Racial and Ethnic Disparities and Pharmacotherapy

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Disclosure :

I have no actual or potential conflict of interest in relation to any product or service mentioned in this program or presentation.

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Objectives

1. Learn about Racial and Ethnic Disparities
2. Understand the factors that affect Health Disparities and Pharmacotherapy
3. Review common Chronic disease conditions
4. Understand what the clinician's role consists of
5. Learn possible solutions

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Racial and Healthcare Disparities

Racial Disparity-A condition that one racial group systemically and disproportionally experience worse outcomes in comparison to other racial groups

Health care Disparity-A persistent gap between health status of minorities and non-minorities in the US (per federal government) that contribute to increased mortality, morbidity, and burden of disease

Higher rates of illness and death are seen in minority groups in many common chronic conditions

- **Houston Chronicle: Texas ranks among worst in the nation for racial health disparities**

**Disparities in Use of New Diabetes Medications: Widening Inequality | Commonwealth Fund

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Factors that Contribute to Healthcare Disparities

- Race and Ethnicity
- Socioeconomic Status
- Lack of Evidence
- Access to Healthcare
- Discrimination
- Mistrust in Health care System

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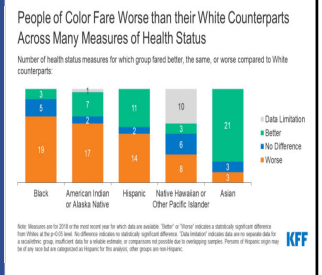
Overview of Racial Disparities in Healthcare

Comparing several measures of health status of minorities in the US to those of White Americans

Health status measures included:

- Infant mortality
- Pregnancy related deaths
- Prevalence of chronic conditions
- Overall physical and mental health status

Disparities in Health and Health Care: 5 Key Questions and Answers | KFF



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Racial/Ethnic Disparities in prevalence of Chronic Disease Conditions

- Diabetes
- Hypertension
- Cardiovascular Disease
- Asthma

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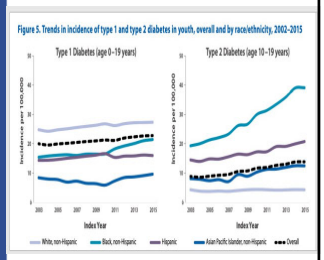
Diabetes

- Diabetes is one of the most common chronic conditions, affecting 13.4% of adults in the US Disparities
- Type 1 Diabetes (T1D) is a genetic condition, while T2D is lifestyle related and develops overtime
- In the US, T2D is predominate in minority groups compared to Whites

https://www.commonwealthfund.org/publications/issue-briefs/2022/jun/disparities-use-new-diabetes-medications-treatment-inequality https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pd



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Newer diabetes medication study

Table 3 Use of newer diabetes medication classes during the study period, overall and by race/ethnicity.

Medication class	Overall (*N* = 4892)	White (*N* = 3111)	Black (*N* = 766)	Hispanic (*N* = 614)
First newer diabetes medication class used				
GLP-1 receptor agonist (%)	976 (20.0)	724 (23.3)	120 (15.7)	97 (15.8)
DPP-4 inhibitor (%)	1154 (23.6)	712 (22.9)	206 (26.9)	157 (25.6)
SGLT-2 inhibitor	81 (1.7)	56 (1.8)	12 (1.6)	12 (2.0)

- Racial/ethnic disparities in the initiation of newer diabetes medications have important clinical consequences. There is evidence from clinical trials that GLP-1Ras and SGLT-2Is have beneficial effects on cardiovascular and renal outcomes compared to other classes of diabetes medications.
- As racial/ethnic minorities with diabetes have a higher burden of chronic kidney disease and worse cardiovascular outcomes
- Reasons for the racial/ethnic differences in initiation of newer diabetes medications may include differences in insurance coverage, provider treatment patterns, and patient preference

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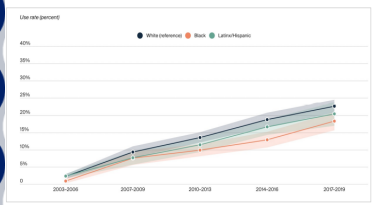
Diabetes

