

Infant Mortality and Issues Relating to Perinatal Reporting



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Health Statistics
National Vital Statistics System



Acknowledgements



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NATIONAL VITAL STATISTICS SYSTEM



Certificate of Live birth

➤ *Live births*

➤ *Fetal deaths*

(>20 weeks)

➤ *Infant deaths*

(to age 1)

Report of Fetal Death

U.S. STANDARD CERTIFICATE OF LIVE BIRTH

This form is used to report a live birth to the state or local health department. It includes fields for the mother's name, date of birth, date of delivery, sex of the child, race, and place of birth. It also includes a section for the physician or midwife who attended the birth.

U.S. STANDARD REPORT OF FETAL DEATH

This form is used to report a fetal death to the state or local health department. It includes fields for the mother's name, date of birth, date of delivery, sex of the fetus, race, and place of birth. It also includes a section for the physician or midwife who attended the birth and a section for the cause of death.

U.S. STANDARD CERTIFICATE OF DEATH

This form is used to report a death to the state or local health department. It includes fields for the decedent's name, date of birth, date of death, sex, race, and place of death. It also includes a section for the physician or coroner who pronounced the death and a section for the cause of death.

Model State Vital Statistics Act and Regulations - Definitions



Live birth - "...breathes or shows any evidence of life such as beating of the heart...heartbeats are to be distinguished from transient cardiac contractions; respirations...from fleeting efforts..."

Fetal Death - "... death prior to [delivery]...is not an induced termination of pregnancy... does not breathe or show any other evidence of life..."

Infant Death - death of a live born infant within one year of life.

Reporting issues which might affect changes in infant mortality rates

- **Changes in reporting of infant deaths <500 grams, i.e., improved reporting of deaths of very small live-born infants**



Reporting issues which might affect changes in infant mortality rates

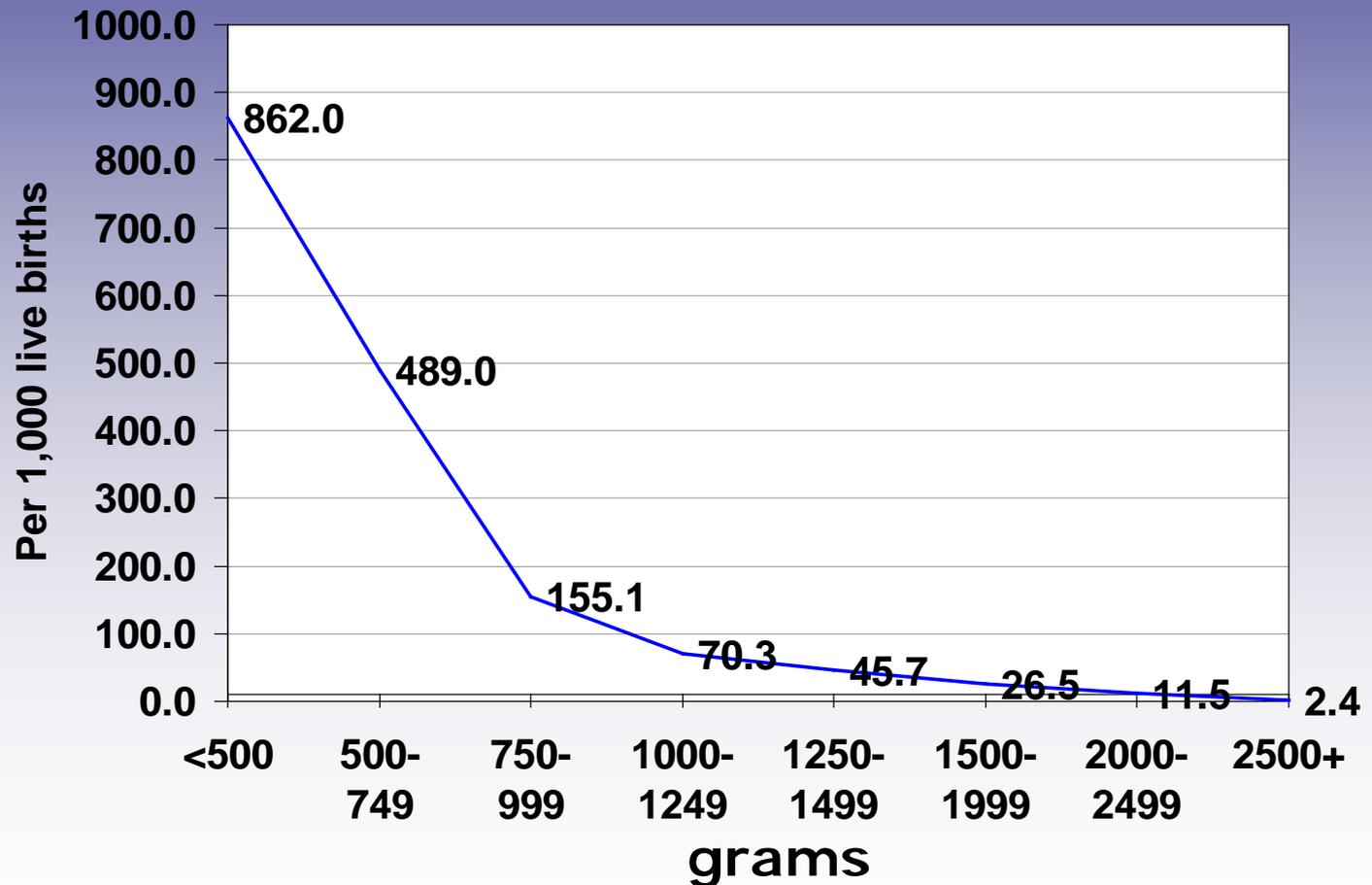
- **Changes in reporting of deliveries at “borderline of viability”**
i.e., increased tendency to report delivery as live birth rather than fetal death



