Targeted Provider Relief Funds Allocated to Hospitals Had Some Differences with Respect to the Ethnicity and Race of Populations Served

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Key Results

Communities with greater concentrations of Hispanic/Latino residents were generally associated with less 2020 COVID-19 targeted provider relief funding for hospitals than communities with lower concentrations. This funding disparity raises concerns because Hispanic/Latino Americans have been more likely to be hospitalized or die from COVID-19 than non-Hispanic White Americans.

On the other hand, high concentrations of Non-Hispanic Black residents were sometimes associated with *more* funding, and funding levels were not found to be associated with poverty.

Why OIG Did This Review

The COVID-19 pandemic highlighted longstanding inequities, like disparities in funding levels for health care providers by locations and populations served, as well as inequitable access to quality health care.[1] From the beginning of the pandemic, reports indicated that people of color (e.g., Hispanic/Latino and Black Americans) and people from economically disadvantaged communities were at greater risk of COVID-19 exposure, illness, hospitalization, and death than members of predominantly Non-Hispanic White communities.[2, 3, 4, 5, 67] In addition, the Centers for Disease Control and Prevention (CDC) considers Hispanic/Latino ethnicity and Black race to be associated with social vulnerability, along with external stressors such as poverty and poor housing conditions. This means that communities with greater concentrations of Hispanic/Latino residents, greater concentrations of Black residents, and/or higher rates of people experiencing poverty may be at a greater risk of experiencing long-term financial hardship due to disease outbreaks.[8, 9]

In April 2020, the U.S. Department of Health and Human Services (HHS) began distributing Provider Relief Fund (PRF) payments through the Health Resources and Services Administration (HRSA) to support health care providers, including hospitals, on the front line of the pandemic response. To respond to the urgent need for health care funding, Congress required HHS to make PRF payments using the most efficient payment systems practicable. HHS had to make decisions quickly about how to allocate money in accordance with statutory criteria associated with the funds.

HHS has placed a priority on promoting health equity and reducing health disparities during the COVID-19 pandemic, including in the distribution of resources.[10, 11] While the PRF was not designed with the goal of addressing health disparities, understanding how early PRF Targeted Distributions (Targeted PRF) correlated with racial, ethnic, and economic characteristics of the communities providers serve can help to inform decisions for future public health funding and the opportunities they present to advance the health equity goals of HHS.

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1

How OIG Did This Review

To analyze hospital funding according to populations served, we took allocations to hospitals from the Targeted PRF in 2020 and translated them into estimated "PRF per person" amounts for each U.S. census tract (in this report, we also refer to census tracts as "communities"). To do so, we used Medicare data about the census tracts served by each hospital, and assigned each hospital's funding allocations to those census tracts proportionately. We then determined whether there were statistically significant correlations between PRF per person and the racial, ethnic, and economic composition of the census tracts. To account for other community characteristics that could help explain differences in PRF per person, we analyzed rural and nonrural census tracts separately. We conducted this analysis for the approximately $44 billion in Targeted PRF allocated to hospitals in 2020 through the four allotments designated for 1) COVID-19 High Impact Area Hospitals, 2) Safety Net Hospitals, 3) Rural Hospitals, and 4) Indian Health Service and Tribal Hospitals.

What OIG Found

Our analysis identified some differences in PRF per person across census tracts with respect to the race and ethnicity of their residents, but not with respect to poverty rates. Specifically, when we analyzed all four Targeted PRF allotments combined, we found that communities with greater concentrations of Hispanic/Latino residents were associated with *less* PRF per person than communities with smaller concentrations of Hispanic/Latino residents. In nonrural areas, communities with greater concentrations of Non-Hispanic Black residents were associated with *more* PRF per person than communities with smaller concentrations of Non-Hispanic Black residents, but this pattern did not occur in rural areas. We did not find a meaningful association between PRF per person and the proportion of residents experiencing poverty in the community.

When we analyzed the four Targeted PRF allotments individually, we found the most notable trends in the allotment targeted to rural hospitals (about $9.7 billion): Communities with greater concentrations of Hispanic/Latino residents or Non-Hispanic Black residents were associated with *less* PRF per person than communities with smaller concentrations of Hispanic/Latino Residents or Non-Hispanic Black residents.

Why This Matters

Differences in hospital funding with respect to the characteristics of the populations hospitals serve—including race and ethnicity—could potentially exacerbate pre-existing disparities in health outcomes. If hospitals that serve populations experiencing disparate health outcomes are under-resourced, those populations may be left with less access to high-quality care, which could widen gaps in health outcomes.

Health care funding is an important tool that can help HHS contribute to goals of reducing health disparities, both in the context of COVID-19 and more broadly. We hope that this analysis is useful to HHS in planning for future emergency funding scenarios and identifying opportunities to support these goals, to the extent permitted by law.

BACKGROUND

The Provider Relief Fund

The Provider Relief Fund (PRF) refers to $178 billion in funds appropriated by Congress in 2020 to prevent, prepare for, and respond to COVID-19, and reimburse health care providers for expenses or lost revenues related to COVID-19. Congress did not require that PRF be allocated in a way that addressed health disparities or build in considerations about which populations were impacted by funding decisions.[12] Congress delegated PRF payment calculation and disbursement to HHS and required HHS to make PRF payments using the most efficient payment systems practicable.[13]

HHS distributed the PRF through a series of payments (hereafter referred to as allotments) to eligible hospitals and other health care providers with the requirement that funds be used for health-care-related expenses or lost revenue attributable to COVID-19. HHS designed the General Distributions to provide financial relief to providers, including hospitals and other facilities, during the COVID-19 pandemic based on provider characteristics such as Medicare reimbursements and Medicaid and CHIP participation.[14] Targeted Distributions were designed to provide financial relief and address COVID-19 challenges for specific types of hospitals and other facilities based on characteristics such as high numbers of COVID-19 admissions and rural or tribal designations.[15] HHS worked with The Office of the Assistant Secretary for Planning and Evaluation and Health Resources and Services Administration (HRSA), along with multiple stakeholders including third-party contractors, to administer the PRF. In April 2020, HHS designated HRSA as the primary operating division in charge of coordinating and overseeing the creation of payment files, calculation of payment allocations for eligible health care providers and facilities, and disbursement of funds for allotments of the General Distributions and Targeted Distributions.

For additional details about the PRF, see Appendix A.

Scope and Limitations of Our Evaluation

We analyzed the following Targeted PRF allotments that were made to hospitals in 2020:
- COVID-19 High Impact Area Hospitals (hereafter refered to as High Impact Hospitals)
  - HRSA determined eligibility for this allotment based on hospitals that had high numbers of confirmed COVID-19 positive inpatient admissions in January-June 2020.
- Safety Net Hospitals
- Rural Hospitals

- Indian Health Service and Tribal Hospitals (hereafter referred to as Tribal Hospitals)
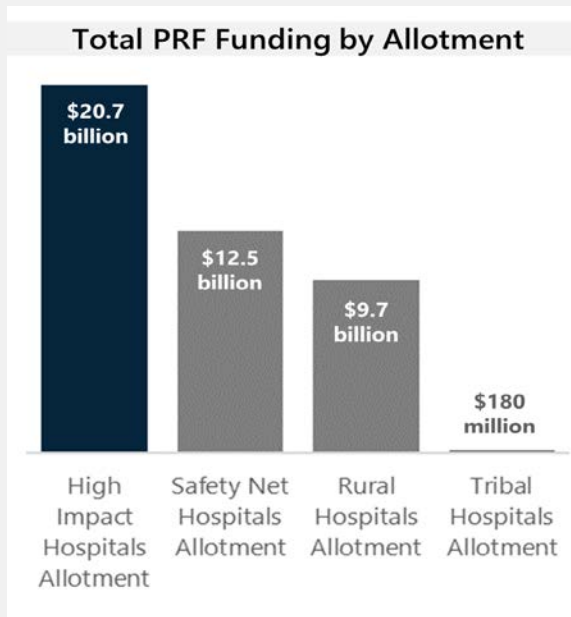
For our analysis, we excluded Targeted PRF amounts that were allocated to facilities other than hospitals (such as nursing homes), as well as Targeted PRF amounts that were allocated to children's hospitals.

As a result of focusing on these specific allotments, we analyzed $43 billion of the $46 billion total Targeted PRF allocations that went to hospitals in 2020.

We could not assess patterns in allocations to hospitals from General Distributions. Because these distributions were allocated to parent companies, data for individual hospital allocations do not exist in the case of hospitals in hospital systems. The extent to which inclusion of General Distribution allocations may have resulted in different outcomes than those we identified is unknown.

We did not review other relief funding that HHS is distributing outside the PRF, such as funds targeted to rural communities through the American Rescue Plan. The extent to which additional funding may have resulted in different outcomes than those we identified is unknown.

Exhibit 1: The allotments we reviewed totaled over $40 billion in Targeted PRF, and the allotment targeted at High Impact Hospitals accounted for almost half that amount.

Total PRF Funding by Allotment

High Impact Hospitals Allotment	$20.7 billion
Safety Net Hospitals Allotment	$12.5 billion
Rural Hospitals Allotment	$9.7 billion
Tribal Hospitals Allotment	$180 million

Source: OIG analysis of subset of Targeted PRF allocations after exclusions.

We were only able to analyze the amounts HRSA a*llocated* to hospitals. Therefore, for the subset of hospitals in our analysis that are owned by a parent organization, we are not able to see where the funds were ultimately *distributed*. After HRSA calculated allocations for each hospital, HRSA then combined the allocations and distributed a single payment to parent organizations for all of their hospitals. Parent organizations were given flexibility to re-distribute funding to the facilities under their umbrellas at their discretion.