The newer diabetic medications, introduced in 2005 reported to be highly effective, with less side effects

Compared to Whites, African-Americans use rates were ~2-6% less prescribed newer diabetic medications (GLP-1 RA, DPP4-I, and SGLT2-I) between 2003- 2019

**Disparities in Use of New Diabetes Medications: Widening Inequality | Commonwealth Fund

Use of New Diabetes Medications by Race and Ethnicity



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Hypertension

- Nearly half of the adults in the US have hypertension (47%, ~116 million)
- Hypertension is more common in African Americans (56%) than in Whites (48%), Hispanics (39%), and Asians (46%)
- Racial disparities in hypertension have been correlated with the morbidity and mortality risks
- Hypertension treatment is guided by Cardiovascular disease (CVD) risk

Facts About Hypertension | cdc.gov

https://www.cdc.gov/bloodpressure/facts.htm

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Racial and Ethnic Differences in Antihypertensive Medication Use and Blood Pressure Control Among US Adults With Hypertension

- Hispanic patients (60.7%; 95% CI, 57.0%–64.3%) had the lowest utilization rate of antihypertensive medications compared both with whites (73.9%; 95% CI, 71.6%–76.2%) and blacks (70.8%; 95% CI, 68.6%–73.0%).
- Similar to black patients, Hispanic patients were less likely to attain the treatment goals in adjusted analysis compared with white patients.
- we observed marked racial differences in these measures. Black and Hispanic patients seemed to have poorer hypertension control (as assessed by both JNC 7 and JNC 8 criteria) compared with whites, and these differences were more pronounced in younger and uninsured patients. Although black patients received more intensive antihypertensive therapy, Hispanics were undertreated.
- Therefore, further efforts should focus on understanding the reasons for racial inequalities in hypertension control and mounting a broader effort in addressing these reasons.

https://www.ahajournals.org/doi/full/10.1161/CIRCOUTCOMES.116.003166

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Table 2. Prevalence of Antihypertensive Medication Use Among Hypertensive Adults Over Time by Race/Ethnicity—National Health and Nutrition Examination Survey, 2003 to 2012

	2003–2004, % (95% CI)	2005–2006, % (95% CI)	2007–2008, % (95% CI)	2009–2010, % (95% CI)	2011–2012, % (95% CI)	P_{trend} (Adjusted)
All patients	n=1606	n=1475	n=2057	n=2017	n=1641	
Diuretics	30.5 (27.2–33.8)	33.6 (29.0–38.1)	34.6 (30.3–38.9)	35.5 (33.1–38.0)	36.8 (33.1–40.4)	<0.01
Thiazide diuretics	22.9 (20.6–25.3)	26.0 (21.9–30.1)	26.9 (23.2–30.6)	27.4 (24.9–29.8)	29.6 (25.8–33.5)	<0.01
Calcium channel blockers	19.9 (17.1–22.7)	21.0 (17.4–24.7)	19.2 (16.7–21.8)	20.0 (17.4–22.7)	19.7 (16.4–23.0)	0.447
Angiotensin-converting enzyme inhibitors	29.3 (25.2–33.5)	29.1 (25.6–32.5)	28.7 (25.3–32.2)	33.0 (30.7–35.3)	33.3 (30.0–36.6)	0.04
β-Blockers	24.6 (21.8–27.4)	30.2 (25.9–34.4)	26.8 (24.4–29.2)	32.3 (28.6–36.0)	28.7 (23.7–33.7)	0.07
Angiotensin receptor blockers	13.0 (10.8–15.3)	14.9 (12.3–17.4)	20.4 (17.9–23.0)	20.2 (17.4–23.0)	17.1 (14.2–20.1)	<0.01
Any antihypertensive drug use	65.6 (61.2–70.0)	69.0 (63.8–74.3)	72.2 (70.2–74.2)	76.3 (72.9–79.6)	77.3 (72.9–81.7)	<0.001