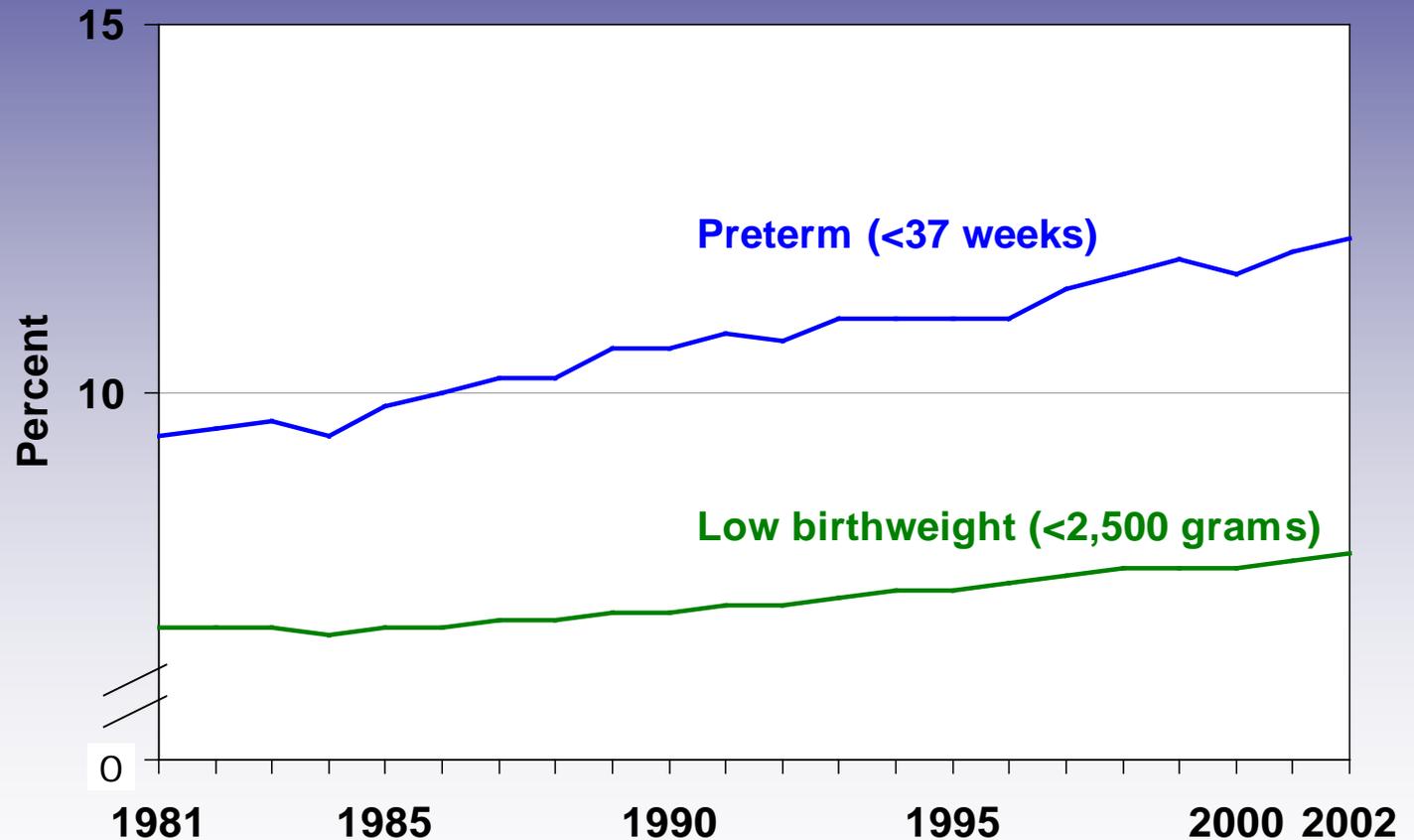


***Trends in
birth characteristics***

Infant mortality rates by birthweight: United States, 2002

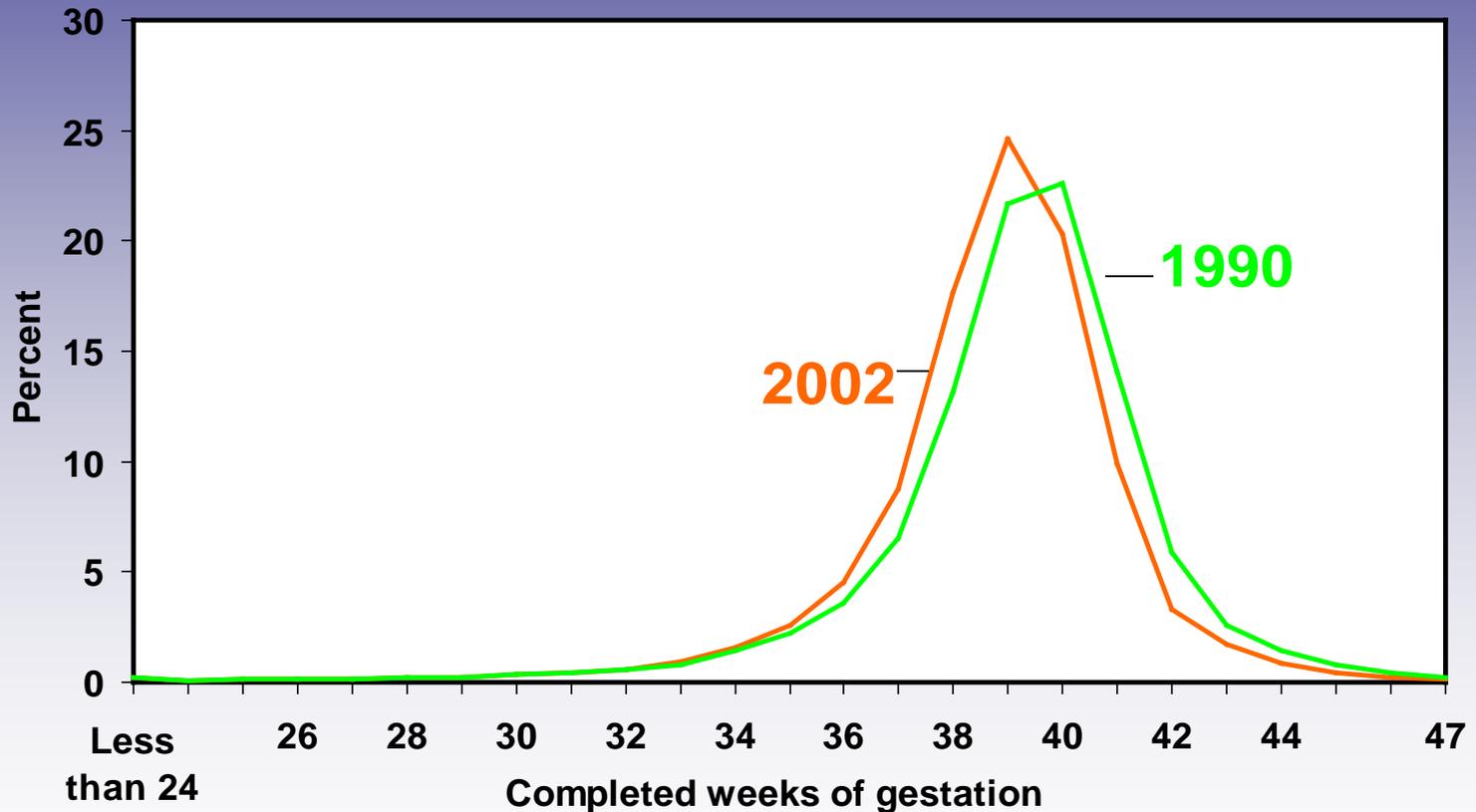


Preterm and low birthweight rates: U.S., 1981-2002

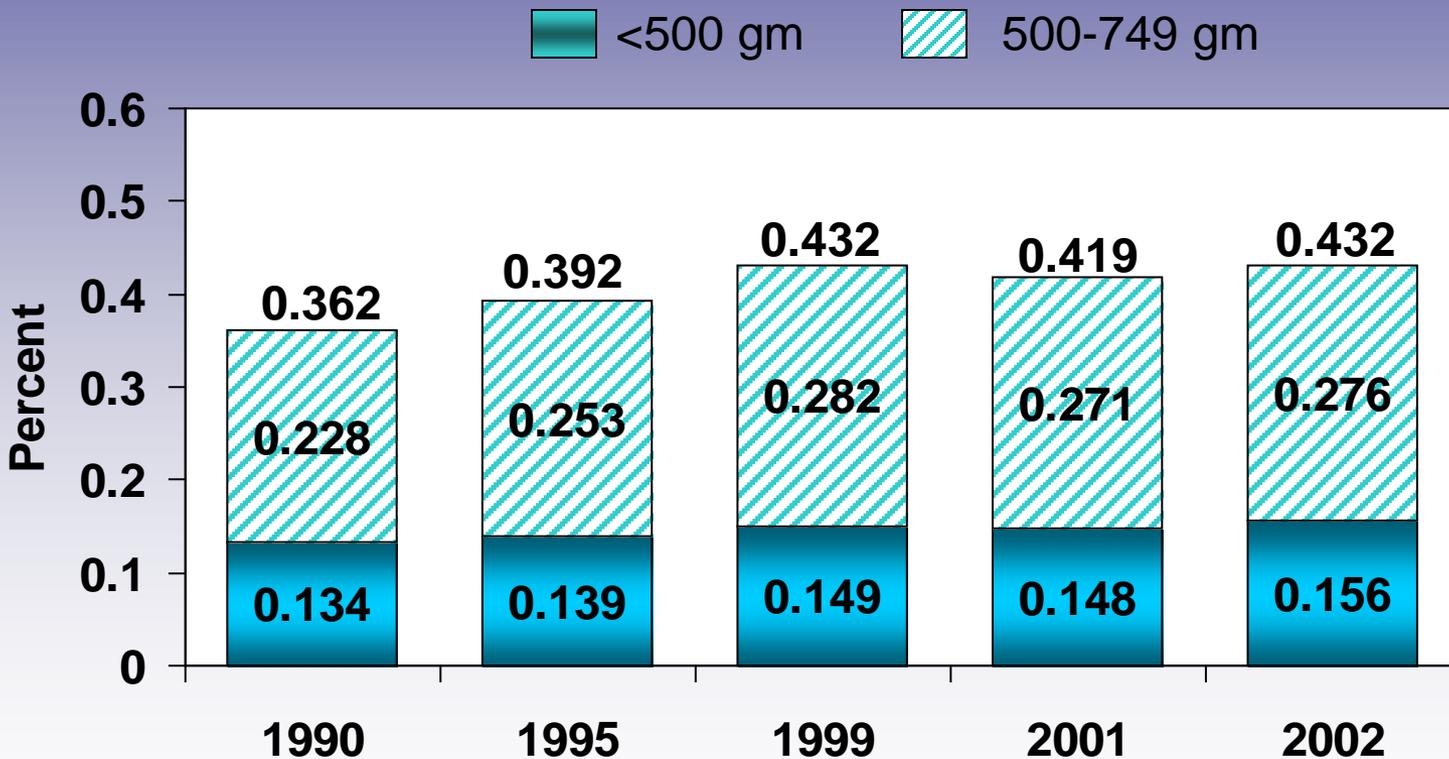


