USDA Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) Demonstration, School Year 2019–2020

FINAL REPORT

March 2022

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Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) Demonstration, School Year 2019–2020: Final Report

March 2022

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Executive Summary

The demonstration of Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) allows authorized States and school districts to use information from Medicaid data files to identify students eligible to receive meals under the National School Lunch Program (NSLP) and School Breakfast Program (SBP) for free or at a reduced price. DCM-F/RP expanded the number of students certified to receive free school lunches and breakfasts without needing to complete an application and, for the first time, made it possible to certify students for reduced-price school meals without an application. DCM-F/RP could increase the total numbers of students certified to receive free or reduced-price meals, the numbers of reimbursable school meals served, Federal reimbursements, and the costs that States incur for administering the NSLP and SBP. The U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) contracted with Mathematica to examine the effects of DCM-F/RP on these and other outcomes.

A. The school meals programs and direct certification

The NSLP and SBP are cornerstones of the government's efforts to provide nutritious meals to schoolchildren and an essential resource for many families. All students enrolled in schools participating in the NSLP or SBP are eligible to receive subsidized school meals, but those in low income households can be certified to receive meals for free or at reduced prices. Districts use two methods to certify students for free or reduced-price meals:

Certification through application. For students to be certified based on an application, households must either provide detailed information on household size and income or demonstrate that they are "categorically eligible" because they participate in one of several public assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), or the Food Distribution Program on Indian Reservations (FDPIR). School district staff assess the application information to determine whether the household meets eligibility requirements.

Direct certification. In the direct certification process, State agency or school district staff match administrative records from programs that confer categorical eligibility with student enrollment records to identify and automatically certify eligible students for free school meals. All districts that certify students for free or reduced-price meals are required to conduct direct certification with SNAP and encouraged to also directly certify students in TANF and FDPIR households. Students documented as foster children, homeless, migrant, runaway, or participating in Head Start can also be directly certified for free school meals.

Some schools and districts use alternative procedures that do not involve certifying individual students each year, and instead serve meals at no cost to all students. Most commonly, under the Community Eligibility Provision (CEP), authorized school districts and schools in high-poverty areas receive the Federal free reimbursement rate for up to 100 percent of meals served—depending on the percentage of "identified students," those certified for free meals through means other than applications. Districts participating in Provision 2 or Provision 3 conduct certification in a base year and are reimbursed in later years based on claims from that base year.

B. Demonstrations using Medicaid data for direct certification

Participation in Medicaid does not confer categorical eligibility for free meals, but the income information from Medicaid eligibility or enrollment files can be used to assess whether a student is

eligible for free or reduced-price meals based on their family's income. These data therefore present an opportunity to directly certify additional eligible students.

The Healthy, Hunger-Free Kids Act of 2010 (HHFKA; P.L. 111-296) required FNS to conduct a demonstration that added Medicaid to the list of programs used to directly certify students for free school meals in selected States and districts. Under this demonstration, students were eligible for free meals if they were enrolled in Medicaid and in a household with Medicaid gross income not exceeding 133 percent of the Federal Poverty Level (FPL) for the family size used for determining Medicaid eligibility. Five States began conducting DCM in school year (SY) 2012–2013, and two others joined the demonstration over the subsequent two years.

Beginning in SY 2016–2017, FNS initiated a new demonstration that differs from the previous DCM demonstration in several ways. First, the income threshold for free meal certification based on Medicaid data was set at 130 percent of the FPL, aligning with the standards for establishing NSLP/SBP eligibility based on income reported on an application. Second, the DCM-F/RP States also use the Medicaid data to identify students in households eligible to receive reduced-price meals and directly certify them at that level. Students can be certified for reduced-price meals under DCM-F/RP if their household income is between 130 and 185 percent of the FPL. Finally, guidelines for assessing eligibility were revised to reflect changes in Medicaid income and household definitions under the Patient Protection and Affordable Care Act of 2010.

Fifteen States participated in the DCM-F/RP demonstrations. Six began conducting DCM-F/RP statewide in SY 2016–2017, and one implemented DCM-F/RP in 14 districts that year and expanded to statewide in SY 2017–2018. Seven other States joined the demonstration in SY 2017–2018, and one first certified students through DCM-F/RP in SY 2018–2019.

C. Evaluation of the DCM-F/RP demonstration

FNS contracted with Mathematica to conduct a study of the DCM-F/RP demonstration. Findings from the first two years of the evaluation, which covered SY 2016–2017 and SY 2017–2018, are presented in two earlier reports (Hulsey et al. 2019 and Hulsey et al. 2020). The current report describes the experiences of States and districts during SY 2019–2020 and examines outcomes related to certification, participation, and costs through descriptive and comparative analyses.

The effects of the demonstration on percentages of students certified, participation (numbers of meals served), and Federal reimbursements are measured by comparing the outcomes in the year before the demonstration to those same outcomes in SY 2019–2020, using a statistical model to control for the influence of some time-varying characteristics (i.e., district enrollment and local economic conditions) and any time-invariant characteristics (such as whether a district is public or private). However, time-varying factors not included in the model and unrelated to the demonstration—such as other improvements in certification processes, broader trends in CEP adoption, or changes in student preferences for school meals—could still be driving some of the observed changes in outcomes. These concerns about changes in factors unrelated to the demonstration increase with the length of time elapsed since baseline.[1]

[1] The baseline year is the year before the statewide implementation of the demonstration: SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 SY for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

Because the COVID-19 pandemic resulted in substantial changes to school meal program operations in many locations beginning in March 2020, measures used in the pre-post analyses cover months before COVID-19 pandemic disruptions began. Certification outcomes are based on October, and participation and Federal reimbursement outcomes are based on the months of the school year through February.

D. Summary of key findings

Certification. Substantial numbers of students were directly certified through DCM-F/RP in SY 2019–2020. More than 1.2 million students were directly certified for free meals based on Medicaid data across the 13 States that participated in the DCM-F/RP demonstration but not in the previous DCM demonstration.[2] An additional 240,000 students were directly certified for reduced-price meals based on Medicaid in the 13 demonstration States where that outcome was measured.[3] Across the 13 States that did not participate in the previous DCM demonstration, the percentage of students directly certified for free meals based on Medicaid ranged from 2 to 17 percent of all enrolled students (Figure ES.1). For the 13 demonstration States where the percentage of students directly certified for reduced-price meals based on Medicaid could be measured in SY 2019–2020 these percentages ranged from less than 1 to 7 percent of enrolled students.

Notably, these certification numbers do not include any students in CEP schools, including those who were identified as eligible for free meals through DCM-F/RP matches. DCM-F/RP may potentially increase a CEP school's identified student percentage or play a role in the decision to elect CEP. These certification outcomes have remained robust since the previous years of the evaluation even though there has been an increase in schools electing CEP in these States since DCM-F/RP was first implemented, reducing the number of students available to be certified.

Although some of these students would have been certified for free or reduced-price meals by application in the absence of the demonstration, overall certification rates improved during DCM-F/RP implementation in a few States, and CEP participation increased in several others. Two States had statistically significant increases (of about 3 percentage points) in the total percentage of students individually certified for free meals. (These regression adjusted changes are considered effects of the demonstration under the pre-post design.) Four States saw statistically significant decreases in this outcome, due to even larger increases in the percentage of students attending CEP schools. Increases in the percentage of students attending CEP schools ranged from 3 to 43 percentage points across these four States and three others. CEP schools serve all meals for free, but because they do not certify individual students, increases in CEP participation can drive down certification rates for free and reduced-price meals.

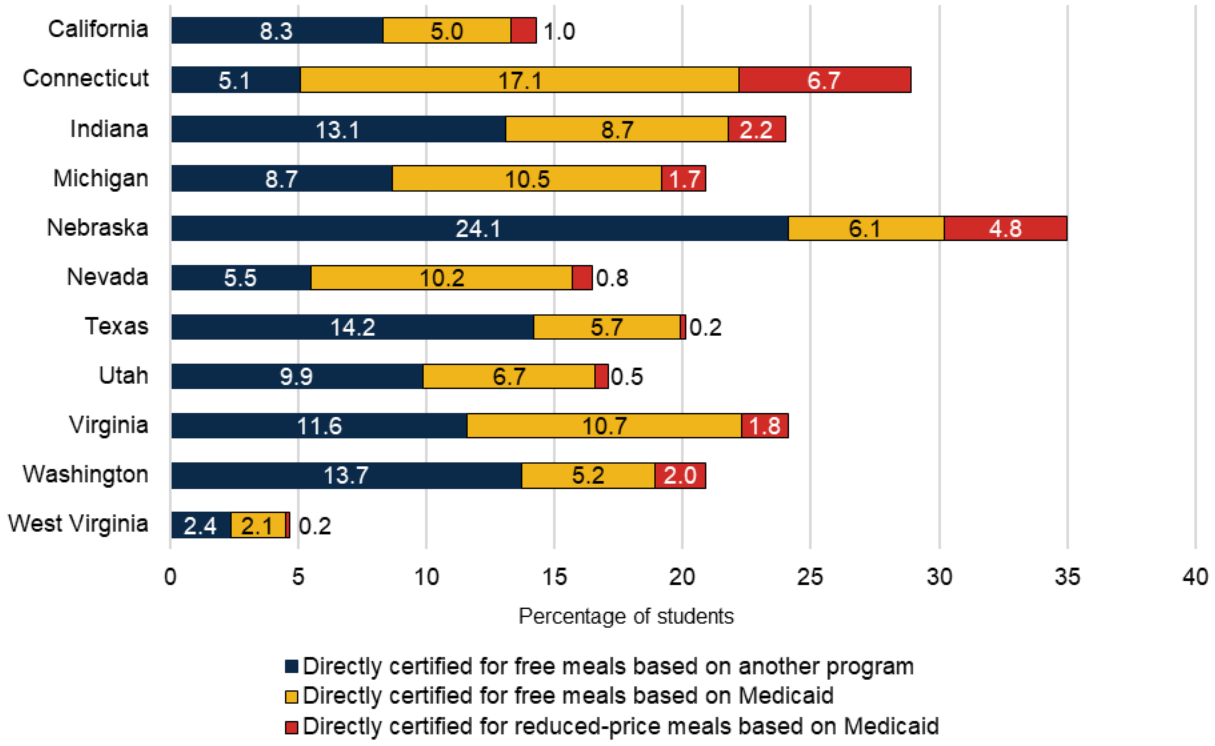
The total percentage of students certified for reduced-price meals decreased significantly in six States but increased in two others.

Participation. For States with changes in certification rates or CEP participation between baseline and SY 2019–2020, those changes translated into changes in at least some participation outcomes. The seven States with increases in the percentage of students receiving free meals—due to increases in CEP or free certifications or both—all had statistically significant increases in the percentage of lunches served for free (ranging from 2 to 13 percentage points), and six of those States also had increases in the percentage

[2] Because Florida and Massachusetts had conducted DCM for free meals statewide during the baseline year under the previous DCM demonstration, analyses of effects related to free meals are not presented for those two States.
[3] Iowa and Wisconsin were excluded from the analysis of reduced-price certification outcomes because the necessary data were unavailable for those States.

of breakfasts served for free (ranging from 2 to 14 percentage points). These increases were typically accompanied by smaller decreases in the percentage of meals served at a reduced price: for lunch in six of the States (ranging from 2 to 4 percentage points) and for breakfast in all seven (ranging from 1 to 4 percentage points). For both breakfasts and lunches, in each State where the percentage of meals served for free increased, this increase was larger than any decrease in the percentage served at a reduced price, indicating an increase in the overall percentage of meals served for free or at a reduced price.

Figure ES.1. Percentage of enrolled students directly certified in SY 2019–2020



Source: Administrative records provided by State administrators.

Notes: Percentages are calculated based on all students enrolled in the districts included in the analysis. Florida, Iowa, Massachusetts, and Wisconsin are excluded from this figure because data on one outcome are unavailable. Values in this figure are regression adjusted.

Four States without changes in the percentage of students receiving free meals had a statistically significant change in at least one participation outcome. In Iowa, the percentage of lunches and breakfasts served for free increased between baseline and SY 2019–2020, and in Virginia these two outcomes decreased during the same period. The percentage of breakfasts served for free also decreased in Indiana, and the percentage of lunches served at a reduced price decreased in Utah. Because DCM-F/RP was only expected to influence participation outcomes through effects on certification outcomes (including CEP), the inconsistent findings in these four States likely reflect factors unrelated to the demonstration. As noted above, although the statistical model used to estimate changes accounts for the influence of included time-varying characteristics and any time-invariant district characteristics that might affect outcomes, regressions cannot control for unmeasured time-variant factors, such as other changes to school meal operations or changes in student preferences for school meals.

Changes in the overall school meal participation rates were somewhat less common than changes in the distribution of meals served. The average number of lunches served per student per day increased in two States between baseline and SY 2019–2020 and decreased in two others. All four of those States had increases in CEP and/or free certifications. The average number of breakfasts served per student per day increased in seven States (including four with increases in CEP) and decreased in one. Again, because DCM-F/RP was expected to influence participation only through effects on certification, the inconsistent findings across outcomes in some States likely reflect changes unrelated to the demonstration.

Federal reimbursements. The changes in Federal reimbursement outcomes between the baseline year and SY 2019–2020 were largely increases. For States with statistically significant changes in both reimbursement and participation outcomes, the changes were generally consistent. For the NSLP, 11 States experienced statistically significant increases in the blended reimbursement rate (BRR) (ranging from 4 cents to 26 cents), and 8 of these States—including 6 of the 7 with increases in CEP participation—also had increases in reimbursements per student per day (from 3 cents to 26 cents).[4] However, the BRR decreased (by 6 cents) in 1 State, and reimbursements per student per day decreased (by 3 to 6 cents) in two others. Fewer States saw statistically significant changes in SBP reimbursements. The SBP BRR increased significantly (by between 3 and 18 cents) in 6 States but decreased (by between 4 and 13 cents) in 2 States. SBP reimbursements per student per day increased (by between 3 and 17 cents) in 8 States and saw no significant changes in other States. Similar to the participation findings, because the demonstration was expected to influence reimbursements through effects on certification and participation, the changes that were inconsistent across these outcomes likely reflect changes in factors unrelated to DCM-F/RP.

State administrative costs. The administrative costs incurred by State agencies in SY 2019–2020 to implement DCM-F/RP (over and above other certification costs) were generally quite low, in part because start-up costs were completed in earlier years. Costs ranged from $0 to approximately $84,000 across the 15 States in SY 2019–2020, averaging about $8,000 per State. Dividing total costs by the number of students directly certified for free or reduced-price meals based on Medicaid data yields a cost of just 8 cents per student directly certified through the demonstration.

Six States reported zero costs for DCM-F/RP, as did one agency (either the child nutrition agency or the Medicaid eligibility agency) in five other States. Only three States reported administrative costs for DCM-F/RP above $5,000 in SY 2019–2020. Nevada incurred the highest costs—about $84,000—which were driven primarily by large contractor costs for developing a new tool for looking up individual students. Across the 15 demonstration States, the division of costs between child nutrition and Medicaid eligibility agencies varied somewhat, but on average, child nutrition agencies incurred higher costs.

E. Limitations

Limitations of the DCM-F/RP demonstration design and available data necessitate caution in interpreting the findings. An experimental design, like that used for the first DCM demonstration, was not possible for the new demonstration, so the effects of DCM-F/RP are estimated using less rigorous methods, as discussed in Section C.

Other limitations relate to the data available. As noted above, Iowa and Wisconsin were excluded from analyses of reduced-price certification because reliable data on reduced-price certification were not

[4] The BRR measures the average reimbursement per meal served and is computed as total Federal reimbursements divided by the number of meals served.

available for those two States. Other certification data elements were unavailable for Indiana, Nebraska, and Wisconsin, leading to the estimation of one or two key outcome measures for each of those States by combining data sources. In addition, some districts were excluded from the analysis sample due to incomplete or inconsistent administrative data (notably in Indiana and Virginia). Finally, findings related to State administrative costs are based on staff reports, which reflect the perspectives of respondents and could be subject to recall error. Other undetected errors could also remain in the data.

In addition, some questions related to the demonstration were not addressed by the evaluation. For example, we did not directly assess how many students would have been certified free or reduced-price by application in the absence of DCM-F/RP. The study also did not explore the extent to which free DCM matches and corresponding increases in identified student percentages (1) were a factor in decisions to elect CEP or (2) increased reimbursement rates for schools that had elected CEP prior to implementation of DCM-F/RP.

F. Summary

In summary, the evaluation revealed that DCM-F/RP resulted in direct certification of substantial numbers of students to receive free or reduced-price meals based on Medicaid data: more than one-third of all students directly certified for free or reduced-price meals. Because Medicaid comes last in the order of programs used for direct certification, these students would not have been directly certified in the absence of the demonstration, but some likely would have been certified by application in the absence of DCM-F/RP.

The percentage of students attending schools participating in the CEP increased in seven States between the baseline year and SY 2019–2020. DCM-F/RP contributed to these increases in CEP, because eligibility for CEP is based on the percentage of students directly certified, but growth in CEP is part of a broader trend across the nation, including in States that are not part of the DCM-F/RP demonstration. Despite the growth in CEP, the total percentage of students individually certified for free meals grew between the baseline year and SY 2019–2020 in two demonstration States, and the total percentage of students certified for reduced-price meals grew in two others.

In most of the States that had changes in overall certification rates or CEP, those changes translated into changes in some participation and Federal reimbursement outcomes. State administrative costs for implementing DCM-F/RP were zero in several States and low in most others.

The most notable and consistent change across the demonstration years is the large decrease in State administrative costs, which fell precipitously after start-up activities were completed. Combined with the certification findings, this pattern suggests that the demonstration continued to be successful in reaching large numbers of students who were not directly certified based on other programs, and at a reasonable cost. However, the effects of DCM-F/RP on less direct outcomes—including total certifications, participation, and Federal reimbursements—are not as clear, due in part to the expansion of CEP.

I. Introduction

The demonstration of Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) allows authorized States and school districts to use Medicaid data files to identify students eligible to receive meals for free or at a reduced price under the National School Lunch Program (NSLP) and School Breakfast Program (SBP). The Food and Nutrition Service (FNS) contracted with Mathematica to conduct a study of the first years of this demonstration to describe the implementation process and explore its effects on certification, participation, Federal reimbursements, and State administrative costs. This report, the third in a series, presents the findings from school year (SY) 2019–2020.[5]

A. The school meal programs and direct certification

The NSLP and SBP are cornerstones of the government's efforts to provide nutritious meals to schoolchildren. All students enrolled in schools participating in the NSLP or SBP are eligible to receive subsidized school meals. Students in families with incomes at or below 130 percent of the Federal poverty level (FPL)—$33,475 for a family of four during SY 2019–2020—are eligible for free meals, as are students whose families participate in one of several public assistance programs. Reduced-price meals are provided to students whose families have incomes between 130 and 185 percent of the FPL (between $33,475 and $47,638 for a family of four). Districts use two methods to certify students for free or reduced-price meals:

Certification through application. For students to be certified based on an application, households must either provide detailed information on household size and income or demonstrate that they are categorically eligible because they participate in one of several public assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), or the Food Distribution Program on Indian Reservations (FDPIR). School district staff assess the application information to determine whether the household meets eligibility requirements.

Direct certification. In the direct certification process, State agency or school district staff match student enrollment records with administrative records from programs that confer categorical eligibility to identify and automatically certify eligible students for free school meals. All districts that certify students are required to conduct direct certification with SNAP at least three times each year. FNS encourages more frequent direct certification in general and direct certification of students in TANF and FDPIR households as well.[6]

Direct certification is intended to ensure that students receive the meal benefits they are eligible for and to improve program integrity by reducing error. It also relieves some of the burden that applying for school meals programs places on parents, and in turn reduces the burden that reviewing and approving or denying those applications places on school district staff.

Some schools and districts use alternative procedures that do not involve certifying individual students each year; instead, they serve free meals to all students. Under the Community Eligibility Provision

[5] The two earlier reports in the series are Hulsey et al. 2019 (available at https://www.fns.usda.gov/cn/evaluation-direct-certification-medicaid-free-and-reduced-price-meals) and Hulsey et al. 2020 (available at https://www.fns.usda.gov/nslp/evaluation-direct-certification-medicaid-free-and-reduced-price-meals-dcm-frp).

[6] Students documented as foster children, homeless, migrant, runaways, or participating in Head Start can also be directly certified for free school meals.

(CEP), authorized school districts and schools in high-poverty areas receive the Federal free reimbursement rate for up to 100 percent of meals served, depending on the percentage of "identified students," those eligible to be certified for free meals through means other than applications.[7] Districts participating in Provision 2 or Provision 3 conduct certification in a base year and are reimbursed in later years based on claims from that base year.[8]

B. Demonstrations using Medicaid data for direct certification

Participating in Medicaid does not confer categorical eligibility for free meals, but the income information from Medicaid eligibility or enrollment files can be used to assess whether a student is income-eligible for free or reduced-price meals. This creates an opportunity to directly certify additional eligible students who participate in Medicaid but not in SNAP or other programs used for direct certification.

The Healthy, Hunger-Free Kids Act of 2010 (HHFKA; P.L. 111-296) required FNS to conduct a demonstration that added Medicaid to the list of programs used to directly certify students for free school meals in selected States and districts. Under this demonstration, which began in SY 2012–2013, students were eligible for free meals if they were enrolled in Medicaid and in a household with Medicaid gross income not exceeding 133 percent of the FPL. (This first direct certification with Medicaid (DCM) demonstration certified students only for free meals, not for reduced-price meals.) The legislation specified the use of gross income "before the application of any expense, block, or other income disregard" rather than net income for determining eligibility under DCM. However, the eligibility determination relied on the definition of household used by the Medicaid agency, which can be different from the one used in the school meal programs. Under this first demonstration, Florida, Illinois, Kentucky, New York City, and Pennsylvania began conducting DCM in SY 2012–2013, followed by Massachusetts and the rest of New York State in SY 2013–2014, and by California in SY 2014–2015.

Beginning in SY 2016–2017, FNS initiated a new demonstration that authorized selected States and districts to directly certify students for free *and* reduced-price meals using Medicaid data. This DCM-F/RP demonstration differs from the previous DCM demonstration in several ways. First, the income threshold for free meal certification based on Medicaid data was set at 130 percent of the FPL (rather than 133 percent), aligning with the standards for establishing NSLP/SBP eligibility based on income reported on an application.[9] Second, the DCM-F/RP States also use the Medicaid data to identify students in households eligible to receive reduced-price meals and directly certify them at that level. Students can be certified for reduced-price meals under DCM-F/RP if their household income is between 130 and 185 percent of the FPL. Finally, to reflect changes in Medicaid income and household definitions under the

[7] Schools, groups of schools, or entire districts are eligible for the CEP if at least 40 percent of their students in a previous year were identified as eligible for free meals through means other than submitting an application—such as through direct certification. Reimbursement rates are based on the percentage of students identified as free-eligible. The percentage of identified free-eligible students is multiplied by 1.6, and the resulting percentage of meals are reimbursed at the free rate, with the remaining meals reimbursed at the paid rate. When the percentage of identified students is 62.5 percent or higher, all meals are reimbursed at the free rate.

[8] Under Provisions 2 and 3, schools operate a base year in which they serve all meals at no charge but use standard program procedures to certify free and reduced-price-eligible students and count meals by eligibility category. In subsequent (non-base) years, the schools continue to serve all meals at no charge but do not certify students and are reimbursed using the base year percentages of free and reduced-price eligible students.

[9] California operates a variation on DCM-F/RP in which the income threshold for free meal eligibility is 133 percent of the FPL.

Patient Protection and Affordable Care Act (ACA) of 2010, guidelines for assessing DCM-F/RP eligibility were revised as follows:

- For students receiving Medicaid in categories[10] where income is defined as the sum of the Modified Adjusted Gross Income (MAGI) for each individual included in the household, eligibility is assessed based on MAGI before applying the 5 percent of FPL disregard used to assess eligibility for Medicaid benefits.[11] This definition covers most Medicaid cases.
- For students receiving Medicaid in categories for which MAGI is not used, DCM-F/RP eligibility is assessed based on the family's gross income before "any expense, block, or disregard"—that is, without applying any State-specific income exclusions or modifications States might use to determine Medicaid eligibility.

Under both definitions, the same income guidelines used for determining eligibility for free or reduced-price meals based on an application are applied to the income information from the Medicaid data file for the household as defined by Medicaid. Specifically, students can be certified for free meals under DCM-F/RP if their household income as determined by Medicaid is at or below 130 percent of the FPL for the family size used for determining Medicaid eligibility and for reduced-price meals if their household income is between 130 and 185 percent of the FPL.

Fifteen States participated in the DCM-F/RP demonstration:

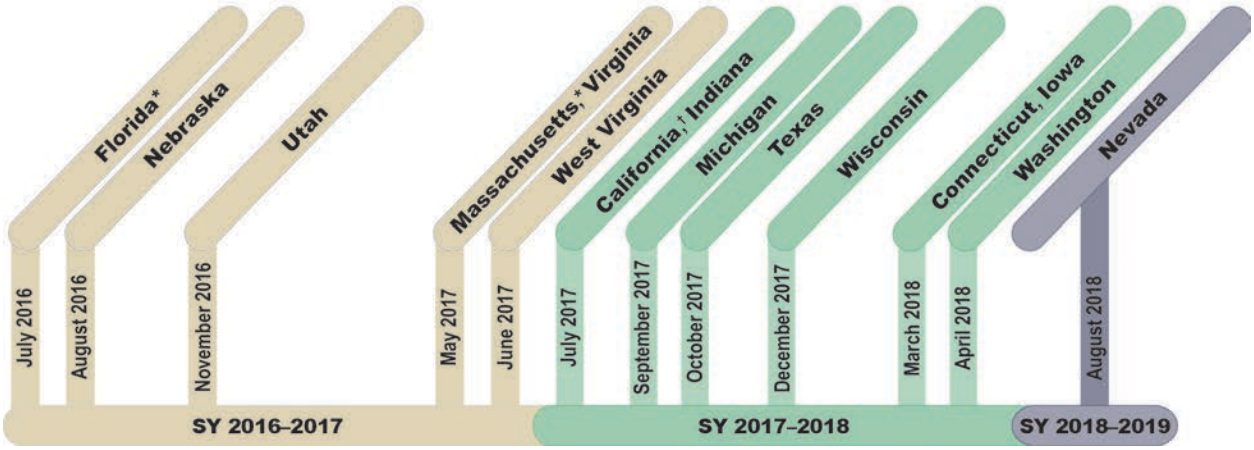
- Six States began conducting DCM-F/RP statewide in SY 2016–2017: Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia. Collectively, these States are referred to as Cohort 1.
- Eight States joined the demonstration in SY 2017–2018: Connecticut, Indiana, Iowa, Michigan, Nevada, Texas, Washington, and Wisconsin. These States are referred to as Cohort 2. However, due to delays, Nevada did not certify students through DCM-F/RP until SY 2018–2019.
- California expanded its implementation of DCM-F/RP from 14 districts in SY 2016–2017 to statewide in SY 2017–2018. California is considered a Cohort 1 State for State-level analyses and a Cohort 2 State for district-level analyses, because the majority of the districts in the State began DCM-F/RP in the second year.

Even within a cohort, the point in the school year when students were first certified through DCM-F/RP varied considerably across States (Figure I.1). Although several conducted DCM-F/RP late in the school year of their first year of implementation, all had been doing so for at least a year before SY 2019–2020, the school year that is the focus of this report.

[10] Medicaid categories, established by each State, are designations indicating the criteria by which an individual qualifies for Medicaid assistance, including income limits and other eligibility criteria such as age, disability, or receipt of Supplemental Security Income.

[11] When determining Medicaid eligibility based on MAGI, States disregard a portion of the applicant's income equal to 5 percent of the FPL. Applying this disregard is the equivalent of raising the income eligibility thresholds for Medicaid by 5 percent of FPL.

Figure I.1. Timing of initial DCM-F/RP match in each State



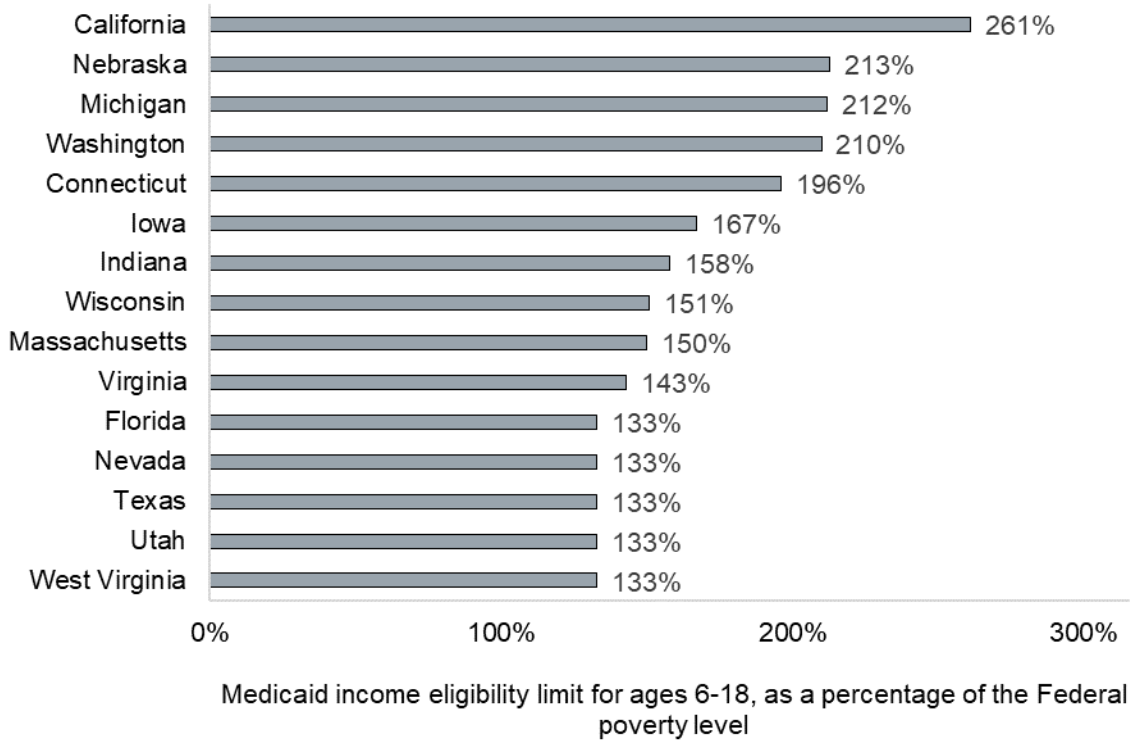
* Participated in the previous DCM demonstration.

† Fourteen districts in California piloted the demonstration beginning in May 2017.

The success of DCM-F/RP depends on the ability of State agencies and school districts to access information on household size and gross income in Medicaid eligibility files; assess children's eligibility based on this information; and match the student to school enrollment files. Within the implementation States and districts, two technical factors limited the pool of students that could be reached by the demonstration. First, the potential effect of DCM-F/RP on students' access to free school meals is limited because a large proportion of Medicaid enrollees also receive SNAP benefits or assistance from other programs used to directly certify students for free meals.[12] If these children are already directly certified, they will not receive any additional benefit from DCM-F/RP. Second, the potential of the demonstration to certify students for reduced-price meals (185 percent of the FPL) depends on the Medicaid eligibility thresholds, which vary by State and Medicaid category. Figure I.2 shows the maximum household income limit for the principal MAGI group—the most common eligibility category—in each demonstration State. In States with Medicaid income limits below 185 percent of the FPL, DCM-F/RP will not be able to reach students with incomes between the Medicaid income limit and 185 percent of the FPL because they are not eligible for Medicaid. In some States, the Medicaid income limit is only a few percentage points above the threshold for free meals (130 percent of the FPL), resulting in an extremely narrow band of income that could result in certification for reduced-price meals through DCM-F/RP. The limits shown in Figure I.2 are not adjusted to reflect the 5 percent disregard typically applied to MAGI before assessing eligibility for Medicaid, and other Medicaid categories have different income limits.

[12] Medicaid beneficiaries and participants in these other programs do not overlap completely because of different eligibility rules and participation patterns among eligible households. For example, households are generally eligible for SNAP, subject to asset limits, if their gross incomes are at or below 130 percent of the FPL and their net incomes (after deductions) are at or below 100 percent of the FPL. In contrast, Medicaid income thresholds differ by State (Figure I.2) and other factors. Households or individuals can also be categorically eligible for SNAP and/or Medicaid benefits—regardless of income—based on other criteria, which differ by program and by State.

Figure I.2. State Medicaid income eligibility limits



Source: Centers for Medicare & Medicaid Services (2019).

Note: The limits reflected here include Medicaid expansions that are funded by the Children's Health Insurance Program, and they are not adjusted to reflect the 5 percent disregard typically used to assess eligibility for Medicaid. Eligibility limits are for the primary MAGI group; States have other Medicaid categories with different eligibility criteria.

MAGI = Modified adjusted gross income.

C. Evaluations of the demonstrations

FNS has sponsored evaluations of the two demonstrations that use Medicaid data for direct certification: (1) DCM, which enables students to be directly certified for free meals, and (2) DCM-F/RP, which enables students to be certified for free or reduced-price meals.

Evaluation of the DCM demonstration. FNS contracted with Mathematica and its subcontractor Insight Policy Research to conduct a study of the first two years of the DCM demonstration (SY 2012–2013 and SY 2013–2014).[13] In five States, districts were randomly assigned to either a treatment group that implemented DCM or a control group that did not.[14] Using this experimental design, the study examined whether DCM led to changes in certification rates, participation rates (the numbers of meals served per student per day), Federal reimbursements, and certification costs incurred by districts. In seven States, the study also assessed State-level administrative costs and identified the challenges that States and districts faced when implementing DCM.

[13] Two reports present findings on the effects of the DCM demonstration (Hulsey et al. 2015; Hulsey et al. 2016).
[14] Random assignment was not possible in Kentucky and Pennsylvania, which implemented DCM statewide. California, which did not join the demonstration until the third year, was not included in the evaluation.

The evaluation found that DCM positively affected certification and NSLP and SBP participation outcomes in some demonstration States but not others. These increases resulted in additional Federal reimbursements in some States, but there was no impact on district costs for certifying students. State DCM administrative costs varied widely, but the majority of the costs were for start-up and not ongoing activities. Because the study used an experimental design, it was able to produce internally valid estimates of the impact of DCM for the participating evaluation districts in the participating States—that is, impacts can be attributed to DCM instead of other factors. However, the study was not intended to be nationally representative, and the findings cannot be generalized to a broader (or otherwise different) set of States and districts.

Evaluation of the DCM-F/RP demonstration. FNS contracted with the same team to conduct a study of the DCM-F/RP demonstration. Findings from the first two years of the evaluation, which covered experiences during SY 2016–2017 and SY 2017–2018, are presented in two earlier reports (Hulsey et al. 2019 and Hulsey et al. 2020). The current report focuses on SY 2019–2020, which is the third year of the DCM-F/RP evaluation and the fourth year of the demonstration.[15] This report addresses the four key objectives listed in Table I.1 and associated research questions listed in the following chapters. Objectives 1 and 2 focus on the potential of DCM-F/RP to reach students who would not be directly certified through another program. Addressing the research questions under these objectives involves analyzing certification and DCM-F/RP matching outcomes. Objective 3 addresses the possible effects of DCM-F/RP on school meal participation, Federal reimbursement costs, and State administrative costs. Objective 4 explores differences over the years of the demonstration.

Table I.1. Study objectives

Objective number	Objective	Related research questions[a]	Relevant chapter(s)
1	Explore the potential of direct certification with Medicaid to reach children who are eligible for free or reduced-price school meals but are not certified to receive the meals.	A.1–A.5	III
2	Explore the potential of direct certification with Medicaid to directly certify eligible children who are enrolled for free or reduced-price school meals based on a household application.	A.1–A.4	III
3	Examine the effect of DCM-F/RP on school meal participation, Federal reimbursement costs, and State administrative costs.	B.1–B.4	IV, V, and VI
4	Examine continuing effects of Medicaid data matching on eligibility and costs over an additional, full school year under the demonstration.	A.5, B.3, C.4	III, IV, V, and VI

[a] Research questions are listed in the chapters that contain the related analyses.

To address these objectives, the study team collected two key types of data: (1) district-level administrative records on certification and participation and (2) workbooks detailing costs incurred by State agencies in implementing DCM-F/RP. The sample for the third year of the DCM-F/RP demonstration evaluation includes all 15 demonstration States. Some analyses include all districts in each State, whereas others focus on a subsample of districts or on State-level activities. Some analyses are limited to States that provided specific types of data or for which a particular outcome was applicable, and

[15] Due to delays, the evaluation did not collect data on the third year of the demonstration, SY 2018–20219.

analyses for the Objective 4 include only States for which the outcomes could be measured for more than one demonstration year.

An experimental design like the one used for the first DCM demonstration was not possible for the new demonstration, so this study uses less rigorous methods to estimate the effects of DCM-F/RP. Effects on certification, participation, and Federal reimbursements are measured by comparing the outcomes of districts in the year before the State began the demonstration to those same outcomes in SY 2019–2020. In this pre-post design, differences between the two years could be affected by unrelated factors in addition to the effects of the demonstration. Although we used a regression model to control for the influence of some time-varying characteristics, factors not included in the model (such as unrelated improvements in certification processes, broader trends in CEP adoption, or changes in student preferences) could be driving some of the observed changes. These concerns about changes in factors unrelated to the demonstration increase with the length of time elapsed since baseline. Other outcomes, including State administrative costs, are explored through descriptive analyses.

D. Overview of report

This report presents the findings from SY 2019–2020, which was the second year of DCM-F/RP implementation in Nevada, the third year of implementation in other Cohort 2 States, and the fourth year of implementation in Cohort 1 States. Chapter II summarizes the methods used to collect data and conduct analyses. Chapters III through V contain key findings on the effects of DCM-F/RP on certification, participation, and Federal reimbursement outcomes, respectively. Chapter VI describes key findings related to State administrative costs, and Chapter VIII summarizes our conclusions and the limitations of the findings. Appendices provide details on methodology and supplemental tables.

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II. Methods

This evaluation measures the effects of DCM-F/RP on certification, participation, and Federal reimbursements, based on a comparison of outcome measures in the baseline year (i.e., the year before the demonstration began) to those in SY 2019–2020. It also assesses State-level administrative costs incurred for DCM-F/RP that year. This chapter summarizes the data collection and analysis methods used, and Appendix A provides additional details.

A. Sample

The SY 2019–2020 analysis included all 15 demonstration States. Two or more State agencies participated in the data collection in each State (Appendix Table A.2).

The analysis sample included 5,966 school districts across the 15 States (Table II.1), representing public, private, and charter districts. Analyses included all school districts with complete certification and participation data for both the baseline year and SY 2019–2020, with some exceptions described in Appendix A. However, some outcomes are relevant for only a subset of demonstration States, as discussed in Section C.

Table II.1. Analysis sample

State	Number of State agencies in cost analysis	Number of districts in administrative records analysis[a]
California[b]	2	1,043
Connecticut	2	171
Florida	2	232
Indiana	2	300
Iowa	2	395
Massachusetts	2	394
Michigan	4	770
Nebraska	2	335
Nevada	3	29
Texas	2	1,125
Utah	3	101
Virginia	2	84
Washington	3	288
West Virginia	2	64
Wisconsin	3	635
Total	**36**	**5,966**

[a] This column shows the sample size for most quantitative analyses. However, some analyses focus on smaller samples of districts, as noted in the relevant tables.

[b] California implemented DCM-F/RP in 14 districts in SY 2016–2017 and statewide in SY 2017–2018. The district-level quantitative analysis includes only the districts that began DCM-F/RP in SY 2017–2018.

SY = school year.

