Agenda IV: Discussion About Identification of Disparities and Disparities Reduction

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Assumptions & Acknowledgments

_____

- Goal of the equity report is to spur hospital action.

- Hospitals will identify dozens of disparities and cannot act on all simultaneously.

- Balance standardization and customization in reporting requirements to promote local improvement.

- Explore both what is currently possible and what is aspirational.

Defining Terms

- **From AB1204:**

  "A hospital shall prepare an annual equity report. The equity report shall include an analysis of health status and access to care **disparities** for patients on the basis of age, sex, race, ethnicity, language, disability status, sexual orientation, gender identity, and payor."

- **Disparities:** "measurable differences in health outcomes that result from inequities"

- **Inequities:** "unjust and avoidable differences in the distribution or allocation of resources between marginalized and dominant groups that lead to disparities."

Source: Health Care Payment Learning & Action Network Health Equity Action Team, Advancing Health Equity through APMs: Guidance for Health Equity Design and Implementation, 2021
https://hcp-lan.org/workproducts/APM-Guidance/Advancing-Health-Equity-Through-APMs.pdf

Considerations for Analysis & Interpretation

Acknowledge limitations in data quality

Define a reference group

Consider relative vs. absolute differences

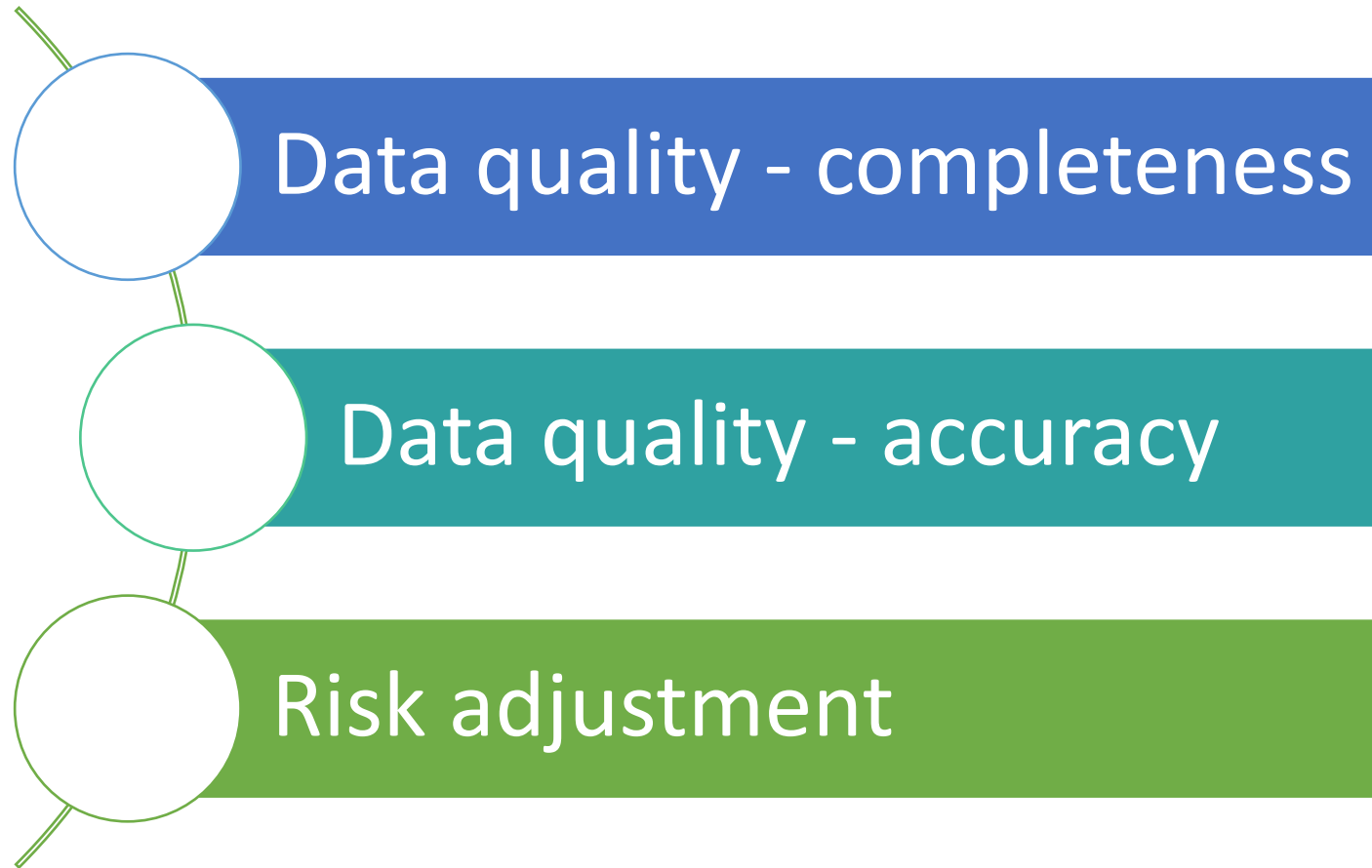Explore statistical and public health significance

