Risk Factors for Infant Mortality

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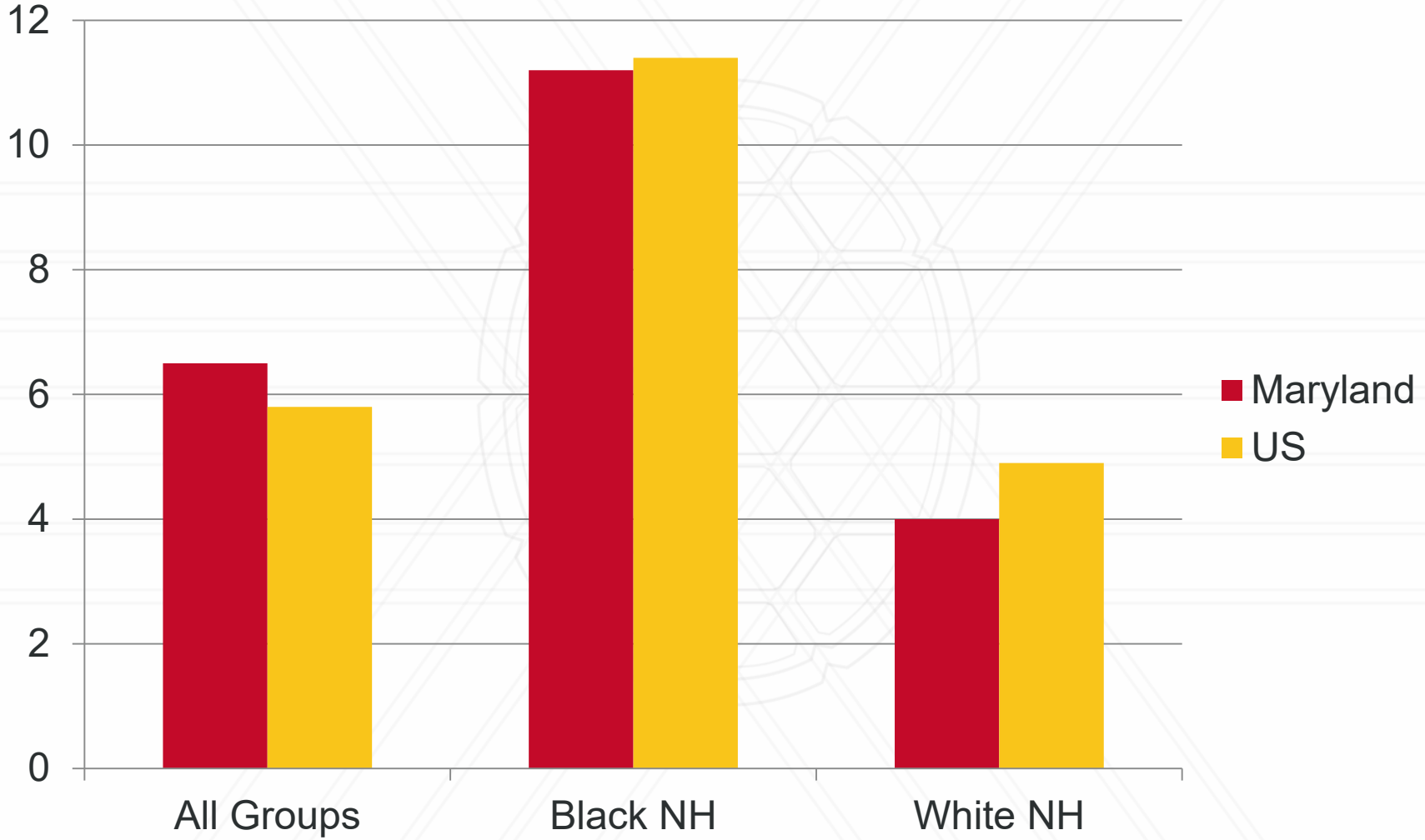