NOTE: Preterm is less than 37 completed weeks of gestation. Low birthweight is less than 2,500 grams.
SOURCE: National Vital Statistics System NCHS CDC

Distribution of births by gestational age: U.S., 1990 and 2002



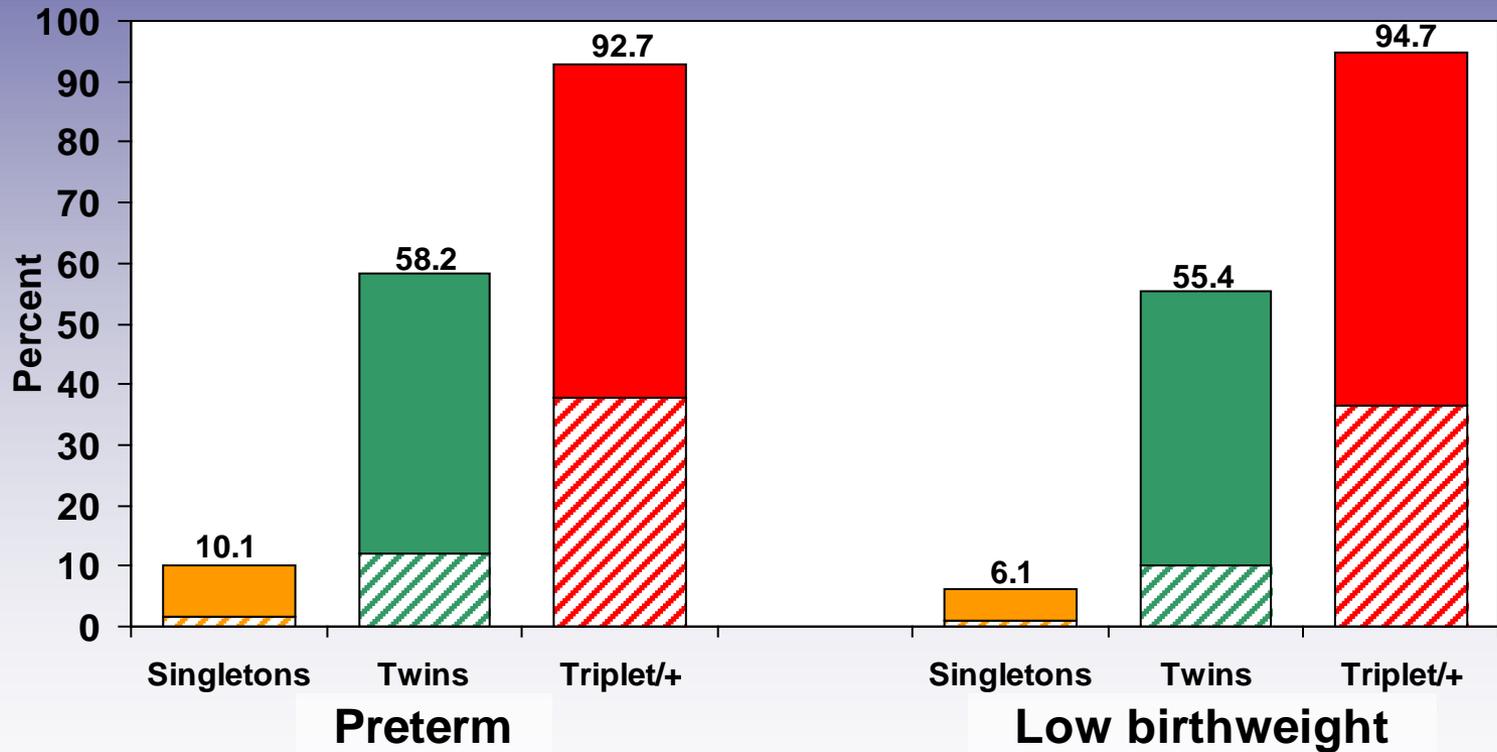
Percent of live births <500 and <750 grams: 1990, 1995, 2001 and 2002



