Healthcare Utilization Among Medicare Fee-for-Service (FFS) Beneficiaries in 2019 By Historically Redlined Status of Place of Residence

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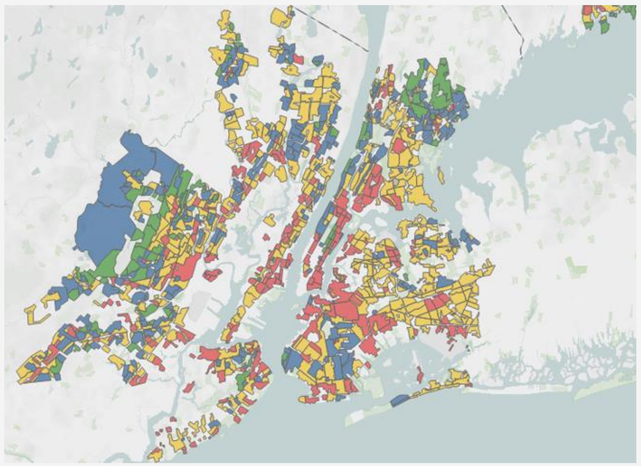
Background

- In the late 1930s, "redlining" was used across 239 U.S. cities to indicate the level of security for real-estate investments as part of the Home Owners' Loan Corporation (HOLC), a program established in 1933 under President Franklin Delano Roosevelt's New Deal.[1]
- Information on the "neighborhood's quality of housing, the recent history of sale and rent values, and, crucially, the racial and ethnic identity and class of residents served as the basis of the neighborhood's grade" to differentiate among classes of riskiness.[1] In the lowest rated class (or redlined area), "conservative, responsible lenders, in HOLC judgment, would 'refuse to make loans in these areas [or] only on a conservative basis.'"[1]
- Despite the prohibition on discriminatory housing and lending practices under the Fair Housing Act (1968) and Community Reinvestment Act (1977), the long-term impact of historical redlining practices continues today, including a persistent lack of investment of both public and private resources in redlined areas. Scholars have characterized redlining practices "as some of the most important factors in preserving racial segregation, intergenerational poverty, and the continued wealth gap between white Americans and most other groups in the U.S."[1]
- The objective of our study was to compare healthcare utilization between individuals residing in historically redlined and non-redlined areas to better understand the association between this historical discriminatory practice and current health outcomes in the U.S.

Methods

- The project *Mapping Inequality* provides a mapping of HOLC categories to Zip Code Tabular Areas (ZCTAs) for the 239 cities (see Figure 1 for a visual example of how redlining was applied in a portion of two states).[1]
- We mapped Medicare FFS Beneficiaries to HOLC categories using their 5-digit zip code (mapped to ZCTAs via the Uniform Coding System) of residence in the 100% Research Identifiable Files (RIF) for calendar year 2019.
  - As zip codes often contain more than one HOLC category, a member's claim data and enrollment may be used more than once.
- We used standardized counting rules from Milliman's *Health Cost Guidelines™–Grouper* software to organize a summary of medical claims and analyzed differences in average risk score, allowed costs (spend), and utilization by HOLC category.
  - Outpatient and professional services vary based on the service and include visits, procedures, and units.
- Results were not normalized for differences in population demographics.
- We determined the current median Social Deprivation Index (SDI) for each redlined area.[2]

FIGURE 1: REDLINING MAP EXAMPLE – NEW JERSEY AND NEW YORK[1]

