Exploring maternal and child health data sources and qualitative data in large datasets
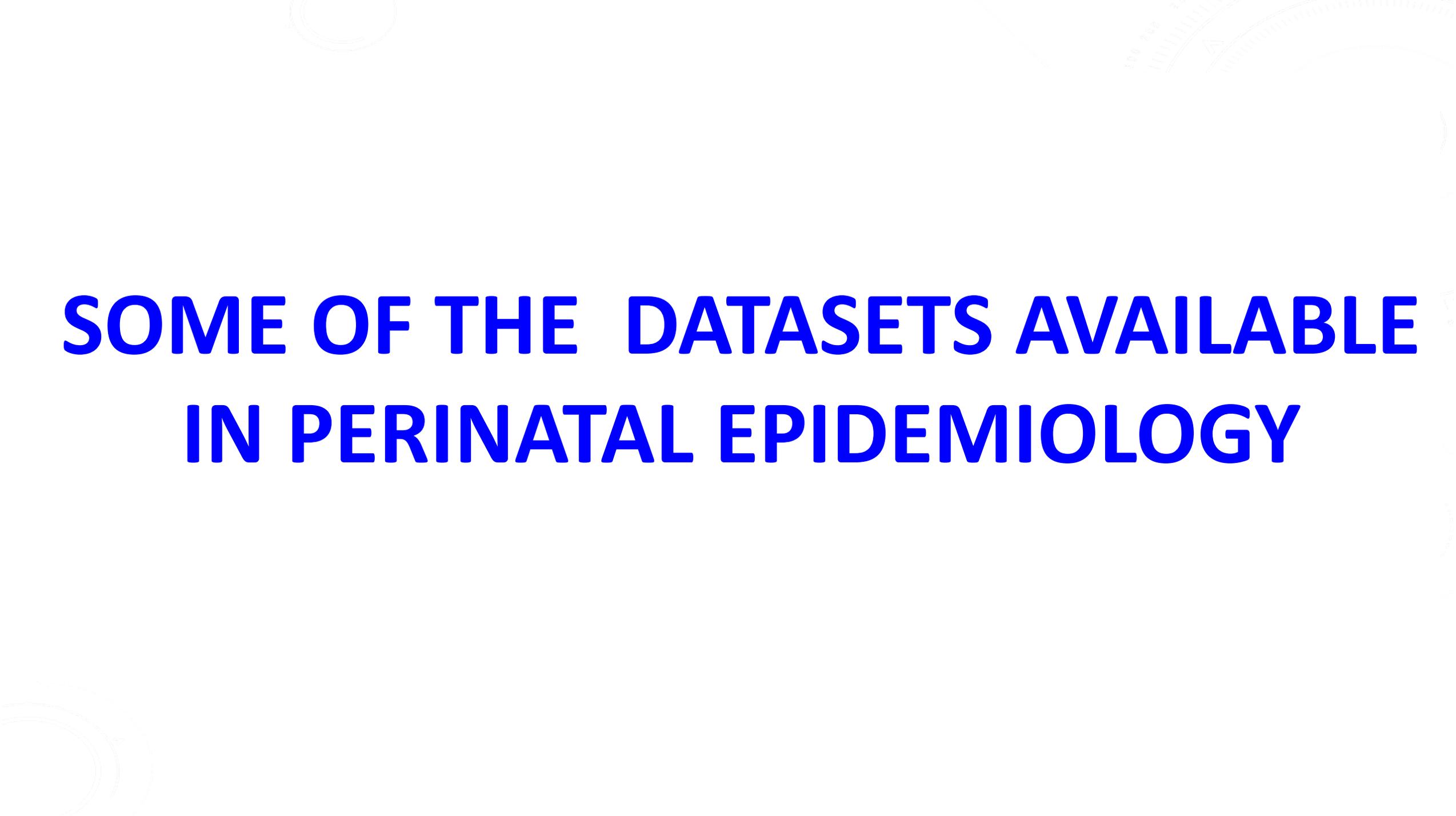

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SOME OF THE DATASETS AVAILABLE IN PERINATAL EPIDEMIOLOGY

10 questions to ask yourself in choosing any data source for your study….

(Prior to choosing a data source, make sure your question is clear.)

10 questions to ask yourself in choosing any data source for your study….

Is there even an existing source of data for my study? If so…..

1. **Who** is included in the data set (who is represented/not)

2. **When** were data collected (actual year? in relation to occurrence of events? *Note difference between publication date & date of collection*)

3. **What exposures** does it capture/not?

4. **What outcomes** does it capture/not? (What I need or close?)

5. Were exposures and outcomes **collected simultaneously**?

6. **Exposure/outcome temporal ordering** established?

10 questions to ask yourself in choosing any data source for your study (cont'd)

7. At what point(s) in the **life course** does it capture data?

8. Does it **capture data at more than one point in time for the same people** (longitudinal analysis possible)?

9. Have the **data been "validated"** from this source? (meaning, have they been compared to some kind of "gold standard") (e.g."Was baby conceived with ART?" (Data recorded on BC vs. data from fertility clinic)

10. Is there **an identifier I can use to link** this data from this source to other data?

The basics of population perinatal epi data sources

- Vital statistics & Census Data

- Administrative (hospital/insurance claims)

- Surveys

- Putting it all together: Linked data sets

Why Population Data?

- **Data on (most) everyone**

  - Less concern about selection bias, etc.

- **Standardized** (hopefully) data collection format

  - You can compare measures across the whole population

- **Large databases!**

  - *Research rare exposures & outcomes*

TYPES OF POPULATION DATA

Vital Statistics

- In our case of greatest value are **birth** and **death** statistics

Vital Statistics

- Birth Certificate work sheets

Mother's medical record # _____
Mother's name _____

FINAL (2/5/04)

FACILITY WORKSHEET FOR THE LIVE BIRTH CERTIFICATE

For pregnancies resulting in the births of two or more live-born infants, this worksheet should be completed for the 1st live born infant in the delivery. For each subsequent live-born infant, complete the "Attachment for Multiple Births." For any fetal loss in the pregnancy reportable under State reporting requirements, complete the "Facility Worksheet for the Fetal Death Report."
For detailed definitions, instructions, information on sources, and common key words and abbreviations please see Worksheets for the Certificate of Live Birth."

Mother's Medical Record #_____
FOR HOSPITAL USE ONLY

1. Facility name: *_____
(If not institution, give street and number)

2. Facility I.D. (National Provider Identifier): _____

3. City, Town or Location of birth: _____

4. County of birth: _____

5. Place of birth:
- ☐ Hospital
- ☐ Freestanding birthing center (Freestanding birthing center is defined as one which has no direct an operative delivery center.)
- ☐ Home birth
  - Planned to deliver at home ☐ Yes ☐ No
- ☐ Clinic/Doctor's Office
- ☐ Other (specify, e.g., taxi cab, train, plane, etc.)_____

*Facilities may wish to have pre-set responses (hard-copy and/or electronic) to questions 1-5 for institutions.

Final 1/28/04

Mother's Name_____

Mother's Worksheet for Child's Birth Certificate

The information you provide below will be used to create your child's birth certificate. The birth certificate is a document that will be used for legal purposes to prove your child's age, citizenship and parentage. This document will be used by your child throughout his/her life. State laws provide protection against the unauthorized release of identifying information from the birth certificates to ensure the confidentiality of the parents and their child.

It is very important that you provide complete and accurate information to all of the questions. In addition to information used for legal purposes, other information from the birth certificate is used by health and medical researchers to study and improve the health of mothers and newborn infants. Items such as parent's education, race, and smoking will be used for studies but will not appear on copies of the birth certificate issued to you or your child.

PLEASE PRINT CLEARLY

1. What is your current legal name?

   _____ _____ _____ _____
   First   Middle   Last   Suffix (Jr., III, etc.)

2. What will be your baby's legal name (as it should appear on the birth certificate)?

   _____ _____ _____ _____
   First   Middle   Last   Suffix (Jr., III, etc.)

   ☐ Name not yet chosen

Vital Statistics

- What are vital statistics?

  - **Record "life" events**

    - Birth
    - Death
    - Marriage & Divorce

  - **History**

    - 1639: General Court of the Massachusetts Bay Colony – requires gov't to record births, deaths, marriages – births not systematically until late 1800s
    - U.S. National vital statistics system evolved over 20th century.
      - By 1933, all states registering live births/deaths.
      - Currently: State-based data, compiled by CDC/NCHS

Vital Stats circa early 20th century

"How well does existing data match the needs of your question?"

Sept. 22, 1914

Vital Statistics

- **Birth certificate**
  - **What's behind the certificate you bring home?**
  - **Domains of information....**
    -
      - Name, sex, date/time of birth
      - Birth weight
      - Gestational age
      - Apgar
      - Facility transfer
      - Congenital anomalies
      - Abnormal conditions of the newborn
      - Breastfeeding (at hospital)

Vital Statistics

- **<u>Parent</u> demographics**
  - age,
  - education,
  - race, nativity
  - missing info?

- **<u>Maternal health</u> conditions**
  - Risk factors, infections, behaviors
  - Reproductive assistance
  - Labor/delivery characteristics, complications, procedures
  - Prior-birth history

- **<u>Birth attendant</u> info**

- **<u>Birth</u> <u>location</u>** (Home, birth center, hospital, hospital level...)

- **<u>Prenatal</u> care** (including payer)

Vital Statistics

- **Who reports the information?**

  - **Birth certificate & Fetal death report**

    - **Parent/Patient worksheet**

      - Demographic/behavioral information

    - **Facility worksheet**

      - Medical history, L&D, newborn characteristics

  - **Death certificate**

    - Funeral director

    - Medical certifier

U.S. STANDARD CERTIFICATE OF LIVE BIRTH

LOCAL FILE NO. _____   BIRTH NUMBER: _____

CHILD

1. CHILD'S NAME (First, Middle, Last, Suffix)

2. TIME OF BIRTH (24 hr)   3. SEX   4. DATE OF BIRTH (Mo/Day/Yr)

5. FACILITY NAME (If not institution, give street and number)   6. CITY, TOWN, OR LOCATION OF BIRTH   7. COUNTY OF BIRTH

MOTHER

8a. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)   8b. DATE OF BIRTH (Mo/Day/Yr)

8c. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last, Suffix)   8d. BIRTHPLACE (State, Territory, or Foreign Country)

9a. RESIDENCE OF MOTHER-STATE   9b. COUNTY   9c. CITY, TOWN, OR LOCATION

9d. STREET AND NUMBER   9e. APT. NO.   9f. ZIP CODE   9g. INSIDE CITY LIMITS? ☐ Yes ☐ No

FATHER

10a. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)   10b. DATE OF BIRTH (Mo/Day/Yr)   10c. BIRTHPLACE (State, Territory, or Foreign Country)

