
- **Small Area Income and Poverty Estimates (SAIPE).** Share of students from a household below the federal poverty level, based on the students' residential location within a geographic school district
- **School Neighborhood Poverty Estimate (SNP).** School-level measure of the average income-to-poverty ratio of 25 households with children living closest to each school, based on five-year American Community Survey estimates
- **Alternative family information forms.** Information families submit directly on household size, household income, and potentially other need factors

Each at-risk measure has advantages and disadvantages. Our goal is for the at-risk measure to best reflect state stakeholders' concerns and needs. Based on feedback from our survey and from interviews, we assembled criteria that an ideal at-risk measure should meet.

For Colorado, a strong at-risk measure for district funding would improve free meal access, capture all students, align in scale with the current free and reduced-price lunch (FRPL) share, reflect actual student enrollment, and minimize school burden and cost. When assessing these options on these criteria and on their potential to affect funding for districts serving different groups, we identified three potential new at-risk measures for Colorado:

- **ISP with student-centered SES neighborhood weights.** If Colorado wanted to adopt a new at-risk measure within the next year, we recommend that it adopt the ISP (students identified through direct certification or categorical eligibility), combined with a weight for students' neighborhood SES.
- **ISP, supplemented by a link to Medicaid data, with a student-centered SES neighborhood weight.** If Colorado has more time to implement a measure, we recommend a new at-risk measure similar to the first option that includes a Medicaid link for direct certification. Adopting a Medicaid link would also expand the share of schools and districts eligible for universal free meals, capturing additional benefits for students. This measure could be combined with a weight for students' neighborhood SES.
- **Link to state revenue data, with a student-centered SES neighborhood weight.** If the state wants to eliminate the link between school meals eligibility and the at-risk measure, we recommend implementing a link to state and federal tax data. This measure could be combined with a weight for students' neighborhood SES.

The transition to a new at-risk measure will have challenges. We can only *estimate* the distributional effects of these new measures, so we suggest that, at least in the first year, Colorado focus on solving implementation challenges and testing how using actual student-level data may affect funding distribution. When the measure is finally in place, we recommend a hold-harmless period of at least five years, so that districts are not adversely affected by the transition to a new measure.

Colorado has an opportunity to improve how it allocates dollars for low-income students and to increase use of universal school meals once pandemic waivers for meals have ended. Any of these three measures could best facilitate these goals.

Identifying a New "At-Risk" Measure

Introduction and Research Evidence

Colorado defines at-risk students as those who are eligible for free and reduced-price lunch (FRPL) and allocates additional dollars for their education. But the adoption of universal free meal programs—through school and district adoption of the Community Eligibility Provision (CEP) as well as the temporary expansion of free meals during the pandemic—weakens this measure as an accurate count of low-income students. Families are less likely to return forms when their students already receive free meals, threatening an accurate at-risk count. Because of this, districts and schools may opt out of using CEP to protect their state funding, causing students to lose out on academic, behavioral, and health benefits.

This report explores alternative at-risk measures for Colorado's funding formula. A new at-risk measure could provide multiple benefits to Colorado students:

1. It would allow more districts to take up universal free meals (CEP), even after the pandemic.
2. It could reduce the paperwork burden on schools, particularly those that participate in CEP.
3. It could render a more accurate and robust count of at-risk students.

Research Evidence on Universal Free Meals

Universal free school meals reduce stigma for students who rely on free meals and have been shown to improve academic outcomes, socioemotional skills, and health outcomes (Cohen et al. 2021). Before the pandemic, schools and districts could provide universal free meals under certain US Department of Agriculture (USDA) provisions. The most popular option is CEP, which allows schools with high shares of students whose households participate in social safety net programs like the Supplemental Nutrition Assistance Program (SNAP) to access free meals for all students.

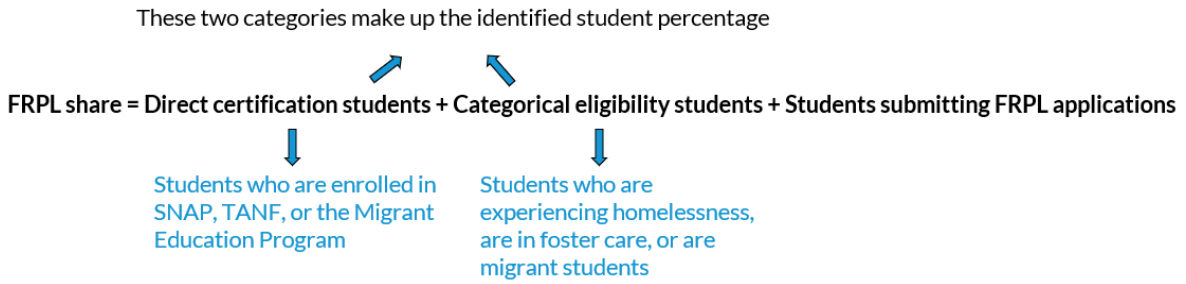
Eligibility for CEP is dependent on a school or district's identified student percentage. In Colorado, the ISP is composed of two groups of students:

- **Directly certified students.** Students who are administratively linked to their household's participation in SNAP, Temporary Assistance for Needy Families (TANF), or the Migrant Education Program.
- **Categorically eligible students.** Students who are eligible for free meals because of their verified status as experiencing homelessness, being in foster care, or being a migrant student.

FIGURE 1

Components of the FRPL Share

FRPL is made up of students who are eligible via administrative link, via participation in a program, or through a paper application



Note: FRPL = free and reduced-price lunch; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

Students who are part of the ISP do not have to submit meals applications. The FRPL share is the ISP plus the share of students who are identified as eligible through the submission of a meals application (figure 1). As a result, the ISP is almost always lower than the FRPL share.

Studies have indicated that schools that adopt CEP see small improvements in math scores and, to a lesser extent, in reading scores (Gordanier et al. 2020; Ruffini 2021). CEP adoption also appears to reduce disciplinary infractions for some students (Gordon and Ruffini 2021) and improve school climate (Gutierrez 2021; Taylor et al. 2020). Universal meal programs also promote student health, lowering body mass index and increasing the share of students at a healthy weight (Davis and Musaddiq 2018; Davis, Kreisman, and Musaddiq 2020; Rothbart, Schwartz, and Gutierrez 2020). And the effects of CEP even ripple out to students' families, lowering the use of local food banks (Ozturk, Pekgun, and Ruffini 2021), reducing grocery costs (Handbury and Moshary 2021), and reducing household food insecurity (Marcus and Yewell 2021).

We estimate that just 4 percent of Colorado's students were enrolled in a CEP school in the 2019–20 school year, even though as many as 15 percent of students may be enrolled in a school that would

qualify for the program in 2021–22. Colorado schools and districts are less likely to adopt the program because it tends to reduce the number of students who submit alternative income forms for verification of their at-risk status, which can lower state funding allotments.

Research Evidence on Increased Funding for Low-Income Students

Providing additional dollars for low-income students has been shown to improve short- and long-term student outcomes and increases in K–12 student funding are associated with increases in standardized test scores (Lafortune, Rothstein, and Schanzenbach 2018) and in high school graduation rates (Candelaria and Shores 2019). Even after students leave school, attending schools with higher K–12 funding is related to higher levels of postsecondary enrollment (Hyman 2017), higher earnings (Jackson, Johnson, and Persico 2014), and improved intergenerational socioeconomic mobility (Biasi 2019).

Improving the accuracy of the at-risk measure in Colorado and expanding the amount of funding for students overall could have a substantial impact. Even after adjusting for local labor costs, Colorado spends roughly $1,500 less per student than the United States average.[1] Further, the state spends just 5 percent more on the average student from a household below the federal poverty level, relative to the average student from a household above the poverty level.

The Definition of "At Risk"

This study considers "at risk" to represent students who are at risk of below-average academic outcomes because of economic disadvantage or poverty. How this socioeconomic disadvantage is identified and defined is the foundation of our work, as there are many ways to identify low-income students. But we recognize there are other ways a student can be at risk. For example, Colorado has a definition of a "high-risk student," which is used to categorize students enrolled in Alternative Education Campuses. This definition does not include whether a student is from a low-income household but rather documents experiences or behaviors that may lead to placement at an Alternative Education Campus, such as juvenile delinquency, dropping out of school, habitual truancy, family history of neglect or domestic violence, being a parent or pregnant, or having a history of mental or behavioral health issues (ADAU 2018).

Beyond the risk for poor academic outcomes related to economic disadvantage, other conditions make it more expensive to educate specific student populations or help them succeed. These characteristics include being an English language learner, requiring special education services and/or

gifted and talented services, and access to career and technical education programs. Funding for these needs is captured by other elements of the Colorado funding formula. Further, Colorado provides supplemental funding for small or remote rural districts.

Colorado does not explicitly set aside funding for students who have poor academic outcomes, though, in the aggregate, exposure to household poverty—particularly, exposure to persistent poverty—is strongly associated with worse academic performance (Dynarski and Michelmore 2017). We do not consider an at-risk measure based on school- or student-level academic outcomes because few states include such a measure in their formula, and states typically use it to supplement a more traditional poverty-based measure. Further, allocating funding based on poor student performance could adversely affect districts; if a district improves student academic outcomes, it may see reduced funding the following year.

Methodology: Surveys and Interviews

We administered a survey to understand stakeholders' perspectives on the current at-risk measure and possible alternative measures (appendix A). The Legislative Interim Committee on School Finance disseminated the survey via email to an array of stakeholders, including those that work for a school district or school, state agency employees, people holding legislative positions, school board or city government members, advocacy or government relations organization staff members, and parents and guardians. The survey link was widely shared via email and Twitter, resulting in a snowball sampling of stakeholders. Respondents completed the survey online through the survey platform Qualtrics by either computer or phone and were given one week to answer the survey, which concluded on October 11.

To capture detailed perspectives, we interviewed more than 30 stakeholders and organizations. Interview participants included several Colorado organizations with interest in the at-risk measure and organizations outside Colorado with key knowledge about potential alternative measures. Organizations represented include the Center on Budget and Policy Priorities, the Colorado Association of School Boards, the Colorado Association of School Executives, the Colorado Charter School Institute, the Colorado Department of Education, the Colorado Education Association, the Colorado League of Charter Schools, the Colorado Rural Schools Alliance, the Colorado School Finance Project, Crocus LLC, the Colorado Department of Health Care Policy and Financing (DHCPF), the Department of Revenue, Douglas County School District Nutrition Services, The Education Trust, the Colorado School Finance Project, the Food Research and Action Center, Hunger Free Colorado,

Littleton Public Schools Nutrition Services, the Massachusetts Office of District and School Finance, Migrant Legal Action Program, the Oregon Department of Education, Ready Education Network, and the Texas Education Agency.

To initiate interviews, we emailed contacts to inquire about interest in participating in an interview to discuss the current at-risk measure and alternative possibilities. Interviews generally lasted a half hour and took place during October and November 2021. Similar to the stakeholder survey, interviewees often referred us to additional stakeholders and organizations for further interview opportunities.

Surveys and Interview Findings

The survey garnered responses from 193 respondents. We received survey responses reflecting many perspectives, including those of school and district leaders, advocates, and government stakeholders. Of the 193 respondents, 128 identified as school or district leaders, 21 were members of advocacy or government relations organizations, 17 were parents or guardians, 11 identified as "other," and 16 were members of a state agency focused on serving K–12 students, state legislators, or local school board members.

Survey Results

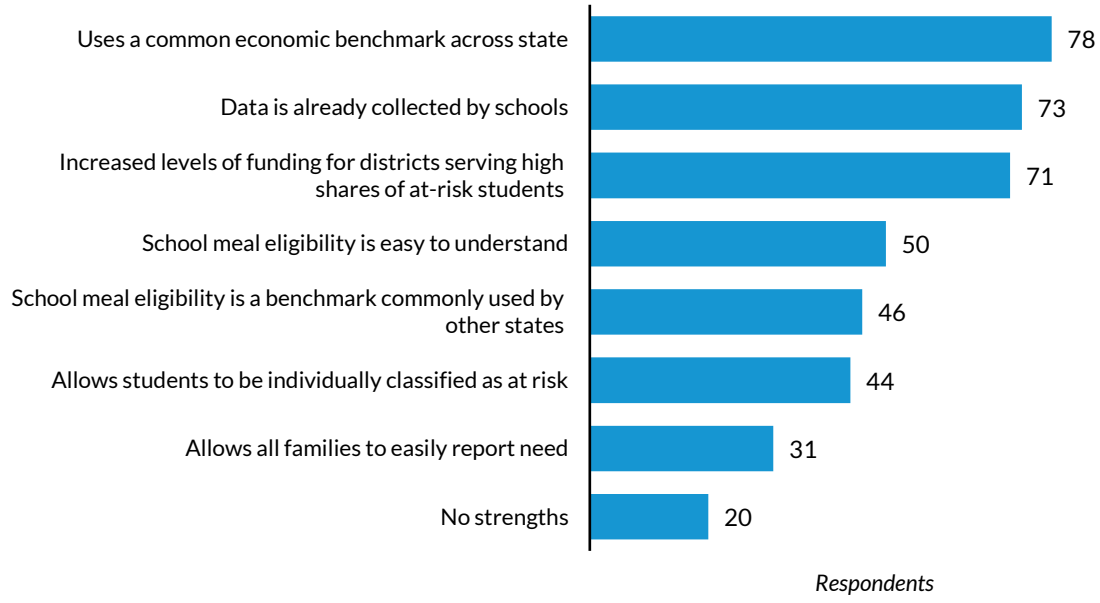
Sixty-two percent of the survey respondents were "strongly" or "somewhat" dissatisfied with the current at-risk measure (27 percent were strongly dissatisfied). And 25 percent were "strongly" or "somewhat" satisfied with the current FRPL eligibility measure (5 percent were strongly dissatisfied).