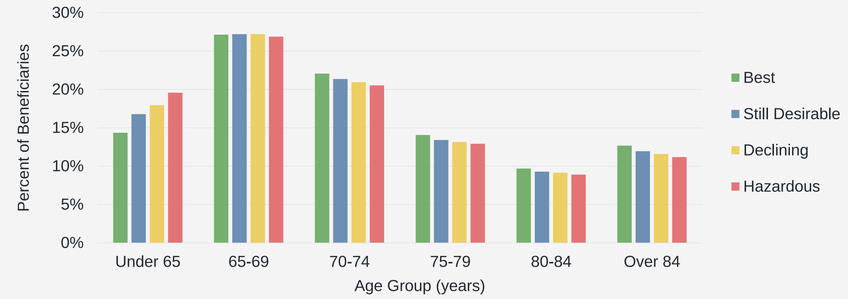


- Green Areas were determined by HOLC to be the "best" areas to lend money and posed a minimal risk for banks and mortgage lenders.
- Blue Areas were determined by HOLC to be "still desirable" but posed slightly more risk than green areas.
- Yellow Areas were determined by HOLC to be "definitely declining."
- Red Areas were determined by HOLC to be "hazardous" and hence the name redlining.

Findings

- We identified 6.6 million Medicare FFS beneficiaries with a zip code of residence that mapped to historically redlined ("hazardous") areas and found that more of these beneficiaries were of younger age (fewer than 65 years and therefore qualifying for Medicare for reasons other than age, such as disability) as compared to the 4.0 million beneficiaries that resided in non-redlined, or "best," areas (Figure 2).

FIGURE 2: FFS MEDICARE BENEFICIARIES BY REDLINED AREA AND AGE CATEGORIES, 2019



- We found an average risk score of 1.19 and average spend of $971 per member per month (PMPM) for Medicare FFS beneficiaries that currently reside in previously redlined ("hazardous") areas and an average risk score of 1.13 and average spend of $877 PMPM for those that currently reside in previously non-redlined ("best") areas (Figure 3).
- We observed the greatest differences in healthcare utilization as follows: dialysis utilization was 52%, inpatient substance use disorders utilization 37%, and outpatient psychiatric - intensive service utilization 31%, higher for the "hazardous" areas as compared to the "best" areas (Figure 3).

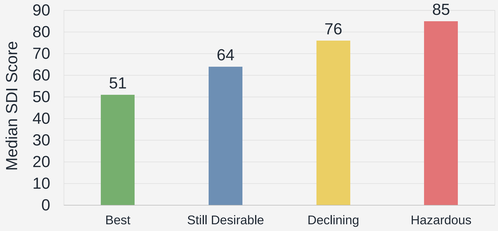
FIGURE 3: UTILIZATION PER 1,000 RATES FOR FFS MEDICARE BENEFICIARIES BY REDLINED AREA, 2019

HEALTHCARE CATEGORY	BEST	STILL DESIRABLE	DECLINING	HAZARDOUS	HAZARDOUS AS PERCENT OF BEST
Membership Split	15%	27%	33%	25%	165%
Risk Score	1.13	1.16	1.18	1.19	105%
Allowed Costs Per Member Per Month (Average Spend)	$877	$935	$956	$971	111%
Inpatient Admits	346	365	376	386	112%
Inpatient Substance Use Disorders	**2.6**	**3.0**	**3.2**	**3.6**	**137%**
Outpatient Visits	7,257	7,680	7,941	8,265	114%
Emergency Department	353	377	392	419	118%
Outpatient Psychiatric – Intensive	**26**	**31**	**32**	**34**	**131%**
Dialysis	**729**	**905**	**1,011**	**1,106**	**152%**
Professional Services	27,857	27,804	27,618	27,114	97%
Additional and Other Services	3,049	3,059	3,057	3,055	100%

Conclusions

- In addition to the well-documented long-lasting impacts of the redlining practices of the 1930s, including the ongoing racial wealth gap,[3] our findings demonstrate that current measures of
  - Risk scores and per member spend may not accurately describe nor account for disparities by historically redlined areas, and
  - Differences in current health resource utilization among historically redlined areas reflect disparities in underlying health status.
- An understanding of discriminatory practices, such as redlining, can be helpful in the context of current measures of disadvantage and opportunities for addressing inequity. For example, our findings are suggestive of reduced life expectancy in historically redlined areas. We also found higher median SDI scores by zip code for historically redlined areas (Figure 4).[2]

FIGURE 4: MEDIAN SOCIAL DEPRIVATION INDEX SCORE BY REDLINED AREA



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