CERTIFIER

11. CERTIFIER'S NAME: _____
TITLE: ☐ MD ☐ DO ☐ HOSPITAL ADMIN. ☐ CNM/CM ☐ OTHER MIDWIFE
☐ OTHER (Specify)_____

12. DATE CERTIFIED ___/___/___ MM DD YYYY

13. DATE FILED BY REGISTRAR ___/___/___ MM DD YYYY

INFORMATION FOR ADMINISTRATIVE USE

MOTHER

14. MOTHER'S MAILING ADDRESS: ☐ Same as residence, or: State: City, Town, or Location:
Street & Number: Apartment No.:   Zip Code:

15. MOTHER MARRIED? (At birth, conception, or any time between) ☐ Yes ☐ No
IF NO, HAS PATERNITY ACKNOWLEDGEMENT BEEN SIGNED IN THE HOSPITAL? ☐ Yes ☐ No

16. SOCIAL SECURITY NUMBER REQUESTED FOR CHILD? ☐ Yes ☐ No   17. FACILITY ID. (NPI)

18. MOTHER'S SOCIAL SECURITY NUMBER: 19. FATHER'S SOCIAL SECURITY NUMBER:

INFORMATION FOR MEDICAL AND HEALTH PURPOSES ONLY

MOTHER

20. MOTHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery)
☐ 8th grade or less
☐ 9th - 12th grade, no diploma
☐ High school graduate or GED completed
☐ Some college credit but no degree
☐ Associate degree (e.g., AA, AS)
☐ Bachelor's degree (e.g., BA, AB, BS)
☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

21. MOTHER OF HISPANIC ORIGIN? (Check the box that best describes whether the mother is Spanish/Hispanic/Latina. Check the "No" box if mother is not Spanish/Hispanic/Latina)
☐ No, not Spanish/Hispanic/Latina
☐ Yes, Mexican, Mexican American, Chicana
☐ Yes, Puerto Rican
☐ Yes, Cuban
☐ Yes, other Spanish/Hispanic/Latina
(Specify)_____

22. MOTHER'S RACE (Check one or more races to indicate what the mother considers herself to be)
☐ White
☐ Black or African American
☐ American Indian or Alaska Native (Name of the enrolled or principal tribe)_____
☐ Asian Indian
☐ Chinese
☐ Filipino
☐ Japanese
☐ Korean
☐ Vietnamese
☐ Other Asian (Specify)_____
☐ Native Hawaiian
☐ Guamanian or Chamorro
☐ Samoan
☐ Other Pacific Islander (Specify)_____
☐ Other (Specify)_____

FATHER

23. FATHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery)
☐ 8th grade or less
☐ 9th - 12th grade, no diploma
☐ High school graduate or GED completed
☐ Some college credit but no degree
☐ Associate degree (e.g., AA, AS)
☐ Bachelor's degree (e.g., BA, AB, BS)
☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

24. FATHER OF HISPANIC ORIGIN? (Check the box that best describes whether the father is Spanish/Hispanic/Latino. Check the "No" box if father is not Spanish/Hispanic/Latino)
☐ No, not Spanish/Hispanic/Latino
☐ Yes, Mexican, Mexican American, Chicano
☐ Yes, Puerto Rican
☐ Yes, Cuban
☐ Yes, other Spanish/Hispanic/Latino
(Specify)_____

25. FATHER'S RACE (Check one or more races to indicate what the father considers himself to be)
☐ White
☐ Black or African American
☐ American Indian or Alaska Native (Name of the enrolled or principal tribe)_____
☐ Asian Indian
☐ Chinese
☐ Filipino
☐ Japanese
☐ Korean
☐ Vietnamese
☐ Other Asian (Specify)_____
☐ Native Hawaiian
☐ Guamanian or Chamorro
☐ Samoan
☐ Other Pacific Islander (Specify)_____
☐ Other (Specify)_____

Mother's Name _____
Mother's Medical Record No. _____

26. PLACE WHERE BIRTH OCCURRED (Check one)
☐ Hospital
☐ Freestanding birthing center
☐ Home Birth: Planned to deliver at home? ☐ Yes ☐ No
☐ Clinic/Doctor's office
☐ Other (Specify)_____

27. ATTENDANT'S NAME, TITLE, AND NPI
NAME: _____   NPI:_____
TITLE: ☐ MD ☐ DO ☐ CNM/CM ☐ OTHER MIDWIFE
☐ OTHER (Specify)_____

28. MOTHER TRANSFERRED FOR MATERNAL MEDICAL OR FETAL INDICATIONS FOR DELIVERY? ☐ Yes ☐ No
IF YES, ENTER NAME OF FACILITY MOTHER TRANSFERRED FROM:
_____

REV. 11/2003

MOTHER

29a. DATE OF FIRST PRENATAL CARE VISIT   MM DD YYYY   ☐ No Prenatal Care

29b. DATE OF LAST PRENATAL CARE VISIT   MM DD YYYY

30. TOTAL NUMBER OF PRENATAL VISITS FOR THIS PREGNANCY (If none, enter "0".)

31. MOTHER'S HEIGHT _____ (feet/inches)

32. MOTHER'S PREPREGNANCY WEIGHT _____ (pounds)

33. MOTHER'S WEIGHT AT DELIVERY _____ (pounds)

34. DID MOTHER GET WIC FOOD FOR HERSELF DURING THIS PREGNANCY? ☐ Yes ☐ No

35. NUMBER OF PREVIOUS LIVE BIRTHS (Do not include this child)
35a. Now Living   Number _____   ☐ None
35b. Now Dead   Number _____   ☐ None

36. NUMBER OF OTHER PREGNANCY OUTCOMES (spontaneous or induced losses or ectopic pregnancies)
36a. Other Outcomes   Number _____   ☐ None

37. CIGARETTE SMOKING BEFORE AND DURING PREGNANCY
For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. IF NONE, ENTER "0".
Average number of cigarettes or packs of cigarettes smoked per day.
	# of cigarettes		# of packs
Three Months Before Pregnancy	_____	OR	_____
First Three Months of Pregnancy	_____	OR	_____
Second Three Months of Pregnancy	_____	OR	_____
Third Trimester of Pregnancy	_____	OR	_____

38. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
☐ Private Insurance
☐ Medicaid
☐ Self-pay
☐ Other (Specify)

35c. DATE OF LAST LIVE BIRTH   MM YYYY

36b. DATE OF LAST OTHER PREGNANCY OUTCOME   MM YYYY

39. DATE LAST NORMAL MENSES BEGAN   MM DD YYYY

40. MOTHER'S MEDICAL RECORD NUMBER

MEDICAL AND HEALTH INFORMATION

41. RISK FACTORS IN THIS PREGNANCY (Check all that apply)
Diabetes
☐ Prepregnancy (Diagnosis prior to this pregnancy)
☐ Gestational (Diagnosis in this pregnancy)
Hypertension
☐ Prepregnancy (Chronic)
☐ Gestational (PIH, preeclampsia)
☐ Eclampsia
☐ Previous preterm birth
☐ Other previous poor pregnancy outcome (Includes perinatal death, small-for-gestational age/intrauterine growth restricted birth)
☐ Pregnancy resulted from infertility treatment-If yes, check all that apply:
  ☐ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
  ☐ Assisted reproductive technology (e.g., in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))
☐ Mother had a previous cesarean delivery
  If yes, how many _____
☐ None of the above

42. INFECTIONS PRESENT AND/OR TREATED DURING THIS PREGNANCY (Check all that apply)
☐ Gonorrhea
☐ Syphilis
☐ Chlamydia
☐ Hepatitis B
☐ Hepatitis C
☐ None of the above

43. OBSTETRIC PROCEDURES (Check all that apply)
☐ Cervical cerclage
☐ Tocolysis
External cephalic version:
☐ Successful
☐ Failed
☐ None of the above

44. ONSET OF LABOR (Check all that apply)
☐ Premature Rupture of the Membranes (prolonged, ≥12 hrs.)
☐ Precipitous Labor (<3 hrs.)
☐ Prolonged Labor (≥ 20 hrs.)
☐ None of the above

45. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply)
☐ Induction of labor
☐ Augmentation of labor
☐ Non-vertex presentation
☐ Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery
☐ Antibiotics received by the mother during labor
☐ Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥38°C (100.4°F)
☐ Moderate/heavy meconium staining of the amniotic fluid
☐ Fetal intolerance of labor such that one or more of the following actions was taken: in-utero resuscitative measures, further fetal assessment, or operative delivery
☐ Epidural or spinal anesthesia during labor
☐ None of the above

46. METHOD OF DELIVERY
A. Was delivery with forceps attempted but unsuccessful? ☐ Yes ☐ No
B. Was delivery with vacuum extraction attempted but unsuccessful? ☐ Yes ☐ No
C. Fetal presentation at birth ☐ Cephalic ☐ Breech ☐ Other
D. Final route and method of delivery (Check one)
☐ Vaginal/Spontaneous
☐ Vaginal/Forceps
☐ Vaginal/Vacuum
☐ Cesarean
If cesarean, was a trial of labor attempted? ☐ Yes ☐ No

47. MATERNAL MORBIDITY (Check all that apply) (Complications associated with labor and delivery)
☐ Maternal transfusion
☐ Third or fourth degree perineal laceration
☐ Ruptured uterus
☐ Unplanned hysterectomy
☐ Admission to intensive care unit
☐ Unplanned operating room procedure following delivery
☐ None of the above

NEWBORN INFORMATION

NEWBORN

Mother's Name _____
Mother's Medical Record No. _____

48. NEWBORN MEDICAL RECORD NUMBER

49. BIRTHWEIGHT (grams preferred, specify unit) _____ ☐ grams ☐ lb/oz

50. OBSTETRIC ESTIMATE OF GESTATION: _____ (completed weeks)

51. APGAR SCORE:
Score at 5 minutes: _____
If 5 minute score is less than 6,
Score at 10 minutes: _____

52. PLURALITY - Single, Twin, Triplet, etc.
(Specify)_____

53. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify) _____

54. ABNORMAL CONDITIONS OF THE NEWBORN (Check all that apply)
☐ Assisted ventilation required immediately following delivery
☐ Assisted ventilation required for more than six hours
☐ NICU admission
☐ Newborn given surfactant replacement therapy
☐ Antibiotics received by the newborn for suspected neonatal sepsis
☐ Seizure or serious neurologic dysfunction
☐ Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention)
☐ None of the above

55. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply)
☐ Anencephaly
☐ Meningomyelocele/Spina bifida
☐ Cyanotic congenital heart disease
☐ Congenital diaphragmatic hernia
☐ Omphalocele
☐ Gastroschisis
☐ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
☐ Cleft Lip with or without Cleft Palate
☐ Cleft Palate alone
☐ Down Syndrome
  ☐ Karyotype confirmed
  ☐ Karyotype pending
☐ Suspected chromosomal disorder
  ☐ Karyotype confirmed
  ☐ Karyotype pending
☐ Hypospadias
☐ None of the anomalies listed above

56. WAS INFANT TRANSFERRED WITHIN 24 HOURS OF DELIVERY? ☐ Yes ☐ No
IF YES, NAME OF FACILITY INFANT TRANSFERRED TO:_____

57. IS INFANT LIVING AT TIME OF REPORT? ☐ Yes ☐ No ☐ Infant transferred, status unknown

58. IS THE INFANT BEING BREASTFED AT DISCHARGE? ☐ Yes ☐ No

What can this not tell you?