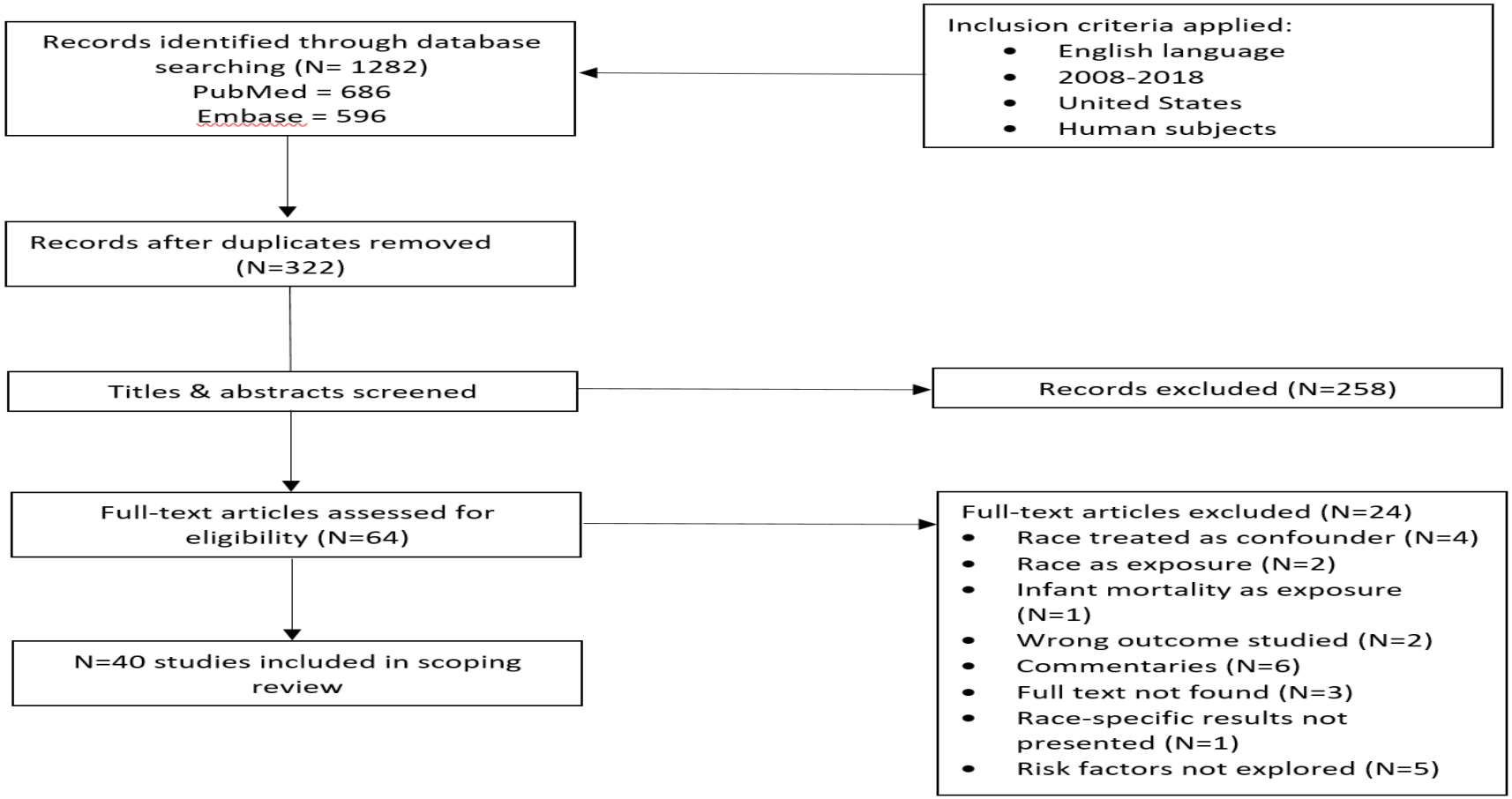
Infant Mortality Rates by Race/ethnicity Maryland and US 2016