This report describes correlations between Targeted PRF per person and census tract characteristics. Our analysis should not be read to imply that differences in census tract characteristics caused differences in PRF per person. Additionally, we did not assess compliance with Federal requirements.
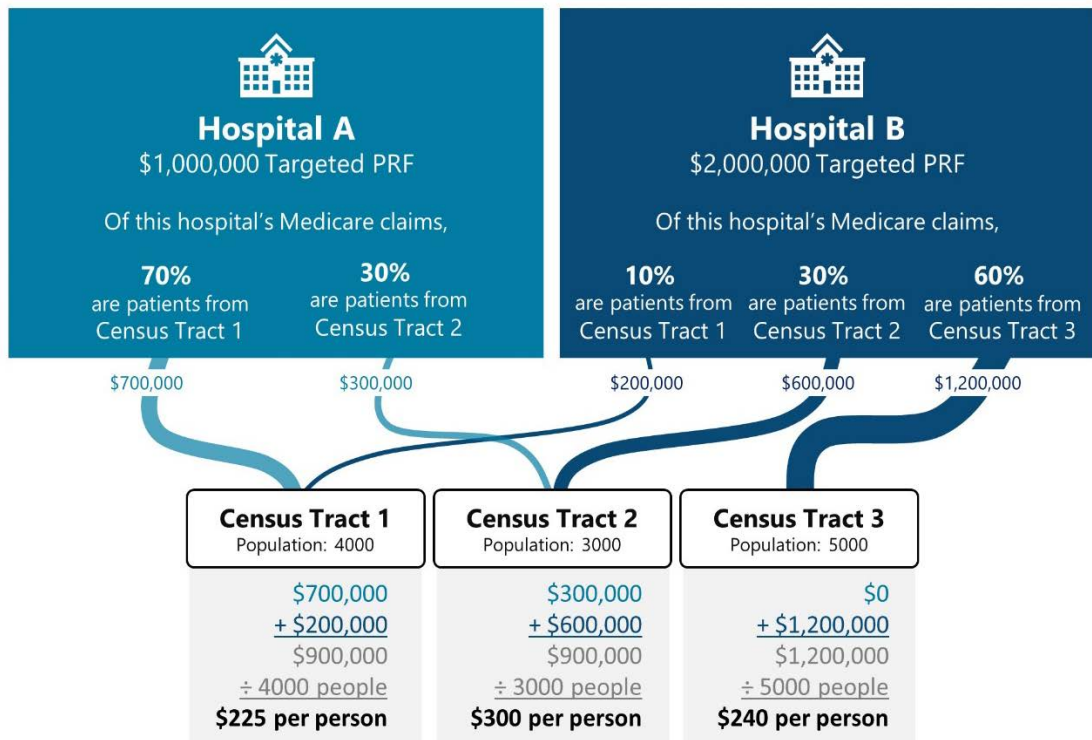
Methodology in Brief

To compare funding across populations, we took Targeted PRF allocations to hospitals and translated them into estimated "PRF per person" amounts for each U.S. census tract[a] based on data about the census tracts served by each hospital. We used Medicare hospital claims to identify the census tracts where each hospital's patients live.[b] We attributed each hospital's Targeted PRF allocations to census tracts proportionally to the number of the hospital's Medicare claims for patients living in each census tract. Finally, we divided the Targeted PRF amount we attributed to each census tract (i.e., from allocations for all hospitals that served the tract) by the population of the tract. See Exhibit 2 for a diagram illustrating the hospital service area methodology.

[a] After excluding tracts in the territories and with data anomalies, we examined PRF per person for 70,342 census tracts (96.2% of tracts in the 50 states + DC).

[b] We linked hospital allocations to census tract populations based on Medicare hospital utilization patterns because we do not have access to comprehensive nationwide utilization data from other payers. For Medicaid, although we have access to hospital claims, we were not able to match these to patients' residence census tracts. We conducted a sensitivity test to ensure that this approach did not meaningfully impact our results. See Methodology for more information.

Exhibit 2: Model to illustrate the hospital service area methodology we used to calculate each census tract's PRF per person

Hospital A
$1,000,000 Targeted PRF

Of this hospital's Medicare claims,

70% are patients from Census Tract 1
30% are patients from Census Tract 2

$700,000 $300,000

Hospital B
$2,000,000 Targeted PRF

Of this hospital's Medicare claims,

10% are patients from Census Tract 1
30% are patients from Census Tract 2
60% are patients from Census Tract 3

$200,000 $600,000 $1,200,000

Census Tract 1
Population: 4000

$700,000
+ $200,000
$900,000
÷ 4000 people
$225 per person

Census Tract 2
Population: 3000

$300,000
+ $600,000
$900,000
÷ 3000 people
$300 per person

Census Tract 3
Population: 5000

$0
+ $1,200,000
$1,200,000
÷ 5000 people
$240 per person

After calculating PRF per person for each census tract, we determined whether PRF per person correlated with these demographic and economic characteristics of each census tract: racial and ethnic composition and poverty rates. We performed this analysis for the four Targeted PRF allotments combined, as well as for each of the allotments individually.

To account for differences between rural and nonrural communities, we analyzed rural and nonrural census tracts separately based on HRSA's designations. We examined PRF per person for 14,814 rural census tracts and 55,528 nonrural census tracts.

Finally, we created graphs to illustrate the correlations that we found between PRF per person and certain demographic characteristics (e.g., race and ethnicity). We split census tracts into four groups based on the shares of specific races or ethnicities and then compared the PRF per person for each group.

See Methodology section for additional details.

Across the Targeted PRF allocations we analyzed, both rural and nonrural communities with more Hispanic/Latino residents had less PRF per person
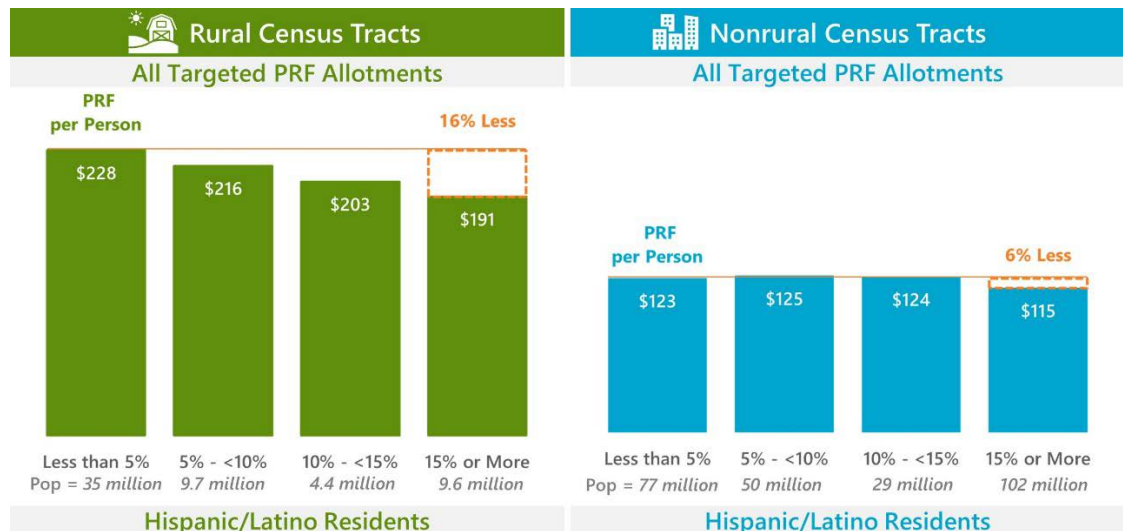
We analyzed the relationship between community characteristics and OIG's estimate of **PRF per person**, which is based on Targeted PRF allocations to hospitals in 2020 and data about the census tracts served by each hospital.

We analyzed Targeted PRF amounts across all four allotments to identify whether there were any overall funding differences when the allotments were combined and considered together. We identified some notable patterns in PRF per person related to race and ethnicity, which we describe below in detail. Refer to Appendix C for detailed results of all community characteristics that we analyzed.

Rural and Nonrural Communities with Greater Concentrations of Hispanic/Latino Residents

We found census tracts with greater concentrations of Hispanic/Latino residents were associated with less PRF per person than census tracts with smaller concentrations of Hispanic/Latino residents. We identified the same trend among both rural and nonrural census tracts, but these differences in PRF per person were larger among rural census tracts.

Exhibit 3: In both rural and nonrural census tracts, we found that communities with more Hispanic/Latino residents had less PRF per person.

	Rural Census Tracts					Nonrural Census Tracts			
	All Targeted PRF Allotments					All Targeted PRF Allotments			

Rural Census Tracts — PRF per Person: $228, $216, $203, $191 (16% Less)
Less than 5% Pop = 35 million; 5% - <10% 9.7 million; 10% - <15% 4.4 million; 15% or More 9.6 million
Hispanic/Latino Residents

Nonrural Census Tracts — PRF per Person: $123, $125, $124, $115 (6% Less)
Less than 5% Pop = 77 million; 5% - <10% 50 million; 10% - <15% 29 million; 15% or More 102 million
Hispanic/Latino Residents

Notes: The bar graphs illustrate the correlations described in the main text of the Results. "Pop" represents the total population that lives in each group of census tracts.

Source: OIG analysis of PRF allocations, HHS Protect Data, ACS Data, Medicare hospitals claims and enrollment data, USA Facts COVID-19 data, 2021

In both groups of census tracts, we identified a negative correlation between the proportion of Hispanic/Latino residents in a census tract and the PRF per person (rural correlation coefficient = -0.154, p < .0001; nonrural correlation coefficient = -0.088[c], p < .0001[d]), which means census tracts with greater concentrations of Hispanic/Latino residents were associated with less PRF per person than census tracts with smaller concentrations of Hispanic/Latino residents. These patterns are clear when we split census tracts into groups by their share of Hispanic/Latino residents to represent the correlation results visually, as shown in Exhibit 3. In rural census tracts, census tracts with greater than 15 percent Hispanic/Latino residents were allocated about 16 percent less PRF per person than census tracts with less than 5 percent Hispanic/Latino populations. We found a funding difference among nonrural census tracts but with the same notable pattern: nonrural census tracts with greater than 15 percent Hispanic/Latino residents were allocated about 6 percent less PRF per person than nonrural census tracts with less than 5 percent Hispanic/Latino residents.

See Appendix C for further statistical analysis.

Across the Targeted PRF allotments we analyzed, nonrural communities with more Non-Hispanic Black residents had more PRF per person

When we analyzed Targeted PRF amounts across all four allotments, we identified a meaningful association for nonrural census tracts, but we did not identify a meaningful association between PRF per person and the concentration of Non-Hispanic Black residents for rural census tracts.

Nonrural Communities with Greater Concentrations of Non-Hispanic Black Residents
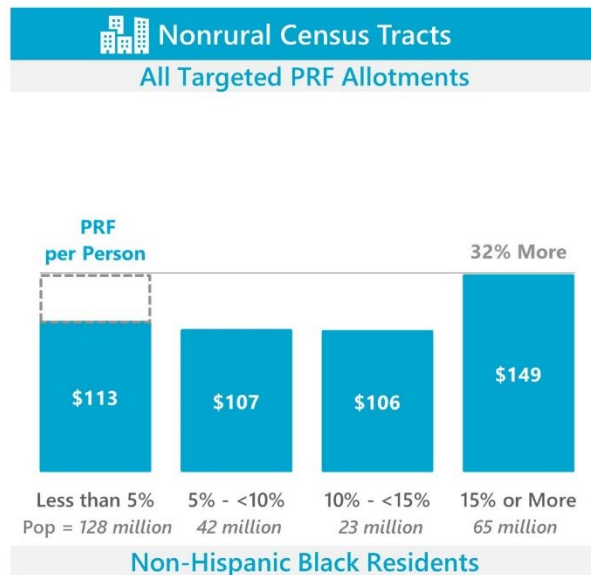
We found nonrural census tracts with greater concentrations of Non-Hispanic Black residents were associated with more PRF per person than census tracts with smaller concentrations of Non-Hispanic Black residents.

