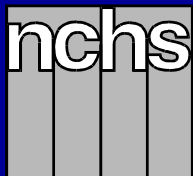


Infant Mortality in the US: An introductory exploration

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Infant and Child Health Studies Branch



Infant Mortality

- Infant deaths = deaths between birth and 1 year of age
- In 2000 infant deaths accounted for:
 - 85% of deaths among children younger than 5 years
 - 69% of deaths among children younger than 15 years
- Infant deaths per year in U.S.
 - Approximately 28,000 in 2000
- Total births per year in U.S.
 - Approximately 4 million in 2000

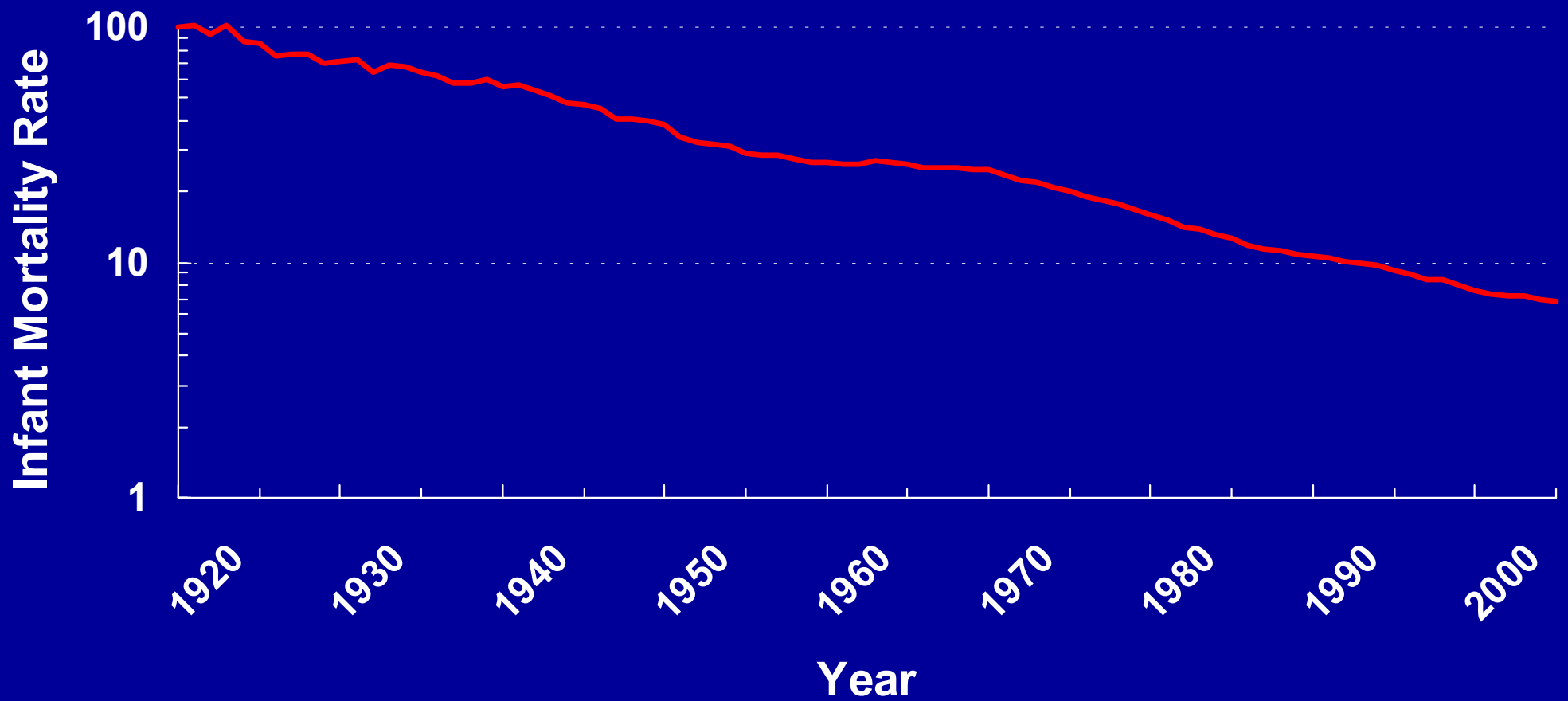
Infant Mortality Rate

- Infant Mortality Rate =

$$\frac{\text{infant deaths during a period}}{\text{live births during same period}} \times 1,000$$

- 2000 US Infant Mortality Rate = 6.9 per 1,000
 - Out of 1,000 infants born alive, 7 died before reaching first birthday
 - 0.7% of infants died in 2000