Schematic of studies included in the scoping review of risk factors for infant mortality*



* Inclusion of studies was informed by Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines.

The review was informed by the eco-social model of health

Eco-social model of health

Conclusions: Individual-level factors

Focus of the literature (2008 – 2018) has been on four of the known causes of infant mortality:

Preterm birth
Low birth weight
Sleep position
Accidents

Other risk factors were also investigated:

Maternal health status: BMI, age, parity; depressive symptoms

Maternal health behaviors: smoking; prenatal care; pregnancy intention

Maternal demographics: education; income; marital status

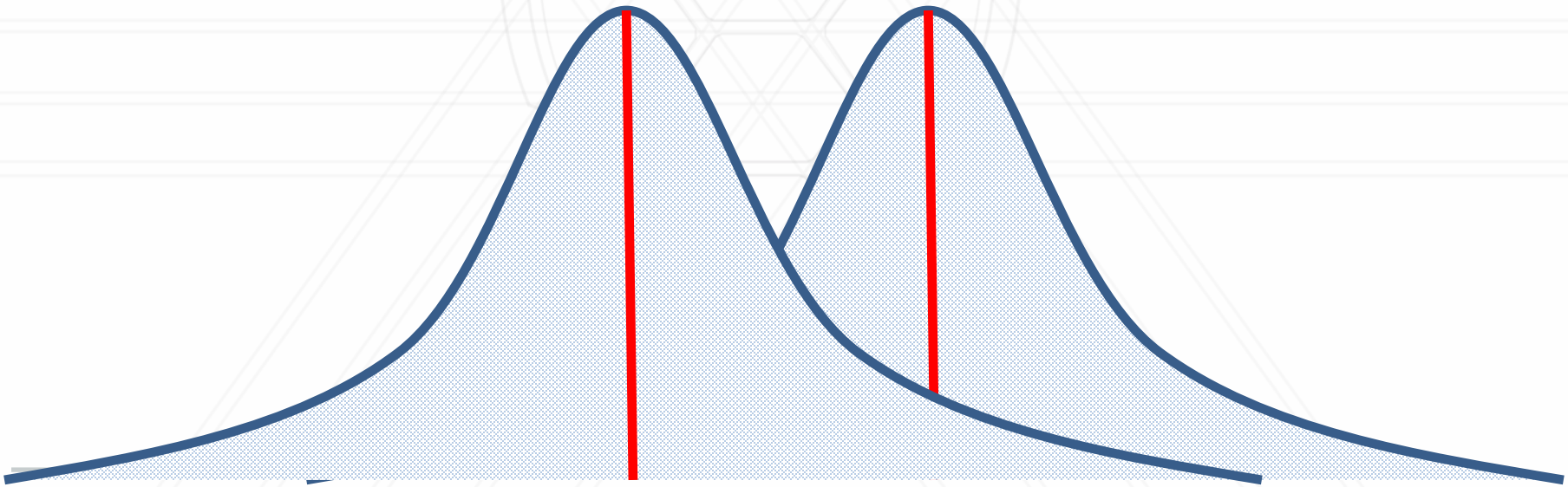
Conclusions: Individual-level factors

The identified risk factors are equally relevant to white or black non-Hispanic women

Compared with white Americans, African Americans present with more risks that are often at more advanced stages

The variable race does not capture the lived experience of African Americans

Why black women present with more risks than white women?



Conclusions: Structural/ecologic factors

Beyond individual-level determinants of infant mortality, the literature highlights the importance of structural factors that determine access to health promoting resources within communities.

Structural determinants of health drive racial-ethnic *disparities* in infant mortality and not individual-level risk factors.

Maternal & Child Health Outcomes Across Various Baltimore Neighborhoods (2016 Data)

Maternal & Child Health Measurement	Cross-country/ Cheswolde	Roland Park/Poplar Hill	Downtown/Seton Hill	Clifton-Berea
% of Women receiving prenatal care in 1st Trimester	62.8	73.6	57.4	51.7
% of Women who reported smoking while pregnant	1.1	1.4	5.8	15.2
% of live births occurring preterm	5.4	8.1	12.8	14.7
Teen birth rate (per 1,000 15-19 year old females)	7.1	0	37	61.2

Why black women present with more risks than white women?