B. Data collection

The evaluation included the following primary data collection activities:

- **Administrative records data.** District-level administrative records data collected fall into two broad categories: (1) enrolled students by certification status, method (direct certification or application), and basis of eligibility (certification based on income or categorical eligibility and the program that conferred that eligibility) and (2) information on monthly participation (that is, meals served) for the NSLP and SBP. To enable pre-post comparisons, we collected these data for both SY 2019–2020 and a baseline year. The baseline year is the year before the statewide implementation of the demonstration: SY 2015–2016 for Cohort 1 States, SY 2016–2017 SY for most Cohort 2 States (including California), and SY 2017–2018 for Nevada. Depending on data availability, we also collected data on SY 2019–2020 direct certification match results for some States. In addition, we collected public information on characteristics of districts and their communities, such as poverty and unemployment rates.
- **State administrative cost data.** We collected monthly data on the administrative costs of operating DCM-F/RP in SY 2019–2020 at the State level through Excel workbooks completed by staff for the State child nutrition and Medicaid eligibility agencies.[16] We sent clarification questions by email and followed up by telephone as needed to ensure accurate interpretation of the data provided.

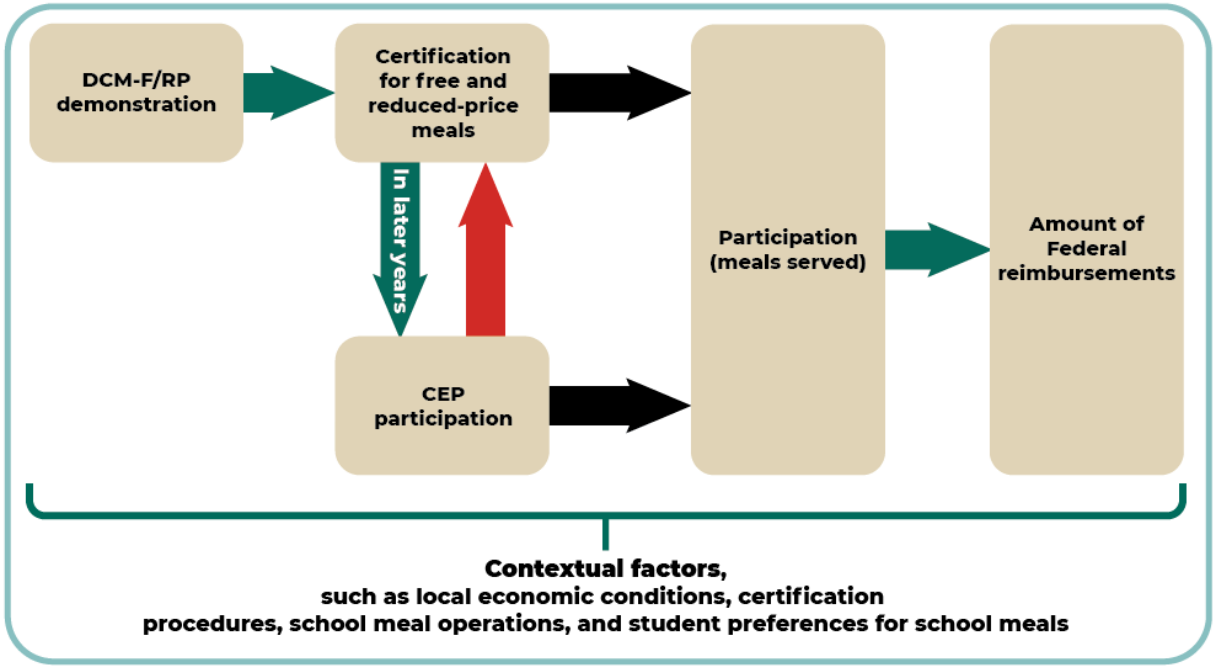
C. Key outcome measures

The evaluation examines outcomes measured at the district level in four domains: certification, participation (that is, receipt of school meals), Federal reimbursements, and State-level administrative costs. The most direct effect of DCM-F/RP would be on certification outcomes (Figure II.1). Certification outcomes, in turn, could affect participation outcomes, which would affect Federal reimbursement outcomes.

Most of the changes in one outcome would affect other outcomes in the same direction (indicated by green arrows in Figure II.1). For example, an increase in students certified for free meals would be expected to cause an increase in free meal participation, and an increase in participation rates would be expected to cause an increase in Federal reimbursements. However, relationships may be different for free and reduced-price meals; for example, an increase in students certified for free meals could result in an increase in free meal participation but a reduction in reduced-price meal participation. Also, changes in CEP participation would influence certification outcomes in the opposite direction. For example, an increase in CEP would reduce the percentage of students certified for free or reduced-price meals because students attending CEP schools are not individually certified. Because all students attending CEP schools receive free meals, an increase in CEP would have a positive effect on participation in free meals but a negative effect on participation in reduced-price meals.

[16] Although each agency's specific roles varied by State, DCM-F/RP required involvement of child nutrition and Medicaid eligibility agencies in each State. Child nutrition agencies led the demonstration and were typically responsible for matching Medicaid data with student enrollment data and providing results to districts. Medicaid eligibility agencies produced files of children enrolled in Medicaid and typically assessed eligibility for DCM-F/RP. More information on the agencies' roles can be found in Chapter VII of the DCM-F/RP Year 2 report (Hulsey et al. 2020).

Figure II.1. Outcomes potentially affected by DCM-F/RP



Note: Green lines indicate expected positive influences of one outcome on the next, red lines indicate expected negative influences, and black lines indicate mixed influences depending on meal reimbursement type (free or reduced).

Because the COVID-19 pandemic resulted in substantial changes to school meal program operations in many locations beginning in March 2020, measures used in the pre-post analyses cover months before COVID-19 pandemic disruptions began. Certification outcomes are based on October, and participation and Federal reimbursement outcomes are based on the months of the school year through February.

1. Certification outcomes

The most direct potential benefits that DCM-F/RP offers to students and their families are (1) certification for free or reduced-price meals when they might otherwise pay a higher price for school meals and (2) certification without having to complete an application. In addition, an increase in the number of students directly certified could affect a district's qualification for, and reimbursement rates under, the CEP, beginning in the school year after DCM-F/RP implementation. Aligned with these benefits, our primary certification measures for each district are as follows:

- Percentage of students certified for free meals based on Medicaid
- Percentage of students certified for reduced-price meals based on Medicaid
- Percentage of students directly certified for free meals
- Percentage of students certified for free meals
- Percentage of students certified for reduced-price meals
- Percentage of students attending schools participating in the CEP

Each of these outcomes is measured for the end of October in the baseline year and SY 2019–2020. Although consequences of the COVID-19 pandemic almost certainly affected student circumstances related to eligibility later in the school year, measuring certification outcomes as of October ensures that the findings are not influenced by the pandemic. For States participating in the previous DCM demonstration, districts were already using Medicaid data to certify students for free meals in the baseline year, so those States are excluded from analyses of outcomes related to free meals. Students attending CEP schools or other special provision schools in a non-base year receive free meals but are not certified individually for free or reduced-price meals. Consequently, they are not counted in the numerators of the first five outcome measures, although the denominators include all students enrolled in the districts.

Measures used in the pre-post analyses cover months before COVID-19 pandemic disruptions began. For example, certification outcomes are based on October, and participation outcomes are defined for the school year through February.

Most States provided the data elements needed to compute these six core measures directly, by dividing the number of students in the certification category by the total number of students enrolled in schools in the district. However, Indiana and Wisconsin did not provide all data required to compute the percentage of students directly certified for free meals based on Medicaid, and Nebraska did not provide that information for some districts. Instead, they provided partial data that we combined with data on match results to estimate the key certification outcomes for those States and districts, as described in Appendix A. Iowa and Wisconsin did not provide data needed to compute the percentage of students directly certified for reduced-price meals and are consequently not included in analyses of reduced-price certification. Also, Nebraska provided data required to compute the percentage of students directly certified for reduced-price meals based on Medicaid for only a subset of districts, and we used the values for that subset to estimate the missing values for other districts. Data issues in Indiana and Virginia required substantial proportions of districts to be excluded from all analyses in those States.

In addition to the core certification measures, we computed the following measures related to match results for the seven States able to provide the necessary data (Indiana, Iowa, Michigan, Nebraska, Texas, Washington, and Wisconsin).

- Number of students matched to free-eligible Medicaid records
- Number of students matched to reduced-price–eligible Medicaid records
- Percentage of each of these groups that were:
  - Matched to another program used for direct certification by program conferring eligibility (such as SNAP, TANF, and foster care)
  - Not matched to another program through the State match

2. Participation outcomes

Because the number of school meals served to students depends on the size of the district, as well as the certification status and participation behavior of students, we focus on outcome measures that account for size rather than comparing raw numbers of meals served. Beginning in March 2020, there were substantial changes to school meal program operations in many locations in response to the COVID-19 pandemic. To reflect pre-pandemic circumstances, each participation outcome is based on the months in the school year through February 2020. For comparability with SY 2019–2020, the baseline measures

cover through February for the baseline school year.[17] Our primary participation measures, each defined separately for the lunch and breakfast programs, are as follows:

- **The percentage of meals served for free**, defined as the number of meals reimbursed at the free rate divided by the total number of reimbursable meals served.[18]
- **The percentage of meals served at a reduced price**, defined as the number of meals reimbursed at the reduced-price rate divided by the total number of reimbursable meals served.[19]
- **The participation rate** (that is, the average number of reimbursable meals served per student per school day), defined as the total number of reimbursable meals served divided by the product of the total number of students enrolled in the district and the number of operating days during the relevant time period.

3. Federal reimbursement outcomes

Our primary measures of the impact of DCM-F/RP on Federal reimbursements were also defined to control for the size of districts and computed separately for the lunch and breakfast programs. They are based on the same set of months used for the participation outcomes: the beginning of the school year through February. The Federal reimbursement outcome measures are:

- **The blended reimbursement rate** (BRR), defined as total Federal reimbursements divided by the number of meals served. The BRR measures the average reimbursement per meal served.
- **Reimbursements per enrolled student per school day**, defined as total Federal reimbursements for meals served to students divided by the product of the total number of students enrolled in the district and the number of operating days in the relevant set of months.

The BRR reflects the distribution of meals served across the free, reduced-price, and paid categories and is therefore influenced by changes in the certification status of students who participate in the school meals programs. The reimbursement cost per student per day equals the BRR multiplied by the average number of meals served per student per day and consequently also reflects any change in the total number of meals per student. Both measures also depend on the FNS reimbursement rates, which vary by meal type (Appendix Table A.3). Reimbursement rates increase each year, so to control for this aspect of variation that is unrelated to the demonstration, in the pre-post analyses we used SY 2015–2016 reimbursement rates for each meal type in computing these measures for all years.

4. State administrative cost outcomes

Unlike the certification, participation, and Federal reimbursement measures, the State cost measures cover the entire school year. The primary State administrative costs measure is the total administrative cost, in

[17] The same set of months (i.e., the beginning of the school year through February) in SY 2016–2017 and SY 2017–2018 was used to define participation measures used for comparisons across demonstration years.
[18] In schools that certify students individually, the percentage of meals served for free and the percentage of meals reimbursed for free are identical. However, the concepts differ in special provision schools, where all meals are served for free but some are reimbursed at lower rates. This measure therefore understates the percentage of meals served for free in special provision schools.
[19] As with free meals, in schools that certify students individually, the percentage of meals served at a reduced price and the percentage of meals reimbursed at a reduced price are identical. This is also true at schools participating in CEP, where no meals are served or reimbursed at a reduced price. However, schools operating Provision 2 or 3 in a non-base year serve all meals for free but are reimbursed for some at the reduced-price rate. This measure therefore overstates the percentage of meals served at a reduced price in those schools.

dollars, of conducting DCM-F/RP (over and above time spent on other direct certification activities) across all relevant State agencies, months, activities, and cost categories. We also examined these costs separately by agency type (child nutrition agencies and Medicaid eligibility agencies) and by cost category (direct labor costs, other direct costs, and indirect costs). In addition, we measured the cost of DCM-F/RP per student enrolled, directly certified for free meals, and directly certified for free or reduced-price meals based on Medicaid.

D. Analysis methods

The evaluation uses comparative analyses to assess the demonstration's effects on certification, participation, and Federal reimbursement outcomes. We conducted descriptive analyses for Medicaid data matching and State administrative cost outcomes.

- **Estimation of SY 2019–2020 effects: comparisons between baseline year and SY 2019–2020.** We estimated the effects of DCM-F/RP on certification, participation, and Federal reimbursement outcomes by comparing the measure in the baseline year—the year before the demonstration—to the same measure in SY 2019–2020. We used regression models to control for changes in observed characteristics—such as economic conditions—between baseline and the first DCM-F/RP year and to improve the precision of the estimates.[20] However, the estimates do not control for characteristics not included in the model, such as broader trends in CEP adoption or changes in student preferences. If there was an unmeasured change unrelated to the demonstration that affected key outcomes—such as an improvement in school meal quality that increased participation among students, or greater availability of competitive foods that decreased interest in reimbursable school meals—the resulting change in participation could be misconstrued as an impact of the demonstration. Appendix A includes details of the regression models. Appendixes B through D contain unadjusted versions of the tables presented in Chapters III through V, respectively. All findings presented in the tables in Chapters III through V are regression adjusted.
- **Comparisons between effects across demonstration years.** For States that provided data for more than one demonstration year, we compared the effects in the earlier years of the DCM-F/RP demonstration with those in SY 2019–2020, using the same model.
- **Descriptive analyses of match results and State administrative costs.** In addition to the comparative analyses, we conducted descriptive analyses of measures collected only in DCM-F/RP years. These included tabulations of State DCM-F/RP match results for the seven States that provided the data necessary to partially address research questions A.2 and A.3. We also tabulated the various measures of State administrative costs, including overall costs and breakdowns by agency and type of cost.

E. Limitations

The findings in this report should be interpreted cautiously in light of several limitations of the DCM-F/RP demonstration evaluation design, sample, and data. Appendix A provides a more detailed discussion of these limitations.

Design. Because States implemented DCM-F/RP statewide, the evaluation used a pre-post design in which the estimated effect of the demonstration is the change in a given outcome that is not explained by

[20] Economic conditions for each school year were measured using data for the calendar year in which the school year began. For example, 2019 economic conditions were used for SY 2019–2020.

changes in measurable characteristics that occurred at the same time. The regression model accounts for the influence of included time-varying characteristics (i.e., district enrollment and local economic conditions) and any time-invariant characteristics (such as type of district) on the outcomes of interest. However, time-varying factors not included in the model and unrelated to the demonstration (such as other improvements to direct certification procedures, broader trends in CEP adoption, changes to school meal operations, or changes in student preferences for school meals) could still be driving some of the observed changes. Therefore, the estimates of effects might reflect factors other than DCM-FRP. The likelihood that factors unrelated to the demonstration drive changes in the outcomes increases with the amount of time elapsed since baseline. However, this caveat does not affect the most immediate outcomes of the demonstration: the percentage of students certified for free meals based on Medicaid data and the percentage of students certified for reduced-price meals based on Medicaid data. Those percentages would be zero in the absence of the demonstration, so the full change between baseline and SY 2019–2020 is attributable to DCM-F/RP.

Several States made notable changes to their direct certification procedures at the same time as they implemented the DCM-F/RP demonstration, or between then and SY 2019–2020. In SY 2017–2018, California introduced central direct certification matching statewide, and Texas began allowing districts to upload current student enrollment data for direct certification matching. In SY 2018–2019, Nebraska implemented a new direct certification system, and Nevada and Virginia shifted to central direct certification matching. These changes could affect outcomes included in this study, and there is no way to disentangle the effect of these changes from the effect of DCM-F/RP.

In addition, some questions related to the demonstration were not addressed by the evaluation. For example, we did not directly assess how many students would have been certified free or reduced-price by application in the absence of DCM-F/RP. The study also did not explore the extent to which free DCM matches and corresponding increases in identified student percentages (1) were a factor in decisions to elect CEP or (2) increased reimbursement rates for schools that had elected CEP prior to implementation of DCM-F/RP.

Sample. The DCM-F/RP evaluation is based on a sample of States that is not representative of all States nationally. The estimated effects presented for the 15 demonstration States should not be interpreted as indicative of the likely effects of nationwide adoption of DCM-F/RP. In addition, some districts (most notably in Indiana and Virginia) had to be excluded from the analysis because of issues with their data, and the remaining samples of districts in those States are not necessarily representative of all districts in those States.

Data. There are several other limitations related to the data available for the evaluation. Specific certification data elements were unavailable for some States, leading two (Iowa and Wisconsin) to be excluded from analysis of reduced-price certification outcomes, and requiring one or two key measures for three other States (Indiana, Nebraska, and Wisconsin) to be estimated by combining data sources, as noted in Section C and discussed further in Appendix A. In addition, although States could use data collected for required annual reporting to FNS as a source for most of the information needed for the certification analysis, some developed separate processes, such as a survey of districts, to collect other certification data elements needed for the DCM-F/RP evaluation. Different sources for the baseline and demonstration years could result in systematic differences in data quality. Some States were unable to obtain the data needed for the evaluation for all districts, and some districts were excluded from the analysis sample due to incomplete or erroneous administrative data. Those omitted districts might differ

systematically from districts for which data were available. There could be other errors remaining in the data that we were not able to detect.

Findings related to State administrative costs are based on staff reports. Differences between States should be interpreted with caution due to possible differences in respondents' judgments of whether a cost would have been necessary in the absence of DCM-F/RP.

III. Effects on Certification Outcomes

The most direct measure of the effects of DCM-F/RP is the change in certification outcomes, including the proportions of students directly certified based on Medicaid, directly certified based on any program, or certified for free or reduced-price meals through any method. DCM-F/RP can also affect school or district eligibility for the CEP. The analyses in this chapter address the research questions under Objectives 1, 2, and 4 of the study (Table III.1), which relate to (1) certification outcomes, (2) CEP eligibility, and (3) the results of matching student enrollment data with Medicaid and other program data, a key intermediate step in the direct certification process. In Section A, we describe the effects of DCM-F/RP on certification outcomes in SY 2019–2020, including certification for free and reduced-price meals (Research Questions A.2 and A.3) and participation in the CEP (related to Research Question A.4). In Section B, we describe how findings evolved across demonstration years of DCM-F/RP (Research Question A.5). Finally, in Section C, we discuss findings related to the results of DCM-F/RP matching (Research Questions A.2 and A.3).

Table III.1. Research questions and objectives related to certification and data-matching outcomes

Question number	Research questions
Objectives 1 and 2. Explore the potential of direct certification with Medicaid to (1) reach children who are eligible for free and reduced-price school meals but are not certified to receive the meals, and (2) directly certify eligible children who are enrolled for free and reduced-price school meals based on a household application.	
A.1	For each of the 15 demonstration States in SY 2019–2020, what is the number and percentage of students certified for: • Free meals based on direct certification by source (SNAP, TANF, FDPIR, Medicaid, other)? • Free meals based on application by type (categorical, income-based)? • Reduced-price meals based on application? • Reduced-price meals based on DCM-F/RP? • Paid meals?
A.2	For each of the 15 demonstration States with the database capability to address these questions, in SY 2019–2020, what is the total number of students directly certified for free meals using Medicaid data? What is the: • Total number of free DCM-F/RP matches that were already directly certified for free meals based on direct certification by source (SNAP, TANF, FDPIR, other)? • Total number of free DCM-F/RP matches that were already certified for free meals based on application by type (categorical, income-based)? • Total number of free DCM-F/RP matches that were already certified for reduced-price meals based on application? • Total number of free DCM-F/RP matches that were not certified for either free or reduced-price meals? • Total number of free DCM-F/RP matches that resulted in extended eligibility through the "living with" policy to other members of the household?

Question number	Research questions
A.3	For each of the 15 demonstration States with the database capability to address these questions, in SY 2019–2020, what is the total number of students directly certified for reduced-price meals using Medicaid data? What is the: • Total number of reduced-price DCM-F/RP matches that were already directly certified for free meals based on direct certification by source (SNAP, TANF, FDPIR, other)? • Total number of reduced-price DCM-F/RP matches that were already certified for free meals based on application by type (categorical, income-based)? • Total number of reduced-price DCM-F/RP matches that were already certified for reduced-price meals based on application? • Total number of reduced-price DCM-F/RP matches that were not certified for either free or reduced-price meals? • Total number of free DCM-F/RP matches that resulted in extended eligibility through the "living with" policy to other members of the household?
A.4	• How would DCM-F/RP change the distribution of districts that would be eligible to participate in the Community Eligibility Provision districtwide? • How many more districts would have an identified student percentage (ISP) greater than 40 percent?[a] • How many more districts would have an ISP greater than 50 percent? • How many more districts would have an ISP greater than 62.5 percent?
Objective 4. Examine continuing effects of Medicaid data matching on eligibility and costs over an additional, full school year under the demonstration.	
A.5	• How have the outcomes of Medicaid data matching described in Research Questions A.1 through A.4 changed from SY 2016–2017 and SY 2017–2018?

[a] Identified student percentage (ISP) refers to the percentage of students certified for free meals through means other than applications. FNS uses this percentage to assess eligibility and reimbursement rates under the CEP.

FDPIR = Food Distribution Program on Indian Reservations; SNAP = Supplemental Nutrition Assistance Program; SY = school year; TANF = Temporary Assistance for Needy Families.

A. Effects on certification outcomes in SY 2019–2020

The most immediate effect of DCM-F/RP is directly certifying students based on Medicaid data. Increases in direct certifications through Medicaid can increase the number of total direct certifications, which can increase the number of students individually certified for free or reduced-price meal benefits (Figure II.1). However, increases in free meal certifications can decrease reduced-price meal certifications if students directly certified for free meals through Medicaid would otherwise have been approved for reduced-price meals by application. The demonstration can increase CEP eligibility and participation after the first year of the demonstration because any increase in free direct certifications increases the schools' and districts' identified student percentage (ISP), the share of students identified as eligible for free meals through means other than applications. That figure is used to determine eligibility for and reimbursement under the CEP in subsequent school years. Increases in CEP participation, in turn, can decrease the number of certifications of all types because students attending CEP schools are not individually certified for meal benefits.

We assess DCM-F/RP's certification effects by measuring changes in outcomes between the baseline year (the year prior to DCM-F/RP implementation) and SY 2019–2020. The changes used to measure effects are regression-adjusted to control for economic and other factors. Appendix B, which contains supplemental tables related to certification outcomes, includes tables showing unadjusted outcome values for baseline and demonstration years.

1. Effects on CEP participation

By SY 2019–2020, all demonstration States were beyond their initial year of DCM-F/RP implementation, and CEP participation could consequently have increased as a result of DCM-F/RP. Because changes in CEP participation influence other certification outcomes, these changes need to be considered when interpreting results on free and reduced-price certification. Therefore, we present changes in CEP participation first to give some context for assessing other certification outcomes.

In seven States, there were statistically significant increases over the baseline year in the percentage of students attending CEP schools in SY 2019–2020. Increases ranged from 3.1 percentage points in Nebraska to 43.1 percentage points in West Virginia (Table III.2). Four States (California, Texas, Washington, and West Virginia) had increases of more than 10 percentage points. DCM-F/RP could be partially driving this increase in CEP participation, although it may also reflect a broader upward trend in CEP adoption since CEP became available for eligible schools and districts in all States in SY 2014-2015 (Pérez and FitzSimons 2021).

The remaining six States for which effects on CEP outcomes could be assessed had no statistically significant changes in CEP participation associated with DCM-F/RP when controlling for changes in economic conditions.[21]

DCM-F/RP was associated with increases in the percentage of students attending CEP schools in seven States, contributing to increases ranging from 3.1 to 43.1 percentage points.

2. Effects on certification for free meals

In SY 2019–2020, the percentage of students individually certified for free meals based on Medicaid ranged from 2.1 percent in West Virginia to 17.1 percent in Connecticut (Table III.3). These students would not have been directly certified in the absence of the DCM-F/RP demonstration, although some might have been approved for free meals by application.

For eight States, free direct certifications based on Medicaid contributed to a statistically significant increase in the total percentage of students directly certified for free meals in SY 2019–2020 relative to the baseline year. These increases ranged from 5.5 percent in Utah to 16.4 percent in Connecticut. Three of these States (Michigan, Nebraska, and Wisconsin) also had increases in CEP participation. That change—which DCM-F/RP could have contributed to—increased access to free meals but reduced the percentage of students available to be individually certified for meal benefits. This resulted in a smaller increase in free direct certifications than would have occurred if CEP participation had not changed. The remaining five States with increases in free direct certifications (Connecticut, Indiana, Iowa, Utah, and Virginia) had no increases in CEP participation between baseline and SY 2019–2020.

[21] We did not assess CEP participation changes in Florida or Massachusetts because those States participated in a previous demonstration of DCM for free meals, so any effects on CEP participation would have begun before the DCM-F/RP baseline year.

Table III.2. Effects of DCM-F/RP on participation in the CEP in SY 2019–2020

State	Percentage of students attending CEP schools		
	Baseline year[a]	SY 2019–2020	Change
California	6.5	36.2	29.7*
Connecticut	27.6	28.7	1.1
Indiana	13.6	13.8	0.2
Iowa	12.0	13.7	1.7
Michigan	21.6	28.5	6.8*
Nebraska	0.0^	3.1	3.1*
Nevada	28.0	38.6	10.6
Texas	15.4	35.3	19.9*
Utah	1.4	3.0	1.6
Virginia	17.6	11.6	-6.0
Washington	3.3	19.9	16.7*
West Virginia	43.1	86.2	43.1*
Wisconsin	14.8	20.5	5.7*
Pooled sample	**15.5**	**26.7**	**11.3***

Source: Administrative records provided by State administrators.

Notes: Florida and Massachusetts were excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affected reduced-price meals. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

* The change between the baseline year for this outcome and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SY = school year.

There were statistically significant decreases between baseline and SY 2019–2020 in the percentage of students directly certified for free meals in three States: California, Washington, and West Virginia (ranging from 4.0 to 14.9 percentage points; Table III.3). These findings are consistent with the large increases in CEP participation in these States, which reduced the number of students who could be individually certified. These three States also had the smallest increases in free direct certifications based on Medicaid.

Table III.3. Effects of DCM-F/RP on certification for free meals in SY 2019–2020

State	Percentage of students directly certified for free meals based on Medicaid			Percentage of students directly certified for free meals			Percentage of students certified for free meals		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	0.0	5.0	5.0*	19.9	13.3	-6.6*	40.2	17.8	-22.3*
Connecticut	0.0	17.1	17.1*	5.8	22.1	16.4*	12.4	22.7	10.3
Indiana	0.0	8.7	8.7*	16.1	21.8	5.8*	29.1	30.5	1.4
Iowa	0.0	7.5	7.5*	18.0	21.6	3.7*	26.1	27.2	1.2
Michigan	0.0	10.5	10.5*	11.9	19.2	7.3*	22.2	23.7	1.5
Nebraska	0.0	6.1	6.1*	20.6	30.2	9.6*	33.7	36.5	2.8*
Nevada	0.0	10.2	10.2[b]	16.9	15.8	-1.1	29.9	18.9	-11.0
Texas	0.0	5.7	5.7*	20.8	19.9	-0.9	37.8	26.8	-11.0*
Utah	0.0	6.7	6.7*	11.2	16.6	5.5*	24.7	24.8	0.1
Virginia	0.0	10.7	10.7*	13.0	22.3	9.3*	22.5	28.8	6.4
Washington	0.0	5.2	5.2*	22.9	18.9	-4.0*	32.4	22.2	-10.2*
West Virginia	0.0	2.1	2.1*	19.4	4.5	-14.9*	23.5	5.0	-18.5*
Wisconsin	0.0	9.0	9.0*	14.5	21.8	7.3*	20.8	23.9	3.2*
Pooled sample	**0.0**	**6.3**	**6.3***	**17.0**	**18.9**	**2.0***	**30.4**	**26.0**	**-4.4***

Source: Administrative records provided by State administrators.

Note: Percentages are calculated based on all students enrolled in the districts included in the analysis. Students attending schools that do not certify individual students, such as CEP and other special provision schools in non-base years, are not counted as certified. Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affected reduced-price meals. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

[b] Although there was no statistically significant change from baseline in the regression adjusted percentage of students directly certified for free meals based on Medicaid in Nevada, the State did directly certify students through Medicaid in SY 2019–2020. Appendix Table B.5.i shows the unadjusted value for this outcome.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

There was no statistically significant change in the total percentage of students directly certified for free meals in Nevada or Texas. Massachusetts and Florida are not included in the analysis of this outcome because they participated in a previous demonstration of direct certification through Medicaid for free meals, and therefore students were already directly certified for free meals based on Medicaid during the year used as the baseline for DCM-F/RP.

Across States, the percentage of students directly certified for free meals based on Medicaid ranged from 2.1 to 17.1 percent in SY 2019–2020.

The demonstration also had mixed effects across States on overall certification for free meals. There were no statistically significant changes for 6 of the 13 States included in the analysis of this outcome measure. Two States had statistically significant increases in the total percentage of students certified for free meals in SY 2019–2020 (2.8 percentage points in Nebraska and 3.2 percentage points in Wisconsin). In both of these States, the increase in the total number of free certifications was smaller than the increase in the percentage of students directly certified for free meals. This was also true for all eight States with significant positive increases in free direct certifications, suggesting that some students directly certified for free meals based on Medicaid would have been certified for free meals by application in the absence of the demonstration. Even if it did not change these students' status, the DCM-F/RP demonstration reduces administrative burden on families and district staff because they do not need to submit or process an application. In addition, increasing the number of students directly certified for free meals increases schools' and districts' identified student percentages, which are used to determine eligibility and reimbursement for CEP.

Due in part to increases in CEP participation, DCM/F-RP was associated with mixed effects on direct certification overall and total certifications for free meals in SY 2019–2020.

Four States out of the 13 had statistically significant decreases in the percentage of students certified for free meals, ranging from 10.2 percentage points in Washington to 22.3 percentage points in California. In three of these States there were also decreases in free direct certifications, and all four had an increase in CEP participation since baseline, which was likely the driving factor behind the reduction in free meal certifications.

3. Effects on certification for reduced-price meals

The demonstration had smaller effects on reduced-price certifications than it did on free certifications, Overall, the percentage of students directly certified for reduced-price meals based on Medicaid ranged from less than 0.1 percent in Florida to 6.7 percent in Connecticut (Table III.4). Five States directly certified less than 1 percent of students for reduced-price meals through Medicaid in SY 2019–2020.

Smaller percentages of students were directly certified for reduced-price meals based on Medicaid, ranging from less than 0.1 percent to 6.7 percent.

Some of the variation in rates of direct certification for reduced-price meals likely results from differences in State Medicaid income eligibility limits. On average, States with higher Medicaid income eligibility limits directly certified a larger percentage of students for reduced-price meals through DCM-F/RP. Five States had Medicaid income eligibility limits greater than 185 percent of the FPL and were thus able to certify students across the entire income eligibility range for reduced-price meals (Figure III.1). These include the two States with the highest percentages of students directly certified for reduced-price meals (Connecticut and Nebraska). Five States (Florida, Nevada, Texas, Utah, and West Virginia) had a Medicaid income eligibility limit of only 133 percent of the FPL and were able to reach only students

whose households were in the narrow band of 130 to 133 percent of the FPL to directly certify them for reduced-price meals. These States also had the five lowest total percentages of students directly certified for reduced-price meals (none higher than 0.8 percent).

Table III.4. Effects of DCM-F/RP on certification for reduced-price meals in SY 2019–2020

State	Percentage of students directly certified for reduced-price meals based on Medicaid			Percentage of students certified for reduced-price meals		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	0.0	1.0	1.0*	8.8	5.0	-3.9*
Connecticut	0.0	6.7	6.7*	1.6	6.2	4.6*
Florida	0.0	0.0^	0.0^[b]	5.1	3.8	-1.3*
Indiana	0.0	2.2	2.2*	6.2	7.1	0.9
Massachusetts	0.0	4.2	4.2*	-0.5[c]	5.8	6.3*
Michigan	0.0	1.7	1.7*	5.1	4.1	-1.1*
Nebraska	0.0	4.8	4.8*	8.7	8.5	-0.2
Nevada	0.0	0.8	0.8[b]	8.9	1.7	-7.2
Texas	0.0	0.2	0.2*	6.0	3.9	-2.0*
Utah	0.0	0.5	0.5*	7.4	6.1	-1.3
Virginia	0.0	1.8	1.8*	4.6	5.6	1.0
Washington	0.0	2.0	2.0*	7.5	5.2	-2.3*
West Virginia	0.0	0.2	0.2*	3.2	0.9	-2.3*
Pooled sample	**0.0**	**0.8**	**0.8***	**6.5**	**4.5**	**-1.9***

Source: Administrative records provided by State administrators.

Note: Percentages are calculated based on all students enrolled in the districts included in the analysis. Students attending schools that do not certify individual students, such as CEP and other special provision schools in non-base years, are not counted as certified. Iowa and Wisconsin are excluded from this table because reliable data for these outcomes are unavailable. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Michigan, Texas, and Washington; and SY 2017–2018 for Nevada.

[b] Although there was no statistically significant change from baseline in the regression-adjusted percentage of students directly certified for reduced-price meals based on Medicaid in Florida or Nevada, those States did directly certify students through Medicaid in SY 2019–2020. Appendix Tables B.5.c and B.5.i show the unadjusted values for this outcome in those States.

[c] The regression adjustment used in this analysis can result in negative regression adjusted values, particularly for cases with observed values close to zero. Appendix Table B.5.f shows the unadjusted values for this outcome.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

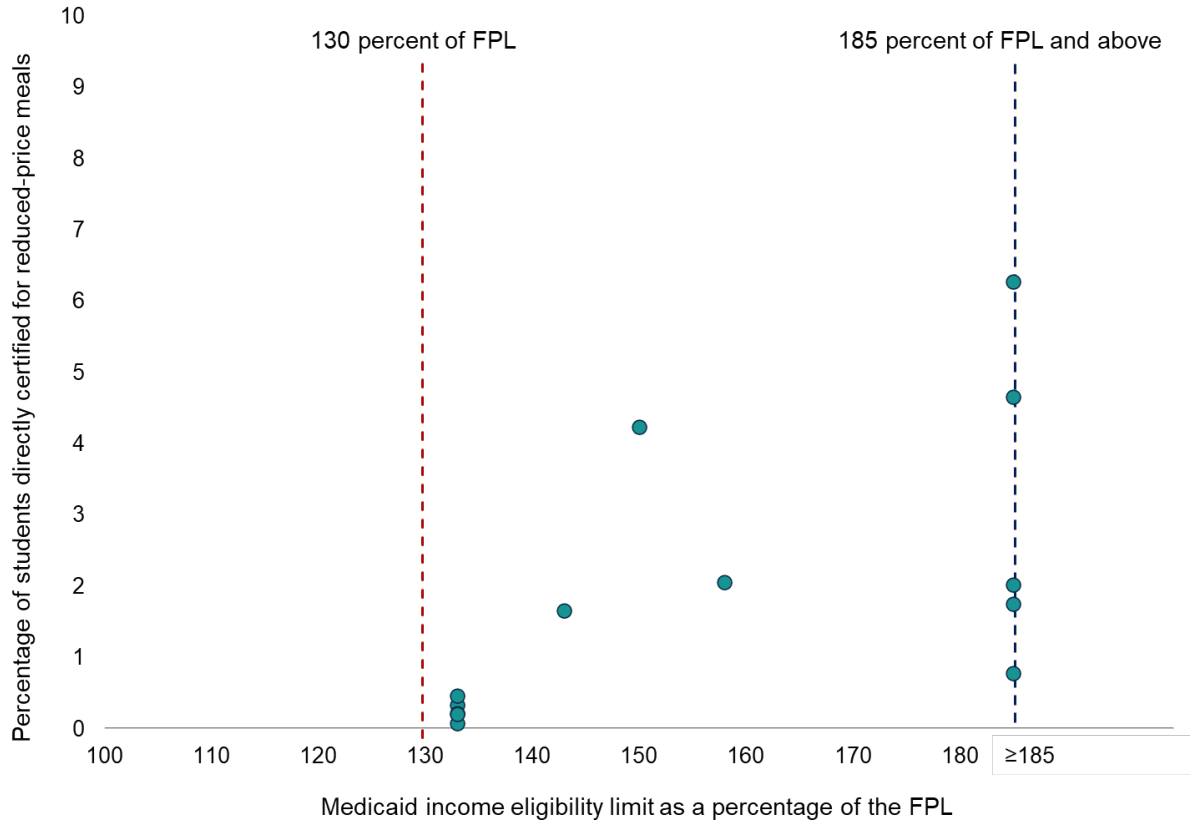
^ Number rounds to zero.

SY = school year.

Relative to the baseline year, in SY 2019–2020 the overall percentage of students certified for reduced-price meals decreased in six States and increased in two. Connecticut and Massachusetts had a

statistically significant increase (4.6 and 6.3 percentage points, respectively). These two States were also among those with the highest increases in direct certifications for reduced-price meals through Medicaid, suggesting that DCM-F/RP helped increase access to reduced-price meals for students who would not otherwise be certified for either free or reduced-price meals. In the six States with statistically significant decreases, values ranged from 1.1 percentage points in Michigan to 3.9 percentage points in California. Excluding Florida, these States had some of the highest increases in CEP participation, which would decrease reduced-price certifications by making fewer students available to be certified for meals through any method. There was no statistically significant change in this outcome in the other five States.

Figure III.1. State Medicaid income eligibility limits and rates of direct certification for reduced-price meals



Source: Administrative records provided by State administrators.

FPL = Federal poverty level.

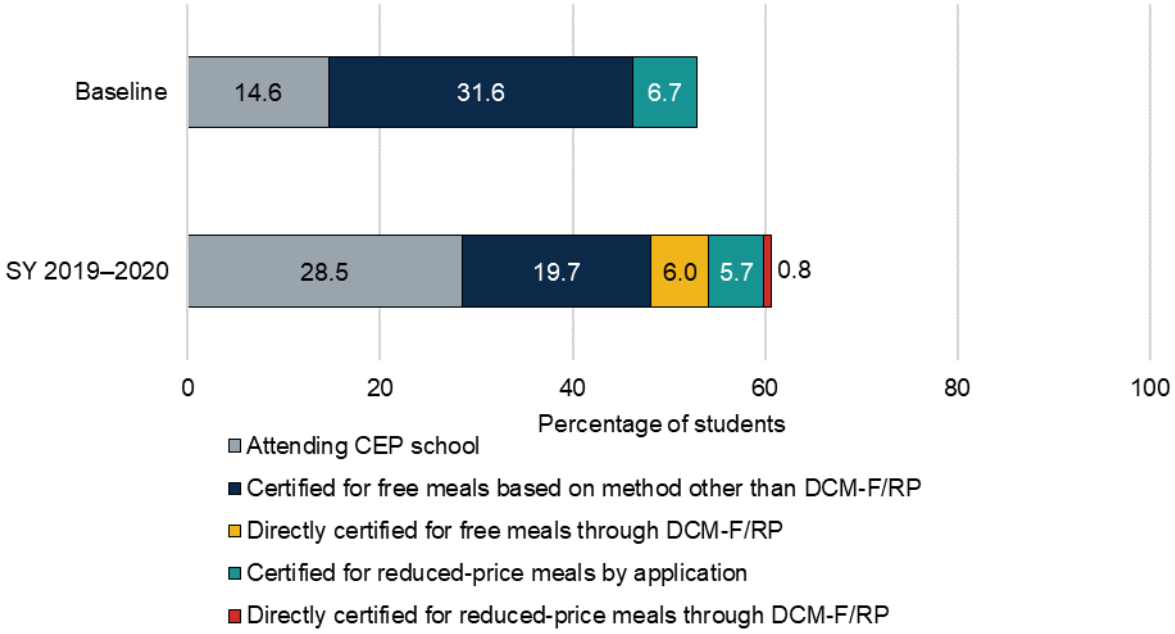
4. Combined certification results

Because both certified students and those attending CEP schools receive free or reduced-price meals, assessing how access to free and reduced-price meals changed with the implementation of DCM-F/RP requires examining certification outcomes together. Figure III.2 shows the certification and CEP outcomes for the baseline year and SY 2019–2020

Increased CEP participation combined with direct certifications based on Medicaid more than offset decreases in certification for free or reduced-price meals through other methods. This led to a net increase in access to meal benefits.

pooled across all States except Florida, Massachusetts, Iowa, and Wisconsin.[22] Free and reduced-price meal access expanded in States in this analysis through increases in CEP participation and direct certifications through Medicaid. CEP participation increased from 14.6 to 28.5 percent of students (Figure III.2).[23] Six percent of students were directly certified for free meals based on Medicaid in SY 2019–2020, and 0.8 percent were directly certified for reduced-price meals; there were no direct certifications based on Medicaid at baseline. Together, these increases more than offset the decreases in free or reduced-price meal certifications by other methods. Free certifications by methods other than DCM-F/RP fell from 31.6 to 19.7 percent of students. Reduced-price certifications by application decreased from 6.7 to 5.7 percent of students in these 11 States. The overall result was an expansion of about 7.7 percentage points in the share of students with access to free or reduced-price meals.