Trend in US Infant Mortality 1915-2000

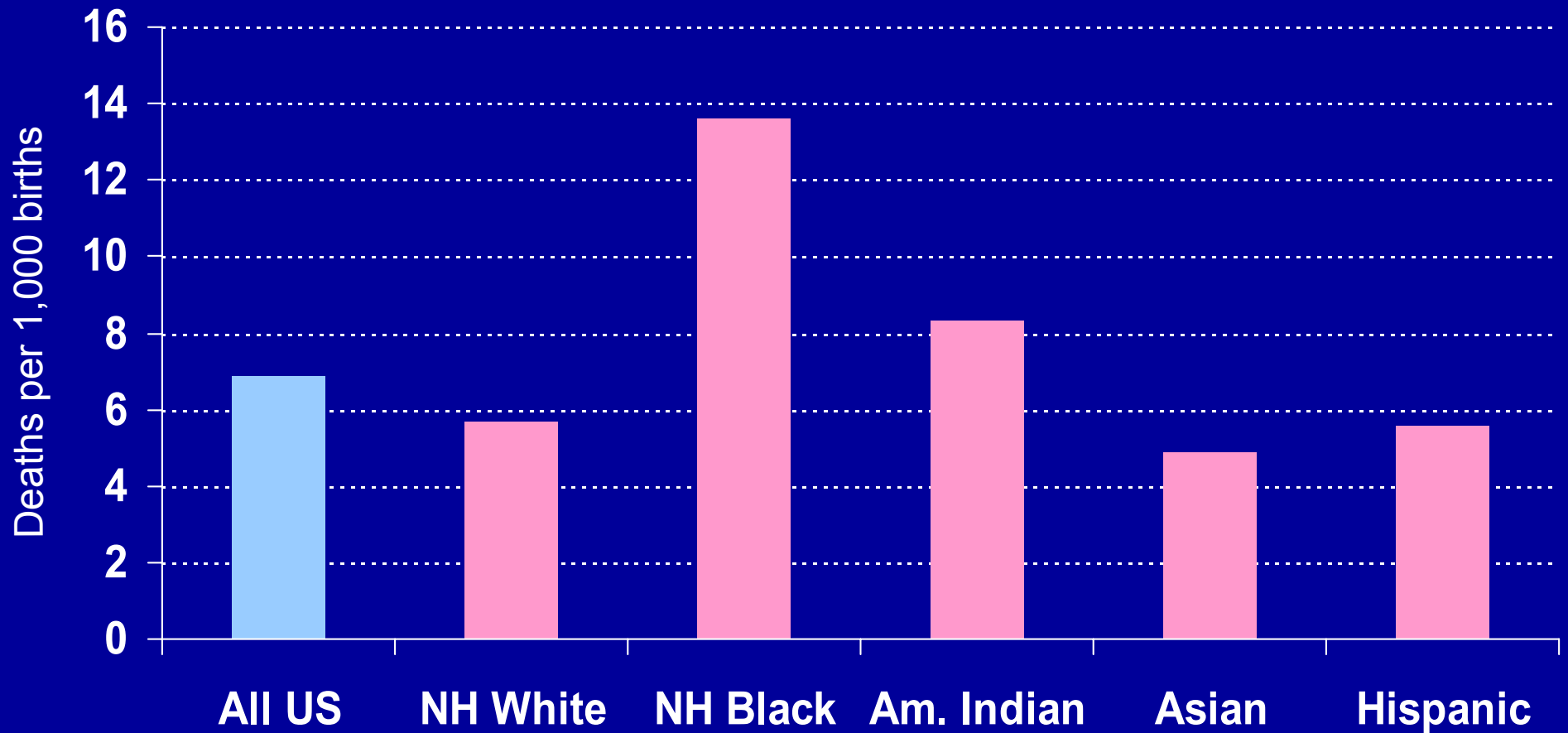


Source: NCHS

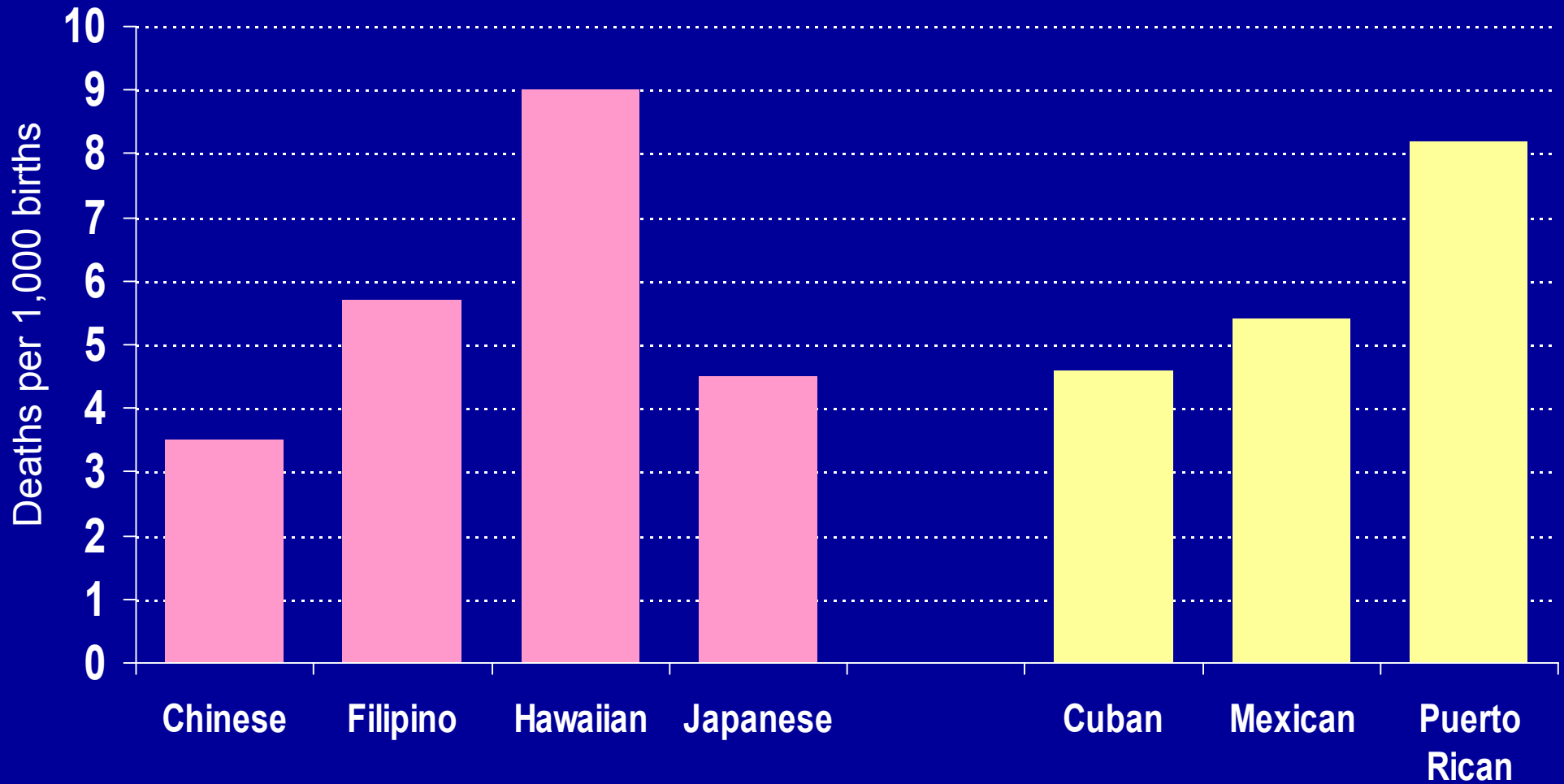
Infant Mortality Data Sources

- Vital statistics mortality file
 - Information from all death certificates filed in the 50 states and DC
- Period linked birth/infant death file
 - Based on matching birth and death certificates for each infant who died in 2000

