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Traffic Safety & Inequities: Understanding Safety Gaps

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Acknowledgements

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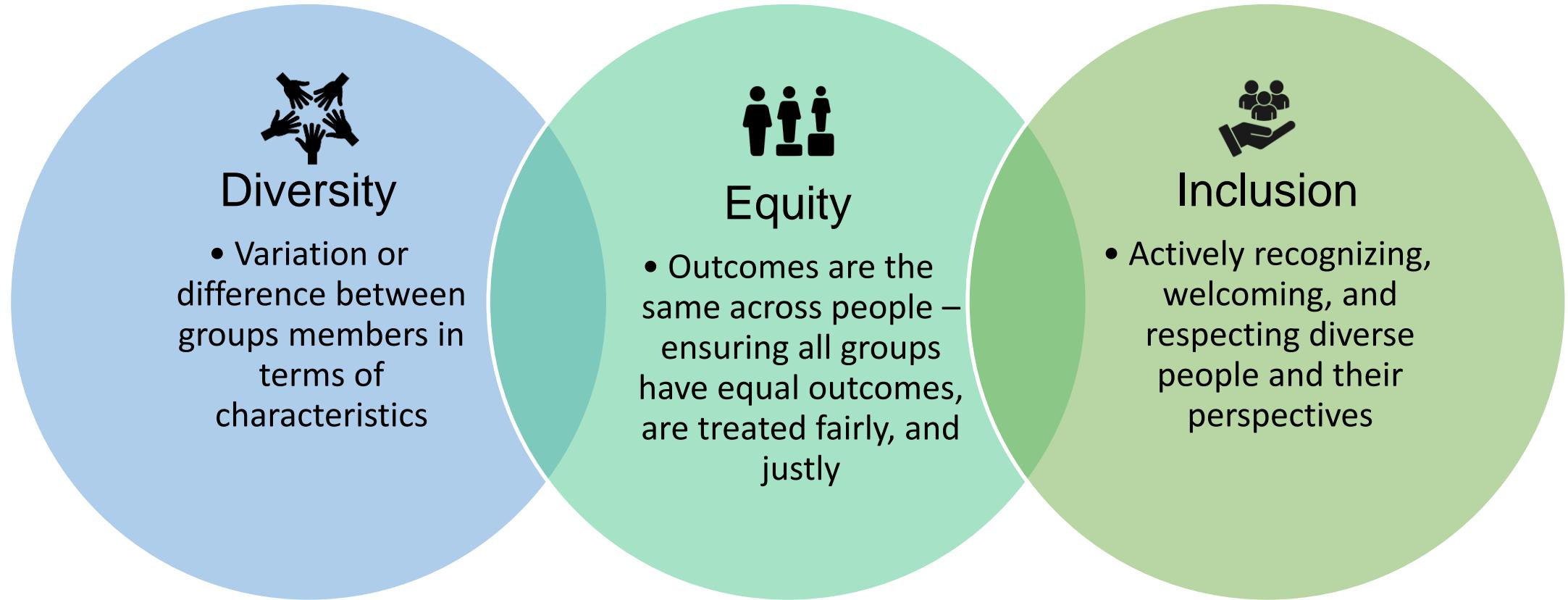


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Defining DEI



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Exclusion and Marginalization

- **Excluded or marginalized groups** have often suffered discrimination or been excluded or marginalized from society and the health-promoting resources it has to offer.
 - Have been pushed to society's margins
- **Exclusion in transportation**
 - Poor or inadequate access to transportation (vehicles, transit, etc.)
 - Poor or inadequate transportation infrastructure (bike lanes, roads, etc.)
 - Disinvestment, under-investment, or (historically) based decision making driven by race or socioeconomic status of communities



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Health Disparities: differences in health or health determinant that adversely affects marginalized or excluded groups



Race- People of color are more likely to be involved in and suffer serious injuries in crashes



Socioeconomic Status- Low SES are more likely to be involved in fatal crashes



Gender- Women are less likely to be involved in a crash, but more likely to die from their injuries



Geography- Those in rural areas are more likely to be seriously injured or die in traffic crashes

- **Health equity:** improve access to conditions and resources that influence health mainly for those who lack access or have worse access to resources