Figure III.2. Certification and CEP outcomes in baseline and SY 2019–2020



Source: Administrative records provided by State administrators.

Note: This figure excludes Florida and Massachusetts because they are excluded from analyses of free certifications and CEP participation; and excludes Iowa and Wisconsin because they are excluded from analyses of reduced-price certifications.

SY = school year.

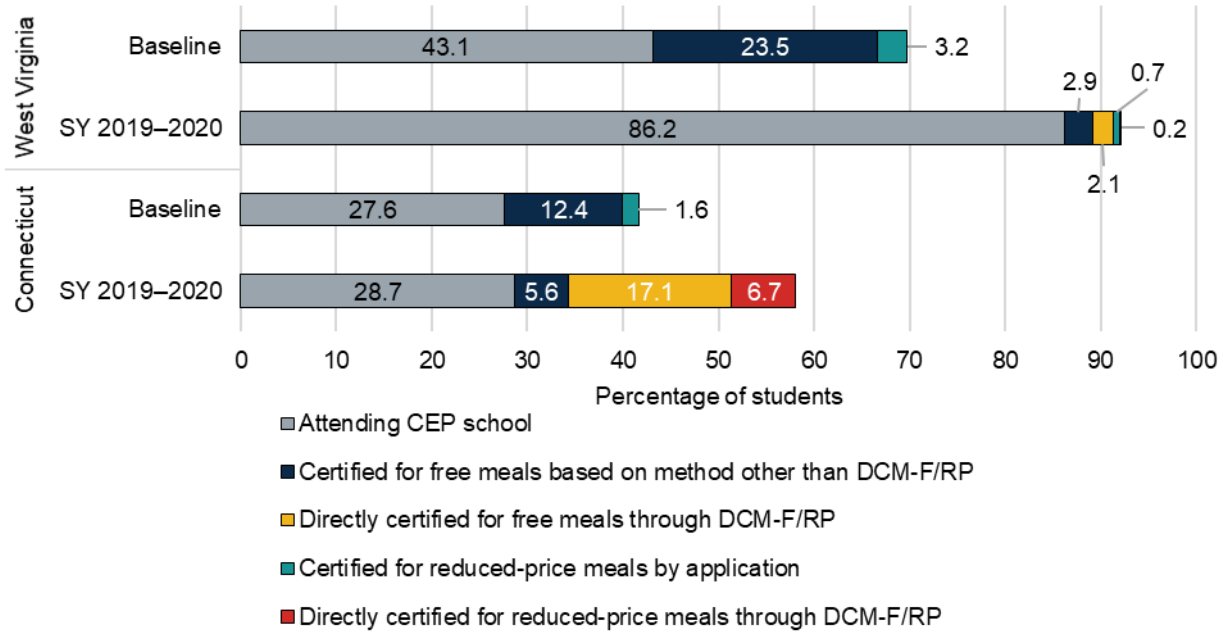
The States included in these aggregate results had expansions in access to free or reduced-price meals through CEP expansions, direct certifications based on Medicaid, or a combination of the two. The two States with the largest expansions in access, West Virginia and Connecticut, illustrate two different

[22] Florida and Massachusetts are excluded because they are excluded from analyses of free certifications and CEP participation; Iowa and Wisconsin are excluded because they are excluded from analyses of reduced-price certifications.

[23] Changes in CEP participation shown in Figure III.3 use the year before DCM-F/RP was implemented as the baseline year so it could have the same baseline year as the other certification outcomes. Except for Nevada, this does not correspond with the baseline year used in the analysis of CEP changes shown in Section III.A.1.

patterns. In West Virginia, there was a 22.4 percentage-point increase in access to free or reduced-price meals from SY 2015–2016 to SY 2019–2020, driven by an exceptionally large increase in CEP participation (Figure III.3). This CEP expansion—along with a small percentage of students directly certified through DCM-F/RP—more than offset decreases in certifications by other methods. California, Texas, and Washington followed a similar pattern, although with smaller changes than West Virginia (not shown). In contrast, Connecticut had an increase in access to meal benefits of about 16 percentage points from SY 2016–2017 to SY 2019–2020, driven overwhelmingly by direct certifications based on Medicaid (Figure III.3).

Figure III.3. Certification and CEP outcomes in baseline and SY 2019–2020 in West Virginia and Connecticut



Source: Administrative records provided by State administrators.

Note: The baseline year was SY 2015–2016 for West Virginia and SY 2016–2017 for Connecticut.

SY = school year.

B. Effects on certification outcomes across demonstration years

Increases in free direct certifications based on Medicaid were largest in the first demonstration year.

To assess how certification outcomes evolved over time during the DCM-F/RP demonstration, we compared outcomes across years using the available data from three demonstration years for Cohort 1 States and two demonstration years for Cohort 2 States.[24] For this analysis, instead of discussing the patterns for each individual State, we focus on two pooled samples: the first combines results for all districts in Cohort 1 States; the second combines results for all districts in Cohort

[24] Although SY 2019–2020 was the second year of DCM-F/RP for Nevada, we collected data for only one demonstration year, so that State is excluded from the analyses in this section.

2 States. Although this approach could blur State-specific differences, it allows us to summarize broader patterns across years.

DCM-F/RP resulted in students directly certified for free meals based on Medicaid in each demonstration year. Free direct certifications based on Medicaid increased for the first two demonstration years measured in this study, but the largest increase was in the first demonstration year. In the first year of the demonstration, free direct certifications based on Medicaid increased from 0 to 4.5 percent of students in Cohort 1 States (SY 2016–2017, Figure III.4) and to 5.3 percent of students in Cohort 2 States (SY 2017–2018, Figure III.5). For both cohorts, this outcome continued to increase in the second demonstration year measured in this evaluation, but the rate slowed as CEP participation increased. Free direct certifications based on Medicaid rose to 6.2 percent of students in Cohort 1 States and 6.6 percent of students in Cohort 2 States. In the third demonstration year measured for Cohort 1 States (SY 2019–2020), this outcome leveled off at 5.9 percent of students, which was not statistically significantly different from the second demonstration year (SY 2017–2018). Increased CEP participation—likely driven in part by DCM-F/RP—reduced the share of students available to be individually certified for meal benefits, including through direct certification based on Medicaid.[25]

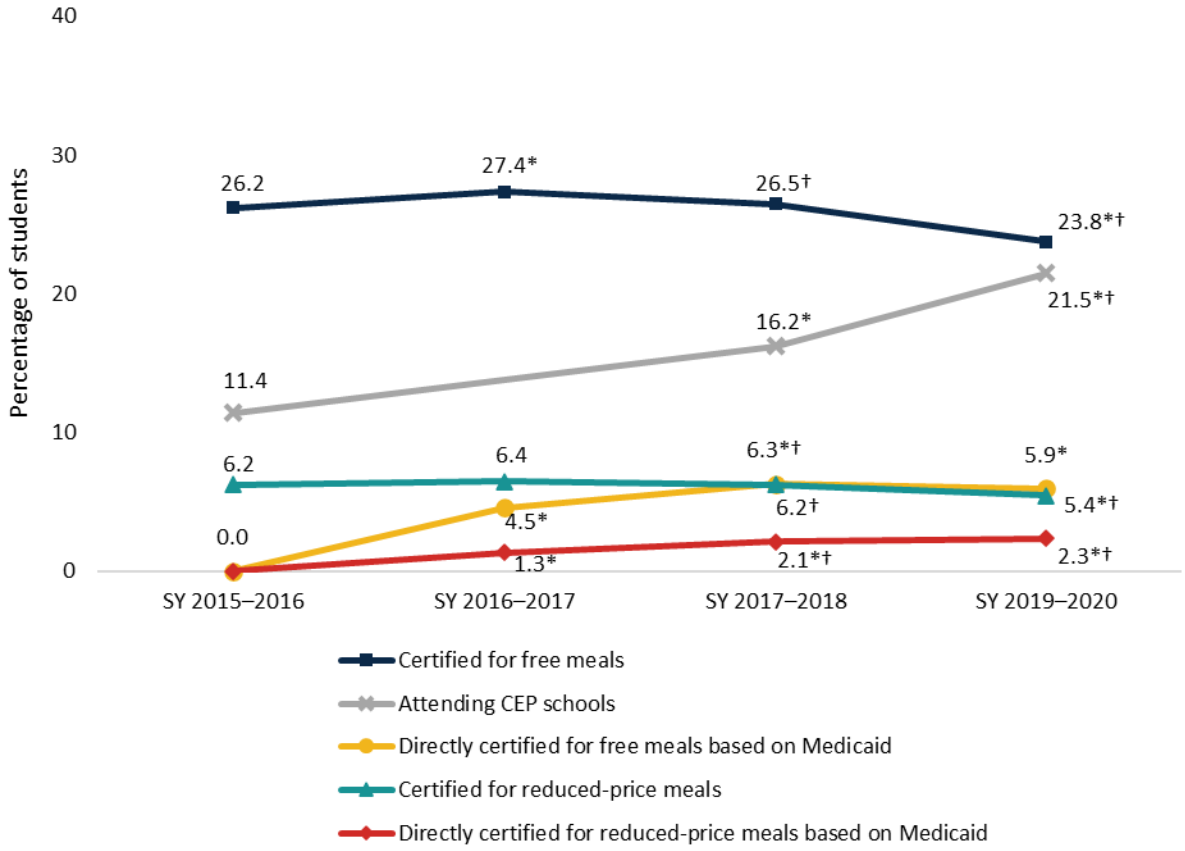
The percentage of students individually certified for free meals increased in the first year of the demonstration and decreased in the next year of the evaluation as CEP expanded, reducing the number of students available for individual certification. For Cohort 1 States, the percentage of students certified for free meals peaked in SY 2016–2017 at 27.4 percent before decreasing gradually to 23.8 percent in SY 2019–2020 (Figure III.4). The trajectory was steeper in Cohort 2 States, in which the total proportion with free certification rose to 34.7 percent of students in SY 2017–2018 before decreasing to 26.8 percent in SY 2019–2020 (Figure III.5).

The percentage of reduced-price direct certifications based on Medicaid increased throughout the demonstration for Cohort 1 States but peaked in the first demonstration year for Cohort 2 States. For Cohort 1 States, the share of students directly certified for reduced-price meals grew slowly, from 0 at baseline to 2.3 percent of students in SY 2019–2020 (Figure III.4). In Cohort 2 States, 1.0 percent of students were directly certified for reduced-price meals in SY 2017–2018, and the share declined to 0.5 percent in SY 2019–2020, likely because of the increase in CEP participation that year (Figure III.5).

The percentage of students certified for reduced-price meals overall remained constant from baseline to the first year of the demonstration and then decreased gradually as CEP participation increased. For both cohorts, there was no statistically significant difference in the percentage of students certified for reduced-price meals in the first year of the demonstration (SY 2016–2017 for Cohort 1 and SY 2017–2018 for Cohort 2) compared with the baseline years (Figures III.4 and III.5). The percentage of reduced-price certifications decreased after the first demonstration year, with a gradual decrease in Cohort 1 and a slightly steeper decrease in Cohort 2. By SY 2019–2020, the percentage of students certified for reduced-price meals was statistically significantly lower than the baseline percentage in both cohorts.

[25] DCM-F/RP could not affect CEP participation until a State's second year of the demonstration.

Figure III.4. Certification for free and reduced-price meals and CEP attendance across demonstration years for Cohort 1 States



Source: Administrative records provided by State administrators.

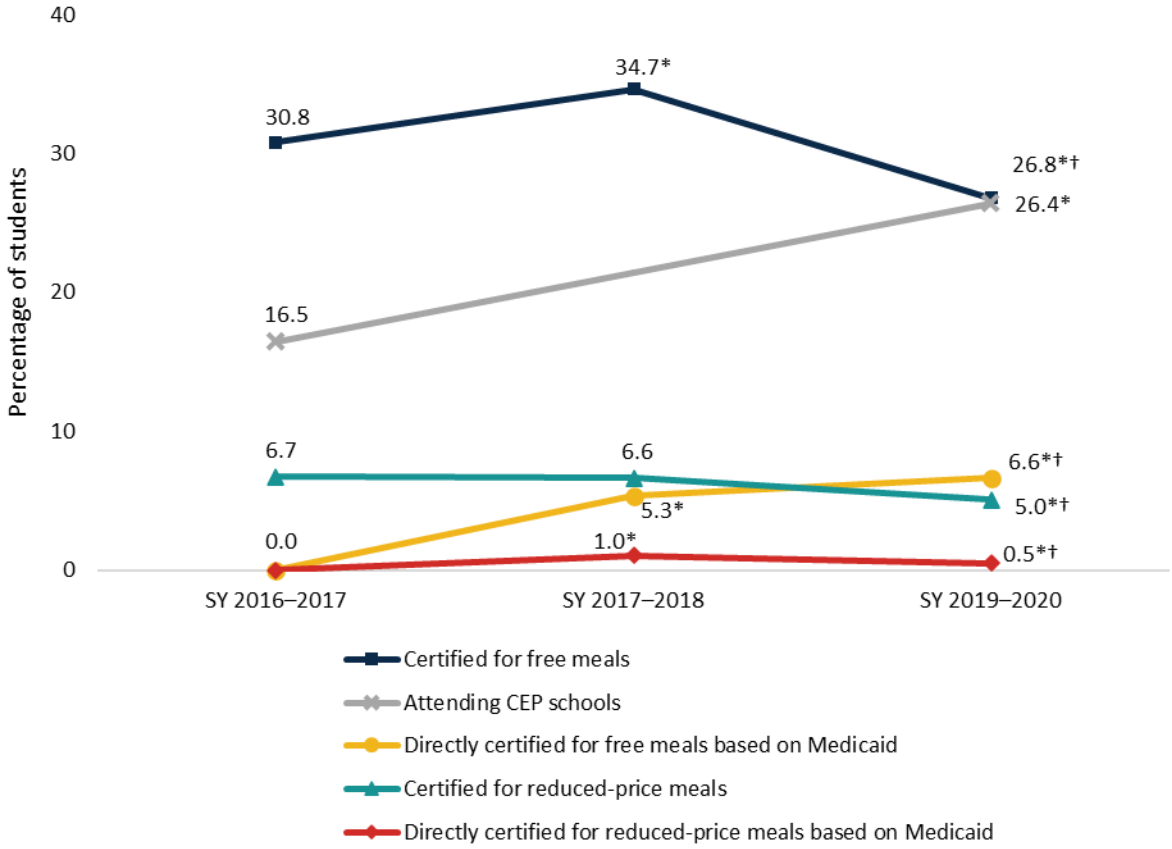
Note: This figure shows pooled results for States new to DCM in SY 2016–2017 (Nebraska, Utah, Virginia, and West Virginia). The baseline year for this cohort is SY 2015–2016.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year's effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

Figure III.5. Certification for free and reduced-price meals and CEP attendance across demonstration years for Cohort 2 States



Source: Administrative records provided by State administrators.

Note: This figure shows pooled results for States that began DCM-F/RP statewide in SY 2017–2018 (California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin). Iowa and Wisconsin are excluded from reduced-price outcomes due to inconsistencies in their reduced-price direct certification data for SY 2019–2020. The baseline year for this cohort is SY 2016–2017 .

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

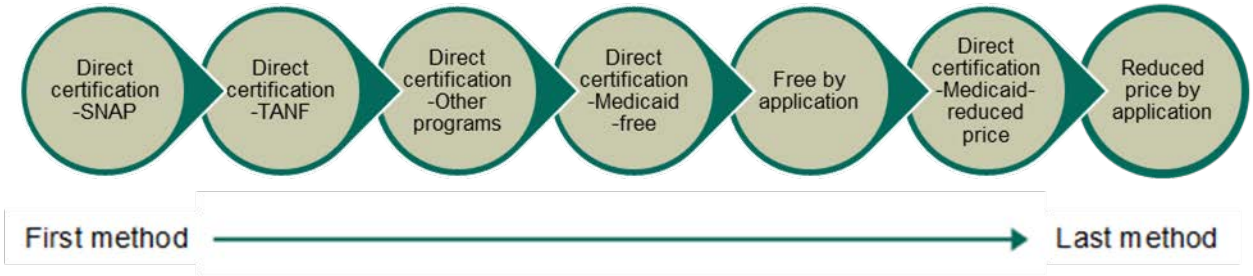
CEP participation increased substantially in both cohorts as increases in other certification outcomes slowed or reversed.

The percentage of students attending CEP schools increased substantially during the demonstration in both cohorts. In Cohort 1 States, the share of students attending CEP schools increased throughout the demonstration, rising from 11.4 percent in SY 2015–2016 to 21.5 percent in SY 2019–2020 (Figure III.4). In Cohort 2 States, the increase was even more substantial, as the share of students attending CEP schools rose from 16.5 percent in SY 2016–2017 to 26.4 percent in SY 2019–2020 (Figure III.5). These increases explain the decreases in most other certification outcomes during that time.

C. Direct certification match results

Participation in any of several programs can make students eligible for direct certification. When a student's school enrollment record matches to program participation records for more than one program, States and districts perform matching according to FNS guidance. Direct certification through SNAP supersedes all other potential bases for certification; that is, students who match to both SNAP records and those of another program are directly certified based on SNAP. Following SNAP are TANF, FDPIR, then other categorically eligible groups such as students in foster care or migrant students. Medicaid direct certification comes last in the order of programs used for direct certification (Figure III.6). Reduced-price direct certifications supersede approval for reduced-price meals by application but are prioritized below free certifications by any method.[26] Assuming States implemented this order correctly, none of the students identified earlier in this chapter as directly certified based on Medicaid would have matched to other programs because all other programs take precedence over Medicaid.

Figure III.6. Certification order of precedence



Some States retain indicators for all programs that match to a student's school enrollment data. In these States, it is possible to examine program overlap in State direct certification matches. Because Medicaid comes last in the order of programs used for direct certification, it is only in States that preserve program overlap (when it exists) among matches that we can see the full set of students who were matched to eligible Medicaid records.[27]

Seven demonstration States provided data on the full set of eligible Medicaid matches and program overlap in their direct certification match results. Four of these States (Indiana, Michigan, Nebraska, and Washington) provided data that excluded students attending CEP or other non-base-year special provision schools. The number of matches shown for these States corresponds to the free and reduced-price certification outcomes presented earlier in this chapter. Three of the seven States (Iowa, Texas, and Wisconsin) were not able to remove students attending special provision schools from the match counts. The results for these States include matches for students who cannot be directly certified because they attended a special provision school and therefore were already receiving free meals.

[26] For details on how demonstration States maintain the order of certification, see Chapter VII of the DCM-F/RP Year 2 report (Hulsey et al. 2020).

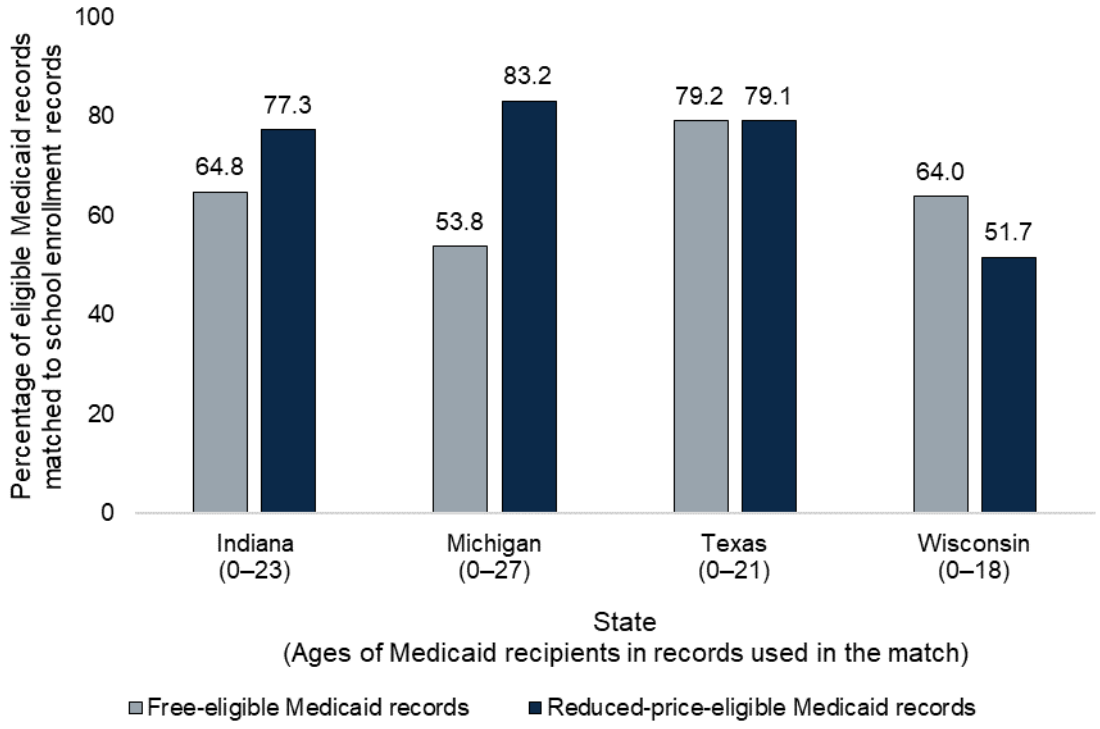
[27] Other States use different approaches to implementing the correct order of precedence for programs used in their direct certification processes, which do not provide the data needed to assess the overlap between programs. Additionally, no States were able to provide the data needed to assess the overlap between direct certification with Medicaid and certification through application.

The results described in this section reflect matching conducted at the State level. Districts conduct local-level matching in many States, but those match results are not captured in the data presented in this section.

1. Medicaid match rates

The program match data supported an analysis of Medicaid match rates for four States (Indiana, Michigan, Texas, and Wisconsin) that provided data on the total number individuals included in free- or reduced-price-eligible Medicaid records used in matching. In combination with the total number of Medicaid matches, these data were used to calculate Medicaid match rates for these States (Figure III.7 and Appendix Table B.6). The match rates show the proportion of free-eligible and, separately, reduced-price–eligible Medicaid records that were matched to school enrollment records. Students are counted as matches regardless of whether they were matched to other programs, certified for free or reduced-price meals by application, or attended special provision schools.

Figure III.7. Medicaid match rates in SY 2019–2020



Source: Administrative records provided by State administrators.

Note: Medicaid match rates were computed as the total number of Medicaid matches in the State—including students attending special provision schools—divided by the total number of individuals included in free- or reduced-price-eligible Medicaid records used in the matches.

SY = school year.

The age range of the students whose State Medicaid records are used in Medicaid matching varies by State, which should be taken into consideration when interpreting the match rates. Indiana's DCM-F/RP match included records for students ages birth to 23; the age range is birth to 27 for Michigan, birth to 21 for Texas, and birth to 18 for Wisconsin. These age ranges include many people who are not school age.

Additionally, some school-age children attend schools that do not participate in NSLP and may not provide student enrollment data for matching. Finally, because the age range used in matching varies, match rates are not directly comparable across States. Although States with a wider age range may have lower match rates, other factors such as the algorithms and matching processes States use also affect the match rate.[28]

Match rates ranged from 53.8 percent to 79.2 percent for free-eligible Medicaid records and 51.7 to 83.2 for reduced-price-eligible Medicaid-reduced records. Michigan had the lowest match rate for free-eligible Medicaid records (53.8 percent), possibly driven by the relatively wide age range of records used in matching, since individuals older than 18 are less likely to match to school enrollment records. However, Michigan's reduced-price match rate was the highest among the four States, at 83.2 percent, likely related to Michigan's higher Medicaid eligibility limit (for those under 18 years old) relative to the other States in this analysis (Figure I.2).[29]

2. Free–eligible Medicaid matches

For the seven States that were able to provide data for this analysis, the percentage of students who matched to free-eligible Medicaid records (those indicating household income at or below 130 percent of the FPL) ranged from 6.4 percent in Washington to 27.5 percent in Wisconsin (Table III.5). A substantial portion of students who matched to free-eligible Medicaid records did not match to any other program: this ranged between 8.4 and 10.6 percent of all students enrolled in all States except Washington, where 3.5 percent of students enrolled matched to free-eligible Medicaid records only.

Most students who matched to free-eligible Medicaid records also matched to SNAP records.

Of the free-eligible Medicaid records that matched to another program, almost all matched to SNAP.[30] These students would have been directly certified based on SNAP regardless of whether the States operated DCM-F/RP. This overlap percentage was highest in Wisconsin, where 69.5 percent of students who matched to free-eligible Medicaid records also matched to SNAP, which could result from a confluence of policies. Compared with the other States in this analysis, Wisconsin has a relatively high SNAP participation rate as measured by the SNAP Program Access Index (PAI) of 0.80.[31] Wisconsin also has a relatively high Broad-Based Categorical Eligibility (BBCE) income threshold. In Wisconsin, the BBCE income threshold allows families to qualify for SNAP if their gross incomes are less than or equal

[28] Detailed description of State matching processes can be found in Chapter VII of the DCM-F/RP Year 2 report (Hulsey et al. 2020).

[29] The Medicaid eligibility limit in Michigan is 212 percent of the FPL for children under 18 years old and 133 percent of the FPL for individuals over the age of 18. The different limits could drive the disparity between free and reduced-price match rates in Michigan because the Medicaid records eligible for the reduced-price match would include a smaller subset of individuals between 18 and 27 years old (just those with incomes between 130 and 133 percent of the FPL) compared to individuals under age 18 (those with incomes between 130 and 185 percent of the FPL). The reduced-price matches therefore likely contain a higher percentage of school-age children than the free matches, which would result in a higher match rate.

[30] These results do not identify students who might have matched to Medicaid, SNAP, and a third program. We retained only the first program in the direct certification matching order to show how each student would be classified in the absence of the demonstration.

[31] The PAI is the average monthly SNAP participation level in each State as a percentage of the number of people with incomes below 125 percent of the FPL. In FY 2017, the last year for which data are available, the PAIs for the other States participating in the DCM-F/RP demonstration were 0.57 in Indiana, 0.80 in Iowa, 0.75 in Michigan, 0.63 in Nebraska, 0.72 in Texas, and 0.87 in Washington. (Food and Nutrition Service 2018).

to 200 percent of FPL.[32] Indiana had the lowest percentage of students matched to both free-eligible Medicaid records and SNAP, at 16.9 percent. Indiana has a relatively low SNAP participation rate (0.57) and BBCE threshold (130 percent of FPL).

[32] Under BBCE policies, households may become categorically eligible for SNAP because they qualify for TANF or a State Maintenance of Effort funded benefit. States have different rules for BBCE implementation, including asset limits, gross income limits, and which programs confer BBCE. (Food and Nutrition Service 2021).

Table III.5. Full direct certification match results for students matched to free-eligible Medicaid records in SY 2019–2020

	Total students matched	First program matched					Total number of students enrolled[c]
		SNAP[a]	TANF[a]	Foster care[a]	Migrant[a]	Medicaid[b]	
Results for States that provided data that excluded students attending special provision schools							
Indiana							
Percentage of total students	13.1	2.2	0.0^	0.2	n.a.	10.7	878,057
Percentage of Medicaid matches	100.0	16.9	0.1	1.2	n.a.	81.8	
Michigan							
Percentage of total students	20.2	11.3	0.1	0.0^	n.a.	8.8	1,489,293
Percentage of Medicaid matches	100.0	56.1	0.4	0.1	n.a.	43.4	
Nebraska							
Percentage of total students	20.5	11.0	0.0^	0.4	n.a.	9.1	340,661
Percentage of Medicaid matches	100.0	53.7	0.0^	2.1	n.a.	44.2	
Washington							
Percentage of total students	6.4	2.7	0.0^	0.0^	0.1	3.5	1,073,772
Percentage of Medicaid matches	100.0	42.4	0.2	0.1	1.6	55.6	
Results for States that provided data that included students attending special provision schools							
Iowa							
Percentage of total students	23.8	12.7	0.2	0.2	n.a.	10.6	526,311
Percentage of Medicaid matches	100.0	53.5	1.0	0.8	n.a.	44.7	
Texas							
Percentage of total students	20.4	10.1	0.0^	n.a.	n.a.	10.2	5,316,024
Percentage of Medicaid matches	100.0	49.7	0.1	n.a.	n.a.	50.3	
Wisconsin[d]							
Percentage of total students	27.5	19.1	0.0^	n.a.	n.a.	8.4	777,068
Percentage of Medicaid matches	100.0	69.5	0.0^	n.a.	n.a.	30.5	

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Direct certification based on these programs takes precedence over direct certification based on Medicaid. Therefore, the DCM demonstration did not change the certification status or reason for these students.

[b] In the absence of DCM, some of these students might have been directly certified for free meals at the district level, either based on programs districts include in local matching or through extension to students residing in a household with a directly certified student. Others might have been approved for free or reduced-price meals by application. Others might not have been approved for free or reduced-price meals in the absence of DCM.

[c] The match results data did not include all districts in some States.

[d] Wisconsin was the only State to conduct direct certification with Food Distribution Program on Indian Reservations (FDPIR) records, and there were no students matched to both free-eligible Medicaid records and FDPIR.

^ Number rounds to zero.

n.a. = not applicable; SNAP = Supplemental Nutrition Assistance Program; SY = school year; TANF = Temporary Assistance for Needy Families.

3. Reduced-price-eligible Medicaid matches

The percentage of total students matched to reduced-price–eligible Medicaid records was lower than the percentage of students matched to free-eligible Medicaid records and ranged from 1.5 percent in Michigan to 6.4 percent in Nebraska (Table III.6). This difference could be the result of differences in CEP enrollment in the two States. A higher percentage of students attended special provision schools in Michigan than in Nebraska, likely resulting in a substantial portion of Michigan's school-age Medicaid population being excluded from this analysis. In Nebraska, a smaller share of students from low-income families were excluded from the analysis because they attended special provision schools.

Most students who matched to reduced-price–eligible Medicaid records did not match to any other direct certification program.

In all States, most students who matched to reduced-price–eligible Medicaid records did not match to any other program used for direct certification. For most States, this was a large majority, 75 percent of matches or more. The exception was Texas, which had the lowest percentage of Medicaid-only reduced-price matches at 55.7 percent. Texas uses the BBCE threshold of 165 percent of FPL and has a low Medicaid eligibility limit: 133 percent of FPL. This means many students eligible to be directly certified for reduced-price meals through Medicaid are likely to live in households that are eligible for SNAP, and they could be directly certified for free meals through that program.

The remaining reduced-price–eligible Medicaid matches overlapped primarily with SNAP, ranging from 7.8 to 21.4 for all States other than Texas. Texas had the highest percentage of records that matched to both Medicaid and SNAP, at 44.3 percent. There was virtually no overlap between reduced-price–eligible Medicaid records and records for other programs, with the exception of migrant matches in Washington which accounted for 1.7 percent of records matched to reduced-price Medicaid. As shown in Table III.6, Washington was the only State to provide program overlap data for migrant children.

Table III.6. Full direct certification match results for students matched to reduced-price–eligible Medicaid records in SY 2019–2020

	Total students matched	First program matched					Total number of students enrolled[c]
		SNAP[a]	TANF[a]	Foster care[a]	Migrant[a]	Medicaid[b]	
Results for States that provided data that excluded students attending special provision schools							
Indiana							
Percentage of total students	2.5	0.3	0.0^	0.0^	n.a.	2.2	878,057
Percentage of Medicaid matches	100.0	10.9	0.0^	0.1	n.a.	89.0	
Michigan							
Percentage of total students	1.5	0.2	0.0	0.0^	n.a.	1.3	1,489,293
Percentage of Medicaid matches	100.0	12.3	0.0	0.1	n.a.	87.6	
Nebraska							
Percentage of total students	6.4	0.5	0.0	0.0^	n.a.	5.9	340,661
Percentage of Medicaid matches	100.0	7.8	0.0	0.1	n.a.	92.1	
Washington							
Percentage of total students	3.0	0.6	0.0^	0.0^	0.1	2.3	1,073,772
Percentage of Medicaid matches	100.0	21.4	0.1	0.1	1.7	76.8	
Results for States that provided data that included students attending special provision schools							
Iowa							
Percentage of total students	3.4	0.4	0.0^	0.0^	n.a.	2.9	526,311
Percentage of Medicaid matches	100.0	12.2	0.2	0.2	n.a.	87.5	
Texas							
Percentage of total students	2.7	1.2	0.0^	n.a.	n.a.	1.5	5,316,024
Percentage of Medicaid matches	100.0	44.3	0.0^	n.a.	n.a.	55.7	
Wisconsin[d]							
Percentage of total students	4.1	0.9	0.0^	n.a.	n.a.	3.3	777,068
Percentage of Medicaid matches	100.0	20.7	0.0^	n.a.	n.a.	79.3	

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Direct certification based on these programs takes precedence over direct certification based on Medicaid. Therefore, the DCM demonstration did not change the certification status or reason for these students. Differences in direct certification status based on different programs could be due to different eligibility criteria or differences in the timing of eligibility determination for each program.

[b] In the absence of DCM, some of these students might have been directly certified for free meals at the district level, either based on programs that districts include in local matching or through extension to students residing in a household with a directly certified student. Others might have been approved for free or reduced-price meals by application. Others might not have been approved for free or reduced-price meals in the absence of DCM.

[c] The match results data did not include all districts in some States.

[d] Wisconsin was the only State to conduct direct certification with Food Distribution Program on Indian Reservations (FDPIR) records, and there were no students matched to both reduced-price-eligible Medicaid records and FDPIR.

^ Number rounds to zero.

n.a. = not applicable; SNAP = Supplemental Nutrition Assistance Program; SY = school year; TANF = Temporary Assistance for Needy Families.

IV. Effects on Participation Outcomes

DCM-F/RP could affect school meal participation outcomes through its effects on certification and CEP participation. The proportion of meals served for free or at a reduced price could increase if students who had been participating—that is, receiving school meals—at full price or not participating at all began to receive free or reduced-price meals. If students who had been participating at a reduced price began to receive free meals (either through certification or attendance at a special provision school), it would increase the proportion of meals served for free but decrease the proportion served at a reduced price. These changes could affect overall school meal participation if students chose to get school meals more often in response to a reduction in price. However, factors unrelated to DCM-F/RP such as changes in student preferences could also influence school meal participation.

The participation analysis focuses on three main outcomes, each defined separately for lunches and breakfasts: the percentage of meals served for free; the percentage of meals served at a reduced price; and the participation rate, defined as average number of meals served per enrolled student per day. As discussed in Chapter II, the measures of meals served for free and meals served at a reduced price actually represent meals reimbursed at the free rate and meals reimbursed at the reduced-price rate. Although these concepts are identical in schools that certify students individually, they differ in special provision schools, where all meals are served for free but some are reported as reduced price (in Provision 2 or 3 but not CEP schools) or as paid in the participation data because they are reimbursed at those rates.

This analysis used data from meals served in July through February of each school year. Beginning in March 2020, participation outcomes were affected by COVID-19 school closures and virtual learning in many locations. To ensure comparability, we excluded March through June in SY 2019–2020 and in the other years. As noted, for States that participated in the previous demonstration of DCM, we examine only outcomes that could have been affected by changes in reduced-price participation. Because these States were already conducting DCM for free meals before the first year of the study, we could not assess the potential effects of DCM-F/RP on free meals by comparing a year in which Medicaid was used for direct certification to a year in which it was not.

Similar to certification analyses, the effects of DCM-F/RP on participation outcomes are measured by changes between the baseline year and SY 2019–2020 outcomes, which are regression adjusted to control for economic and other factors. The analyses in this chapter address the first set of research questions (B.1) under Objective 3 of the study, as well as the portion of Research Question B.4 that pertains to the participation findings (Table IV.1). The other research questions under this objective are discussed in Chapters V and VI. This chapter presents findings on the effects of DCM-F/RP on these participation outcomes, first for the NSLP and then for the SBP. We then discuss how these findings relate to the findings on certification (Chapter III). Finally, we compare findings across demonstration years. Appendix C contains supplemental tables related to participation outcomes, including tables showing unadjusted values in each year.

Table IV.1. Research questions and objectives related to participation, Federal reimbursement, and State administrative costs

Question number	Research question	Relevant chapter
Objective 3. Examine the effect of DCM-F/RP on school meal participation, Federal reimbursement costs, and State administrative costs.		
B.1	• How does DCM-F/RP affect the average number of meals served (breakfast and lunch separately) per student per day? • How does DCM-F/RP affect the percentage of meals (breakfast and lunch separately) served free? Served at a reduced price?	IV
B.2	• How does DCM-F/RP affect the total Federal reimbursement costs for meals served to students per school day? • How does DCM-F/RP affect the blended reimbursement rate (BRR), defined as total Federal reimbursement costs divided by the number of meals served?	V
B.3	• How does DCM-F/RP affect the total State administrative costs relative to existing costs for direct certification, broken down by agency (child nutrition or Medicaid)? Start-up costs versus ongoing costs?	VI
Objective 4. Examine continuing effects of Medicaid data matching on eligibility and costs over an additional, full school year under the demonstration.		
B.4	• How have the impacts on reimbursement, participation, and costs described in research questions B.1 through B.3 changed from SY 2016–2017 and SY 2017–2018?	IV, V, and VI

A. Effects on SY 2019–2020 NSLP and SBP participation outcomes

SY 2019–2020 was the fourth year of DCM-F/RP for Cohort 1 States and the third for Cohort 2 States. The outcomes for SY 2019–2020 can therefore help us understand the effects of the demonstration after it was fully implemented. For both lunches and breakfasts, about half of States had statistically significant increases in the percentage of meals served for free, but a few States saw decreases, and all changes in the percentage of meals served at a reduced price were decreases. Fewer than half of States had changes in the average number of lunches per student per day (also called the overall participation rate). Four States had no changes in any outcome for lunch and breakfast. Since participation and certification outcomes are closely tied, we compare these outcomes together in the next section.

1. Effects on NSLP outcomes

The percentage of lunches served for free increased between the baseline year and SY 2019–2020 in 8 of the 13 States for which we measured this outcome (Table IV.2).[33] The largest change was a 12.7 percentage point increase (equivalent to about 7 additional free meals per student per year) in California.[34] There was only one State, Virginia, with a statistically significant decrease in this outcome, a

[33] As noted, States that participated in the first DCM demonstration (Florida and Massachusetts) were not included in the analysis of this outcome.

[34] A common way to examine magnitudes of effects across outcomes is to translate them into effect sizes. Generally, an effect size of 0.25 standard deviations or larger is considered to be substantively important (U.S. Department of Education 2020). For the percentage of lunches served for free, the effect size ranges from approximately 2.8 standard deviations for the increase of 12.7 percentage points in California to 0.3 standard deviations for the increase of 1.7 percentage points in Wisconsin. For the 2.2 percentage point decrease in Virginia, the effect size is

decline of 2.2 percentage points, or about 1.3 free meals per student per year. There was no statistically significant change in the remaining four States.

