

BACKGROUND

- CMS Innovation Center has placed the advancement of health equity on their roadmaps as a strategic objective
- Data are crucial to identifying and closing equity gaps in healthcare outcomes, but the lack of robust analytics is an important barrier to progress (1)
- Sutter Health, a large integrated healthcare system in Northern CA, has developed **two novel health equity methods** that capture unique inequities across interacting social domains (2).



METHOD

- 4 ambulatory and 3 acute care key performance indicators
 - ✓ **Ambulatory**: HTN control, T2DM control, colorectal cancer screening and breast cancer screening
 - ✓ **Acute**: Sepsis mortality, NTSV C-Section, 30-day Readmission
- Each at the subgroup level representing the **intersection** of :
 - **Race** (5 categories)
 - **Sex** assigned at birth (2 categories)
 - **Median household income** for residential census tract (2 categories)
- Subgroup values are compared with national benchmarks

Method 1: Proportion of each subgroup that meets national health equity benchmark targets (the 90th percentile [P90] across systems contributing to HEDIS) and summarizes the number at or above the P90 target

Method 2: Ratio of proportion of a subgroup not meeting P90 target compared to the proportion of all individuals overall not meeting target; this ratio per subgroup is referred as the outcome equity ratio (OER)

OER greater than 1 = inequity

$$OER = \frac{P(NAG_{Subgroup})}{P(NAG_{Overall})}$$

RESULTS

We present simulated data to demonstrate each metric for Type 2 Diabetes control

POPULATION SIMULATED TO MIRROR SUTTER DEMOGRAPHICS

91,304 individuals with T2DM

- Race/ethnicity**: 46.7% non-Hispanic white (NHW), 6.7% NH black (NHB), 24.1% NH Asian (NHA), 22% were Hispanic and <1% were NH American Indian or Alaska Native (NHAIAN)
- Sex**: 49.2 female
- Median Income**: 86.8% from high income census tract

Overall, 78% achieved HbA1c control per the HEDIS metric definition (“at goal”)

Table 1. Intersectional Subgroup Matrix

Measure Met?	Race Ethnicity	Income < 2°FPL		Income >= 2°FPL		Grand Total
		Female	Male	Female	Male	
No	Hispanic	860	973	3274	3364	8471
	NH Asian	90	125	1452	1565	3232
	NH Black	278	196	463	424	1361
	NH American Indian or Alaska Native	14	17	63	40	134
	NH White	520	494	2866	3004	6884
Yes	Hispanic	1250	1000	5103	4325	11678
	NH Asian	508	340	8658	9262	18768
	NH Black	435	320	2145	1862	4762
	NH American Indian or Alaska Native	16	16	100	100	232
	NH White	2371	2263	14459	16689	35782
	Grand Total	6342	5744	38583	40635	91304

Method 1: The percentages of active patients with T2DM “at goal” for HbA1C (HbA1C >8.0%) in each subgroup; We compared each of these percentages to the national P90 benchmark (65.33% for HbA1C). Cells in **red** do not meet goal

Race/Ethnicity	Income < 2°FPL		Income >= 2°FPL	
	Female	Male	Female	Male
Hispanic	59.2%	50.7%	60.9%	56.2%
NH Asian	84.9%	73.1%	85.6%	85.5%
NH Black	61.0%	62.0%	82.2%	81.5%
NH American Indian or Alaska Native	53.3%	48.5%	61.3%	71.4%
NH White	82.0%	82.1%	83.5%	84.7%

- Proportions “at goal” varied by subgroup
- Low of 48.5%, for male patients who self-identify as NHAIAN with low median household income
- High of 85.6% for female patients who self-identify as NHA with high-income
- 9 subgroups did not meet the national benchmark standard
- Inequities were observed for all Hispanic individuals across income and sex categories and low income NHB and NHAIAN

Method 2: Ratio of percentages “not meeting goal” for HbA1C in a particular subgroup to percentage in overall population. Cells in **red** have OER ≥ 1

Race/Ethnicity	Income < 2°FPL		Income >= 2°FPL	
	Female	Male	Female	Male
Hispanic	1.85	2.24	1.78	1.99
NH Asian	0.68	1.22	0.65	0.66
NH Black	1.77	1.73	0.81	0.84
NH American Indian or Alaska Native	2.12	2.34	1.76	1.30
NH White	0.82	0.81	0.75	0.69

- Inequities in HbA1C metric (OER >1) were identified for 11 of the 20 subgroups
- Across all non-White racial/ethnic groups, greater inequity in HbA1C control among low income male patients
- Among low-income males, the highest inequities were observed among NHAIAN (OER=2.34), Hispanic (OER= 2.24), and Non-Hispanic Black (OER=1.73) individuals
- Inequities were observed for all Hispanic and NHAIAN individuals across income and sex categories (OER ranges: 1.78-2.24 and 1.30-2.34, respectively)

CONCLUSIONS

- First method allows identification of whether or not sub-groups meet the P90 benchmark but this method does not allow for observation of relative inequity across sub-groups (an approach which could support more strategic intervention development within a healthcare system)
- Second method is focused on internal equity between patient subgroups, regardless of whether the overall quality standards are met
- We recommend a blended approach, utilizing both metrics to obtain a complete assessment which can inform health system actions to mitigate disparities in outcomes.
- Leveraging both methods incorporates intersectional, underlying drivers of inequities:
 - to allow for more precise identification of population subgroups with unmet needs and inequitable outcomes
 - to facilitate the development of focused and effective interventions to close the identified gaps.

REFERENCES

(1) <https://www.commonwealthfund.org/publications/2021/oct/confronting-racism-health-care#:~:text=Strategies%20for%20Combating%20Racism%20in%20Health%20Care%20Examining,Reviewing%20clinical%20algorithms%20that%20erroneously%20rely%20on%20race>

(2) Crenshaw, K. (1989) ‘Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics’, *The University of Chicago Legal Forum*, pp. 139–167.