Structural determinants :
Income
Inequality
Structural racism

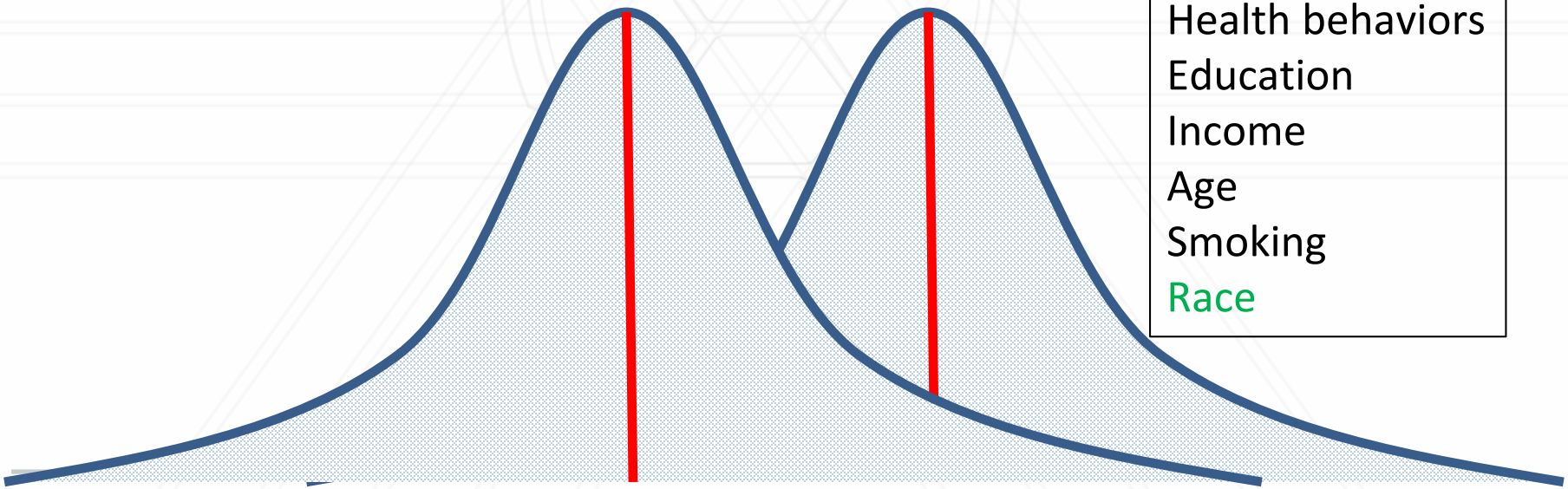
Improve access to local health promoting resources:

Fresh foods & vegetables
Healthy/affordable housing
Public transportation
Neighborhoods safety