Determine actionability

Example – Readmissions by Payor

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	523	82	55	38	28
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	16.09%	12.62%	10.00%	10.86%	14.00%
Potentially preventable events [reference group = private]	--	198	17	--	3	8

Step 0. Acknowledge Limitations

Data quality - completeness

Data quality - accuracy

Risk adjustment

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Data Completeness

- National response rate for HCAHPS is ~25% (2019)... and there is a positive relationship between response rates of HCAHPS scores

- Capturing self-identified data is complex – surveys, tablets, post-discharge calls, place-based data, etc... may need an "all of the above approach"

- "To impute or not impute, that is the question" – not done often with hospitals because they have not had completeness thresholds

- How do you interpret "other" or "decline to state"

- Patients complain about repetitive inquiries and "intrusions" (e.g., interpersonal violence)
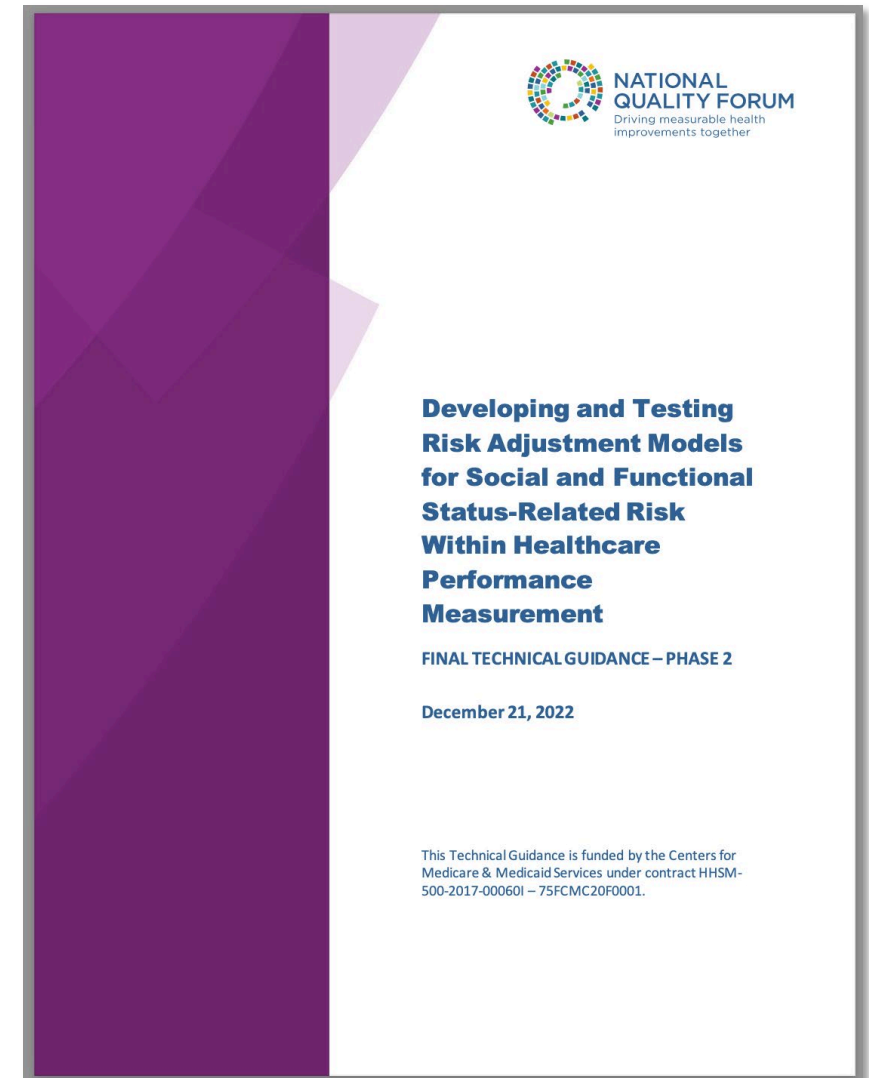
Data Accuracy
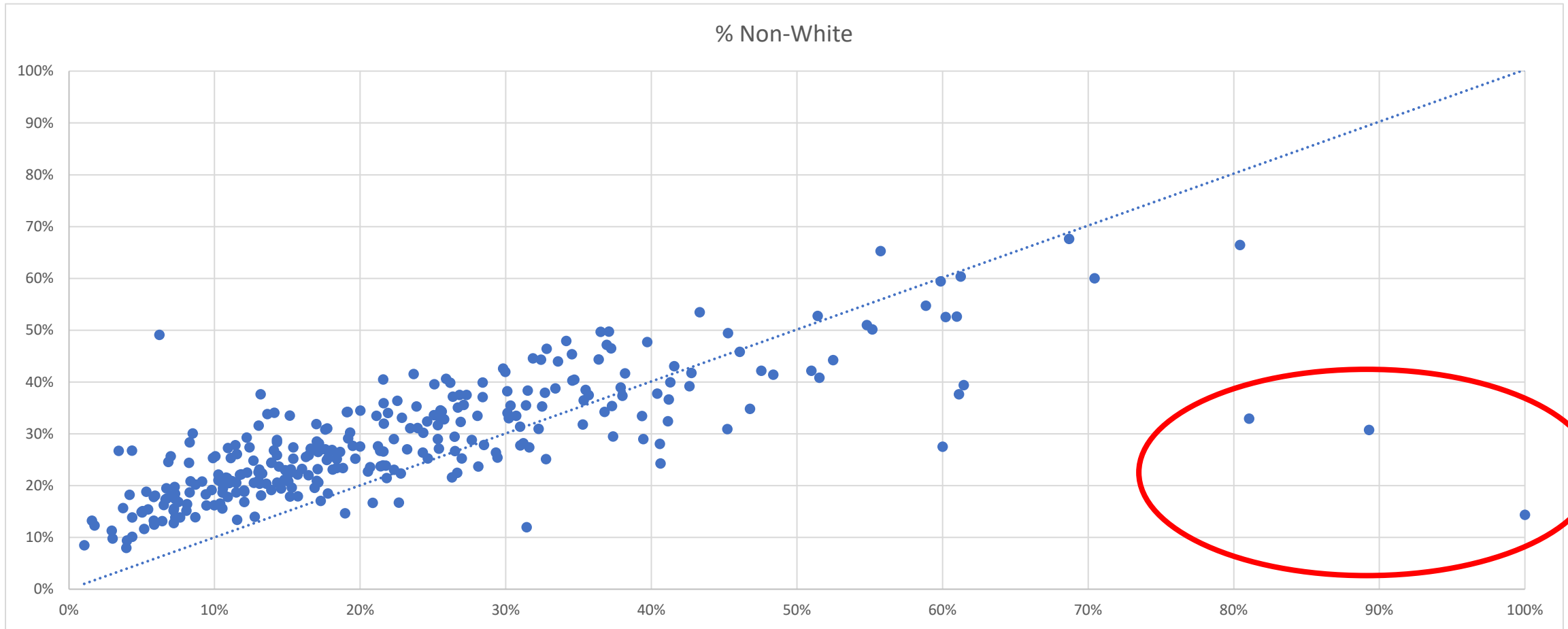
Risk Adjustment

"Both proponents and critics of adjusting for social risk factors point to concerns about *possible unintended consequences*. Those who favor adjustment note that failure to account for social risk factors in performance metrics can result in lower scores for providers that care for populations with high social risk and might, therefore, *cause them to avoid caring for these populations*. On the other hand, opponents argue that adjusting measures *obscures true disparities* in care and fails to promote further investment in achieving health equity."