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[c] OIG identified correlations with coefficients less than -0.05 or greater than 0.05 as representing meaningful associations. For example, some researchers may consider only stronger correlations, such as those with coefficients less than -0.10 or greater than 0.10, as representing meaningful associations.

[d] Generally, a p-value less than 0.05 indicates a statistically significant correlation. Correlation coefficients represent the strength of the correlation: coefficients closer to -1.0 indicate a stronger inverse relationship, a coefficient of 0 indicates no relationship, and coefficients closer to 1.0 indicate a stronger direct relationship.

Exhibit 4: In nonrural census tracts, we found that communities with more Non-Hispanic Black residents had more PRF per person.

We identified a positive correlation between the proportion of Non-Hispanic Black residents in a nonrural census tract and PRF per person (correlation = 0.136, p < .0001). Nonrural census tracts with greater than 15 percent Non-Hispanic Black residents were allocated about 32 percent more PRF per person than census tracts with less than 5 percent Non-Hispanic Black populations.

Nonrural Census Tracts
All Targeted PRF Allotments

PRF per Person

32% More

$113 — Less than 5% — Pop = 128 million

$107 — 5% - <10% — 42 million

$106 — 10% - <15% — 23 million

$149 — 15% or More — 65 million

Non-Hispanic Black Residents

Notes: The bar graph illustrates the correlations described in the main text of the Results. "Pop" represents the total population that lives in each group of census tracts.

Source: OIG analysis of PRF allocations, HHS Protect Data, ACS Data, Medicare hospitals claims and enrollment data, USA Facts COVID-19 data, 2021

Rural Communities and Concentrations of Non-Hispanic Black Population

When we analyzed the Targeted PRF amounts across all four allotments for rural census tracts, we did not identify a meaningful association between the PRF per person and concentrations of Non-Hispanic Black residents. The correlation between the proportion of Non-Hispanic Black residents and PRF per person is close to zero, indicating no meaningful association (correlation = 0.021, p = 0.01).

Across the Targeted PRF allotments we analyzed, there was no meaningful association between the proportion of residents experiencing poverty and PRF per person

We did not find a meaningful association between PRF per person and the proportion of people experiencing poverty in rural or nonrural communities across the country. The correlation coefficients between poverty rates and PRF per person are very small for both rural and nonrural census tracts (nonrural census tracts: correlation = -0.030, p < .0001; rural census tracts: correlation = 0.040, p < .0001).

Findings Related to Additional Race Groups

For Non-Hispanic White residents, we found results that were opposite the results for Non-Hispanic Black residents. Specifically, census tracts with greater concentrations of Non-Hispanic White residents were associated with less PRF per person than census tracts with smaller concentrations of Non-Hispanic White residents in both nonrural and rural census tracts, though the correlation was stronger in nonrural census tracts. These results logically make sense as proportion of Non-Hispanic White and Non-Hispanic Black populations in census tracts likely have an inverse relationship.

We found correlations between PRF per person and concentrations of additional race groups. We did not focus our major takeaways on these groups because they comprise relatively small proportions of the population in our analysis. For example, we found a negative correlation between the proportion of Non-Hispanic residents that identify as "Other Race" in a census tract and the PRF per person, and this correlation was stronger in nonrural census tracts. Additionally, in our analysis of the Tribal Hospitals allotment specifically, we found a positive correlation between the proportion of Non-Hispanic American Indian/Alaska Native (AI/AN) residents in a census tract and the PRF per person, indicating that greater concentrations of Non-Hispanic AI/AN residents were associated with higher PRF per person from that allotment.

See Appendix C for additional details.

In the PRF allotment targeted to rural hospitals, communities with more Hispanic/Latino and Non-Hispanic Black Residents had less PRF per person

In addition to analyzing Targeted PRF amounts across all four allotments, we analyzed each allotment individually. Targeted PRF was allocated with different funding formulas in the different allotments, so understanding the results of specific allotments can help inform future funding decisions.

We found the most notable trends in the Rural Hospitals allotment. We found two similar trends in this allotment: Communities with greater concentrations of Hispanic/Latino residents were associated with less PRF per person than communities with smaller concentrations of Hispanic/Latino residents, and communities with greater concentrations of Non-Hispanic Black residents were associated with less PRF per person than communities with smaller concentrations of Non-Hispanic Black residents.

In the sections below, we only present the results related to rural census tracts, and not nonrural census tracts, because there was only a small percentage of the Rural Hospitals allotment that was allocated to rural hospitals that served nonrural communities. However, we did see similar trends in nonrural census tracts as well. See Appendix C for detailed analysis.

The Rural Hospitals Allotment and Hispanic/Latino Residents

When looking within each individual Targeted PRF allotment, the overall trend of less PRF per person to census tracts with greater concentrations of Hispanic/Latino residents (as described in the first result) was also evident in the Rural Hospitals allotment.
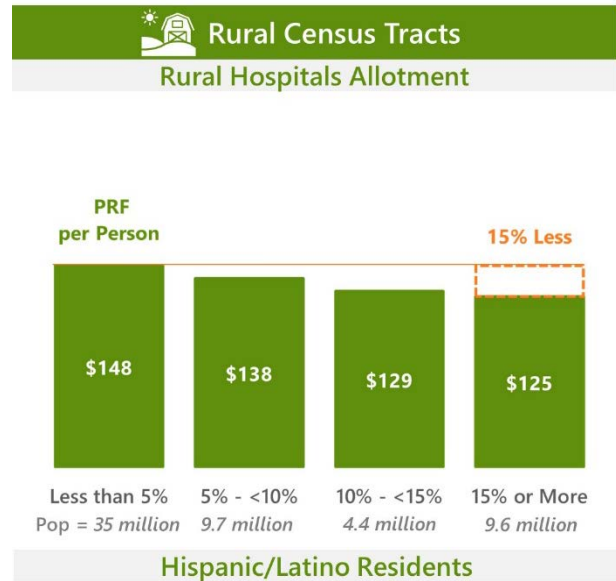
Exhibit 5: Among rural census tracts, we found that communities with more Hispanic/Latino residents had less PRF per person in the Rural Hospitals allotment.

The overall pattern we identified in the analysis across all four Targeted PRF allotments (i.e., less PRF per person allocated to hospitals that served communities with greater concentrations of Hispanic/Latino residents) appears to be driven primarily by the differences within the Rural Hospitals Allotment, specifically. In the Rural Hospitals allotment, we identified a negative correlation between the concentration of Hispanic/Latino

Notes: The bar graph illustrates the correlations described in the main text of the Results. "Pop" represents the total population that lives in each group of census tracts.

Source: OIG analysis of PRF allocations, HHS Protect Data, ACS Data, Medicare hospitals claims and enrollment data, USA Facts COVID-19 data, 2021

residents in a rural census tract and the PRF per person (rural correlation = -0.149, p < .0001). Among the three other individual Targeted PRF allotments (High Impact Hospitals, Safety Net Hospitals, Tribal Hospitals), the correlations between the concentration of Hispanic/Latino residents and PRF per person were smaller or close to zero. See Appendix C for specific correlation coefficients for each allotment.

The Rural Hospitals Allotment and Non-Hispanic Black Residents

In the Rural Hospitals allotment, rural communities with greater concentrations of Non-Hispanic Black residents were associated with less PRF per person than rural communities with smaller concentrations of Non-Hispanic Black residents. For the Rural Hospitals allotments, we found a negative correlation between PRF per person
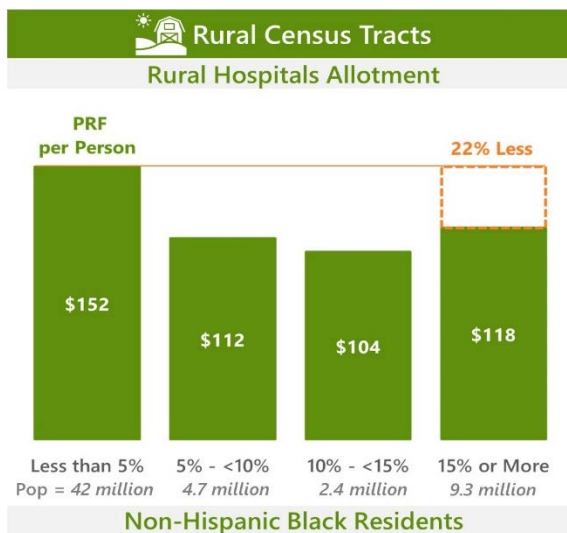
and concentration of Non-Hispanic Black population in rural census tracts (correlation = -0.117, p < .0001).[e]

Exhibit 6: Among rural census tracts, we found that communities with more Non-Hispanic Black residents had less PRF per person in the Rural Hospitals allotment, but this trend was offset by the opposite pattern in two other allotments.

Rural Census Tracts
Rural Hospitals Allotment

PRF per Person

22% Less

$152
$112
$104
$118

Less than 5%   5% - <10%   10% - <15%   15% or More
Pop = 42 million   4.7 million   2.4 million   9.3 million

Non-Hispanic Black Residents

Rural Census Tracts
Safety Net Hospitals Allotment

PRF per Person

85% More

$41
$48
$58
$75

Less than 5%   5% - <10%   10% - <15%   15% or More
Pop = 42 million   4.7 million   2.4 million   9.3 million

Non-Hispanic Black Residents

Rural Census Tracts
High Impact Hospitals Allotment

PRF per Person

148% More

$19
$29
$38
$48

Less than 5%   5% - <10%   10% - <15%   15% or More
Pop = 42 million   4.7 million   2.4 million   9.3 million

Non-Hispanic Black Residents

Notes: The bar graphs illustrate the correlations described in the main text of the Results. "Pop" represents the total population that lives in each group of census tracts.

Source: OIG analysis of PRF allocations, HHS Protect Data, ACS Data, Medicare hospitals claims and enrollment data, USA Facts COVID-19 data, 2021

We found that this trend related to Non-Hispanic Black residents was offset by the opposite pattern in other individual allotments (see Exhibit 6), which may explain why, as noted previously, we did not find a meaningful association between PRF per person and concentration of Non-Hispanic Black residents in rural communities when looking across all four Targeted PRF allotments. When we analyzed the High Impact Hospitals

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[e] The correlation in the Tribal Hospitals allotment was also negative (correlation = -0.067, p < .0001). We did not include this allotment in Exhibit 6 because the dollar amounts per person across all rural census tracts are too small to be visible on the same scale. The total money targeted to Tribal Hospitals was much smaller than the other allotments.

allotment and the Safety Net Hospitals allotment individually, we found a positive correlation between PRF per person and concentration of Non-Hispanic Black population in rural census tracts (for rural census tracts, High Impact Hospitals allotment correlation = 0.286, p < .0001; Safety Net Hospitals allotment correlation = 0.234, p < .0001).