Infant Mortality by Race/Ethnicity US, 2000



Infant Mortality by Ethnicity US, 2000

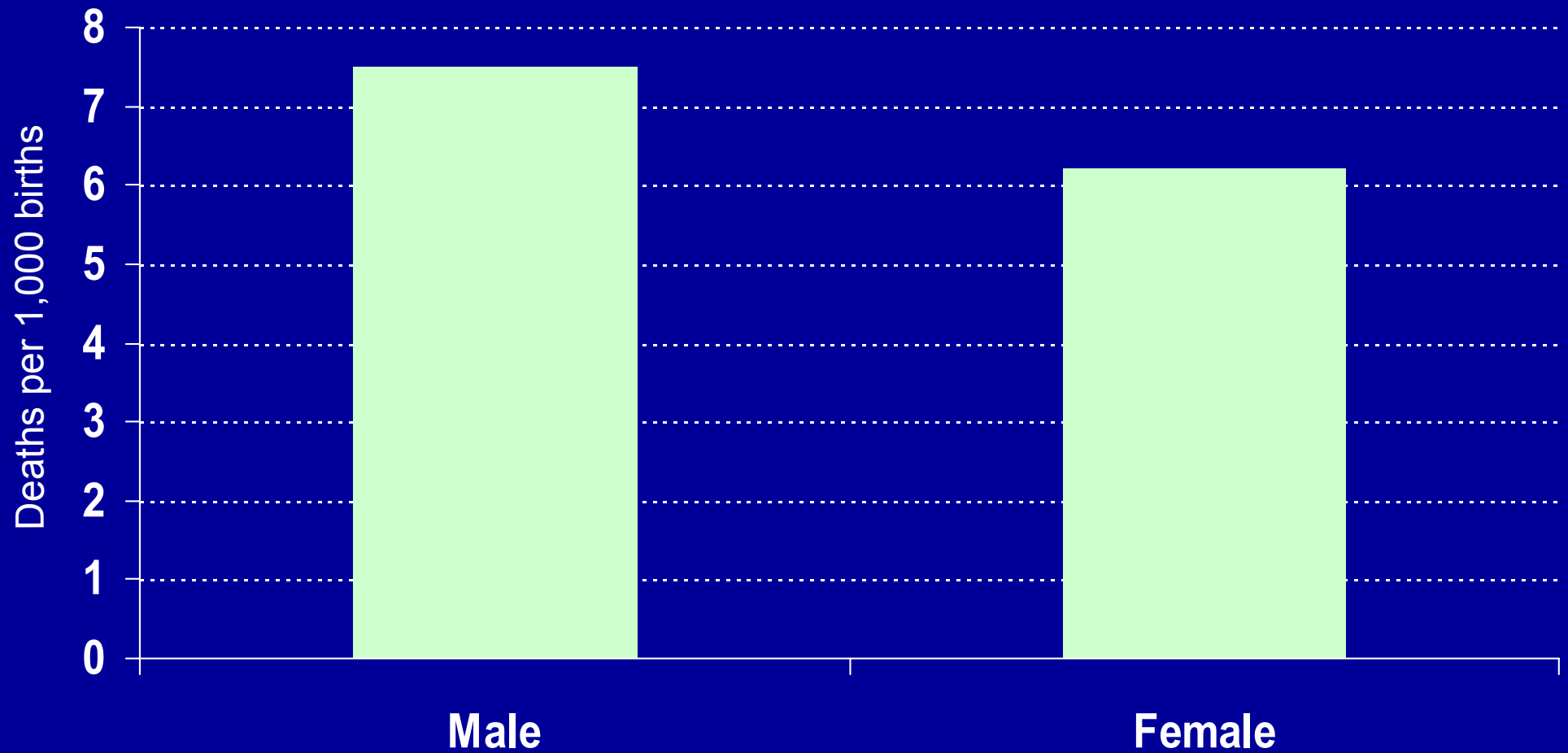


Source: NCHS

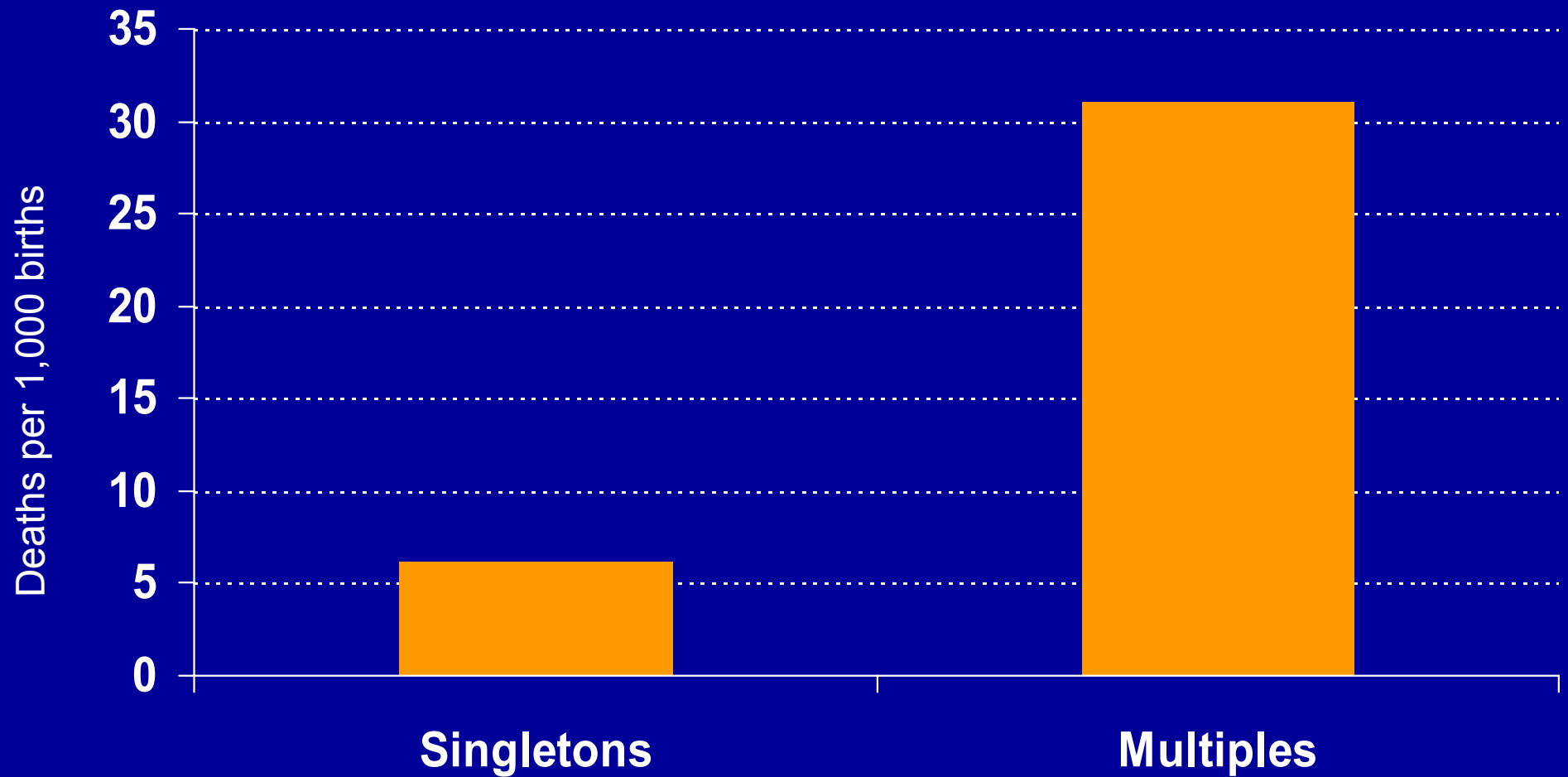
Asian

Hispanic

Infant Mortality by Sex US, 2000

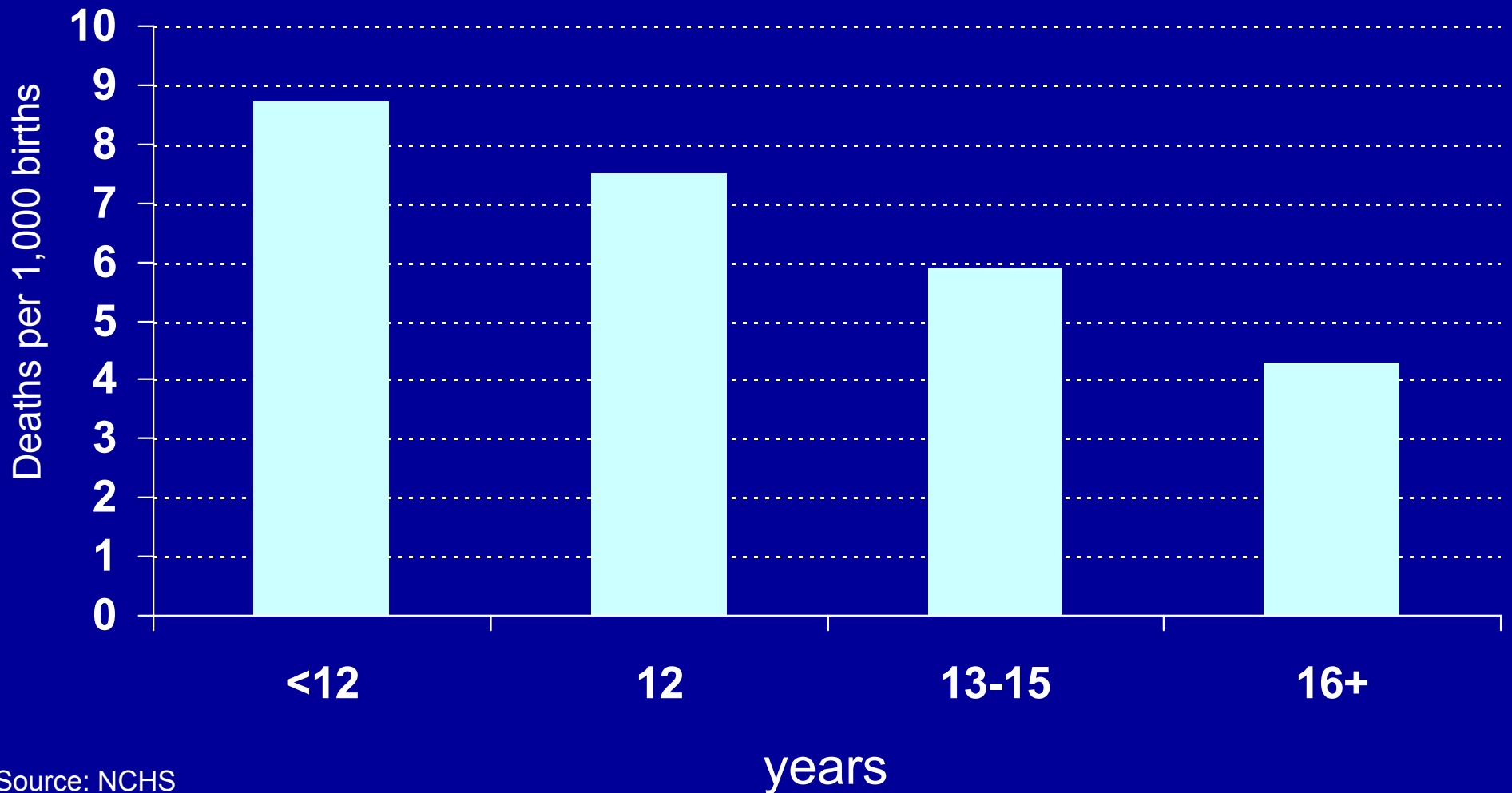


Infant Mortality by Plurality US, 2000



Source: NCHS