Source:
https://www.qualityforum.org/Publications/2022/12/Risk_Adjustment_Technical_Guidance_Final_Report_-_Phase_2.aspx

NATIONAL QUALITY FORUM
Driving measurable health improvements together

Developing and Testing Risk Adjustment Models for Social and Functional Status-Related Risk Within Healthcare Performance Measurement

FINAL TECHNICAL GUIDANCE – PHASE 2

December 21, 2022

This Technical Guidance is funded by the Centers for Medicare & Medicaid Services under contract HHSM-500-2017-00060I – 75FCMC20F0001.

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Step 1. Define a reference group

- Consider state-wide consistency vs. individual hospital context

	State-wide consistency	**Individual hospital comparison to highest performing group**
Pros	• Allows for state-wide comparison • Aligns with existing research (e.g., using white as the comparison for race/ethnicity)	• Promotes action based on local context and needs
Cons	• Won't allow hospitals to leverage existing analyses that don't align with standardized requirements	• More difficult to make hospital to hospital comparisons or state-wide analyses

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Reference Group: Private Insurance vs. Medicare

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	523	82	55	38	28
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	16.09%	12.62%	10.00%	10.86%	14.00%
Potentially preventable events [reference group = Medicare]	--	113	0	-14	-6	3
Potentially preventable events [reference group = commercial]	--	198	17	--	3	8

Step 2. Consider absolute vs. relative differences

Relative vs. Absolute Differences in Rates

- Highest rate = 90%
- Comparison Rate = 81%

Absolute Difference = 9%

Relative Difference = 10%

More common with desirable outcomes (e.g., HCAHPS, breast milk feeding, sepsis management)

- Highest rate = 5%
- Comparison rate = 4.5%

Absolute Difference = 0.5%

Relative Difference = 10%

More common with undesirable outcomes (e.g., pneumonia death rate, death after serious treatable condition)

Determining the absolute magnitude of a difference

- Absolute difference (reference group rate – comparison group rate) multiply the denominator (number of people) in the comparison group

This yields

- Number of potentially preventable events (for undesirable events like harms)
- Number of potentially increased performance (for desirable activities like sepsis management)

Example – Readmissions by payor

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	523	82	55	38	28
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	16.09%	12.62%	10.00%	10.86%	14.00%
Potentially preventable events [reference group = private]	--	198	17	--	3	8

Absolute difference between Medicaid and Commercial is **6%.**

Relative difference is **60%**

Magnitude of Impact

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	523	82	55	38	28
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	16.09%	12.62%	10.00%	10.86%	14.00%
Potentially preventable events [reference group = private]	--	198	17	--	3	8

Rate difference multiplied by the denominator shows *magnitude of impact*.

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Magnitude of Impact, Example 2

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	513	82	55	38	38
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	15.78%	12.62%	10.00%	10.86%	19.00%
Potentially preventable events [reference group = private]	--	188	17	--	3	18