Preterm and low birthweight rates by plurality: U.S., 2002

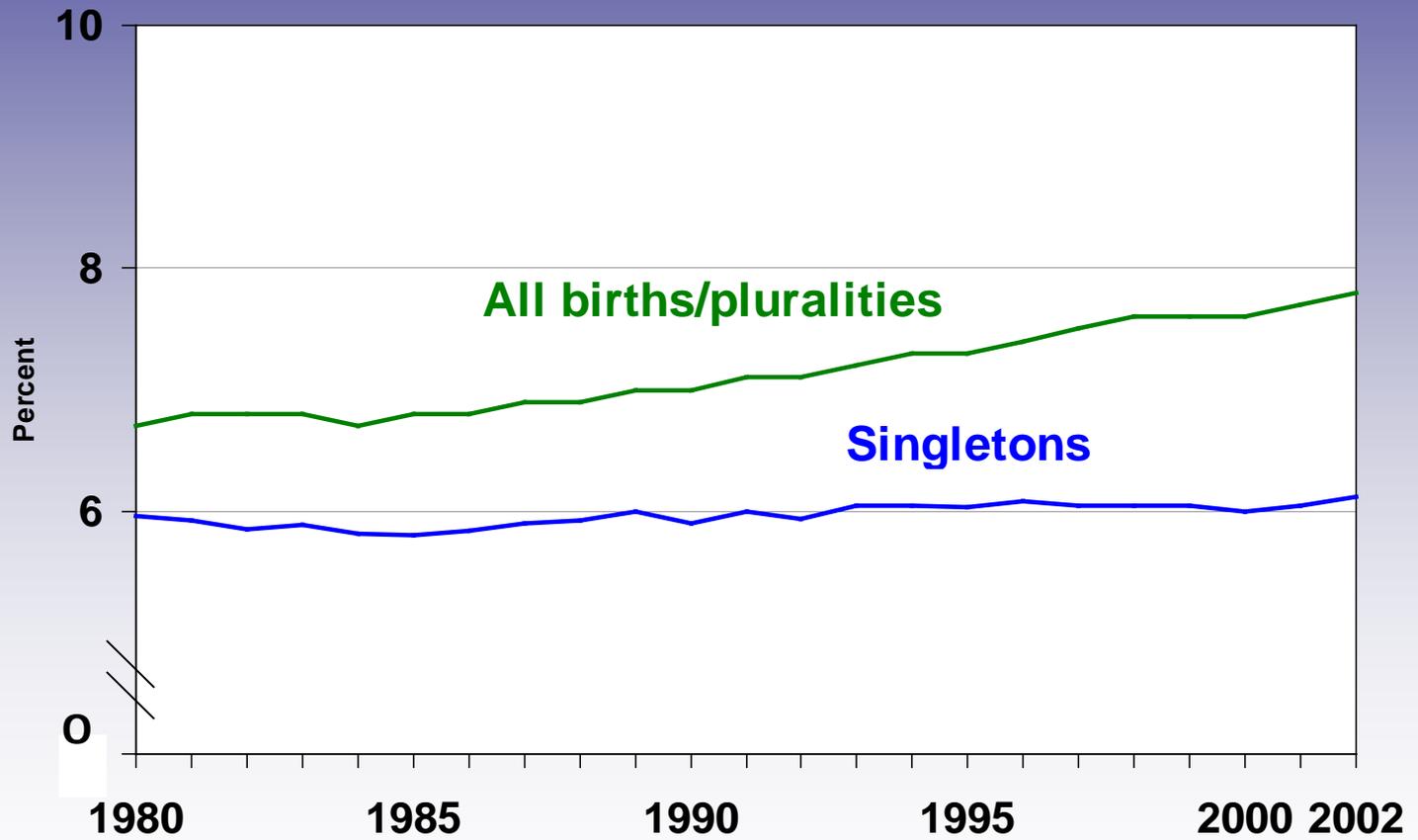
 Very preterm/low birthweight

 Moderately preterm/low birthweight



SOURCE: National Vital Statistics System, NCHS, CDC.

Percent low birthweight for all births and for singletons only: U.S., 1980-2002



NOTE: Low birthweight is less than 2,500 grams.
SOURCE: National Vital Statistics System, NCHS, CDC.



*Reporting & trends in fetal
mortality*

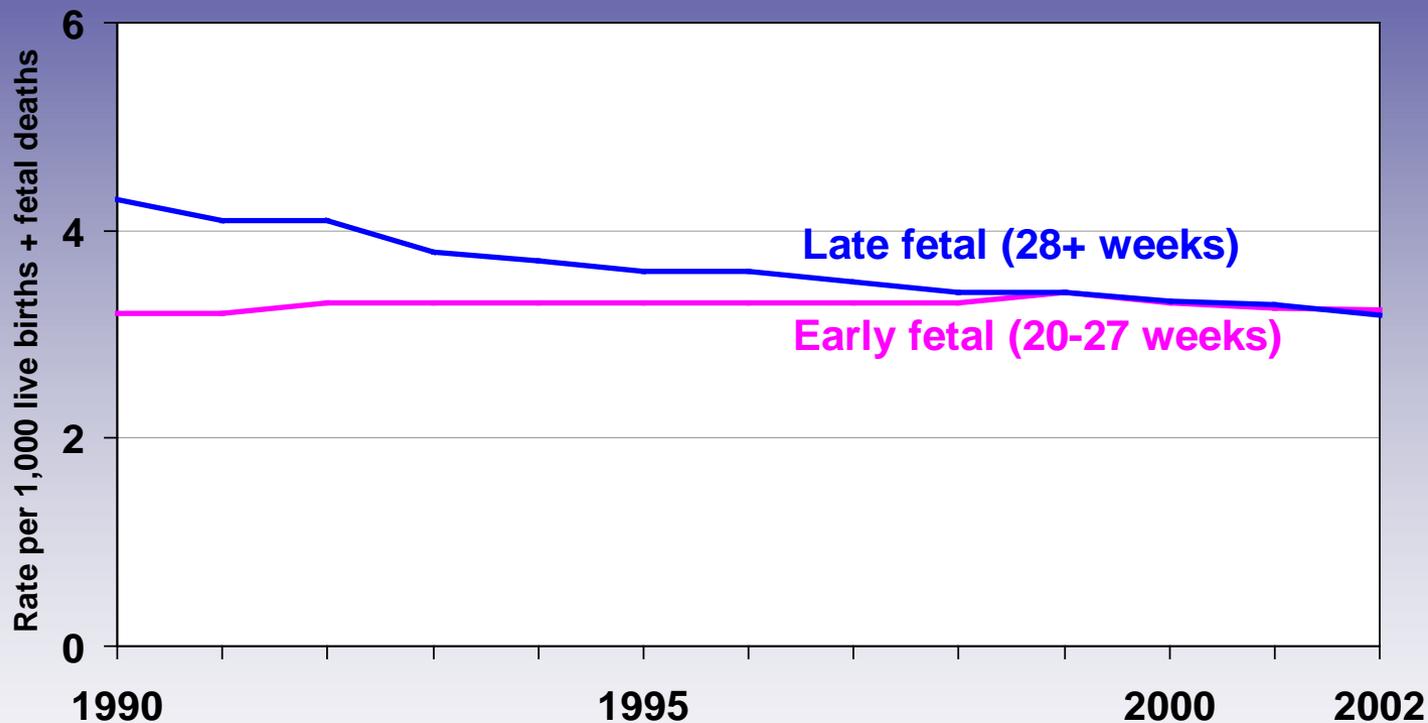
Reporting requirements for fetal deaths

Model Law recommends 350 grams/20 wks

➤ All products of conception	7 States
➤ 16 weeks	1 State
➤ 20 weeks or more/350 grams	39 States
➤ 500 grams or more	3 States*

*District of Columbia = 20 wks or 500 grams

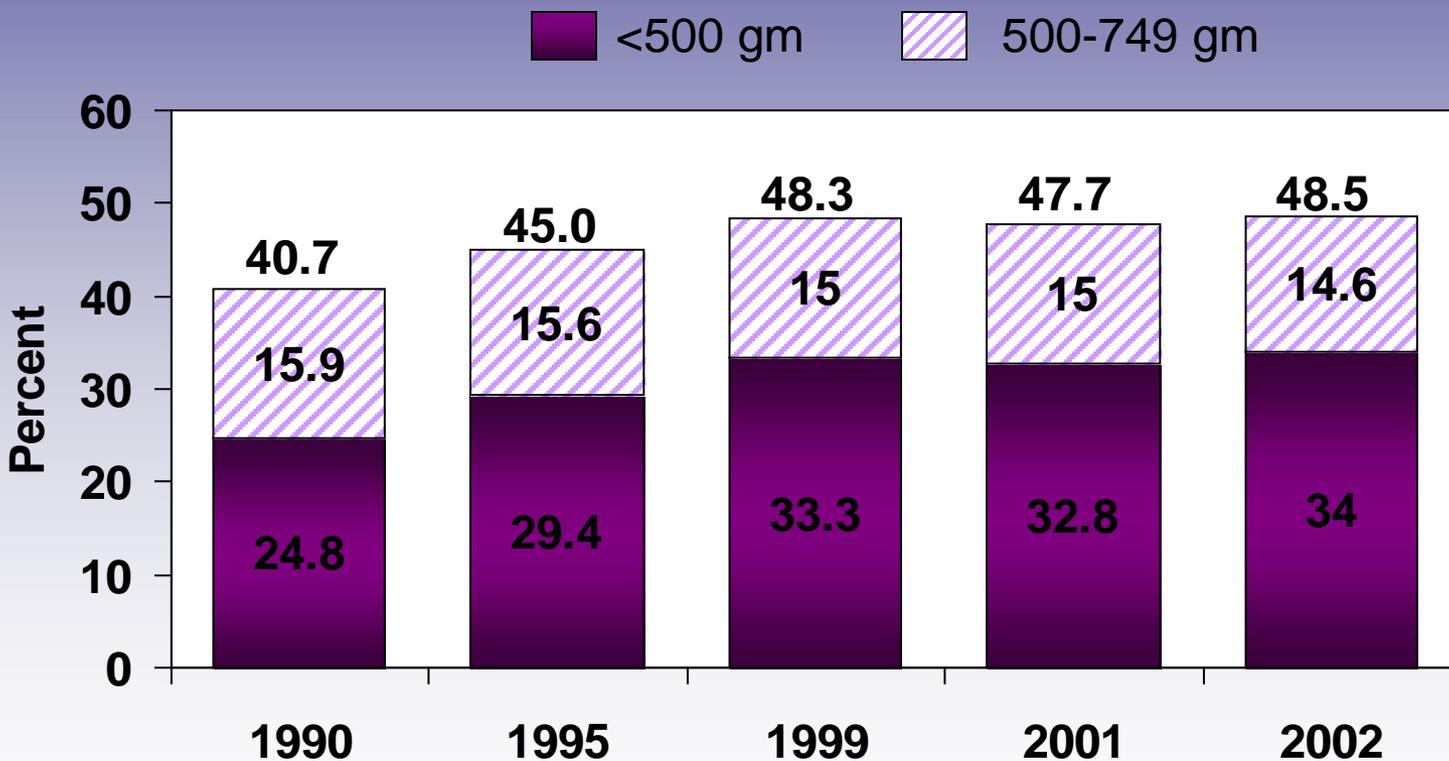
Early and late fetal mortality rates: U.S. 1990-2002