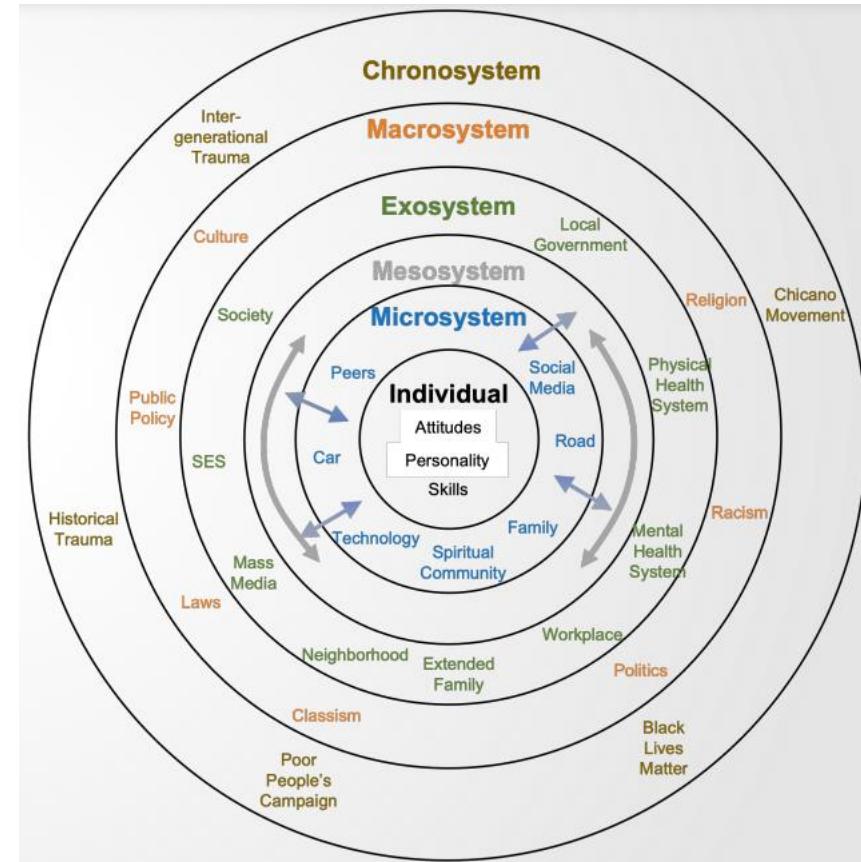


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Ecological Model



- Cassarino M, Murphy G. Reducing young drivers' crash risk: Are we there yet? An ecological systems-based review of the last decade of research. *Transp Res Part F Traffic Psychol Behav.* 2018;56:54-73. doi:10.1016/j.trf.2018.04.003
- Shannon Roberts, Ph.D. Transportation Research Board Young Drivers Committee, Mid-Year Meeting, 2022

Safety is a luxury of the wealthy

OEMs offering Automated Emergency Braking as standard in >90%

- 2017: Mercedes-Benz and **Tesla** offer AEB as std.
- 2018: **Volvo** and **Lexus**
- 2020: Audi*

U.S. DOT and IIHS announce historic commitment of 20 automakers to make automatic emergency braking standard on new vehicles

March 17, 2016

... we hit the goal, but not all

General Motors – 58%

- Stellantis (Alfa Romeo, Chrysler, Dodge, Fiat, Jeep, Maserati, & Ram) – 43%



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Gender Gaps in Crash Survivability

- Men are more likely than women to be involved in crashes
 - Due to higher engagement in risky driving behavior (DUI, speeding, running red lights)
- When women are involved in crashes, they are more likely to be injured or killed. Why?
 - The men who hit them are more likely to be driving large trucks and SUVs (IIHS, 2021)
 - Taller, heavier vehicles are designed to prioritize safety of their own occupants over others
 - Vehicle designs are less likely to be built using anthropometric data of women
 - Women 70% more likely to suffer serious leg injuries in a crash (IIHS, 2019)