CONCLUSION

While the PRF was not specifically intended to address health disparities, health care funding, in general, is an important tool that can help HHS contribute to goals of reducing health disparities by supporting communities and populations with greater risk of poor health outcomes, both in the context of COVID-19 and more broadly. HHS has prioritized health equity and reducing health disparities, especially during the COVID-19 pandemic.[16, 17] Many HHS programs, including those that target funding and resources, are meant to reach underserved populations and address disparities. Further, HHS's emergency preparedness goals include responding to public health emergencies in ways that meet the needs of at-risk populations, which, in the case of COVID-19, may include people of color and people from communities experiencing higher rates of poverty.[18, 19]

Understanding the relationship between the PRF per person and community characteristics such as race, ethnicity, and income can help to inform HHS on decisions about allotting future emergency funding. For example, in the PRF allotment targeted to rural hospitals, communities with more Hispanic/Latino and Non-Hispanic Black Residents had less PRF per person. However, Hispanic/Latino Americans have been more likely to be hospitalized or die from COVID-19 than non-Hispanic White Americans. Thus, it may be especially important to consider HHS's goal to reduce health disparities when allocating emergency funding to rural communities in the future.

We hope that this analysis is useful to HHS in planning for future emergency funding scenarios and identifying opportunities to support these goals, to the extent permitted by law. Given that emergency funding, like PRF, is designed to respond to an unexpected and urgent need for health care funding and the Department will have to make decisions quickly about how to allocate money, effective planning could help ensure HHS emergency funding is allocated in ways that meet the needs of at-risk populations and further reduce health disparities. Because statutory parameters can impact HHS's ability to direct funding, it may also be important for HHS to engage with Congress regarding the authority needed to most effectively consider health equity, alongside other priorities like efficiency and expeditiousness, in emergency funding scenarios.

METHODOLOGY

Data Sources

PRF allocations

HRSA provided OIG with data on all Targeted PRF allocations by provider CMS Certification Number (CCN) that were allocated during calendar year 2020.

Hospital data

We used data related to individual hospitals from HHS Protect. HHS Protect is a COVID-19 data hub managed by HHS.[20] We used this data source to identify hospitals and their locations.

Data from HHS Protect rely on reports submitted by hospitals. HHS Protect was rolled out for use on April 10, 2020.[21]

Medicare hospital claims and enrollment data

We used Medicare Part A and B claims data and Part C encounter data from calendar years 2020 and 2021 to identify the service area of each hospital. We used hospital inpatient and outpatient claims of discharges to identify the Medicare patients who were served by each hospital, and then used Medicare enrollment files to identify the census tracts where those patients live.

Census tract characteristics

We used Census American Community Survey (ACS) 2019 5-year estimates for census tract social factors: percent of each self-identified race and ethnicity and percent of residents with income less than the poverty level (poverty rate) Census.[22]

The ACS data are self-reported, based on a sample, and are subject to sampling variability. A relatively small sample of each census tract's population responded to the ACS survey, and respondents were instructed to choose which category best fits with how they self-identify.

In the ACS survey, respondents are asked to self-identify their race. In 2019, respondents were presented the following options and told to "check all that apply": White, Black or African Am., American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Asian, Other Pacific Islander, Some other race.[23] The ACS 5-year estimates data combine multiple Asian races into one category and multiple Native

Hawaiian/Pacific Islander races into one category.[f] For this study, we further combined Asian and Native Hawaiian/Pacific Islander to one category. We considered respondents as "Other Race" by combining the count of respondents who selected "Some other race" with the count of respondents who checked more than one race.

In the ACS survey, respondents were asked about their ethnicity separate from race. Respondents were presented five options: 1) not Hispanic, Latino, or Spanish origin, 2) Yes, Mexican, Mexican Am., Chicano, 3) Yes, Puerto Rican, 4) Yes, Cuban, 5) Yes, another Hispanic Latino, Spanish origin (with a text box below to Print origin). Option 1 categorizes individuals into not Hispanic, Latino, or Spanish origin while options 2-5 categorize individuals into Hispanic, Latino, or Spanish origin. Because ethnicity is separate from race, respondents of Hispanic, Latino, or Spanish origin could select any of the races presented.

To simplify our analysis, we combined ACS respondent data about races and ethnicities to create the following groups: Hispanic (of any race); non-Hispanic White; non-Hispanic Black; non-Hispanic Asian or Native Hawaiian/Pacific Islander (Asian); non-Hispanic American Indian/Alaska Native (AIAN); non-Hispanic Other Race (other than White, Black, Asian, AIAN); or more than one Race (other Race).

To define rural and nonrural census tracts, we used HRSA's list of rural tracts. HRSA identifies rural vs. nonrural census tracts using Rural-Urban Commuting Area (RUCA) codes created by the U.S. Department of Agriculture's Economic Research Service.[24]

To determine the distance from each census tract to the nearest hospital, which we used as a control in our regression models, we used Medicare enrollment data for enrollee addresses and the HHS Protect data above for hospital locations. For each Medicare enrollee, we calculated the straight-line distance to each hospital and determined the minimum distance. We then assigned the census-tract minimum distance as the median of all the minimum distances for beneficiaries living in that census tract.

COVID-19 deaths

We used county COVID-19 death count estimates from calendar year 2020 from USAFacts.org. USAFacts is a nonpartisan non-profit organization that collects and shares public data reported by state and local governments.[25] The USAFacts data provide the cumulative cases and deaths by county from January 22, 2020, through December 31, 2020. Because census-tract level data on COVID-19 deaths were not available, we assigned data from each county to the individual census tracts located in that county. Data from USAFacts rely on measurement and reporting from state- and local-level public health agencies.[26] As such, data collection and reporting methodologies may vary.

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[f] We used ACS Table B03002, "Hispanic or Latino Origin By Race."

Data Analysis

We analyzed the relationship between PRF per person and the racial, ethnic, and economic composition of each census tract. Specifically, we analyzed these variables: concentration of Hispanic/Latino residents, concentration of each race group (e.g., Non-Hispanic Black), and concentration of residents experiencing poverty. For our regression modeling, we also analyzed COVID-19 deaths per capita and distance to the nearest hospital.
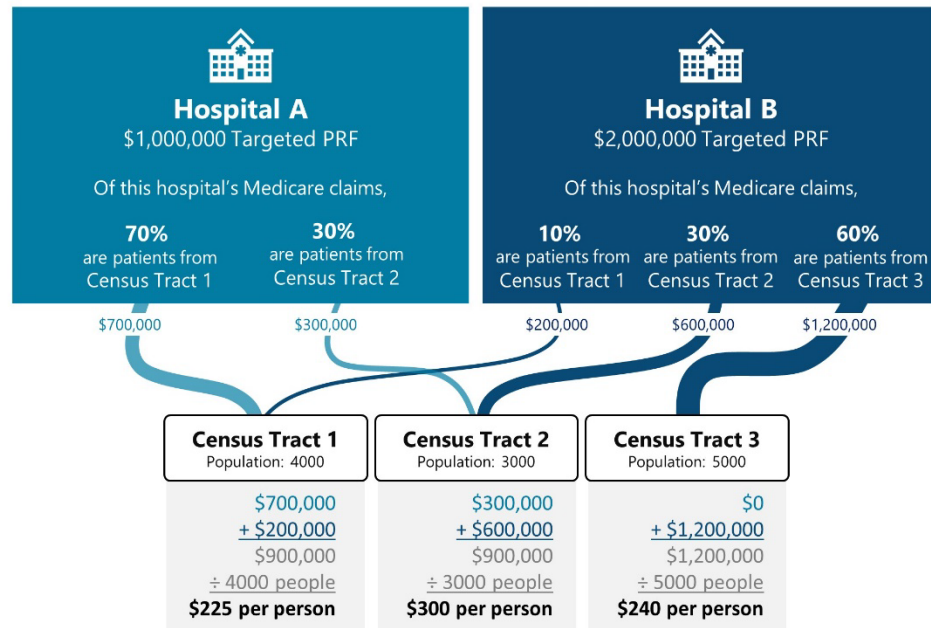
Calculating PRF allocations per person

We used Targeted PRF allocation data that we received directly from HRSA to calculate the total amount of Targeted PRF for each hospital. We summed all Targeted PRF allotments that were allocated in 2020 except for the allotment targeted to children's hospitals. We excluded this allotment because we used Medicare data to assign PRF dollars to census tracts, as described below.

We analyzed allocation amounts to most hospitals that were allocated Targeted PRF, including acute care hospitals, tribal hospitals, and critical access hospitals. We excluded 20 hospitals that were allocated Targeted PRF but were not required to submit COVID-19 data in HHS Protect, for example, rehabilitation and psychiatric hospitals.[27]

After calculating the Targeted PRF amounts across all four allotments for each hospital, we calculated "PRF per person" for each census tract using data about hospital service areas. We used Medicare claims and enrollment data to identify the census tracts of the Medicare patients who had Medicare inpatient or outpatient claims from each hospital during calendar year 2020 or 2021. For each hospital, we then assigned PRF dollars to each census tract in its service area, proportional to the number of claims for patients who live in each census tract. For each census tract, we summed all the money assigned from all hospitals that served that census tract. Lastly, we divided Targeted PRF amounts across all four allotments for each census tract by the population of that census tract. See Exhibit 7 (same as Exhibit 2 from Background) for a diagram of the hospital service area methodology using a very simple example to illustrate. We repeated this same methodology for each of the individual allotments of funding (High Impact Hospitals, Safety Net Hospitals, Rural Hospitals, and Tribal Hospitals), using the same hospital service areas.

Exhibit 7: Model to illustrate the hospital service area methodology we used to calculate each census tract's PRF per person

Hospital A
$1,000,000 Targeted PRF

Of this hospital's Medicare claims,

70%
are patients from
Census Tract 1

30%
are patients from
Census Tract 2

$700,000 $300,000

Hospital B
$2,000,000 Targeted PRF

Of this hospital's Medicare claims,

10%
are patients from
Census Tract 1

30%
are patients from
Census Tract 2

60%
are patients from
Census Tract 3

$200,000 $600,000 $1,200,000

Census Tract 1
Population: 4000

$700,000
+ $200,000
$900,000
÷ 4000 people
$225 per person

Census Tract 2
Population: 3000

$300,000
+ $600,000
$900,000
÷ 3000 people
$300 per person

Census Tract 3
Population: 5000

$0
+ $1,200,000
$1,200,000
÷ 5000 people
$240 per person

Excluded census tracts

We calculated PRF per person for all census tracts in which Medicare beneficiaries served by hospitals live. However, we then excluded a small number of census tracts from the analyses. We limited our analysis to tracts in 50 States and DC, excluding tracts in U.S. territories. We also excluded census tracts with missing population characteristics, especially low population estimates, and data anomalies. Specifically, we excluded tracts with fewer than 100 residents or fewer than 10 Medicare enrolled residents per ACS estimates, tracts with greater than 50% of the residents living in institutional settings per ACS, and tracts that were outliers when we compared Medicare enrollment counts and the ACS estimates of the number of people with Medicare coverage. We excluded 5% of tracts for final analysis of 70,342 tracts.