Table IV.2. Effects of DCM-F/RP on NSLP participation in SY 2019–2020

State	Percentage of lunches served for free			Percentage of lunches served at a reduced price			Average number of lunches served per student per day		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	65.9	78.6	12.7*	11.0	7.0	-3.9*	0.431	0.419	-0.012
Connecticut	59.3	62.8	3.5	4.3	5.3	1.0	0.484	0.507	0.024
Florida[b]	n.a.	n.a.	n.a.	5.3	4.9	-0.5	0.565	0.578	0.013
Indiana	52.4	54.1	1.7	7.9	8.0	0.1	0.619	0.601	-0.018
Iowa	42.8	46.9	4.1*	6.4	6.1	-0.3	0.653	0.655	0.002
Massachusetts[b]	n.a.	n.a.	n.a.	3.3	4.9	1.7	0.466	0.470	0.005
Michigan	62.8	68.9	6.1*	7.1	4.8	-2.2*	0.473	0.468	-0.006
Nebraska	40.6	45.1	4.5*	10.5	9.0	-1.5*	0.663	0.644	-0.019*
Nevada	71.6	79.0	7.4	9.6	3.6	-6.0	0.401	0.451	0.050
Texas	68.5	77.3	8.7*	7.1	4.3	-2.8*	0.589	0.586	-0.003
Utah	39.7	39.2	-0.5	10.6	9.2	-1.4*	0.493	0.474	-0.019
Virginia	58.5	56.3	-2.2*	7.0	6.9	0.0^	0.498	0.517	0.019
Washington	57.4	60.6	3.2*	10.6	8.5	-2.1*	0.354	0.429	0.075*
West Virginia	66.7	78.3	11.6*	3.5	0.9	-2.6*	0.619	0.655	0.037*
Wisconsin	49.1	50.8	1.7*	6.1	5.8	-0.3	0.541	0.515	-0.026*
Pooled sample	**61.7**	**68.6**	**6.9***	**7.6**	**5.6**	**-2.1***	**0.510**	**0.520**	**0.010***

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

[b] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

approximately -0.5 standard deviations. We were able to identify the small changes in these States as statistically significant because the statistical procedures we used to estimate the effects explain a large proportion of variance in this outcome. Therefore, the estimates are precise and are likely to be identified as statistically significant.

Seven States had a decrease in the percentage of lunches served at a reduced price, and the remaining eight States had no statistically significant change in this outcome. The decreases in the percentage of lunches served at a reduced price ranged from 1.4 in Utah to 3.9 in California. These decreases translated to between one and two fewer lunches per student per year. As noted at the beginning of this chapter, there was no clear expectation of how the demonstration might affect the percentage of meals served at a reduced price because two aspects of DCM-F/RP work in opposite directions for reduced-price meals: student certifications shifting from reduced-price to free status (or CEP) would potentially decrease the proportion of meals served at a reduced price, whereas student certifications shifting from paid to reduced-price status would potentially increase that proportion (Figure II.1).[35]

DCM-F/RP was associated with increases in the percentage of lunches served for free and decreases in the percentage of lunches served at a reduced price.

When changes in these two participation outcomes are examined in combination, of the States with a statistically significant decrease in the percentage of meals served at a reduced price, all but one had a larger increase in the percentage of meals served for free. This indicates an increase in the overall percentage of meals served for free or at a reduced price despite the decline in the reduced-price outcome. For example, in Michigan the percentage of lunches served for free increased by 6.1 percentage points, and the percentage served at a reduced price decreased by 2.2 percentage points, for a net increase of 3.9 in the percentage of lunches served for free or a reduced price.

DCM-F/RP had no statistically significant effect on the overall NSLP participation rate (average number of lunches served per student per day) in most States. However, two demonstration States (Washington and West Virginia) had statistically significant increases between the baseline year and SY 2019–2020, and two others (Nebraska and Wisconsin) had decreases in this measure. The largest change was an increase of 0.075 lunches per student per day in Washington, which translates to about 14 meals per student across a full school year. In the two States with statistically significant decreases, the magnitude ranged from 0.019 lunches per student per day in Nebraska to 0.026 in Wisconsin.

The estimates of differences between the baseline year and SY 2019–2020 might reflect changes over time that were not related to DCM-F/RP. Although the regression adjustments were intended to control for time-invariant district characteristics and changes in economic conditions that might affect outcomes, regressions cannot control for unmeasured time-variant factors (such as other changes to school meal operations or changes in student preferences for school meals).

2. Effects on SBP outcomes

The percentage of breakfasts served for free increased between the baseline year and SY 2019–2020 in seven demonstration States and decreased in two others (Table IV.3). The statistically significant increases ranged from 2.3 percentage points in Washington to 13.8 percentage points in California. These seven States also had increases in the percentage of lunches served for free. Two other States, Indiana and Virginia, had statistically significant decreases in the percentage of breakfasts served for free, with a 3.2 and 8.8 percentage point decrease, respectively. The remaining six States for which this outcome was measured did not have statistically significant changes in the percentage of breakfasts served for free.

[35] For States that participated in the previous DCM demonstration (Florida and Massachusetts), any shift to free status would have taken place before baseline, so the new demonstration could only result in students moving from paid to reduced-price status.

Table IV.3. Effects of DCM-F/RP on SBP participation in SY 2019–2020

State	Percentage of breakfasts served for free			Percentage of breakfasts served at a reduced price			Average number of breakfasts served per student per day		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	69.3	83.1	13.8*	10.8	6.6	-4.3*	0.240	0.215	-0.025*
Connecticut	74.6	72.1	-2.5	4.7	5.1	0.5	0.175	0.214	0.038
Florida[b]	n.a.	n.a.	n.a.	4.7	4.7	0.0^	0.271	0.286	0.015
Indiana	71.1	67.9	-3.2*	8.4	8.7	0.3	0.224	0.245	0.021*
Iowa	64.8	67.2	2.4*	7.1	6.5	-0.6	0.175	0.189	0.014*
Massachusetts[b]	n.a.	n.a.	n.a.	4.6	3.8	-0.9	0.157	0.194	0.037
Michigan	74.5	77.4	3.0*	6.8	4.7	-2.1*	0.224	0.251	0.027*
Nebraska	53.9	56.2	2.4*	11.2	9.4	-1.8*	0.198	0.226	0.028*
Nevada	81.7	80.8	-0.9	4.9	4.9	0.0^	0.196	0.317	0.121
Texas	75.2	83.6	8.4*	6.9	4.0	-2.9*	0.335	0.338	0.003
Utah	63.8	59.2	-4.6	10.6	11.0	0.4	0.116	0.128	0.013
Virginia	74.5	65.7	-8.8*	7.7	7.7	0.0^	0.219	0.277	0.057*
Washington	69.5	71.8	2.3*	11.4	9.4	-2.0*	0.105	0.203	0.098*
West Virginia	70.7	78.5	7.9*	3.1	1.1	-2.1*	0.488	0.536	0.048*
Wisconsin	61.8	60.4	-1.4	6.9	6.0	-0.9*	0.195	0.206	0.011
Pooled sample	**71.2**	**76.6**	**5.4***	**7.6**	**5.4**	**-2.2***	**0.245**	**0.259**	**0.014***

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

[b] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

As with lunches, the percentage of breakfasts served at a reduced price decreased in almost half of States, and the remaining States had no statistically significant change in this outcome. Seven of the 15 demonstration States had a statistically significant decrease in this outcome between the baseline year and SY 2019–2020, ranging from 0.9 percentage points in Wisconsin to 4.3 percentage points in California. Six of these seven States had similar decreases in the

DCM-F/RP was associated with decreases in the percentage of breakfasts served at a reduced price and increases in the overall SBP participation rate.

percentage of lunches served at a reduced price. As noted in the discussion on NSLP outcomes, the decrease in the percentage of students certified for reduced-price meals in five States and the increase in the number of CEP districts in all seven States likely contributed to these States' increases. The remaining eight States did not have statistically significant changes in the percentage of breakfasts served at a reduced price.

Six States experienced both a statistically significant increase in the percentage of breakfasts served for free and a statistically significant decrease in the percentage served at a reduced price. As discussed in Chapter III and above, five of these six States had statistically significant increases in the percentage of students attending CEP schools paired with statistically significant decreases in the percentage of students certified for reduced-price meals, which likely contributed to the changes in participation. In each of the six States, the increase in the percentage of breakfasts served for free was larger than the decrease in the percentage of breakfasts served at a reduced price, resulting in an increase in the overall percentage of breakfasts served for free or at a reduced price. All but one of these States (California) also had an increase in the average number of breakfasts served per student per day.

For almost half of demonstration States, the breakfast participation rate did not change significantly between the baseline year and SY 2019–2020. There were statistically significant increases in this measure in seven States, and a decrease in one State. Increases in the breakfast participation rate ranged from 0.014 in Iowa to 0.098 in Washington. These increases translated to between 3 and 18 additional breakfasts per student per year. California experienced a statistically significant decrease in the participation rate of 0.025, which translated to about 5 fewer breakfasts per student per year.

B. Comparisons with certification findings

As discussed in Chapter III, DCM-F/RP was associated with statistically significant changes in certification outcomes, including changes in the overall percentages of students certified for free meals (decreases in four States and increases in two States), certified for reduced-price meals (decreases in six State and increases in two States), and attending CEP schools (increases in seven States).

For NSLP participation outcomes, most States had consistent patterns in certification and participation outcomes particularly with respect to CEP (Table IV.4). The three States with the largest increases in percentage of lunches served for free (California, Texas, and West Virginia) also had the largest increases in the percentage of students attending CEP schools and (because CEP schools do no individually certify students for meal benefits) the largest decreases in the percentage of students individually certified for free meals (see Chapter III).[36] Moreover, the seven States with statistically significant increases in CEP participation (California, Michigan, Nebraska, Texas, Washington, West Virginia, and Wisconsin) or free certifications (Nebraska and Wisconsin) also had statistically significant increases in the percentage of lunches served for free in SY 2019–2020. Two other States did not have statistically significant changes in certification outcomes but did have an increase (Iowa) or decrease (Virginia) in the percentage of lunches served for free. The remaining four States (Connecticut, Indiana, Nevada, and Utah) did not have statistically significant changes in lunches served for free.

[36] Because the lunches-served-for-free outcome is actually lunches reimbursed at the free Federal reimbursement rate, it could understate the changes in States where the number of CEP schools increased. Although all meals are served for free in CEP schools, some are reimbursed at the paid rate, so more students may be receiving free meals than is indicated by the participation percentage.

Table IV.4. Changes in key certification and participation outcomes from baseline year to SY 2019–2020

State	Certification outcomes			Participation outcomes					
	Percentage of students			NSLP			SBP		
	Attending CEP schools	Certified for free meals	Certified for reduced-price meals	Percentage of meals served for free	Percentage of meals served at a reduced price	Average number of meals served per student per day	Percentage of meals served for free	Percentage of meals served at a reduced price	Average number of meals served per student per day
California	↑	↓	↓	↑	↓	O	↑	↓	↓
Connecticut	O	O	↑	O	O	O	O	O	O
Florida[a]	n.a.	n.a.	↓	n.a.	O	O	n.a.	O	O
Indiana	O	O	O	O	O	O	↓	O	↑
Iowa	O	O	n.a.	↑	O	O	↑	O	↑
Massachusetts[a]	n.a.	n.a.	↑	n.a.	O	O	n.a.	O	O
Michigan	↑	O	↓	↑	↓	O	↑	↓	↑
Nebraska	↑	↑	O	↑	↓	↓	↑	↓	↑
Nevada	O	O	O	O	O	O	O	O	O
Texas	↑	↓	↓	↑	↓	O	↑	↓	O
Utah	O	O	O	O	↓	O	O	O	O
Virginia	O	O	O	↓	O	O	↓	O	↑
Washington	↑	↓	↓	↑	↓	↑	↑	↓	↑
West Virginia	↑	↓	↓	↑	↓	↑	↑	↓	↑
Wisconsin	↑	↑	n.a.	↑	O	↓	O	↓	O

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020.

[a] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

↑ = The change between the baseline year and SY 2019–2020 is a statistically significant increase at the .05 level, two-tailed test.

O = There was no statistically significant change between the baseline year and SY 2019–2020 at the .05 level, two-tailed test.

↓= The change between the baseline year and SY 2019–2020 is a statistically significant decrease at the .05 level, two-tailed test.

n.a.= This outcome is not available for this State.

Similar to free meals, reduced-price NSLP participation patterns were consistent with certification patterns in the majority of States. Five of the six States (California, Michigan, Texas, Washington, and West Virginia) with statistically significant decreases from the baseline year in the percentage of students certified for reduced-price meals also had decreases in the percentage of lunches served at a reduced price in SY 2019–2020. However, the remaining three States with statistically significant changes (increases in Connecticut and Massachusetts and a decrease in Florida) in the percentage of students certified for reduced-price meals did not have statistically significant changes in the percentage of lunches served at a reduced price. Two other States (Nebraska and Utah) did not have statistically significant changes in the percentage of student certified for reduced-price meals, but did have statistically significant decreases in the percentage of lunches served at a reduced price. The remaining three States (Indiana, Nevada, Virginia) did not have statistically significant changes in certification or reduced-price participation.[37]

Changes in the percentage of students certified for free and reduced-price meals translated to increases in the percentage of meals served for free or at a reduced price in most States.

The results for SBP free meal participation outcomes were similarly consistent with the certification findings for most of the States included in analyses of outcomes related to free meals. Six States with increases in the percentage of breakfasts served for free had consistent increases in attendance at CEP schools (California, Michigan, Nebraska, Texas, Washington, and West Virginia). Nebraska also had an increase in the percentage of students certified for free meals. Three States (Connecticut, Nevada, and Utah) had no statistically significant changes in free breakfast participation or related certification outcomes. However, four other States had inconsistent changes in these outcomes. Three of these States did not have statistically significant changes in certification outcomes but did have either an increase (Iowa) or decrease (Indiana and Virginia) in the percentage of breakfasts served for free. One State (Wisconsin) did not have a statistically significant change in this participation outcome but did have an increase in the percentage of students certified for free meals.

The patterns for SBP reduced-price participation were also consistent with the certification findings for most States. California, Michigan, Texas, Washington, and West Virginia had decreases in the percentage of student certified for reduced-price meals and decreases in the percentages of breakfasts served at a reduced price. Nebraska had a decrease in the percentage of breakfasts served at a reduced price but had no statistically significant changes in the corresponding certification outcome.[38] In the remaining eight States, there was no statistically significant change in the percentage of breakfasts served at a reduced price, despite increases in reduced-price certification in two States (Connecticut and Massachusetts) and a decrease in certification in one (Florida).

C. Effects on participation outcomes across demonstration years

Comparing the effects of DCM-F/RP on key outcomes in different years of the demonstration can help us understand how stable the effects are over time. Because the participation outcomes are defined for the months of July through February of each school year, this analysis excludes the first year of

[37] Iowa and Wisconsin are excluded from the outcome on certification for reduced-price meals because reliable data for these outcomes are unavailable.

[38] Wisconsin also had a decrease in the percentage of breakfasts served at a reduced price but was excluded from the corresponding certification outcome because reliable data for that outcome were unavailable.

implementation for States that did not begin DCM-F/RP by that point in the school year.[39] In presenting the findings across demonstration years, we organize the States into three groups: (1) Cohort 1 States with three years of data on changes to participation outcomes, (2) Cohort 1 States with two years of data on changes to participation outcomes, and (3) Cohort 2 States with two years of data on changes to participation outcomes.

1. Effects on NSLP participation outcomes across demonstration years

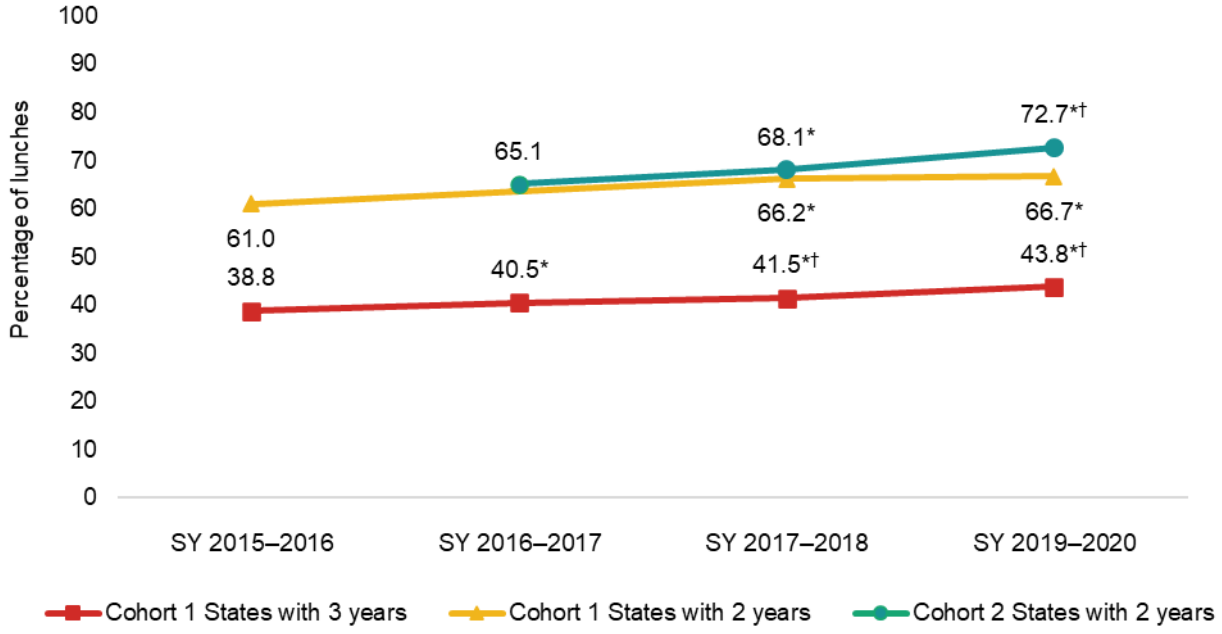
The percentage of lunches served for free increased in each year of the DCM-F/RP demonstration relative to the baseline in all three pools of States for which participation outcomes were measured for more than one demonstration year (Figure IV.1). For Cohort 1 States with three years of data on changes to participation outcomes and Cohort 2 States with two years of data, the increase (relative to the baseline) in the percentage of free meals was larger each demonstration year. For example, in the Cohort 1 States with these outcomes for three years, there was an increase (relative to baseline) of 1.7 percentage points in SY 2016–2017, 2.7 percentage points in SY 2017–2018, and 5.0 percentage points in SY 2019–2020.

The percentage of lunches served at a reduced price decreased across all three groups of States, though not always consistently (Figure IV.2). The pattern in Cohort 2 States with two years of data on changes to participation outcomes was consistent, with decreases becoming larger over time: the percentage of lunches served at a reduced price decreased by 0.4 percentage points from SY 2016–2017 to SY 2017–2018, then by 1.1 percentage points from SY 2017–2018 to SY 2019–2020. In Cohort 1 States with two years of data on changes to participation outcomes, there was no statistically significant effect in the first year and a decrease in SY 2019–2020. The pattern in Cohort 1 States with three years of data on changes to participation outcomes was inconsistent, with no statistically significant effect in the first year, a decrease of 2.0 percentage points relative to the baseline in SY 2017–2018, and no statistically significant change relative to the baseline in SY 2019–2020. Overall, the magnitude of the decreases in the percentage of meals served at a reduced price was smaller than the magnitude of the increases in the percentage of meals served for free.

Across demonstration years, effects on the percentage of lunches served for free tended to be positive and increase over time. Effects on the percentage of lunches served at a reduced price tended to be negative, and the size of the negative effects were larger in later years.

[39] Specifically, Connecticut, Iowa, Nevada, and Washington are excluded from this analysis because they began DCM-F/RP after February 2018, so participation outcomes were only measured for one school year under the demonstration. Massachusetts, Virginia, and West Virginia began DCM-F/RP after February 2017, so their participation outcomes were only measured for two school years. Figure I.1 in Chapter I shows the starting month for each State.

Figure IV.1. Percentage of lunches served for free across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Nebraska and Utah) and those with two years of data (Virginia and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

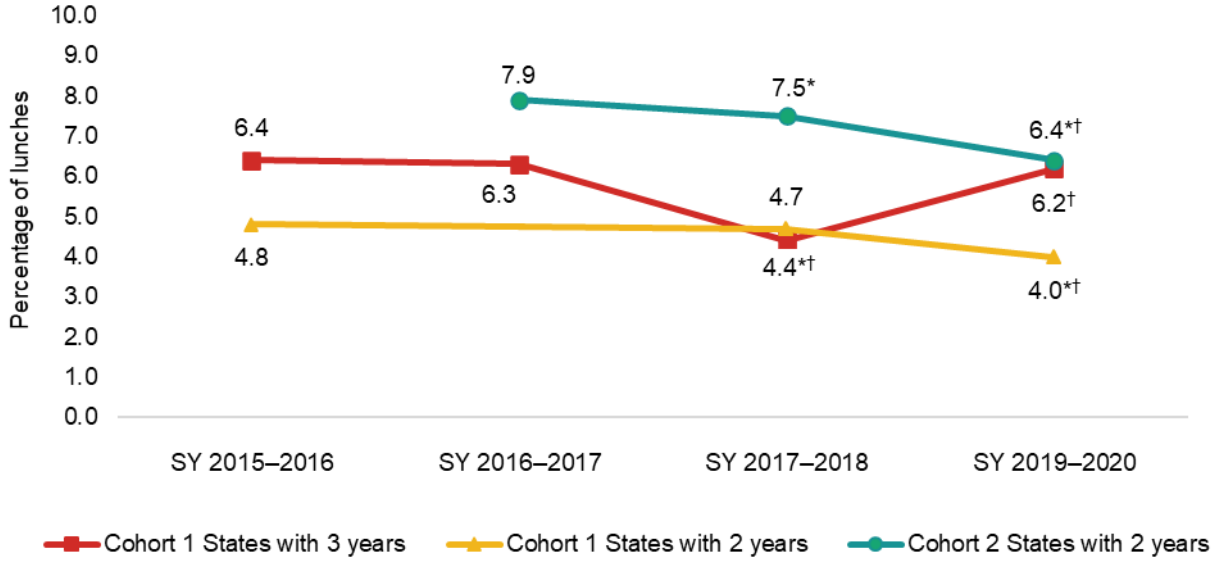
† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

There was no discernible pattern over time in the effects on average number of lunches per student per day.[40] Two groups of States had statistically significant increases in this outcome for one year and decreases for another year.

[40] Appendix Table C.3.c shows results by State, but not those for the pooled samples.

Figure IV.2. Percentage of lunches served at a reduced price across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

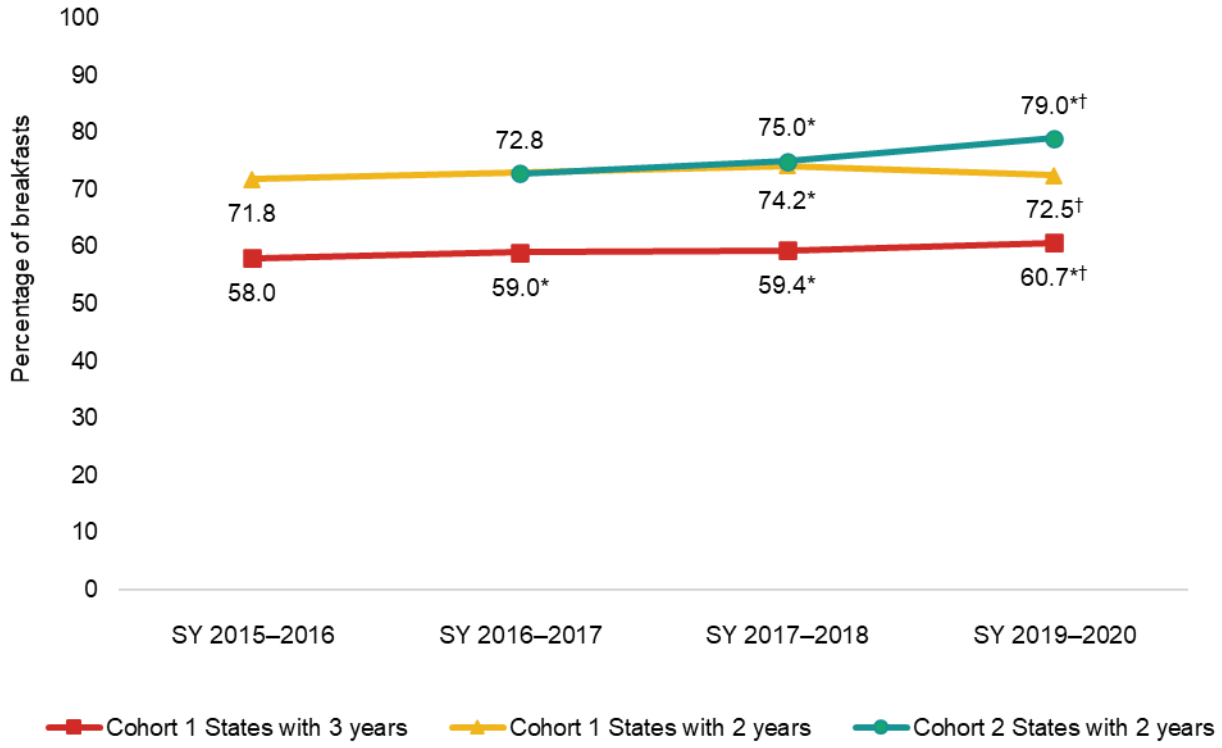
2. Effects on SBP participation outcomes across demonstration years

The percentage of breakfasts served for free increased in each year of the DCM-F/RP demonstration, relative to the baseline, in the three pools of States for which participation outcomes were measured in more than one demonstration year (Figure IV.3). Consistent with findings on free lunches, in Cohort 1 States with three years of data on changes to participation outcomes and Cohort 2 States with two years of data, the percentage of free breakfasts increased by a growing amount each year.

In Cohort 2 States with two years of data on changes to participation outcomes, the percentage of breakfasts served for free increased by 2.3 percentage points relative to the baseline in SY 2017–2018, then increased to 6.2 percentage points higher than the baseline in SY 2019–2020. In Cohort 1 States with three years of data on changes to participation outcomes, the percentage of breakfasts served for free increased by 1.0, 1.4, and 2.7 percentage points (relative to baseline) across the three school years. The sample of Cohort 1 States with two years of data on changes to participation outcomes had statistically significant increases in the percentage of breakfasts served for free in each year, but the magnitude of the effects decreased from 2.4 percentage points to 0.7 percentage points.[41]

[41] Changes calculated from figures may differ slightly from calculated differences because of rounding.

Figure IV.3. Percentage of breakfasts served for free across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Nebraska and Utah) and those with two years of data (Virginia and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured for a given year, there is no data point for that year.

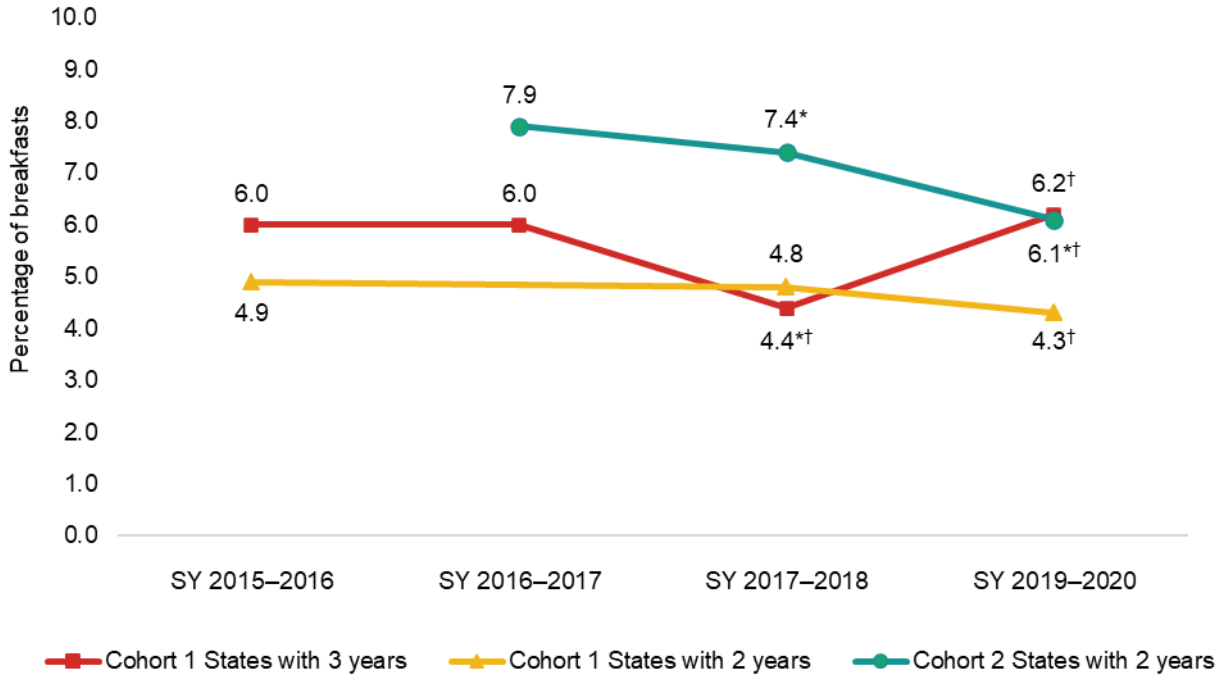
* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

The percentage of breakfasts served at a reduced price decreased for two groups of States (Figure IV.4). Cohort 2 States with two years of data on changes to participation outcomes had decreases that became larger over time: the percentage of lunches served at a reduced price decreased by 0.6 percentage points in SY 2017–2018, then by 1.8 percentage points in SY 2019–2020. The pattern in Cohort 1 States with three years of data on changes to participation outcomes was less consistent: the percentage of breakfasts served at a reduced price decreased by 1.6 percentage points in SY 2017–2018, but there was no statistically significant effect in other school years. There were no statistically significant changes from baseline in Cohort 1 States with two years of data on changes to this participation outcomes. As is the case for lunches, the magnitude of the decreases in the percentage of meals served at a reduced price was smaller than the magnitude of the increases in the percentage of meals served for free.

Figure IV.4. Percentage of breakfasts served at a reduced price across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured for a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

The average number of breakfasts served per student per day increased at a growing rate for the first two years of DCM-F/RP implementation for all three groups of States.[42] For example, in Cohort 2 States with two years of data on changes to participation outcomes, the average number of breakfasts served per student per day increased by 0.023 in SY 2017–2018 and increased by 0.059 in SY 2019–2020. This positive effect pattern for the average number of breakfasts served per student per day is different from results for lunches, which did not have a discernible pattern.

Patterns of effects on breakfast outcomes across demonstration years were similar to those for lunch outcomes. Effects on the average number of breakfasts served per student per day were positive.

[42] Appendix Table C.4.c shows results by State, but not those for the pooled samples.

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V. Effects on Federal Reimbursement Outcomes

If DCM-F/RP influences the number of free, reduced-price, and paid meals that are served in schools, it will also affect the Federal reimbursements to districts (Figure II.1). These reimbursements are revenues for the districts but are costs from the Federal perspective. Reimbursements for each meal vary by meal type (i.e., breakfast or lunch), recipient's certification status or school's special provision status,[43] district- or school-level measures of need, and whether the district meets school nutrition performance standards.

To address the second set of research questions under Objective 3 (Table IV.1), this chapter focuses on two outcome measures, each defined separately for lunches and breakfasts:

1. Blended reimbursement rate (BRR), which measures the average reimbursement rate per meal served
2. Reimbursements per enrolled student per day, defined as average daily reimbursements per student enrolled

Both outcome measures are based on the same set of months that were used for the participation outcomes (July through February of each school year).[44] The BRR reflects the distribution of meals served across the free, reduced-price, and paid categories and is thus influenced by changes in the certification status of students who participate in the school meals programs. Reimbursement cost per student per day equals the BRR multiplied by the average number of meals served per student per day (one of the outcomes presented in Chapter IV) and thus also reflects any changes in the total number of meals per student.

NSLP base rates (that is, before any adjustments based on need or fulfillment of performance standards) in SY 2015–2016 were $3.07 for free lunches, $2.67 for reduced-price lunches, and $0.29 for paid lunches. Free breakfasts were reimbursed at a base rate of $1.66, reduced-price breakfasts at $1.36, and paid breakfasts at $0.29. Appendix Table A.3 shows the full sets of rates for SYs 2015–2016, 2016–2017, 2017–2018, and 2019–2020. Because reimbursement rates increase each year, reimbursement amounts based on these rates would be expected to increase from the baseline year to the demonstration years even if the demonstration had no effect. To remove this aspect of variation that is unrelated to the demonstration, we held rates constant at SY 2015–2016 values in the analyses. However, even with the rates held constant, the amount of Federal reimbursements could change independent of changes to participation and the distribution of meals by certification status if districts or schools qualify for additional payments (based on need or fulfillment of school nutrition performance standards) in one year but not the other.

This chapter presents findings on NSLP and SBP Federal reimbursement outcomes in SY 2019–2020. We then discuss how these findings relate to the participation findings in Chapter IV. Finally, we present a comparison of findings across demonstration years. The effects of the demonstration are measured by changes between baseline year and demonstration year outcomes, which are regression adjusted to control for economic and other factors. Appendix D, which contains supplemental tables related to Federal

[43] Although students attending CEP or other non-base-year special provision schools are not certified, all meals served in those schools are served at no cost to students. However, they are not all reimbursed at the free rate. Per-meal reimbursement rates under the CEP are based on the percentage of identified students (those certified for free meals through means other than applications), and under Provisions 2 and 3 they are based on the certification rates determined during a baseline year.

[44] As discussed in Chapter IV, outcomes beginning in March 2020 were affected by COVID-19 school closures and virtual learning in many locations. To ensure comparability, we excluded March through June in SY 2019–2020 and in the other years.

reimbursement outcomes, includes tables showing unadjusted outcome values for baseline and demonstration years.

A. Effects on SY 2019–2020 Federal reimbursement outcomes

DCM-F/RP was associated with mixed but mostly positive changes to NSLP and SBP Federal reimbursement outcomes between the baseline year and SY 2019–2020. There was a substantially higher number of States with statistically significant increases in the BRR for lunches than for breakfasts (11 States versus 6). However, the number with increases in Federal reimbursements per student per day was the same (eight) across both programs. No more than two States had statistically significant decreases for any outcome.

1. Effects on NSLP outcomes

The implementation of DCM-F/RP was associated with positive changes to the NSLP BRR in most demonstration States (Table V.1). The NSLP BRR increased between the baseline year and SY 2019–2020 in 11 of the 15 States, with increases ranging from 4 cents in Indiana, Washington, and Wisconsin to 26 cents in California and West Virginia. The next largest increases were in Texas (18 cents) and Florida (17 cents). Three States (Massachusetts, Nevada, and Utah) had no statistically significant change in this outcome. One State, Virginia, had a statistically significant decrease of 6 cents, which was inconsistent with the anticipated direction of the effect of the demonstration. Notably, Virginia also had a statistically significant decrease in the percentage of meals served for free (Chapter IV) and these changes could be due to unmeasured, time-variant factors unrelated to DCM-F/RP.

DCM-F/RP was associated with increases in NSLP Federal reimbursement outcomes in most States.

The demonstration was associated with increases in NSLP Federal reimbursements per enrolled student per day in more than half of the States. In total, 8 of the 15 States had increases in SY 2019–2020 relative to the baseline year, ranging from 3 cents in Nebraska to 26 cents in West Virginia. These changes translate to a range of $5.40 to $46.80 per student over the course of a 180-day school year. The next largest increases were in Washington (19 cents), Florida (14 cents), and Texas (10 cents). All 8 States with statistically significant increases in NSLP Federal reimbursements per student per day also had increases in the BRR, which is unsurprising because the former outcome is a function of the BRR (along with average daily participation).

Five of the remaining States had no statistically significant change in NSLP Federal reimbursements per student per day. Only Utah and Wisconsin had statistically significant decreases (6 cents and 3 cents, respectively). The decrease in Utah was driven by a statistically significant decrease in the percentage of meals served at a reduced price coupled with decreases that were not statistically significant in the percentage of meals served for free and in average daily participation. Wisconsin, on the other hand, had the largest decrease in average daily participation. The pattern of the two NSLP reimbursement outcomes in Wisconsin indicates, as observed in the participation outcome findings presented in Chapter IV, a concurrent decrease in the participation rate and increase in the percentage of meals served for free.

Table V.1. Effects of DCM-F/RP on NSLP Federal reimbursements in SY 2019–2020

State	Blended reimbursement rate ($)			Federal reimbursements per enrolled student per day ($)		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	2.46	2.72	0.26*	1.07	1.14	0.07*
Connecticut	2.11	2.24	0.12*	1.03	1.10	0.07
Florida	2.62	2.78	0.17*	1.47	1.62	0.14*
Indiana	2.01	2.05	0.04*	1.23	1.24	0.00^
Iowa	1.70	1.80	0.11*	1.10	1.19	0.09*
Massachusetts	2.09	2.08	-0.01	0.96	0.98	0.02
Michigan	2.28	2.40	0.12*	1.08	1.13	0.04*
Nebraska	1.74	1.83	0.09*	1.15	1.18	0.03*
Nevada	2.59	2.65	0.06	1.03	1.21	0.18
Texas	2.44	2.62	0.18*	1.44	1.54	0.10*
Utah	1.71	1.66	-0.05	0.84	0.78	-0.06*
Virginia	2.15	2.09	-0.06*	1.09	1.07	-0.01
Washington	2.21	2.25	0.04*	0.78	0.97	0.19*
West Virginia	2.30	2.57	0.26*	1.42	1.69	0.26*
Wisconsin	1.87	1.91	0.04*	1.02	0.99	-0.03*
Pooled sample	2.32	2.47	0.15*	1.18	1.29	0.11*

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

SY = school year.

2. Effects on SBP outcomes

Compared with the NSLP reimbursement outcomes, fewer States had statistically significant changes to SBP reimbursement outcomes. Between the baseline year and SY 2019–2020, six States had statistically significant increases in the BRR, ranging from 3 cents in Iowa and Nebraska to 18 cents in California (Table V.2). Two States had statistically significant decreases in the SBP BRR: Indiana, where the decrease was 4 cents, and Virginia, where the decrease was 13 cents. Both States also had consistent statistically significant decreases in the percentage of breakfasts served for free (Chapter IV). There were no statistically significant changes in the SBP BRR in 7 of the 15 demonstration States (Table V.2).

Table V.2. Effects of DCM-F/RP on SBP Federal reimbursements in SY 2019–2020

State	Blended reimbursement rate ($)			Federal reimbursements per enrolled student per day ($)		
	Baseline year[a]	SY 2019–2020	Change	Baseline year[a]	SY 2019–2020	Change
California	1.61	1.79	0.18*	0.38	0.41	0.03*
Connecticut	1.57	1.54	-0.03	0.32	0.36	0.04
Florida	1.73	1.78	0.06*	0.47	0.51	0.04
Indiana	1.58	1.54	-0.04*	0.37	0.39	0.02
Iowa	1.42	1.45	0.03*	0.27	0.30	0.03*
Massachusetts	1.56	1.41	-0.15	0.30	0.31	0.01
Michigan	1.62	1.65	0.03	0.38	0.43	0.05*
Nebraska	1.30	1.33	0.03*	0.28	0.33	0.05*
Nevada	1.74	1.73	0.00^	0.39	0.51	0.12
Texas	1.66	1.75	0.10*	0.57	0.60	0.03*
Utah	1.47	1.40	-0.06	0.18	0.19	0.01
Virginia	1.64	1.50	-0.13*	0.37	0.43	0.05*
Washington	1.61	1.63	0.01	0.17	0.34	0.17*
West Virginia	1.53	1.64	0.11*	0.76	0.88	0.12*
Wisconsin	1.36	1.34	-0.02	0.31	0.32	0.01
Pooled sample	**1.61**	**1.68**	**0.07***	**0.41**	**0.45**	**0.04***

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

SY = school year.

DCM-F/RP was associated with mixed effects on SBP Federal reimbursement outcomes.