We asked the respondents to rank what they viewed as the top strengths and challenges associated with the current at-risk measure; they could choose up to three options. Respondents identified the top strengths of the current measure as follows: it uses a common economic benchmark (n = 78), schools already collect the data (n = 73), and it increases funding for districts serving high shares of at-risk students (n = 71) (figure 2).

FIGURE 2

What Would You Identify as Key Strengths of the Current At-Risk Measure?

Respondents noted free and reduced-price lunch is a common benchmark and is already collected by schools



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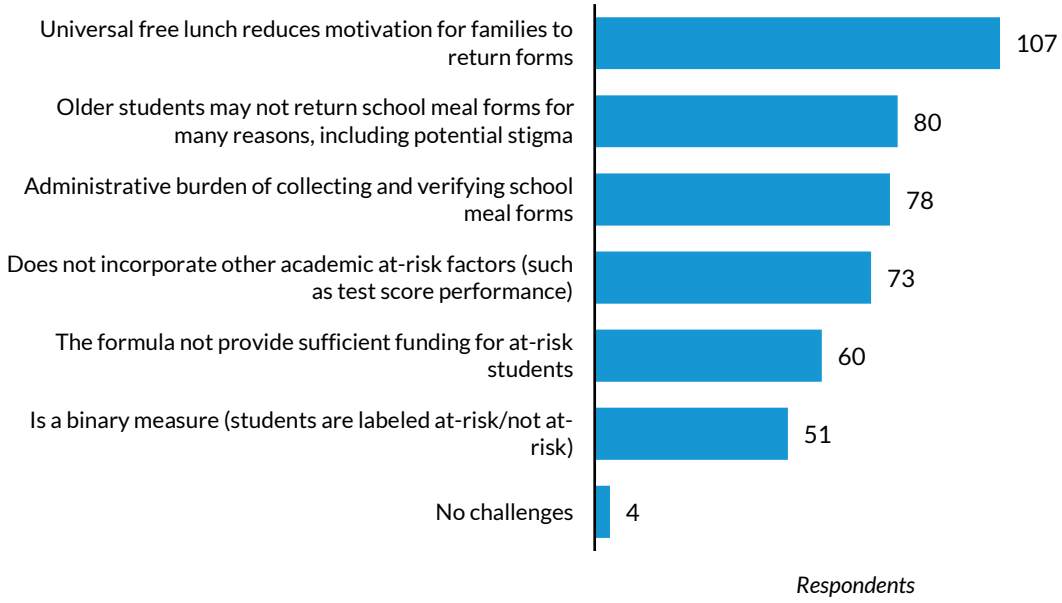
Source: Urban Institute analysis of survey responses.

The top three answers given in response to the challenges question were as follows: universal free meals reduces motivation for families to return forms (n = 107), older students may not return school meal forms for many reasons, including potential stigma (n = 80), and collecting and verifying school meal forms is too great an administrative burden (n = 78) (figure 3).

FIGURE 3

What Would You Identify as Key Challenges of the Current At-Risk Measure?

Respondents noted that not all eligible students return forms



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Source: Urban Institute analysis of survey responses.

Respondents were given the choice of commonly suggested alternative at-risk measures and were asked to rank their preferred options (1 = highest priority, 5 = lowest priority). These options were direct certification, direct certification with a Medicaid link, geographic poverty shares, socioeconomic data, and alternative income forms. Respondents were also asked to discuss other possible measures in open-response textboxes.

Many respondents wrote open-text responses. Most respondents focused on the need for additional school funding. In response to the question about weaknesses in the current measure, one respondent wrote, "A weakness is not just in the definition but in the level of funding associated with the definition. Having the right definition doesn't mean you have the right funding to go with it."

Many commented on the stigma the current measure created and its probability of being an undercount: "This measure does not account for the risks imposed on families to completing the eligibility forms (for example, families which may have undocumented members) and thus is likely an undercount of pupils deserving additional support and funding."

When prompted about alternative at-risk measures, a few respondents wanted a combination of the options provided. One respondent desired a measure that included "% of students defined as ELL

[English language learner], SPED [special education], Below Proficient on state testing, SRD [significant reading deficiency] in K-3." The respondent also wrote, "Though complicated, it would be ideal to have an index of measures that includes all of the options above and qualifies students, schools or districts for additional funding either automatically (through participation in other public programs) or through the submission of forms—and that also incorporates community-level characteristics (like the Texas model) and not just income status at the family level."

Interviewees' Perspectives

In interviews, stakeholders expressed concerns about the current at-risk measure. Broadly, stakeholders felt that a change in the at-risk measure should be accompanied by increased funding, and they expressed frustration with how the budget stabilization factor prevents at-risk students from being fully funded. One stakeholder stated, "You can create a great definition of [at-risk] students, but if you aren't willing to address it from the funding side, why waste your time?"

Stakeholders generally commented on the complicated, burdensome nature of collecting FRPL forms, particularly during a period when students receive universal eligibility for free meals under USDA waivers. Most Colorado districts are small and rural, and the form collection responsibility often lands on one school staff person. Other stakeholders expressed concerns that FRPL represents an undercount of student need because of the stigma attached to the forms. Further, school administrators stressed that it can be difficult to get students who may have undocumented family members to turn in "official" forms to schools. People working closely with schools also stressed that collecting forms tends to measure how hard school administrators try to gather forms, rather than an accurate measure of student need.

Several stakeholders mentioned frustrations that the funding formula's use of FRPL interferes with schools' ability to adopt universal meal programs such as the Community Eligibility Provision, which is designed to remove the administrative burden of form collection by instead directly certifying students participating in social safety net programs, but forms must still be collected to inform the state funding formula. Once all students received free meals under universal free meal programs, it became difficult to provide families incentives to continue to fill out the forms, but districts risk losing additional funding if the forms are not submitted. One stakeholder said the FRPL measure "puts schools in a position to choose between education funding and nutrition."

Stakeholders also described how the expansion of universal free meal eligibility during the pandemic complicated FRPL collection. District and school staff members reported a decline in the

number of FRPL forms returned and therefore a fear of decreased at-risk funding. Stakeholders also reported a large increase in participation in school food programs. One stakeholder stated that the past two years "have shone a light on the intersection of FRPL applications and at-risk [identification through eligibility for free and reduced-price] meals. There is an urgent need to separate the two."

Lastly, some stakeholders wanted to make sure that the transition from FRPL to another measure was covered by a hold-harmless period during which districts would not suddenly lose funding based on the change in measures.

Assessing Seven Alternative At-Risk Measures

This section provides further detail and quantitative analysis of the current measure and seven alternatives:

- **Identified student percentage.** Share of students directly certified or categorically eligible for free meals
- **Identified student percentage with Medicaid expansion.** Share of students directly certified or categorically eligible for free meals, supplemented by an expansion of the direct certification link to Medicaid and CHP+ program participation
- **Share below a given poverty level, as determined by tax records.** Share of students below a given federal poverty level, as determined by a link to state and federal tax records
- **Neighborhood Socioeconomic Status Index.** Student needs weighted based on five SES neighborhood factors, linked to each student's census block group
- **Small Area Income and Poverty Estimates.** Share of students from a household below the federal poverty level, based on the students' residential location within a geographic school district
- **School Neighborhood Poverty Estimate.** School-level measure of the average income-to-poverty ratio of 25 households with children living closest to each school, based on five-year American Community Survey estimates
- **Alternative family information forms.** Information families submit directly on household size, household income, and potentially other need factors

For each measure, we provide background on the way such a measure might work, which states are using the measure, and context for how Colorado might engage with such a measure. In addition to qualitative data gathered from surveys, interviews, and research, we also provide evidence on how such a measure would compare with the current FRPL eligibility approach. We use data from 2019–20 and from five-year census survey estimates from 2015 to 2019 to conduct these analyses.

Because we do not have access to student-level data, our numbers provide an *estimate* of how a new measure might affect funding across Colorado's school districts. Given these data limitations, some of our estimates are less likely to be accurate for school districts serving very few students and for areas where students may be more likely to attend school out of their geographic school district. Nonetheless, our estimates help indicate the extent to which a measure could replicate the current distribution of funding and help us identify subgroups of students who may be adversely affected by a given approach.

To look at the potential distribution of funding and the distribution of the measure values, we run each measure through a simplified version of Colorado's at-risk formula. We assume the state has a $400 million budget for at-risk students (about $360 million was provided for at-risk funding in fiscal year 2019–20 before the application of the budget stabilization factor) (Colorado Legislative Council Staff 2020).

In the current formula, school districts receive at least a 12 percent increase on their base per pupil funding for each at-risk student. To avoid conflating current district funding allocations with changes in the at-risk measure, we assume each at-risk student in the state carries an equal per student amount to their district (i.e., $400 million divided by the total number of students identified as at risk by the measure). This means that when a proposed measure identifies a smaller number of students as being at risk in the state than the current measure, each identified at-risk student carries a larger amount of funding with them to their district.

To mirror the at-risk concentration weight in the actual formula, we also apply a simplified concentration weight: districts above the state's enrollment-weighted mean value of the at-risk factor are weighted in a way similar to the 0.3 percentage-point increase above the 12 percent value in the current formula. But unlike the actual formula, we do not cap the amount at 18 percent, nor do we provide a different adjustment based on district enrollment size.

Identified Student Percentage

The identified student percentage is the share of students directly certified or deemed categorically eligible for free meals. Direct certification is the process through which eligible children are certified for free meals if they are participating in certain means-tested federal assistance programs (USDA 2018). States can decide which other programs they use for direct certification, but they are required by federal law to meet a benchmark of directly certifying at least 95 percent of school-age children in households receiving SNAP. In Colorado, direct certification links students to their household's participation in SNAP[2] or TANF, as well as their participation in the Migrant Education Program. In the 2016–17 school year in Colorado, 92 percent of school-age SNAP participants were directly certified for free school meals (USDA 2018).

Direct certification reduces the burden on schools to identify students as eligible for free school meals and reduces the burden on families to fill out household income information. School staff members upload student names, date of birth, and gender to the Colorado Nutrition Portal to conduct the match to SNAP and TANF records. Students who are matched do not have to submit FRPL forms to be deemed eligible.

The combined share of students identified through either direct certification or categorical eligibility is collectively known as the ISP. Students who are categorically eligible for free meals—who are deemed eligible because of a special status—also do not have to submit FRPL forms. In Colorado, students are categorically eligible if they are homeless (lack a fixed, regular, or adequate nighttime residence), participate in the Head Start program, or are determined to be a runaway, in foster care, or a migrant student.[3]

BOX 1

More Information about SNAP and TANF Eligibility in Colorado

To qualify for SNAP, a family must meet at least one of the following criteria[a]: gross monthly income must be at or below 130 percent of the federal poverty level; net income, or household income after deductions, must be at or below the federal poverty level; and assets must fall below certain limits—households without a member who is elderly (age 60 or older) or who has a disability must have assets of $2,500 or less, and households with such a member must have assets of $3,750 or less.

Colorado also uses broad-based categorical eligibility, which allows the state to streamline SNAP eligibility and enrollment for households who also receive benefits from TANF. In 2019, through broad-based categorical eligibility, Colorado expanded SNAP eligibility to families with a gross income limit up to 200 percent of the federal poverty level, or $51,500 for a family of four in 2019.

To qualify for Colorado Works (the state's TANF program), families must be a resident of the state and a US citizen, legal alien, or qualified alien; be unemployed or underemployed and have low or very low income; and have a child up to age 18, or be pregnant, or be up to age 18 years and the head of household.

[a] Qualification requirements are also listed in CBPP (Center on Budget and Policy Priorities), "A Quick Guide to SNAP Eligibility and Benefits" (Washington, DC: CBPP, 2021).

Although direct certification and categorical eligibility can streamline FRPL eligibility, not every FRPL-eligible student lives in a household that uses means-tested social safety net programs. Families may not use these programs because of lack of eligibility or for other reasons (Greenberg 2018), ranging from fear of stigma, distrust of government entities, or lack of knowledge about their eligibility.

Some students who might otherwise be eligible for free meals may be missed in the ISP count. Further, while SNAP and TANF in Colorado have income eligibility thresholds of 130 to 200 percent of the federal poverty level, this process generally counts students who are eligible for free meals (130 percent of the federal poverty level) instead of those who are eligible for FRPL (up to 185 percent of the federal poverty level). Therefore, the number of ISP-identified students will generally be much lower than the number eligible for FRPL. Because fewer students would likely be identified using direct certification compared with FRPL forms, we recommend that there be an increase in the funding factor associated with each student identified. This would mitigate district funding loss associated with identifying fewer students, though some schools will be worse off if their students are more likely to fall in this low-income part of the distribution but not the lowest-income part of the distribution or their families are less likely to apply for these programs.

Adopting direct certification instead of the current use of FRPL forms would also encourage schools to adopt universal meal programs such as CEP. CEP is designed to remove the administrative burden of form collection by providing universal free meals when at least 40 percent of students are directly certified or categorically eligible. Many schools do not participate in CEP because they would still be required to collect alternative income forms to generate an at-risk measure. Families have less incentive to return these forms under CEP because their children are already receiving free meals. As a result, schools risk losing out on additional state funding. If the state transitioned to using the ISP, CEP schools would not have to collect alternative income forms.