Statistical analysis

For all allotments combined, and separately for the four allotments, we performed the following statistical analysis to understand the relationships between PRF per person and census tract community characteristics.

Correlation analysis. To examine the relationships between PRF per person and census tract population characteristics, we calculated Pearson correlation coefficients. We did this separately for rural and nonrural census tracts. We used log transformed variables in the correlation analysis to reduce the influence of outliers.

We reported a correlation between variables as those with a Pearson correlation coefficient greater than 0.05 or less than -0.05 and a p-value less than .05. We reported "no meaningful association" between variables when Pearson correlation coefficients were between -0.05 and 0.05, even if those correlations were statistically significant.

Regression analysis. To understand relationships between multiple variables, we ran linear regressions controlling for COVID-19 deaths in January 22-June 10, 2020, and June 11-December 31, 2020, distance to the nearest hospital, and the census tract social factors (proportion of each race and ethnicity group and proportion of population experiencing poverty) to understand which factors were associated with PRF per person while controlling for the other factors in the model. Specifically, we used the following independent variables: proportion of Hispanic/Latino, Non-Hispanic Black, Non-Hispanic Asian/PI, and Non-Hispanic AI/AN residents, residents who identify as Non-Hispanic Other Race, proportion of people experiencing poverty, 2020 COVID-19 deaths per capita, and distance to the nearest hospital. We used the same set of independent variables across all regression models so that it would be more possible to compare the estimated parameters among models. We log transformed both the dependent and independent variables in all regression models to reduce the influence of outliers.

Graphics. To highlight the notable correlations that we discuss in the main report, we summarized the correlation analysis by creating bar graphs. We subdivided the census tracts into groups based on the population characteristics (percent Latino/Hispanic and percent non-Hispanic Black). For each of these groups, we calculated the total PRF divided by the total population and then compared the PRF per person across the groups. We created the groups by using interval cutoffs. For example, we compared PRF per person for tracts with 0-<5% Hispanic/Latino, 5%-<10% Hispanic/Latino, 10%-<15% Hispanic/Latino, and 15% or higher Hispanic/Latino. The group labeled 0-<5% Hispanic/Latino was created by including census tracts with equal to or greater than 0% of Hispanic/Latino residents and less than 5% of Hispanic/Latino residents. 5%-<10% Hispanic/Latino was created by including census tracts with equal or to greater than 5% Hispanic/Latino residents and less than 10% Hispanic/Latino residents. We continued to use this method for the last two interval cutoff groups.

Scope

For this evaluation, we analyzed the Provider Relief Funds allocated in Targeted Distributions to hospitals during calendar year 2020. We did not examine General Distributions because allocations could not be always linked to individual hospitals. We excluded the Targeted Distribution targeted to children's hospitals because the hospital service area distribution limited to people covered by Medicare may not be representative of children's hospital service areas.

Our analysis was limited to Targeted PRF allocated to hospitals in calendar year 2020. This means our analysis does not provide information regarding any PRF allocated to non-hospital providers, or about any PRF that were distributed after the end of 2020.

Our analysis should not be read to imply that differences in census tract characteristics caused differences in PRF per person. Additionally, we did not assess compliance with Federal requirements.

Limitations

We could not assess the patterns in allocations from the General Distribution with respect to county population characteristics because data for individual hospital allocations do not always exist. General Distribution payments were not always allocated at the facility level because, in the case of hospitals in hospitals systems, they were instead allocated directly to parent companies. Further, we were only able to analyze Targeted Distribution amounts HRSA allocated to hospitals initially, not where the funds were ultimately distributed, because parent organizations, which can include multiple hospitals located in different areas, were given flexibility to re-allocate and distribute funding to facilities under their umbrella at their discretion. Therefore, we could not assume parent organizations disbursed the money in any certain way. It is unknown the extent to which General Distribution allocations may have changed the outcomes we identified, particularly for hospitals that did not receive any funding through the Targeted Distribution but did receive funding through later phases of the General Distribution.

However, researchers have raised concerns about the equity of the earlier phases of General Distributions. A study published in the Journal of the American Medical Association suggested that the formulas used to allocate money may have favored hospitals that primarily serve White and higher-income populations.[28] Specifically, initial distributions were allocated proportionally to hospitals' past revenues. Hospitals that primarily serve White populations tend to have higher revenues, on average, than hospitals that primarily serve people of color and whose patients are more likely to be covered by Medicaid or underinsured.[29, 30] However, because General Distribution payments were often calculated and reported at the parent organization level, there is not comprehensive data on how much individual facilities and providers qualified for.

We used Medicare data in our calculation of PRF per person, rather than information on all hospital patients, because we do not have access to comprehensive nationwide utilization data from other payers that could be matched with residence census tracts. Medicare claims data might not always be representative of the full population that receives care at any given hospital. Although we do have hospital utilization from Medicaid, we could not effectively match Medicaid enrollees to their residence census tracts so we could not use this data.

In this study, we used demographic data about characteristics of people living in census tracts. Geography is a proxy that can help us understand the potential impact on certain individuals, but it is not a substitute for lived experiences of individuals.

Additionally, we used county-level data for 2020 COVID-19 deaths because 2020 COVID-19 deaths data were not available at the census tract level.

Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

APPENDIX A

Detailed information about Provider Relief Fund and related relief funding

Provider Relief Fund

The PRF refers to relief funds appropriated by Congress to the Public Health and Social Services Emergency Fund based on the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020, the Paycheck Protection Program and Health Care Enhancement Act (PPHCEA) in April 2020, and the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act in December 2020. The CARES Act provided $100 billion, the PPHCEA added $75 billion, and the CRRSA Act added an extra $3 billion.[31, 32, 33]

Through these Acts, Congress delegated PRF payment calculation and disbursement to HHS and required HHS to make PRF payments using the most efficient payment systems practicable.[34] Congress appropriated these funds "to prevent, prepare for, and respond to coronavirus, domestically or internationally, for necessary expenses to reimburse health care providers for health care related expenses or lost revenues that are attributable to coronavirus."[35] Additionally, some of the PRF appropriations were used for claims reimbursement programs and COVID-19 Coverage Assistance Fund.[36, 37]

HHS worked with The Office of the Assistant Secretary for Planning and Evaluation and Health Resources and Services Administration (HRSA), along with multiple stakeholders including third-party contractors, to administer the PRF. In April 2020, HHS designated HRSA as the primary operating division in charge of coordinating and overseeing the creation of payment files, calculation of payment allocations for eligible health care providers and facilities, and disbursement of funds for allotments of the General Distributions and Targeted Distributions.[g]

General Distributions

General Distributions were intended to provide financial relief to providers, including hospitals and other facilities, during the COVID-19 pandemic based on characteristics such as participation in Medicare or Medicaid.[38] General Distributions consisted of four phases of allotments.[39, 40, h] Phase 1 consisted of a total of $41.9 billion to

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[g] According to HRSA, third-party contractors developed the methodology and determined the calculated payments files for hospitals and providers. Then, HRSA and the third-party contractors identified ineligible hospitals and providers. Lastly, the United Health Group allocated final calculated distributions to the eligible providers.

[h] Dollar amounts for General Distribution Phases 1-3 allotments are current as of January 2023.

providers who billed Medicare fee-for-service in calendar year 2019.[41] Phase 2 consisted of $4.5 billion to providers that participated in state Medicaid/Children's Health Insurance Plan or Medicaid managed care plans, dental providers, assisted living facilities, and certain Medicare providers.[42] Phase 3 consisted of $19.5 billion to providers previously eligible for earlier phases, while also expanding to additional provider types such as behavioral health providers.[43] Phase 3 payment calculations included a deduction of all prior PRF payments for providers that received any PRF funds.[44] Phase 4 has consisted of $15.4 billion to providers previously eligible for earlier phases. Phase 4 payments consisted of 1) base payments based on providers' reported changes in revenues and expenses from July 1, 2020, to March 31, 2021; and 2) bonus payments based on providers' level of participation in Medicaid, the Children's Health Insurance Program, and Medicare.[45, i]

According to HRSA, General Distribution payments were sometimes allocated and/or disbursed to parent organizations, rather than individual facilities or providers. At the beginning of the pandemic, health care facilities experienced immediate financial hardship.[46] HHS made payments quickly to provide financial support to ensure providers such as hospitals could sustain services.[47] The CARES Act required HHS to use the most efficient payment systems practicable to provide PRF payments.[48] According to HHS guidance, any parent organization with more than one facility was allowed to allocate and distribute funding to the facilities under its umbrella at its discretion.[49]

Targeted Distributions

Targeted Distributions were intended to provide financial relief to address added COVID-19 challenges, specific types of hospitals, and other facilities based on certain metrics and characteristics (e.g., high numbers of COVID-19 admissions, rural or tribal designations). Targeted Distributions consisted of several allotments that each had different formulas and methodologies to determine PRF payment amounts.[50]

Targeted Distributions consisted of several allotments, some of which included payments to hospitals.[j, 51] The High Impact allotment consisted of $20.7 billion to hospitals that had a high number of confirmed COVID-19 positive inpatient admissions.[52] The Rural allotment consisted of approximately $11 billion to rural hospitals including rural acute care general hospitals and Critical Access Hospitals (CAHs), primarily based on facility operating expenses.[53] The IHS and Tribal Hospitals allotment consisted of $494 million to IHS and tribal facilities based on facility or program operating expenses and estimated service population.[54] The Safety Net Hospitals allotment consisted of $13.9 billion to Safety Net Hospitals, acute care hospitals, and children's hospitals based on profit margin, proportion of Medicare

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[i] Dollar amount for General Distribution Phase 4 allotment is current as of January 2023.

[j] Not all $178 billion of the PRF has been allocated to hospitals and providers.

patients, and proportion of Medicaid patients for the children's hospitals.[55] Exhibit 8 describes the metrics used for each PRF Targeted Distribution allotment.