In results similar to the SBP BRR findings, almost half of the demonstration States did not have statistically significant changes in SBP Federal reimbursements per student per day. However, in contrast with the BRR findings, all statistically significant changes in reimbursements per student per day were increases, ranging from 3 cents in California, Iowa, and Texas to 17 cents in Washington. These increases translate to a range of $5.40 to $30.60 per student over the course of a year. Five of the eight States with increases in average daily reimbursements also had consistent increases in the BRR. Two other States (Michigan and Washington) had no statistically significant change in the BRR; this pattern suggests that SBP participation increased but the percentage of meals served for free or at a reduced price did not change substantially. In Virginia, where average daily

reimbursements increased but the BRR decreased by 13 cents, the increase in average daily participation coincided with a smaller percentage of meals being served for free or at a reduced price.

The increases in SBP average daily reimbursements were generally smaller than the increases in NSLP average daily reimbursements because the dollar value difference between reimbursement categories is higher for lunches than for breakfasts.

B. Comparisons with participation findings

Because BRRs depend on the distribution of the meal reimbursement categories (free, reduced-price, or paid), and average daily reimbursements per enrolled student depend on both that and the number of daily meals per student, we expect the Federal reimbursement findings to be generally consistent with the participation findings. Specifically, the BRR generally increases when the percentage of meals served for free or at a reduced price increases (assuming no large changes in the number of schools qualifying for higher reimbursement rates based on need or fulfillment of performance standards). Likewise, average daily reimbursements per student will generally increase when the percentage of meals served for free or the school meals participation rates increase.

States with increases in the BRR also generally had increases in the percentage of meals served for free, and those with increases in average daily reimbursements generally had increases in at least one participation outcome.

The Federal reimbursement findings in the previous section are generally consistent with the participation findings discussed in Chapter IV, and those in turn are influenced by changes in certification and CEP participation (Table V.3). Changes to the BRR generally aligned with changes in the percentage of free or reduced-price meals served in States where we examined that outcome.[45] For the NSLP, the direction and statistical significance of the changes to the BRR aligned with the direction and statistical significance of changes in the percentage of lunches served for free in 11 of the 13 States. All eight States with (1) statistically significant increases in the percentage of lunches served for free and (2) smaller or no changes in the percentage of lunches served at a reduced price also had statistically significant increases in the NSLP BRR. In Virginia, there was a decrease in both the percentage of lunches served for free and the BRR. Two States, Nevada and Utah, had no statistically significant changes in either the percentage of lunches served for free or the BRR, although Utah had a statistically significant decrease in the number of meals served at a reduced price. The remaining two States, Connecticut and Indiana, had statistically significant increases in the NSLP BRR, but no change in the percentage of lunches served for free or at a reduced price.

[45] We could not assess whether the percentage of meals served for free or at a reduced price aligned with the BRR for the two States included in both DCM demonstrations (Florida and Massachusetts) because we did not examine the percentage of meals served for free in those States (for reasons discussed in Chapter IV).

Table V.3. Changes in key participation and Federal reimbursement outcomes from baseline year to SY 2019–2020

State	NSLP					SBP				
	Participation outcomes			Federal reimbursement outcomes		Participation outcomes			Federal reimbursement outcomes	
	Percentage of meals served for free	Percentage of meals served at a reduced price	Average number of meals served per student per day	Blended reimburse-ment rate	Reimburse-ments per student per day	Percentage of meals served for free	Percentage of meals served at a reduced price	Average number of meals served per student per day	Blended reimburse-ment rate	Reimburse-ments per student per day
California	↑	↓	O	↑	↑	↑	↓	↓	↑	↑
Connecticut	O	O	O	↑	O	O	O	O	O	O
Florida[a]	n.a.	O	O	↑	↑	n.a.	O	O	↑	O
Indiana	O	O	O	↑	O	↓	O	↑	↓	O
Iowa	↑	O	O	↑	↑	↑	O	↑	↑	↑
Massachusetts[a]	n.a.	O	O	O	O	n.a.	O	O	O	O
Michigan	↑	↓	O	↑	↑	↑	↓	↑	O	↑
Nebraska	↑	↓	↓	↑	↑	↑	↓	↑	↑	↑
Nevada	O	O	O	O	O	O	O	O	O	O
Texas	↑	↓	O	↑	↑	↑	↓	O	↑	↑
Utah	O	↓	O	O	↓	O	O	O	O	O
Virginia	↓	O	O	↓	O	↓	O	↑	↓	↑
Washington	↑	↓	↑	↑	↑	↑	↓	↑	O	↑
West Virginia	↑	↓	↑	↑	↑	↑	↓	↑	↑	↑
Wisconsin	↑	O	↓	↑	↓	O	↓	O	O	O

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020.

[a] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

↑ = The change between the baseline year and SY 2019–2020 is a statistically significant increase at the .05 level, two-tailed test.

O = There was no statistically significant change between the baseline year and SY 2019–2020 at the .05 level, two-tailed test.

↓ = The change between the baseline year and SY 2019–2020 is a statistically significant decrease at the .05 level, two-tailed test.

n.a. = This outcome is not available for this State.

Federal reimbursements per student per day increase when either the percentage of meals served for free increases or the average number of meals served per student per day increases. In States where we

examined all three participation outcomes, the States with a statistically significant increase in NSLP Federal reimbursements per student per day all had a corresponding increase in the percentage of lunches served for free, average daily lunches served per student, or both. As discussed in Section A, the Federal reimbursement outcomes for the two States with statistically significant decreases in NSLP Federal reimbursements per student per day, Utah and Wisconsin, logically followed from the States' participation outcomes. Three of the four States that had no statistically significant change in Federal reimbursements per student per day, and for which we examined all three participation outcomes, had no statistically significant changes to their participation outcomes. The exception, Virginia, had a statistically significant decrease in the percentage of lunches served for free, but no statistically significant change in the average number of lunches served per day.

For the SBP, the Federal reimbursement outcomes also logically followed from the participation outcomes. For example, among States for which both outcomes were measured, all five of the States with SBP BRR increases and both of the States with decreases had corresponding increases or decreases in the percentage of breakfasts served for free. Four States with no statistically significant change to the SBP BRR also had no change in the percentage of breakfasts served for free. However, two States (Michigan and Washington) had increases in the percentage of breakfasts served for free but no change to the SBP BRR.

Similarly to the NSLP finding for Federal reimbursements per student per day, all States with a statistically significant increase in the SBP outcome had a corresponding increase in the percentage of breakfasts served for free, the average daily breakfasts served per student, or both.

C. Effects on Federal reimbursement outcomes across demonstration years

To assess the stability of outcomes associated with the demonstration over time, we compared the changes to key Federal reimbursement outcomes across demonstration years. As in the analogous analysis in Chapter IV, for each State we only include school years in which the demonstration had begun by February.[46] We organize States into the same three groups used in Chapter IV: (1) Cohort 1 States with three years of data on changes to Federal reimbursement outcomes, (2) Cohort 1 States with two years of data on changes to Federal reimbursement outcomes, and (3) Cohort 2 States two years of data on changes to Federal reimbursement outcomes.

1. Effects on NSLP outcomes across demonstration years

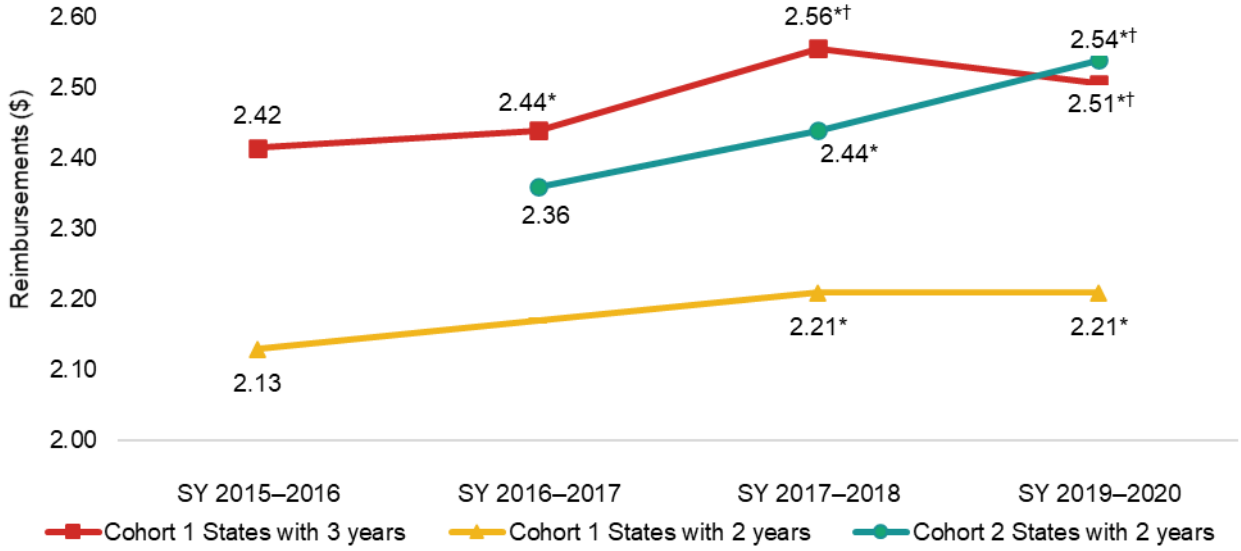
Across both outcomes and meal types, DCM-F/RP tended to be associated with modest increases in the first year for all three pooled samples, before showing substantially larger increases in the second demonstration year in which Federal reimbursement outcomes were measured (Figures V.1 through V.4). For the Cohort 1 States in which these outcomes were measured in three demonstration years, the NSLP BRR and both the NSLP and SBP Federal reimbursements per student per day decreased by a statistically significant amount in SY 2019–2020 relative to SY 2017–2018.

[46] Consequently, we assess effects of DCM-F/RP on reimbursement outcomes in three Cohort 1 States (Florida, Nebraska, and Utah) across three years (SY 2016–2017, SY 2017–2018, and SY 2019–2020), and we assess outcomes in the remaining Cohort 1 States (Massachusetts, Virginia, and West Virginia) and five Cohort 2 States (California, Indiana, Michigan, Texas, and Wisconsin) across two years (SY 2017–2018, and SY 2019–2020). We are unable to assess effects across demonstration years in the remaining States: Connecticut, Iowa, Nevada, and Washington.

All three pooled groups of States experienced increases in the NSLP BRRs relative to the baseline in all demonstration years included in the analysis. In Cohort 1 States with three years of data, the BRR increased by 2 cents in the first year from $2.42 to $2.44 and an additional 12 cents in the second year, from $2.44 to $2.56. It dropped in their third year by about 5 cents, but still it remained 9 cents higher than the BRR in the baseline year. In Cohort 2 States with two years of data, the BRR increased by 8 cents in the first year from $2.36 to $2.44 before increasing by 10 cents in the second year, from $2.44 to $2.54. In Cohort 1 States with data for two years, there was a statistically significant NSLP BRR increase in the first full year of the demonstration relative to the baseline (from $2.13 to $2.21) but the BRR did not increase further in SY 2019–2020.

Federal reimbursements tended to increase by larger amounts between the first and second year in which the effects were measured than between the baseline year and the first year.

Figure V.1. NSLP blended reimbursement rates across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

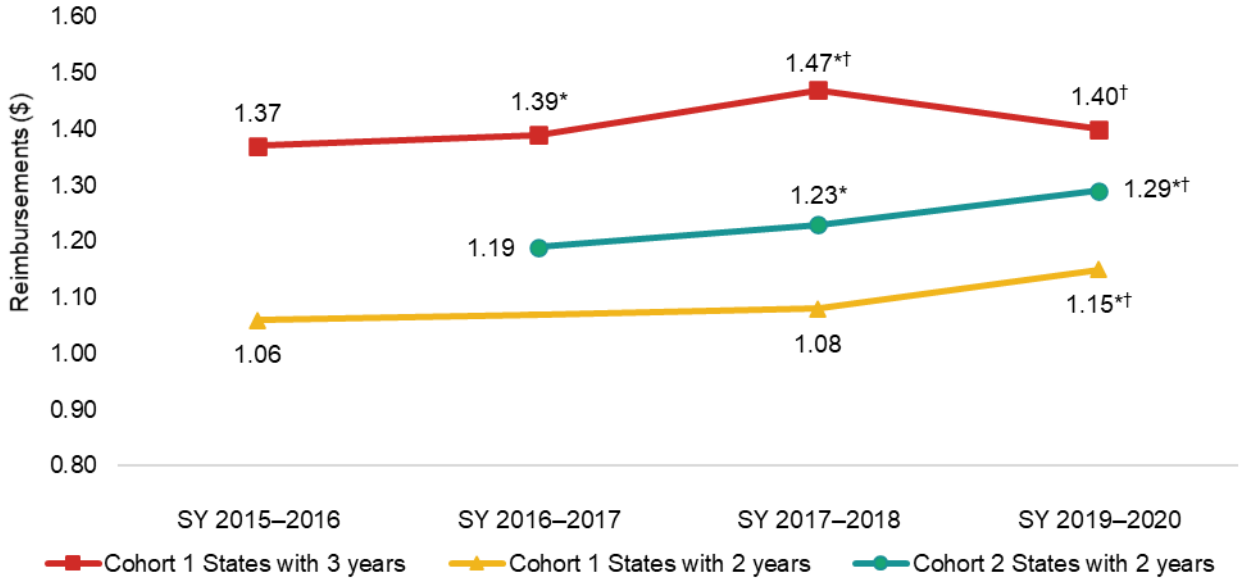
† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

Similarly, in all three pooled groups of States, there were larger increases in NSLP Federal reimbursements per student per day in the second demonstration year for which Federal reimbursement outcomes were measured than in the first year. Specifically, in Cohort 1 States with three years of data, reimbursements per student per day increased by 8 cents in the second year, compared with 2 cents in the first year; for Cohort 2 States with two years of data, it increased by 6 cents in the second year and 4 cents in the first year; and for Cohort 1 States with two years of data, it increased by 7 cents in the second year

compared with no statistically significant change in the first year. Federal reimbursements per student per day decreased in SY 2019–2020 relative to SY 2017–2018 for Cohort 1 States with three years of data on changes.

Figure V.2. NSLP reimbursements per student per day across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

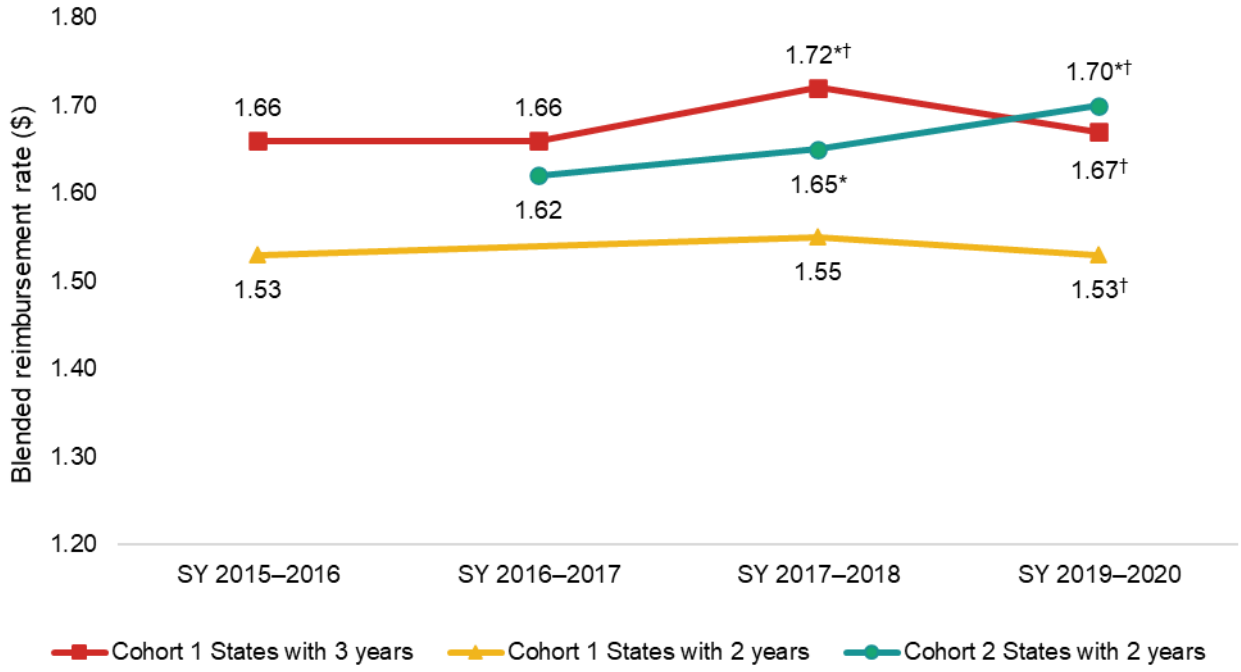
SY = school year.

2. Effects on SBP outcomes across demonstration years

Patterns across years for SBP Federal reimbursements were similar to those for NSLP reimbursements in the three pooled groups of States (Figures V.3 and V.4). For example, Cohort 1 States with three years of data on changes to Federal reimbursement outcomes had no statistically significant change in the BRR in the first year. Then, the BRR increased from $1.66 to $1.72 between the first and the second demonstration year, and there was a decline in the BRR in the third year. In Cohort 2 States with Federal reimbursement outcomes for two demonstration years, the BRR increased by 3 cents in the first year and an additional 5 cents in the second year. Cohort 1 States with two years of data on changes to this outcome did not have statistically significant changes in the SBP BRR.

Patterns of changes to Federal reimbursement amounts across years were similar across both meal programs (NSLP and SBP).

Figure V.3. SBP blended reimbursement rates across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

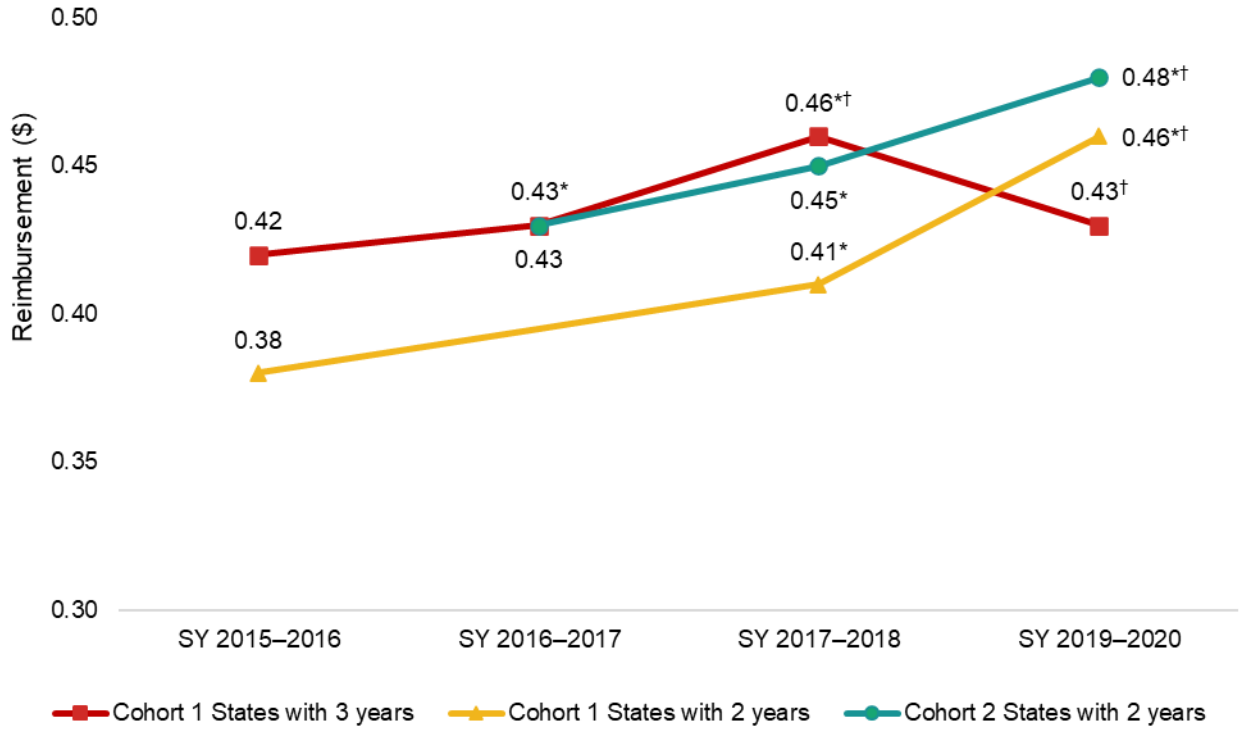
* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

Likewise, the effect of the demonstration on SBP Federal reimbursements per student per day increased by more between the first and the second year for which outcomes were measured than between the baseline year and the first year. For Cohort 1 States with three years of data, Federal reimbursements per student per day increased from 42 cents to 43 cents in the first year and then increased from 43 cents to 46 cents in the second year before reverting back to 43 cents in the third year. Cohort 2 States with two years of data on changes to outcomes had an increase from 43 cents to 45 cents in the first year, and an increase from 45 cents to 48 cents in the second year. Cohort 1 States with two demonstration years of data on this outcome saw Federal reimbursements per student per day increase from 38 cents to 41 cents in the first year and by an additional 5 cents, from 41 cents to 46 cents, in the second.

Figure V.4. SBP reimbursements per student per day across demonstration years



Source: Administrative records provided by State administrators

Note: The baseline year is SY 2015–2016 for Cohort 1 States, including those with three years of data (Florida, Nebraska, and Utah) and those with two years of data (Massachusetts, Virginia, and West Virginia); and it is SY 2016–2017 for Cohort 2 States with two years of data (California, Indiana, Michigan, Texas, and Wisconsin). If an outcome was not measured in a given year, there is no data point for that year.

* Change from baseline year is significantly different from zero at the .05 level, two-tailed test.

† Difference from the previous demonstration year effect is significantly different from zero at the .05 level, two-tailed test.

SY = school year.

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VI. Effects on State Administrative Cost Outcomes

The DCM-F/RP demonstration is designed to benefit students and their families, and it represents an investment of time and resources from the agencies involved. At the State level, at least one child nutrition agency and one Medicaid eligibility agency were involved in the demonstration.[47] Child nutrition agencies led the demonstration and communicated with FNS, other State agencies, and districts about DCM-F/RP. These agencies were also typically responsible for matching Medicaid data with student enrollment data and providing direct certification results (or lists of eligible students, in States using a local-matching process) to districts.[48] Medicaid eligibility agencies produced files of children enrolled in Medicaid, typically assessing eligibility for DCM-F/RP and restricting the file to eligible children. State administrative costs of DCM-F/RP are defined as all expenditures these State agencies incurred over and above the costs of the certification process in the absence of DCM-F/RP.

State administrative costs are defined as all expenditures State agencies incurred above those that would be necessary in the absence of DCM-F/RP.

The analyses in this chapter address the third set of research questions under Objective 3 and a related question under Objective 4 (Table IV.1). Section A starts with a description of the State administrative costs that agencies incurred for DCM-F/RP during SY 2019–2020. The key outcome is the total administrative costs of DCM-F/RP by State and agency type (Research Question B.3). Then, to aid in understanding patterns observed in these key outcomes, this section explores the breakdown of costs by category and the costs per student enrolled or directly certified. Finally, to address Research Question B.4, Section B has a comparison of costs across demonstration years. Supplemental tables related to State administrative cost outcomes are included in Appendix E.

A. State administrative costs in SY 2019–2020

By SY 2019–2020, all demonstration States had been conducting DCM-F/RP for at least a full year and thus had already incurred the start-up costs of setting up DCM-F/RP. Some State agencies continued to incur ongoing costs associated with maintaining DCM-F/RP systems and processes, resolving questions, or communicating with other agencies and school districts. This chapter focuses on ongoing costs in SY 2019–2020—defined as costs that occurred after the month of the State's first DCM-F/RP match—and does not discuss start-up costs, which were only incurred in each State's first year of implementation.[49]

1. Total State administrative costs

The administrative costs of DCM-F/RP incurred during SY 2019–2020 varied widely but were small or zero for most States (Table VI.1). In six States (Massachusetts, Michigan, Nebraska, Texas, Washington, and West Virginia), both the child nutrition and Medicaid eligibility agencies reported zero costs. Child

[47] For the evaluation, each agency that expected to incur costs in SY 2019–2020 due to DCM-F/RP was categorized as either a child nutrition agency or a Medicaid eligibility agency based on its role in the direct certification process (Table A.2). Five States involved more than one agency of each type: Michigan had three child nutrition agencies; Nevada and Wisconsin had two child nutrition agencies; and Utah and Washington had two Medicaid eligibility agencies.

[48] More information on how the agencies' roles varied by State can be found in Chapter VII of the DCM-F/RP Year 2 report (Hulsey et al. 2020).

[49] Information on start-up costs in earlier years of the demonstration can be found in the DCM-F/RP Year 1 report (Hulsey et al. 2019) and the DCM-F/RP Year 2 report (Hulsey et al. 2020).

nutrition agencies in three other States (Florida, Indiana, and Virginia), and Medicaid eligibility agencies in two others (California and Connecticut) also reported zero costs. Only three States had costs above $5,000: Nevada, Connecticut, and Iowa. Across all States, administrative costs averaged about $8,000 per State.

Most States incurred less than $5,000 in administrative costs from DCM-F/RP in SY 2019–2020, with many agencies reporting zero costs.

Table VI.1. State administrative costs of DCM-F/RP in SY 2019–2020, by agency type

State	State administrative costs in SY 2019–2020 ($)		
	Child nutrition agency	Medicaid eligibility agency	Total
California	620	0	620
Connecticut	17,664	0	17,664
Florida	0	464	464
Indiana	0	52	52
Iowa	11,866	1,768	13,634
Massachusetts	0	0	0
Michigan	0	0	0
Nebraska	0	0	0
Nevada	65,841	17,724	83,565
Texas	0	0	0
Utah	1,679	52	1,731
Virginia	0	4,230	4,230
Washington	0	0	0
West Virginia	0	0	0
Wisconsin	3,598	140	3,737
Total	**101,268**	**24,428**	**125,697**
Mean	**6,751**	**1,629**	**8,380**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2019–2020.

SY = school year.

Across States, child nutrition agencies had higher costs on average than Medicaid eligibility agencies did, with respective averages of $6,751 and $1,629. Child nutrition agency costs ranged from $0 to $65,841, whereas Medicaid eligibility agency costs ranged from $0 to $17,724.

Among child nutrition agencies, the agency in Nevada had the highest costs at $65,841, driven primarily by large contractor costs for software development and hardware installation for the State's Single Student Look Up tool. The Single Student Look Up tool is a new feature developed for all direct certification programs, and the State reported a portion of the cost for DCM-F/RP. The tool is a one-time enhancement, and the State does not expect this level of spending in future years. Child nutrition agencies in most other States incurred administrative costs under $4,000 in SY 2019–2020. The two exceptions—Connecticut and Iowa—incurred costs of $17,664and $11,866, respectively. The child nutrition agency in Connecticut reported time spent on testing match procedures, providing training and technical assistance

(TA) to districts, checking the file from the Medicaid eligibility agency, and conducting post-implementation meetings and coordination. The agency also reported indirect costs. Most of the reported time spent by the child nutrition agency in Iowa was for merging student records matched to DCM-F/RP with student records matched to other programs used for direct certification and providing training and TA to districts.

Among Medicaid eligibility agencies, the agency in Nevada had the highest costs at $17,724, driven by time spent working with the child nutrition agencies in the State to transfer data files and reports for DCM-F/RP. Medicaid eligibility agencies in other States incurred costs below $2,000, except Virginia, which incurred costs of $4,230.

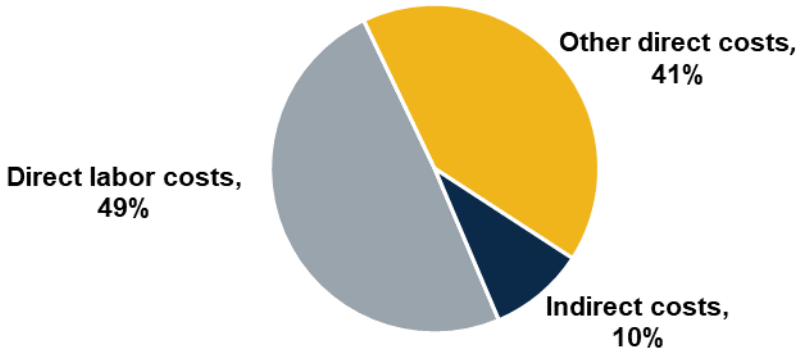
2. Direct labor costs, direct costs other than labor, and indirect costs

Total administrative costs for the State agencies consist of (1) direct labor costs, including wage and fringe benefits for time spent on DCM-F/RP; (2) other direct costs, excluding labor (ODCs); and (3) indirect costs, which can include administrative support and facilities costs. Payment to contractors was usually reported as an ODC, but some States reported contractor payments in the direct labor category.

Overall, direct labor costs accounted for about half of total State administrative costs in SY 2019–2020 (Figure VI.1). Direct labor costs ranged from $52 to $15,950 across agencies (Appendix Table E.1). Most Medicaid eligibility agencies reported no other type of cost.

Direct labor costs accounted for about half of the costs across States.

Figure VI.1. Distribution of DCM-F/RP administrative costs in SY 2019–2020, by type



Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2019–2020.
SY = school year.

ODCs accounted for the next largest percentage of costs, at 40 percent. However, this was driven by contractor costs in just two States—Iowa and Nevada. The Medicaid eligibility agency in Iowa had $1,614 in ODCs (equal to 91 percent of the agency's total costs), and the child nutrition agency in Nevada had ODCs of $50,267 (equal to 76 percent of its costs). Contractors in Iowa matched Medicaid data to student records, and ODCs for that agency also included a standardized rate for IT personnel to oversee the process. Contractors for Nevada's child nutrition agency developed software and installed hardware needed for DCM-F/RP. No other States reported any ODCs (Table E.1).

Indirect costs accounted for just 10 percent of total costs across States and were a small portion of total costs for most agencies that reported them. The only exception was the Connecticut child nutrition agency, where indirect costs for management, human resources, IT support, and building maintenance of $4,687 made up 27 percent of the agency's total costs.

3. Costs per student enrolled or directly certified

Administrative costs might be higher for States with more enrolled students, more directly certified students, or more students certified through DCM-F/RP if larger eligibility and match files make the demonstration more expensive to implement. To account for the number of students, we examined State administrative costs of DCM-F/RP in SY 2019–2020 per student enrolled, per student directly certified for free meals (through any program), and per student directly certified for free or reduced-price meals based on Medicaid. Costs per student enrolled shows the costs of DCM-F/RP relative to the size of the student population, and costs per student directly certified for free meals can provide context for including Medicaid within the preexisting set of direct certification programs. The cost per student directly certified for free or reduced-price meals based on Medicaid provides a cost-benefit measure for students impacted by the demonstration.

The costs per student enrolled, directly certified for free meals, and directly certified for free or reduced-price meals based on Medicaid were small for all States.

Costs by all three measures were small and consistent with overall costs for all States (Table VI.2). The cost per student enrolled was less than 1 cent in 12 of the 15 States. The cost per student directly certified for free meals was 2 cents or less in 9 States, and the cost per student directly certified for free or reduced-price meals based on Medicaid was 5 cents or less in 8 States. Seven of the 10 States with data available on per-student costs had costs that are at or near zero for all three measures.

B. State administrative costs across demonstration years

Because States had the highest administrative costs during their first year of implementation, comparisons across demonstration years are presented separately by cohort. Cohort 1 comprises the seven States that began conducting DCM-F/RP in SY 2016–2017: California, Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia.[50] Cohort 2 includes the eight new States that joined in SY 2017–2018: Connecticut, Indiana, Iowa, Michigan, Nevada, Texas, Washington, and Wisconsin.[51]

The costs of conducting DCM-F/RP decreased substantially for States after their first year of implementation (Figure VI.2). Average administrative costs per State decreased by 90 percent for Cohort 1 States from SY 2016–2017 to SY 2017–2018 and by 88 percent for Cohort 2 States from SY 2017–2018 to SY 2019–2020. Average costs per Cohort 1 State continued to decrease in SY 2019–2020, falling by 88 percent from SY 2017–2018.

Costs decreased substantially across States in each year of the demonstration.

[50] Although treated as a Cohort 1 State for this analysis, California expanded its implementation of DCM-F/RP from 14 districts in SY 2016–2017 to statewide in SY 2017–2018.

[51] Nevada did not certify any students through DCM-F/RP until SY 2018–2019 but incurred costs in SY 2017–2018 to prepare for implementation.

Table VI.2. State administrative costs of DCM-F/RP per student enrolled or directly certified in SY 2019–2020

State	State administrative costs ($)		
	Per student enrolled	Per student directly certified for free meals	Per student directly certified for free or reduced-price meals based on Medicaid
California[a]	0.00^	0.00^	0.00^
Connecticut	0.04	0.24	0.41
Florida	0.00^	n.a.	n.a.
Indiana	0.00^	0.00^	0.00^
Iowa	0.03	0.12	NA
Massachusetts	0.00	n.a.	n.a.
Michigan	0.00	0.00	0.00
Nebraska	0.00	0.00	0.00
Nevada	0.18	1.29	3.37
Texas	0.00	0.00	0.00
Utah	0.00^	0.02	0.05
Virginia	0.00^	NA	NA
Washington	0.00	0.00	0.00
West Virginia	0.00	0.00	0.00
Wisconsin	0.00^	0.02	NA
Pooled sample[b]	**0.01**	**0.04**	**0.08**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2019–2020. Enrollment and direct certification data from administrative records provided by State administrators for SY 2019–2020 are used as denominators.

Note: For most States, the denominators are based on the districts in the analysis sample used in other chapters. For Virginia, which had a large number of districts excluded from other analyses because of data problems, the enrollment denominator also includes total enrolled student counts from districts excluded from other analyses. The total number of students directly certified for free meals and the total number of students directly certified for free or reduced-price meals based on Medicaid are not available for Virginia. The total number of students directly certified for reduced-price meals based on Medicaid is not available for Iowa or Wisconsin. Florida and Massachusetts participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration only affects reduced-price meals in those States.

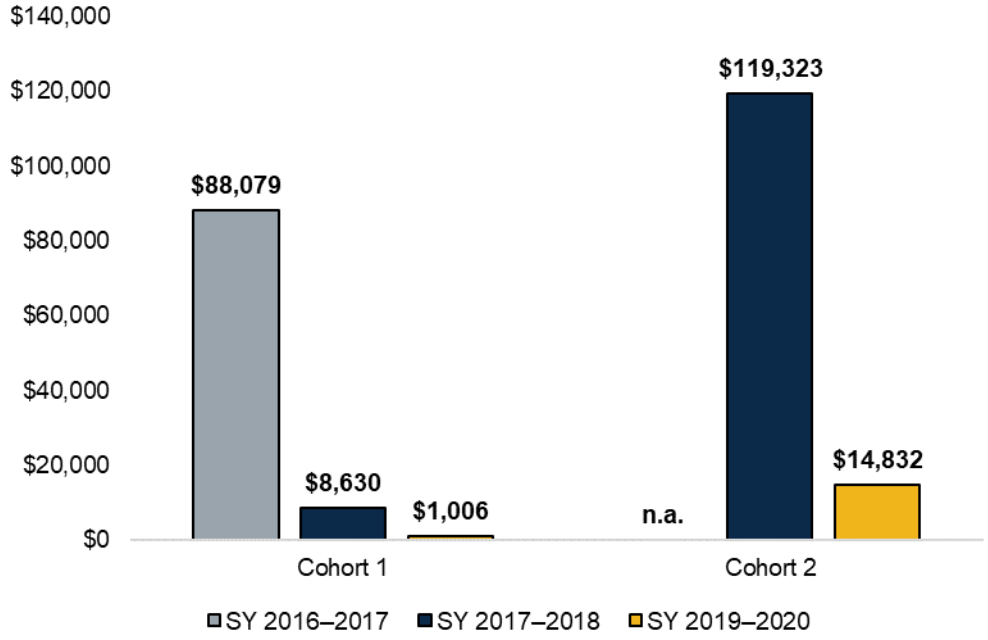
[a] The 14 California districts that implemented DCM-F/RP in SY 2016–2017 were excluded from the certification analysis and therefore excluded from the denominators used to compute the numbers in this table.

[b] The pooled sample is computed by summing costs across all States for which the outcome is measured and dividing by the total number of students in those States.

^ Number rounds to zero.

n.a. = not applicable; NA = not available; SY = school year.

Figure VI.2. Average State administrative costs of DCM-F/RP across demonstration years, by cohort



Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020.

Note: For this analysis, Cohort 1 includes California, Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; Cohort 2 includes Connecticut, Indiana, Iowa, Michigan, Nevada, Texas, Washington, and Wisconsin.

n.a. = not applicable; SY = school year.

For all Cohort 1 States, total administrative costs in SY 2019–2020 were minimal—less than $5,000 in each State (Table VI.3). Only two agencies incurred increased costs from SY 2017–2018 to SY 2019–2020: the Medicaid eligibility agencies in Florida and Virginia (Appendix Table E.2). The nominal costs ($464) reported by the Medicaid eligibility agency in Florida in SY 2019–2020—up from $0 in SY 2017–2018—were for amending and reviewing the data-sharing agreement with the State's child nutrition agency. The costs incurred by the Virginia Medicaid eligibility agency increased from SY 2017–2018 to SY 2019–2020 but were still small. In SY 2019–2020, the agency reported more time spent on the same kinds of activities it reported in SY 2017–2018, including developing and testing programs for data extraction and other post-implementation activities, which involved meetings and coordination and validating DCM-F/RP file extracts from the State's child nutrition agency. For all other Cohort 1 States, costs decreased from SY 2017–2018 to SY 2019–2020.

Costs were less than $18,000 for all Cohort 2 States in SY 2019–2020, except for Nevada (Table VI.3). The child nutrition agency in Nevada was the only agency in Cohort 2 that saw a cost increase from SY 2017–2018 to SY 2019–2020 (Appendix Table E.2). In SY 2019–2020, the agency reported higher contractor costs than it did in SY 2017–2018, along with agency staff time spent on post-implementation activities. The contractor costs and most of the time reported on post-implementation activities were for the State's Single Student Look Up tool. However, total costs for Nevada decreased from SY 2017–2018 to SY 2019–2020.

Table VI.3. Total State administrative costs of DCM-F/RP across demonstration years

State	Total State administrative costs ($)		
	SY 2016–2017	SY 2017–2018	SY 2019–2020
Cohort 1 States			
California	81,237	35,984	620
Florida	256,708	0	464
Massachusetts	151,754	3,504	0
Nebraska	14,760	0	0
Utah	45,862	16,316	1,731
Virginia	53,655	3,089	4,230
West Virginia	12,576	1,520	0
Total	**616,552**	**60,413**	**7,045**
Mean	**88,079**	**8,630**	**1,006**
Cohort 2 States			
Connecticut	n.a.	97,692	17,664
Indiana	n.a.	67,361	52
Iowa	n.a.	50,931	13,634
Michigan	n.a.	30,496	0
Nevada	n.a.	124,225	83,565
Texas	n.a.	373,489	0
Washington	n.a.	61,084	0
Wisconsin	n.a.	149,302	3,737
Total	**n.a.**	**954,580**	**118,652**
Mean	**n.a.**	**119,323**	**14,832**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020.

Note: California implemented DCM-F/RP in 14 districts in SY 2016–2017 and statewide in SY 2017–2018. Nevada began implementing the demonstration in SY 2017–2018 but did not certify students through DCM-F/RP until SY 2018–2019.

n.a. = not applicable; SY = school year.

In all three years of the evaluation, contractor costs made up a large portion of total costs in the States with highest costs. In each cohort, for the two States with the highest costs in their first year of implementation (Florida and Massachusetts in SY 2016–2017 and Texas and Wisconsin in SY 2017–2018), the largest expenditure—accounting for the majority of total costs—was for work done by Medicaid eligibility agency contractors to develop queries for extracting the necessary Medicaid data. Those contractor costs fell to $0 for those States by SY 2019–2020.

Average monthly ongoing costs were small and decreased over time for most States.