Infant Mortality by Maternal Education US, 2000



Source: NCHS

Infant Mortality

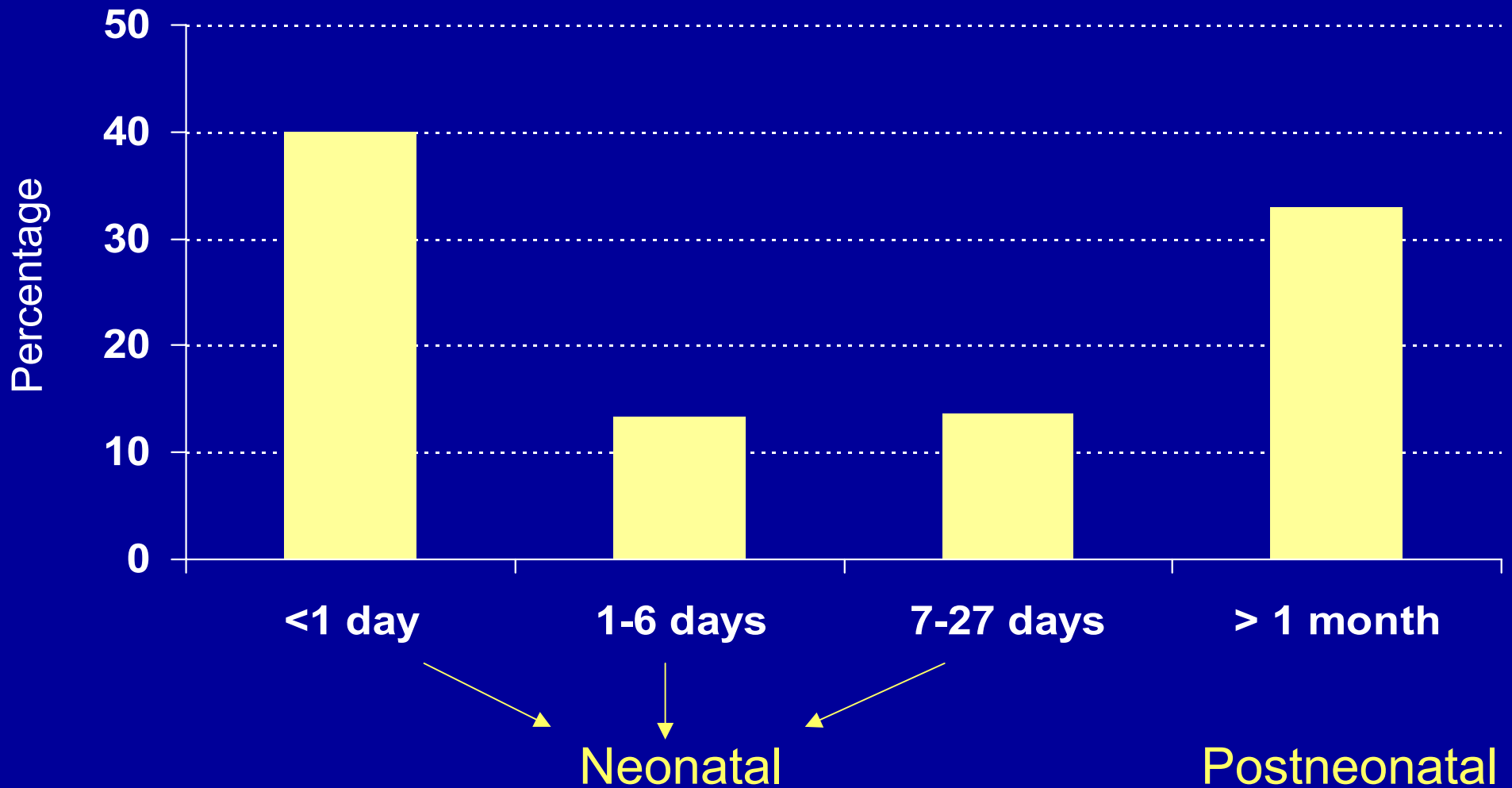
Three important aspects

- Timing (age at death)
- Cause of death
- Birth weight

Components of Infant Mortality

- Neonatal (birth through first 27 days)
 - Early neonatal (birth-6 days)
 - Late neonatal (7-27 days)
- Postneonatal (28 days through 365 days)