Exhibit 8: 2020 PRF Targeted Distribution allotments that included hospitals

Targeted PRF Allotments	Total Amounts	Metric Used to Target Allotments
COVID-19 High Impact Area (High Impact Hospitals)	$20.7 billion	Number of COVID-19 positive inpatient admissions
Safety Net Hospitals: Acute Care Facilities	$12.8 billion	Proportion of the individual facility score (number of facility beds multiplied by Medicare Disproportionate Patient Percentage for an acute care facility) to the cumulative facility scores
Rural Hospitals and Clinics	$10.7 billion	Base payments plus operating expenses (including lost revenue) of rural acute care hospitals and CAHs, operating expenses of Sole Community Hospitals, Medicare Dependent Hospitals, & Rural Referral Center Hospitals in Small Metro Areas
Safety Net Hospitals: Children's Hospitals	$1.1 billion	Proportion of the individual facility score (facility beds multiplied by Medicaid only ratio) to the cumulative facility scores
Indian Health Services and Tribal Hospitals	$0.49 billion	Base payments plus operating expenses of IHS and Tribal Hospitals and estimated service population

Notes: These amounts represent the total number of dollars distributed in the listed Targeted PRF allotments. They do not represent the subset of Targeted PRF allotments that were in OIG's analysis.

Source: HRSA, Provider Relief Fund Past Payments Targeted Distributions website.[56] Dollar amounts are current as of November 2022.

According to HRSA, Targeted Distribution allotments were allocated for each individual facility and were either distributed to individual facilities or rolled up and distributed to parent organizations.

Related COVID-19 Relief Funding

In addition to PRF, HHS, through HRSA, began distributing American Rescue Plan payments to rural health care providers in November 2021. These funds were intended to address the disproportionate impact of COVID-19 on rural health care providers and rural communities.[57] These payments were based on characteristics such as Medicare reimbursements for services to rural beneficiaries.[58]

Related OIG Work

The Office of Inspector General (OIG) is conducting strategic oversight of HHS's pandemic response and recovery efforts, including additional reviews related to the PRF. For example, OIG found that HHS and HRSA developed controls related to selected PRF program requirements to ensure that providers received the correct PRF payments from the Phase 1 General Distribution in a fast, fair, and transparent manner but that some of those controls could be improved.[59]

APPENDIX B

Rural and Nonrural Census Tracts

Hospitals serving rural census tracts were allocated more PRF per person than hospitals serving nonrural census tracts. The PRF per person in rural census tracts was $218 per person, which is 81% higher than the PRF per person in nonrural census tracts.

The COVID-19 pandemic has impacted urban and rural populations differently. The disease initially spread most rapidly in large metropolitan areas (nonrural), which aligns with the fact that most of the U.S. population lives in dense, urban regions. By late October 2020, the number of cumulative COVID-19 cases in rural areas exceeded those in urban areas.[60]

In addition, the racial and ethnic makeup of rural and nonrural census tracts differs considerably. Exhibit 9 summarizes many of the differences in specific racial and ethnic group populations between rural and nonrural census tracts.

Because of these differences, we analyzed rural and nonrural census tracts separately based on HRSA's designations.

Exhibit 9: Statistics on nonrural and rural census tracts

	Mean in Nonrural Census Tracts (n = 55528 tracts)	Mean in Rural Census Tracts (n = 14814 tracts)
2020 COVID-19 Deaths/100,000 residents	106.87	108.92
% Poverty	13.96%	15.99%
% Non-Hispanic Black	14.86%	7.80%
% Non-Hispanic Asian/PI	6.21%	0.95%
% Non-Hispanic AI/AN	0.39%	1.71%
% Non-Hispanic Other Race	2.81%	2.08%
% Non-Hispanic White	57.05%	78.98%
% Hispanic/Latino	18.68%	8.48%

Note: 2020 COVID-19 deaths represent the total deaths during the range of dates included in our study, January 22, 2020, to December 31, 2020.

Source: OIG Analysis of USAFacts COVID-19 data, ACS data, HRSA Rural Census Tract Designations.

APPENDIX C

Detailed Statistical Analysis for All PRF and Individual Waves

We found that the median PRF per person across the four allocations was $106, and PRF per person ranged between $49 per person and $203 per person.

Correlation Analysis Results

In the main report, we reported on the correlation coefficients between PRF per person and proportion of Hispanic/Latino ethnicity, Non-Hispanic Black, and proportion of people experiencing poverty for all Targeted PRF allotments. We also performed the same analysis with regards to the following census tract characteristics: proportion of Non-Hispanic Asian/PI residents, Non-Hispanic AI/AN residents, residents who identify as Non-Hispanic Other Race, 2020 COVID-19 deaths per capita, and distance to the nearest hospital. Exhibit 10 shows the correlation coefficients for each of these characteristics in all Targeted PRF allotments. We calculated two sets of correlation coefficients for all Targeted PRF allotments: 1) using only nonrural census tracts and 2) using only rural census tracts.

The purpose of this report was to analyze correlations between PRF per person and community demographic characteristics, including race, ethnicity, and economic status. Because of this, we did not focus on the correlations between PRF per person and 2020 COVID-19 deaths or PRF per person and distance to the nearest hospital, even though these correlations were often stronger than that of the variables we discussed in our main findings.

Please note that most of the census tracts have small percentages of residents that identify as Non-Hispanic "Other Race" (a race not listed or more than one race), Non-Hispanic Asian/PI, and Non-Hispanic AI/AN (please see Appendix B for further details).

Exhibit 10: Results for correlation analysis for all Targeted PRF allotments in nonrural tracts and rural tracts

Note: Census tract characteristics were log transformed in all regression models.

	All Targeted PRF Allotments									
	Pearson Correlation Coefficients (p-values)									
	Nonrural Tracts (n = 55528 tracts)									
Census Tract Charact-eristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	0.637	0.015	-0.097	-0.034	0.136	-0.142	-0.088	-0.192	-0.030	-0.125
p-value	<.0001	0.0006	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	Rural Tracts (n = 14814 tracts)									
Census Tract Charact-eristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	0.021	0.082	0.072	-0.101	0.021	-0.072	-0.154	-0.060	0.040	-0.251
p-value	0.0113	<.0001	<.0001	<.0001	0.0096	<.0001	<.0001	<.0001	<.0001	<.0001

We also calculated correlation coefficients between PRF per person and community characteristics for each individual Targeted PRF allotment. Exhibits 11-14 show those correlation coefficients for High Impact Hospitals, Safety Net Hospitals, Rural Hospitals, and Tribal Hospitals allotments. We calculated correlation coefficients separately for nonrural and rural census tracts.

Exhibit 11: Results for correlation analysis for High Impact Hospitals allotments in nonrural tracts and rural tracts

Note: Census tract characteristics were log transformed in all regression models.

High Impact Hospitals Allotments									
Pearson Correlation Coefficients (p-values)									
Nonrural Tracts (n = 55528 tracts)									
Census Tract Characteristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	0.795	-0.024	-0.159	0.060	0.156	-0.142	-0.009	-0.186	-0.104	-0.139
p-values	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0343	<.0001	<.0001	<.0001
Rural Tracts (n = 14814 tracts)									
Census Tract Characteristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	0.514	0.096	-0.102	-0.029	0.286	-0.101	-0.029	-0.164	-0.046	0.007
p-values	<.0001	<.0001	<.0001	0.0004	<.0001	<.0001	0.0004	<.0001	<.0001	0.3739

Exhibit 12: Results for correlation analysis for Safety Net Hospitals allotments in nonrural tracts and rural tracts

Note: Census tract characteristics were log transformed in all regression models.

Safety Net Hospitals Allotments									
Pearson Correlation Coefficients (p-values)									
Nonrural Tracts (n = 55528 tracts)									
Census Tract Characteristics	2020 COVID Deaths (Jan – Jun)	2020 COVID Deaths (Jun – Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	0.264	0.044	-0.029	-0.018	0.153	-0.068	0.017	-0.224	0.093	-0.133
p-values	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Rural Tracts (n = 14814 tracts)									
Census Tract Characteristics	2020 COVID Deaths (Jan – Jun)	2020 COVID Deaths (Jun - Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital)
PRF per Person	0.118	0.057	-0.032	-0.078	0.234	-0.020	-0.066	-0.124	0.191	0.003
p-values	<.0001	<.0001	<.0001	<.0001	<.0001	0.015	<.0001	<.0001	<.0001	0.7052

Exhibit 13: Results for correlation analysis for Rural Hospitals allotments in nonrural tracts and rural tracts

Note: Census tract characteristics were log transformed in all regression models.

Rural Hospitals Allotments										
Pearson Correlation Coefficients (p-values)										
Nonrural Tracts (n = 55528 tracts)										
Census tract Characteristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun – Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	-0.348	0.137	0.140	-0.314	-0.198	-0.056	-0.319	0.271	-0.032	0.252
p-values	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Rural Tracts (n = 14814 tracts)										
Census Tract Characteristics	2020 COVID Deaths (Jan – Jun)	2020 COVID Deaths (Jun – Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	-0.167	0.074	0.015	-0.097	-0.117	-0.065	-0.149	0.111	0.001	-0.310
p-values	<.0001	<.0001	0.0763	<.0001	<.0001	<.0001	<.0001	<.0001	0.8842	<.0001

Exhibit 14: Results for correlation analysis for Tribal Hospitals allotments in nonrural tracts and rural tracts

Note: Census tract characteristics were log transformed in all regression models.

Tribal Hospitals Allotments										
Pearson Correlation Coefficients (p-values)										
Nonrural Tracts (n = 55528 tracts)										
Census Tract Characteristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	-0.092	0.062	0.448	-0.035	-0.055	0.079	0.057	0.037	0.037	0.001
p-values	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.8141
Rural Tracts (n = 14814 tracts)										
Census Tract Characteristics	2020 COVID Deaths (Jan–Jun)	2020 COVID Deaths (Jun–Dec)	% Non-Hispanic AIAN	% Non-Hispanic Asian	% Non-Hispanic Black	% Non-Hispanic Other Race	% Hispanic	% Non-Hispanic White	% Poverty	Distance from hospital
PRF per Person	-0.008	-0.008	0.641	0.015	-0.067	0.262	0.044	-0.283	0.104	0.045
p-values	0.3218	0.3462	<.0001	0.0673	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Regression Analysis Results

We used multivariable linear regressions to determine if the relationships we identified in the correlation analyses remain when all the census tract characteristics are included in a single model. Our regressions control for COVID-19 deaths in January 22-June 10, 2020, and June 11-December 31, 2020, distance to the nearest hospital, and the census tract social factors (proportion of each race/ethnicity group, proportion of population experiencing poverty) to understand which factors were related to PRF per person while controlling for the other factors in the model. We log transformed both the dependent and independent variables in all regressions to reduce the influence of outliers. We report regression results for the five different outcomes: all Targeted PRF allotments per person and each of the four individual allotments per person (High Impact Hospitals, Safety Net Hospitals, Rural Hospitals, and Tribal Hospitals). In addition to examining all tracts in a single model, we modeled the relationships by HRSA designation.