Comparing average monthly ongoing costs across demonstration years can reveal whether the lower overall costs after initial implementation of DCM-F/RP were due entirely to the absence of start-up costs, or whether the ongoing cost of conducting DCM-F/RP also changed. Average monthly ongoing costs were computed by dividing the total costs in each State by the number of months in the school year

after the State conducted its first DCM-FR/P match.[52] Unlike total ongoing costs, examining average monthly ongoing costs accounts for the differences in the number of months of ongoing activity during a State's first year of the demonstration (because the number of months with ongoing costs depended on when during the school year the State conducted its first DCM-F/RP match). Average monthly ongoing costs tended to be small, and for most States they decreased over time, probably reflecting a decrease after initial implementation of DCM-F/RP (Appendix Table E.3). Exceptions were California and Utah from SY 2016–2017 to SY 2017–2018, and Virginia from SY 2017–2018 to SY 2019–2020. In each of these States, the increase from one year to the next was minimal.

Details on administrative costs per student directly certified for free or reduced-price meals based on Medicaid across demonstration years can be found in Appendix Table E.4.

[52] After a State's first year of implementation, all months of the school year are included in the denominator.

VII. Conclusions and Limitations

The DCM-F/RP demonstration authorizes States to directly certify students for free or reduced-price meals based on income eligibility assessed through Medicaid data. This evaluation was designed to assess the potential of DCM-F/RP to (1) expand the number of eligible students who are certified to receive free or reduced-price school meals without needing to submit applications, (2) increase the numbers of meals served and Federal reimbursements for those meals, and (3) affect the administrative costs State staff incur during the certification process. This chapter summarizes key findings from SY 2019–2020, by which time all States had been conducting DCM-F/RP for at least one full school year.

A. Certification, participation, and Federal reimbursements

Under the DCM-F/RP demonstration, substantial numbers of students were directly certified to receive free or reduced-price meals based on Medicaid data, comprising more than one-third of all students directly certified. Because Medicaid comes last in the order of programs used for direct certification, these students would not have been directly certified in the absence of the demonstration, but some likely would have been certified by application in the absence of DCM-F/RP.

The percentage of students attending schools participating in the CEP increased in seven States between the baseline year and SY 2019–2020. DCM-F/RP contributed to these increases in CEP because eligibility for CEP is based on the percentage of students directly certified, but growth in CEP is part of a broader trend across the nation, including in States that are not part of the DCM-F/RP demonstration. Despite the growth in CEP, the total percentage of students individually certified for free meals grew between the baseline year and SY 2019–2020 in two demonstration States. The total percentage of students certified for reduced-price meals grew in two other States, where the study did not find an increase in CEP. In most of the States that had changes in overall certification rates or CEP, those changes translated into changes in some participation and Federal reimbursement outcomes.

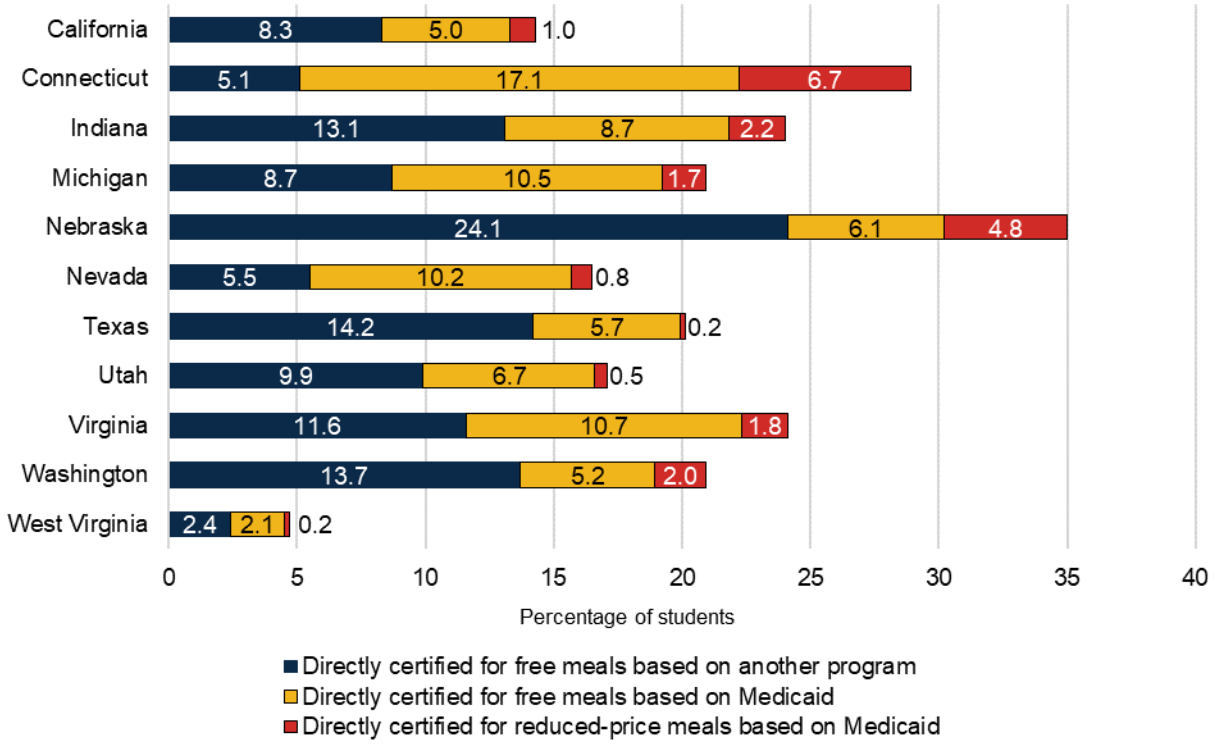
Limitations of the DCM-F/RP demonstration design and data should be considered in interpreting the findings summarized here. The certification, participation, and Federal reimbursement outcomes were analyzed using a pre-post design, which estimated the effect of the demonstration as the change in a given outcome not explained by changes in measurable characteristics that occurred at the same time. The statistical model used to estimate changes accounts for the influence of included time-varying characteristics (i.e., district enrollment and local economic conditions) and any time-invariant characteristics (such as type of district) on the outcomes of interest. However, time-varying factors not included in the model and unrelated to the demonstration (such as nationwide expansion of CEP, improvements to direct certification procedures, changes to school meal operations, or changes in student preferences for school meals) could be driving some of the observed changes. Concerns that changes in outcomes could be due to factors unrelated to the demonstration increase with the amount of time elapsed since baseline.

Another limitation is that some States were excluded from analyses of certain outcomes. First, because DCM-F/RP would not have affected free certifications in districts that participated in the previous DCM demonstration, the evaluation did not examine outcomes related to free meals in Florida and Massachusetts. Second, because reliable data on reduced-price certification outcomes were unavailable for Iowa and Wisconsin, those States were excluded from analyses of those outcomes. In addition to State-level exclusions, some districts had to be excluded from all analyses, notably in Indiana and Virginia. Chapter II and Appendix A provide a more detailed discussion of these and other limitations.

Certification. Substantial numbers of students were directly certified through DCM-F/RP in SY 2019–2020. More than 1.2 million students were directly certified for free meals based on Medicaid data across the 13 States that participated in the DCM-F/RP demonstration but did not participate in the previous DCM demonstration. An additional 240,000 students were directly certified for reduced-price meals based on Medicaid data in the 13 demonstration States where that outcome was measured. Notably, these findings emerged despite increases in CEP, which reduced the number of students available to be certified.

Across the 13 States that did not participate in the previous DCM demonstration, the percentage of students directly certified for free meals based on Medicaid ranged from 2.1 to 17.1 percent of all enrolled students (Figure VII.1). (For comparison, between 4.5 and 30.2 percent of enrolled students were directly certified for free meals based on any program in these States.) For the 13 States where the percentage of students directly certified for reduced-price meals based on Medicaid could be measured in SY 2019–2020, these percentages ranged from less than 0.1 (in Florida, not shown in Figure VII.1) to 6.7 percent of enrolled students.

Figure VII.1. Percentage of enrolled students directly certified in SY 2019–2020



Source: Administrative records provided by State administrators.

Notes: Percentages are calculated based on all students enrolled in the districts included in the analysis. Florida, Iowa, Massachusetts, and Wisconsin are excluded from this figure because data on one outcome are unavailable. Values in this figure are regression adjusted.

Although some of these students would have been certified for free or reduced-price meals by application in the absence of the demonstration, overall certification rates improved during DCM-F/RP implementation in a few States, and CEP participation increased in several others. Two States had statistically significant increases (of between 2.8 and 3.2 percentage points) in the total percentage of

students individually certified for free meals. Four States saw statistically significant decreases in this outcome because there were even larger increases in the percentage of students attending CEP schools. Increases in the percentage of students attending CEP schools ranged from 3.1 to 43.1 percentage points across these four States and three others. CEP schools serve all meals for free, but because they do not certify individual students, increases in CEP participation can drive down certification rates for free and reduced-price meals. The total percentage of students certified for reduced-price meals decreased significantly in six States but increased in two others.

Participation. For States with changes in certification rates or CEP participation between baseline and SY 2019–2020, those changes translated into changes in at least some participation outcomes. The seven States with increases in the percentage of students eligible to receive free meals—due to increases in CEP or free certifications or both—all had statistically significant increases in the percentage of lunches served for free (ranging from 1.7 to 12.7 percentage points), and six of those States also had increases in the percentage of breakfasts served for free (ranging from 2.3 to 13.8 percentage points). These increases were typically accompanied by smaller decreases in the percentage of meals served at a reduced price: for lunch in six of the States (ranging from 1.5 to 3.9 percentage points) and for breakfast in all seven (ranging from 0.9 to 4.3 percentage points). For both breakfasts and lunches, in each State where the percentage of meals served for free increased, this increase was larger than any decrease in the percentage served at a reduced price, indicating an increase in the overall percentage of meals served for free or at a reduced price.

Four States without changes in the percentage of students receiving free meals had a statistically significant change in at least one participation outcome. In Iowa, the percentage of lunches and breakfasts served for free increased between baseline and SY 2019–2020, and in Virginia these two outcomes decreased during the same period. The percentage of breakfasts served for free also decreased in Indiana, and the percentage of lunches served at a reduced price decreased in Utah. Because DCM-F/RP was only expected to influence participation outcomes through effects on certification outcomes (including CEP), the inconsistent findings in these four States likely reflect factors unrelated to the demonstration. As noted above, although the statistical model used to estimate changes accounts for the influence of included time-varying characteristics and any time-invariant district characteristics that might affect outcomes, regressions cannot control for unmeasured time-variant factors, such as other changes to school meal procedures or changes in student preferences for school meals.

Changes in the overall school meal participation rates were somewhat less common than changes in the distribution of meals served. The average number of lunches served per student per day increased in two States between baseline and SY 2019–2020 and decreased in two others. All four of those States had increases in CEP and/or free certifications. The average number of breakfasts served per student per day increased in seven States (including four with increases in CEP) and decreased in one. Again, because DCM-F/RP was expected to influence participation only through effects on certification, the inconsistent findings across outcomes in some States likely reflect changes unrelated to the demonstration.

Federal reimbursements. Federal reimbursements largely increased between the baseline year and SY 2019–2020. For States with changes in both federal reimbursements and participation outcomes, these changes were generally consistent. For the NSLP, 11 States experienced statistically significant increases in the BRR (ranging from 4 cents to 26 cents), and eight of these States—including six of the seven with increases in CEP participation—also had increases in reimbursements per student per day (from 3 cents to 26 cents). However, the BRR decreased (by 6 cents) in one State, and reimbursements per student per day decreased (by 3 to 6 cents) in two others.

Fewer States saw statistically significant changes in SBP reimbursements. The SBP BRR increased (by between 3 and 18 cents) in 6 States but decreased (by between 4 and 13 cents) in two States. SBP reimbursements per student per day increased, by between three and 17 cents, in eight States, and saw no significant changes in other States. Similar to the participation findings, the changes between the baseline year and SY 2019–2020 that were not driven by changes in certification outcomes likely reflect changes in factors unrelated to DCM-F/RP.

B. State administrative costs

The administrative costs incurred by State agencies in SY 2019–2020 to implement DCM-F/RP (over and above other certification costs) were generally quite low, in part because start-up costs were completed in earlier years. Costs ranged from $0 to about $84,000 across the 15 States. Six States reported zero costs for DCM-F/RP, as did one agency (either the child nutrition agency or the Medicaid eligibility agency) in five other States. Only three States reported administrative costs for DCM-F/RP above $5,000 in SY 2019–2020. Nevada incurred the highest costs—about $84,000—which were driven primarily by large contractor costs for developing a new tool for looking up individual students. Across the 15 demonstration States, the division of costs between child nutrition and Medicaid eligibility agencies varied somewhat, but on average, child nutrition agencies incurred higher costs.

C. Summary of findings across demonstration years

SY 2019–2020 was the fourth year of DCM-F/RP implementation in the Cohort 1 States and the third year of DCM-F/RP implementation for most other States. The most notable and consistent change across the demonstration years is the large decrease in State administrative costs, which fell each year. In most States, the most immediate outcomes of DCM-F/RP—the percentages of students directly certified for free and reduced-price meals based on Medicaid—increased over time. Together, these findings suggest that the demonstration was successful in reaching large numbers of students who were not directly certified based on other programs, and at a reasonable cost.

For other outcomes, assessing the evolution of effects over time is complicated by the study's pre-post design because less direct outcomes are more likely to be influenced by factors unrelated to the demonstration, and the length of time elapsed since baseline increases the likelihood of external factors driving the changes. In particular, in later years of DCM-F/RP, increases in CEP participation—which could be partially a result of the demonstration but also driven by broader national trends—seemed to be driving changes in certification, participation, and Federal reimbursement outcomes in some States.

References

Centers for Medicare & Medicaid Services. "Medicaid, Children's Health Insurance Program, & Basic Health Program Eligibility Levels." April 2019. Available at https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-eligibility-levels/index.html. Accessed October 2019.

Conway, Kevin, Andrew Gothro, Quinn Moore, and Brandon Kyler. "Direct Certification in the National School Lunch Program: State Implementation Progress, School Year 2015–2016." Report to Congress (unpublished). Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support, July 27, 2017.

Food and Nutrition Service. "Broad-Based Categorical Eligibility." Available at https://fns-prod.azureedge.net/sites/default/files/resource-files/BBCE%20States%20Chart%20%28July%202021%29.pdf. Updated July 2021. Accessed July 2021.

Food and Nutrition Service. "Calculation of SNAP Program Access Index 2017." Washington, DC: U.S. Department of Agriculture, Food and Nutrition Service, 2018. Available at https://fns-prod.azureedge.net/sites/default/files/resource-files/PAI2017.pdf. Accessed July 2021.

Food and Nutrition Service. "Rates of Reimbursement." Washington, DC: U.S. Department of Agriculture, Food and Nutrition Service, 2021. Available at https://www.fns.usda.gov/cn/rates-reimbursement. Accessed August 2021.

Hulsey, Lara, Anne Gordon, Joshua Leftin, Claire Smither-Wulsin, Allen Schirm, Nicholas Beyler, Anna Comerford, Jessica Galin, Brian Estes, and Carole Trippe. "Year 1 Impacts of Using Medicaid Data to Directly Certify Students for Free School Meals." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. Princeton, NJ: Mathematica Policy Research, January 2015.

Hulsey, Lara, Andrew Gothro, Joshua Leftin, Brian Estes, Claire Smither Wulsin, Liana Washburn, Josephine Thomason, and Daniela Golinelli. "Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) Demonstration, Year 1." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. Princeton, NJ: Mathematica Policy Research, August 2019. Available at https://www.fns.usda.gov/cn/evaluation-direct-certification-medicaid-free-and-reduced-price-meals. Accessed September 2021.

Hulsey, Lara, Andrew Gothro, Joshua Leftin, Liana Washburn, Brian Estes, Kathy Wroblewska, Hilary Wagner, Amanda Lee, Claire Smither Wulsin, and Kelsey Chesnut. "Direct Certification with Medicaid for Free and Reduced-Price Meals (DCM-F/RP) Demonstration, Year 2." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. Princeton, NJ: Mathematica Policy Research, April 2020. Available at https://www.fns.usda.gov/nslp/evaluation-direct-certification-medicaid-free-and-reduced-price-meals-dcm-frp. Accessed September 2021.

Hulsey, Lara, Joshua Leftin, Anne Gordon, Claire Smither Wulsin, Nicholas Redel, Allen Schirm, Nicholas Beyler, Brian Estes, and Carole Trippe. "Year 2 Impacts of Using Medicaid Data to Directly Certify Students for Free School Meals." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. Princeton, NJ: Mathematica Policy Research, June 2016.

Pérez, Allyson, and Crystal FitzSimons. "Community Eligibility: The Key to Hunger-Free Schools, School Year 2020–2021." Food Research & Action Center, June 2021. Available at https://frac.org/wp-content/uploads/CEP-Report-2021.pdf. Accessed July 2021.

What Works. Clearinghouse. "What Works Clearinghouse Standards Handbook, Version. 4.1." Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Available on the What Works Clearinghouse website at https://ies.ed.gov/ncee/wwc/handbooks. Accessed July 2021.

Appendix A.

Methods

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This appendix describes the samples and the data collection and analysis methods used for the DCM-F/RP Year 3 report.

A. Sample

FNS solicited applications and selected 15 States to participate in the DCM-F/RP demonstration. Seven—California, Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia—began implementing DCM-F/RP in SY 2016–2017.[53] Eight additional States—Connecticut, Indiana, Iowa, Michigan, Nevada, Texas, Washington, and Wisconsin—were selected to begin DCM-F/RP in SY 2017–2018, although Nevada did not certify any students through the demonstration until the following school year.

All demonstration States were implementing DCM-F/RP in all school districts statewide in SY 2019–2020. The evaluation sample included all school districts in each State, with the following exceptions:

- Districts missing all certification data or all participation data for either the baseline year or SY 2019–2020. Based on their names, the majority of these appeared to be charter schools, private schools, or facilities serving special populations.
- Districts composed entirely of Residential Child Care Institutions that had no certified students.
- Districts where the number of students was reported as zero or missing.
- Districts with serious data problems—such as inconsistencies or missing values in key variables—that could not be resolved.
- Districts missing secondary data used as covariates in regressions.
- The 14 California districts that participated in DCM before SY 2017–2018. These districts could not be included in the Cohort 2 analysis with the other districts in the State because they had different baseline years, and they could not be analyzed separately due to insufficient statistical power.
- Private schools in Virginia. Because Virginia did not initially include private schools in the DCM-F/RP demonstration, they were not included in the evaluation. Private schools were included in the sample in other States.

These exclusions resulted in a total sample of 5,951 districts across the demonstration States, compared with 7,273 and 7,919 districts in the raw data files for the baseline year and SY 2019–2020, respectively.[54,55] Table II.1 shows the numbers of State agencies and districts included in Year 2 of the demonstration evaluation; Table A.1 shows the numbers of students enrolled and the numbers of meals served in those districts in the baseline year and SY 2019–2020.

[53] California implemented DCM-F/RP in only 14 districts in SY 2016–2017 and expanded the demonstration statewide in SY 2017–2018.

[54] A large majority of all excluded records were removed for one of the following three reasons: (1) missing number of students, largely in Michigan, which included educational institutions that did not participate in the NSLP in one raw data file; (2) Residential Child Care Institutions that didn't certify students; (3) serious data problems that could not be resolved, mainly in Indiana and Virginia, as discussed in Section C.

[55] Because the set of districts that had to be excluded from the sample due to incomplete data or serious data problems differed across demonstration years, the sample used in this report is not identical to those used in the earlier reports from the DCM-F/RP study. Therefore, the numbers shown in this report for the baseline and earlier demonstration years differ somewhat from the ones shown in earlier reports. The sample differences are largest for States where notable numbers of districts had missing data or errors we could resolve in one year but not another.

Table A.1. Numbers of students and meals served through February in sample districts, by State and school year

State	Baseline year[a]			SY 2019–2020		
	Number of students enrolled	Number of lunches served	Number of breakfasts served	Number of students enrolled	Number of lunches served	Number of breakfasts served
California	5,691,733	320,517,044	171,318,510	5,592,064	315,940,948	168,554,218
Connecticut	500,817	28,309,149	10,809,374	492,839	29,329,288	11,984,386
Florida	2,750,157	184,513,445	87,844,981	2,793,546	193,544,746	96,731,890
Indiana	882,585	68,747,860	25,236,779	884,313	66,838,600	26,429,050
Iowa	523,626	40,920,414	10,882,041	533,628	40,073,191	11,324,161
Massachusetts	953,681	50,142,483	17,826,978	941,626	50,442,071	21,378,771
Michigan	1,536,158	78,267,004	39,626,638	1,498,276	81,379,822	42,199,940
Nebraska	329,308	26,838,452	8,196,547	341,228	26,919,301	9,107,197
Nevada	466,780	25,777,362	15,437,216	469,651	27,171,480	15,429,173
Texas	5,181,412	366,243,845	210,207,307	5,316,358	375,915,108	218,148,315
Utah	622,580	36,312,656	8,777,175	641,462	35,978,674	9,017,820
Virginia	502,731	27,317,561	12,315,749	516,617	30,264,254	15,650,592
Washington	1,053,119	48,341,211	17,526,156	1,075,643	50,330,604	20,474,302
West Virginia	280,043	21,162,556	16,800,826	263,349	20,435,244	16,562,296
Wisconsin	816,898	50,259,794	18,371,292	810,722	49,459,101	19,963,292
Total	**22,091,628**	**1,373,670,836**	**671,177,569**	**22,171,322**	**1,394,022,432**	**702,955,403**

Source: Administrative records for SY 2015–2016 (Cohort 1 baseline), SY 2016–2017 (Cohort 2 baseline), SY 2017–2018 (Nevada baseline), and SY 2019–2020 provided by State administrators.

Note: The numbers of meals served cover the beginning of the school year through February.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

SY = school year.

Some analyses included only a subset of the overall sample:

- **Outcomes relevant for a subset of States.** Outcomes related to free meals are not presented for States in which all districts participated in the earlier demonstration of DCM for free meals (Florida and Massachusetts) because the DCM-F/RP demonstration would not have had an effect on those outcomes in those States.
- **Outcomes available for a subset of States.** Iowa and Wisconsin did not provide the data needed to compute the percentage of students directly certified for reduced-price meals, so those States are not included in the analysis of reduced-price certification outcomes. Only seven States provided the supplemental data needed for the analysis of DCM-F/RP matching.
- **Comparisons between demonstration years.** Comparisons between DCM-F/RP years are only presented for States for which the outcome is measured for more than one demonstration year. Because participation and Federal reimbursement outcomes are based on data through February of each school year, those outcomes can be measured for only one demonstration year in Cohort 2 States

that conducted their first DCM-F/RP match after February 2018 (Connecticut, Iowa, Nevada, and Washington), so comparisons across demonstration years are not possible.

Within each State, at least two State-level agencies were included in the data collection (Table A.2). These agencies played key roles in DCM-F/RP and provided cost workbooks. Only one agency per State provided administrative records data.

Table A.2. State agencies included in data collection, by State and agency type

State	Agencies related to	
	Child nutrition	Medicaid eligibility
California	Department of Education	Department of Health Care Services; Department of Social Services[a]
Connecticut	State Department of Education	Department of Social Services
Florida	Department of Agriculture and Consumer Services	Department of Children and Families
Indiana	Department of Education	Family and Social Services Administration
Iowa	Department of Education	Department of Human Services
Massachusetts	Department of Elementary and Secondary Education	Executive Office of Health and Human Services
Michigan	Department of Education; Center for Educational Performance and Information; Department of Technology, Management, and Budget	Department of Health and Human Services
Nebraska	Department of Education	Department of Health and Human Services
Nevada	Department of Agriculture; Department of Education	Department of Welfare and Supportive Services
Texas	Department of Agriculture; Education Agency[a]	Health and Human Services Commission
Utah	State Board of Education	Department of Workforce Services; Department of Health
Virginia	Department of Education	Department of Social Services
Washington	Office of Superintendent of Public Instruction	Department of Social and Health Services; State Health Care Authority
West Virginia	Department of Education	Department of Health and Human Resources
Wisconsin	Department of Public Instruction; Department of Children and Families	Department of Health Services

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2019–2020.

[a] We did not collect State cost data from this agency because earlier discussions indicated that its SY 2019–2020 costs would be minimal.

B. Data collection

We collected two key types of data in SY 2019–2020: (1) district-level administrative records data on certification and NSLP and SBP participation, and (2) data on the administrative costs incurred by State agencies for DCM-F/RP activities.

1. Administrative records data

Administrative data on certification and meal participation were collected for each district in the demonstration States. To enable pre-post comparisons, the data were collected from each State child nutrition agency for both SY 2019–2020 and a baseline year. The baseline year is the year before the demonstration: SY 2015–2016 for Cohort 1 States, SY 2016–2017 for most Cohort 2 States, and SY 2017–2018 for Nevada.[56] Cohort 1 States also provided data for SY 2016–2017 and SY 2017–2018, their first and second demonstration years, and Cohort 2 States also provided data for SY 2017–2018, their first demonstration year. District-level data collected for each period fall into two broad categories: (1) information on enrolled students by certification status and reason for certification and (2) monthly participation (that is, meals served) information for the NSLP and SBP. The specific data elements collected largely align with the district-level data that States typically collect from districts for administrative reporting.

Core certification data. We collected data on certification status and reason for certification, including the method (direct certification or application) and basis of eligibility (that is, the program that resulted in direct certification or whether an application was approved on the basis of household income or categorical eligibility).[57] For the baseline year and SY 2019–2020, the reference date for the certification data provided is the last operating day in October, the date used for required annual reporting to FNS, because the data for that point in time were most readily available.[58] The core certification data elements that we collected included:

- Total number of students enrolled in the district
- Number of students certified for free meals
- Number of students certified for reduced-price meals
- Number of students certified by each method of certification (i.e., direct certification or application)
  - Number of students directly certified on the basis of each program (e.g., SNAP, Medicaid) [59]
  - Number of students certified by application by basis of eligibility (i.e., household income or categorical eligibility)

Supplemental certification data. Only seven of the demonstration States—Indiana, Iowa, Michigan, Nebraska, Texas, Washington, and Wisconsin—were able to provide additional administrative data on DCM-F/RP match results and prior certification information to address parts of Research Questions A.2

[56] For California, the baseline year of SY 2016–2017 is the year immediately before the State began statewide implementation of DCM-F/RP.

[57] Not all States were able to provide all requested certification data elements for all districts. Iowa and Wisconsin had to be excluded from the analysis of reduced-price certification outcomes, and we estimated some of the key outcomes for Indiana, Nebraska, and Wisconsin. Notable subsets of districts in Indiana and Virginia had to be excluded from analyses due to data limitations. These issues are discussed in Section C.

[58] The same time point was used for SY 2016–2017 and SY 2017–2018 data in States that had implemented the demonstration by October of the school year. However, States that conducted their first DCM-F/RP match after the end of October in their first year of implementation reported the data certification elements for that year as of about a month after their first DCM-F/RP match.

[59] Most States provided the number of students who were certified to receive free meals but not subject to verification as a more readily available proxy for the number directly certified. In addition, although we also requested as complete a breakdown as available of the number of students directly certified by program, the information available for the baseline year was typically limited to SNAP and a combined number for programs other than SNAP.

and A.3. Specifically, we collected information on (1) the total number of students identified as eligible for free meals, and, separately, for reduced-piece meals based on the DCM-F/RP match—regardless of whether this match was recorded as the reason for their certification status; and (2) the program used as the basis for their direct certification. The other eight demonstration States were unable to provide these data. Even in the seven States that provided some supplemental data, there is not enough information in the available data to fully address Research Questions A.2 and A.3 because the data on prior certification include only direct certification match results and not application results.

NSLP/SBP participation data. State child nutrition agencies provided the total numbers of reimbursable lunches and breakfasts served by reimbursement category (free, reduced-price, paid) in each month during the baseline year and SY 2019–2020, for each district in the evaluation sample. To facilitate analyses of Federal reimbursements, we also collected data on the numbers of meals served in districts certified as meeting new school meal pattern and nutrition regulations, which receive an extra six cents per lunch served, and the numbers reimbursed at the slightly higher "needs-based" NSLP rates or "severe-needs" SBP rates that some districts or schools qualify for.[60] Because reimbursement rates increase each year, to remove this aspect of variation unrelated to the demonstration, we used the SY 2015–2016 rates in computing all reimbursement outcomes in the analyses. The rates for SYs 2015–2016, 2016–2017, 2017–2018, and 2019–2020 are detailed in Table A.3 for reference.

After the initial certification and participation files were received from each State, the study team examined the data in each file and compiled lists of questions, including seeking general clarification on the format of the data received, asking how to use or interpret specific data elements, and requesting explanation of unusual patterns identified for individual districts. For some data files, these questions revealed major data problems that required the State to provide a corrected file. In others, the questions could be addressed individually. Some questions about specific districts' data could not be resolved by the States; in these cases, depending on the severity of the issue, the district was either dropped from the analysis, included with a missing value for the problematic variables, or kept unchanged.

Secondary data. We collected additional types of data from Federal websites. First, to compute reimbursement amounts, we collected public Federal per-meal NSLP and SBP reimbursement rates from FNS' website (http://www.fns.usda.gov/school-meals/rates-reimbursement) for each school year covered by the participation data (Table A.3). In addition, we collected information from public sources on district and county characteristics; this was used to control for changes in economic characteristics between the years and to improve the precision of the estimates of demonstration effects. In particular, we collected:

- Census Small Area Income and Poverty Estimates (SAIPE): annual county-level income and poverty rates
- Bureau of Labor Statistics Local Area Unemployment Statistics: annual county-level unemployment rates

These data are defined based on a calendar year rather than a school year. We collected 2015 data to approximate the baseline school year for Cohort 1 States, 2016 data to approximate SY 2016–2017 (the baseline school year for Cohort 2 States and the first demonstration year for Cohort 1 States), 2017 data to approximate SY 2017–2018 (the baseline school year for Nevada, the first demonstration year for other

[60] For the NSLP, entire districts may qualify for needs-based rates. For the SBP, severe-needs rate eligibility varies by school.

Cohort 2 States, and the second demonstration year for Cohort 1 States), and 2019 data to approximate SY 2019–2020.[61]

Table A.3. NSLP and SBP Federal reimbursement rates

Rate type	NSLP Federal reimbursement rates ($)			SBP Federal reimbursement rates ($)		
	Free	Reduced-price	Paid	Free	Reduced-price	Paid
SY 2015–2016						
Without six-cent performance-based increase						
Standard rate	3.07	2.67	0.29	1.66	1.36	0.29
Needs-based or severe-needs rate	3.09	2.69	0.31	1.99	1.69	0.29
With six-cent performance-based increase						
Standard rate	3.13	2.73	0.35	n.a.	n.a.	n.a.
Needs-based or severe-needs rate	3.15	2.75	0.37	n.a.	n.a.	n.a.
SY 2016–2017						
Without six-cent performance-based increase						
Standard rate	3.16	2.76	0.30	1.71	1.41	0.29
Needs-based or severe-needs rate	3.18	2.78	0.32	2.04	1.74	0.29
With six-cent performance-based increase						
Standard rate	3.22	2.82	0.36	n.a.	n.a.	n.a.
Needs-based or severe-needs rate	3.24	2.84	0.38	n.a.	n.a.	n.a.
SY 2017–2018						
Without six-cent performance-based increase						
Standard rate	3.23	2.83	0.31	1.75	1.45	0.30
Needs-based or severe-needs rate	3.25	2.85	0.33	2.09	1.79	0.30
With six-cent performance-based increase						
Standard rate	3.29	2.89	0.37	n.a.	n.a.	n.a.
Needs-based or severe-needs rate	3.31	2.91	0.39	n.a.	n.a.	n.a.
SY 2019–2020						
Without seven-cent performance-based increase						
Standard rate	3.41	3.01	0.32	1.84	1.54	0.31
Needs-based or severe-needs rate	3.43	3.03	0.34	2.20	1.90	0.31
With seven-cent performance-based increase						
Standard rate	3.48	3.08	0.39	n.a.	n.a.	n.a.
Needs-based or severe-needs rate	3.50	3.10	0.41	n.a.	n.a.	n.a.

Source: Food and Nutrition Service Rates of Reimbursement (see https://www.fns.usda.gov/school-meals/rates-reimbursement).

Note: These rates exclude additional commodity payments for school lunches.

n.a. = not applicable; SY = school year.

[61] Using calendar 2019 data to approximate SY 2019–2020 aligns with our approach of defining outcome measures based on portions of the school year before the influence of the COVID-19 pandemic.

2. State administrative cost data

Data on the State-level administrative costs of operating DCM-F/RP in SY 2019–2020 were collected from staff of the Medicaid eligibility and child nutrition agencies that played key roles in the demonstration and had nontrivial costs in SY 2019–2020.[62] These data covered costs of DCM-F/RP over and above those of other certification activities—including, for those participating in the previous DCM demonstration, using Medicaid to directly certify students for free meals.

Excel workbooks were created for the Medicaid eligibility and child nutrition agencies and were distributed at the beginning of July 2019. The workbooks recorded hours per month spent on each activity, with separate activity lists for the Medicaid eligibility and child nutrition agencies. The lists of activities that State agency staff were involved in included negotiating data-sharing agreements, developing specifications for Medicaid extracts to be used in matching, developing and testing the programs that created the extracts and assessed eligibility for DCM-F/RP, and matching Medicaid and student data. State staff could also enter other activities that were not listed. Hours were recorded for each staff position, and a separate page in the workbook was used to collect information on salaries and fringe benefits. Additional pages in the workbook were provided for other direct and indirect costs (such as contractors, website vendors, management, human resources, accounting, information technology services, and building maintenance).

All Medicaid eligibility and child nutrition agencies provided State cost data for four periods: (1) July–September 2019, (2) October–December 2019, (3) January–March 2020, and (4) April–June 2020.[63] State agencies provided cost data in the Excel workbooks for the months in which DCM-F/RP activity occurred. State agencies that spent minimal or no time on DCM-F/RP in a given time period notified us via email that they had no costs to report and did not complete a workbook.

We conducted clarification calls with any new agency staff who completed a cost workbook for the first time to confirm that the information in the workbooks was complete and the evaluation team was interpreting the information correctly. When reviewing the cost workbooks for completeness and reasonableness, we also compared data with State cost data provided by the agency in previous years or quarters. We resolved any questions by calling or emailing State agencies.

C. Key outcome measures

The analysis examines outcomes in four domains: certification, participation, Federal reimbursements, and State administrative costs. For each district with the necessary administrative records data, we computed each measure described below for the baseline year and SY 2019–2020. We also computed each measure for SY 2016–2017 and SY 2017–2018 for States that conducted DCMF/RP in those years, to use in comparisons across DCM-F/RP years.

[62] In five States (Michigan, Nevada, Utah, Washington, and Wisconsin), more than one agency playing roles related to child nutrition or Medicaid eligibility completed cost workbooks.

[63] Although the COVID-19 pandemic could have affected State administrative costs during the last two quarters, there were no notable changes in the cost patterns around March or April 2020. Anecdotal comments suggested that some agencies were too busy with pandemic-specific issues at that point to spend much time on DCM-F/RP specifically, but time reported in earlier months was low as well.

1. Certification outcomes

To address Research Questions A.1, A.4, and parts of A.5, we computed for each district measures of the percentages of students with each certification status and reason for certification as well as measures of CEP participation. The primary certification measures for each district are as follows:

- Percentage of students certified for free meals based on Medicaid
- Percentage of students certified for reduced-price meals based on Medicaid
- Percentage of students directly certified for free meals
- Percentage of students certified for free meals
- Percentage of students certified for reduced-price meals
- Percentage of students attending schools participating in the CEP

For States participating in the previous DCM demonstration, DCM-F/RP would affect only outcomes related to reduced-price meals, so those States (Florida and Massachusetts) are excluded from analyses of outcomes related to free meals.

Students attending CEP schools or other special provision schools in a non-base year receive free meals but are not certified individually for free or reduced-price meals. These students are therefore not counted in the numerators of the five "Percentage of students certified" outcomes, although the denominators include all students enrolled in the districts.

Most States provided the data elements needed to compute these seven core measures directly, by dividing the number of students in the certification category by the total number of students enrolled in schools in the district. However, there were some notable limitations in the certification data available from some States:

- Iowa and Wisconsin did not provide the data necessary to compute reduced-price certification outcomes and are therefore excluded from analyses of those measures.
- Indiana and Wisconsin did not provide usable counts of free direct certifications based on Medicaid, but we were able to estimate the percentages of students directly certified for free meals based on Medicaid for those States. The two States did provide counts of (1) total free direct certifications based on programs other than SNAP and (2) free direct certification matches made by the State, by program. To estimate the percentage of students certified for free meals based on Medicaid for each district in these States, we computed the percentage of all non-SNAP free matches that were Medicaid matches, then applied that factor to the number of non-SNAP direct certifications. We took this same approach for a subset of districts in Nebraska for which counts of direct certifications based on Medicaid were unavailable. (This is the approach we used for Indiana and Nebraska in earlier years of the evaluation as well.)
- In addition, as in previous years, Nebraska provided counts of reduced-price certifications based on Medicaid for only a subset of districts. We calculated the ratio of reduced-price–eligible Medicaid matches to reduced-price direct certifications among these 261 districts. We then applied this ratio to counts of reduced-price–eligible Medicaid matches for each of the remaining 74 districts to estimate counts of reduced-price direct certifications and used that to estimate the percentage of students certified for reduced-price meals based on Medicaid. However, the subset of districts is subject to nonresponse bias because the State attempted to collect these data from all districts.

- Limitations in the certification data available for Indiana and Virginia required excluding substantial portions of districts from the analysis. In Indiana, data needed to assess key outcomes (students directly certified for free or reduced-price meals based on Medicaid) were unavailable in 30 percent of districts, which contained 20 percent of the student population. In Virginia, data limitations required us to exclude districts in which some, but not all, schools participated in a special provision in SY 2019–2020. This exclusion affected 32 percent of Virginia districts, serving just over half of students in the State. We conducted a separate analysis to explore whether the results in Virginia were driven by this sample exclusion, and the results for the larger sample including the partial special provision districts were similar to the results presented in this report.

Supplemental measures. For Indiana, Michigan, Nebraska, Iowa, Texas, Washington, and Wisconsin (the seven States that were able to provide the necessary supplemental data), we also computed measures related to Research Questions A.2 and A.3, including the following:

- Number of students matched to free-eligible Medicaid records
- Number of students matched to reduced-price–eligible Medicaid records

Each of these groups includes both students matched only to Medicaid records and students also matched to SNAP or another program, which takes precedence over Medicaid. For each group, we examined two other measures:

- Percentage matched to another program used for direct certification, by program conferring eligibility (i.e., SNAP, TANF, foster care)
- Percentage not matched to another program through the State match

2. Participation outcomes

To address Research Question B.1 and related parts of B.4, we examine three primary participation measures, each defined for the lunch and breakfast programs separately:

- **The percentage of meals served for free**, defined as the number of meals reimbursed at the free rate divided by the total number of reimbursable meals served.
- **The percentage of meals served at a reduced price**, defined as the number of meals reimbursed at the reduced-price rate divided by the total number of reimbursable meals served.
- **The participation rate** (that is, the average number of meals served per student per day), defined as the total number of reimbursable meals served divided by the product of the total number of students enrolled in the district and the number of operating days during the relevant time period.

These participation measures are defined for all districts, including those operating CEP and other special provisions. In schools and districts where all meals were served for free before the demonstration began, DCM-F/RP would not be expected to affect these outcomes. However, if the demonstration increased the percentage of students directly certified in an earlier school year, it could increase the number of CEP schools in SY 2019–2020, which would affect these measures.

Because the COVID-19 pandemic resulted in substantial changes to school meal program operations in many locations beginning in March 2020, we defined each participation outcome based on the earlier months of the school year. Specifically, we aggregated numbers of meals across all months from the

beginning of the 2019–2020 school year through February 2020. The baseline measures cover the same set of months for the baseline school year, for comparability with SY 2019–2020.