Direct certification (supplemented with additional programs other than SNAP) is being used in other states, including Massachusetts. Massachusetts transitioned from using FRPL forms to direct

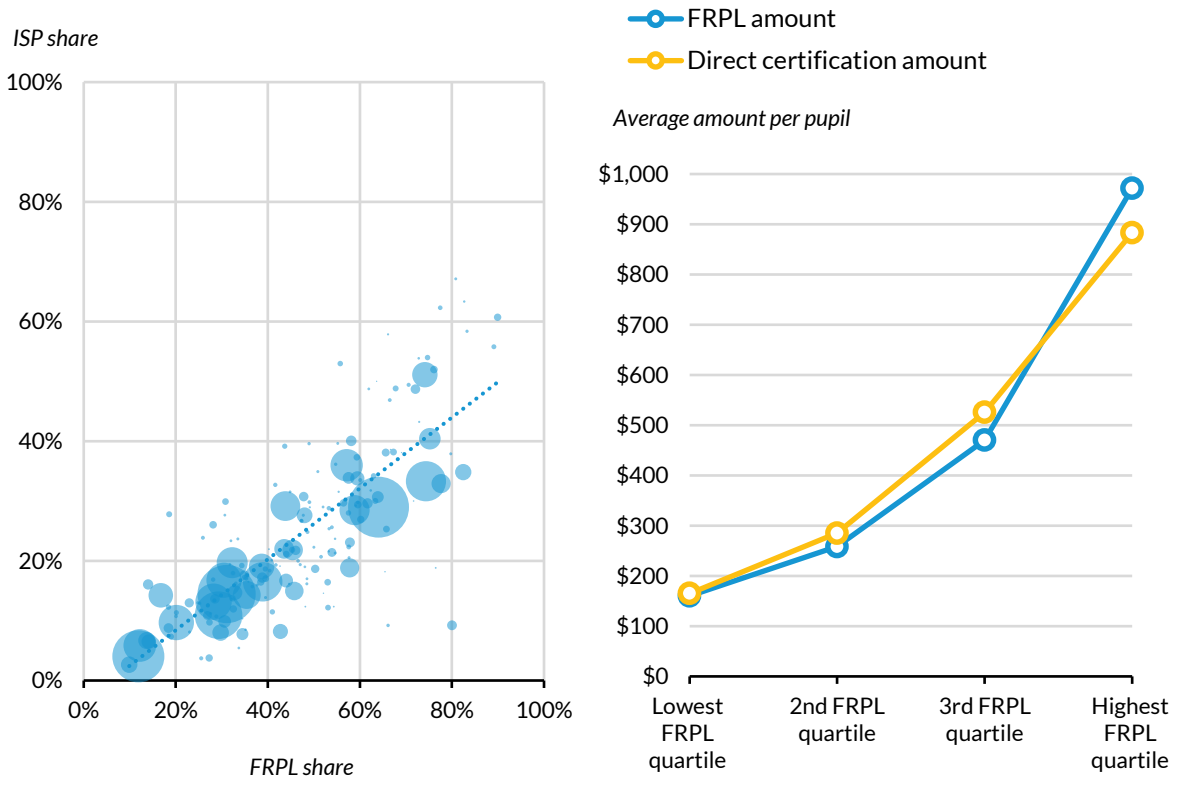
certification plus Medicaid as its primary poverty measure in 2015–16. Because of differences in eligibility between direct certification and FRPL eligibility, it saw an expected drop in the number of students identified as economically disadvantaged. To make up for the change in the measure, the state increased the funding weight for identified students, transitioning to a decile-based system. This prevented districts from experiencing significant funding drops. The decile system also gives a higher funding weight to districts with higher concentrations of poverty.

In 2020–21, Massachusetts began offering an additional income form for districts to send out to the small share of students who were likely eligible but were not being directly certified. These forms were intended for ad hoc use, but some schools have sent them out to all families (not just the families they believe are being missed by direct certification).

FIGURE 4

Distributional Effects of Using ISP as an At-Risk Measure

The correlation between ISP and FRPL is 0.84



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Source: Urban Institute analysis of 2019–20 data from the Common Core of Data.
Note: FRPL = free and reduced-price lunch; ISP = identified student percentage.

To look at the effects of transitioning to the ISP, we use district-level data on the share of Colorado students who are directly certified in each district, as reported to the US Department of Education's Common Core of Data. For some districts, these numbers may not include students who are deemed categorically eligible. Figure 4 provides a comparison of the distribution of the at-risk student share relative to the current measure, and our estimate of the effects of funding in our simulated model. In the scatterplot, each district is represented as a circle, with the size reflecting enrollment. The correlation between the FRPL share and the direct certification share is 0.84 (where 0 is no relationship, and 1 is a perfectly linear relationship).

From the scatterplot, we find that the direct certification–ISP measure would likely closely track the FRPL share but that the number of students identified as at risk under this measure would be lower. Further, a few districts fall off the general trend; some of these districts appear to have high shares of students from income-eligible households that may be unable to take up social safety net programs (e.g., because of fear of stigma for using programs or because of ineligibility caused by citizenship status).

The line graph shows the difference in average per pupil funding when allocating funding using direct certification, relative to an allocation using FRPL forms. Districts are categorized into enrollment-weighted quartiles based on FRPL share.

Under our simulated formula, the distribution of funding using direct certification/ISP is similar to the distribution using FRPL forms. A slight rise in average per pupil funding occurs in the third quartile (meaning more students are certified using direct certification instead of FRPL forms). For the highest-need quartile, our model reduces average per pupil funding slightly.

Some districts would see large changes in funding relative to current funding with a switch to this measure. For example, Platte Canyon School District and Bennett School District would see larger funding declines. But Holly School District and Las Animas School District would see larger funding increases.

Identified Student Percentage with Medicaid Expansion

Direct certification is the process through which students are directly certified for free meal eligibility by being matched through means-tested safety net programs. States can decide which other programs they use for direct certification, but they are required by federal law to use SNAP.

In 2010, the Healthy, Hunger-Free Kids Act allowed select states to pilot adding Medicaid to the list of programs used to directly certify students for free school meals. Under direct certification using

Medicaid,[4] students are still deemed eligible based on the household income and size used for the Medicaid application. Thus, students are certified for free school meal eligibility if their Medicaid application income is below 130 percent of the federal poverty level for the family size, and they are certified for reduced-price school meal eligibility if application income is between 130 and 185 percent of the federal poverty level for the family size. As of 2017–18, 15 states participated in this pilot. Any state can now apply to the USDA to conduct Medicaid direct certification. The next deadline for applying is in September 2022 (for the 2023–24 school year).

BOX 2

More Information about Medicaid and CHP+ Eligibility in Colorado

The Affordable Care Act of 2010 gave states the opportunity to expand Medicaid to cover nearly all low-income Americans younger than 65. Colorado expanded Medicaid in 2014.[a] The Department of Health Care Policy and Financing administers the Medicaid and CHP+ programs and other programs for Colorado's low-income families, the elderly, and people with disabilities.[b]

Medicaid is funded up to 147 percent of the federal poverty level for children from birth to age 16, and the upper income limit is 265 percent of the federal poverty level.[c] The DHCPF also manages Colorado's CHP program.[d] For uninsured children ages 6 to 18, CHP+ is funded up to 108 to 147 percent of the federal poverty level under Medicaid coverage. Separately, CHP+ coverage for uninsured children ages 6 to 18 is offered to household up to 111 to 265 percent of the federal poverty level.[e]

[a] DHCPF (Department of Health Care Policy and Financing), "Colorado Medicaid Expansion" (Denver: DHCPF, 2018).
[b] DHCPF, "Getting Health Care Coverage Through Health First Colorado and Child Health Plan Plus" (Denver: DHCPF, n.d.).
[c] Qualification requirements are also listed at DHCPF, "Application for Public Assistance" (Denver: DHCPF, n.d.).
[d] "Child Health Plan Plus (CHP+)," Colorado Department of Health Care Policy and Financing, accessed December 2, 2021, https://hcpf.colorado.gov/child-health-plan-plus.
[e] Additional requirements for CHP are also listed at "What Is Colorado Child Health Plan Plus (CHP+)?" Benefits.gov, accessed December 2, 2021, https://www.benefits.gov/benefit/1235.

About 1.2 million people in Colorado are covered by Medicaid (19 percent of the population), including more than half a million people ages 20 and younger (DHCPF 2021). About 76,000 children are enrolled in the state's CHP+ program (DHCPF 2021). If Colorado adopted Medicaid as an expansion of the direct certification process, the share of students deemed eligible for FRPL without the need for FRPL applications would likely increase. A substantial share of Medicaid recipients who appear to be eligible for SNAP do not take up SNAP. In Denver County, slightly more than 80,000 Medicaid

participants are also enrolled in SNAP, but an additional 120,000 Medicaid participants appear eligible for SNAP but are not enrolled (DHCPF 2021).

Massachusetts uses direct certification with a Medicaid link. In the first year, the state saw a drop in the number of students being identified, by about 64,000, relative to the FRPL application-based measure. In subsequent years, the state worked to remedy this by transitioning to matching students as eligible at 185 percent of the federal poverty level (up from 133 percent). This transition increased the number of identified students to 42 percent in 2021–22. In 2021–22, Massachusetts continues to use a hold-harmless provision for districts, based on the share of low-income students in 2015–16.

Despite the expansion of direct certification using a Medicaid link, the ISP will likely still be lower than the overall FRPL share. Similar to other social safety net programs, some low-income families may not be enrolled because of lack of eligibility or for other reasons, ranging from fear of stigma, distrust of government entities, use of private insurance, and lack of knowledge about their eligibility.

To include a Medicaid link, Colorado districts would ideally use the same process it uses for linking student records to SNAP and TANF participation. Districts would submit student names, date of birth, and gender to the Colorado Nutrition Portal, which would link to a DHCPF-created list of students enrolled in Medicaid.

DHCPF staff members estimated that a match would require a modest administrative effort. Their biggest concern was whether districts would be able to provide the data necessary to make the match. With data-sharing agreements in place, DHCPF staff members could cross-match the names of students with those students' families' participation in Medicaid. They also stressed that it would be important to have multiple checks throughout the school year as people join Medicaid throughout the year. Districts are required to directly certify students four times a year and are encouraged to upload monthly.

States that have already implemented the Medicaid pilot did face barriers to building an effective matching process (Hulsey, Gothro, and Leftin 2020). Some states had difficulty identifying the income and household size information needed to assess students' eligibility or had difficulty creating a process to revise interagency agreements to include the Medicaid match. Navigating data-sharing agreements and identifying the data for eligibility determination resulted in delays in implementation in some states. At the district level, staff members had to change local data systems to recognize Medicaid participation as a program option and to allow direct certification to confer reduced-price eligibility.

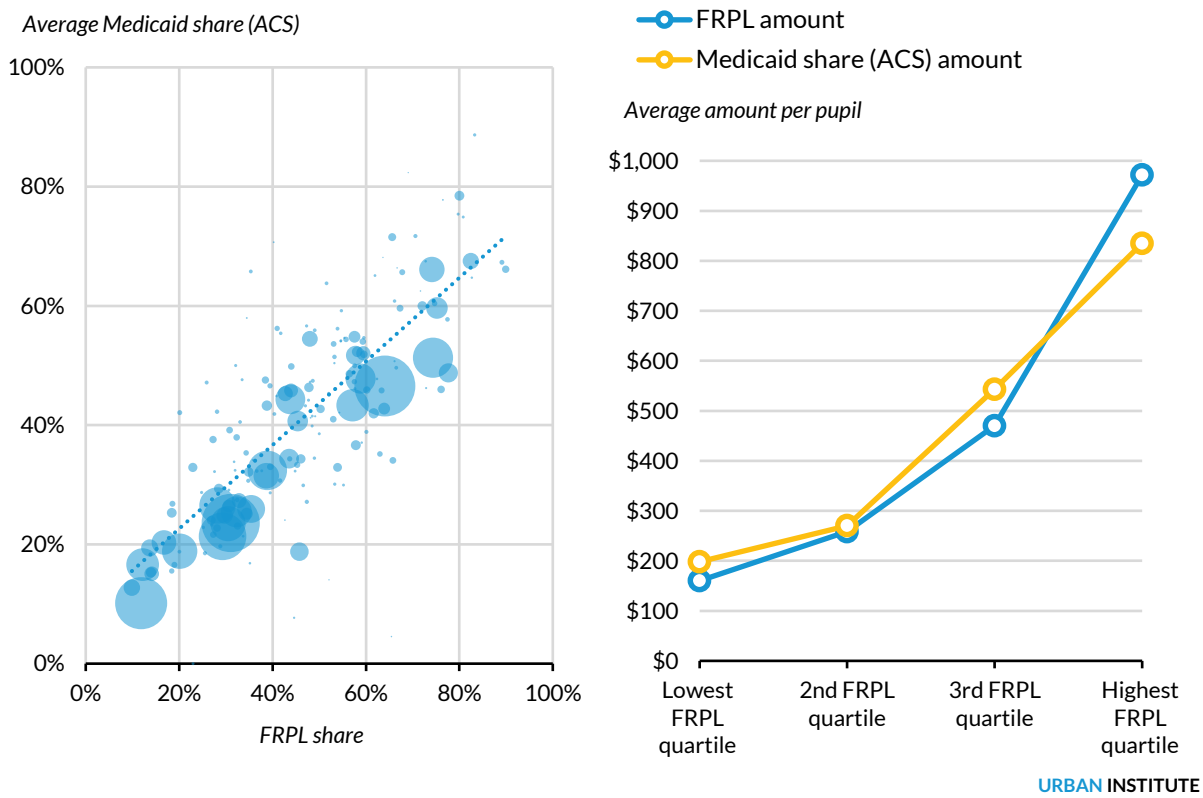
In terms of costs, states in the first year of implementation spent between $30,000 and $373,000 to set up their systems. Costs in the following years were lower; in their second year, states spent between $0 and $16,000. The division of costs between agencies varied widely by state, but Medicaid agencies usually incurred higher costs because these agencies built the data extracts. These costs can be somewhat mitigated by gains in federal reimbursements for eligible students. Per-student, per-day, school breakfast program blended reimbursement rates (BRR) and federal lunch reimbursements rates increased significantly in six states by 1 cent to 10 cents. But lunch reimbursements per student per day decreased for one state, and the BRR decreased for two states, and in other states, adopting Medicaid links did not significantly change reimbursement rates. But given expanded federal funds for both school districts and other state and local governments in the current years, this might be an especially opportune time to investigate creating coordinated systems.

