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# Learning Objectives

- Describe the evolution of the use of data and visualization tools to identify and combat health disparities.
- Discuss the challenges of and lessons learned about the collection, standardization and stratification of complex demographic and socioeconomic data.
- Outline the use of analytics in identifying the root cause of disparities and helping to improve stakeholder engagement.

### Goal

• Identify existing health disparities among demographic groups at Loyola Medicine and measure the impact of the hospital-level health-equity initiatives.

## Background

- The CDC defines health equity as "the state in which everyone has a fair and just opportunity to attain their highest level of health"
- Racial and ethnic groups experience higher rates of morbidity and mortality compared to their White counterparts.
- COVID-19 pandemic exacerbated existing preventable health disparities

### Method

- Data sources: EHR & Chart Abstraction Databases
- Demographic data self-reported
- Develop visualizations stratifying health outcomes by demographics.
- Identify health disparities and create more visualizations stratifying by known risk factors by demographics

### Outcome/Impact

- Identified a disparity in low-risk cesarean birth rates (TJC measure PC-02): White patients had a rate of 24.1%, compared with 34.3% for Hispanic or Latino patients and 36.9% for Black patients.
- Data-guided education and improved risk stratification methods helped reduce the gaps by approximately 8.1% over nine months.
- Real-time reporting tool for stakeholders to identify emerging trends.

### Lessons Learned

- Use existing literature as starting point
- More visualizations  $\neq$  more insight
- Partnership with clinical leaders & DEI leaders is integral for success

#### References

- Centers for Disease Control and Prevention (CDC) July 1 2022. What is Health Equity? Retrieved from https://www.cdc.gov/healthequity/whatis/index.html
- Centers for Disease Control and Prevention (CDC) November 24 2021. Racism and Health Retrieved from https://www.cdc.gov/minorityhealth/racism-disparities/index.html

# Data-Enabled Health Equity: Creating a Framework for Action

### Figure 1. Example Visualizations Showing Health Disparity Analysis

AD-MANO MANO MANO MANO MANO	LOYOLA MEDICINE		Perinatal Care Meası <u>Cesarean Bi</u>			
ar I	Month All	Hospital LUMC	Delivery Provide All	er Quality Measures Per Cesarean Birth (PC-0		
			PC Measure	e Summary		
Elective Deliver	ry (PC-01)	Cesarean Birth (PC-02)	Exclusive Breast Milk Feeding (PC-05)	Unexpected Complications in Term Newborns - Overall Rate (PC-06.0)	Unexpected Complications in Term Newborns - Severe Rate (PC-06.1)	Unexpected Complications in Ter Newborns - Moderate Rate (PC-06
0.00%	6	29.59%	22.22%	2.16%	0.42%	1.74%
ta available from 1/	1/21 - 5/31/23.					
licking any below gra	aph will filter all other g	graphs based on your selection.				
	Race		Ethnicity		Insurance	
AI/AN Asian	30.	77%	100.00%	Hispanic or Latino	34.42%	30.37% 29.089
Black Hispanic 0.00% Aultiracial	25.00%	■ 36.90%		Not Hispanic or Latino	26.68%	et 20.00%-
Other Unknown White	24.14%	50.00%		Unknown	27.27%	10.00%
0.00%	20.00%	40.00% 60.00% PC Rate	80.00% 100.00%	0.0096 10.0096	20.00% 30.00% 40.00% PC Rate	0.00% Public Privat
dth of bar relative to	the # of deliveries.			Width of bar relative to the # of deliverie:	s. W	idth of bar relative to the # of deliverie
		Mothe	er's Age		Zip	Code
Under 18		22.22%	ò			
18-24		21.07%				
25-34			32.85%			Carlo Carlo
35-39			39	.56%	Le Birr	
0 and over 0.00%	5.00% 10.00%	15.00% 20.00% 25.0	0% 30.00% 35.00% 40.00	50.00% 96 45.00% 50.00% 55.00%	© 2023 Mapbox © OpenStreetMap	
			PC Rate		PC Measure Rate	
	the # of deliveries.				0.00%	100.0