The SY 2016–2017 and SY 2017–2018 measures used in comparisons across demonstration years cover the same set of months for the relevant school year. We did not define SY 2016–2017 and SY 2017–2018 measures for States that did not conduct their first DCM-F/RP until after February of the given year, because the demonstration could not have affected participation outcomes during the months for which these outcomes were measured. Specifically, Massachusetts, Virginia, and West Virginia are excluded from the SY 2016–2017 participation measures; and Connecticut, Iowa, Nevada, and Washington are excluded from the SY 2017–2018 measures.

3. Federal reimbursement outcomes

To address Research Question B.2 and related parts of B.4, we combined elements from the participation data with public Federal per-meal NSLP and SBP reimbursement rates to define two primary Federal reimbursement outcome measures, each defined for the NSLP and SBP separately:

- **The blended reimbursement rate (BRR),** defined as total Federal reimbursements divided by the number of meals served. The BRR measures the average reimbursement per meal served.
- **Reimbursements per enrolled student per school day,** defined as total Federal reimbursements for meals served to students divided by the product of the total number of students enrolled in the district and the number of operating days in the relevant set of months.

Like the participation measures, these Federal reimbursement measures are defined for the set of months from the beginning of the school year through February. Both measures depend on the reimbursement rates FNS pays, which vary by meal type (Table A.3). Because reimbursement rates increase each year, we use SY 2015–2016 reimbursement rates for each meal type in computing these measures for all years, to control for this aspect of variation that is unrelated to the demonstration in the pre-post analyses.

4. State administrative cost outcomes

The State administrative costs of DCM-F/RP are defined as those in excess of expenditures that would be necessary in the absence of the new demonstration. The primary outcome measure for the State administrative costs is the total administrative cost, in dollars, of conducting DCM-F/RP across all relevant State agencies, months, activities, and cost categories. Additional measures include costs disaggregated by agency type (i.e., child nutrition agency or Medicaid eligibility agency) and by cost type (i.e., direct labor costs, other direct costs, or indirect costs). In addition, we measure the cost of DCM-F/RP per student enrolled, directly certified for free meals, and directly certified for free or reduced-price meals based on Medicaid. State administrative cost measures cover July 2019 through June 2020.

D. Analysis methods

To assess effects on certification, participation, and Federal reimbursement outcomes data, we used comparative analyses. We conducted descriptive analyses for Medicaid data matching and State administrative cost outcomes.

Comparisons between baseline year and SY 2019–2020. We estimated the effects of DCM-F/RP on certification, participation, and Federal reimbursement outcomes by comparing the measure in the baseline year to the same measure in SY 2019–2020. We used a fixed effects model to control for

changes in outcomes between years and to improve the precision of the estimates. We used Stata analytic software to compute regression adjusted baseline and SY 2019–2020 means (and SY 2016–2017 and SY 2017–2018 means for States conducting DCM-F/RP in those years).[64] To generate State-specific estimates and pooled estimates for each outcome, we fitted the following linear district-level fixed effects regression model:

$$(1) \qquad y_{it} = \alpha + \beta_1 post_1 + \beta_2 post_2 + \beta_3 post_3 + \beta_4 post_4 + \gamma X_{it} + \delta_i + \varepsilon_{it},$$

where y_{it} is the outcome of interest for district *i* in year *t* (baseline or the district's first or second year of the demonstration); $post_t$ is a binary indicator that is equal to one in year *t* and zero in other years; X_{it} is a set of time-varying district characteristics; δ_i is a district fixed effect; and ε_{it} is a random error term. The coefficient of interest is β_4 for Cohort 1 States, β_3 for Cohort 2 States, and β_2 for Nevada, which corresponds to the effect on the outcome in SY 2019–2020, controlling for time-invariant district characteristics and the following time-varying characteristics:

- Logarithmic transformation of enrollment[65]
- SAIPE median household income for the county
- SAIPE poverty rate for the county
- Local Area Unemployment Statistics unemployment rate for the county

Table A.4 shows, for each State, the means across districts of each covariate measured for the baseline year (SY 2015–2016 for Cohort 1 States, SY 2016–2017 for Cohort 2 States, and 2017–2018 for Nevada) and for SY 2019–2020 under DCM-F/RP, weighted by district size. For each State, we found at least one statistically significant change in economic conditions between the baseline and SY 2019–2020 (Table A.4). There were statistically significant decreases in the unemployment rate in all but one of the 15 States (Nebraska) and increases in median household income in all but two States (Nevada and Virginia). In addition, there were statistically significant decreases in the poverty rate in nine States (all but Connecticut, Iowa, Nevada, Virginia, West Virginia, and Wisconsin). Changes in factors that could influence outcomes are a concern for a pre-post design and make controlling for these covariates through modeling particularly important. There were no statistically significant differences between baseline and SY 2019–2020 in the log of the number of students enrolled.

[64] These model-based estimates can result in some negative regression adjusted values, particularly for cases with observed values close to zero.
[65] Because enrollment is positively skewed, we applied a logarithmic transformation.

Table A.4. Changes in the district characteristics used as regression covariates (weighted by enrollment)

District characteristic	Baseline year[a]	SY 2019–2020	Change[b]
California			
Unemployment rate for the district's county (percentage)	5.9	4.5	-1.5*
Median household income for the district's county	$66,957	$79,240	$12,283*
Poverty rate for the district's county (percentage)	15.0	12.3	-2.7*
Number of students enrolled (log)	9.8	9.8	-0.1
Connecticut			
Unemployment rate for the district's county (percentage)	5.2	3.7	-1.4*
Median household income for the district's county	$74,618	$79,753	$5,136*
Poverty rate for the district's county (percentage)	9.9	10.1	0.1
Number of students enrolled (log)	8.6	8.6	0.0
Florida			
Unemployment rate for the district's county (percentage)	5.5	3.2	-2.4*
Median household income for the district's county	$49,515	$59,525	$10,010*
Poverty rate for the district's county (percentage)	15.9	12.8	-3.0*
Number of students enrolled (log)	11.1	11.1	0.0
Indiana			
Unemployment rate for the district's county (percentage)	4.4	3.3	-1.1*
Median household income for the district's county	$55,811	$62,289	$6,478*
Poverty rate for the district's county (percentage)	13.4	11.4	-1.9*
Number of students enrolled (log)	8.5	8.5	0.0
Iowa			
Unemployment rate for the district's county (percentage)	3.7	2.8	-0.9*
Median household income for the district's county	$58,190	$63,889	$5,699*
Poverty rate for the district's county (percentage)	11.5	10.8	-0.6
Number of students enrolled (log)	8.0	8.0	0.0
Massachusetts			
Unemployment rate for the district's county (percentage)	4.9	2.9	-1.9*
Median household income for the district's county	$71,753	$86,111	$14,358*
Poverty rate for the district's county (percentage)	11.6	9.5	-2.1*
Number of students enrolled (log)	8.5	8.5	0.0
Michigan			
Unemployment rate for the district's county (percentage)	5.1	4.1	-0.9*
Median household income for the district's county	$54,066	$60,706	$6,640*
Poverty rate for the district's county (percentage)	15.1	13.1	-2.1*
Number of students enrolled (log)	8.3	8.3	0.0

District characteristic	Baseline year[a]	SY 2019–2020	Change[b]
Nebraska			
Unemployment rate for the district's county (percentage)	3.0	3.1	0.1
Median household income for the district's county	$56,149	$63,900	$7,751*
Poverty rate for the district's county (percentage)	12.5	10.0	-2.4*
Number of students enrolled (log)	8.5	8.5	0.0
Nevada			
Unemployment rate for the district's county (percentage)	5.0	3.9	-1.1*
Median household income for the district's county	$58,256	$63,951	$5,696
Poverty rate for the district's county (percentage)	13.3	12.7	-0.6
Number of students enrolled (log)	11.9	11.8	-0.1
Texas			
Unemployment rate for the district's county (percentage)	4.8	3.6	-1.1*
Median household income for the district's county	$57,623	$65,345	$7,722*
Poverty rate for the district's county (percentage)	16.0	13.9	-2.1*
Number of students enrolled (log)	9.9	9.9	0.0
Utah			
Unemployment rate for the district's county (percentage)	3.7	2.6	-1.0*
Median household income for the district's county	$64,015	$77,294	$13,279*
Poverty rate for the district's county (percentage)	11.2	8.8	-2.4*
Number of students enrolled (log)	10.1	10.1	0.0
Virginia			
Unemployment rate for the district's county (percentage)	4.7	2.9	-1.8*
Median household income for the district's county	$69,689	$83,427	$13,738
Poverty rate for the district's county (percentage)	12.5	10.8	-1.7
Number of students enrolled (log)	9.4	9.5	0.1
Washington			
Unemployment rate for the district's county (percentage)	5.5	4.5	-1.0*
Median household income for the district's county	$67,927	$79,497	$11,569*
Poverty rate for the district's county (percentage)	11.4	10.0	-1.4*
Number of students enrolled (log)	9.2	9.2	0.0
West Virginia			
Unemployment rate for the district's county (percentage)	7.0	5.1	-1.9*
Median household income for the district's county	$42,945	$49,485	$6,540*
Poverty rate for the district's county (percentage)	18.0	16.2	-1.9
Number of students enrolled (log)	8.9	8.8	-0.1
Wisconsin			
Unemployment rate for the district's county (percentage)	4.0	3.4	-0.7*
Median household income for the district's county	$58,026	$65,087	$7,061*
Poverty rate for the district's county (percentage)	11.9	10.5	-1.3
Number of students enrolled (log)	8.2	8.2	0.0

District characteristic	Baseline year[a]	SY 2019–2020	Change[b]
Pooled sample of all demonstration States			
Unemployment rate for the district's county (percentage)	5.1	3.8	-1.4*
Median household income for the district's county	$60,473	$70,052	$9,579*
Poverty rate for the district's county (percentage)	14.4	12.3	-2.2*
Number of students enrolled (log)	9.6	9.6	0.0

Source: Bureau of Labor Statistics Local Area Unemployment Statistics and Census Small Area Income and Poverty Estimates data for 2015 (Cohort 1 baseline), 2016 (Cohort 2 baseline), 2017 (Nevada baseline), and 2019; and administrative records for SY 2015–2016 (Cohort 1 baseline), SY 2016–2017 (Cohort 2 baseline), SY 2017–2018 (Nevada baseline), and SY 2019–2020 provided by State administrators.

Notes: The statistics in this table are weighted by enrollment because most outcomes are weighted by enrollment in the analyses.

* The change between the baseline year and SY 2019–2020 is significantly different from zero at the .05 level, two-tailed test.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin; and SY 2017–2018 for Nevada.

[b] Changes shown in the table may differ slightly from calculated differences due to rounding. The numbers in this column for the log of the number of students enrolled are not actual zeros but round to 0.0 for each State.

SY = school year.

All regressions were weighted using the denominator of the outcome variable as a weight. For example, for the percentage of students directly certified for free meals based on Medicaid (and several other outcomes), the weighting variable was enrollment. This method was used to obtain aggregated estimates, which weighted districts according to their size.

Comparisons between effects across demonstration years. For the States that provided data for more than one demonstration year, we compared the effects in the earlier years of the demonstration (SY 2016–2017 for Cohort 1 States and SY 2017–2018 for both Cohort 1 and Cohort 2) with those in SY 2019–2020. We assessed these changes using the same model discussed above. The coefficients of interest for this analysis are β_t, which correspond to the effect on the outcome in year t, controlling for other district characteristics.

Descriptive analyses of certification and match results. For all States, in addition to the comparative analyses focusing on the key certification outcomes defined in the previous section, we conducted descriptive analyses tabulating the distribution of students by certification status and reason for certification—including whether applications were approved on the basis of income or categorical eligibility, and as much detail as States provided on program that resulted in direct certification—for the year before the demonstration and each demonstration year (Tables B.5.a–B.5.o). We also used descriptive methods for analyses that did not involve comparisons between years. These included tabulations of State DCM-F/RP match results for the seven States that provided the supplemental data necessary to address parts of Research Questions A.2 and A.3 about the number of students matched to eligible Medicaid records who were also eligible for free or reduced-price meals through other methods.

Descriptive analyses of State administrative costs. The estimates of costs that State agencies incurred in conducting DCM-F/RP are based on the reports of staff at State child nutrition and Medicaid eligibility agencies in all demonstration States of the time spent and other costs incurred for DCM-F/RP beyond

those that would be necessary for direct certification with SNAP and other programs in SY 2019–2020. In contrast with data on certification and participation, detailed administrative cost records were not available for the baseline year, and asking respondents to retrospectively estimate costs incurred more than a year earlier would have prompted serious concerns about recall error. Instead, the analysis of State administrative costs relies on staff to report the additional costs of DCM-F/RP. The analysis also compares State administrative costs for SY 2019–2020 with those reported by State agencies in prior demonstration years.

State administrative cost data analysis covers July 2019 through June 2020 for all demonstration States. Monthly data from each agency were combined into one cost workbook for the agency covering the entire school year. In five States, more than one agency of the same type completed cost workbooks: three child nutrition-related agencies in Michigan, two each in Nevada and Wisconsin, and two Medicaid eligibility-related agencies each in Utah and Washington reported cost data. In each case, the study team aggregated costs for the two (or three) agencies into a single workbook. The calculations described below were completed in the workbook for each State and agency type.

The information provided on salary and fringe benefits were combined to calculate an hourly rate for each staff position. The monthly hours reported for each staff position for each DCM-F/RP activity were summed to create quarterly totals for each activity, which were then multiplied by the staff's hourly rate to provide quarterly total costs per staff position for each activity. These costs were then summed across all quarters and staff positions to yield the total labor costs for all DCM-F/RP activities for each agency type in SY 2019–2020, which we then summed for each State to obtain State-level labor costs. Indirect costs were summed for all months, as were other direct costs. All three types of costs were added together, creating the total costs per agency and State to implement DCM-F/RP for SY 2019–2020.

State administrative cost data were combined with certification data to compute three measures of the cost of DCM-F/RP per student. The total administrative cost for each State was divided by (1) the number of students enrolled, (2) the number directly certified for free meals, and (3) the number directly certified for free or reduced-price meals based on Medicaid. For most States, the denominators were based on the analysis sample used in other chapters. For Virginia, which had a large number of districts excluded from other analyses because of data problems, the enrollment denominator also includes students enrolled in districts that were excluded from other analyses.

Pooled estimates. Within each State, district-level results are aggregated to present an estimate for demonstration districts across the State. To summarize the results obtained across the demonstration States, the analysis presents "pooled estimates," which are derived by aggregating across States (weighting each district by size). Most tables include a single pooled estimate for each outcome based on all States included in that analysis. For analyses comparing outcomes across demonstration years, we pooled States based on the number of demonstration years for which the outcome can be measured using the available data.[66]

Pooled estimates pertain only to the particular collection of districts included in the evaluation sample; they are not intended to have any broader generalizability. In particular, the pooled estimates across States do not estimate the likely effects if DCM-F/RP were implemented across the country.

[66] For certification outcomes, this results in pooling by cohort, combining all States that began DCM-F/RP during a given school year. California is included with Cohort 2 States in these pooled estimates because all but 14 districts in California implemented DCM for the first time in SY 2017–2018 (and those 14 districts are excluded from the analysis).

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Appendix B.

Supplemental Tables Related to Certification Outcomes

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Table B.1. Participation in the CEP (unadjusted)

State	Percentage of students attending CEP schools			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	9.4	10.6	30.5
Connecticut	n.a.	22.4	24.2	35.5
Indiana	n.a.	9.1	8.2	18.1
Iowa	n.a.	9.6	10.1	15.3
Michigan	n.a.	17.7	19.5	32.0
Nebraska	0.9	1.1	1.8	1.8
Nevada	n.a.	n.a.	19.8	46.2
Texas	n.a.	18.2	15.1	34.4
Utah	1.4	0.8	1.9	3.2
Virginia	10.7	8.8	15.6	22.4
Washington	n.a.	8.3	14.9	11.6
West Virginia	50.8	63.0	69.0	76.4
Wisconsin	n.a.	16.6	17.5	17.8

Source: Administrative records provided by State administrators.

Note: Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

CEP = Community Eligibility Provision; n.a. = not applicable; SY = school year.

Table B.2. Certification for free meals (unadjusted)

State	Percentage of students directly certified for free meals based on Medicaid				Percentage of students directly certified for free meals based on any program				Percentage of students certified for free meals			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	0.0	7.8	6.6	n.a.	17.8	26.7	16.7	n.a.	35.9	38.8	24.0
Connecticut	n.a.	0.0	5.9	6.1	n.a.	11.7	18.0	14.7	n.a.	17.6	21.6	16.2
Indiana	n.a.	0.0	9.2	9.3	n.a.	17.5	24.2	20.3	n.a.	32.2	33.7	27.5
Iowa	n.a.	0.0	2.9	7.3	n.a.	18.7	NA	20.8	n.a.	27.4	28.1	26.0
Michigan	n.a.	0.0	8.5	7.8	n.a.	14.7	23.1	16.1	n.a.	25.3	30.0	20.4
Nebraska	0.0	6.4	8.7	7.2	20.9	27.1	27.6	30.0	33.7	36.6	36.0	36.6
Nevada	n.a.	n.a.	0.0	4.9	n.a.	n.a.	19.0	13.7	n.a.	n.a.	31.2	17.8
Texas	n.a.	0.0	1.0	6.3	n.a.	19.8	22.5	20.5	n.a.	36.0	36.8	28.0
Utah	0.0	4.9	5.6	5.4	12.8	17.3	17.2	14.3	26.2	28.1	25.8	22.4
Virginia	0.0	4.1	6.3	7.0	16.7	20.1	19.4	16.7	27.0	28.4	26.3	22.0
Washington	n.a.	0.0	1.3	5.2	n.a.	21.5	17.1	20.8	n.a.	29.3	22.2	26.2
West Virginia	0.0	2.3	3.4	2.8	16.7	14.0	11.2	8.0	20.3	16.0	12.6	9.0
Wisconsin	n.a.	0.0	4.0	7.1	n.a.	16.1	19.2	20.1	n.a.	21.3	24.3	23.1

Source: Administrative records provided by State administrators.

Note: Percentages are calculated based on all students enrolled in the districts included in the analysis. Students attending schools that do not certify individual students, such as CEP and other special provision schools in non-base years, are not counted as certified. Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

n.a. = not applicable; NA = not available; SY = school year.

Table B.3. Certification for reduced-price meals (unadjusted)

State	Percentage of students directly certified for reduced-price meals based on Medicaid				Percentage of students certified for reduced-price meals			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	0.0	2.0	1.7	n.a.	7.8	8.1	6.4
Connecticut	n.a.	0.0	2.7	2.6	n.a.	3.6	4.8	3.7
Florida	0.0	NA	0.8	0.9	4.1	NA	3.4	5.0
Indiana	n.a.	0.0	2.1	1.9	n.a.	7.0	7.4	6.4
Iowa	n.a.	0.0	1.2	NA	n.a.	5.5	6.0	NA
Massachusetts	0.0	NA	1.4	1.6	2.6	NA	3.1	2.8
Michigan	n.a.	0.0	1.2	1.2	n.a.	5.3	4.9	3.9
Nebraska	0.0	4.0	5.5	4.1	8.4	10.6	11.5	8.8
Nevada	n.a.	n.a.	0.0	0.4	n.a.	n.a.	6.4	4.2
Texas	n.a.	0.0	0.0	0.2	n.a.	5.7	5.4	4.2
Utah	0.0	0.5	0.5	0.4	7.4	7.3	6.6	6.3
Virginia	0.0	0.5	0.9	0.9	5.5	5.4	4.5	4.2
Washington	n.a.	0.0	0.6	2.2	n.a.	6.3	5.0	6.7
West Virginia	0.0	0.2	0.4	0.2	2.8	2.0	1.7	1.4
Wisconsin	n.a.	0.0	1.4	NA	n.a.	4.3	4.5	NA

Source: Administrative records provided by State administrators.

Note: Percentages are calculated based on all students enrolled in the districts included in the analysis. Students attending schools that do not certify individual students, such as CEP and other special provision schools in non-base years, are not counted as certified.

n.a. = not applicable; NA = not available; SY = school year.

Table B.4.a. Comparison across demonstration years of effects of DCM-F/RP on percentage of students directly certified for free meals based on Medicaid

State	Change between baseline[a] and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States						
Nebraska	6.3*	8.1*	6.1*	1.9†	-2.0†	-0.2
Utah	5.2*	6.1*	6.7*	0.9†	0.5	1.5
Virginia	4.7*	8.1*	10.7*	3.4†	2.7†	6.0†
West Virginia	2.1*	3.5*	2.1*	1.5†	-1.4†	0.1
Cohort 2 States						
California	n.a.	7.4*	5.0*	n.a.	-2.4†	n.a.
Connecticut	n.a.	9.1*	17.1*	n.a.	8.0†	n.a.
Indiana	n.a.	8.2*	8.7*	n.a.	0.5	n.a.
Iowa	n.a.	2.7*	7.5*	n.a.	4.7†	n.a.
Michigan	n.a.	9.5*	10.5*	n.a.	1.0†	n.a.
Texas	n.a.	0.6*	5.7*	n.a.	5.1†	n.a.
Washington	n.a.	1.2*	5.2*	n.a.	4.0†	n.a.
Wisconsin	n.a.	5.5*	9.0*	n.a.	3.5†	n.a.

Source: Administrative records provided by State administrators.

Note: Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals. Nevada is excluded from this table because it provided data for only one demonstration year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Nebraska, Utah, Virginia, and West Virginia; and it is SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin.

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Table B.4.b. Comparison across demonstration years of effects of DCM-F/RP on percentage of students directly certified for free meals

State	Change between baseline[a] and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States						
Nebraska	6.7*	7.2*	9.6*	0.6	2.3†	2.9†
Utah	5.6*	6.4*	5.5*	0.7	-0.9	-0.2
Virginia	5.0*	7.0*	9.3*	1.9	2.3	4.3
West Virginia	-4.4*	-9.1*	-14.9*	-4.6†	-5.8†	-10.5†
Cohort 2 States						
California	n.a.	7.9*	-6.6*	n.a.	-14.5†	n.a.
Connecticut	n.a.	10.6*	16.4*	n.a.	5.7	n.a.
Indiana	n.a.	8.3*	5.8*	n.a.	-2.5†	n.a.
Michigan	n.a.	10.8*	7.3*	n.a.	-3.5†	n.a.
Texas	n.a.	1.2*	-0.9	n.a.	-2.1†	n.a.
Washington	n.a.	-4.3*	-4.0*	n.a.	0.4	n.a.
Wisconsin	n.a.	4.6*	7.3*	n.a.	2.7†	n.a.

Source: Administrative records provided by State administrators.

Note: Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals. Iowa and Nevada are excluded from this table because they provided data for only one demonstration year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Nebraska, Utah, Virginia, and West Virginia; and it is SY 2016–2017 for California, Connecticut, Indiana, Michigan, Texas, Washington, and Wisconsin.

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Table B.4.c. Comparison across demonstration years of effects of DCM-F/RP on percentage of students certified for free meals

State	Change between baseline[a] and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States						
Nebraska	3.3*	2.7*	2.8*	-0.5	0.1	-0.4
Utah	2.9*	1.5	0.1	-1.3	-1.5	-2.8
Virginia	3.2*	4.6*	6.4	1.3	1.8	3.1
West Virginia	-6.2*	-11.9*	-18.5*	-5.7†	-6.6†	-12.2†
Cohort 2 States						
California	n.a.	0.3	-22.3*	n.a.	-22.6†	n.a.
Connecticut	n.a.	8.0*	10.3	n.a.	2.3	n.a.
Indiana	n.a.	5.1*	1.4	n.a.	-3.7†	n.a.
Iowa	n.a.	2.3*	1.2	n.a.	-1.2	n.a.
Michigan	n.a.	7.4*	1.5	n.a.	-5.9†	n.a.
Texas	n.a.	-1.8*	-11.0*	n.a.	-9.1†	n.a.
Washington	n.a.	-8.1*	-10.2*	n.a.	-2.2	n.a.
Wisconsin	n.a.	3.3*	3.2*	n.a.	-0.1	n.a.

Source: Administrative records provided by State administrators.

Note: Students attending schools that do not certify individual students, such as special provision schools in non-base years, are not counted as certified. Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals. Nevada is excluded from this table because it provided data for only one demonstration year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Nebraska, Utah, Virginia, and West Virginia; and it is SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, Washington, and Wisconsin.

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Table B.4.d. Comparison across demonstration years of effects of DCM-F/RP on percentage of students directly certified for reduced-price meals based on Medicaid

State	Change between baseline[a] and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States						
Florida	NA	0.4*	0.0^	NA	-0.4†	NA
Massachusetts	NA	2.9*	4.2*	NA	1.4†	NA
Nebraska	4.3*	5.7*	4.8*	1.5†	-0.9†	0.6†
Utah	0.5*	0.6*	0.5*	0.1	-0.1	0.0^
Virginia	0.7*	1.3*	1.8*	0.7†	0.5†	1.2†
West Virginia	0.2*	0.5*	0.2*	0.3†	-0.3†	0.0^
Cohort 2 States						
California	n.a.	1.8*	1.0*	n.a.	-0.8†	n.a.
Connecticut	n.a.	3.8*	6.7*	n.a.	2.9†	n.a.
Indiana	n.a.	2.3*	2.2*	n.a.	-0.1	n.a.
Michigan	n.a.	1.4*	1.7*	n.a.	0.3†	n.a.
Texas	n.a.	0.0^	0.2*	n.a.	0.2†	n.a.
Washington	n.a.	0.5*	2.0*	n.a.	1.5†	n.a.

Source: Administrative records provided by State administrators.

Note: Nevada is excluded from this table because it provided data for only one demonstration year. Iowa and Wisconsin are excluded from this table due to inconsistencies in their reduced-price direct certification values for SY 2019–2020. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; and it is SY 2016–2017 for California, Connecticut, Indiana, Michigan, Texas, and Washington.

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; NA = not available; SY = school year.

Table B.4.e. Comparison across demonstration years of effects of DCM-F/RP on percentage of students certified for reduced-price meals

State	Change between baseline[a] and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States						
Florida	NA	-1.6*	-1.3*	NA	0.3	NA
Massachusetts	NA	3.8*	6.3*	NA	2.6†	NA
Nebraska	2.0*	2.7*	-0.2	0.8†	-2.9†	-2.2†
Utah	0.0^	-0.7*	-1.3	-0.7†	-0.6	-1.3
Virginia	0.2	0.1	1.0	-0.2	1.0†	0.8
West Virginia	-1.0*	-1.6*	-2.3*	-0.6†	-0.6	-1.2†
Cohort 2 States						
California	n.a.	-0.5*	-3.9*	n.a.	-3.4†	n.a.
Connecticut	n.a.	2.5*	4.6*	n.a.	2.0†	n.a.
Indiana	n.a.	1.3*	0.9	n.a.	-0.4	n.a.
Michigan	n.a.	-0.2	-1.1*	n.a.	-0.8†	n.a.
Texas	n.a.	-0.7*	-2.0*	n.a.	-1.3†	n.a.
Washington	n.a.	-1.9*	-2.3*	n.a.	-0.4	n.a.

Source: Administrative records provided by State administrators.

Note: Nevada is excluded from this table because it provided data for only one demonstration year. Iowa and Wisconsin are excluded from this table because reliable data for these outcomes are unavailable. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016 for Florida, Massachusetts, Nebraska, Utah, Virginia, and West Virginia; and it is SY 2016–2017 for California, Connecticut, Indiana, Iowa, Michigan, Texas, and Washington.

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; NA = not available; SY = school year.

Table B.4.f. Comparison across demonstration years of effects of DCM-F/RP on percentage of students attending CEP schools

State	Change between baseline[a] and:		Difference between SY 2017–2018 and SY 2019–2020
	SY 2017–2018	SY 2019–2020	
Cohort 1 States			
Nebraska	2.2*	3.1*	0.9
Utah	0.3	1.6	1.3
Virginia	-2.6	-6.0	-3.4
West Virginia	28.7*	43.1*	14.4†

Source: Administrative records provided by State administrators.

Note: Florida and Massachusetts are excluded from this table because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals. Cohort 2 States are excluded from this table because they provided data reflecting potential CEP effects for only one year (SY 2019–2020), as DCM-F/RP cannot affect CEP participation until the second year of the demonstration. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Changes shown in the table may differ slightly from calculated differences because of rounding.

[a] The baseline year is SY 2015–2016. .

* The effect is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

CEP = Community Eligibility Provision; SY = school year.

Table B.5.a. Distribution of students by meal certification category in California (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	5,691,733	100.0	5,636,609	100.0	5,592,064	100.0
Students certified for free meals	**2,043,621**	**35.9**	**2,186,714**	**38.8**	**1,344,375**	**24.0**
Directly certified students	1,012,836	17.8	1,502,877	26.7	935,890	16.7
Based on Medicaid	0	0.0	437,932	7.8	368,037	6.6
Based on SNAP	853,645	15.0	931,582	16.5	486,695	8.7
Based on other program	159,191	2.8	133,363	2.4	81,158	1.5
Based on letter method	922	0.0^	364	0.0^	461	0.0^
Students certified free by application	1,029,863	18.1	683,473	12.1	408,024	7.3
Based on income	818,568	14.4	532,497	9.4	333,039	6.0
Based on categorical eligibility	211,295	3.7	150,976	2.7	74,985	1.3
Students certified for reduced-price meals	**445,529**	**7.8**	**455,097**	**8.1**	**355,908**	**6.4**
Directly certified based on Medicaid	0	0.0	110,024	2.0	92,505	1.7
Certified by application	445,529	7.8	345,073	6.1	263,403	4.7
Students in schools that do not certify students individually	**909,109**	**16.0**	**978,947**	**17.4**	**1,928,013**	**34.5**
Students in CEP schools	536,985	9.4	600,048	10.6	1,704,680	30.5
Students in non-base-year Provision 2 or 3 schools[a]	372,124	6.5	378,899	6.7	223,333	4.0
Uncertified students in non-special-provision schools	**2,293,474**	**40.3**	**2,015,851**	**35.8**	**1,963,768**	**35.1**

Source: Administrative records provided by State administrators.

Note: California implemented DCM-F/RP in 14 districts in SY 2016–2017 and statewide beginning in SY 2017–2018. This analysis includes only districts that began the demonstration in SY 2017–2018. Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.b. Distribution of students by meal certification category in Connecticut (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	500,817	100.0	467,857	100.0	492,839	100.0
Students certified for free meals	**87,950**	**17.6**	**101,222**	**21.6**	**80,003**	**16.2**
Directly certified students	58,700	11.7	84,195	18.0	72,651	14.7
Based on Medicaid	0	0.0	27,788	5.9	30,135	6.1
Based on SNAP	56,113	11.2	53,345	11.4	39,892	8.1
Based on other program	2,587	0.5	3,062	0.7	2,624	0.5
Based on letter method	422	0.1	476	0.1	74	0.0^
Students certified free by application	28,828	5.8	16,551	3.5	7,278	1.5
Based on income	28,169	5.6	16,238	3.5	7,125	1.4
Based on categorical eligibility	659	0.1	313	0.1	153	0.0^
Students certified for reduced-price meals	**18,044**	**3.6**	**22,439**	**4.8**	**18,090**	**3.7**
Directly certified based on Medicaid	0	0.0	12,645	2.7	12,688	2.6
Certified by application	18,044	3.6	9,794	2.1	5,402	1.1
Students in schools that do not certify students individually	**112,158**	**22.4**	**113,774**	**24.3**	**174,951**	**35.5**
Students in CEP schools	112,158	22.4	113,292	24.2	174,951	35.5
Students in non-base-year Provision 2 or 3 schools[a]	0	0.0	482	0.1	0	0.0
Uncertified students in non-special-provision schools	**282,665**	**56.4**	**230,422**	**49.3**	**219,795**	**44.6**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.c. Distribution of students by meal certification category in Florida (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	2,750,157	100.0	2,785,642	100.0	2,793,546	100.0
Students certified for free meals	**1,212,607**	**44.1**	**1,166,322**	**41.9**	**946,297**	**33.9**
Students certified for reduced-price meals	**111,683**	**4.1**	**95,456**	**3.4**	**140,085**	**5.0**
Directly certified based on Medicaid	0	0.0	22,967	0.8	26,035	0.9
Certified by application	111,683	4.1	72,489	2.6	114,050	4.1
Students not certified for meal benefits[a]	**1,425,867**	**51.8**	**1,523,864**	**54.7**	**1,707,164**	**61.1**

Source: Administrative records provided by State administrators.

Note: SY 2016–2017 is omitted from this table because the necessary data were not available for that year.

[a] This row contains students attending schools that do not certify students individually and students in non-special provision schools who are not certified for free or reduced-price meals.

SY = school year.

Table B.5.d. Distribution of students by meal certification category in Indiana (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	882,585	100.0	866,829	100.0	884,313	100.0
Students certified for free meals	**284,535**	**32.2**	**292,218**	**33.7**	**243,533**	**27.5**
Directly certified students	154,688	17.5	210,100	24.2	179,397	20.3
Based on Medicaid	0	0.0	79,737	9.2	82,436	9.3
Based on SNAP	146,255	16.6	126,526	14.6	92,728	10.5
Based on other program	8,433	1.0	3,837	0.4	4,233	0.5
Based on letter method	137	0.0^	479	0.1	58	0.0^
Students certified free by application	129,710	14.7	81,639	9.4	64,078	7.2
Based on income	109,272	12.4	69,634	8.0	56,383	6.4
Based on categorical eligibility	20,438	2.3	12,005	1.4	7,695	0.9
Students certified for reduced-price meals	**61,918**	**7.0**	**63,905**	**7.4**	**56,620**	**6.4**
Directly certified based on Medicaid	0	0.0	18,605	2.1	16,366	1.9
Certified by application	61,918	7.0	45,300	5.2	40,254	4.6
Students in schools that do not certify students individually	**81,681**	**9.3**	**72,768**	**8.4**	**160,640**	**18.2**
Students in CEP schools	80,106	9.1	70,954	8.2	160,401	18.1
Students in non-base-year Provision 2 or 3 schools[a]	1,575	0.2	1,814	0.2	239	0.0^
Uncertified students in non-special-provision schools	**454,451**	**51.5**	**437,938**	**50.5**	**423,520**	**47.9**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.e. Distribution of students by meal certification category in Iowa (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	523,626	100.0	527,905	100.0	533,628	100.0
Students certified for free meals	**143,458**	**27.4**	**148,525**	**28.1**	**138,549**	**26.0**
Directly certified students	98,127	18.7	NA	NA	110,943	20.8
Based on Medicaid	0	0.0	15,219	2.9	39,159	7.3
Based on SNAP	93,237	17.8	NA	NA	68,510	12.8
Based on other program	4,890	0.9	NA	NA	3,274	0.6
Based on letter method	1,813	0.3	NA	NA	1,541	0.3
Students certified free by application	43,518	8.3	NA	NA	26,065	4.9
Based on income	37,733	7.2	NA	NA	23,018	4.3
Based on categorical eligibility	5,785	1.1	NA	NA	3,047	0.6
Students certified for reduced-price meals	**29,029**	**5.5**	**31,428**	**6.0**	**NA**	**NA**
Directly certified based on Medicaid	0	0.0	6,549	1.2	NA	NA
Certified by application	29,029	5.5	24,879	4.7	18,685	3.5
Students in schools that do not certify students individually	**50,468**	**9.6**	**53,311**	**10.1**	**81,552**	**15.3**
Students in CEP schools	50,468	9.6	53,311	10.1	81,552	15.3
Students in non-base-year Provision 2 or 3 schools[a]	0	0.0	0	0.0	0	0.0
Uncertified students in non-special-provision schools	**300,671**	**57.4**	**294,641**	**55.8**	**NA**	**NA**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

CEP = Community Eligibility Provision; NA = not available; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.f. Distribution of students by meal certification category in Massachusetts (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	953,681	100.0	953,202	100.0	941,626	100.0
Students certified for free meals	**186,816**	**19.6**	**166,833**	**17.5**	**141,511**	**15.0**
Students certified for reduced-price meals	**24,536**	**2.6**	**29,519**	**3.1**	**26,669**	**2.8**
Directly certified based on Medicaid	0	0.0	13,470	1.4	14,622	1.6
Certified by application	24,536	2.6	16,049	1.7	12,047	1.3
Students not certified for meal benefits[a]	**742,329**	**77.8**	**756,850**	**79.4**	**773,446**	**82.1**

Source: Administrative records provided by State administrators.

Note: SY 2016–2017 is omitted from this table because the necessary data were not available for that year. Subgroup percentages may not sum to totals because of rounding.

[a] This row contains students attending schools that do not certify students individually and students in non-special provision schools who are not certified for free or reduced-price meals.

SY = school year.

Table B.5.g. Distribution of students by meal certification category in Michigan (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	1,536,158	100.0	1,530,556	100.0	1,498,276	100.0
Students certified for free meals	**388,194**	**25.3**	**459,283**	**30.0**	**306,081**	**20.4**
Directly certified students	225,641	14.7	353,274	23.1	241,556	16.1
Based on Medicaid	0	0.0	129,967	8.5	116,268	7.8
Based on SNAP	212,044	13.8	192,872	12.6	116,505	7.8
Based on other program	13,597	0.9	30,435	2.0	8,783	0.6
Based on letter method	0	0.0	0	0.0	0	0.0
Students certified free by application	162,553	10.6	106,009	6.9	64,525	4.3
Based on income	118,958	7.7	76,814	5.0	47,348	3.2
Based on categorical eligibility	43,595	2.8	29,195	1.9	17,177	1.1
Students certified for reduced-price meals	**81,525**	**5.3**	**74,722**	**4.9**	**58,103**	**3.9**
Directly certified based on Medicaid	0	0.0	18,461	1.2	18,366	1.2
Certified by application	81,525	5.3	56,261	3.7	39,737	2.7
Students in schools that do not certify students individually	**272,215**	**17.7**	**297,817**	**19.5**	**478,761**	**32.0**
Students in CEP schools	272,215	17.7	297,817	19.5	478,761	32.0
Students in non-base-year Provision 2 or 3 schools[a]	0	0.0	0	0.0	0	0.0
Uncertified students in non-special-provision schools	**794,224**	**51.7**	**698,734**	**45.7**	**655,331**	**43.7**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.h. Distribution of students by meal certification category in Nebraska (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2016–2017		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Total students	329,308	100.0	331,595	100.0	335,085	100.0	341,228	100.0
Students certified for free meals	**110,890**	**33.7**	**121,464**	**36.6**	**120,465**	**36.0**	**125,005**	**36.6**
Directly certified students	68,714	20.9	90,023	27.1	92,376	27.6	102,337	30.0
Based on Medicaid	0	0.0	21,283	6.4	29,220	8.7	24,432	7.2
Based on SNAP	64,462	19.6	66,923	20.2	60,845	18.2	72,414	21.2
Based on other program	4,252	1.3	1,817	0.5	2,311	0.7	5,491	1.6
Based on letter method	96	0.0^	219	0.1	119	0.0^	188	0.1
Students certified free by application	42,080	12.8	31,222	9.4	27,970	8.3	22,480	6.6
Based on income	37,901	11.5	27,073	8.2	24,528	7.3	20,069	5.9
Based on categorical eligibility	4,179	1.3	4,149	1.3	3,442	1.0	2,411	0.7
Students certified for reduced-price meals	**27,740**	**8.4**	**35,059**	**10.6**	**38,655**	**11.5**	**29,902**	**8.8**
Directly certified based on Medicaid	0	0.0	13,408	4.0	18,381	5.5	14,106	4.1
Certified by application	27,740	8.4	21,651	6.5	20,274	6.1	15,796	4.6
Students in schools that do not certify students individually	**3,308**	**1.0**	**3,892**	**1.2**	**6,337**	**1.9**	**6,260**	**1.8**
Students in CEP schools	2,979	0.9	3,570	1.1	6,028	1.8	6,260	1.8
Students in non-base-year Provision 2 or 3 schools[a]	329	0.1	322	0.1	309	0.1	0	0.0
Uncertified students in non-special-provision schools	**187,370**	**56.9**	**171,180**	**51.6**	**169,628**	**50.6**	**180,061**	**52.8**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.i. Distribution of students by meal certification category in Nevada (unadjusted)

Outcome	SY 2017–2018 (baseline year)		SY 2019–2020	
	Number	Percentage	Number	Percentage
Total students	466,780	100.0	469,651	100.0
Students certified for free meals	**145,471**	**31.2**	**83,400**	**17.8**
Directly certified students	88,706	19.0	64,551	13.7
Based on Medicaid	0	0.0	23,051	4.9
Based on SNAP	81,854	17.5	36,900	7.9
Based on other program	6,852	1.5	4,600	1.0
Based on letter method	3	0.0^	0	0.0
Students certified free by application	56,762	12.2	18,849	4.0
Based on income	50,421	10.8	17,646	3.8
Based on categorical eligibility	6,341	1.4	1,203	0.3
Students certified for reduced-price meals	**29,983**	**6.4**	**19,891**	**4.2**
Directly certified based on Medicaid	0	0.0	1,767	0.4
Certified by application	29,983	6.4	18,124	3.9
Students in schools that do not certify students individually	**112,507**	**24.1**	**220,575**	**47.0**
Students in CEP schools	92,500	19.8	216,936	46.2
Students in non-base-year Provision 2 or 3 schools[a]	20,007	4.3	3,639	0.8
Uncertified students in non-special-provision schools	**178,819**	**38.3**	**145,785**	**31.0**

Source: Administrative records provided by State administrators.