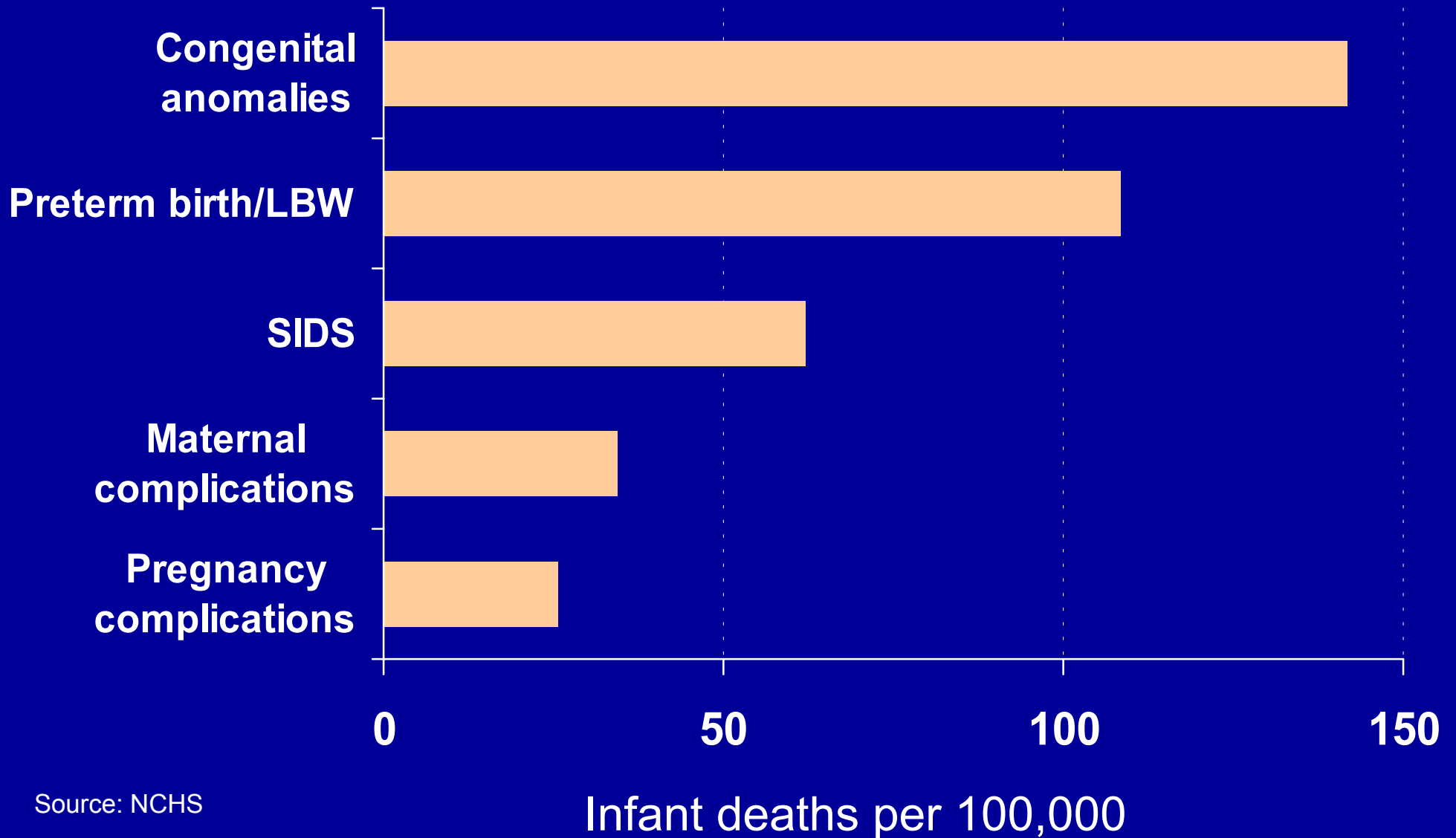
Distribution of Deaths by Time US, 2000



Causes of Infant Mortality

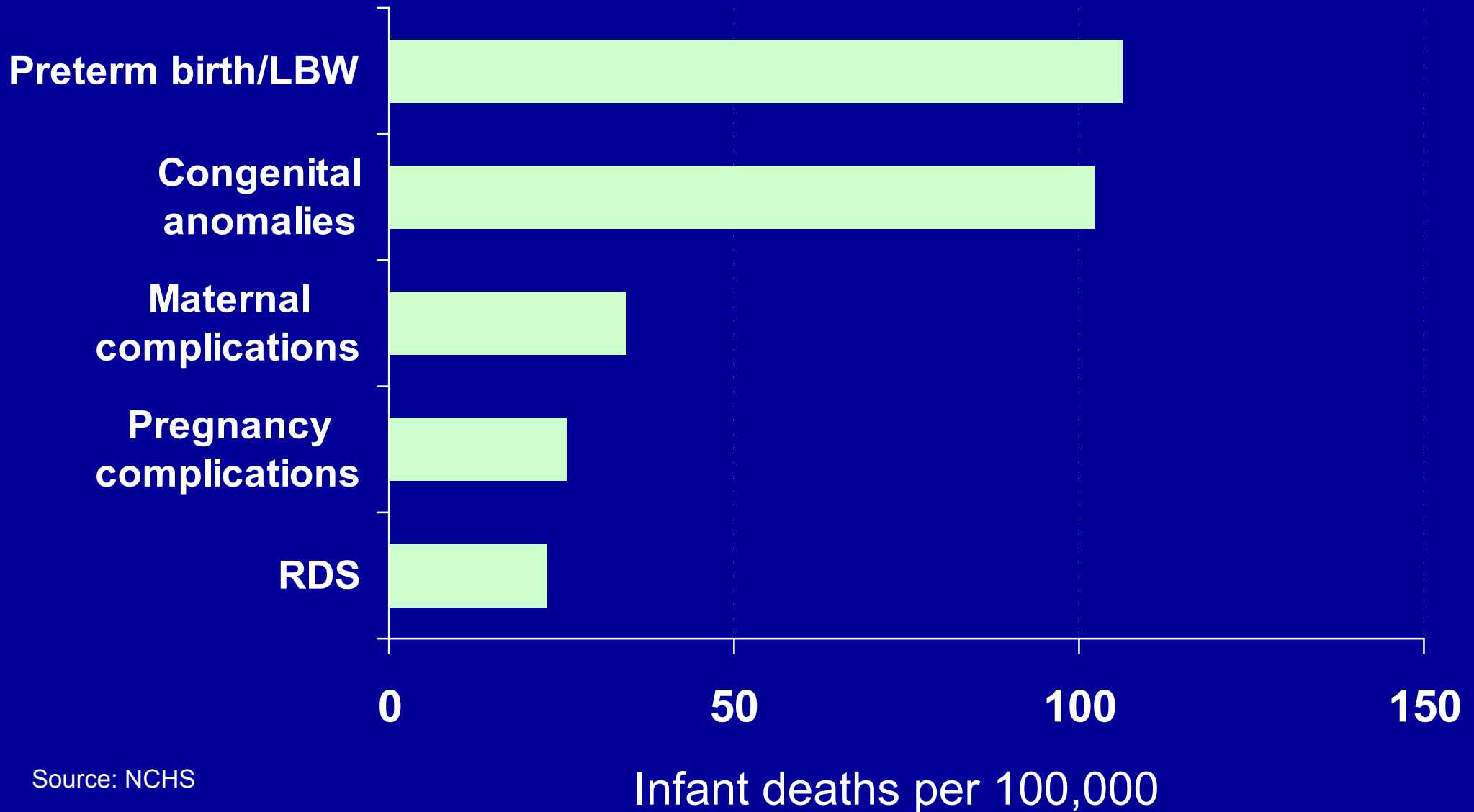
- Vary according to time of death
- Vary according to race, sex, other factors
- Change with intervention