### Figure 2. Example Visualizations Showing Comorbidity Risk Factors

LOYOLA

LOYOLA MEDICINE	Risk Factors by		
Year of Delivery Date Month of Delivery Date All All	Hospital Delivery Provide	er Demographic Ethnici Race All	ty y
Pregravid BMI	Tobacco use during pregnancy	Drug use during pregnancy	Gestational Hypertension
AI/AN Asian Black	AI/AN 14.29%	Black 5.77% Hispanic 3.57%	AI/AN 42.86% Asian 16.67%
Hispanic Multiracial Other Unknown	Multiracial 3.45%	Multiracial 3.45%	Black 21.95% Hispanic — 10.71% Multiracial — 13.79%
White 0% 20% 40% 60% 80% 100% % of Total Deliveries	Unknown — 0.74%	Unknown 4.44%	Other 15.76% Unknown 16.30%
Excludes cases where pregravid BMI was not recorded.	White 2.85%   0% 5% 10% 15%   % of Total Deliveries	White 2.48%   0% 2% 4% 6%   % of Total Deliveries 6% 6% 6%	White 17.25% 0% 10% 20% 30% 40% 50% % of Total Deliveries
OB Visits	Pre-existing diabetes	Gestational Diabetes	Pre-eclampsia
AI/AN Asian Black Hispanic Multiracial Other	Asian 0.67% Black 1.70% Other 2.32%	AI/AN 14.29% Asian 18.00% Black 7.00% Hispanic 3.57% Multiracial 10.34%	Asian 7.33% Black 13.53% Hispanic 14.29% Multiracial 10.34% Other 10.64%
White 0% 20% 40% 60% 80% 100% % of Total Deliveries	Unknown 4.44% White 2.03% 0% 1% 2% 3% 4% 5%	Other 13.60% Unknown 9.63% White 11.09% 0% 5% 10% 15% 20%	Unknown 8.89% White 9.31% 0% 5% 10% 15%
No OB Visits a 0-5 Visits 6-10 Visit	% of Total Deliveries	% of Total Deliveries	% of Total Deliveries

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MEDICINE Month of Delivery Date Ethnicity ear of Delivery Date Hospital Delivery Provide Demographi LUMC Ethnicity Pregravid BMI **Gestational Hypertensio** obacco use during pregnar Drug use during pregnancy Hispanic or Latino Hispanic or L Not Hispanic or Latin 3.40% L8.991% 3.89% Not Hispanic or Latii Not Hispanic or Latin Not Hispanic or Lati Unknow 50% 100 Unknown - 0.39% 1.94% % of Total Deliveries xcludes cases where pregravid BMI was not 0% 2% 4% 0% 0% 10% 20% 30 recorded. 2% <18.5 18.5 - 24.9 25 - 29.9 % of Total Deliveries % of Total Deliveries % of Total Deliveries Gestational Diabetes **OB** Visits Pre-existing diabetes Pre-eclampsia Hispanic or Lati Hispanic or La Not Hispanic or Latir Not Hispanic or La Not Hispanic or Lating .601% Unkno 096 50% 100 % of Total Deliveries 0% 1% 2% 3% 4% 10% 20% 0% 5% 10% 15% No OB Visits a.. 📃 0-5 Visits 6-10 Vis % of Total Deliveries % of Total Deliveries % of Total Deliveries