Note: Totals for the subgroups may not match the table totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.j. Distribution of students by meal certification category in Texas (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	5,181,412	100.0	3,777,575	100.0	5,316,358	100.0
Students certified for free meals	**1,864,635**	**36.0**	**1,391,331**	**36.8**	**1,486,814**	**28.0**
Directly certified students	1,026,164	19.8	850,694	22.5	1,088,721	20.5
Based on Medicaid	0	0.0	36,875	1.0	334,680	6.3
Based on SNAP	886,752	17.1	748,143	19.8	662,935	12.5
Based on other program	139,412	2.7	65,676	1.7	91,106	1.7
Based on letter method	0	0.0	0	0.0	0	0.0
Students certified free by application	838,471	16.2	540,637	14.3	398,093	7.5
Based on income	719,180	13.9	469,006	12.4	363,573	6.8
Based on categorical eligibility	119,291	2.3	71,631	1.9	34,520	0.6
Students certified for reduced-price meals	**293,583**	**5.7**	**202,938**	**5.4**	**222,749**	**4.2**
Directly certified based on Medicaid	0	0.0	542	0.0^	11,769	0.2
Certified by application	293,583	5.7	202,396	5.4	210,980	4.0
Students in schools that do not certify students individually	**1,116,474**	**21.5**	**718,278**	**19.0**	**1,893,431**	**35.6**
Students in CEP schools	945,202	18.2	570,168	15.1	1,830,565	34.4
Students in non-base-year Provision 2 or 3 schools[a]	171,272	3.3	148,110	3.9	62,866	1.2
Uncertified students in non-special-provision schools	**1,906,720**	**36.8**	**1,465,027**	**38.8**	**1,713,364**	**32.2**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.k. Distribution of students by meal certification category in Utah (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2016–2017		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Total students	622,580	100.0	583,283	100.0	632,452	100.0	641,462	100.0
Students certified for free meals	**163,331**	**26.2**	**164,183**	**28.1**	**163,459**	**25.8**	**143,428**	**22.4**
Directly certified students	79,635	12.8	100,700	17.3	108,753	17.2	91,530	14.3
Based on Medicaid	0	0.0	28,433	4.9	35,479	5.6	34,444	5.4
Based on SNAP	74,909	12.0	60,754	10.4	68,482	10.8	51,735	8.1
Based on other program	4,726	0.8	11,513	2.0	4,792	0.8	5,351	0.8
Based on letter method	0	0.0	0	0.0	0	0.0	0	0.0
Students certified free by application	83,696	13.4	63,483	10.9	54,706	8.6	51,898	8.1
Based on income	73,381	11.8	56,757	9.7	48,568	7.7	47,704	7.4
Based on categorical eligibility	10,315	1.7	6,726	1.2	6,138	1.0	4,194	0.7
Students certified for reduced-price meals	**45,836**	**7.4**	**42,448**	**7.3**	**41,945**	**6.6**	**40,457**	**6.3**
Directly certified based on Medicaid	0	0.0	2,843	0.5	3,452	0.5	2,864	0.4
Certified by application	45,836	7.4	39,605	6.8	38,493	6.1	37,593	5.9
Students in schools that do not certify students individually	**9,158**	**1.5**	**5,123**	**0.9**	**12,841**	**2.0**	**21,129**	**3.3**
Students in CEP schools	8,756	1.4	4,707	0.8	11,934	1.9	20,650	3.2
Students in non-base-year Provision 2 or 3 schools[a]	402	0.1	416	0.1	907	0.1	479	0.1
Uncertified students in non-special-provision schools	**404,255**	**64.9**	**371,529**	**63.7**	**414,207**	**65.5**	**436,448**	**68.0**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.I. Distribution of students by meal certification category in Virginia (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2016–2017		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Total students	502,731	100.0	473,051	100.0	515,191	100.0	516,617	100.0
Students certified for free meals	**135,856**	**27.0**	**134,282**	**28.4**	**135,597**	**26.3**	**113,587**	**22.0**
Directly certified students	84,152	16.7	95,189	20.1	99,888	19.4	86,180	16.7
Based on Medicaid	0	0.0	19,216	4.1	32,550	6.3	36,111	7.0
Based on SNAP	78,579	15.6	71,794	15.2	61,658	12.0	44,755	8.7
Based on other program	5,573	1.1	4,179	0.9	5,680	1.1	5,314	1.0
Based on letter method	0	0.0	0	0.0	0	0.0	29	0.0^
Students certified free by application	51,704	10.3	39,093	8.3	35,709	6.9	27,378	5.3
Based on income	45,118	9.0	31,246	6.6	31,176	6.1	23,963	4.6
Based on categorical eligibility	6,586	1.3	7,847	1.7	4,533	0.9	3,415	0.7
Students certified for reduced-price meals	**27,530**	**5.5**	**25,317**	**5.4**	**23,115**	**4.5**	**21,591**	**4.2**
Directly certified based on Medicaid	0	0.0	2,239	0.5	4,587	0.9	4,776	0.9
Certified by application	27,530	5.5	23,078	4.9	18,528	3.6	16,815	3.3
Students in schools that do not certify students individually	**53,706**	**10.7**	**41,728**	**8.8**	**80,232**	**15.6**	**115,727**	**22.4**
Students in CEP schools	53,706	10.7	41,728	8.8	80,232	15.6	115,727	22.4
Students in non-base-year Provision 2 or 3 schools[a]	0	0.0	0	0.0	0	0.0	0	0.0
Uncertified students in non-special-provision schools	**285,639**	**56.8**	**271,724**	**57.4**	**276,247**	**53.6**	**265,712**	**51.4**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.m. Distribution of students by meal certification category in Washington (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	1,053,119	100.0	552,554	100.0	1,075,643	100.0
Students certified for free meals	**308,986**	**29.3**	**122,544**	**22.2**	**282,008**	**26.2**
Directly certified students	226,281	21.5	94,479	17.1	223,967	20.8
Based on Medicaid	0	0.0	7,094	1.3	55,651	5.2
Based on SNAP	201,494	19.1	75,744	13.7	141,439	13.1
Based on other program	24,787	2.4	11,641	2.1	26,877	2.5
Based on letter method	0	0.0	0	0.0	0	0.0
Students certified free by application	82,705	7.9	28,065	5.1	58,041	5.4
Based on income	67,808	6.4	23,902	4.3	48,545	4.5
Based on categorical eligibility	14,897	1.4	4,163	0.8	9,496	0.9
Students certified for reduced-price meals	**66,174**	**6.3**	**27,533**	**5.0**	**72,602**	**6.7**
Directly certified based on Medicaid	0	0.0	3,532	0.6	23,569	2.2
Certified by application	66,174	6.3	24,001	4.3	49,033	4.6
Students in schools that do not certify students individually	**93,691**	**8.9**	**85,184**	**15.4**	**125,517**	**11.7**
Students in CEP schools	87,826	8.3	82,471	14.9	125,000	11.6
Students in non-base-year Provision 2 or 3 schools[a]	5,865	0.6	2,713	0.5	517	0.0^
Uncertified students in non-special-provision schools	**584,268**	**55.5**	**317,293**	**57.4**	**595,516**	**55.4**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.n. Distribution of students by meal certification category in West Virginia (unadjusted)

Outcome	SY 2015–2016 (baseline year)		SY 2016–2017		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Total students	280,043	100.0	279,891	100.0	274,484	100.0	263,349	100.0
Students certified for free meals	**56,983**	**20.3**	**44,742**	**16.0**	**34,645**	**12.6**	**23,739**	**9.0**
Directly certified students	46,907	16.7	39,170	14.0	30,701	11.2	21,057	8.0
Based on Medicaid	0	0.0	6,500	2.3	9,374	3.4	7,504	2.8
Based on SNAP	44,517	15.9	31,559	11.3	20,156	7.3	12,213	4.6
Based on other program	2,390	0.9	1,111	0.4	1,171	0.4	1,340	0.5
Based on letter method	0	0.0	0	0.0	0	0.0	0	0.0
Students certified free by application	10,076	3.6	5,572	2.0	3,944	1.4	2,682	1.0
Based on income	9,089	3.2	5,013	1.8	3,613	1.3	2,393	0.9
Based on categorical eligibility	987	0.4	559	0.2	331	0.1	289	0.1
Students certified for reduced-price meals	**7,894**	**2.8**	**5,564**	**2.0**	**4,537**	**1.7**	**3,584**	**1.4**
Directly certified based on Medicaid	0	0.0	491	0.2	1,112	0.4	583	0.2
Certified by application	7,894	2.8	5,073	1.8	3,425	1.2	3,001	1.1
Students in schools that do not certify students individually	**142,214**	**50.8**	**176,288**	**63.0**	**189,498**	**69.0**	**201,220**	**76.4**
Students in CEP schools	142,214	50.8	176,288	63.0	189,498	69.0	201,220	76.4
Students in non-base-year Provision 2 or 3 schools[a]	0	0.0	0	0.0	0	0.0	0	0.0
Uncertified students in non-special-provision schools	**72,952**	**26.1**	**53,297**	**19.0**	**45,804**	**16.7**	**34,806**	**13.2**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

CEP = Community Eligibility Provision; SNAP = Supplemental Nutrition Assistance Program; SY = school year.

Table B.5.o. Distribution of students by meal certification category in Wisconsin (unadjusted)

Outcome	SY 2016–2017 (baseline year)		SY 2017–2018		SY 2019–2020	
	Number	Percentage	Number	Percentage	Number	Percentage
Total students	816,898	100.0	777,593	100.0	810,722	100.0
Students certified for free meals	**174,262**	**21.3**	**189,013**	**24.3**	**187,130**	**23.1**
Directly certified students	131,844	16.1	149,204	19.2	163,285	20.1
Based on Medicaid	0	0.0	31,354	4.0	57,395	7.1
Based on SNAP	127,969	15.7	112,666	14.5	102,679	12.7
Based on other program	3,875	0.5	5,184	0.7	3,211	0.4
Based on letter method	64	0.0^	0	0.0	0	0.0
Students certified free by application	42,354	5.2	39,809	5.1	23,845	2.9
Based on income	34,983	4.3	30,852	4.0	19,653	2.4
Based on categorical eligibility	7,371	0.9	8,957	1.2	4,192	0.5
Students certified for reduced-price meals	**35,389**	**4.3**	**34,990**	**4.5**	**NA**	**NA**
Directly certified based on Medicaid	0	0.0	10,549	1.4	NA	NA
Certified by application	35,389	4.3	24,441	3.1	20,730	2.6
Students in schools that do not certify students individually	**136,025**	**16.7**	**136,341**	**17.5**	**144,239**	**17.8**
Students in CEP schools	135,774	16.6	136,090	17.5	144,138	17.8
Students in non-base-year Provision 2 or 3 schools[a]	251	0.0^	251	0.0^	101	0.0^
Uncertified students in non-special-provision schools	**471,222**	**57.7**	**417,249**	**53.7**	**NA**	**NA**

Source: Administrative records provided by State administrators.

Note: Subgroup percentages may not sum to totals because of rounding.

[a] Schools are counted as Provision 2 or 3 only if they operate the special provision for both breakfast and lunch.

^ Number rounds to zero.

CEP = Community Eligibility Provision; NA = not available; SNAP = Supplemental Nutrition Assistance Program; SY = school year

Table B.6. Medicaid match rates in SY 2019–2020

State	Ages of Medicaid recipients in records used in the match (years)	Free-eligible Medicaid records		Reduced-price–eligible Medicaid records	
		Number used in the match	Percentage matched to school enrollment records	Number used in the match	Percentage matched to school enrollment records
Indiana	0–23	309,181	64.8	65,774	77.3
Michigan	0–27	1,269,085	53.8	47,512	83.2
Texas	0–21	1,381,585	79.2	182,204	79.1
Wisconsin	0–18	371,617	64.0	67,650	51.7

Source: Administrative records provided by State administrators.

Note: Medicaid match rates were computed as the total number of Medicaid matches in the State—including students attending special provision schools—divided by the total number of individuals included in free- or reduced-price-eligible Medicaid records used in the matches.

SY = school year.

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Appendix C.

Supplemental Tables Related to Participation Outcomes

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Table C.1. NSLP participation outcomes (unadjusted)

State	Percentage of lunches served for free				Percentage of lunches served at a reduced price				Average number of lunches served per student per day			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	69.3	70.4	74.3	n.a.	10.7	10.0	7.4	n.a.	0.423	0.428	0.424
Connecticut	n.a.	57.2	n.a.	64.4	n.a.	5.3	n.a.	4.2	n.a.	0.491	n.a.	0.499
Florida[a]	n.a.	n.a.	n.a.	n.a.	4.8	4.9	2.7	5.4	0.579	0.579	0.582	0.562
Indiana	n.a.	51.6	52.6	55.0	n.a.	8.4	8.4	7.4	n.a.	0.624	0.610	0.597
Iowa	n.a.	42.4	n.a.	47.0	n.a.	6.6	n.a.	5.8	n.a.	0.661	n.a.	0.645
Massachusetts[a]	n.a.	n.a.	n.a.	n.a.	3.8	n.a.	4.7	4.3	0.470	n.a.	0.464	0.471
Michigan	n.a.	62.3	65.0	69.5	n.a.	7.3	5.8	4.6	n.a.	0.460	0.457	0.481
Nebraska	41.2	43.2	42.9	44.3	9.9	9.3	10.0	9.5	0.662	0.660	0.657	0.646
Nevada	n.a.	n.a.	72.0	78.4	n.a.	n.a.	8.9	4.3	n.a.	n.a.	0.421	0.429
Texas	n.a.	70.4	72.3	75.9	n.a.	6.6	5.9	4.6	n.a.	0.587	0.588	0.586
Utah	41.0	39.6	40.1	36.8	10.5	10.2	9.8	9.2	0.496	0.488	0.483	0.470
Virginia	56.5	n.a.	59.6	60.6	7.7	n.a.	6.5	5.5	0.499	n.a.	0.464	0.516
Washington	n.a.	59.4	n.a.	56.7	n.a.	9.7	n.a.	9.8	n.a.	0.355	n.a.	0.420
West Virginia	66.4	n.a.	76.7	78.1	3.1	n.a.	1.9	1.4	0.626	n.a.	0.622	0.652
Wisconsin	n.a.	49.2	49.3	51.0	n.a.	6.1	6.0	5.9	n.a.	0.529	0.522	0.520

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February.

[a] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

n.a. = not applicable; SY = school year.

Table C.2. SBP participation outcomes (unadjusted)

State	Percentage of breakfasts served for free				Percentage of breakfasts served at a reduced price				Average number of breakfasts served per student per day			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	74.3	74.9	80.1	n.a.	9.7	9.1	6.7	n.a.	0.224	0.229	0.228
Connecticut	n.a.	81.3	n.a.	85.2	n.a.	3.9	n.a.	2.6	n.a.	0.186	n.a.	0.203
Florida[a]	n.a.	n.a.	n.a.	n.a.	4.1	4.3	2.3	4.8	0.275	0.280	0.289	0.285
Indiana	n.a.	74.1	74.1	74.4	n.a.	7.7	8.1	6.8	n.a.	0.230	0.222	0.239
Iowa	n.a.	71.9	n.a.	74.2	n.a.	6.6	n.a.	5.6	n.a.	0.176	n.a.	0.184
Massachusetts[a]	n.a.	n.a.	n.a.	n.a.	3.1	2.4	3.0	2.7	0.158	0.166	0.174	0.190
Michigan	n.a.	76.7	78.2	83.2	n.a.	5.9	4.8	3.5	n.a.	0.226	0.226	0.244
Nebraska	60.1	61.2	60.6	61.0	11.0	10.1	10.6	10.2	0.201	0.206	0.213	0.218
Nevada	n.a.	n.a.	77.0	87.1	n.a.	n.a.	7.3	2.4	n.a.	n.a.	0.267	0.244
Texas	n.a.	79.1	81.1	85.0	n.a.	5.7	5.0	3.6	n.a.	0.334	0.323	0.340
Utah	68.2	65.6	66.1	62.1	10.4	10.6	10.3	10.0	0.121	0.122	0.123	0.117
Virginia	74.8	n.a.	75.7	74.6	7.0	n.a.	5.8	5.0	0.226	n.a.	0.231	0.271
Washington	n.a.	74.3	n.a.	70.7	n.a.	10.2	n.a.	9.8	n.a.	0.128	n.a.	0.172
West Virginia	70.4	n.a.	80.2	80.9	2.6	n.a.	1.6	1.2	0.498	n.a.	0.503	0.528
Wisconsin	n.a.	72.4	71.3	70.4	n.a.	5.7	5.7	5.6	n.a.	0.189	0.197	0.207

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February.

[a] Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

n.a. = not applicable; SY = school year.

Table C.3.a. Comparison across demonstration years of effects of DCM-F/RP on percentage of lunches served for free

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects for three years						
Nebraska	2.3*	2.7*	4.5*	0.4	1.8†	2.2†
Utah	0.4	0.7	-0.5	0.3	-1.2	-0.9
Cohort 1 States with effects for two years						
Virginia	n.a.	0.6	-2.2*	n.a.	-2.8†	n.a.
West Virginia	n.a.	9.7*	11.6*	n.a.	2.0	n.a.
Cohort 2 States with effects for two years						
California	n.a.	3.4*	12.7*	n.a.	9.3†	n.a.
Indiana	n.a.	0.9	1.7	n.a.	0.7	n.a.
Michigan	n.a.	2.4*	6.1*	n.a.	3.6†	n.a.
Texas	n.a.	5.1*	8.7*	n.a.	3.7†	n.a.
Wisconsin	n.a.	0.1	1.7*	n.a.	1.6†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Table C.3.b. Comparison across demonstration years of effects of DCM-F/RP on percentage of lunches served at a reduced price

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects for three years						
Florida	-0.1	-2.7*	-0.5	-2.5†	2.2†	-0.3
Nebraska	-1.0*	-0.6*	-1.5*	0.4†	-0.9†	-0.5†
Utah	-0.3	-0.7*	-1.4*	-0.4†	-0.7	-1.1†
Cohort 1 States with effects for two years						
Massachusetts	n.a.	1.5	1.7	n.a.	0.2	n.a.
Virginia	n.a.	-0.3	0.0^	n.a.	0.3	n.a.
West Virginia	n.a.	-1.8*	-2.6*	n.a.	-0.8†	n.a.
Cohort 2 States with effects for two years						
California	n.a.	-0.5*	-3.9*	n.a.	-3.4†	n.a.
Indiana	n.a.	0.5	0.1	n.a.	-0.4	n.a.
Michigan	n.a.	-1.3*	-2.2*	n.a.	-0.9†	n.a.
Texas	n.a.	-1.4*	-2.8*	n.a.	-1.4†	n.a.
Wisconsin	n.a.	0.0^	-0.3	n.a.	-0.3	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table C.3.c. Comparison across demonstration years of effects of DCM-F/RP on average number of lunches served per student per day

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.010*	0.020*	0.013	0.011†	-0.007	0.003
Nebraska	-0.001	-0.006*	-0.019*	-0.004	-0.013†	-0.018†
Utah	-0.003	-0.008	-0.019	-0.005	-0.012	-0.017
Cohort 1 States with effects in two years						
Massachusetts	n.a.	-0.002	0.005	n.a.	0.006	n.a.
Virginia	n.a.	-0.032*	0.019	n.a.	0.051†	n.a.
West Virginia	n.a.	0.008	0.037*	n.a.	0.029†	n.a.
Cohort 2 States with effects in two years						
California	n.a.	-0.002	-0.012	n.a.	-0.009†	n.a.
Indiana	n.a.	-0.007	-0.018	n.a.	-0.010†	n.a.
Michigan	n.a.	-0.012*	-0.006	n.a.	0.007	n.a.
Texas	n.a.	0.005*	-0.003	n.a.	-0.008†	n.a.
Wisconsin	n.a.	-0.025*	-0.026*	n.a.	-0.001	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Table C.4.a. Comparison across demonstration years of effects of DCM-F/RP on percentage of breakfasts served for free

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Nebraska	1.7*	1.7*	2.4*	0.1	0.6	0.7
Utah	-0.7	-1.5	-4.6	-0.7	-3.1	-3.8
Cohort 1 States with effects in two years						
Virginia	n.a.	-3.1*	-8.8*	n.a.	-5.7†	n.a.
West Virginia	n.a.	7.6*	7.9*	n.a.	0.2	n.a.
Cohort 2 States with effects in two years						
California	n.a.	3.8*	13.8*	n.a.	10.0†	n.a.
Indiana	n.a.	-0.9	-3.2*	n.a.	-2.3†	n.a.
Michigan	n.a.	0.9	3.0*	n.a.	2.0†	n.a.
Texas	n.a.	4.4*	8.4*	n.a.	4.0†	n.a.
Wisconsin	n.a.	-1.4	-1.4	n.a.	0.0^	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments. Outcomes related to free meals are not shown for Florida and Massachusetts because they participated in an earlier demonstration of DCM for free meals during the baseline year, so the DCM-F/RP demonstration in those States only affects reduced-price meals.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table C.4.b. Comparison across demonstration years of effects of DCM-F/RP on percentage of breakfasts served at a reduced price

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.0^	-2.3*	0.0^	-2.3†	2.3†	0.0^
Nebraska	-1.2*	-0.9*	-1.8*	0.3	-0.8†	-0.5
Utah	0.1	0.1	0.4	-0.1	0.4	0.3
Cohort 1 States with effects in two years						
Massachusetts	n.a.	-0.1	-0.9	n.a.	-0.8	n.a.
Virginia	n.a.	-0.4	0.0^	n.a.	0.3	n.a.
West Virginia	n.a.	-1.5*	-2.1*	n.a.	-0.5	n.a.
Cohort 2 States with effects in two years						
California	n.a.	-0.7*	-4.3*	n.a.	-3.5†	n.a.
Indiana	n.a.	0.6	0.3	n.a.	-0.2	n.a.
Michigan	n.a.	-1.3*	-2.1*	n.a.	-0.8†	n.a.
Texas	n.a.	-1.5*	-2.9*	n.a.	-1.5†	n.a.
Wisconsin	n.a.	-0.3	-0.9*	n.a.	-0.6†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table C.4.c. Comparison across demonstration years of effects of DCM-F/RP on average number of breakfasts served per student per day

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.010*	0.021*	0.015	0.010†	-0.006	0.005
Nebraska	0.006*	0.016*	0.028*	0.010†	0.012†	0.022†
Utah	0.007	0.009	0.013	0.003	0.003	0.006
Cohort 1 States with effects in two years						
Massachusetts	n.a.	0.016	0.037	n.a.	0.021	n.a.
Virginia	n.a.	0.014	0.057*	n.a.	0.043†	n.a.
West Virginia	n.a.	0.022	0.048*	n.a.	0.026†	n.a.
Cohort 2 States with effects in two years						
California	n.a.	-0.008*	-0.025*	n.a.	-0.017†	n.a.
Indiana	n.a.	0.002	0.021*	n.a.	0.019†	n.a.
Michigan	n.a.	0.003	0.027*	n.a.	0.024†	n.a.
Texas	n.a.	0.002	0.003	n.a.	0.001	n.a.
Wisconsin	n.a.	-0.002	0.011	n.a.	0.013†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

n.a. = not applicable; SY = school year.

Appendix D.

Supplemental Tables Related to Federal Reimbursement Outcomes

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Table D.1. NSLP Federal reimbursement outcomes (unadjusted)

State	Blended reimbursement rate ($)				Federal reimbursements per student per day ($)			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	2.55	2.56	2.61	n.a.	1.08	1.10	1.11
Connecticut	n.a.	2.08	n.a.	2.25	n.a.	1.02	n.a.	1.13
Florida	2.68	2.69	2.82	2.70	1.55	1.56	1.64	1.52
Indiana	n.a.	1.99	2.02	2.06	n.a.	1.24	1.23	1.23
Iowa	n.a.	1.69	n.a.	1.80	n.a.	1.12	n.a.	1.16
Massachusetts	2.07	2.10	2.11	2.09	0.97	0.97	0.98	0.98
Michigan	n.a.	2.27	2.31	2.41	n.a.	1.04	1.05	1.16
Nebraska	1.74	1.78	1.79	1.81	1.15	1.17	1.17	1.17
Nevada	n.a.	n.a.	2.58	2.65	n.a.	n.a.	1.09	1.14
Texas	n.a.	2.48	2.51	2.59	n.a.	1.46	1.48	1.52
Utah	1.75	1.70	1.71	1.60	0.87	0.83	0.82	0.75
Virginia	2.12	n.a.	2.17	2.18	1.06	n.a.	1.01	1.12
Washington	n.a.	2.25	n.a.	2.18	n.a.	0.80	n.a.	0.91
West Virginia	2.29	n.a.	2.55	2.57	1.43	n.a.	1.58	1.68
Wisconsin	n.a.	1.87	1.87	1.92	n.a.	0.99	0.98	1.00

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for the baseline year and for school years in which the demonstration had begun by February.

n.a. = not applicable; SY = school year.

Table D.2. SBP Federal reimbursement outcomes (unadjusted)

State	Blended reimbursement rate ($)				Federal reimbursements per student per day ($)			
	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2015–2016	SY 2016–2017	SY 2017–2018	SY 2019–2020
California	n.a.	1.69	1.69	1.74	n.a.	0.38	0.39	0.40
Connecticut	n.a.	1.71	n.a.	1.76	n.a.	0.32	n.a.	0.36
Florida	1.75	1.76	1.84	1.75	0.48	0.49	0.53	0.50
Indiana	n.a.	1.64	1.65	1.63	n.a.	0.38	0.37	0.39
Iowa	n.a.	1.56	n.a.	1.59	n.a.	0.27	n.a.	0.29
Massachusetts	1.76	1.78	1.77	1.74	0.28	0.30	0.31	0.33
Michigan	n.a.	1.66	1.66	1.74	n.a.	0.38	0.38	0.43
Nebraska	1.44	1.44	1.44	1.45	0.29	0.30	0.31	0.32
Nevada	n.a.	n.a.	1.69	1.80	n.a.	n.a.	0.45	0.44
Texas	n.a.	1.71	1.73	1.78	n.a.	0.57	0.56	0.61
Utah	1.57	1.52	1.53	1.46	0.19	0.19	0.19	0.17
Virginia	1.64	n.a.	1.65	1.62	0.37	n.a.	0.38	0.44
Washington	n.a.	1.69	n.a.	1.62	n.a.	0.22	n.a.	0.28
West Virginia	1.52	n.a.	1.67	1.68	0.76	n.a.	0.84	0.89
Wisconsin	n.a.	1.57	1.55	1.54	n.a.	0.30	0.31	0.32

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for the baseline year and for school years in which the demonstration had begun by February.

n.a. = not applicable; SY = school year.

Table D.3.a. Comparison across demonstration years of effects of DCM-F/RP on NSLP blended reimbursement rate

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.05*	0.22*	0.17*	0.17†	-0.05†	0.12†
Nebraska	0.04*	0.06*	0.09*	0.02†	0.03†	0.05†
Utah	0.00^	0.00^	-0.05	0.00^	-0.05†	-0.05†
Cohort 1 States with effects in two years						
Massachusetts	n.a.	0.01	-0.01	n.a.	-0.02	n.a.
Virginia	n.a.	0.01	-0.06*	n.a.	-0.07†	n.a.
West Virginia	n.a.	0.23*	0.26*	n.a.	0.04	n.a.
Cohort 2 States with effects in two years						
California	n.a.	0.08*	0.26*	n.a.	0.18†	n.a.
Indiana	n.a.	0.03*	0.04*	n.a.	0.01	n.a.
Michigan	n.a.	0.04*	0.12*	n.a.	0.08†	n.a.
Texas	n.a.	0.11*	0.18*	n.a.	0.07†	n.a.
Wisconsin	n.a.	0.00^	0.04*	n.a.	0.04†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table D.3.b. Comparison across demonstration years of effects of DCM-F/RP on NSLP Federal reimbursements per enrolled student per day

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.06*	0.18*	0.14*	0.13†	-0.04	0.09†
Nebraska	0.03*	0.04*	0.03*	0.01	0.00^	0.00^
Utah	-0.01	-0.01	-0.06*	-0.01	-0.05†	-0.05†
Cohort 1 States with effects in two years						
Massachusetts	n.a.	0.01	0.02	n.a.	0.01	n.a.
Virginia	n.a.	-0.08*	-0.01	n.a.	0.06†	n.a.
West Virginia	n.a.	0.17*	0.26*	n.a.	0.10†	n.a.
Cohort 2 States with effects in two years						
California	n.a.	0.02*	0.07*	n.a.	0.05†	n.a.
Indiana	n.a.	0.01	0.00^	n.a.	-0.01	n.a.
Michigan	n.a.	-0.02	0.04*	n.a.	0.06†	n.a.
Texas	n.a.	0.08*	0.10*	n.a.	0.02	n.a.
Wisconsin	n.a.	-0.06*	-0.03*	n.a.	0.02†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table D.4.a. Comparison across demonstration years of effects of DCM-F/RP on SBP blended reimbursement rate

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.02*	0.11*	0.06*	0.10†	-0.06†	0.04†
Nebraska	0.01	0.02*	0.03*	0.01	0.01	0.02
Utah	-0.01	-0.02	-0.06	-0.02	-0.04	-0.06
Cohort 1 States with effects in two years						
Massachusetts	n.a.	-0.07	-0.15	n.a.	-0.08	n.a.
Virginia	n.a.	-0.05*	-0.13*	n.a.	-0.08†	n.a.
West Virginia	n.a.	0.11*	0.11*	n.a.	0.00^	n.a.
Cohort 1 States with effects in two years						
California	n.a.	0.06*	0.18*	n.a.	0.12†	n.a.
Indiana	n.a.	-0.01	-0.04*	n.a.	-0.04†	n.a.
Michigan	n.a.	-0.01	0.03	n.a.	0.04†	n.a.
Texas	n.a.	0.05*	0.10*	n.a.	0.05†	n.a.
Wisconsin	n.a.	-0.02	-0.02	n.a.	0.00^	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Table D.4.b. Comparison across demonstration years of effects of DCM-F/RP on SBP Federal reimbursements per enrolled student per day

State	Change between baseline and:			Difference between:		
	SY 2016–2017	SY 2017–2018	SY 2019–2020	SY 2016–2017 and SY 2017–2018	SY 2017–2018 and SY 2019–2020	SY 2016–2017 and SY 2019–2020
Cohort 1 States with effects in three years						
Florida	0.02*	0.07*	0.04	0.05†	-0.03†	0.02
Nebraska	0.01*	0.03*	0.05*	0.02†	0.02†	0.04†
Utah	0.01*	0.01	0.01	0.00^	0.00^	0.00^
Cohort 1 States with effects in two years						
Massachusetts	n.a.	0.00^	0.01	n.a.	0.01	n.a.
Virginia	n.a.	0.01	0.05*	n.a.	0.04†	n.a.
West Virginia	n.a.	0.08*	0.12*	n.a.	0.04	n.a.
Cohort 1 States with two years						
California	n.a.	0.01*	0.03*	n.a.	0.02†	n.a.
Indiana	n.a.	0.00^	0.02	n.a.	0.02†	n.a.
Michigan	n.a.	0.00^	0.05*	n.a.	0.05†	n.a.
Texas	n.a.	0.02*	0.03*	n.a.	0.02†	n.a.
Wisconsin	n.a.	-0.01	0.01	n.a.	0.02†	n.a.

Source: Administrative records provided by State administrators.

Note: These results are based on data from July through February for each school year because SY 2019–2020 outcomes were affected by the COVID-19 pandemic beginning in March 2020. For each State, data are shown for school years in which the demonstration had begun by February. Connecticut, Iowa, Nevada, and Washington are excluded from this table because DCM-F/RP began after February 2018, so effects on these outcomes were only measured for one school year. Values in this table are regression adjusted. Appendix A lists the variables included in the regression adjustments.

* The change relative to the baseline year is significantly different from zero at the .05 level, two-tailed test.

† The difference in effects is significantly different from zero at the .05 level, two-tailed test.

^ Number rounds to zero.

n.a. = not applicable; SY = school year.

Appendix E.

Supplemental Tables Related to State Administrative Cost Outcomes

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Table E.1. State DCM-F/RP administrative costs in SY 2019–2020, by cost and agency type

State	Child nutrition agency			Medicaid eligibility agency		
	Direct labor costs ($)	Other direct costs ($)	Indirect costs ($)	Direct labor costs ($)	Other direct costs ($)	Indirect costs ($)
California	504	0	116	n.a.	n.a.	n.a.
Connecticut	12,977	0	4,687	n.a.	n.a.	n.a.
Florida	n.a.	n.a.	n.a.	464	0	0
Indiana	n.a.	n.a.	n.a.	52	0	0
Iowa	10,169	0	1,697	154	1,614	0
Nevada	12,053	50,267	3,521	15,950	0	1,774
Utah	1,612	0	67	52	0	0
Virginia	n.a.	n.a.	n.a.	4,230	0	0
Wisconsin	3,594	0	3	140	0	0
Total	**40,910**	**50,267**	**10,092**	**21,041**	**1,614**	**1,774**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2019–2020.

Note: States that reported zero costs in SY 2019–2020—Massachusetts, Michigan, Nebraska, Texas, Washington, and West Virginia—are excluded from this table. State costs may not sum to totals due to rounding.

n.a. = not applicable, because these agencies reported zero costs; SY = school year.

Table E.2. State administrative costs of DCM-F/RP across demonstration years, by State and agency type

State	State administrative costs ($)		
	SY 2016–2017	SY 2017–2018	SY 2019–2020
Cohort 1 States			
California			
Child nutrition agency	42,114	25,208	620
Medicaid eligibility agency	39,123	10,776	0
Florida			
Child nutrition agency	11,570	0	0
Medicaid eligibility agency	245,138	0	464
Massachusetts			
Child nutrition agency	10,473	3,504	0
Medicaid eligibility agency	141,281	0	0
Nebraska			
Child nutrition agency	6,287	0	0
Medicaid eligibility agency	8,473	0	0
Utah			
Child nutrition agency	23,583	5,922	1,679
Medicaid eligibility agency	22,279	10,394	52
Virginia			
Child nutrition agency	8,130	1,358	0
Medicaid eligibility agency	45,525	1,731	4,230
West Virginia			
Child nutrition agency	3,848	1,520	0
Medicaid eligibility agency	8,728	0	0
Average			
Child nutrition agency	**15,144**	**5,359**	**328**
Medicaid eligibility agency	**72,935**	**3,272**	**678**
Cohort 2 States			
Connecticut			
Child nutrition agency	n.a.	34,935	17,664
Medicaid eligibility agency	n.a.	62,756	0
Indiana			
Child nutrition agency	n.a.	65,346	0
Medicaid eligibility agency	n.a.	2,015	52
Iowa			
Child nutrition agency	n.a.	17,418	11,866
Medicaid eligibility agency	n.a.	33,513	1,768

State	State administrative costs ($)		
	SY 2016–2017	SY 2017–2018	SY 2019–2020
Michigan			
Child nutrition agency	n.a.	29,639	0
Medicaid eligibility agency	n.a.	856	0
Nevada			
Child nutrition agency	n.a.	42,889	65,841
Medicaid eligibility agency	n.a.	81,336	17,724
Texas			
Child nutrition agency	n.a.	21,079	0
Medicaid eligibility agency	n.a.	352,410	0
Washington			
Child nutrition agency	n.a.	60,284	0
Medicaid eligibility agency	n.a.	799	0
Wisconsin			
Child nutrition agency	n.a.	16,057	3,598
Medicaid eligibility agency	n.a.	133,245	140
Average			
Child nutrition agency	**n.a.**	**35,956**	**12,371**
Medicaid eligibility agency	**n.a.**	**83,366**	**2,460**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020.

Note: California implemented DCM-F/RP in 14 districts in SY 2016–2017 and statewide in SY 2017–2018. Nevada began implementing the demonstration in SY 2017–2018 but did not certify students through DCM-F/RP until SY 2018–2019.

n.a. = not applicable; SY = school year.

Table E.3. Average monthly ongoing State administrative costs of DCM-F/RP across demonstration years

State	Average monthly ongoing State administrative costs ($)		
	SY 2016–2017	SY 2017–2018	SY 2019–2020
Cohort 1 States			
California	1,717	2,103	52
Florida	0	0	39
Massachusetts	1,865	292	0
Nebraska	897	0	0
Utah	1,245	1,360	144
Virginia	6,167	257	352
West Virginia	n.a.	127	0
Mean	**1,982**	**591**	**84**
Cohort 2 States			
Connecticut	n.a.	5,191	1,472
Indiana	n.a.	3,726	4
Iowa	n.a.	2,645	1,136
Michigan	n.a.	434	0
Nevada	n.a.	n.a.	6,964
Texas	n.a.	577	0
Washington	n.a.	1,748	0
Wisconsin	n.a.	1,796	311
Mean	**n.a.**	**2,302**	**1,236**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020.

Note: California implemented DCM-F/RP in 14 districts in SY 2016–2017 and statewide in SY 2017–2018. Nevada began implementing the demonstration in SY 2017–2018 but did not certify students through DCM-F/RP until SY 2018–2019.

n.a. = not applicable; SY = school year.

Table E.4. State administrative costs of DCM-F/RP per student directly certified for free or reduced-price meals based on Medicaid, across demonstration years

State	State administrative costs per student directly certified for free or reduced-price meals based on Medicaid ($)		
	SY 2016–2017	SY 2017–2018	SY 2019–2020
Cohort 1 States			
California[a]	n.a.	0.07	0.00^
Nebraska	0.43	0.00	0.00
Utah	1.47	0.42	0.05
West Virginia	1.80	0.14	0.00
Pooled sample	**2.12**	**0.08**	**0.00^**
Cohort 2 States			
Connecticut	n.a.	2.42	0.41
Indiana	n.a.	0.68	0.00^
Michigan	n.a.	0.21	0.00
Nevada	n.a.	n.a.	3.37
Texas	n.a.	9.98	0.00
Washington	n.a.	5.75	0.00
Pooled sample	**n.a.**	**1.88**	**0.14**

Source: Cost-tracking workbooks completed quarterly by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020. Direct certification data from administrative records provided by State administrators for SY 2016–2017, SY 2017–2018, and SY 2019–2020 were used as denominators.

Note: Florida, Massachusetts, Virginia, Iowa, and Wisconsin are excluded from this table because reliable denominator data were not available for more than one SY.

[a] The 14 California districts that implemented DCM-F/RP in SY 2016–2017 were excluded from the certification analysis and therefore excluded from the denominators used to compute the numbers in this table.

^ Number rounds to zero.

n.a. = not applicable; NA = not available; SY = school year.

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