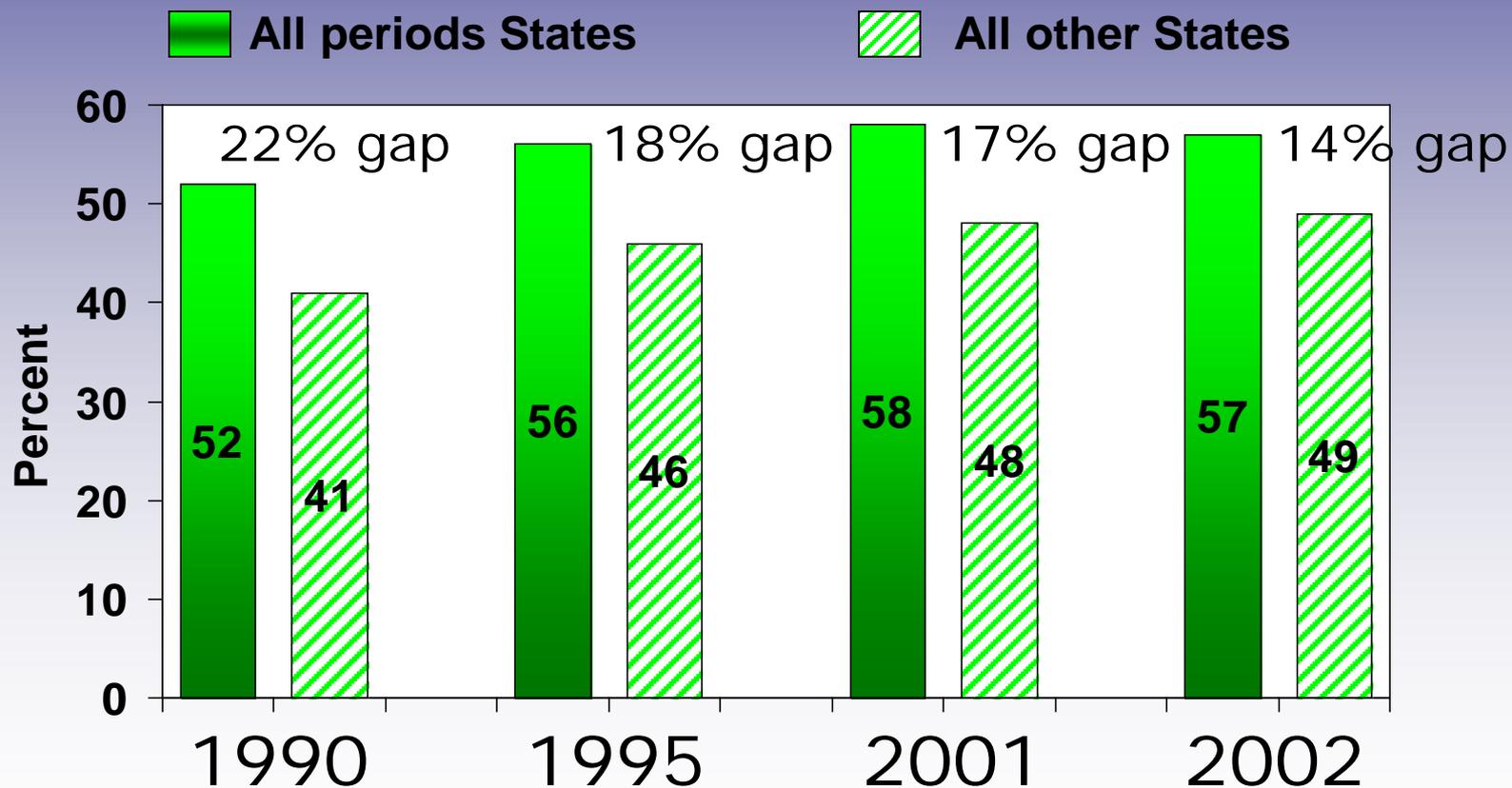
Early fetal mortality rate = fetal deaths with stated or presumed gestational ages of <28 weeks per 1,000 live births plus fetal deaths. Late fetal mortality rate = deaths with stated or presumed gestational ages of 28 weeks or more per 1,000 live births plus fetal deaths.

Source: National Vital Statistics System, NCHS, CDC.

Percent of fetal deaths 20+ weeks <500 grams and <750 grams: 1990, 1995, 2001 and 2002