Vital Statistics

Report of fetal death (stillbirth)

Vital Statistics

- ## Report of fetal death
  - Similar information to birth certificate
  - Includes "Cause/conditions contributing to fetal death"

18. CAUSE/CONDITIONS CONTRIBUTING TO FETAL DEATH

CAUSE OF FETAL DEATH

Mother's Name _____
Mother's Medical Record No. _____

18a. INITIATING CAUSE/CONDITION

(AMONG THE CHOICES BELOW, PLEASE SELECT THE ONE WHICH MOST LIKELY BEGAN THE SEQUENCE OF EVENTS RESULTING IN THE DEATH OF THE FETUS)

Maternal Conditions/Diseases (Specify) _____

Complications of Placenta, Cord, or Membranes

□ Rupture of membranes prior to onset of labor
□ Abruptio placenta
□ Placental insufficiency   **Primary cause**
□ Prolapsed cord
□ Chorioamnionitis
□ Other Specify) _____

Other Obstetrical or Pregnancy Complications (Specify) _____

Fetal Anomaly (Specify) _____

Fetal Injury (Specify) _____

Fetal Infection (Specify) _____

Other Fetal Conditions/Disorders (Specify) _____

□ Unknown

18b. OTHER SIGNIFICANT CAUSES OR CONDITIONS

(SELECT OR SPECIFY ALL OTHER CONDITIONS CONTRIBUTING TO DEATH IN ITEM 18b)

Maternal Conditions/Diseases (Specify) _____

Complications of Placenta, Cord, or Membranes

□ Rupture of membranes prior to onset of labor
□ Abruptio placenta
□ Placental insufficie   **Secondary cause**
□ Prolapsed cord
□ Chorioamnionitis
□ Other Specify) _____

Other Obstetrical or Pregnancy Complications (Specify) _____

Fetal Anomaly (Specify) _____

Fetal Injury (Specify) _____

Fetal Infection (Specify) _____

Other Fetal Conditions/Disorders (Specify) _____

□ Unknown

18c. WEIGHT OF FETUS (grams preferred, specify unit)

□ grams   □ lb/oz

18d. OBSTETRIC ESTIMATE OF GESTATION AT DELIVERY

_____ (completed weeks)

18e. ESTIMATED TIME OF FETAL DEATH

□ Dead at time of first assessment, no labor ongoing
□ Dead at time of first assessment, labor ongoing
□ Died during labor, after first assessment
□ Unknown time of fetal death

18f. WAS AN AUTOPSY PERFORMED?
□ Yes   □ No   □ Planned

18g. WAS A HISTOLOGICAL PLACENTAL EXAMINATION PERFORMED?
□ Yes   □ No   □ Planned

18h. WERE AUTOPSY OR HISTOLOGICAL PLACENTAL EXAMINATION RESULTS USED IN DETERMINING THE CAUSE OF FETAL DEATH? □ Yes   □ No

REV. 11/2003

Revised (2003) U.S. Standard Certificate of Death

PART II (Other significant conditions)
•Enter all diseases or conditions contributing to death that were not reported in the chain of events in Part I and that did not result in the **underlying cause of death**. See attached examples.
•If two or more possible sequences resulted in death, or if two conditions seem to have added together, report in Part I the one that, in your opinion, most directly caused death. Report in Part II the other conditions or diseases.

CHANGES TO CAUSE OF DEATH
Should additional medical information or autopsy findings become available that would change the cause of death originally reported, the original death certificate should be amended by the certifying physician by **immediately** reporting the revised cause of death to the State Vital Records Office.

ITEMS 33-34 - AUTOPSY
•33 - Enter "Yes" if either a partial or full autopsy was performed. Otherwise enter "No."
•34 - Enter "Yes" if autopsy findings were available to complete the cause of death; otherwise enter "No". Leave item blank if no autopsy was performed.

ITEM 35 - DID TOBACCO USE CONTRIBUTE TO DEATH?
Check "yes" if, in your opinion, the use of tobacco contributed to death. Tobacco use may contribute to deaths due to a wide variety of diseases; for example, tobacco use contributes to many deaths due to emphysema or lung cancer and some heart disease and cancers of the head and neck. Check "no" if, in your clinical judgment, tobacco use did not contribute to this particular death.

ITEM 36 - IF FEMALE, WAS DECEDENT PREGNANT AT TIME OF DEATH OR WITHIN PAST YEAR?
This information is important in determining pregnancy-related mortality.

ITEM 37 - MANNER OF DEATH
•Always check Manner of Death, which is important: 1) in determining accurate causes of death; 2) in processing insurance claims; and 3) in statistical studies of injuries and death.
•Indicate "Pending investigation" if the manner of death cannot be determined whether due to an accident, suicide, or homicide within the statutory time limit for filing the death certificate. This should be changed later to one of the other terms.
•Indicate "Could not be Determined" **ONLY** when it is impossible to determine the manner of death.

Checkbox format:

IF FEMALE:

❏Not pregnant within past year

❏Pregnant at time of death

❏Not pregnant, but pregnant within 42 days of death

❏Not pregnant, but pregnant 43 days to 1 year before death

❏Unknown if pregnant within the past year

Vital Statistics

- Where can you access vital statistics data, right now?

FastStats (CDC) is a nice place to start for ready-made tables & such (as the name would imply…) Great for all sorts of health topics, not just perinatal epi

Births and Natality

Data are for the U.S.

- Number of births: 3,664,292
- Birth rate: 11.0 per 1,000 population
- Fertility rate: 56.3 births per 1,000 women aged 15-44
- Percent born low birthweight: 8.52%
- Percent born preterm: 10.49%
- Percent unmarried: 40.0%
- Mean age at first birth: 27.3

Source: Births: Final Data for 2021, tables 1, 9, 11, and 13 📄 [PDF – 1 MB]

Related FastStats

- Births – method of delivery
- Births – multiple births
- Births – teen births
- Births – unmarried childbearing
- Birthweight and gestation

More data

- Trends in Births from Health, United States
- Health, United States — Topic Page: Births
- Birth data
- Vital Statistics of the United States

www.birthbythenumbers.org

Vital Statistics

- **Data query sites**
  - Produce basic tables (rates/proportions for subgroups, states, regions)
  - Explore potential research ideas
  - Can complete publishable studies
    - **CDC WONDER** (natality & Death data & more): http://wonder.cdc.gov
    - **PERISTATS** (March of Dimes) – vitals & select other maternal & infant outcomes: http://www.marchofdimes.com/peristats/default.aspx

WONDER Online Databases

▸ AIDS Public Use Data

▸ Births

▸ Cancer Statistics

Deaths:

All Ages:

▸ Underlying Cause of Death

▸ Multiple Cause of Death (Provisional)

▸ Multiple Cause of Death (Final)

▸ U.S. - Mexico Border Area Mortality

▸ Compressed Mortality

▸ Fetal Deaths

▸ Infant Deaths

Environment:

▸ Heat Wave Days May-September

National Notifiable Conditions

▸ NNDSS Annual Summary Data Query

▸ NNDSS Annual Tables

▸ NNDSS Weekly Tables

Reports and References

Prevention Guidelines (Archive)

Scientific Data and Documentation (Archive)

Other Query Systems

▸ Healthy People 2010 (Archive)

▸ 122 Cities Weekly Mortality (Archive)

CDC Wonder

CDC Wonder

CDC WONDER

Natality Information
Live Births

The Natality online databases report counts of live births occurring within the United States to U.S. residents. Counts can be obtained by a variety of demographic characteristics, such as state and county of residence, mother's race, and mother's age, and health and medical items, such as tobacco use, method of delivery, and congenital anomalies. The data are derived from birth certificates. For more information, refer to Natality data description.

Select from following:

Natality for 2016 - 2021 (expanded)

Natality for 2007 - 2021

Natality for 2003 - 2006

Natality for 1995 - 2002

The Natality data are offered in four separate online databases because of changes in data reporting standards beginning in 2003. The race group categories changed from 8 categories for the years 1995-2002 to 4 "bridged-race" categories for the years 2003-2006. Beginning in 2003, county-level data are available for 66 additional counties, because the 2003-2006 data reference the year 2000 census to determine suppression for counties with populations less than 100,000 persons. The 1995-2002 data reference the 1990 census to determine county-level data suppression. Beginning in 2007, data are reported from the the 2003 U.S. standard Certificate of Live Birth. With the implementation of the 2003 U.S. standard Certificate of Live Birth by the states, some data items are not comparable with the previous 1989 revision, resulting in changes to the data items available here. Beginning with year 2007, data for five new birth anomalies are available, and data for five maternal risk factors are no longer available. Beginning with year 2016, data for many additional items (mostly medical and health items) are available. "Bridged-race" categories are not available in the expanded database for 2016 and later years. "Bridged-race" categories are not available after year 2019.

Hint: Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Mother's Single Race 6

Pick between:

Mother's Single Race 6 ●
Mother's Single Race 15 ○
Mother's Single/Multi Race 31 ○

- All Races
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- More than one race
- Unknown or Not Stated

Mother's Hispanic Origin

Pick between:

Mother's Hispanic Origin ●
Mother's Expanded Hispanic Origin ○

- All Origins
- Hispanic or Latino
- Not Hispanic or Latino
- Unknown or Not Stated

Age of Mother 9

Pick between:

Age of Mother 9 ●
Age of Mother 10 ○
Age of Mother 13 ○
Age of Mother Year ○

- All Ages
- Under 15 years
- 15-19 years
- 20-24 years
- 25-29 years
- 30-34 years
- 35-39 years
- 40-44 years

Mother's Education

- All Levels
- 8th grade or less
- 9th through 12th grade with no diploma
- High school graduate or GED complete
- Some college credit, but not a degree
- Associate degree (AA, AS)

Marital Status

- All Values
- Married
- Unmarried
- Unknown or Not Stated
- Not Reported

Paternity Acknowledgment (if mother unmarried)

- All Values
- Yes
- No
- Unknown or Not Stated
- Not Applicable

Mother's Nativity

- All Values
- Born in the U.S. (50 US States)
- Born outside the U.S. (includes possessions)
- Unknown or Not Stated
- Not Reported

Mother's Birth Country

- All Countries
- AFGHANISTAN (AF)
- ALBANIA (AL)
- ALGERIA (AG)
- AMERICAN SAMOA (AQ)
- ANDORRA (AN)
- ANGOLA (AO)
- ANGUILLA (AV)
- ANTARCTICA (AY)
- ANTIGUA AND BARBUDA (A
- ARGENTINA (AR)

Mother's Birth State

- The United States
- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia

What can you do with CDC Wonder?
Distribution of birthweights, U.S. Births 1995, 2021