Because these data links do not yet exist, we do not have data on how many public school students would be directly certified through their household's participation in Medicaid. To estimate the effects of a Medicaid direct certification process on funding outcomes, we use geographic school district data from the American Community Survey (ACS) on the share of children who use Medicaid or other means-tested public health care coverage options. This proxy measure may be more inclusive than the actual share of students who would be directly certified (i.e., because some CHP+ students may not be income eligible for FRPL), but we find that the results roughly match the trends in FRPL-eligible students (figure 5).

FIGURE 5

Distributional Effects of Using Medicaid as an At-Risk Measure

The correlation between Medicaid and FRPL is 0.89



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 ACS data.
Note: ACS = American Community Survey; FRPL = free and reduced-price lunch.

When funds are allocated based on our proxy Medicaid measure, average per pupil funding roughly tracks funding based on FRPL share (scatterplot). Some of the variation in the scatterplot is because of the use of survey data to estimate for small districts, so it is possible that there is a tighter correlation with FRPL shares than what is shown here. The correlation between the FRPL share and the Medicaid share is 0.89 (where 0 is no relationship, and 1 is a perfectly linear relationship).

Under our simulated funding formula, we find that allocating funds through our Medicaid proxy slightly increases per pupil dollars for the third quartile of districts and slightly decreases dollars for districts with the highest shares of FRPL students.

Share below a Given Poverty Level, as Determined by Tax Records

Another potential at-risk measure policymakers could consider is the use of student data linked to their parent or guardians' tax records (Domina et al. 2018). With this link, policymakers could receive data aggregated to the district level and develop a more granular assessment of student economic need based on household income and household size as claimed on the tax form. For example, policymakers could weight students from households in deep poverty (e.g., earning below 100 percent of the federal poverty level) more heavily than students who have substantial need but are higher income (e.g., earning between 100 and 200 of the federal poverty level).

This approach is being piloted in New Mexico beginning in 2021–22.[5] Students are matched to one of five income tiers based on household income and household size. Students in the two lowest tiers—extremely low income (earning 0 to 75 percent of the federal poverty level) and very low income (earning 76 to 130 percent of the federal poverty level)—are added together. Across the state, about 30 percent of students fall into these two categories. New Mexico is using the index to identify schools with high shares of low-income students, so a school starts to receive additional funding when at least 35 percent of its students fall into this category.

In its initial year, New Mexico was able to match roughly three-quarters of all public school students through tax records. For students they could not match, officials relied on imputing income through single-year tract-level household estimates of the share of students at the same federal poverty levels from the 2019 ACS. Fewer than 300 students (0.1 percent of students in the state) could not be identified because of missing or incomplete address data. New Mexico plans to repeat the matching process each year and, eventually, take the most recent three-year average of students who fall into the lowest two tiers.

In Colorado, the Department of Revenue would likely conduct this administrative link on its own. Depending on how the data are housed and matched, the Department of Revenue may require a specific carve-out in state statute to conduct the link. More than 20 carve-outs already exist.[6] For example, one carve-out allows the department to provide data to the Department of Human Services to offset state tax refunds against overdue child support. With a carve-out in statute, the Department of Revenue could provide more granular state tax data to the Colorado Department of Education (CDE) to match in-house data but could not share any federal tax data with the CDE.

Because individual tax records are closely held private data, the more likely option is that the Department of Revenue would receive student data from the CDE and match them to state and federal tax records on file. The department would then release aggregated data by school district back to the

CDE. This link would take a few weeks to set up at the Department of Revenue but could be run automatically as a report each year after it is constructed. Districts would be responsible for collecting home census tract data for students that cannot be matched by the Department of Revenue. With these tract counts, the CDE could supplement the aggregated measures provided by the Department of Revenue. One downside of this aggregated data approach is that students cannot be individually identified as being at risk (e.g., for reporting state achievement test results or for delivering additional services within the school).

Children can be matched to their parent or guardian's tax data because they are listed as dependents on their household's federal income tax form, which can be linked to their state income tax form. A small share of students may be listed as dependents on the state tax form if their household claims the Expanded Colorado Earned Income Tax Credit. Dependent students may also be claimed in association with the Colorado Child Care Expenses Credit (Colorado Department of Revenue, n.d.). In the future, the department could explore collecting dependent data more broadly, pending activation of the Colorado Child Tax Credit beginning with income tax year 2022 (enacted and funded in HB21-1311).[7]

On the federal tax return,[8] children are identified by first and last name and Social Security number. On the state tax return, children are identified by first and last name, birth date, and Social Security number or Individual Taxpayer Identification Number. Under the current direct certification process, matches to household SNAP records are made using a student's first and last name, birth date, and gender. It is uncertain whether student Social Security numbers or Individual Taxpayer Identification Numbers would be available for the match. But a substantial share of matches could be likely made with just first and last name, particularly if supplemented by information such as a student's household zip code.

The state receives state tax data with about a one-year lag and receives federal tax data with a roughly two-year lag. Although households with very low incomes are not required to file tax returns, many low-income families with children still opt to file to receive child tax credits (Mok 2017). Researchers estimate that roughly 10 percent of the population does not file a federal income tax form (Cilke 2014). The next few years might be an especially fruitful time to examine this type of at-risk measure in Colorado. More students are likely to be included in the tax data because of expanded tax credits and a larger share of tax units are filing taxes and because of the passage of the Expanded Colorado Earned Income Tax Credit, which provides a state earned income tax credit to taxpayers ineligible for the federal tax credit because they do not have a Social Security number.

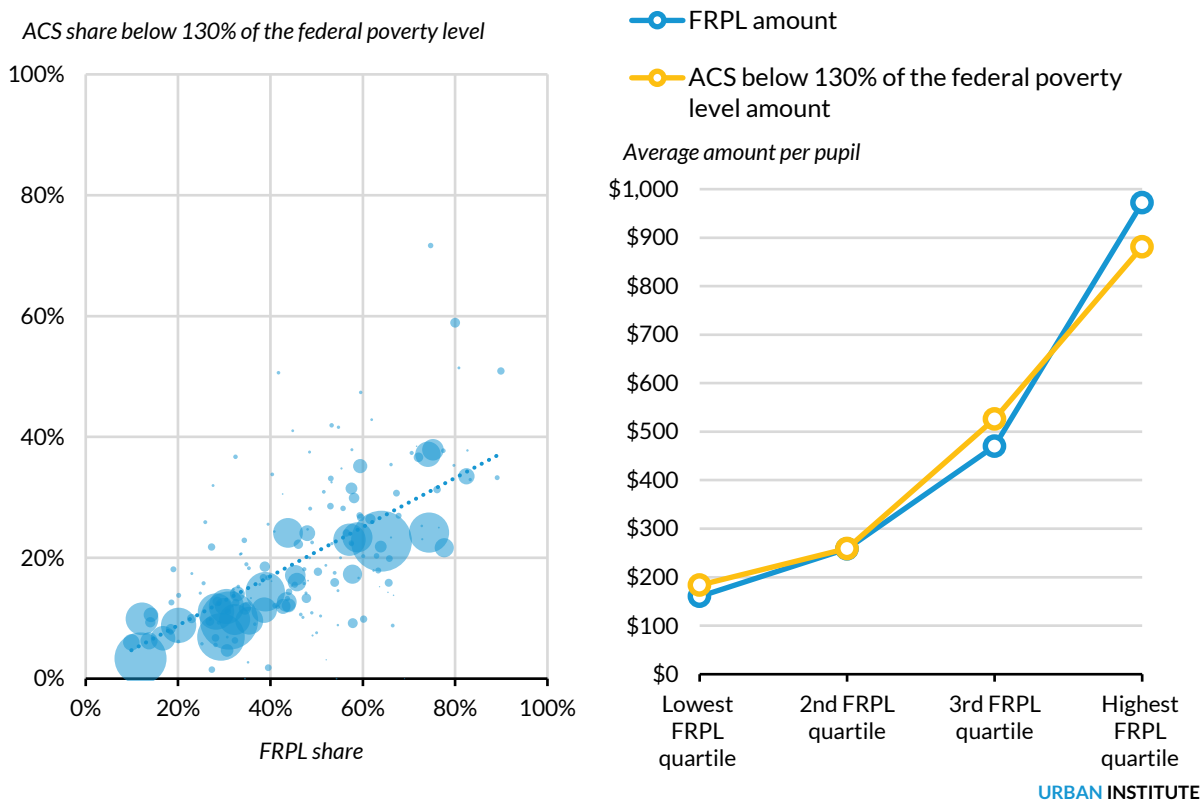
We do not have access to individual or aggregate tax data for students to analyze for this report. But we can estimate the effects of using different federal poverty level thresholds to allocate funding, an approach that the income tax link would likely facilitate. In this section, we focus on a level analogous to the level New Mexico uses: the share of children in a geographic school district living in households below 130 percent of the federal poverty level (a level equivalent to the eligibility threshold for free meals). We use household income data for families with children from the 2015–19 ACS to build our estimates.

Using an income level close to the threshold used for free meals eligibility correlates closely with our estimates of per pupil averages in at-risk spending under the current FRPL measure (figure 6). But the share of students identified at 130 percent of the federal poverty level is substantially lower than the FRPL share (at 185 percent of the federal poverty level). When we change our FRPL threshold to 150 or 185 percent, the correlation is similar, but the numbers begin to more closely replicate the FRPL share (appendix figures C.1 and C.2). There are some small differences in allocation under our simulated funding formula, especially at higher levels of need, but it is difficult to determine how much of this is within margins of error of our estimation approach. The correlation between the FRPL share and the share of children in households below 130 percent of the federal poverty level is 0.79 (where 0 is no relationship, and 1 is a perfectly linear relationship).

FIGURE 6

Distributional Effects of Using 130 Percent of the Federal Poverty Level as an At-Risk Measure

The correlation between 130 percent of the federal poverty level and FRPL is 0.79



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 American Community Survey data.

Note: ACS = American Community Survey; FRPL = free and reduced-price lunch.

The distributions of funding at the 150 percent and 185 percent thresholds are similar, but as the threshold increases, the per pupil amount of dollars allocated to the highest quartile declines slightly (from an average of roughly $880 per pupil at 130 percent, to about $870 at 150 percent, to $850 at 185 percent).

Using ACS data under the 130 percent measure, we estimate that districts with the highest shares of at-risk students are in portions of the southwest and southeast CDE region, as well as in and around the Denver metropolitan area (appendix B).

At the 130 percent threshold, eight districts experience large swings in their at-risk funding level. Seven of these districts enroll fewer than 400 students, so we suspect that these shifts are caused by the imprecision of our survey-based estimate.

Neighborhood Socioeconomic Status Index

Some survey respondents and people we interviewed expressed a desire to incorporate factors beyond household income into an at-risk measure. One way to incorporate other socioeconomic factors would be to use data on a student's neighborhood context. To assess the validity of his approach, we build a neighborhood index using ACS data reported at the census block group level. A census block group is the second-smallest geographic area at which census survey data may be reported, and they generally contain between 600 and 3,000 people.[9] Colorado contains 3,532 block groups.[10] In a city like Denver, a block group may be as small as five city blocks, while in a sparsely populated area, it may be several miles wide (e.g., the northwest corner of the state has one of the geographically largest block groups, stretching roughly 60 miles, from Dinosaur on the western border to State Highway 13).

ACS data used to build this index are publicly available, and to obtain the most accurate estimate, we use measures aggregated from surveys conducted from 2015 to 2019.[11] These census block data can be downloaded via CSV through the Integrated Public Use Microdata Series using the National Historical Geographic Information System.

Texas bases its compensatory education allotment—supplemental funds for students at risk of dropping out—in part on neighborhood index data. Each student identified as eligible for FRPL is weighted in the compensatory education allotment formula based on their neighborhood's socioeconomic characteristics. The Texas neighborhood index includes the following indicators: median household income, average educational attainment of population, single-parent household share, and homeownership rate.[12] Texas school districts use an Excel-based tool to geolocate each student based on their residential address and submit to the state the number of FRPL-eligible students in each census block group. Weights assigned to the five tiers or indicators range from 0.225 to 0.275, from least to most severe economic disadvantage.[13]

To demonstrate how a neighborhood SES index might work in Colorado, we build an index of the following measures: share of households where a non-English language is spoken at home, share of children who are fostered or raised by a nonparental relative, median household income, homeownership rate, and share of adults ages 25 and older with a bachelor's degree or more. We standardize each measure at the block group level, weighting by the number of children in each block group. By standardizing the measure, block groups at the mean for a given index component are assigned a value (z-score) of 0. Block groups that are 1 standard deviation higher on the SES index component have a value of 1, while those 1 standard deviation lower than average have a value of negative 1.