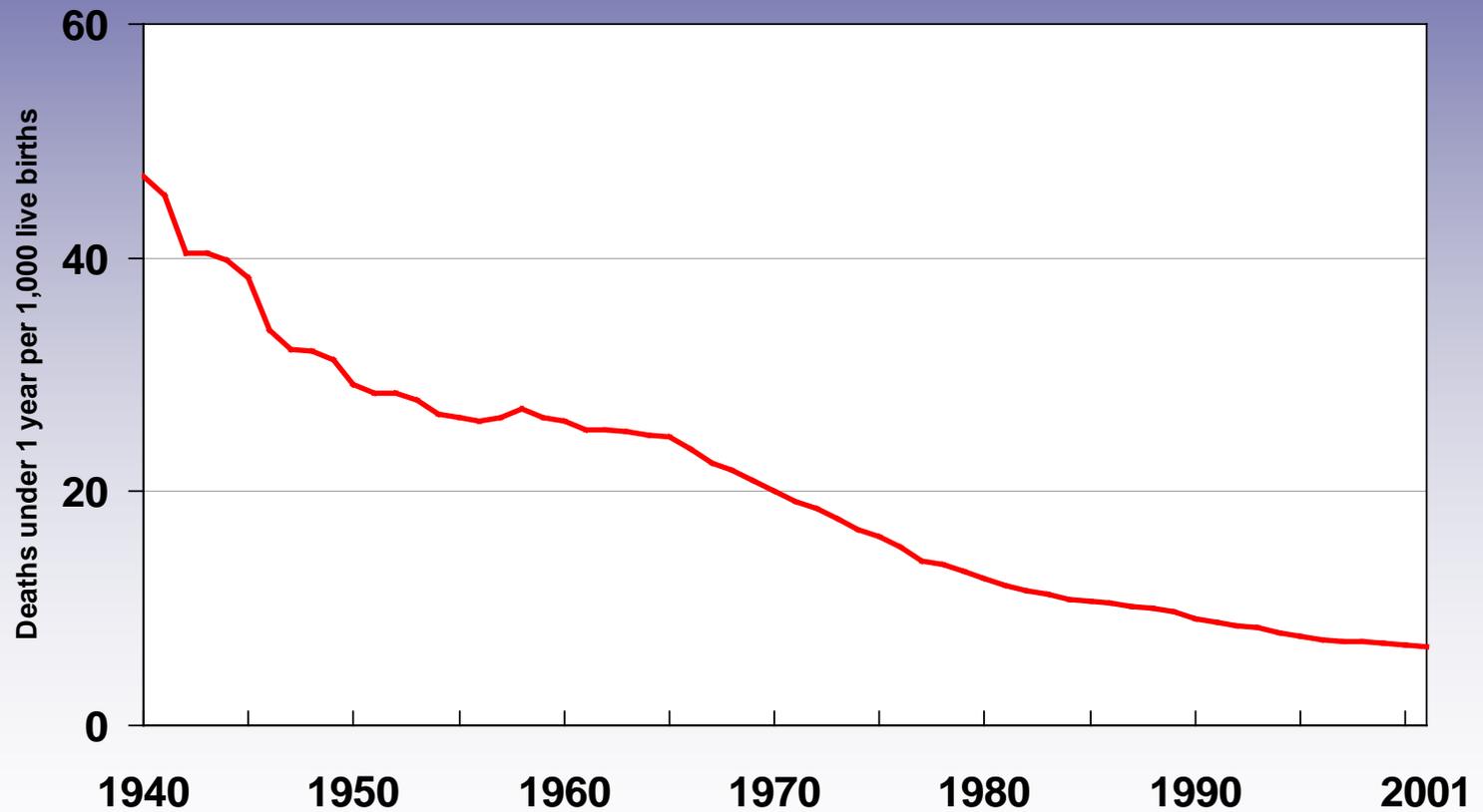
Percent of all fetal deaths 20+ weeks that occur at 20-27 weeks: States reporting all periods of gestation and all other States, Selected years