5 Leading Causes of Infant Mortality US, 2000



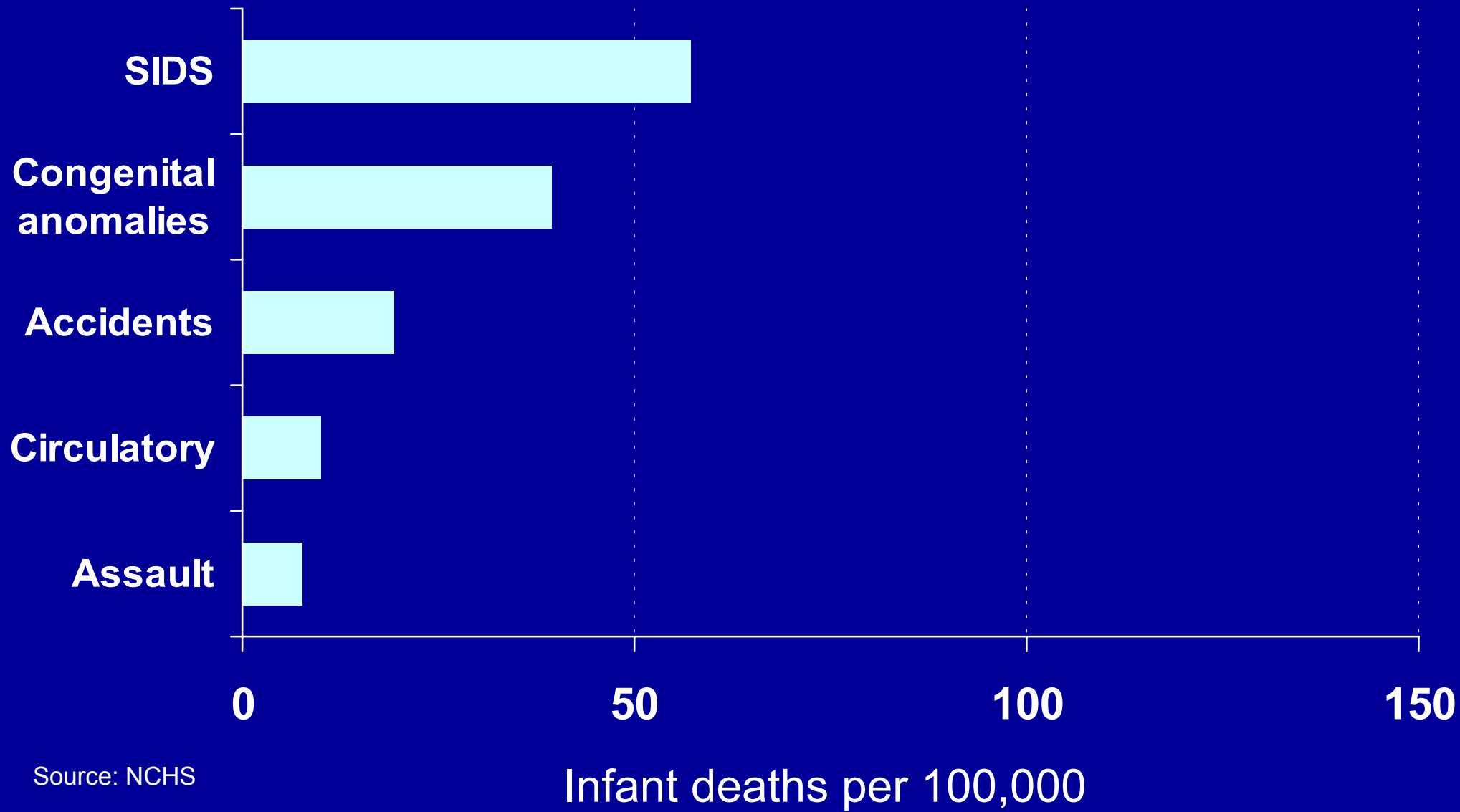
Source: NCHS

5 Leading Causes of Neonatal Mortality US, 2000



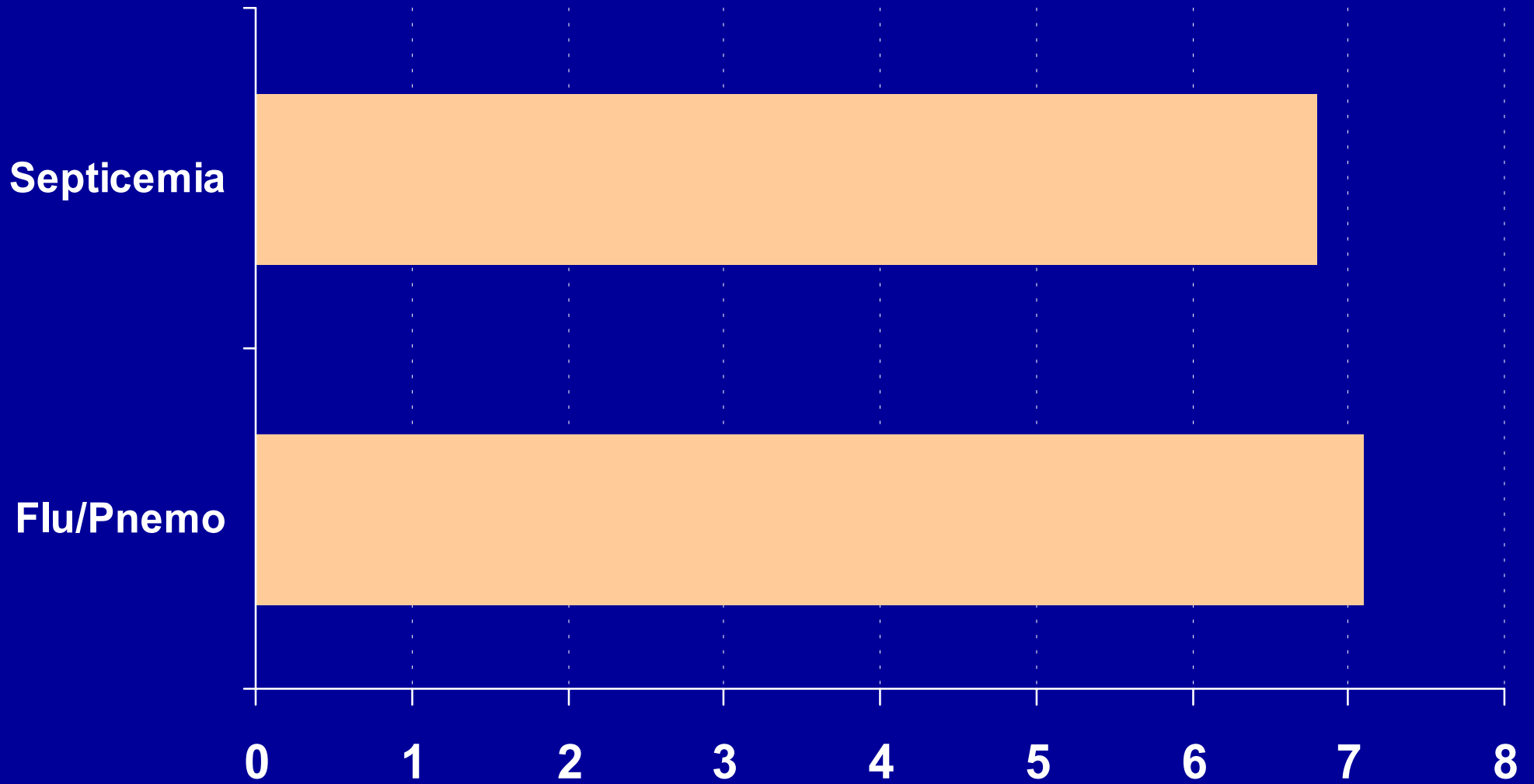
Source: NCHS

5 Leading Causes of Postneonatal Mortality US, 2000



Source: NCHS

Causes of Infectious Origin



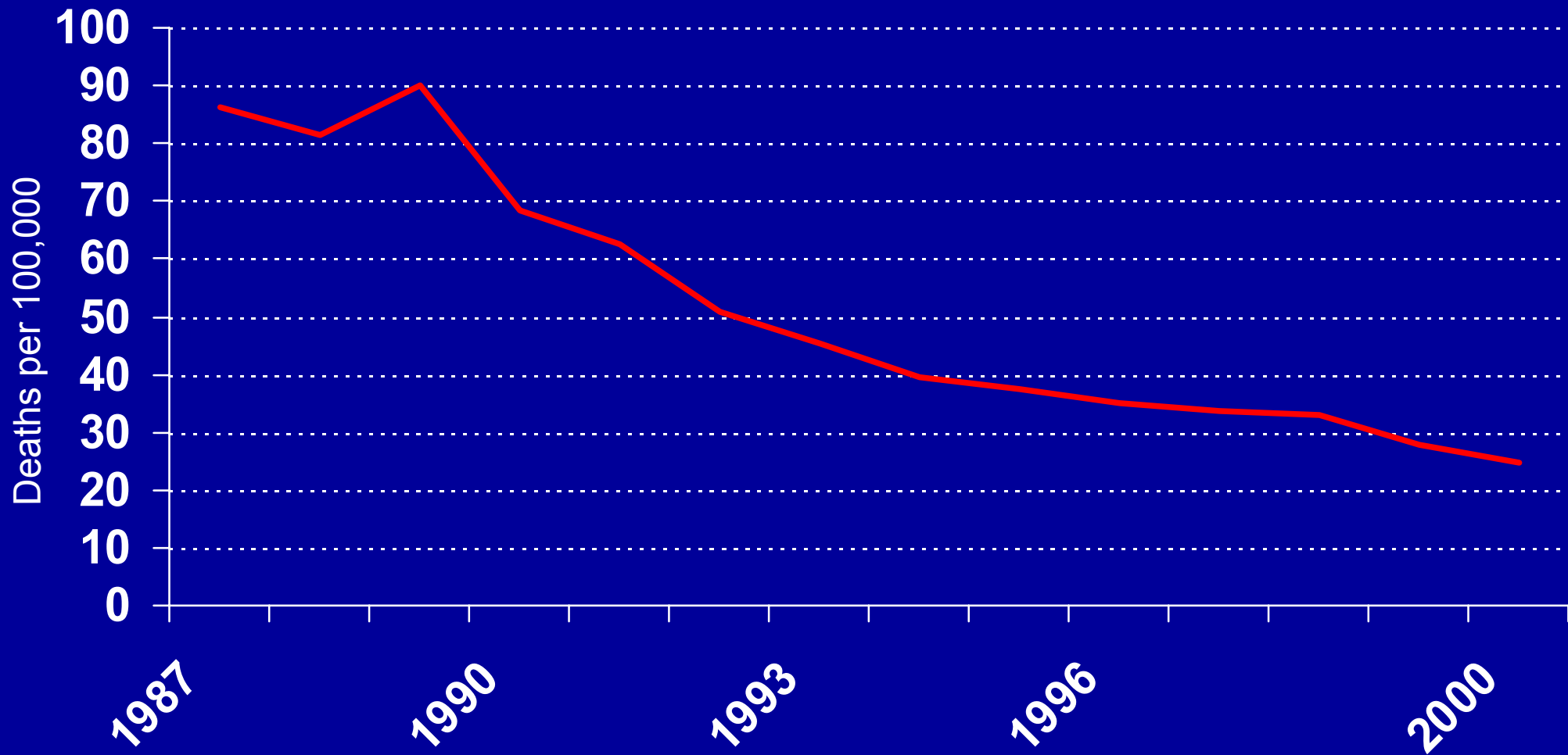
Source: NCHS

Infant deaths per 100,000

Selected Factors Influencing Infant Mortality

- Medical interventions
 - Surfactant
 - Immunizations and antibiotics
- Environmental factors
 - Sleep position
 - Child-proofing of residence

Trends in RDS Mortality Rates US, 1987-2000



Source: NCHS

Selected Factors Influencing Infant Mortality

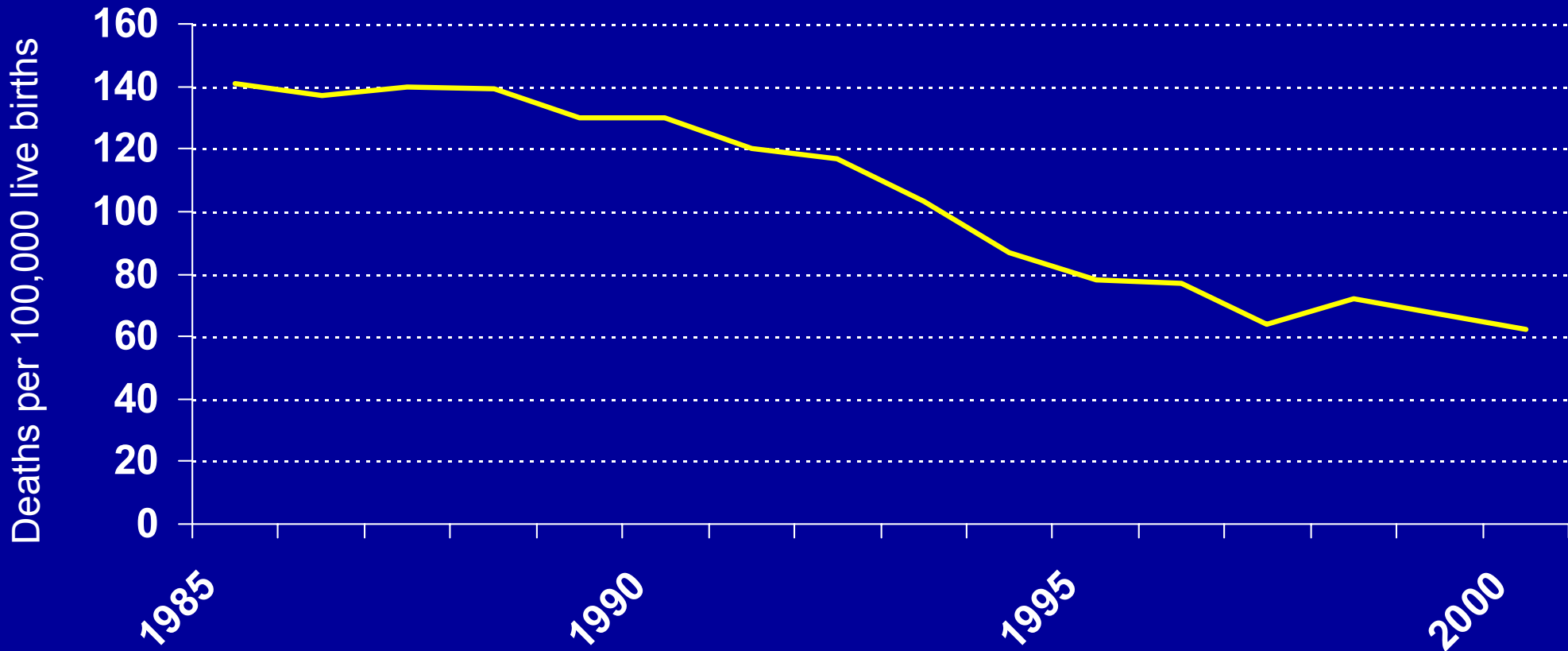
- Medical interventions
 - Surfactant
 - Immunizations and antibiotics
- Environmental factors
 - Sleep position
 - Child-proofing of residence