Legend: 1995, 2021

X-axis categories: 499 grams or less, 500 - 999 grams, 1000 - 1499 grams, 1500 - 1999 grams, 2000 - 2499 grams, 2500 - 2999 grams, 3000 - 3499 grams, 3500 - 3999 grams, 4000 - 4499 grams, 4500 - 4999 grams, 5000 - 8165 grams

Y-axis: 0% to 40%

www.birthbythenumbers.org
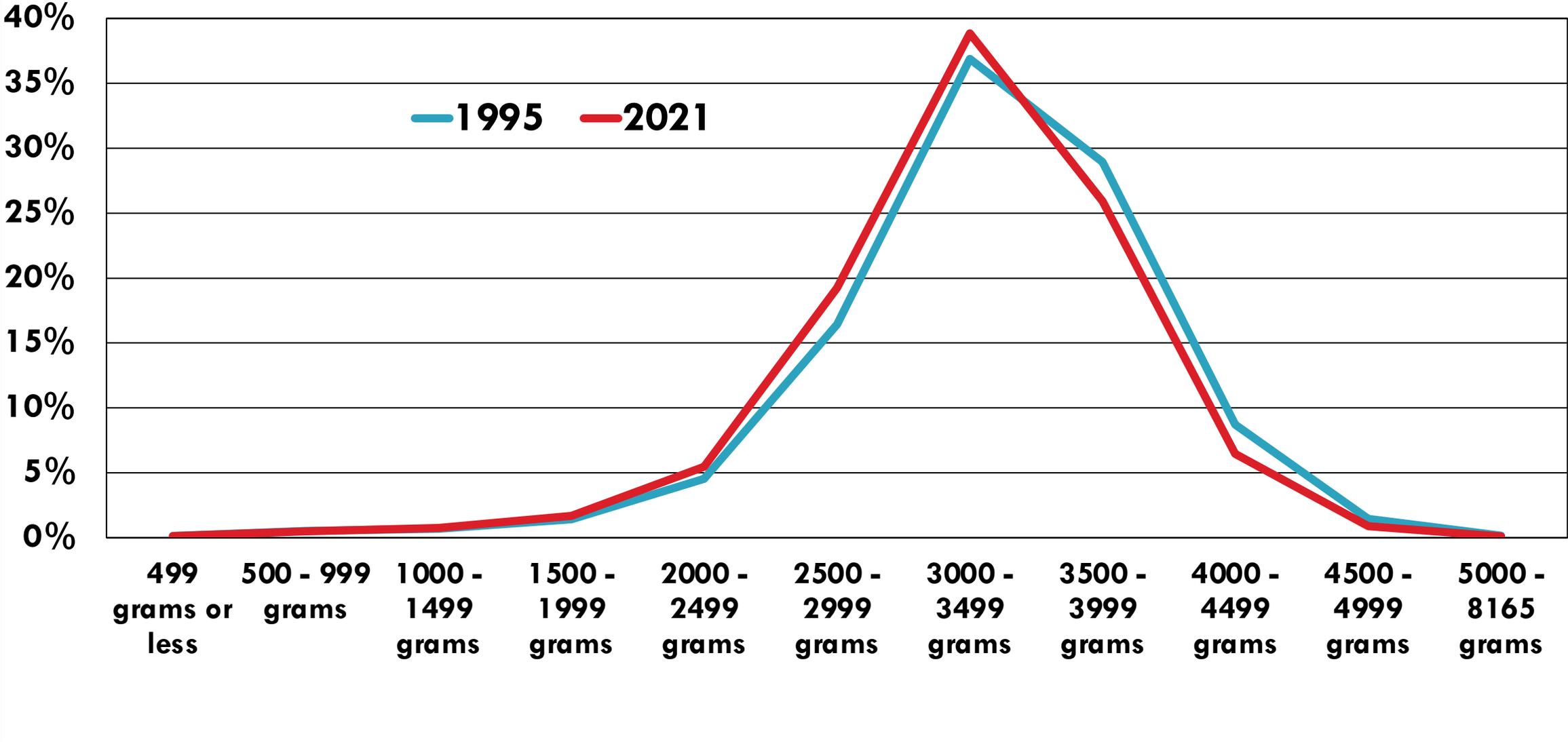
What can you do with CDC Wonder?
Distribution of birthweights, U.S. Births, by Race, 2021

www.birthbythenumbers.org

Can you publish using CDC Wonder Data?

JAMA Network Open

Research Letter | Public Health
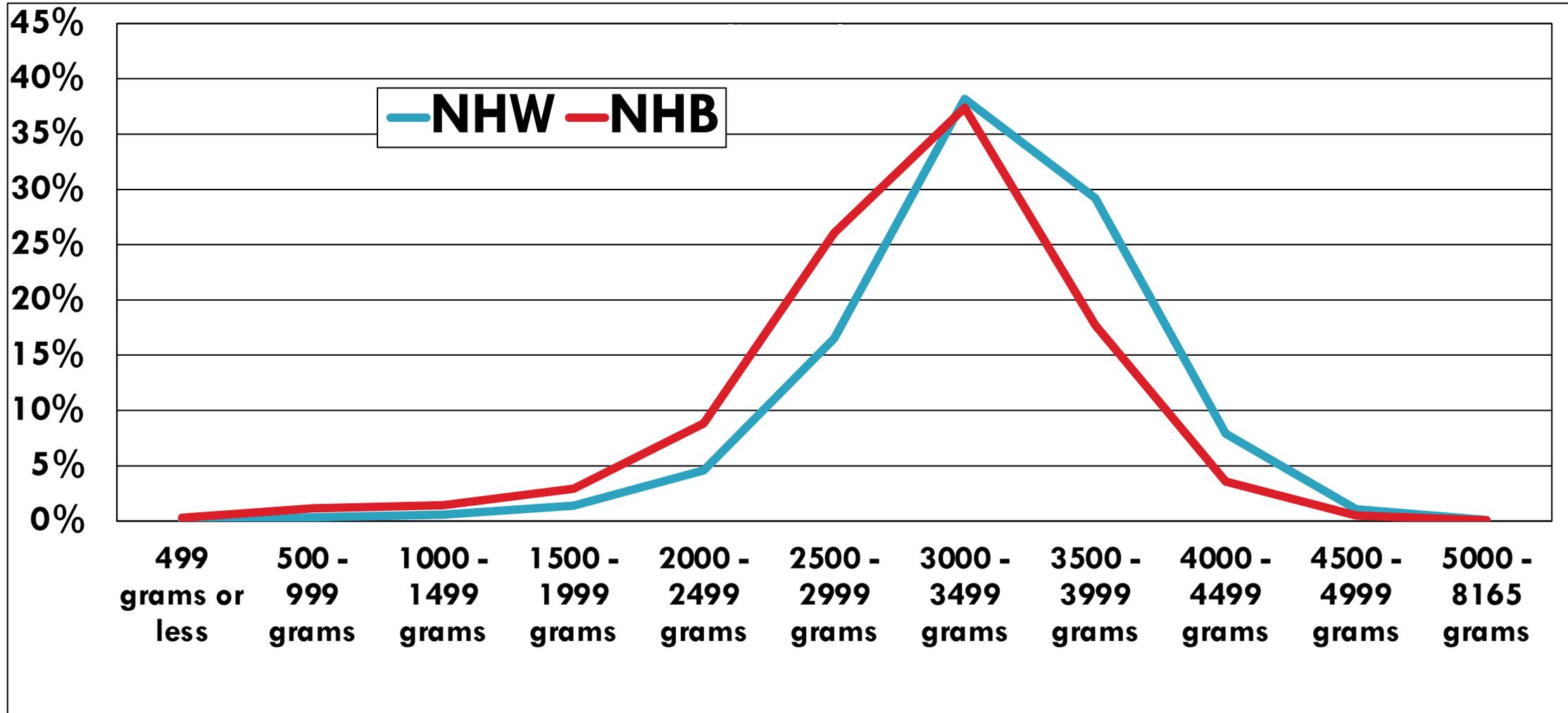
All-Cause Maternal Mortality in the US Before vs During the COVID-19 Pandemic

Marie E. Thoma, PhD; Eugene R. Declercq, PhD

Original Research

Changes in Pregnancy-Related Mortality Associated With the Coronavirus Disease 2019 (COVID-19) Pandemic in the United States

OBSTETRICS & GYNECOLOGY

Marie E. Thoma, PhD, MHS, and Eugene R. Declercq, PhD

PLOS ONE

RESEARCH ARTICLE

The relationship between obstetrical interventions and the increase in U.S. preterm births, 2014-2019

Marian F. MacDorman[1] *, Marie Thoma[2], Eugene Declercq[3], Elizabeth A. Howell[4]

PLOS ONE

RESEARCH ARTICLE

The natural pattern of birth timing and gestational age in the U.S. compared to England, and the Netherlands

Eugene Declercq[1] *, Anneke Wolterink[2], Rachel Rowe[3], Ank de Jonge[2], Raymond De Vries[4], Marianne Nieuwenhuijze[5], Corine Verhoeven[2], Neel Shah[6]

Racial and Ethnic Disparities in Maternal Mortality in the United States Using Enhanced Vital Records, 2016–2017

AJPH

Marian F. MacDorman, PhD, Marie Thoma, PhD, Eugene Declercq, PhD, and Elizabeth A. Howell, MD, MPP

www.birthbythenumbers.org

Leading Causes of Death

1900

			Number	Rate per 100K
	All causes---		343,217	1,719.1
1	Pneumonia (all forms) and influenza-----------------	107-109,33	40,362	202.2
2	Tuberculosis (all forms) ----------------------------	13-22	38,820	194.4
3	Diarrhea, enteritis, and ulceration of the intestines------	119,120	28,491	142.7
4	Diseases of the heart -------------------------------	90-95	27,427	137.4
5	Intracranial lesions of vascular origin -----------------	83	21,353	106.9
6	Nephritis (all forms) --------------------------------	130-132	17,699	88.6
7	All accidents --------------------------------------	169-195	14,429	72.3
8	Cancer and other malignant tumors -----------------	45-55	12,769	64.0
9	Senility ---	162	10,015	50.2
10	Diphtheria ---	10	8,056	40.3

2021	3,464,231	1,043.8
1. Diseases of heart (I00-I09,I11,I13,I20-I51)	695,547	43.8
2. Malignant neoplasms (C00-C97)	605,213	182.4
3. COVID-19 (U07.1)	416,893	125.6
4. Accidents (unintentional injuries) (V01-X59,Y85-Y86)	224,935	67.8
5. Cerebrovascular diseases (I60-I69)	162,890	49.1
6. Chronic lower respiratory diseases (J40-J47)	142,342	42.9
7. Alzheimer disease (G30)	119,399	36
8. Diabetes mellitus (E10-E14)	103,294	31.1
9. Chronic liver disease and cirrhosis (K70,K73-K74)	56,585	17
10. Nephritis, nephrotic syndrome and nephrosis (N00-N07,N17-N19,N25-N27)	54,358	16.4

Peristats

COVID-19 PANDEMIC RESOURCES AND SUPPORT

Learn more

Select a state

news: Infant Mortality Update

What information are you looking for? Please start your selection with either location or topic. Not all items are required. After you submit, you can narrow your results by year or health indicator or compare with another region. To get the best results, use reset button before starting a new search.