It should be noted that the variation in PRF per person is more fully explained by the included community characteristics for the High Impact Hospitals, Tribal and Rural Hospitals allotments and less well explained in the models for Safety Net Hospitals allotments as indicated by the Adjusted R-Squared values. We also tested alternative models for Rural, Tribal and Safety Net Hospitals that received PRF in those allocations. This substantially improved the Adjusted R-Squared for the Safety Net Hospitals models, but the resulting set of independent variables would have been different from the models for High Impact Hospitals. Results in Exhibits 15-19 should be interpreted with this limitation of the models in mind.

Exhibit 15: Linear regression model results for all Targeted PRF allotments

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

All Targeted PRF Allotments						
Linear Regression Model of Targeted PRF per Person						
	Nonrural (n =55528 tracts)			Rural (n = 14814 tracts)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Intercept	3.488	0.040	<.0001	5.928	0.046	<.0001
COVID-19 Deaths Jan-Jun	0.550	0.003	<.0001	0.009	0.004	0.0345
COVID-19 Deaths Jun-Dec	-0.061	0.008	<.0001	0.028	0.006	<.0001
% Non-Hispanic AI/AN	0.043	0.010	<.0001	0.140	0.008	<.0001
% Non-Hispanic Asian/PI	-0.074	0.004	<.0001	-0.133	0.011	<.0001
% Non-Hispanic Black	0.045	0.003	<.0001	-0.012	0.005	0.0226
% Non-Hispanic Other Race	-0.163	0.006	<.0001	-0.111	0.010	<.0001
% Hispanic/Latino	-0.070	0.004	<.0001	-0.125	0.005	<.0001
% Poverty Rate	-0.057	0.006	<.0001	0.010	0.012	0.3751
Distance	-0.053	0.006	<.0001	-0.252	0.007	<.0001
Adjusted R-Squared			0.4273			0.1359

Exhibit 16: Regression model results for High Impact Hospitals allotments

Note: Census tract characteristics and PRF per person were log transformed.

High Impact Hospitals Allotments						
Linear Regression Model of Targeted PRF per Person						
	Nonrural (n = 55528 tracts)			Rural (n = 14814 tracts)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Intercept	1.636	0.045	<.0001	2.418	0.073	<.0001
COVID-19 Deaths Jan-Jun	0.988	0.003	<.0001	0.420	0.007	<.0001
COVID-19 Deaths Jun-Dec	-0.157	0.009	<.0001	0.018	0.010	0.0722
% Non-Hispanic AI/AN	-0.077	0.011	<.0001	-0.017	0.013	0.2035
% Non-Hispanic Asian/PI	-0.035	0.005	<.0001	-0.038	0.018	0.032
% Non-Hispanic Black	0.124	0.004	<.0001	0.211	0.008	<.0001
% Non-Hispanic Other Race	-0.245	0.007	<.0001	-0.117	0.016	<.0001
% Hispanic/Latino	0.047	0.004	<.0001	-0.009	0.009	0.3203
% Poverty Rate	-0.272	0.007	<.0001	-0.374	0.019	<.0001
Distance	0.015	0.007	0.0391	0.044	0.010	<.0001
Adjusted R-Squared			0.655			0.3073

Exhibit 17: Linear regression model results for Safety Net Hospitals allotments

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

Safety Net Hospitals Allotments						
Linear Regression Model of Targeted PRF per Person						
	Nonrural (n = 55528 tracts)			Rural (n = 14814 tracts)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Intercept	2.331	0.057	<.0001	2.150	0.085	<.0001
COVID-19 Deaths Jan-Jun	0.232	0.004	<.0001	0.052	0.008	<.0001
COVID-19 Deaths Jun-Dec	0.030	0.011	0.0051	-0.008	0.012	0.4744
% Non-Hispanic AI/AN	0.046	0.013	0.0005	-0.031	0.016	0.0451
% Non-Hispanic Asian/PI	-0.016	0.006	0.0066	-0.117	0.021	<.0001
% Non-Hispanic Black	0.090	0.005	<.0001	0.180	0.010	<.0001
% Non-Hispanic Other Race	-0.118	0.009	<.0001	-0.011	0.019	0.5697
% Hispanic/Latino	-0.006	0.005	0.1873	-0.085	0.010	<.0001
% Poverty Rate	0.060	0.008	<.0001	0.326	0.022	<.0001
Distance	-0.131	0.009	<.0001	0.042	0.012	0.0006
Adjusted R-Squared			0.0921			0.0789

Exhibit 18: Linear regression model results for Rural Hospitals allotments

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

	Rural Hospitals Allotments					
	Linear Regression Model of Targeted PRF per Person					
	Nonrural (n = 55528 tracts)			**Rural** (n = 14814 tracts)		
	Estimate	**Std. Error**	**p-value**	**Estimate**	**Std. Error**	**p-value**
Intercept	1.561	0.042	<.0001	5.918	0.059	<.0001
COVID-19 Deaths Jan-Jun	-0.229	0.003	<.0001	-0.103	0.005	<.0001
COVID-19 Deaths Jun-Dec	0.220	0.008	<.0001	0.065	0.008	<.0001
% Non-Hispanic AI/AN	0.250	0.010	<.0001	0.069	0.011	<.0001
% Non-Hispanic Asian/PI	-0.203	0.004	<.0001	-0.190	0.014	<.0001
% Non-Hispanic Black	-0.160	0.003	<.0001	-0.110	0.007	<.0001
% Non-Hispanic Other Race	0.016	0.007	0.0135	-0.111	0.013	<.0001
% Hispanic/Latino	-0.277	0.004	<.0001	-0.167	0.007	<.0001
% Poverty Rate	0.084	0.006	<.0001	0.042	0.015	0.006
Distance	0.117	0.007	<.0001	-0.421	0.009	<.0001
Adjusted R-Squared			0.3285			0.2021

Exhibit 19: Linear regression model results for Tribal Hospitals allotments

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

	Tribal Hospitals Allotments					
	Linear Regression Model of Targeted PRF per Person					
	Nonrural (n = 55528 tracts)			**Rural** (n = 14814 tracts)		
	Estimate	**Std. Error**	**p-value**	**Estimate**	**Std. Error**	**p-value**
Intercept	-0.123	0.010	<.0001	-0.392	0.035	<.0001
COVID-19 Deaths Jan-Jun	-0.003	0.001	<.0001	0.026	0.003	<.0001
COVID-19 Deaths Jun-Dec	0.030	0.002	<.0001	0.019	0.005	<.0001
% Non-Hispanic AI/AN	0.262	0.002	<.0001	0.578	0.006	<.0001
% Non-Hispanic Asian/PI	-0.008	0.001	<.0001	-0.031	0.008	0.0002
% Non-Hispanic Black	-0.008	0.001	<.0001	-0.021	0.004	<.0001
% Non-Hispanic Other Race	0.019	0.002	<.0001	0.103	0.008	<.0001
% Hispanic/Latino	0.009	0.001	<.0001	-0.008	0.004	0.0704
% Poverty Rate	-0.005	0.001	0.0003	0.047	0.009	<.0001
Distance	-0.005	0.002	0.0016	0.009	0.005	0.0625
Adjusted R-Squared			0.2101			0.4209

Stepwise Regression Analysis for All Targeted PRF Allotments

To better understand the relationship between proportion of Hispanic/Latino residents in a census tract and PRF and proportion of Non-Hispanic Black residents and PRF, we performed stepwise regression analysis on all Targeted PRF allotments. For both nonrural and rural census tracts, we started with a model including variables for race, ethnicity, and poverty, and then added controls to the model in steps to observe how estimates in the model changed.

In Exhibit 20, you can see that there is a positive correlation between the proportion of Non-Hispanic Black residents and PRF per person in nonrural census tracts when only race/ethnicity and poverty variables are included in the model. However, the estimate associated with proportion of Non-Hispanic Black residents decreases dramatically when the COVID-19 death rate variables are introduced to the model. This indicates that although higher proportions of Non-Hispanic Black residents are associated with higher PRF per person in nonrural census tracts, this relationship can be partially explained by the positive association between COVID-19 death rates and PRF per person in All Targeted PRF Allotments combined.

In both Exhibits 20 and 21 (both nonrural and rural census tracts), you can see that the estimate associated with proportion of Hispanic/Latino residents does not change meaningfully when the COVID-19 death rate variables are introduced to the model. This indicates that the difference in PRF per person between high-Hispanic/Latino and low-Hispanic/Latino communities cannot be explained by low COVID-19 impact in areas with greater concentrations of Hispanic/Latino residents.

Exhibit 20: Stepwise regression model results for all Targeted PRF allotments in nonrural census tracts

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

	All Targeted PRF Allotments								
	Stepwise Regression Model of Targeted PRF per Person								
	Nonrural Tracts (n = 55528 tracts)								
	Step 1 (No COVID-19 Deaths and Distance)			Step 2 (Include COVID-19 Deaths; No Distance)			Step 3 (Include COVID-19 Deaths and Distance)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Intercept	4.817	0.020	<.0001	3.333	0.036	<.0001	3.488	0.040	<.0001
% Non-Hispanic AI/AN	-0.158	0.012	<.0001	0.043	0.010	<.0001	0.043	0.010	<.0001
% Non-Hispanic Asian/PI	0.027	0.005	<.0001	-0.067	0.004	<.0001	-0.074	0.004	<.0001
% Non-Hispanic Black	0.171	0.004	<.0001	0.047	0.003	<.0001	0.045	0.003	<.0001
% Non-Hispanic Other Race	-0.307	0.008	<.0001	-0.161	0.006	<.0001	-0.163	0.006	<.0001
% Hispanic/Latino	-0.070	0.004	<.0001	-0.067	0.003	<.0001	-0.070	0.004	<.0001
% Poverty Rate	-0.135	0.007	<.0001	-0.046	0.006	<.0001	-0.057	0.006	<.0001
COVID-19 Deaths Jan-Jun				0.555	0.003	<.0001	0.550	0.003	<.0001
COVID-19 Deaths Jun-Dec				-0.061	0.008	<.0001	-0.061	0.008	<.0001
Distance							-0.053	0.006	<.0001
Adjusted R-Squared		0.064			0.427			0.427	

Exhibit 21: Stepwise regression model results for all Targeted PRF allotments in rural census tracts

Note: Census tract characteristics and PRF per person were log transformed in all regression models.