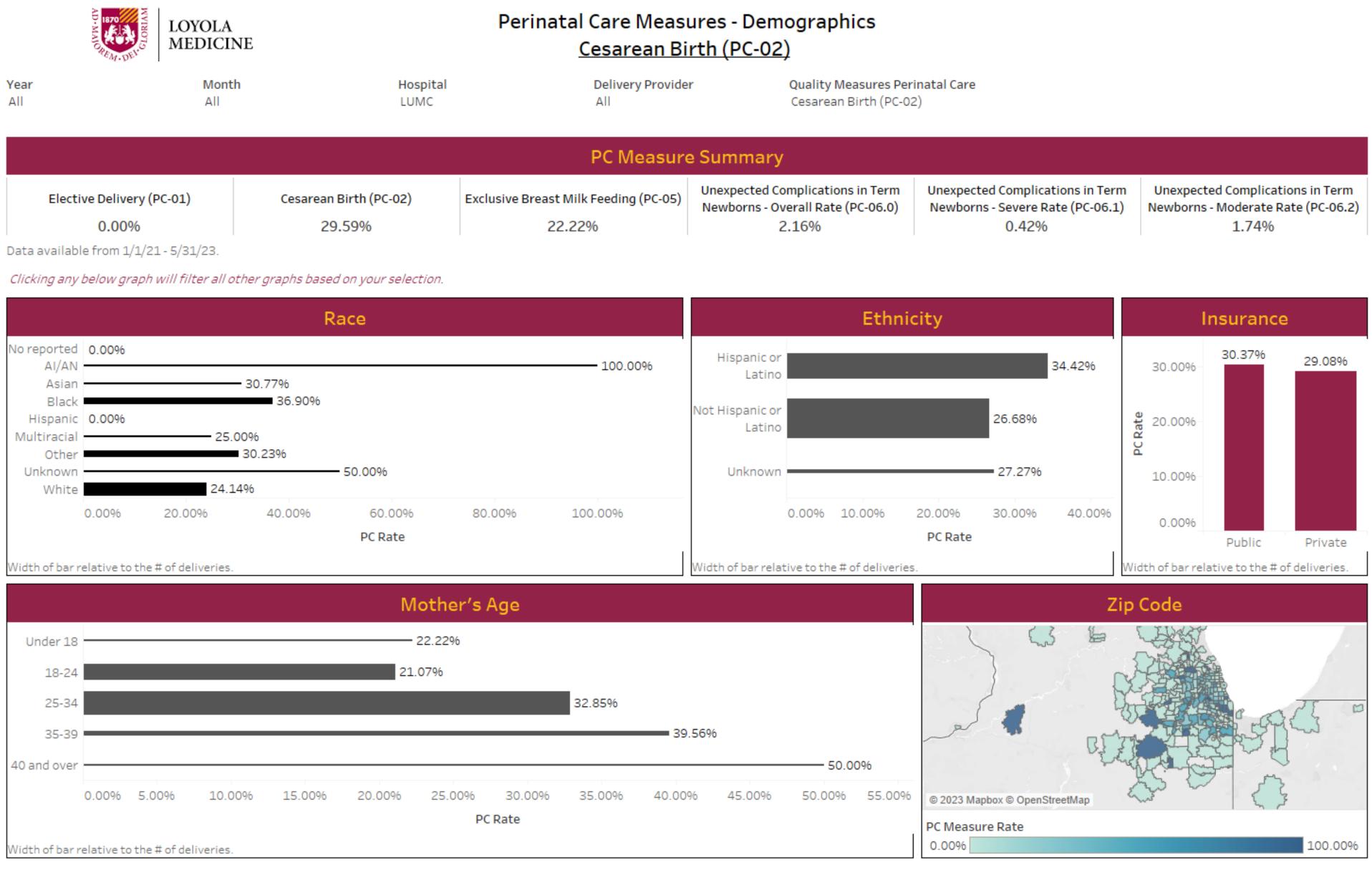
Risk Factors by Demographics

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#### Figure 1. Example Visualizations Showing Health Disparity Analysis



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#### **Other Focus Areas**

- Readmissions
- PC-02 (Cesarean Section)
- Sepsis
- Maternal Hemorrhage
- Opioid & Naloxone Prescribing



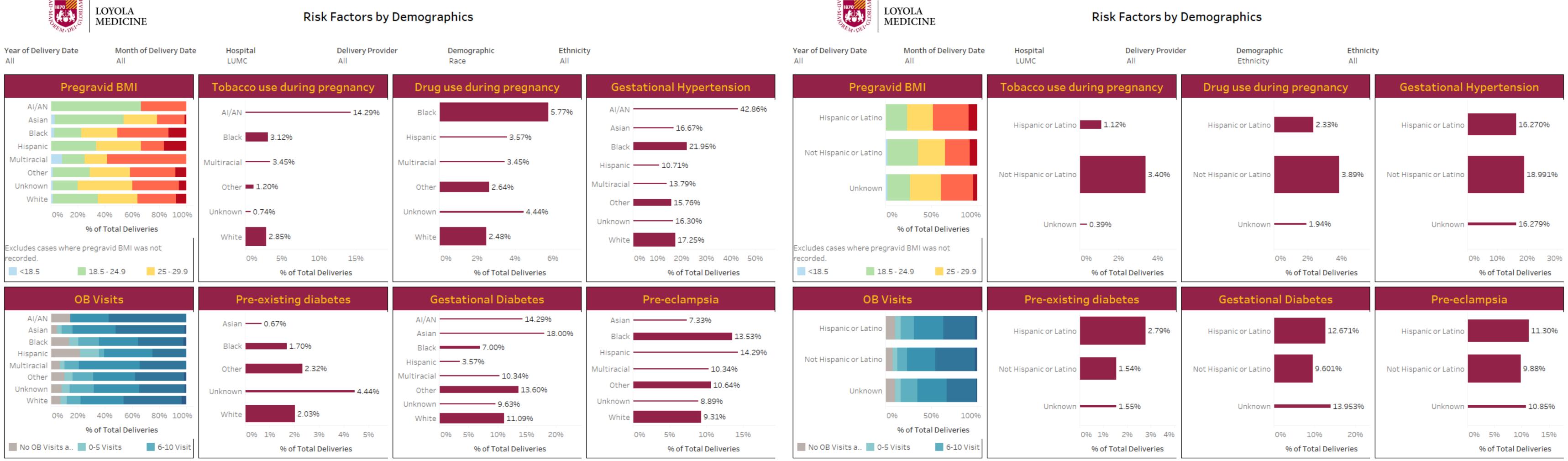
#### LOYOLA MEDICINE

#### **Current EHR Race Categories**

- Asian Indian
- Chinese
- Filipino
- Japanese
- Korean
- Vietnamese
- Other Asian
- Native Hawaiian
- Other Pacific Islander
- Guamanian
- Samoan
- Black/African American
- American Indian/Alaskan Native
- White

#### **Current EHR Ethnicity Categories**

- Mexican, Mexican American, Chicano/a
- Puerto Rican
- Cuban
- Another Hispanic, Latino/a, or Spanish Origin
- Non-Hispanic or Latino/a



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#### Figure 2. Example Visualizations Showing Comorbidity Risk Factors

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