Readmission rate for individuals with no insurance is highest (19%)….but the magnitude of impact is much smaller (18 vs 188 for Medicaid)
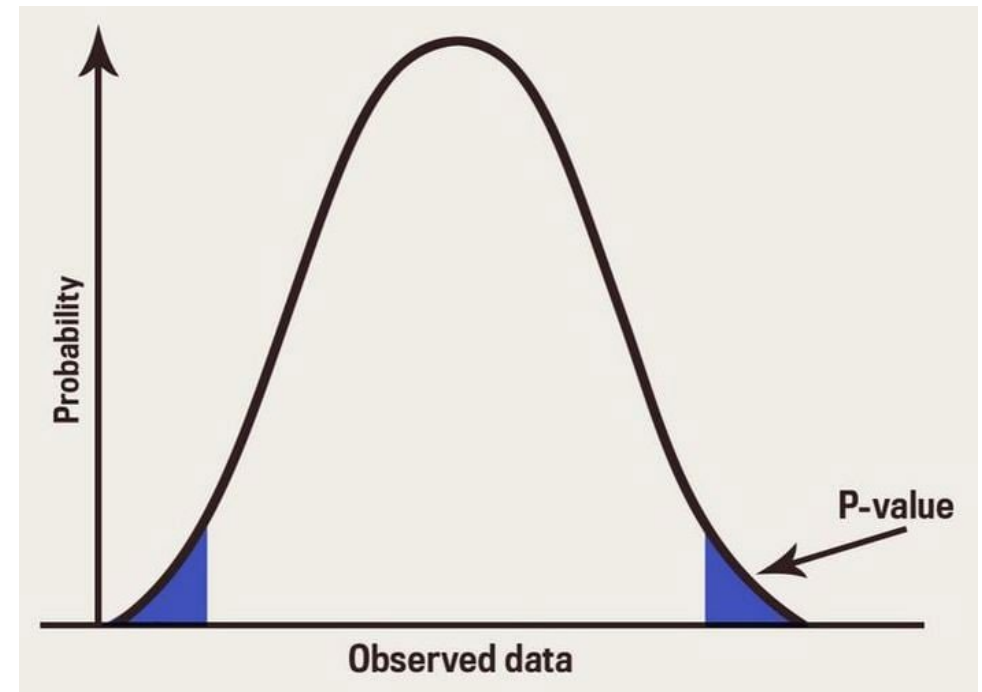
Determining the statistical significance for either absolute or relative improvement (HCAI)

- Select appropriate significant tests for each measure
  - Preliminary literature reviews
  - Evaluate data distribution

- Select appropriate significance levels for each measure

- Select separate tests for measuring difference and improvement

Example - Readmissions by Payor

	Total	Medi-Cal	Medicare	Private	Other	Self-pay
Numerator [total readmissions]	726	523	82	55	38	28
Denominator [total discharges]	5000	3250	650	550	350	200
Rate	14.52%	16.09%	12.62%	10.00%	10.86%	14.00%
Potentially preventable events [reference group = private]	--	198	17	--	3	8
Significance Testing p-value		p=.12*	p=.2*		p= .3*	p=.03
*Not significant at p <.05						

Determining statistical vs public health impact (HCAI)

- Statistical significance is usually determined by a p-value of less than .05 but could be different based on the data
    - This is affected by both sample size and the size of the disparity
    - Some disparities may be very small but there may be statistical significance because of a large sample size
    - Statistical significance for a specific measure may not be considered a public health impact
- A disparity may not reach statistical significance but may still affect a large enough group of people that it has a public health impact