Causes:
Preterm birth
LBW
Birth defects
SIDS
Pregnancy comp.
Accidents

Infant Mortality

Maternal Risks:
Health status
Health behaviors
Education
Income
Age
Smoking
Race



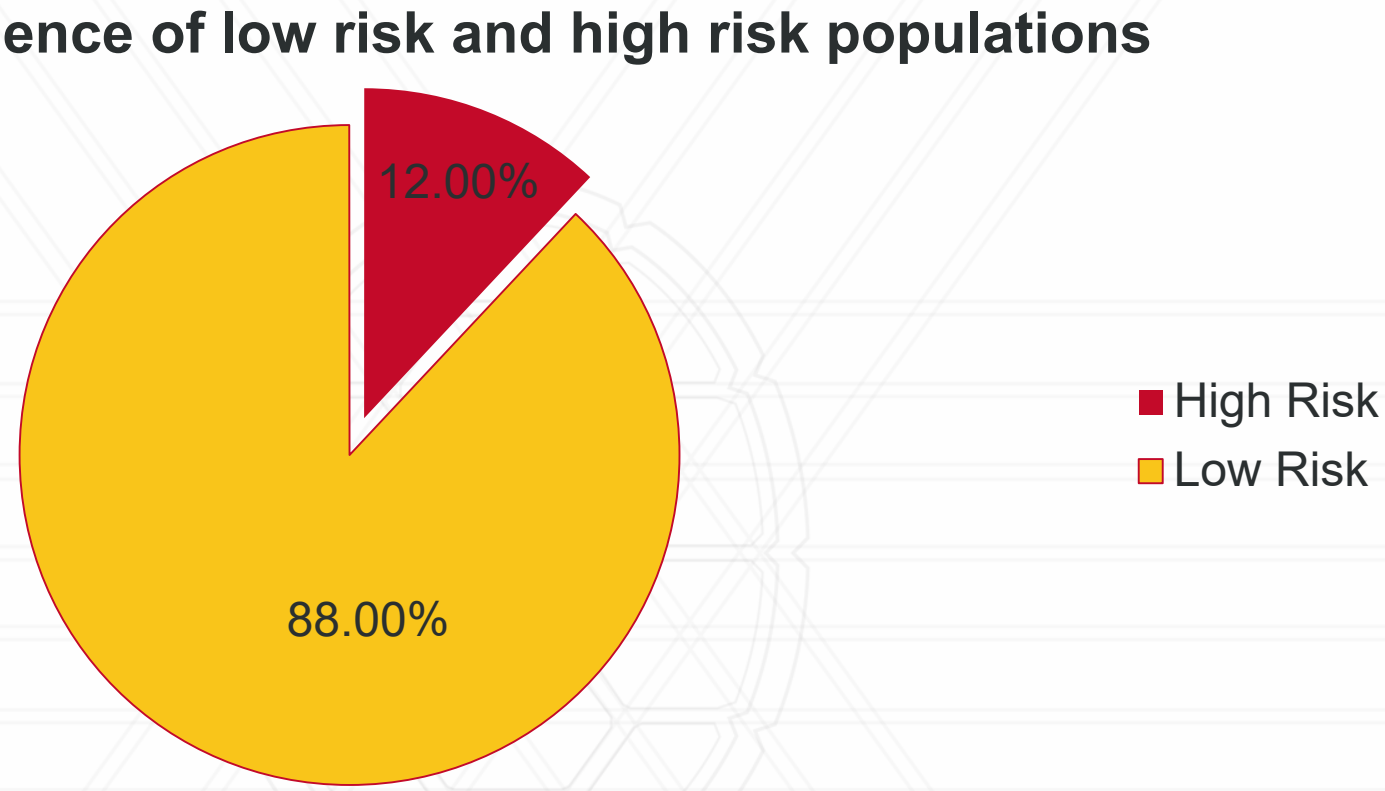
Other considerations

About 40% of women who give birth before 37 weeks gestation present with no known risk factors