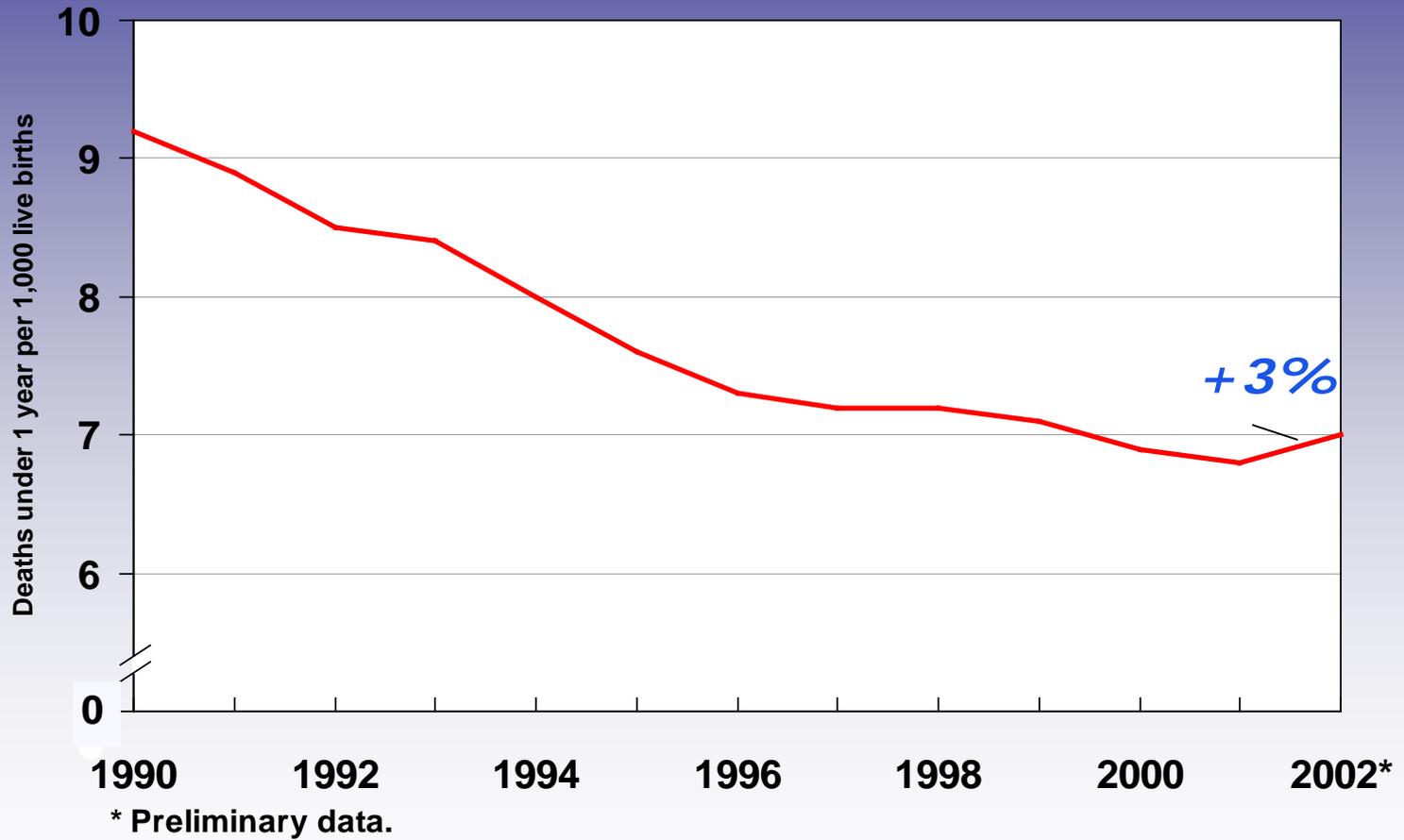
Trends in infant mortality

Infant mortality rate: United States, 1940-2001



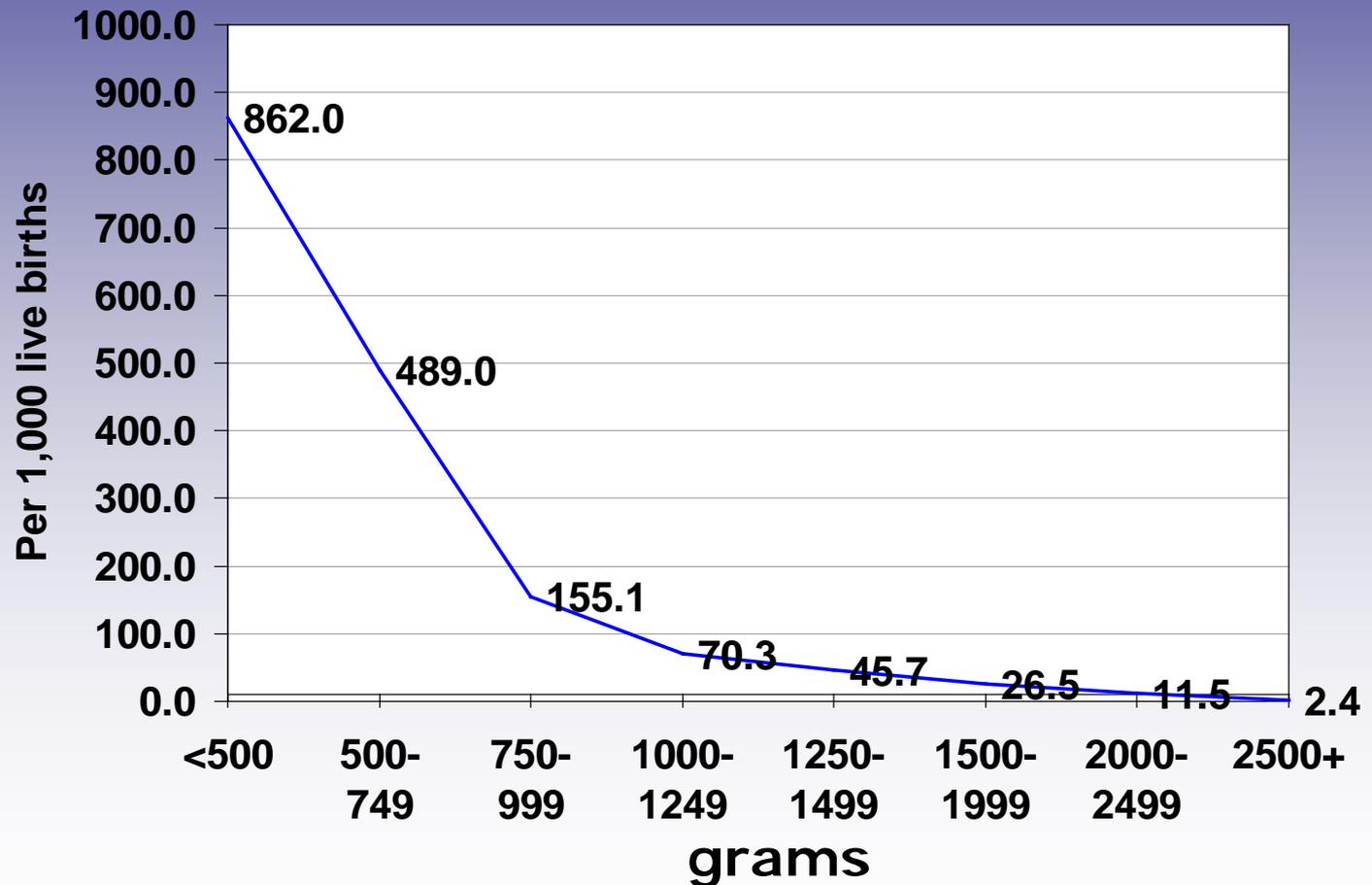
SOURCE: National Vital Statistics System, NCHS, CDC.

Infant mortality rate: United States, 1990-2002



SOURCE: National Vital Statistics System, NCHS, CDC.

Infant mortality rates by birthweight: United States, 2002



Infant deaths and infant, neonatal, and postneonatal mortality rates: United States, preliminary 2002, and final 2001

[Rates per 1,000 live births]

Year	Infant deaths	Infant mortality rate				
		Total	Neonatal (Under 28 days)			Postneonatal (28 days – 11 months)
			Total	Under 7 days	7-27 days	
2002 ¹	28,042	<u>7.0</u>	<u>4.7</u>	<u>3.7</u>	0.9*	2.3
2001	27,568	6.8	4.5	3.6	0.9	2.3

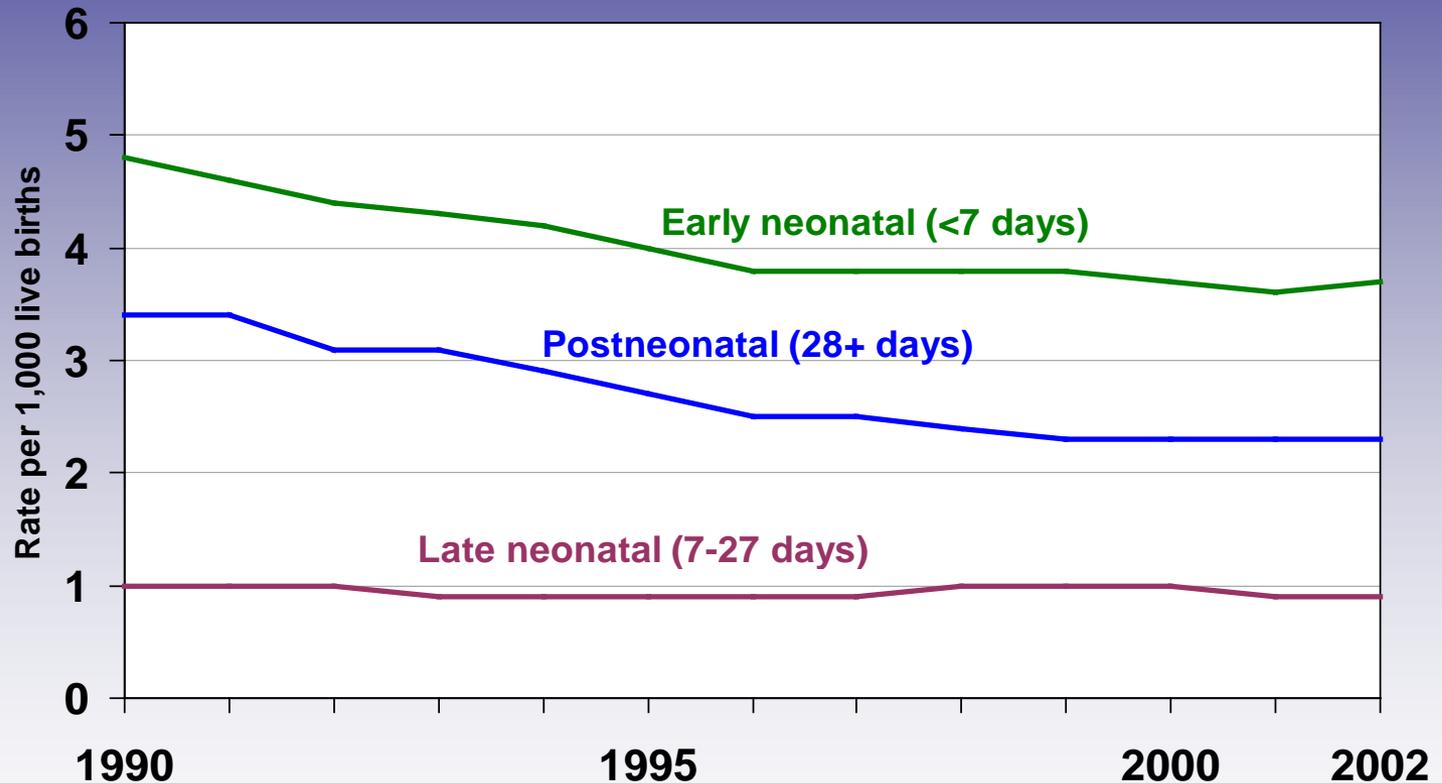
¹ Partially edited data processed through January 2004.

*2001 = 0.908, 2002 = 0.931

NOTE: Bold underlined numbers indicate a statistically significant increase from the previous year.

SOURCE: National Vital Statistics System, NCHS, CDC.