	All Targeted PRF Allotments								
	Stepwise Regression Model of Targeted PRF per Person								
	Rural Tracts (n = 14814 tracts)								
	Step 1 (No COVID-19 Deaths and Distance)			Step 2 (Include COVID-19 Deaths; No Distance)			Step 3 (Include COVID-19 Deaths and Distance)		
	Estimate	**Std. Error**	**p-value**	**Estimate**	**Std. Error**	**p-value**	**Estimate**	**Std. Error**	**p-value**
Intercept	5.330	0.033	<.0001	5.125	0.043	<.0001	5.928	0.046	<.0001
% Non-Hispanic AI/AN	0.112	0.009	<.0001	0.111	0.009	<.0001	0.140	0.008	<.0001
% Non-Hispanic Asian/PI	-0.080	0.011	<.0001	-0.069	0.012	<.0001	-0.133	0.011	<.0001
% Non-Hispanic Black	0.012	0.005	0.0214	0.003	0.006	0.5816	-0.012	0.005	0.0226
% Non-Hispanic Other Race	-0.099	0.011	<.0001	-0.088	0.011	<.0001	-0.111	0.010	<.0001
% Hispanic/Latino	-0.104	0.006	<.0001	-0.106	0.006	<.0001	-0.125	0.005	<.0001
% Poverty Rate	0.049	0.012	<.0001	0.046	0.012	0.0002	0.010	0.012	0.3751
COVID-19 Deaths Jan-Jun				0.008	0.004	0.0744	0.009	0.004	0.0345
COVID-19 Deaths Jun-Dec				0.047	0.007	<.0001	0.028	0.006	<.0001
Distance							-0.252	0.007	<.0001
Adjusted R-Squared			0.042			0.048			0.133

ACKNOWLEDGMENTS AND CONTACT

Acknowledgments

Contact

To obtain additional information concerning this report, contact the Office of Public Affairs at Public.Affairs@oig.hhs.gov. OIG reports and other information can be found on the OIG website at oig.hhs.gov.

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ENDNOTES

[1] Commonwealth Fund, *Achieving Racial and Ethnic Equity in U.S. Health Care*. Accessed at Achieving Racial and Ethnic Equity in U.S. Health Care: Scorecard | Commonwealth Fund on May 15, 2023.

[2] CDC, *COVID-19 in Racial and Ethnic Minority Groups*. Accessed at COVID-19 racial and ethnic health disparities : 1. Introduction (cdc.gov) on November 6, 2020.

[3] CNN, *Black communities account for disproportionate number of COVID-19 deaths in the US, study finds*. Accessed at Black communities account for disproportionate number of Covid-19 deaths in the US, study finds | CNN on November 6, 2020.

[4] Washington Post, *The coronavirus is infecting and killing black Americans at an alarmingly high rate*. Accessed at https://www.washingtonpost.com/nation/2020/04/07/coronavirus-is-infecting-killing-black-americans-an-alarmingly-high-rate-post-analysis-shows/ on November 6, 2020.

[5] Brookings, *Racial economic inequality amid the COVID-19 crisis*. Accessed at https://www.brookings.edu/research/racial-economic-inequality-amid-the-covid-19-crisis/ on November 6, 2020.

[6] Pew Research Center, *For U.S. Latinos, COVID-19 Has Taken a Personal and Financial Toll*. Accessed at For U.S. Latinos, COVID-19 Has Taken a Personal and Financial Toll | Pew Research Center on August 27 2021.

[7] COVID-19 has had a disproportionate impact among high-poverty populations: National Center for Biotechnology Information, *Coronavirus infections and deaths by poverty status: The effects of social distancing*. Accessed at https://pubmed.ncbi.nlm.nih.gov/33362321/ on August 27, 2021.

[8] HHS Office of Minority Health, Minority Health Social Vulnerability Index Overview. Accessed at Minority Health Social Vulnerability Index Overview (hhs.gov) on October 26, 2022.

[9] CDC, CDC SVI 2018 Documentation. Accessed at SVI2018Documentation_01192022_1.pdf (cdc.gov) on October 27, 2022.

[10] Executive Order 13995, Ensuring an Equitable Pandemic Response and Recovery, *Code of Federal Regulations*, Vol. 86, No. 15 (enacted January 26, 2021).

[11] HHS, *HHS Equity Action Plan*. Accessed at HHS Equity Action Plan on May 16, 2021.

[12] Coronavirus Aid, Relief, and Economic Security (CARES) Act, Div. B, tit. VIII, P.L. 116-136 (enacted March 27, 2020).

[13] Ibid.

[14] HRSA, Provider Relief Fund: General Information. Accessed at CARES Act Provider Relief Fund: General Information | HHS.gov on August 19, 2021.

[15] HRSA, Provider Relief Fund Past Payments Targeted Distributions. Accessed at Past Targeted Distributions | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov) on September 8, 2021.

[16] HHS, Office of Minority Health, *About COVID-19 Health Equity Task Force*. Accessed at Health Equity Task Force - The Office of Minority Health (hhs.gov) on October 1, 2021.

[17] HHS, Strategic Plan FY 2018 – 2022, Strategic Objective 2.4: Prepare for and respond to public health emergencies. Accessed at Strategic Goal 2: Protect the Health of Americans Where They Live, Learn, Work, and Play | HHS.gov on December 3, 2021.

[18] CDC, Health Equity Considerations & Racial & Ethnic Minority Groups. Accessed at Health Equity Considerations and Racial and Ethnic Minority Groups | CDC on January 25, 2022.

[19] HHS, *HHS Equity Action Plan*. Accessed at HHS Equity Action Plan on May 16, 2021.

[20] HHS, HHS Protect FAQ. Accessed at hhs-protect-faqs.pdf on October 25, 2021.

[21] Ibid.

[22] U.S. Census Bureau, *Why We Ask Each Question About / Race*, Accessed at [Race | American Community Survey | U.S. Census Bureau](#) on June 11 2023.

[23] U.S. Census Bureau, *Questionnaire Archive*. Accessed at [https://www.census.gov/programs-surveys/acs/methodology/questionnaire-archive.2019.html](#) at on October 7, 2021.

[24] HRSA, *Defining Rural Population*. Accessed at [Defining Rural Population | HRSA](#) on April 8, 2022.

[25] USA Facts, About USAFacts. Accessed at [https://usafacts.org/about-usafacts/](#) on October 21, 2021.

[26] USA Facts, Detailed Methodology and Sources: COVID-19 Data. Accessed at [https://usafacts.org/articles/detailed-methodology-covid-19-data/](#) on November 12, 2020.

[27] HHS, *COVID-19 Guidance for Hospital Reporting and FAQs For Hospitals, Hospitals Laboratory, and Acute Care Facility Data Reporting*. Accessed at [covid-19-faqs-hospitals-hospital-laboratory-acute-care-facility-data-reporting.pdf< (hhs.gov)](#) on October 25, 2021.

[28] Journal of American Medical Association, *Allocation of COVID-19 Relief Funding to Disproportionately Black Counties*. Accessed at [Allocation of COVID-19 Relief Funding to Disproportionately Black Counties | Health Disparities | JAMA | JAMA Network](#) on August 25, 2021.

[29] Journal of Health Politics, Policy and Law, Duke University Press, *Unsanitized and Unfair: How COVID-19 Bailout Funds Refuel Inequity in the US Health Care System*. Accessed at [Unsanitized and Unfair: How COVID-19 Bailout Funds Refuel Inequity in the US Health Care System | Journal of Health Politics, Policy and Law | Duke University Press (dukeupress.edu)](#) on November 29, 2021.

[30] KFF, *Changes in Health Coverage by Race and Ethnicity since the ACA, 2010-2018*. Accessed at [https://www.kff.org/racial-equity-and-health-policy/issue-brief/changes-in-health-coverage-by-race-and-ethnicity-since-the-aca-2010-2018/](#) on March 5, 2020.

[31] CARES Act, Div. B, tit. VIII, P.L. 116-136 (enacted March 27, 2020).

[32] Paycheck Protection Program and Health Care Enhancement Act, Div. B, tit. I, P.L. 116–139 (enacted April 24, 2020).

[33] Coronavirus Response and Relief Supplemental Appropriations Act, 2021, Div. M, tit. III, P.L. 116-260 (enacted December 27, 2020).

[34] CARES Act, Div. B, tit. VIII, P.L. 116-136 (enacted March 27, 2020).

[35] Ibid.

[36] HRSA, COVID-19 Claims Reimbursement to Health Care Providers and Facilities for Testing, Treatment, and Vaccine Administration for the Uninsured. Accessed at [COVID-19 Claims Reimbursement to Health Care Providers and Facilities for Testing, Treatment, and Vaccine Administration for the Uninsured | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov)](#) on January 27, 2022.

[37] HRSA, COVID-19 Coverage Assistance Fund. Accessed at [COVID-19 Coverage Assistance Fund | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov)](#) on January 27, 2022.

[38] HRSA, Provider Relief Fund Past Payments General Distributions. Accessed at [Past General Distributions | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov)](#) on September 8, 2021.

[39] Ibid.

[40] HRSA, Provider Relief Funds Future Payments. Accessed at [Future Payments | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov)](#) on September 15, 2021.

[41] HRSA, Provider Relief Fund Past Payments General Distributions. Accessed at [Past General Distributions | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov)](#) on September 8, 2021.

[42] Ibid.

[43] Ibid.

[44] HRSA, Provider Relief Fund 3: Payment Calculation Methodology. Accessed at Provider Relief Fund Phase 3: Payment Calculation Methodology (hrsa.gov) on February 7, 2022.

[45] HRSA, Provider Relief Funds Future Payments. Accessed at Future Payments | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov) on October 25, 2022.

[46] In March 2020, hospitals reported substantial challenges with mitigation strategies, and needs for assistance related to personal protective equipment (PPE), testing, staffing, supplies and durable equipment; maintaining or expanding facility capacity; and financial concerns. OEI-06-20-00300.

[47] HHS Press Release, *HHS to Begin Immediate Delivery of Initial $30 Billion of CARES Act Provider Relief Funding*. Accessed at 2020-12-31 08:51 | Archive of HHS.gov (pagefreezer.com) on January 14, 2022.

[48] CARES Act, Div. B, tit. VIII, P.L. 116-136 (enacted March 27, 2020).

[49] HRSA, Provider Relief Fund General Information. Accessed at Provider Relief Fund General Information | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov) on September 17, 2021.

[50] HRSA, Provider Relief Fund Past Payments Targeted Distributions. Accessed at Past Targeted Distributions | Official web site of the U.S. Health Resources & Services Administration (hrsa.gov) on September 8, 2021.

[51] Ibid.

[52] Ibid.

[53] Ibid.

[54] Ibid.

[55] Ibid.

[56] Ibid.

[57] HRSA, *Current and Future Payments*. Accessed at Current and Future Payments | HRSA on December 19, 2022.

[58] Ibid.

[59] OIG, *HHS's and HRSA's Controls Related to Selected Provider Relief Fund Program Requirements Could Be Improved*. Accessed at HHS's and HRSA's Controls Related to Selected Provider Relief Fund Program Requirements Could Be Improved A-09-21-06001 09-26-2022 on December 7, 2022.

[60] USDA Economic Research Service, *The COVID-19 Pandemic and Rural America*. Accessed at USDA ERS - The COVID-19 Pandemic and Rural America on August 17, 2021.