Similar to Texas, we use this process to create five categories of socioeconomic status. To implement in our simple test formula, we assume 80 percent of children in the lowest SES quintile census block groups are at risk, 60 percent are at risk in the second-lowest quintile, and so on. We then aggregate the number of students up to the geographic school district level and run our formula. In practice, we would imagine the state would use a weight for students from each quintile, with students from lower-SES-index neighborhoods receiving a higher weight, similar to Texas.

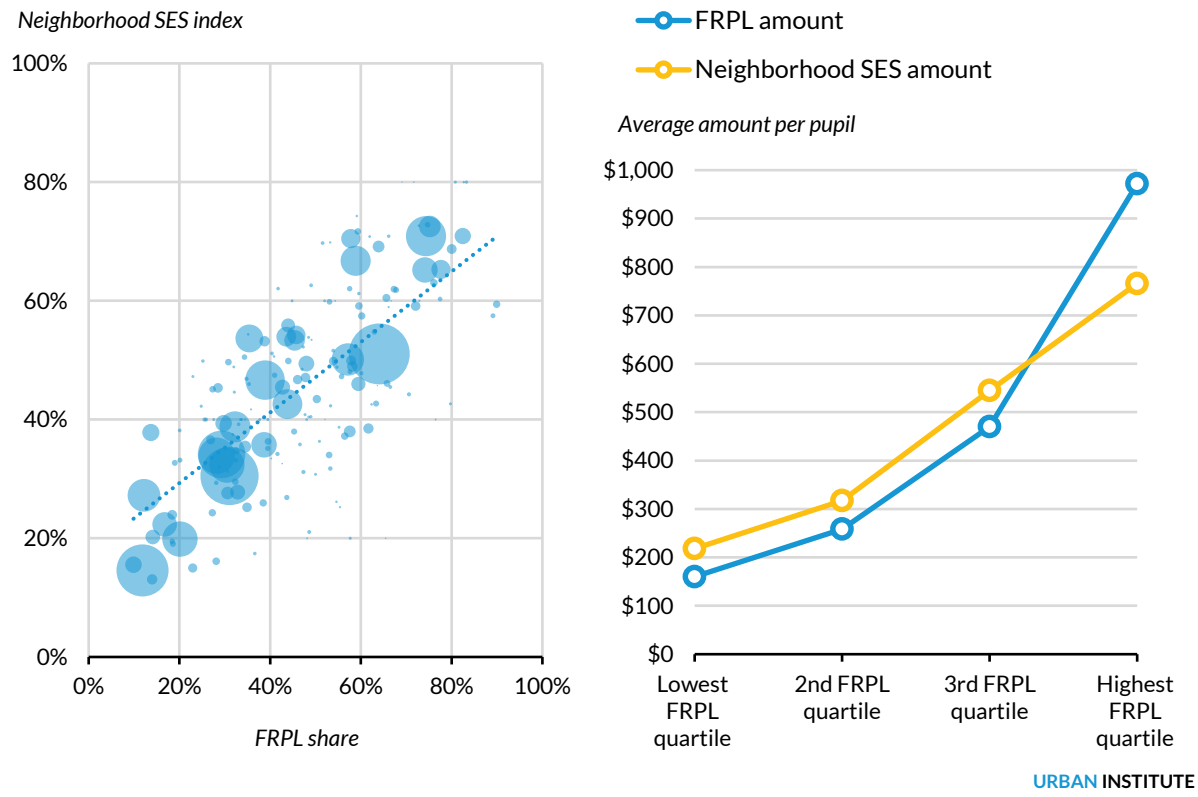
Figure 7 tracks the correlation of per pupil at-risk spending between the FRPL measure and the SES neighborhood index share. Our model is generally correlated with the FRPL share. Few districts fall outside the general trend. The correlation between the FRPL share and the SES neighborhood index share is 0.87 (where 0 is no relationship, and 1 is a perfectly linear relationship).

The distribution of per pupil funds at the lowest quartile increases with the SES neighborhood index (where FRPL stands at $160 and the neighborhood index stands at $218). This distribution of funds for the neighborhood index is consistently higher than FRPL funding until the highest quartile. For districts in the highest quartile, the neighborhood index allocates substantially less than the FRPL measure (figure 7). Our model uses neighborhood estimates and not actual student addresses, so part of this result may be caused by not fully capturing public school students where they live. Colorado would leverage actual student address data in its neighborhood index model and could adjust the weights of the district quintiles to direct additional dollars to high-need districts.

FIGURE 7

Distributional Effects of Using Neighborhood SES Index as an At-Risk Measure

The correlation between neighborhood SES index and FRPL is 0.87



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 American Community Survey data.

Note: FRPL = free and reduced-price lunch; SES = socioeconomic status.

Small Area Income and Poverty Estimates

The US Census Bureau SAIPE program captures annual estimates of the share of children in poverty for all US school districts, counties, and states.[14] The SAIPE model uses aggregated Internal Revenue Service state-level data, state and county SNAP benefits data, and ACS data to calculate the share of children ages 5 to 17 from households below the federal poverty level.[15] This measure is used by the US Department of Education to inform the distribution of Title I funding.

Pennsylvania[16] and Oregon use geographic poverty data to directly distribute funding for at-risk students, while Idaho, Montana, and North Carolina rely at least partially on Title I–identified students. To use SAIPE data in its funding formula, the Oregon Department of Education computes the share of students in poverty by multiplying the SAIPE poverty share by the average daily membership data for

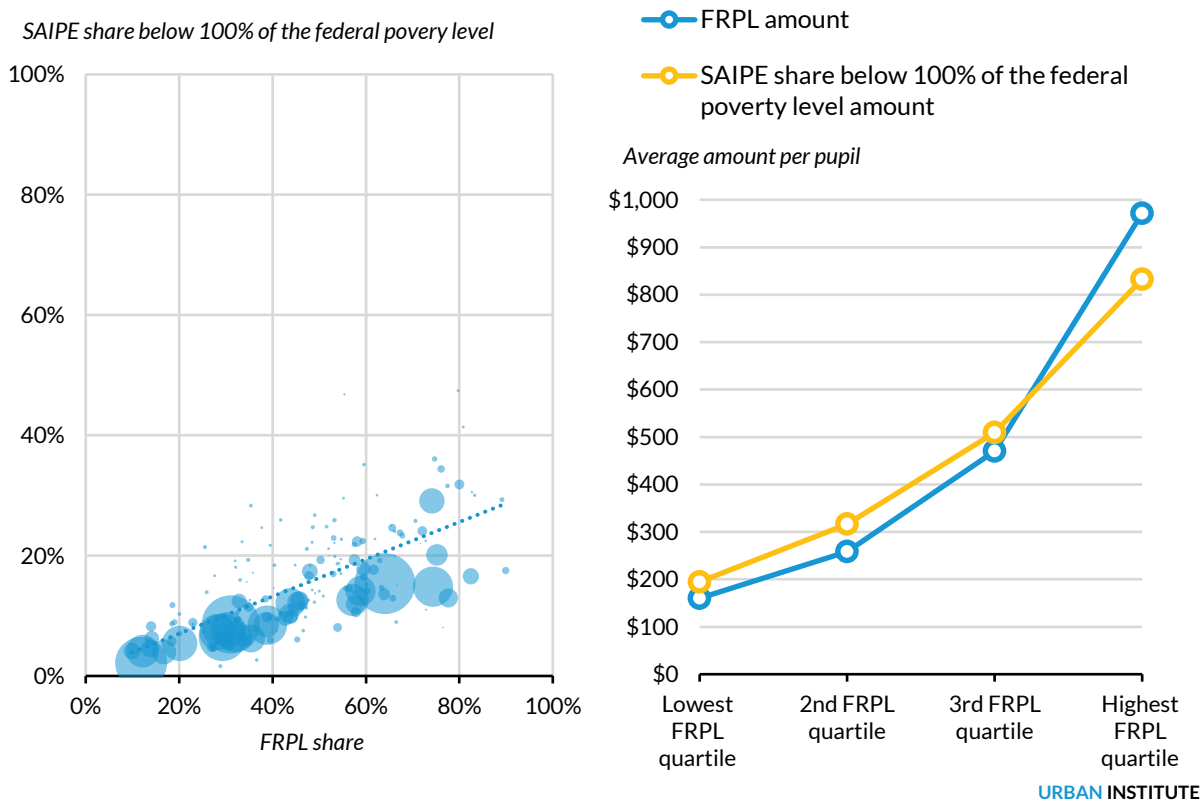
each geographic school district. This accounts for the share of students enrolled outside the district in private and virtual charter schools, but the state does not reweight average daily membership data to account for potential differences in the incomes of those who may leave the geographic school district. But less than 4 percent of Oregon public school students attend a charter school (Oregon Department of Education 2020), compared with nearly 14 percent in Colorado.[17]

This is reflected in the scatterplot in figure 8, where we compare the correlation between FRPL and our SAIPE model. As shown, this measure is a strict definition of poverty and identifies very few at-risk students (any given district has, at most, 30 percent of students identified as being below the federal poverty level). The correlation between the FRPL share and the SAIPE share below the federal poverty level is 0.78 (where 0 is no relationship, and 1 is a perfectly linear relationship).

FIGURE 8

Distributional Effects of Using SAIPE Share below 100 Percent of the Federal Poverty Level as an At-Risk Measure

The correlation between SAIPE share below 100 percent of the federal poverty level and FRPL is 0.78



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2019–20 SAIPE data.
Note: FRPL = free and reduced-price lunch; SAIPE = Small Area Income and Poverty Estimates.

Under our simplified funding model, per pupil funding using the SAIPE measure is higher than an FRPL model for the bottom three quartiles of districts. At the highest quartile, there is a drop from $972 in FRPL to $833 in SAIPE in per pupil funding. This result is largely driven by lower funding for large school districts. Because SAIPE relies on geographic school district data, it does not accurately account for the share of students enrolled outside the district in private or charter schools. Because these choice options are more often used in high-poverty districts, this may explain some of the discrepancy in the fourth quartile. Additionally, this option would be difficult to implement for schools that are not within a geographic school district.

School Neighborhood Poverty Estimate

The SNP is a school-level measure of poverty produced by the National Center for Education Statistics Education Demographic and Geographic Estimates using the spatially interpolated demographic and economic estimates (Geverdt 2017).

The measure reflects the income-to-poverty ratio (IPR), which is the family income relative to the federal poverty threshold set for the family's size and structure. The IPR is calculated from the survey responses of households with children closest to where a school is physically located. The measure ranges from 0 to 999, where lower values indicate a greater degree of poverty (e.g., a family with income at the poverty threshold has an IPR value of 100). IPR relies on income data from families with children ages 5 to 18 who were surveyed over a five-year period from the ACS and public school point locations developed by National Center for Education Statistics.[18] The measure is available for public schools, as well as charter and vocational schools.

The data are publicly available and are released with a two-year lag. The data are downloadable via a CSV and can be matched to other data using the National Center for Education Statistics school ID. This measure is not used in any state funding formulas to allocate aid for students in poverty.

Although the economic condition of the neighborhood around a school may affect the school's operations and effectiveness, the measure does not directly reflect the students' economic conditions. Especially where students might not attend their closest school, the calculated IPR value may vary considerably from actual student need. Thus, high levels of school choice, where students attend schools that are not in their residential neighborhood, would make this measure less reliable and less reflective of the school's students. Colorado has a long-standing school choice program where students may attend schools outside their assigned attendance zone.[19] Nearly 14 percent of Colorado public

school students attend charter schools, and 12 percent of students enroll outside their home geographic school district.[20]

In our analysis, we download the 2019 IPRs for all Colorado schools and then aggregate to district averages, weighting by enrollment. Because the IPR is a measure ranging from 0 to 999, we transform it to a factor similar to a share that can be used in our simulated funding allocation. The highest IPR value in Colorado for 2019 is 700; therefore, each district-level IPR is transformed using this formula:

$$(700 - \text{district-level IPR}) / 700 \quad (1)$$

Figure 9 shows the relationship between districts' FRPL shares and IPR factors. Each circle represents a district, and the size of the circle reflects the district's enrollment. The correlation between the FRPL share and the SES neighborhood index share is 0.73 (where 0 is no relationship, and 1 is a perfectly linear relationship).