Early and late neonatal and postneonatal mortality rates: U.S., 1990-2002

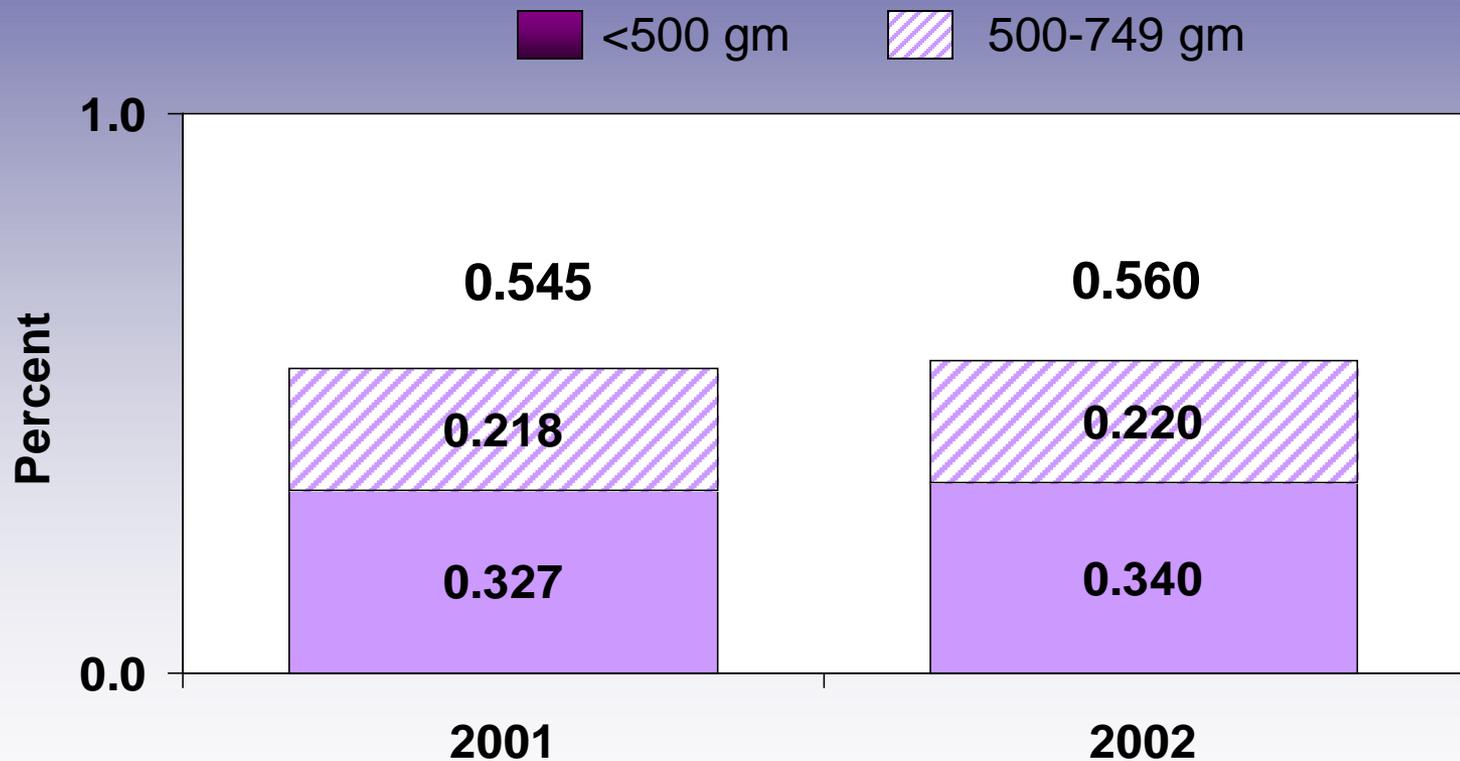


Note: Rates for 2002 are based on partially edited data processed as of January, 2004.

Early neonatal mortality rate = deaths to infant < 7 days per 1,000 live births. Late neonatal mortality rate = deaths to infants 7-27 days. Postneonatal mortality rate = deaths to infants 28 days - 1 year per 1,000 live births.

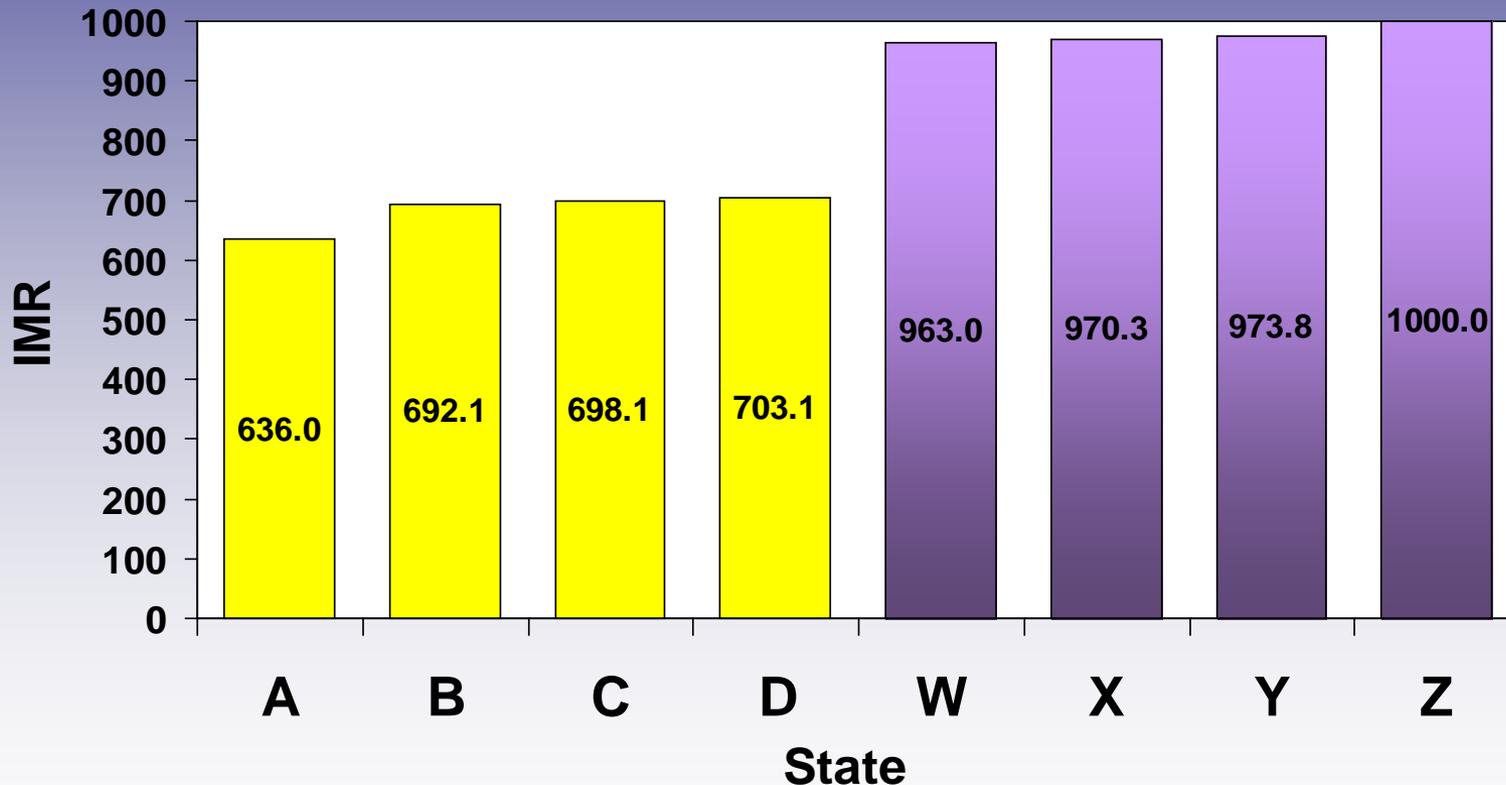
Source: National Vital Statistics System, NCHS, CDC.

Percent of perinatal events* <750 grams: 2001 and 2002



* Includes fetal deaths of 20+ weeks of gestation plus live births of all gestational ages.

Infant mortality rates <500 g. birthweight, Selected States, 2002



Includes the four states with the highest and lowest rates in 2002, which also had at least 20 births <500 grams.

How might reporting improvements be made?



- Active follow-back on < 750gm births
- Better support of fetal death reporting
- Modification of state law on fetal death reporting
- Re-engineering

But Why Re-engineering?



- Automated linkage - improve surveillance of borderline events
- Keep birth and fetal death report of the same event from happening
- Fetal event is rare ... hard to capture via a seldom used paper report.
- Improved understanding of the importance for reporting fetals