Location: Please select   edit

Topic: Please select   edit

Format: Please select   edit

search   reset

How do I find city and county data?

view tray   slides (0)

erm by race/ethnicity
t of live births

Low

Hispanic	White	Black	American Indian/Alaska Native	Asian/Pacific Islander	Total
9.8	9.2	14.0	11.7	8.8	10.1

30.0
20.0
10.0
0.0
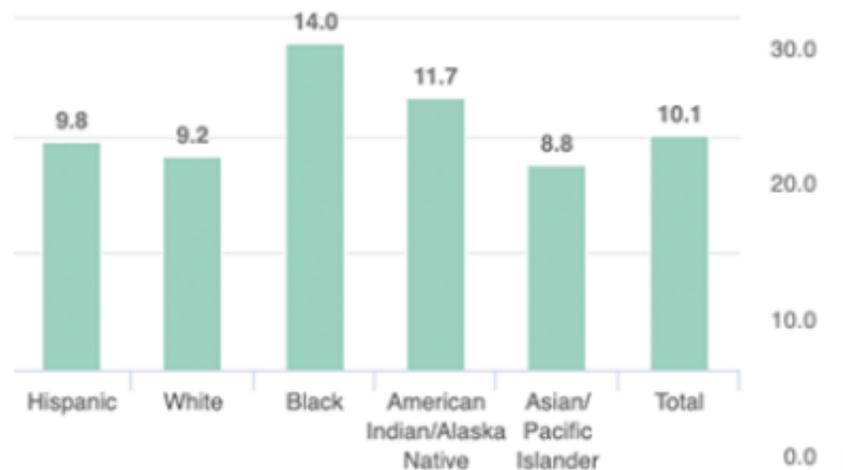
States, 2017-2019 Average

Texas,

Center for Health Statistics, final natality data.
February 18, 2021, from www.marchofdimes.org/peristats.

National
Retrieve

State Summaries
Find the latest data by state.

Select a State
Select a Report

go

More PeriStats

Overview   Calculations

What's new   FAQs

Resources   Documents

Archives

PubMed literature search

Vital Statistics

SO YOU WANT THE DATA FOR YOURSELF?

- Downloadable public use data files

  - Vital Statistics Data Available Online:
    http://www.cdc.gov/nchs/data_access/vitalstatsonline.htm

  - Individual-level data (you can **do actual multivariable analyses** with this)

  - Many more data elements than query site

  - Some variables still unavailable
    - State (unless you ask)
    - Rare events/conditions that are potentially identifying

www.birthbythenumbers.org

Vital Statistics

- You can download data files, by year (**Note**: ~3.8 million cases)
  - Birth
  - Linked birth/infant death (birth cohort linked & period linked)
  - Fetal death
  - Mortality

- Data documentation & instructions: (gives variable names, coding info)

The DIY approach – analyze it yourself!

You can download the data from the NCHS site or better, the National Bureau of Economic Research yourself or you can use a subset of the national data

National Center for Health Statistics

National Center for Health Statistics Home

Vital Statistics Online Data Portal

User's Guide (.pdf files)	U.S. Data (.zip files)*
2021 (1.5 MB)	2021 (228 MB)
2020 (1.4 MB)	2020 (224 MB)
2019 (1.9 MB)	2019 (221 MB)
2018 (1.7 MB)	2018 (223 MB)
2017 (1.4 MB)	2017 (231 MB)
2016 (1.6 MB)	2016 (242 MB)

NBER | NATIONAL BUREAU of ECONOMIC RESEARCH

Public Use Data Archive

Vital Statistics Natality Birth Data

2017	.zip	.dta, .do, .dct	sas, code	.csv	.sps	desc	pdf
2018	.zip	.dta	sas	.csv	NA	codebook	pdf
2019	.zip	.dta	sas	.csv	NA	codebook	pdf
2020	.zip	.dta	sas	.csv	NA	codebook	pdf
2021	.zip	.dta	sas	.csv	NA	codebook	pdf

https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm

Administrative (hospital/insurance claims)

Administrative data (Hospital billing data)

- ## What is it?
  - *Hospital stay, emergency department visit, observational stay (hospital discharge records)*
  - *Outpatient visit/treatment data (insurance records & Private databases)*
    - Private insurer & brokers selling refined public data
- Who's included?
- What point in life are data collected?
- How many times data collected per person?
- What do you have to do to be included?
- What doesn't it have?

Administrative data (Hospital billing data)

- **What does it have?**
  - *Diagnoses/Conditions (ICD codes) primary, secondary, etc*
  - *Procedures/treatments (CPT codes)*
  - *Patient Demographics (Sex, race/ethnicity, age, insurance)*
  - *Birthweight/age in weeks (if infant)*
  - *Geography (Town/State/Zip)*
  - *Hospital ID; Provider ID*
  - *Dates/Duration of stay*
  - ***Charge$***

WHY NOT JUST USE THE MEDICAL RECORD? WHY BILLING?

Tradeoffs with Administrative Data

Advantages

- Available electronically.
- Less expensive than obtaining medical record data.
- Available for an entire population of patients and across payers.
- Fairly uniform (and improving) coding systems and practices.

Challenges

- Limited clinical information.
- Questionable accuracy for public reporting because the primary purpose is billing.
- Completeness.
- Timeliness.

H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT

DO YOUR OWN ANALYSIS   **EXPLORE EXPERT RESEARCH & LIMITED DATASETS**

RESEARCH TOOLS

Software Tools

HCUP software tools can be applied to HCUP and other administrative databases to systematically create new data elements from existing data, thereby enhancing a researcher's ability to conduct analyses.

Tools for ICD-10-CM/PCS
Designed for use with International Classification of Diseases, 10th Revision, Clinical Modification/Procedure Coding System (ICD-10-CM/PCS) codes
- Clinical Classifications Software Refined (CCSR)

  o CCSR for ICD-10-CM Diagnoses
    Groups diagnosis codes into over 530 clinical categories

  o CCSR for ICD-10-PCS Procedures
    Groups procedure codes into over 320 clinical categories

Tools for CPT and HCPCS Level II
Designed for use with Healthcare Common Procedure Coding System (HCPCS) Level I (Current Procedural Terminology (CPT®)) and HCPCS Level II codes
- Clinical Classifications Software (CCS) for Services and Procedures
  Groups codes into over 240 clinical categories

- Surgery Flags for Services and Procedures
  Identifies codes as narrowly defined therapeutic invasive surgeries or more broadly defined surgeries that include diagnostic invasive procedures

Tools for ICD-9-CM
Designed for use with International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes
- Clinical Classifications Software (CCS) for ICD-9-CM
  Groups diagnosis and procedure codes into clinically meaningful categories

- Chronic Condition Indicator (CCI) for ICD-9-CM
  Identifies diagnoses as chronic conditions

- Elixhauser Comorbidity Software for ICD-9-CM
  Identifies secondary diagnoses as comorbidities

Survey Research

Survey data

- ## What IS a survey?

    - What does it have?

    - Who's included?

    - What point in life collected?

    - How many times data collected per person?

    - What do you have to do to be included?

    - What doesn't it have?

Why survey data?

- **General survey advantages:**

  - Breadth of information

  - Surveys collect data that others don't

  - Confidentiality sometimes elicits better information

- **General survey disadvantages:**

  - Self-report can be unreliable (recall, social desirability)

  - Response rates can be low; non-response bias

  - Answer depends on respondent's interpretation of question

  - Can be expensive; time consuming (especially if you DIY)

  - Response fatigue, especially selected populations

PRAMS
(Pregnancy Risk Assessment Monitoring System)

- 1987 (first states to start PRAMS survey); Currently almost all states (+NYC) have it

- N = ~2500 respond./yr (MA) ~65% response rate.

- Birth certificates randomly sampled

- Oversampling (by race/eth; BWT; other)

- Mail survey (or phone or online)

- 2-6 months post partum

- English/Spanish

Massachusetts Pregnancy Risk
Assessment Monitoring System (PRAMS)
2017–2018 Surveillance Report

Massachusetts Department of Public Health
Bureau of Family Health and Nutrition
Division of Maternal and Child Health Research and Analysis

December 2021

PRAMS
Massachusetts
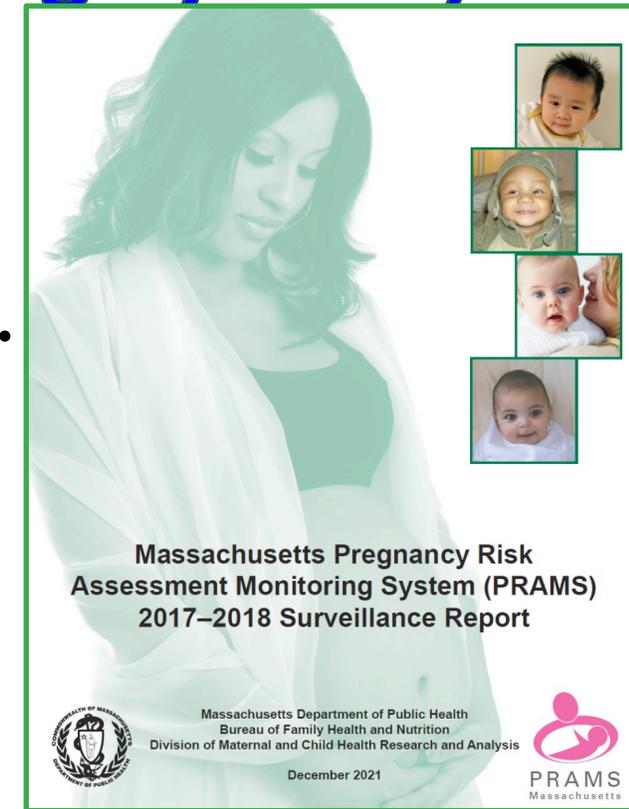
PRAMS in action

Differential effects of hospital breastfeeding practices, ACES, Cesarean Sections, substance use in pregnancy, IPV, mental health differential by race

Adverse Childhood Experiences and Prescription Opioid Use During Pregnancy: An Analysis of the North and South Dakota PRAMS, 2019-2020

Life Stressors During Pregnancy in Women With Epilepsy: Results From the Pregnancy Risk Assessment Monitoring System

Morbidity and Mortality Weekly Report

Vital Signs: Postpartum Depressive Symptoms and Provider Discussions Abc Perinatal Depression — United States, 2018

Brenda L. Bauman, MSPH[1]; Jean Y. Ko, PhD[1]; Shanna Cox, MSPH[1]; Denise V. D'Angelo, MPH[1]; Lee Warner, PhD[1]; Suzanne Folger, PhD[1]; Heather D. Tevendale, PhD[1]; Kelsey C. Coy, MPH[1]; Leslie Harrison, MPH[1]; Wanda D. Barfield, MD[1]

1 Adverse Childhood Experiences and Prescription Opioid Use During Pregnancy: An Analysis of the North and South Dakota **PRAMS**, 2019-2020.
Testa A, Jacobs B, Zhang L, Jackson D, Ganson K, Nagata J.
Res Sq. 2023 May 9:rs.3.rs-2547252. doi: 10.21203/rs.3.rs-2547252/v1. Preprint.
PMID: 37214797 Free PMC article.