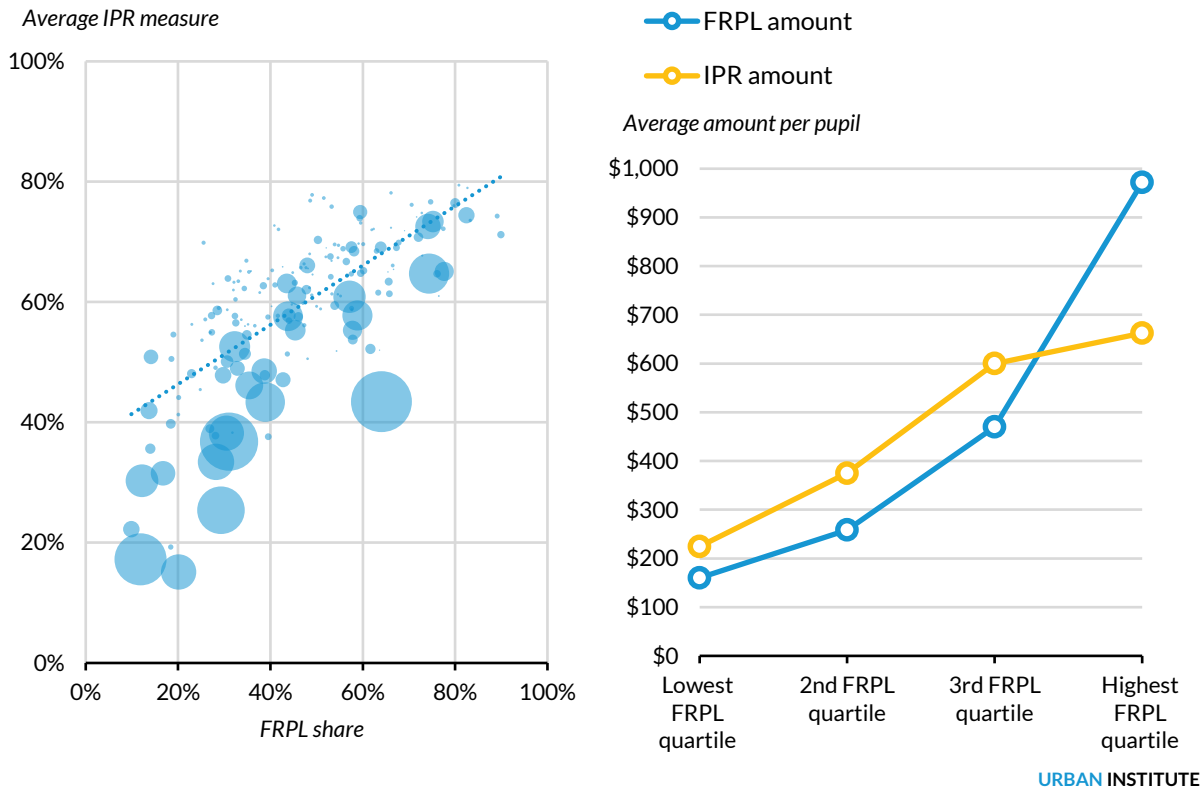
The relationship between districts' FRPL shares and IPR factors is not tightly correlated, and larger districts tend to have lower IPR factors relative to their FRPL shares. This is likely because large school districts tend to be urban districts with an abundance of school choice. IPR reflects the poverty or wealth of the neighborhoods surrounding the schools, while the FRPL share directly represents enrolled students. Therefore, IPR is less likely to accurately reflect poverty in districts where students attend schools farther from the students' residential neighborhoods.

Figure 9 shows the average funding per pupil at each quartile of FRPL. Using IPR, districts would receive 25 to 45 percent more at the lower three quartiles but a third less at the highest FPRL quartile.

FIGURE 9

Distributional Effects of Using IPR as an At-Risk Measure

The correlation between IPR and FRPL is 0.73



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2019–20 Department of Education IPR data.

Note: FRPL = free and reduced-price lunch; IPR = income-to-poverty ratio.

The transition from FRPL to IPR does not drastically change the district's position in the poverty distribution for most districts. Only three districts move more than five deciles between FRPL and IPR. Two of these districts enroll few students, meaning small changes in student enrollment can produce large changes in the poverty distribution. Agate School District, which enrolled 44 students in 2019–20, moves from the ninth decile based on FRPL to the third decile based on IPR, and Branson Reorganized School District, which enrolled 431 students, moved from the second decile to the ninth. The Denver County School District, on the other hand, enrolled more than 92,000 students and shifted from the ninth decile under FRPL to the second based on IPR.[21] This is, again, likely caused by an abundance of school choice and is reflected in the highest FRPL quartile in figure 9. Other changes districts might experience from a transition from FRPL to IPR can be seen in appendix B.

Because the IPR is reflective of the poverty level of the neighborhood surrounding a school, it can be inaccurate for districts where students have ample school choice and attend schools in neighborhoods that are not reflective of their residential neighborhoods. In these instances, the measure would not be reflective of the poverty levels of the enrolled students. Therefore, we do not recommend this measure as an alternative to the FRPL measure.

Summarizing At-Risk Options

Each at-risk measure has advantages and disadvantages. For Colorado, an ideal at-risk measure would meet each of the following criteria:

- **Improve free meal access.** Facilitate the adoption of universal free meals among eligible school districts
- **Capture all students.** Reflect all students who live in low-income or low-SES households
- **Align with FRPL.** Produce estimates that align in scale with the previous at-risk measure of FRPL share and current at-risk allocations by identifying a similar overall number of at-risk students
- **Reflect actual student enrollment.** Account for students who enroll in charter schools or cross district lines to attend school by using individual-level data
- **Minimize school burden and cost.** Minimize or reduce the administrative burden for schools and districts, relative to the current measure, and can be adopted with relatively low cost, especially after accounting for start-up costs

Table 1 illustrates how we judge each proposed at-risk measure performs on these criteria.

TABLE 1

At-Risk Measure Performance

Some measures excel against one criterion but do poorly against others

	Improve free meal access	Capture all students	Align with FRPL	Reflect actual enrollment	Minimize school and cost burden
FRPL	Poor	Good	Excellent	Excellent	Poor
ISP	Good	Fair	Fair	Excellent	Excellent
ISP with Medicaid link	Excellent	Good	Good	Excellent	Excellent
Tax record link	Good	Good	Excellent	Excellent	Good
Student neighborhood SES index (ACS)	Good	Excellent	Good	Good	Good
SAIPE	Good	Good	Fair	Poor	Excellent
School Neighborhood Poverty (IPR)	Good	Good	Poor	Poor	Excellent
Alternative family information form	Good	Excellent	Good	Excellent	Poor

Source: Urban Institute analysis of Colorado qualitative and quantitative data.

Note: ACS = American Community Survey; FRPL = free and reduced-price lunch; IPR = income-to-poverty ratio; ISP = identified student percentage; SAIPE = Small Area Income and Poverty Estimates.

The three at-risk measures that perform best on these criteria are ISP with a Medicaid link, a tax record link, and a student-centered neighborhood SES index. But none of these systems are currently in place for Colorado school districts, which would mean that implementation would be at least one or two school years away. Based on what we know about the overlap between SNAP and Medicaid programs, the current ISP measure is a substantial undercount of students who are eligible for free meals, relative to one improved by a Medicaid link (though this measure still would not count students who come from low-income households that do not participate in these programs).

Another critical set of criteria for selecting a new at-risk measure is whether the new measure will disproportionately change funding for certain students or subgroups. To assess this, we calculate an equity ratio based on the average funding level experienced by students in the group, relative to those not in the group (box 1). We assess equity in funding along five student or district dimensions: poverty, as measured by SAIPE;[22] students of color; students in rural schools; adults in the district who do not hold at least a four-year college degree; and households in the district where a language other than English is spoken. The current at-risk measure allocates more funding, on average, for districts with higher shares of these subgroups. Our aim is to ensure that a new measure provides funding that is roughly similar to the average funding differential under FRPL.

BOX 3

Calculating Equity Measures

In our sample equity measures example, we imagine a state with only two districts, A and B, each with 100 students. In this case, we calculate average funding experienced by white students and by students of color.

District A	District B
20 percent of students at risk	30 percent of students at risk
$1,000 at-risk funding per student	$1,500 at-risk funding per student
80 white students, 20 students of color	50 white students, 50 students of color

We compute a weighted average funding level for both subgroups:

White students:

$$\frac{(80 \text{ students from A} \times \$1{,}000) + (50 \text{ students from B} \times \$1{,}500)}{80 \text{ students from A} + 50 \text{ students from B}} = \$1{,}192 \text{ per student}$$

Students of color:

$$\frac{(20 \text{ students from A} \times \$1{,}000) + (50 \text{ students from B} \times \$1{,}500)}{20 \text{ students from A} + 50 \text{ students from B}} = \$1{,}357 \text{ per student}$$

The ratio between these two averages is our equity ratio, where a number higher than 1 indicates the group receives more average funding:

$1,357 per student of color / $1,192 per white student = 1.14 equity ratio for students of color

Table 2 indicates our assessment of the equity ratios for each measure. Because some of our measures are only estimates of what the true value would be, we classify each equity ratio into broad categories, as providing very high, high, or modest levels of equity, or relative funding for the given group, roughly equal equity, or negative equity.

TABLE 2

At-Risk Equity Analysis

Most proposed at-risk measures preserve similar proportions of at-risk funding for specific groups

	Students in poverty (SAIPE)	Students of color	Students in rural schools	Adults without a four-year degree	Non-English-speaking households
FRPL	Very high	Very high	Modest	Very high	Very high
ISP	Very high	Very high	Equal	Very high	High
ISP with Medicaid link	Very high	Very high	Equal	Very high	High
Tax record link	Very high	Very high	Equal/ Negative[a]	Very high	High
Student neighborhood SES index (ACS)	High	Very high	Modest	Very high	High
SAIPE	Very high	High	Negative	Very high	High
School neighborhood poverty (IPR)	High	High	Negative	Very high	Modest

Source: Urban Institute analysis of at-risk measure data.

Notes: ACS = American Community Survey; FRPL = free and reduced-price lunch; ISP = identified student percentage; IPR = income-to-poverty ratio; SAIPE = Small Area Income and Poverty Estimate. The equity ratios are as follows: negative is < 0.90, equal is 0.90–1.09, modest is 1.10–1.19, high is 1.20–1.39, and very high is ≥ 1.40.

[a] Depending on percentage of the federal poverty level cutoff used.

Our estimates indicate that our measures appear to retain similar equity for most students of district population subgroups. The current at-risk FRPL measure allocates slightly more for students in rural areas, and we estimate that most of the proposed measures, except for the student-based neighborhood SES measure, might lower this share or even allocate slightly more to urban districts. Our assessment is only of exposure to at-risk funding, and Colorado does allocate additional dollars outside the formula for spare and rural schools.

Recommendations

Based on input from stakeholders, conversations with other states, and quantitative analysis of potential measures, we recommend that Colorado adopt an at-risk model that combines administratively linked data with student-centered neighborhood SES data. This could take one of the following forms:

- **ISP with student-centered SES neighborhood weights.** If Colorado wanted to adopt a new at-risk measure within the next year, we recommend that it adopt the ISP (students identified

through direct certification or categorical eligibility), combined with a weight for students' neighborhood SES.

  - School districts already collect and report ISP data, so there is no additional administrative burden for the measure's base component.
  - For student SES neighborhood weight, schools would have to identify an address for each student and code to a census block group. We believe this would be a light lift for school districts, as addresses are already generally collected for mailing school materials and for student transportation. Districts can use a simple Excel tool to geocode student addresses and provide counts in each census block group.
  - The state would have to determine the funding amount that should be allocated per student identified in the ISP and an amount based on student neighborhood SES quartile. We recommend that these amounts are chosen to allocate funding to districts in a way that closely replicates or exceeds the amounts allocated under FRPL.

- **ISP, supplemented by a link to Medicaid data, with a student-centered SES neighborhood weight.** If Colorado has more time to implement a measure, we recommend a new at-risk formula that includes a Medicaid link for direct certification. Adopting a Medicaid link would also expand the share of schools and districts eligible for universal free meals, capturing additional benefits for students.

  - This would likely capture more at-risk students but would involve coordination between the CDE and the DHCPF, which could take time. The earliest such a link could be implemented would be the 2023–24 school year.
  - Although this measure increases the share of students in the ISP, many students from households that do not take up social safety net programs still will not be included. We recommend continuing to include a student-centered SES neighborhood weight.

- **Link to state revenue data, with a student-centered SES neighborhood weight.** If the state wants to eliminate the link between school meals eligibility and the at-risk measure, we recommend implementing a link to state and federal tax data.

  - This option would likely involve the highest amount of state agency effort, as it would require coordination and data-sharing agreements between the Department of Revenue and the CDE.