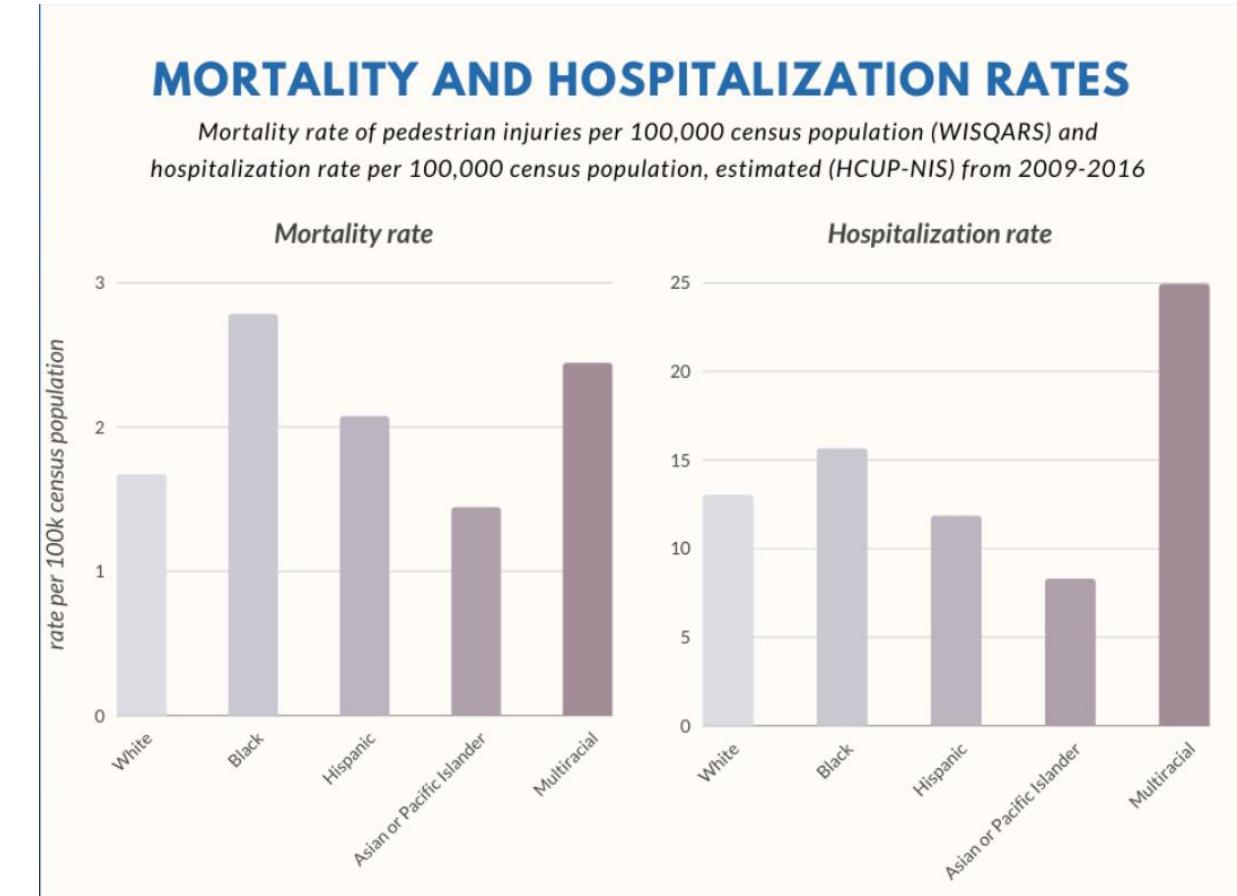
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Pedestrian Injuries are Worse for Minorities

- Minorities experience higher mortality and hospitalization rates compared to whites
 - (Peek-Asa, Hamann, & Butcher, 2020)
 - Less likely to own a vehicle – depend on walking and public transit
 - Smart & Klein, 2015
 - Walk in areas with greater vehicle volumes and poor intersection geometry linked to crash rates
 - Morency et al., 2012



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Potential Solutions?

Focus on *Microsystems* influences

- Make AEB truly standard – and that actually work
- Limit vehicle size
 - Incentivize smaller vehicles (tax credits)
 - Heavier taxes on large vehicles
 - Ban lifted trucks in cities
- Greater investment in public transit and bicycling facilities
- And as always...SPEED LIMITERS



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Thank you!

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