2 Associations of cesarean sections with comorbidities within the Pregnancy Risk Assessment Monitoring System.
Austin J, Wirtz A, Garrett M, Ferrell SC, Stephenson E, Gajjar S, Perloff S, Hartwell M.
J Perinat Med. 2023 May 22. doi: 10.1515/jpm-2023-0005. Online ahead of print.
PMID: 37203560

3 Polysubstance use during pregnancy: The importance of screening, patient education, and integrating a harm reduction perspective.
Board A, D'Angelo DV, Salvesen von Essen B, Denny CH, Miele K, Dunkley J, Baillieu R, Kim SY.
Drug Alcohol Depend. 2023 Jun 1;247:109872. doi: 10.1016/j.drugalcdep.2023.109872. Epub 2023 Apr 14.
PMID: 37182339

4 The Association of Maternal Smoking and Drinking Changes During Pregnancy and Postpartum Breastfeeding Pattern and Duration.
Washio Y, Raines AL, Lv M, Pei S, Taylor SN, Zhang Z.
Breastfeed Med. 2023 May 4. doi: 10.1089/bfm.2022.0130. Online ahead of print.
PMID: 37155202

5 Replication and validation of a statewide linkage method to estimate incidence proportion of child maltreatment.
Newby-Kew A, Marshall LM, Zane S, Putz JW, Parrish JW.
Ann Epidemiol. 2023 May 3;84:1-7. doi: 10.1016/j.annepidem.2023.04.020. Online ahead of print.
PMID: 37146922

6 Smokers' utilization of quitting methods and vaping during pregnancy: an empirical cluster analysis of 2016-2018 Pregnancy Risk Assessment Monitoring System (**PRAMS**) data in seven US states.
Wang X, Lee NL, Burstyn I.
BMC Pregnancy Childbirth. 2023 May 2;23(1):306. doi: 10.1186/s12884-023-05608-3.
PMID: 37131124 Free PMC article.

7 Examining the Role of Interpersonal Violence in Racial Disparities in Breastfeeding in North Dakota (ND **PRAMS** 2017-2019).
Kanichy Makah M, Schmidt L, Anderson R, Njau G, Stiffarm Aaniiih A, Schmidt M, Stepanov A, Williams A.
Int J Environ Res Public Health. 2023 Apr 9;20(8):5445. doi: 10.3390/ijerph20085445.
PMID: 37107727 Free PMC article.

8 Predictors of WIC uptake among low-income pregnant individuals: a longitudinal nationwide analysis.
Collin DF, Guan A, Hamad R.
Am J Clin Nutr. 2023 Jun;117(6):1331-1341. doi: 10.1016/j.ajcnut.2023.04.023. Epub 2023 Apr 23.
PMID: 37088228 Free article.

9 Association of Mental Health Conditions, Recent Stressful Life Events, and Adverse Childhood Experiences with Postpartum Substance Use - Seven States, 2019-2020.
Stewart A, Ko J, Salvesen von Essen B, Levecke M, D'Angelo DV, Romero L, Cox S, Warner L, Barfield W.
MMWR Morb Mortal Wkly Rep. 2023 Apr 21;72(16):416-420. doi: 10.15585/mmwr.mm7216a1.
PMID: 37079476 Free PMC article.

Other survey data sources you might consider….

- Many sources of survey data that have various bits and pieces of perinatal health information!
  - Some you can query on the spot. Some available for download on the spot. Others you have to ask for.
    - **NHIS** (National Health Interview Survey)
    - **NSFG** (National Survey of Family Growth)
    - **NSCH** (National Survey of Children's Health)
    - **NHANES** (National Health and Nutrition Examination Study)
    - **BRFSS** (Behavior Risk Factor Surveillance System)
    - **YRBS** (Youth Risk Behavior Survey)
    - **LTM** (Listening to Mothers, I, II, III, CA & IV)

Listening to Mothers (III & CA)

What you can learn from survey data that you can't from other records.

The rise of the big baby

Labor Induction

- Three in ten (**29%**) mothers tried to start their labor on their own.

- More than four out of ten respondents (**41%**) indicated that their care provider tried to induce their labor

- Three out of four of those women (**74%**) indicating that it did start labor, resulting in an overall rate of medically induced labor of **30%**.

Inductions in Vaginal Births, U.S., 1990-2021
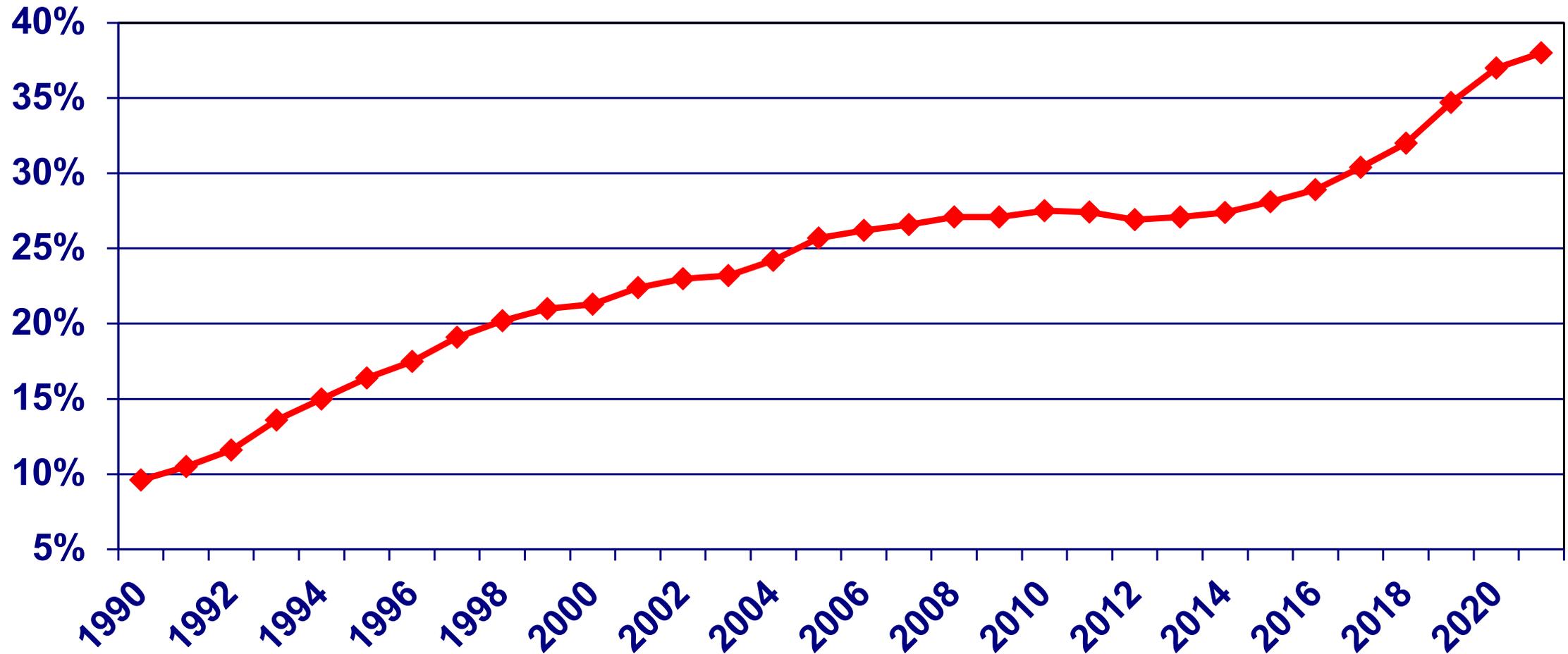
Source: CDC, NCHS. Downloadable annual natality datasets and CDC Wonder. (2016-2020)

BirthByTheNumbers.org

Reasons why mothers experienced medical induction

Base: care provider tried to induce labor *n=991*	
Baby was full term/close to due date	44%
Mother wanted to get pregnancy over with	19%
Care provider was concerned that mother was "overdue"	18%
Maternal health problem that required quick delivery	18%
Care provider was concerned about the size of the baby	16%
Water had broken and there was a concern about infection	12%
Mother wanted to control timing of birth for work or other personal reasons	11%
Care provider was concerned that amniotic fluid around the baby was low	11%
Care provider was concerned that baby was not doing well	10%
Mother wanted to give birth with a specific provider	10%
Some other reason	10%

Reasons for primary and repeat cesarean birth

Base: had cesarean *n=744* (choose reason that best applies)	Primary cesarean *n=368*	Repeat cesarean *n=376*
I had had a prior cesarean *(asked of prior cesarean only)*	n.a.	61%
Baby was in the wrong position	16%	3%
Fetal monitor showed the baby was having problems during labor	11%	3%
I had a health condition that called for procedure	10%	13%
Baby was having trouble fitting through	10%	2%
Maternity care provider worried the baby was too big	**9%**	**2%**
Provider tried to induce labor but it didn't work	8%	3%
Problem with the placenta	8%	2%
Labor was taking too long	7%	2%
Past my due date	3%	-
Afraid to labor and have baby vaginally	3%	-
No medical reason	4%	3%

Are U.S. Babies Getting Bigger?...NO!
% Singleton, *Full Term* Babies by Birthweight, U. S., 1990-2021

Legend:
- 3500-3999gms
- 4000+gms

Year	3500-3999gms (total top label)	3500-3999gms	4000+gms
1990	41%	30%	11%
1995	44%	32%	12%
2000	44%	32%	12%
2005	39%	30%	9%
2010	38%	29%	9%
2015	39%	30%	9%
2021	37%	29%	8%