When is a disparity (or non-disparity) not a correct inference? – Introducing Simpson's Paradox
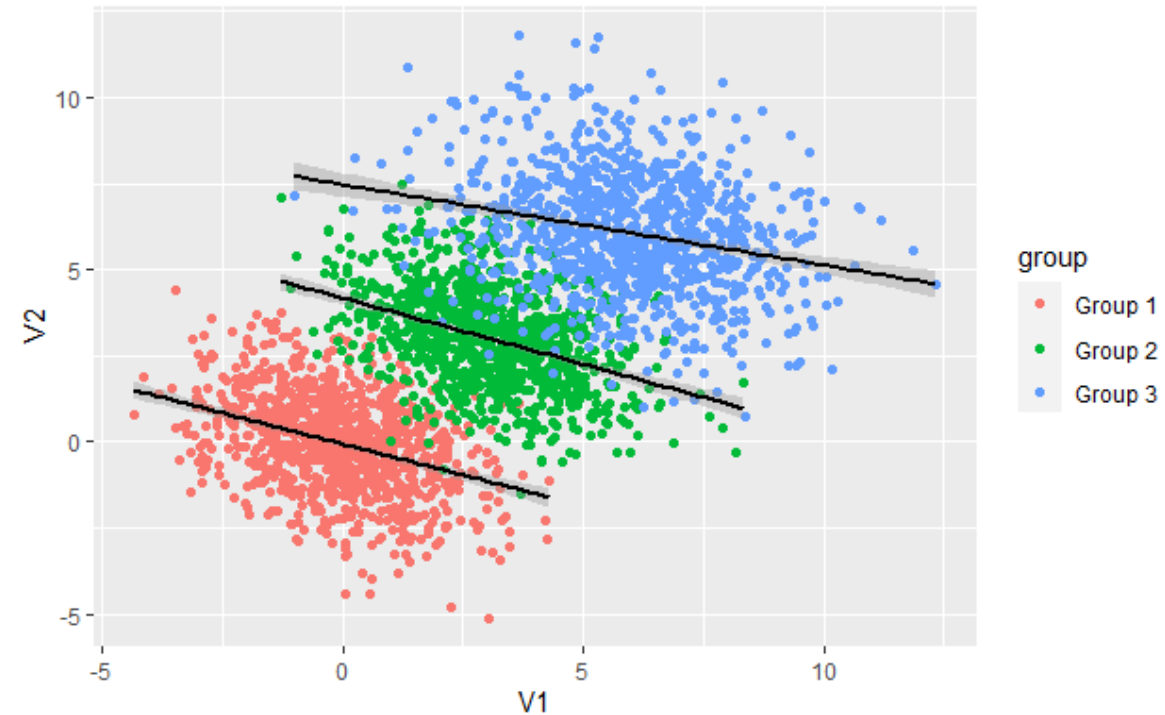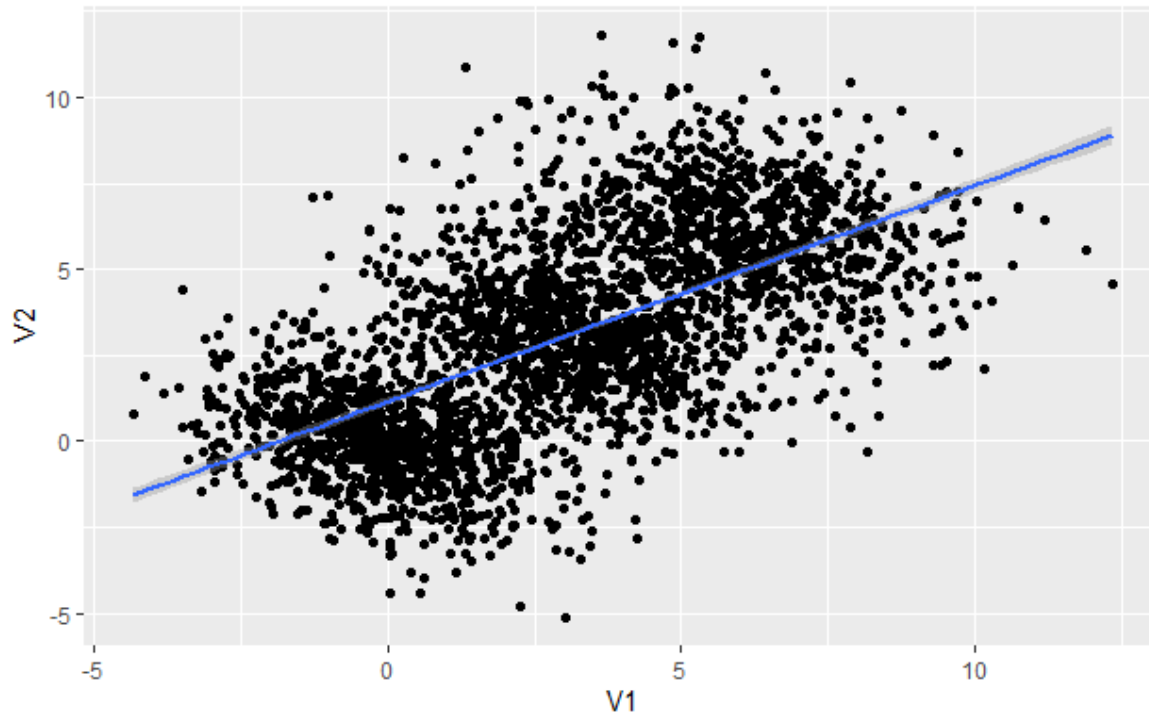
Campus Wide Graduate Student Admissions 1973