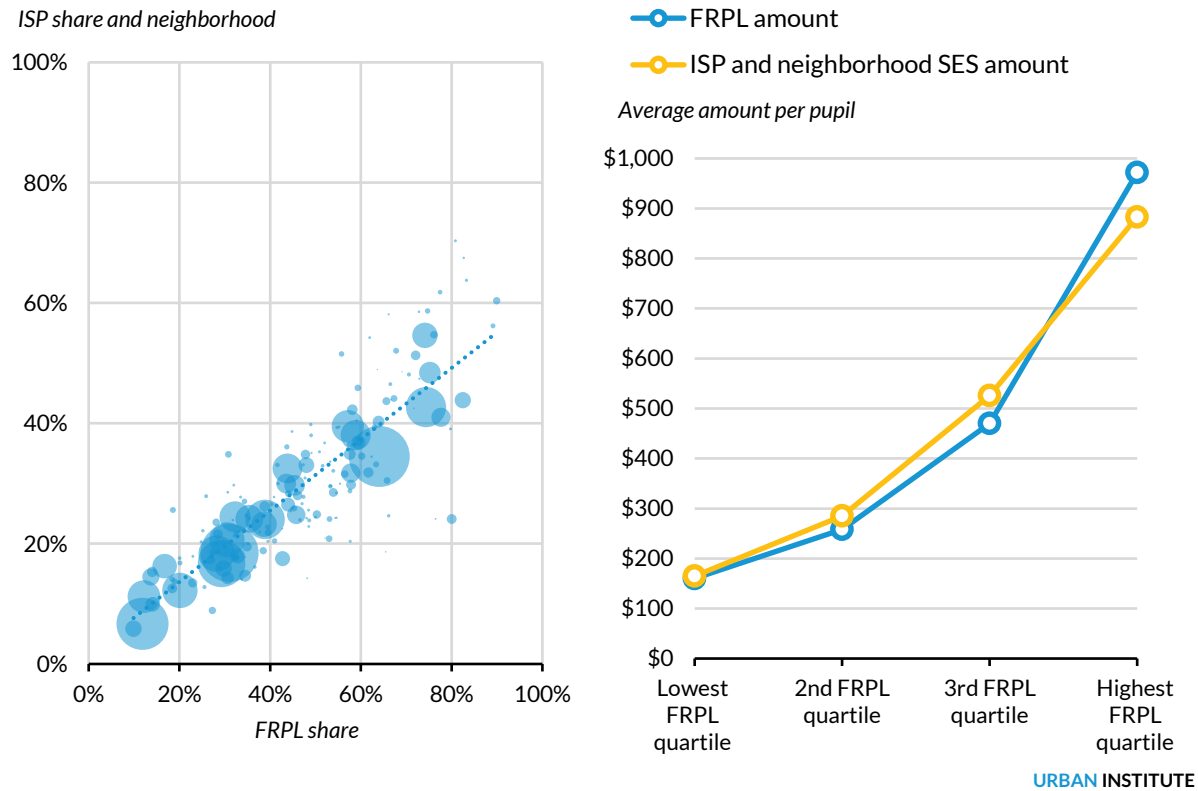
- Following New Mexico's model, students who could not be linked to their household's tax data would have their data imputed from census data on median household income, using a process similar to what is used for the student-centered neighborhood SES measure.
- Because census block group locations would already be collected, we would again suggest supplementing with a neighborhood SES measure.

To show how a combination of these measures can best capture at-risk students, we built a model based on 2019–20 direct certification data (our best proxy for ISP) and student-centered SES neighborhood quintiles. We weight the model so that 75 percent of the measure is informed by the direct certification share and 25 percent is informed by the SES of the student's neighborhood.

FIGURE 10

Distributional Effects of Using ISP Share and Neighborhood SES as an At-Risk Measure

The correlation between ISP share and neighborhood SES and FRPL is 0.91



Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 American Community Survey data.

Note: FRPL = free and reduced-price lunch; ISP = identified student percentage; SES = socioeconomic status.

This measure is highly correlated with the FRPL share for Colorado school districts, and the average amount of funding allocated to districts is roughly similar to what we estimate would be allocated under our FRPL model. The correlation between the FRPL share and the SES neighborhood index share is 0.91 (where 0 is no relationship, and 1 is a perfectly linear relationship). There is a slight drop-off for students in the highest quartile. We believe part of this is because we can estimate student location only for neighborhood SES. Using actual data will likely improve the alignment, and the state could take additional steps to improve the alignment by adjusting weights on the SES quintiles.

This combined measure would meet all five criteria for a strong Colorado at-risk measure and allocates funding to subgroups in a way similar to the current FRPL measure (table 3).

TABLE 3

At-Risk Criteria and Equity Analysis

A combination of ISP and a student-centered neighborhood SES index meets or exceeds FRPL as an at-risk measure on nearly all criteria

	Improve free meal access	Capture all students	Align with FRPL	Reflect actual enrollment	Minimize school and cost burden
FRPL	Poor	Good	Excellent	Excellent	Poor
ISP and student neighborhood SES index	Good	Excellent	Good	Excellent	Good

	Students in poverty (SAIPE)	Students of color	Students in rural schools	Adults without a four-year degree	Non-English-speaking households
FRPL	Very high	Very high	Modest	Very high	Very high
ISP and student neighborhood SES index	Very high	Very high	Modest/ Equal[a]	Very high	Very high

Source:

Notes: FRPL = free and reduced-price lunch; ISP = identified student percentage; SAIPE = Small Area Income and Poverty Estimates; SES = socioeconomic status. The equity ratios are as follows: negative is < 0.90, equal is 0.90–1.09, modest is 1.10–1.19, high is 1.20–1.39, and very high is ≥ 1.40.

[a] Depending on weight for neighborhood SES index. A higher weight on neighborhood SES allocates more funding for rural schools.

Next Steps: Additional Analysis and Implementation

We believe these recommendations best address Colorado stakeholders' needs and concerns. Our recommended measures enable schools and districts serving high shares of low-income students to

more broadly adopt universal free meal programs and capture a definition of need that is broader than household income.

Because we did not have access to individual-level student data, we recommend that the state further examine these measures with student-level data to better understand any shifts in funding and to assess implementation challenges (i.e., assess the amount of work needed for districts to geocode student addresses).

Any new at-risk measure will require a transition period. We recommend that the state consider allocating funding for a hold-harmless period of at least five years, where districts are guaranteed an amount of at-risk funding that is at least equal to the amount allocated under the old FRPL at-risk measure. This hold-harmless period will also allow districts and the state to assess any needed improvements to the at-risk measure while keeping funding predictable for schools and districts.

Adopting one of the three recommended measures will help uncouple eligibility for school meals from school district funding, enabling more students to access free meals and allowing for a definition of "at risk" that is more expansive than household income.

Appendix A. Survey Questions

1. That best describes the organization you work for, or the interest you have in measuring the share of at-risk pupils?
    a. I work for a school district or school
    b. I work for a state agency focused on serving K12 students and/or children
    c. I work for a state agency with broader focus (e.g., housing, law, transportation)
    d. I am a state legislator, or I work for the legislature
    e. I am a local school board member, or I work for a local city government
    f. I work for an advocacy or government relations organization
    g. I am a parent or guardian
    h. Other (Specify, if desired): _____
2. How satisfied are you with the current measure for at-risk students?
    a. Strongly dissatisfied
    b. Somewhat dissatisfied
    c. Neither satisfied nor dissatisfied
    d. Somewhat satisfied
    e. Strongly satisfied
3. Every measure has strengths and weaknesses. What would you identify as key strengths of the correct at-risk measure? Pick up to three strengths - if you see no strengths with the current measure, select "no strengths."
    a. Allows all families to easily report need
    b. Allows students to be individually classified as "at-risk"
    c. Uses a common economic benchmark across state (185% of federal poverty level or below)

d. Data is already collected by schools

e. School meal eligibility is a benchmark commonly used by other states

f. School meal eligibility is easy to understand

g. Increased levels of funding for districts serving high shares of at-risk students

h. No strengths

4. If there are additional strengths not listed here, please identify: _____

5. What would you identify as key challenges of the current at-risk measure? Pick up to three challenges. If you see no challenges with the current measure, select "no challenges."

    a. Administrative burden of collecting and verifying school meal forms

    b. Universal free lunch reduces motivation for families to return forms

    c. Older students may not return school meal forms for many reason, including potential stigma

    d. Does not incorporate other indicators of socioeconomic status (such as parent education or family wealth)

    e. Does not incorporate other academic at-risk factors (such as test score performance)

    f. Is a binary measure (students are labeled at-risk/not at-risk)

    g. The formula does not provide sufficient funding for at-risk students

    h. No challenges

6. If there are additional challenges not listed here, please identify:_____

7. There are many ways to identify at-risk students. Which of these new measures would you suggest assessing? Please prioritize these measures by ranking them (1=highest priority, 5=lowest priority)

    a. Students who are administratively linked to their household's participation in low-cost public health insurance plans, such as Medicaid or Child Health Plan Plus (CHP+)

b. Students who are administratively linked to their household's participation in social safety net programs, such as the Supplemental Nutrition Assistance Program (SNAP), sometimes referred to as food stamps.

c. Parent response to an alternative income survey administered by the school.

d. An index of socioeconomic indicators (such as share of parents with post-secondary education) for students' home neighborhood.

e. The share of students who are identified as living below the poverty line within geographic school district boundaries (similar to the measure used to allocate federal dollars to low-income students).

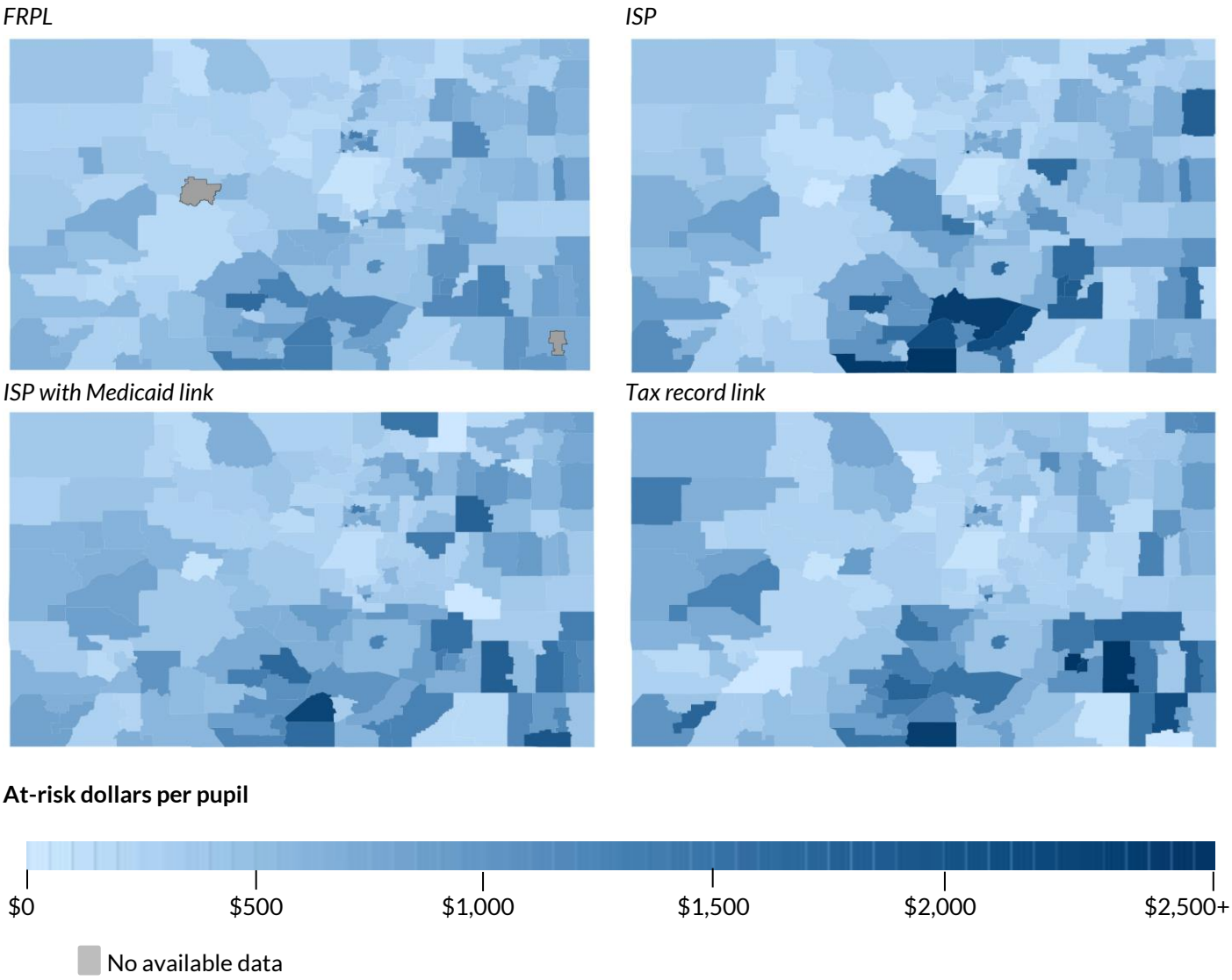
8. There are many ways to measure and fund at-risk pupils. If you have a specific measure not listed here, please describe your idea: _____

If you have other comments or ideas for how we should approach our work, please list them here: _____

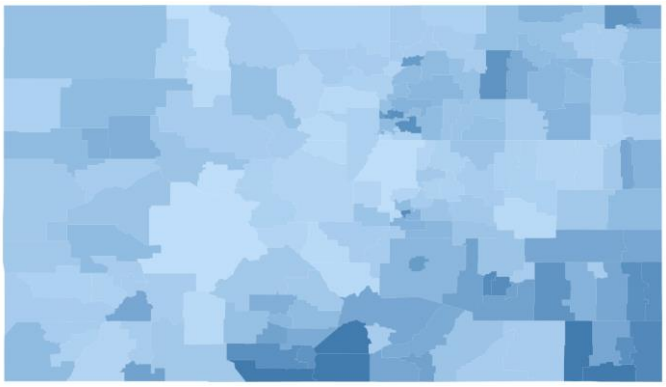
Appendix B. District Maps

FIGURE B.1

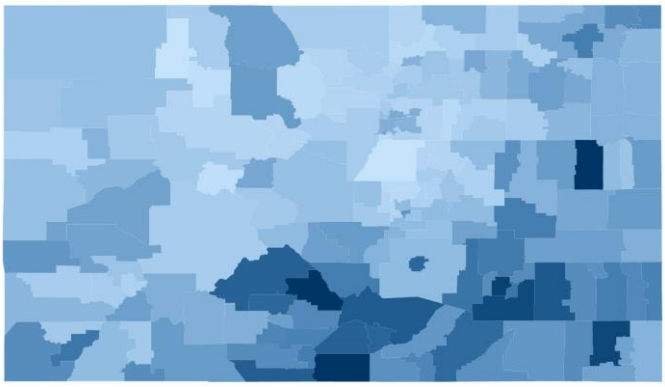
Estimated District Funding Allocations



Student neighborhood SES index (ACS)