Source: Centers for Disease Control and Prevention. CDC Wonder

www.BirthByTheNumbers.org
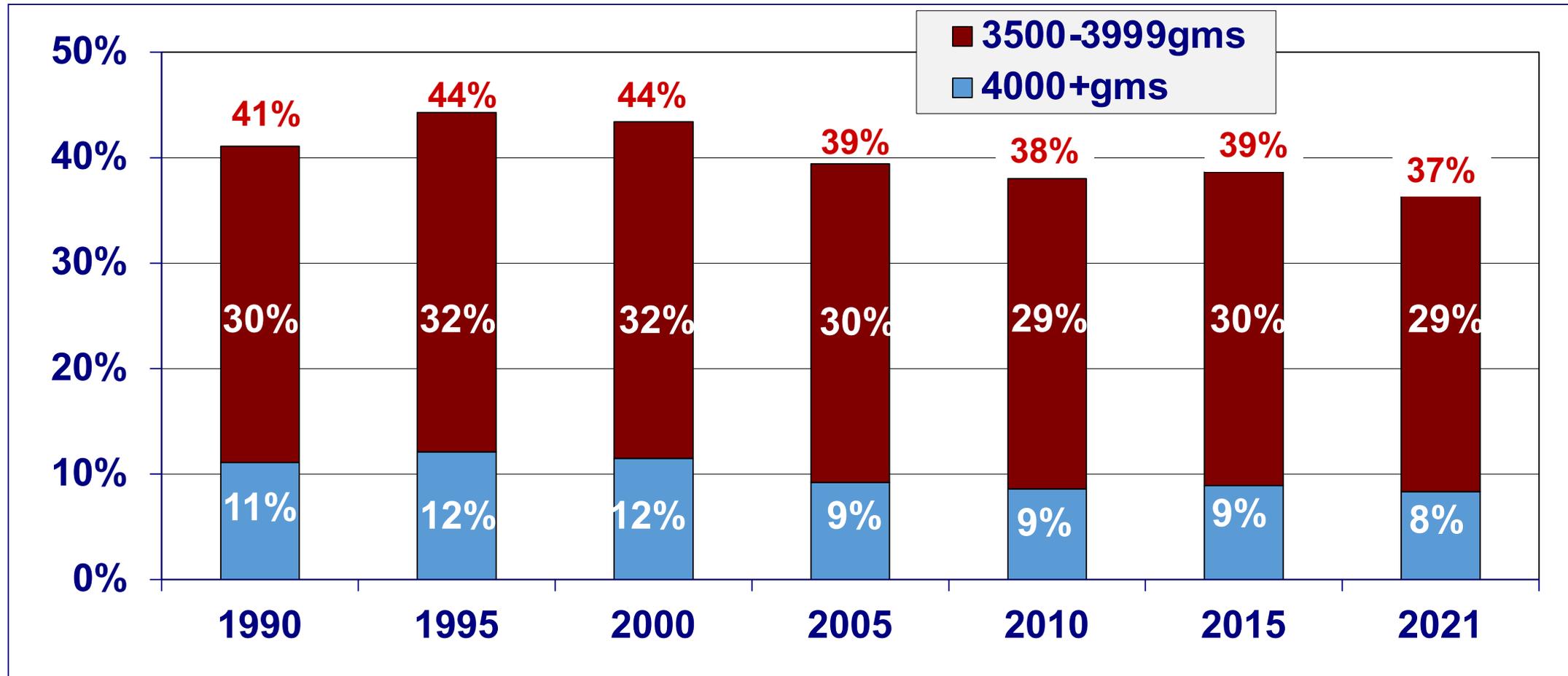
What's with these Big Babies?

Near the end of your pregnancy, did your maternity care provider tell you that your baby might be getting quite large?			
31.2% YES	**ALL**	**Yes**	**No**
Actual Weight	7 lbs 5 ounces	7 lbs 14 ounces	7 lbs 1 ounce
Baby Actually Macrosomic (8lb 13ounces)	9.9%	19.7%	5.5%

Source: Cheng et al. Healthcare Utilization of Mothers with Suspected Large Babies. *MCH Journal*. 2015. 19:2578–2586

What's the impact of being told you might have a big baby?
Labor and Delivery Outcomes

	Suspected Large Baby		
	Yes	No	
	%	**%**	
Tried Self Induction of Labor	**43.0**	**24.7**	***
Medical Induction of Labor	**70.1**	**51.1**	***
Cesarean Delivery	**21.1**	**18.1**	NS
Epidural Analgesia	**72.7**	**61.7**	***
Requested Cesarean Delivery	**32.5**	**6.8**	***

***p < .001

53

Likelihood of Labor or Delivery Outcomes Controlling for Key Variables

- **Self Induced Labor** – almost twice as likely

- **Medical Induction** – almost twice as likely

- **Epidural** – twice as likely

- **Requesting a cesarean** – 4 times as likely

Would have never discovered this phenomenon if we didn't listen to mothers

Listening to Mothers (III & CA)

Listening to Mothers III Question Areas – Pregnancy & Birth

- PLANNING PREGNANCY AND PRENATAL
- CHOICE OF MATERNITY CARE PROVIDER & HOSPITAL
- PRENATAL CARE II (Q1805-Q1815)
- OTHER SERVICES AND SUPPORTS
- INFORMATION SOURCES & TRUSTWORTHINESS OF SOURCES
- INTRAPARTUM
- BIRTH AND CESAREAN-SPECIFIC (Q1555-Q1720)
- LABOR, BIRTH, AFTER BIRTH IN HOSPITAL, FEEDING/RACE & CULTURE
- POSTPARTUM
- BABY STATS & MOTHER MISCELLANEOUS
- DEMOGRAPHICS

Mental Health

The Relationship between Social Support and Postnatal Anxiety and Depression: Results from the Listening to Mothers in California Survey

Check for updates
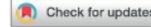
Emily Feinberg, ScD, CPNP [a,*], Eugene Declercq, PhD, MBA [b], Annette Lee, BS, MPH [b], Candice Belanoff, ScD, MPH [b]

Are women with social support less likely to experience postpartum anxiety or depression?
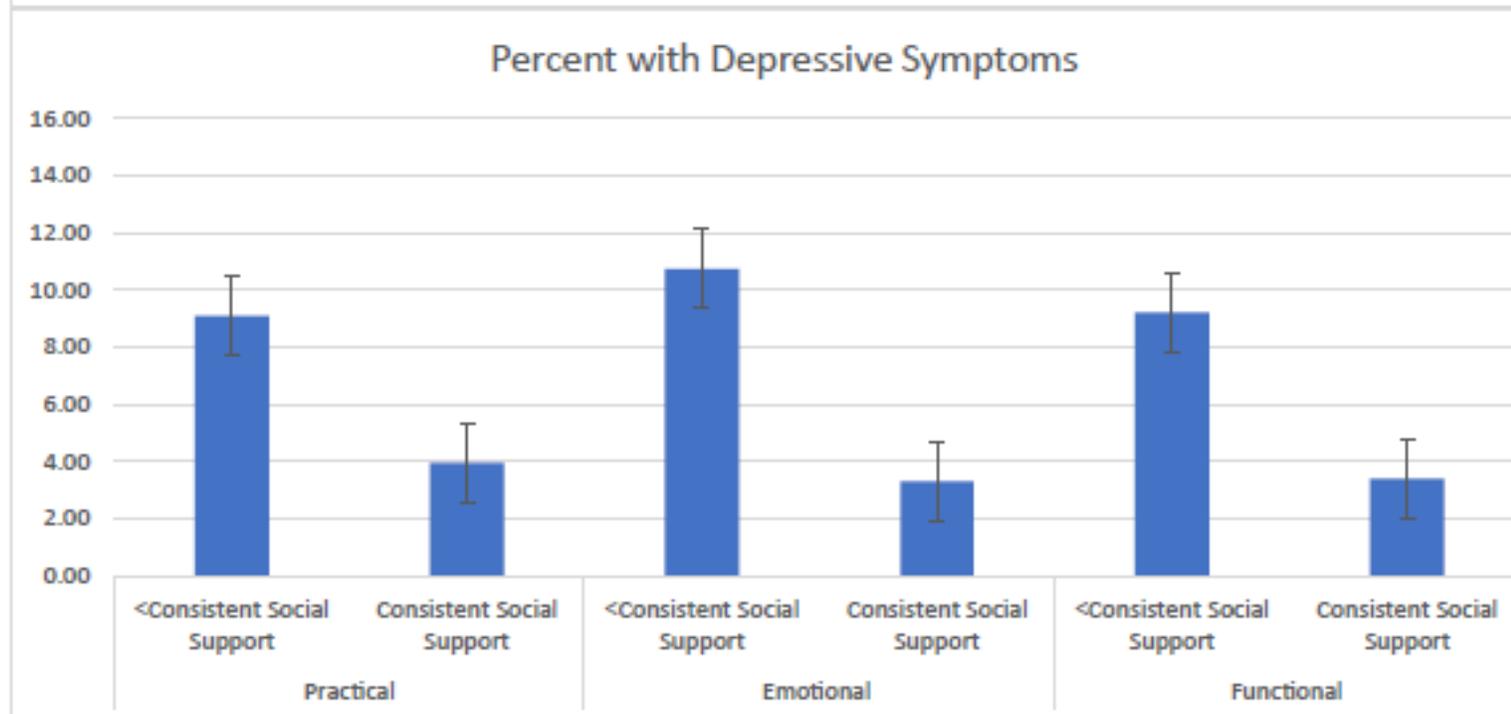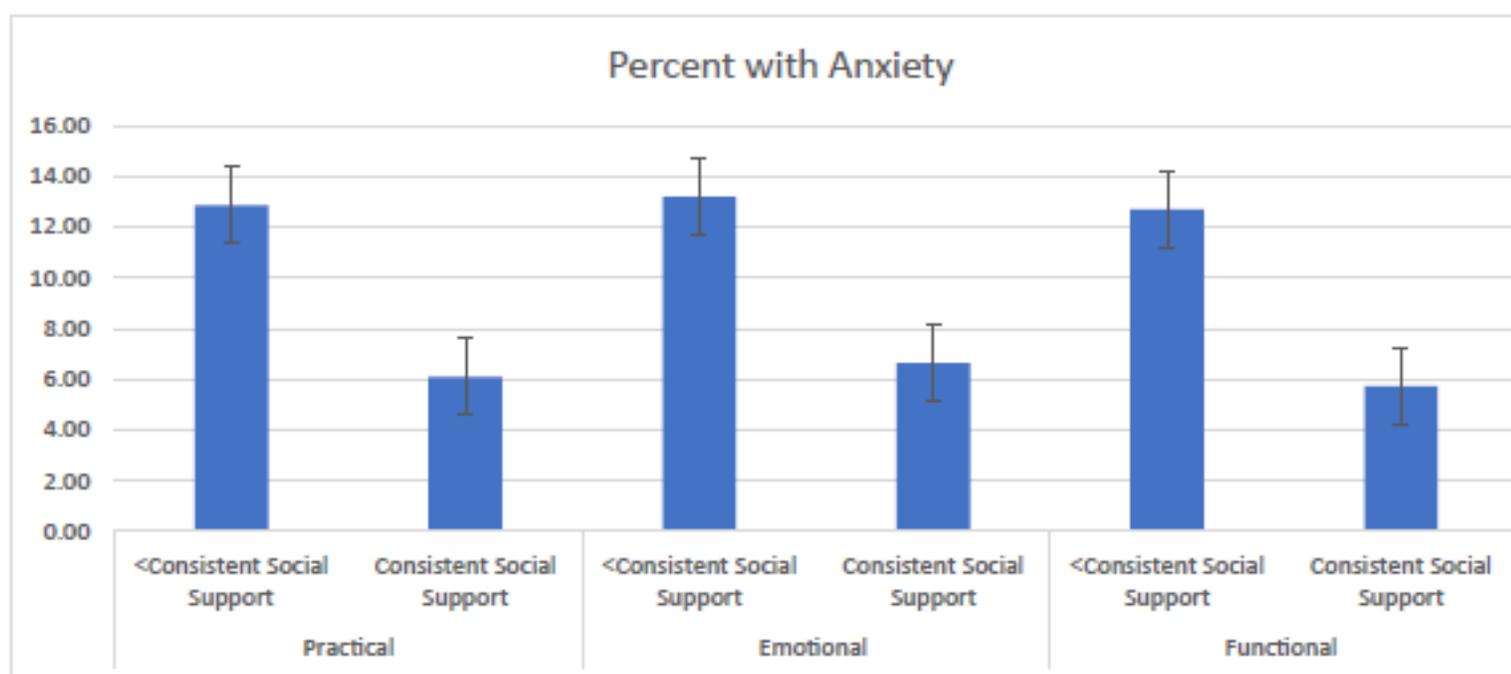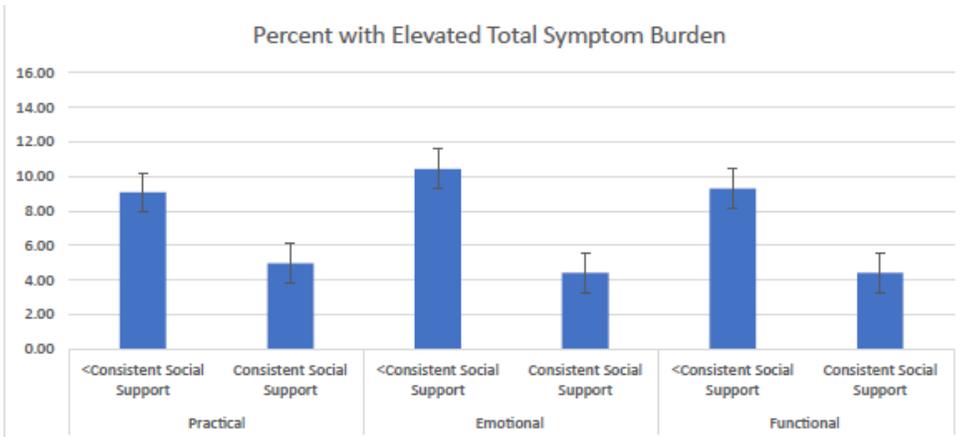
DEMOGRAPHIC AND HEALTH SURVEYS