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Black	n=362	n=447	n=531	n=484	n=651	
Diuretics	36.0 (29.7–42.3)	40.0 (33.8–46.1)	39.0 (33.5–44.6)	42.3 (38.5–46.1)	43.1 (39.3–46.9)	<0.01
Thiazide diuretics	27.4 (22.5–32.4)	30.8 (25.7–35.9)	31.1 (27.3–34.9)	33.9 (29.2–38.6)	34.7 (30.4–39.1)	<0.001
Calcium channel blockers	27.1 (21.0–33.2)	31.5 (26.8–36.2)	27.5 (22.5–32.5)	27.8 (22.7–32.9)	30.5 (27.0–34.0)	0.581
Angiotensin-converting enzyme inhibitors	26.9 (23.5–30.3)	26.2 (21.3–31.2)	31.1 (25.2–37.1)	29.3 (24.9–33.6)	28.5 (22.8–34.2)	0.740
β-Blockers	15.8 (10.4–21.2)	22.5 (18.0–27.0)	21.4 (17.5–25.3)	26.9 (21.1–32.7)	21.8 (18.4–25.1)	0.02
Angiotensin receptor blockers	9.4 (5.8–13.1)	18.4 (14.7–22.0)	16.7 (13.3–20.1)	19.2 (13.2–25.3)	18.1 (14.0–22.3)	<0.01
Any antihypertensive drug use	63.0 (56.6–69.3)	69.7 (64.6–74.8)	69.1 (64.5–73.6)	74.0 (70.1–77.9)	76.0 (71.3–80.7)	<0.001
Hispanic	n=345	n=209	n=471	n=488	n=299	
Diuretics	21.3 (15.2–27.3)	14.5 (8.1–20.9)	23.0 (18.7–27.2)	26.9 (23.1–30.7)	22.7 (16.3–29.1)	0.427
Thiazide diuretics	18.1 (12.1–24.1)	10.7 (5.4–16.0)	18.5 (14.5–22.5)	21.2 (16.4–26.0)	19.8 (13.0–26.5)	0.279
Calcium channel blockers	21.3 (8.4–34.3)	8.1 (4.2–12.0)	16.5 (13.2–19.8)	19.5 (13.3–25.7)	19.8 (14.3–25.2)	0.862
Angiotensin-converting enzyme inhibitors	24.0 (16.9–31.0)	20.7 (12.8–28.6)	26.1 (22.5–29.7)	34.7 (28.7–40.6)	33.5 (26.9–40.2)	0.01
β-Blockers	23.7 (16.2–31.3)	14.4 (8.6–20.1)	22.7 (19.7–25.6)	25.5 (21.4–29.7)	22.0 (17.6–26.3)	0.860
Angiotensin receptor blockers	10.9 (6.5–15.4)	6.0 (1.8–10.2)	16.6 (9.7–23.5)	17.5 (13.8–21.2)	16.4 (11.2–21.7)	<0.01

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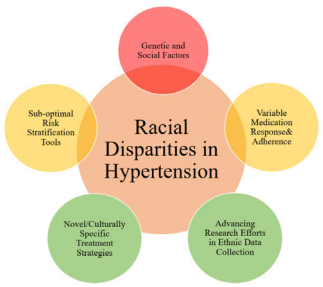
Racial Disparities in Hypertension

Major factors – Genetic and Social factors

Reasons for worse outcomes – Sub-optimal risk stratification tolls and variable medication response and adherence

Future directions for improving disparities in ethnic minorities – Novel/culturally specific treatment strategies and advancing research efforts in ethnic data collection

https://www.acc.org/latest-in-cardiology/articles/2020/04/06/08/53/racial-disparities-in-hypertension-prevalence-and-management



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Hypertension

Blacks and Hispanics are two times more likely to struggle with high blood pressure reduction due to challenges in lifestyle changes such as:

- Alcohol restriction
- Exercise
- Quitting smoking
- Salt restriction (in Blacks)
- Reducing stress
- Hypertension is more resistant in African-Americans, forcing the need for additional therapies to control blood pressure

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4108512/pdf/nihms-590664.pdf

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Cardiovascular Disease

Cardiovascular disease is the leading cause of death in the US

Four primary clinical risk factors of CVD include:

- Diabetes
- Hypertension
- Obesity
- Dyslipidemia

Risk factors and effects of cardiovascular disease differ by racial/ ethnic groups

- **https://www.commonwealthfund.org/publications/issue-briefs/2022/jun/disparities-use-new-diabetes-medications-treatment-inequality

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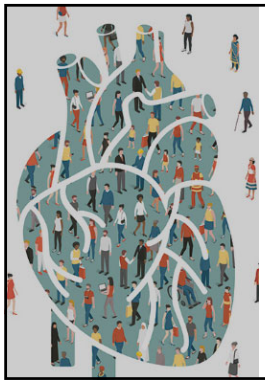

Cardiovascular Disease

Hispanics are twice more likely to die form Cardiovascular diseases than African American or White patients..?