Must consider the sensitivity and specificity by which risks can be identified

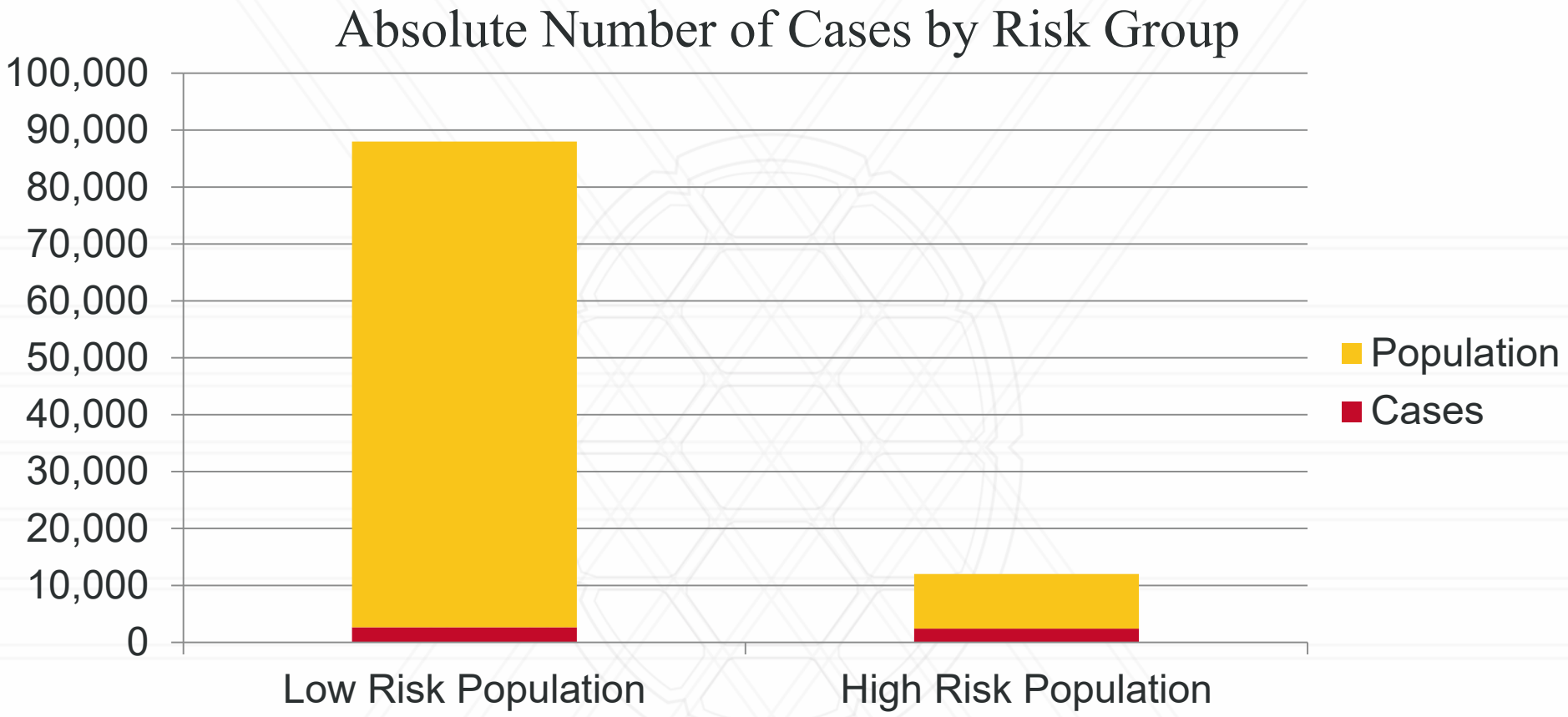
Must consider prevalence of risk factors. The vastly higher number of low risk individuals produce nearly as much infant mortality than the much smaller population of high risk individuals.

Other considerations



In the reviewed literature the average prevalence of individual-level medical/behavioral risk factors is ~12%.

Other considerations



Example: Compared with the low risk population, the high risk population has a risk ratio of 4, but this low risk population gives rise to nearly as many cases as the low risk population.

Conclusions

Scoping reviews provide a broad and accurate picture of work during a particular period but do not consider earlier seminal works; they do not include an assessment of methodologic quality of the included studies.

The literature (2008-2018) is focused on individual and interpersonal risk factor; and secondarily on structural and community level factors, there is only sparse literature on organizational variables.

We found no literature on determinants of infant mortality among residents of rural areas.

No literature on interactions across the five levels of influence. The identified individual-level risk factors do not accurately capture the complexity of the syndrome of infant mortality.

Conclusions

Determining *why* infants die, does not address why *more* black infants die than white infants.

Structural determinants of health drive racial-ethnic *disparities* in infant mortality and not individual-level risk factors.

Health effects of some structural determinants of health (e.g., income inequality) are race-specific in the US.

It is most efficient for programs to be available to the entire community because the vastly higher number of low risk individuals produce more infant mortality than the much smaller population of high risk individuals.