SIDS Intervention

April, 1992: American Academy of Pediatrics recommends healthy infants should sleep on their backs or sides

June, 1994: “Back to Sleep” campaign initiated

Trends in SIDS Rates US, 1985-2000



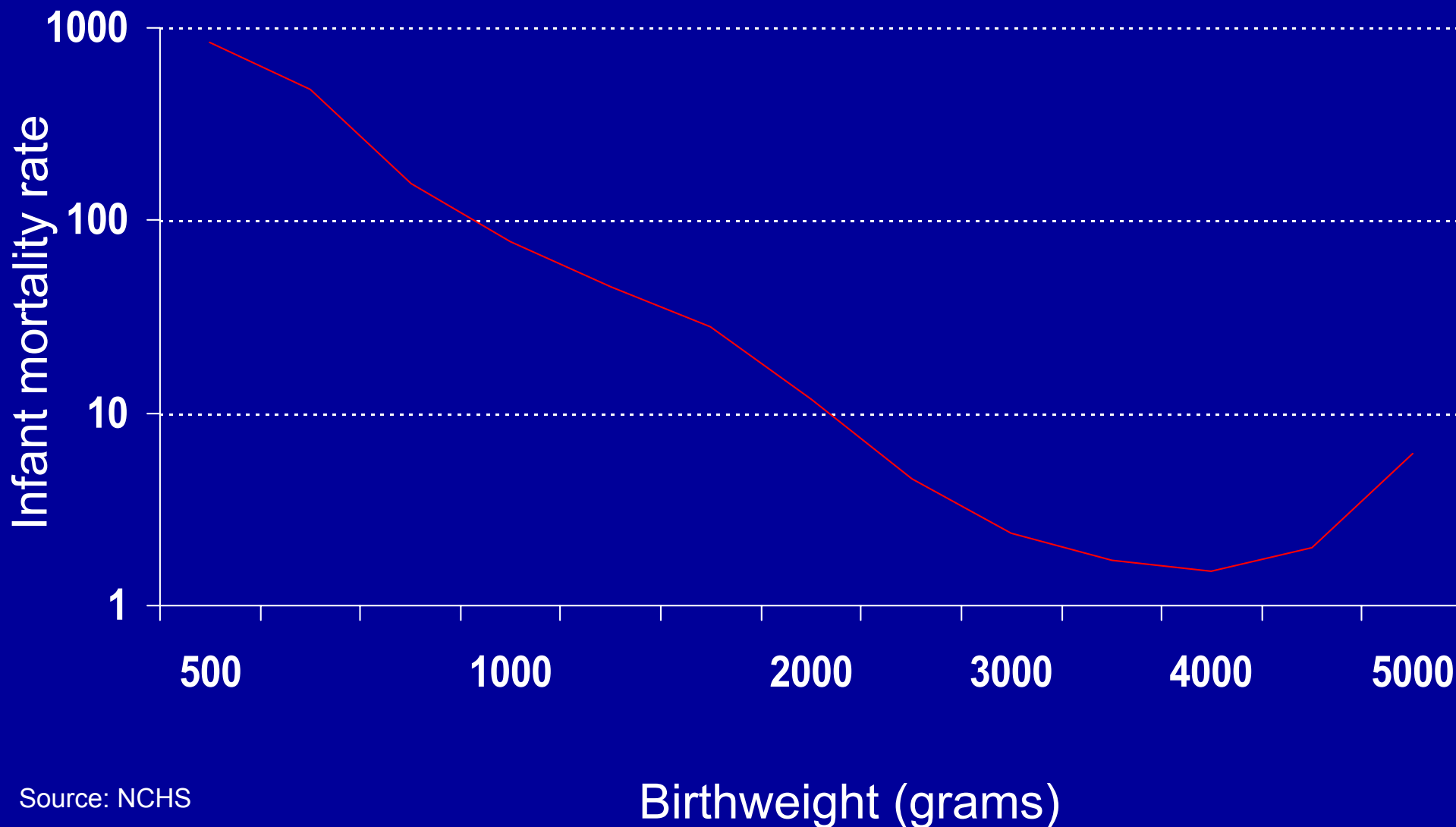
Is it

gestational age...

or

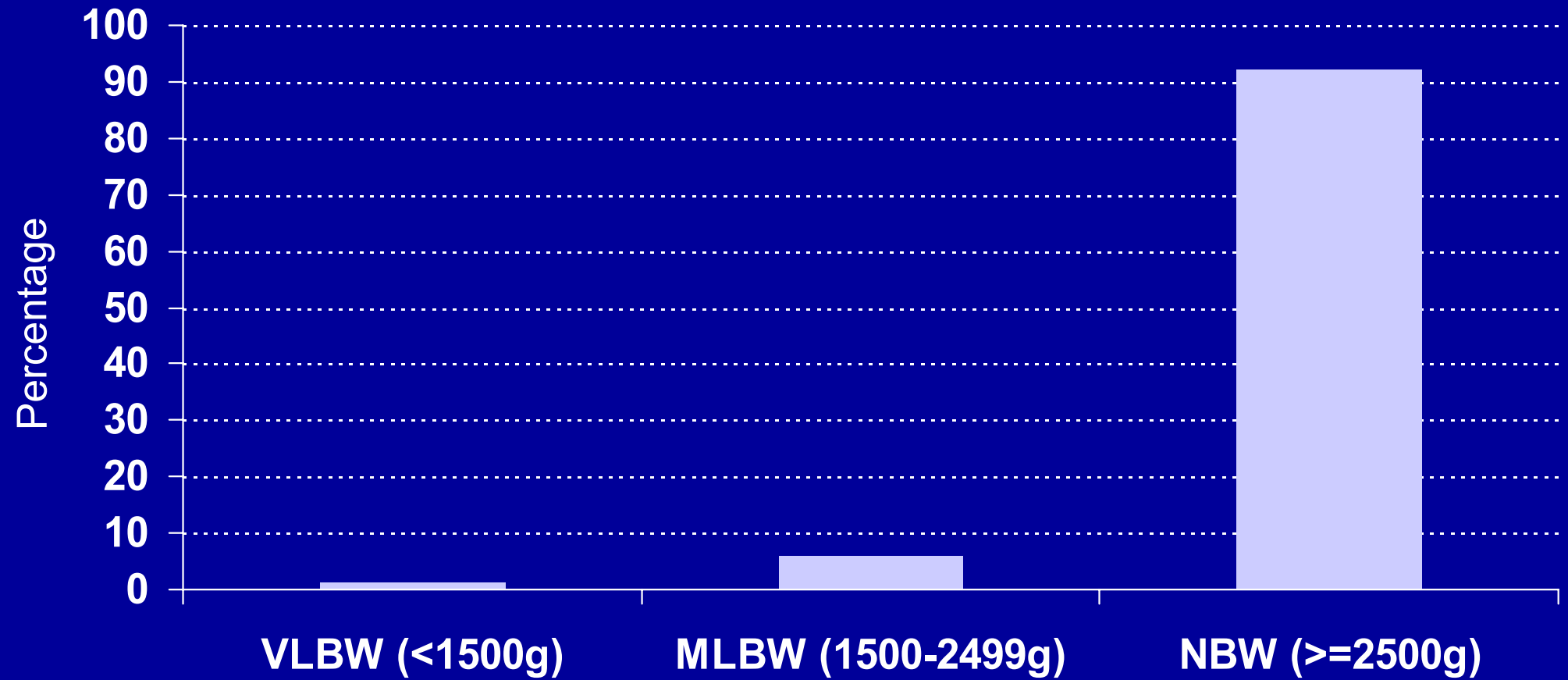
birth weight??