- True
- False

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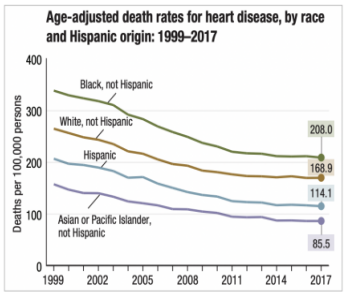
Cardiovascular Disease

African Americans are twice more likely to die from CVD than Asian and Hispanic races

"https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(22)00027-X/fulltext



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Cardiovascular Disease Disparities

Differences in risk factors

African-Americans (AA)

- Higher prevalence and earlier onset of risk factors than Whites, including hypertension and diabetes
- AA women have a higher platelet count, causing them to be less responsive to antiplatelet agents

Whites

- Lowest rates of DM and hypertension compared to other ethnicities
- Lowest rate of CVD

Hispanics

- Higher rates of heart failure (HF), stroke, and peripheral artery disease (PAD)

Asians

- Have lower prevalence of the risk factors than all other ethnicities

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Cardiovascular Disease Disparities

Differences in CVD Drug Treatment

Anticoagulants

- SLCO1B1 haplotypes vary among different races contributes to different responses to statins
- There is a difference in the efficacy and pharmacokinetics of statins between East Asians

- Decreases plasma concentration of Atorvastatin

- Warfarin dosage requirements to achieve goal INR is lower in Asians
- CYP2C9*2 is associated with lower dose requirements in Whites, but not in African Americans
- Asians and Whites have a higher risk of heparin-induced thrombocytopenia (HIT)

Antiplatelets

- African Americans reported less likely to take aspirin than Whites
- Minority races less likely to receive optimal preventative care for prophylaxis

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Asthma

Which race has the highest prevalence for it?

- African Americans
- Hispanics
- Whites

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Asthma

Asthma affects about over 300 million individuals worldwide and ~26 million in the US

Prevalence of asthma among African Americans (14.5%) is higher compared to Whites and Hispanics (8.2% and 7.5%, respectively)

- Racial and ethnic disparities in asthma can be caused by determinates such as:
  - Structural
  - Social
  - Biological
  - Behaviors

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8461584/pdf/yjbm_94_3_497.pdf

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Asthma

- Racial Differences
- There are a lack of studies to establish normal parameters to characterize airway inflammation of minority, Non-White populations
- Therapeutic responses to asthmatic therapies differ by racial and ethnic populations
- **According to national Asthma Survey conducted in few states including Texas, Children with asthma in this large, multistate survey showed a dramatic underuse of Inhaled corticosteroids (ICSs). Black and Hispanic children compared with white children had more indicators of poorly controlled asthma, including increased emergency health-care utilization, more daily rescue medication use, and lower use of ICSs, regardless of symptom control**

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Racial Differences in Asthma Therapy Responses

African-Americans

- Different responses to corticosteroids compared to White patients
- Children respond better to inhaled corticosteroids (ICS), while adults respond better to LABAs
- Higher risk of asthma-related death with the use of salmeterol (LABA- Long-acting beta agonist)
- Children less likely to respond to additive treatment with leukotriene receptor antagonist

Hispanics/ Whites

- Children responded better to step therapy with LABA than higher dose of Inhaled corticosteroids (ICS)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8461584/pdf/ijbm_94_3_497.pdf