	All		Men		Women	
	Applicants	Admitted	Applicants	Admitted	Applicants	Admitted
Total	12,763	41%	8,442	44%	4,321	35%

Department Level Graduate Student Admissions 1973

Department	All		Men		Women	
	Applicants	Admitted	Applicants	Admitted	Applicants	Admitted
A	933	64%	825	62%	108	82%
B	585	63%	560	63%	25	68%
C	918	35%	325	37%	593	34%
D	792	34%	417	33%	375	35%
E	584	25%	191	28%	393	24%
F	714	6%	373	6%	341	7%
Total	4526	39%	2691	45%	1835	30%

Legend:

- greater percentage of successful applicants than the other gender
- greater number of applicants than the other gender

bold - the two 'most applied for' departments for each gender

Simpson's Paradox – UC Berkeley Gender Bias

Healthcare Example of Simpson's Paradox

Hospital Mortality (176 Beds+) by Patient SVI+Charlston Percentile*					
	0-15th	16-50th	51-85th	86th+	Grand Total
Black	1.65%	2.90%	4.07%	6.93%	3.7%
White	1.66%	3.11%	4.96%	7.32%	3.4%
Disparity	-1.0%	-6.7%	-18.0%	-5.3%	10.2%

A 10% disparity in hospital mortality

Disparity in hospital mortality reverses

*2019-2021 FFS Medicare Data from 70/300 Hospitals in a Learning Collaborative
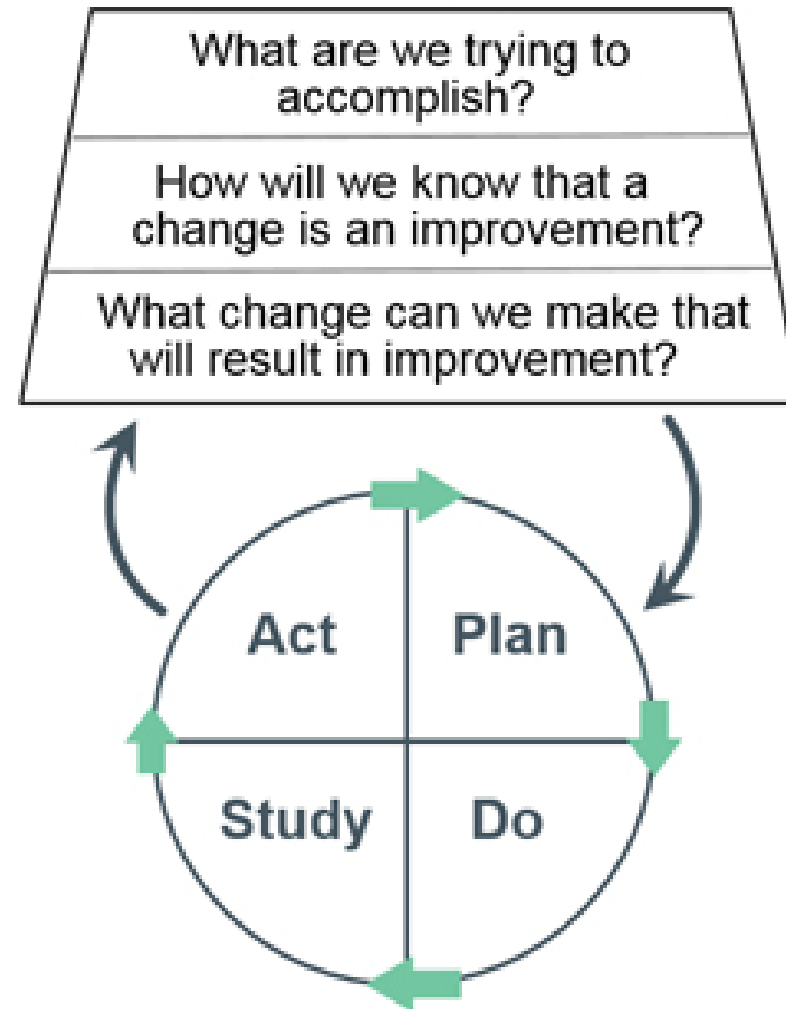
Asymmetric distribution of the denominator