Birthweight-Specific Infant Mortality US, 2000

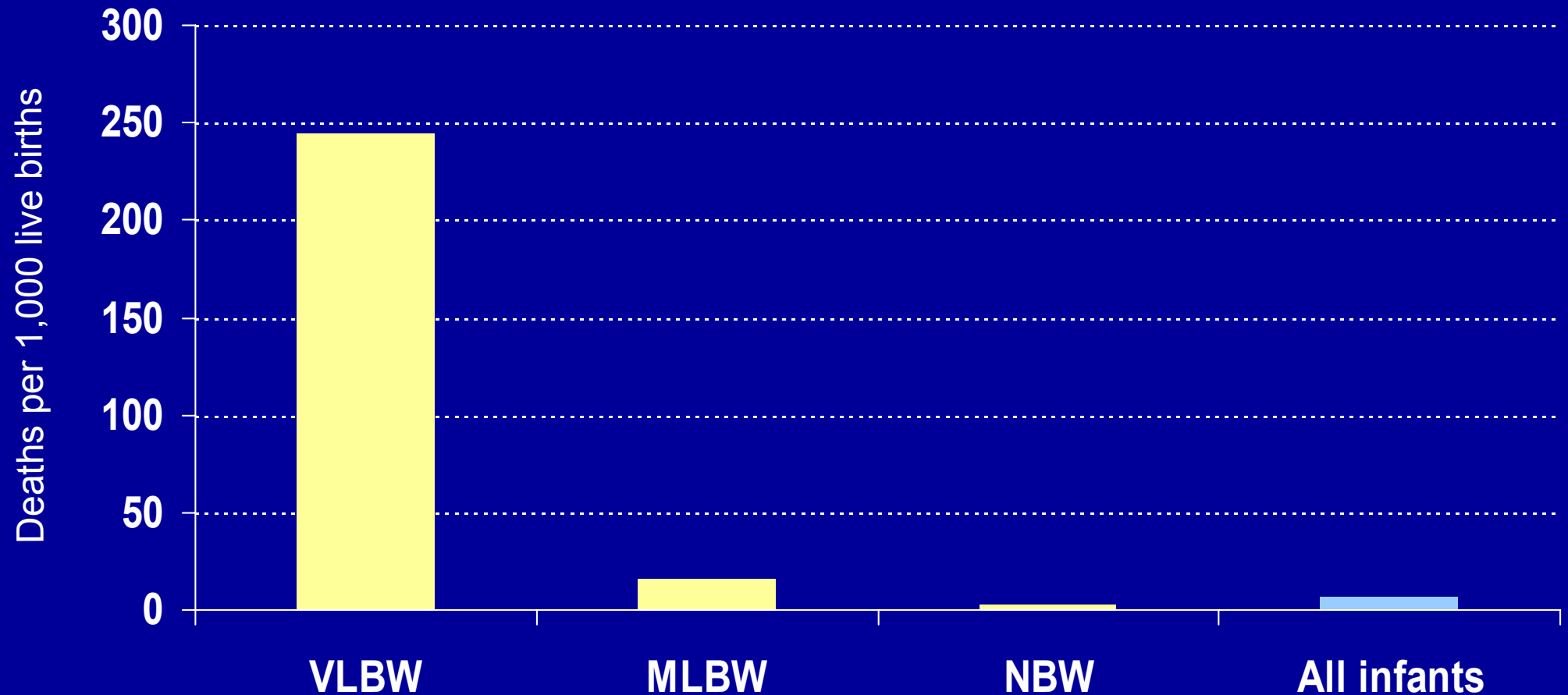


Source: NCHS

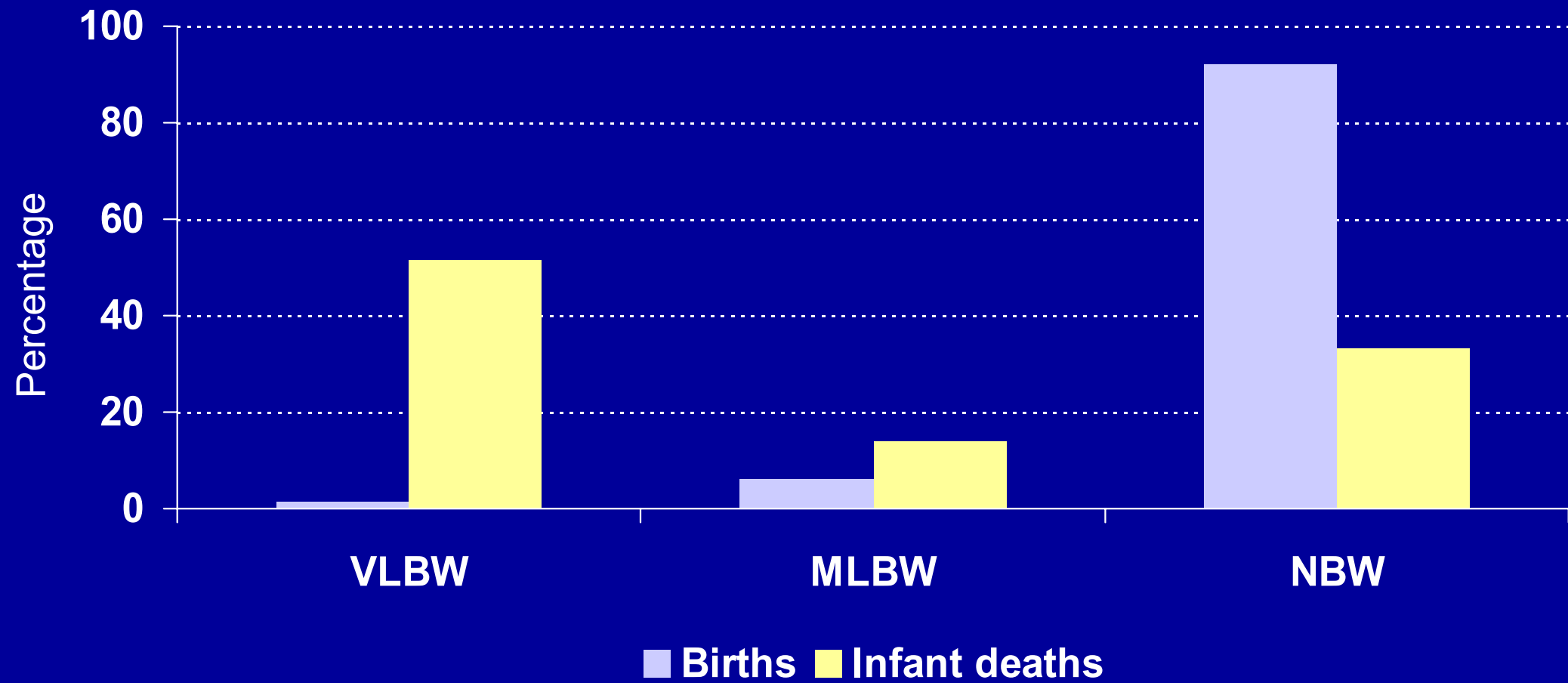
Birthweight Distribution US, 2000



Birthweight-specific Infant Mortality US, 2000



Birth and Infant Mortality Distribution US, 2000



Selected Factors Influencing Low Birthweight or Preterm Birth

- Maternal nutrition or weight gain
- Smoking
- Prenatal care
- Medical interventions
 - Tocolysis
 - Vaginal and cervical infection treatment
 - Management of maternal diabetes

Summing it all up

- Differences in infant mortality among different groups defined different ways (sex, education, race, etc.)
- Majority of infant deaths occur very early in infancy and likely related to conditions intrinsic to pregnancy, etc.
- Causes of death vary by timing

Summing it all up

- Crude evidence supports that some interventions may beneficially influence mortality rates
- PT and LBW are large contributors to infant mortality

Further Information

- CDC

Birth defects, injury, immunizations, MMWR

www.cdc.gov

- NCHS

Annual mortality reports, public use data

www.cdc.gov/nchs

- Questions?

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