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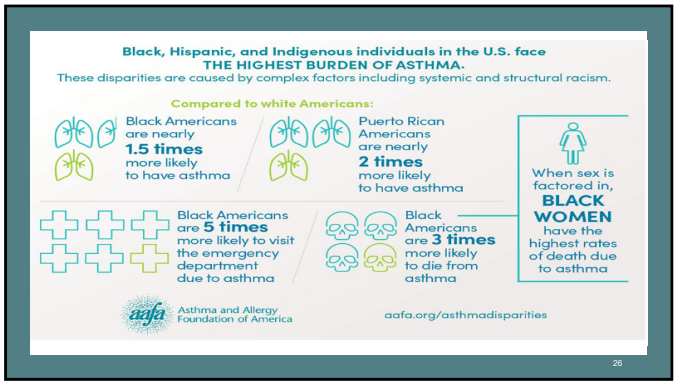

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Rare Chronic Conditions

There are rare diseases and conditions that are more prevalent in some races and ethnicities; this caused by genes specific to certain races, also socioeconomics.

Examples:

- Sickle Cell Disease
- Cystic Fibrosis

Disparities seen in rare chronic diseases include lack of:

- Federal funding & Foundation contributions
- Research
- FDA Drug Approvals

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Clinician's Role in Eliminating Disparities

- Continual education on significant effects of both treatments and conditions in different ethnicities and races
- Including all ethnic groups in research and development for medications and medical treatment
- Improve the provider-patient interactions to diminish the mistrust of minority communities in our health system
- Eliminate discrimination that effects access to healthcare
- Bring awareness to other health professionals of disparities
- Short Patient (Print) Social Needs Screening Tool (aafp.org)

https://accessemanals.onlinelibrary.wiley.com/doi/10.1002/jac5.1565 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8360018/pdf/nihms-1688075.pdf

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Texas specific diabetes data

C&S MLD Pro Compliance Rates — Flowchart Run: SEP_Q2 — Claims Thru Date: 9/20/2022 — Reporting Database Refreshed On: 10/1/2022 7:01:19 AM

Health Plan	Review Set	LOB	Measure ID	Sub Measure ID	Sub Measure Description	Compliance Count	Compliance %	Non Compliance Count	Eligible
TX	PRO_MY_22	TX_MCD_STAR_PLUS_LTC_230	HBDMY22D	HBA1CB	Non-Medicare HbA1c Control (<8)	3365	26.58%	9293	12658
				LTB_AM_D	HbA1c < 8 - American Indian and Alaska Native Direct	2	13.33%	13	15
				LTB_AS_D	HbA1c < 8 - Asian Direct	59	37.11%	100	159
				LTB_B_D	HbA1c < 8 - Black Direct	913	27.68%	2385	3298
				LTB_HL_D	HbA1c < 8 - Hispanic/Latino Direct	826	27.77%	2148	2974
				LTB_NHL_D	HbA1c < 8 - Not Hispanic/Latino Direct	2539	26.22%	7144	9683
				LTB_O_D	HbA1c < 8 - Some Other Race Direct	819	27.79%	2128	2947
				LTB_W_D	HbA1c < 8 - White Direct	836	26.46%	2324	3160

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- https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/factsheets/minority/minorfind/minorfind.pdf
- https://www.usccr.gov/files/pubs/docs/Healthcare-Disparities.pdf
- https://sfgov.org/civilservice/sites/default/files/12-31-20_CSC%20Racial_%20Equity_%20Action_Plan_0.pdf

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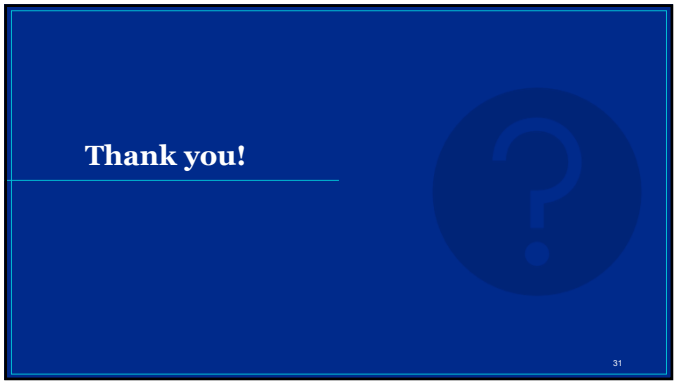

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