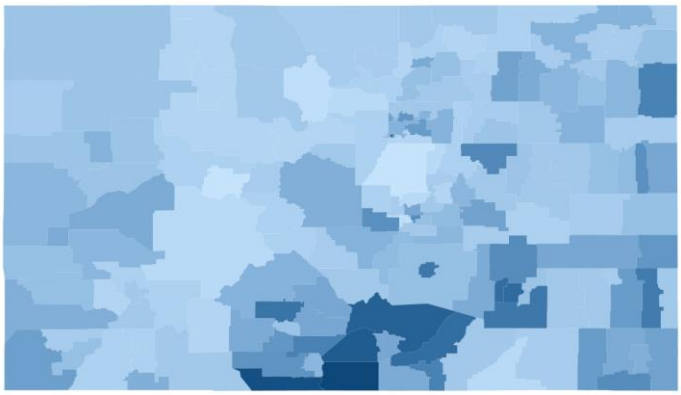


SAIPE



School neighborhood poverty (IPR)

ISP and student neighborhood SES index (ACS)



At-risk dollars per pupil

No available data

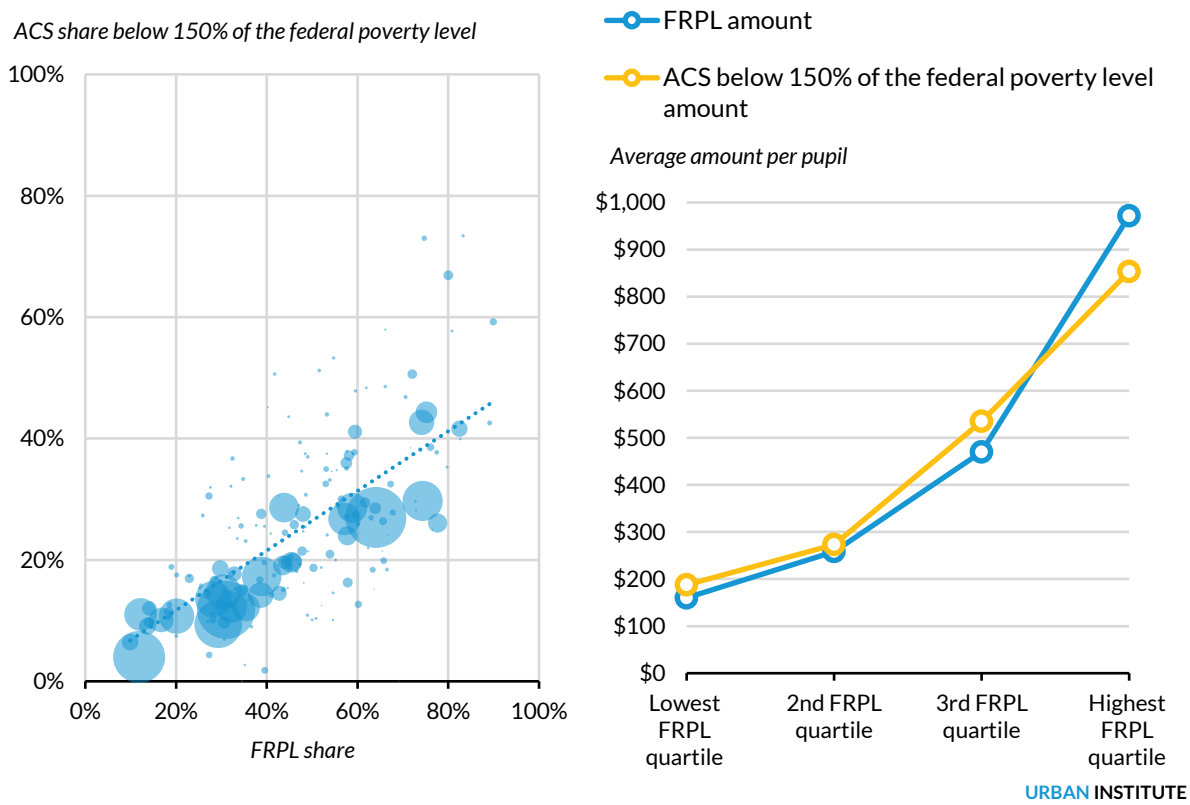
Note: ACS = American Community Survey; FRPL = free and reduced-price lunch; IPR = income-to-poverty ratio; ISP = identified student percentage; SAIPE = Small Area Income and Poverty Estimates; SES = socioeconomic status.

Appendix C. Additional Figures

FIGURE C.1

Distributional Effects of Using 150 Percent of the Federal Poverty Level as an At-Risk Measure

The correlation between 150 percent of the federal poverty level and FRPL is 0.81



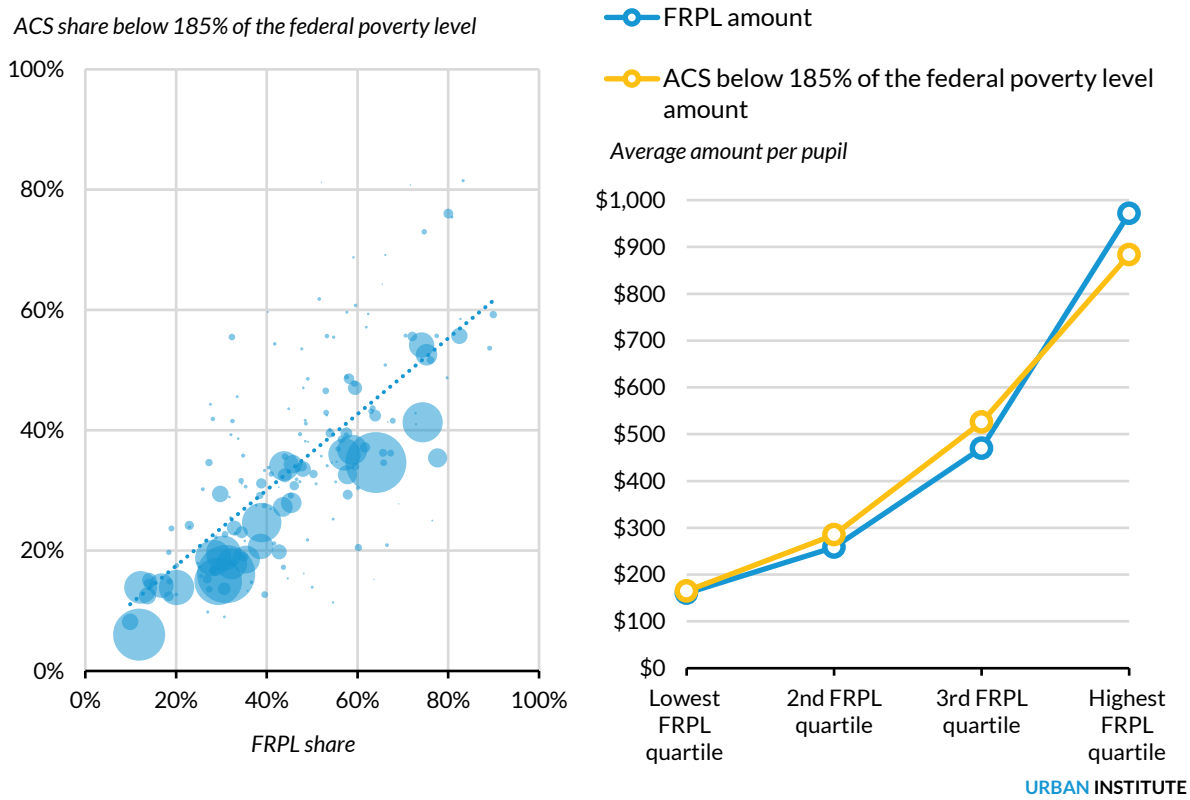
Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 American Community Survey data.

Note: ACS = American Community Survey; FRPL = free and reduced-price lunch.

FIGURE C.2

Distributional Effects of Using 185 Percent of the Federal Poverty Level as an At-Risk Measure

The correlation between 185 percent of the federal poverty level and FRPL is 0.85



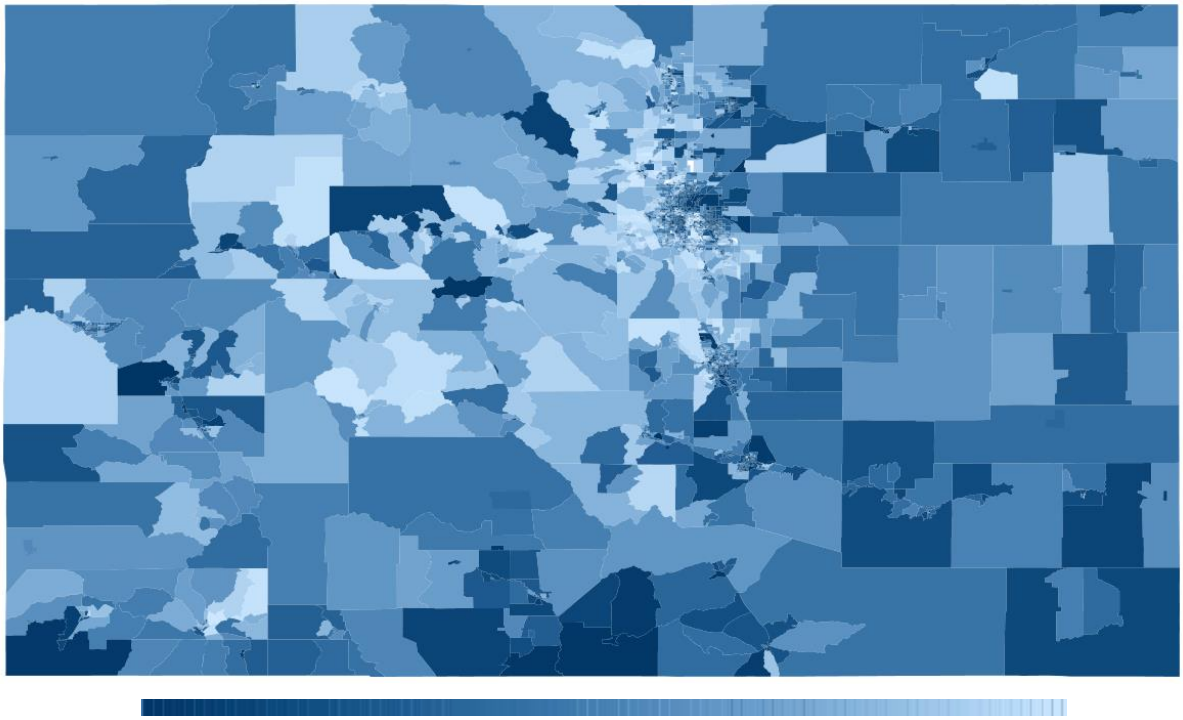
Source: Urban Institute analysis of 2019–20 data from the Common Core of Data and 2015–19 American Community Survey data.

Note: ACS = American Community Survey; FRPL = free and reduced-price lunch.

FIGURE C.3

SES Neighborhood Index Raw Scores by Block Group

Index of five SES criteria from the 2015–19 American Community Survey



Low SES index *High SES index*

Source: Urban Institute analysis of 2015–19 American Community Survey data.

Notes: SES = socioeconomic status. Index criteria are share of households where a non-English language is spoken at home, share of children who are fostered or raised by a nonparental relative, median household income, homeownership rate, and share of adults ages 25 and older with a bachelor's degree or more.

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[5] S.B. 17, 2021 Leg., Reg. Sess. (N.M. 2021).

[6] CO Rev. Stat. § 39-21-113 (2016).

[7] "HB21-1311: Income Tax," Colorado General Assembly, accessed December 16, 2021, https://leg.colorado.gov/bills/hb21-1311.

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[9] "Geography Program, About, Glossary," US Census Bureau, last updated October 8, 2021, https://www.census.gov/programs-surveys/geography/about/glossary.html.

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[14] "Small Area Income and Poverty Estimates (SAIPE) Program," US Census Bureau, last updated October 8, 2021, https://www.census.gov/programs-surveys/saipe.html.

[15] "About SAIPE Model Inputs," US Census Bureau, last updated October 8, 2021, https://www.census.gov/programs-surveys/saipe/guidance/model-input-data.html.

[16] "1949 Act 14," Pennsylvania General Assembly, accessed December 16, 2021, https://www.legis.state.pa.us/cfdocs/legis/LI/uconsCheck.cfm?txtType=HTM&yr=1949&sessInd=0&smthLwInd=0&act=14&chpt=25&sctn=2&subsctn=53.

[17] "Charter School Facts," Colorado League of Charter Schools, accessed December 9, 2021, https://coloradoleague.org/page/charterschoolfacts.

[18] The Census Bureau calculates the IPR based on money income reported for families. Noncash benefits (e.g., SNAP benefits and housing subsidies) are excluded, as are capital gains and losses. Unmarried partners and unrelated children are not included in families, and their income is not added to family income.

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[22] Because SAIPE is one of our potential at-risk measures, it, by definition, performs best on the poverty dimension. We assessed each measure against the SAIPE measure because it is a national benchmark measure of poverty, but it may not be the best measure for Colorado school districts.

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