	Number of Patients in Each Group				
	0-15th	16-50th	51-85th	86th+	Grand Total
Black	1,518	5,242	7,059	1,530	15,349
	9.9%	34.2%	46.0%	10.0%	
White	24,041	44,006	22,898	4,127	95,072
	25.3%	46.3%	24.1%	4.3%	

Higher percentile = "Less Healthy"

How might Simpson's Paradox occur in hospital equity measure analyses?

- Evaluating an entire health system vs its individual hospitals
- Performing multi-level analyses:
  - Readmissions by SDOH and behavioral health
  - Age and payor type
- Aggregating (or disaggregating) across different regions
- Disaggregating by racial/ethnic subcategory
- Comparing different hospital types by equity category
  - Safety net, rural/urban, investor owned/not for profit, academic, small/large

Step 4. Determine actionability

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Act | Plan
Study | Do

Considerations for Actionability

ARE THERE PROVEN APPROACHES?

WHAT PARTNERSHIPS DO YOU HAVE?

WHAT LOCAL CONTEXT MIGHT INFORM PRIORITIZATION?

IS THIS A SHORT- OR LONG-TERM ENDEAVOR?

HOW MUCH IS DRIVEN BY FACTORS WITHIN THE HOSPITAL'S CONTROL?

How Might Hospitals Eliminate Disparities?
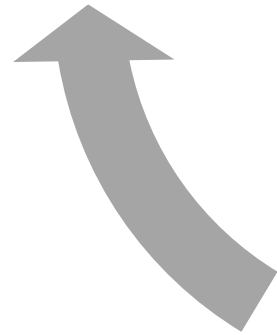
Match the Intervention to the Root Cause

- Readmission rates
- Access to SUD treatment
- Primary care, mental health shortage areas

Disparities after hospitalization

Disparities prior to hospitalization

- Access to health care services
- Social drivers of health
- Disease burden

Disparities during hospitalization

- Breast milk feeding
- HCAHPS

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Partner with Patients and Families
SDOH Screening Example

VS

Without PFP

Use data to identify highest community needs

Develop screening program internally

Develop public messaging

Implement program

Evaluate program

With PFP

Use data to identify highest community need

Validate data with lived experiences

Learn about community resources from the people who are accessing them

PFPs inform community messaging

PFPs co design scripting, inform timing and evaluate screening programs.

PFCCpartners
Patient & Family Centered Care

Hospitals Can Play Many Roles

Exhibit 1: Typology of community-level actions for hospitals to address social determinants of health

Leverage business operations for community economic development

Hire from local historically marginalized communities

Procure from local historically marginalized communities

Invest in local historically marginalized communities

Improve availability of local social services

Fund services through grants

Provide non-financial support

Directly provide services or resources

Advance systems and policy change

Support and engage in multi-sector coalitions

Support and engage in advocacy

Source: "Community-Level Actions On The Social Determinants Of Health: A Typology For Hospitals", Health Affairs Forefront, October 11, 2022.DOI: 10.1377/forefront.20221006.388060

Considerations for on-going monitoring and evaluation

- Lessons learned from other projects
  - HCAI-coronary artery bypass graft outcomes reporting
  - Literature review

- Stakeholder feedback
  - Past HCAI outreach and engagement
  - Ongoing hospital feedback
  - Advisory committee feedback

- Plan for further discussion at future HEMAC meeting

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