It's not just about quantitative analysis – need mixed methods & qualitative analysis – to truly understand results.

BACKGROUND AND PRACTICE OF MAJOR MIDWIVES*

Name	Birthplace	Years Documented Practice in Lawr.	Age when Docum. Lawr. Practice Begun	Total Record. Deliveries	Record Del. in Ave. Yr.
Louise Beck	Germany	1896-1899[1]	**	1031	258
Concetta Carbonaro[2]	Italy	1906-1914[3]	23	312	35
Laura Carpenito[2]	Italy	1908-1914	39	476	68
Ann Curran	Ireland	1899-1901	80	80	32
Angelina DeMarco[5]	Italy	1907-1914	50	80	68
Antonia Dyba	Austria	1910-1914[4]	28	814	163
Hanarata Groele[5]	**	1911-1914	**	117	29
Hedwig Himmer	Germany	1898-1914	30	1866	109
Serafina Isabella	Italy	1901-1907	**	176	25
Louise Loppes[5]	Portugal	1901-1914	39	192	13
Angelina Lopiano	Italy	1901-1914	38	1601	114
Virginia Pedrazzini[2,5]	Italy	1907-1914	53	952	119
Minnie Riehm	Germany	1899-1914	30	3363	210
Paola Ripa[2]	Italy	1910-1914	46	171	34
Christine Shaheen[5]	Syria	1903-1905	37	62	21
Elena Stella	Italy	1907-1914	48	68	8

Birth Certificate Data

1915 Local Canvass of Births

No. 2357 CANVASSER'S RETURN OF A BIRTH

ALL NAMES TO BE IN FULL.

Date of Birth	Oct 21, 1914 Rossi
Name of Child	
Sex, Color and If Twin	Male White Single
Place of Birth	11 middle st
Full Name of Father	
Maiden Name of Mother	
Residence of Parents at Time of Birth	11 middle st — Ward 1
Occupation of Father	mill operative
Occupation of Mother	At Home
Birthplace of Father	Italy
Birthplace of Mother	Italy
Attending Physician	Virginia
Dated	June 13, 1915
Signature of person making return	Thomas F. Keegan

1914 MA Birth Certificate

Date of Birth,	October 21st, 1914
Sex,	male
Color (if other than white)	white Rossi
Name (if named)	
Place of birth, No.	11 Middle
Name of Father,	
Name of Mother,	Rosaria
Maiden Name of Mother,	Rosaria Sciuto
Age of Father,	29 years Mother, 28 yrs
Residence of Parents, No.	11 middle Street
Ward,	
Occupation of Father,	mill operative
Occupation of Mother (if any)	mill operative
Birthplace of Father,	Italy
Birthplace of Mother,	Italy
did _____ personally attend the birth. (Signature),	Constant Caliti Physician.

Fill out with ink.   All names to be in full.

> **Two records of the same births can provide new insights**

Gene's Brilliant Historical Data Analysis
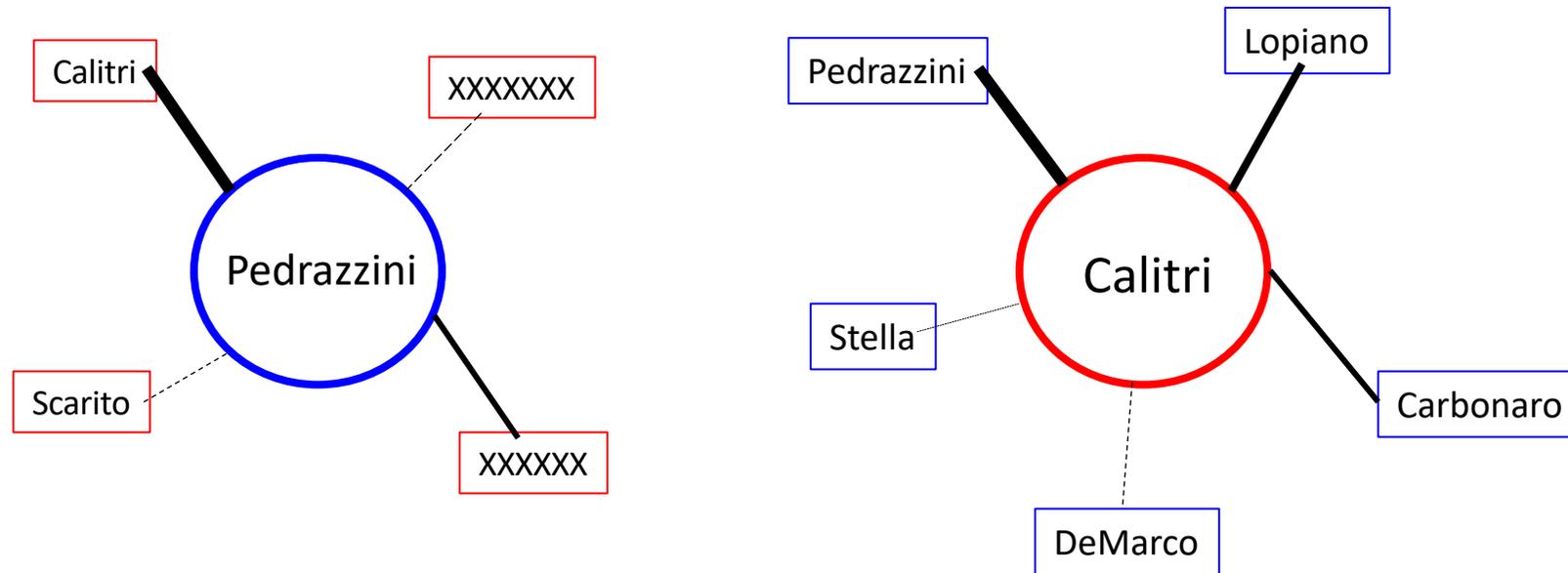
Linked data: The case of PELL

- **Multiple data sets linked together (on individuals)**
  - How? Identifiers (names, birthdates, SSN, zip codes, combinations)
- **PELL Includes:**
  - Vitals (BC/FD)
  - Hospital discharge records
    - Mom & Baby at the time of birth
  - **"Core"** linkage of BCs to HDs (mom/baby) & FD's to mom's HD.
  - Prior and Subsequent hospitalizations (mom/baby)
  - Program/service data (Early intervention; WIC)
  - Special other linkages
    - ART; BSAS; Geocoded, census data, environmental exposures

PELL Data System

CORE

Longitudinal

Program Participation Data
- WIC
- Early Intervention
- Assisted Reproductive Tech.
- All Payers Claims (Partial)

Contextual Data
- Geocoded birth data
- Census 2020 Data

Core:
- Birth Certificate
- (HD) Birth Mothers
- Fetal Death
- (HD) Birth Child
- 1998-2018 1,641,514 births

Future Datasets: All Payers Data, DESE (School),

Vital and Health Status Data
- Newborn Hearing Screening
- Birth Defects Registry
- Child and Mother deaths
- Pregnancy-associated deaths
- Linked birth-infant deaths
- Cancer Registry
- PRAMS

Health Services Utilization Data w/ diagnosis codes & charges
- Non-birth Hospital Discharge
- Observational Stays
- Emergency Department

www.birthbythenumbers.org

Linked data: The case of the Pregnancy to Early Life Longitudinal Data System (a.k.a. PELL)
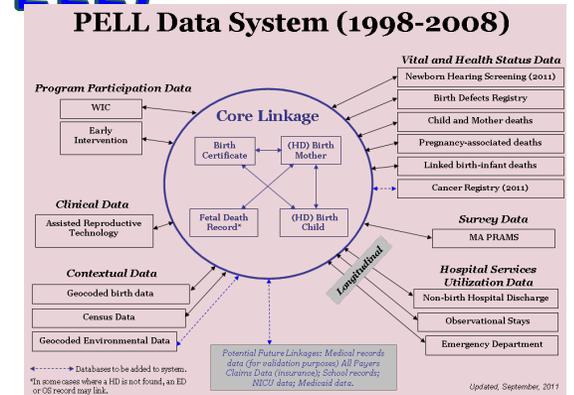

PELL Data System (1998-2008)

- ## What could you do with this thing?

  - Combine the "best of both worlds" for measures
   - e.g. BC good for race. HD better for L&D procedures

  - Fill in the blanks
    - *If data missing on one, get from the other (e.g. gestational diabetes might be indicated on BC but not HD, or vice, versa.)*

Linked data: The case of the Pregnancy to Early Life Longitudinal Data System (a.k.a. PELL)

PELL Data System (1998-2008)

- Use maternal *and* infant health data in the same analysis

  - e.g. Mom's prenatal hospitalizations and infant BWT

  - e.g. Mom's pre-conception health and infant outcomes (History of violence & PTB?)

  - Follow the same mom/baby over time (longitudinally linked)

- Look at birth characteristics *and* later use of services

  - **EXAMPLE**: Late preterm/early term birth and Early Intervention use? (Shapiro-Mendoza, 2013.)
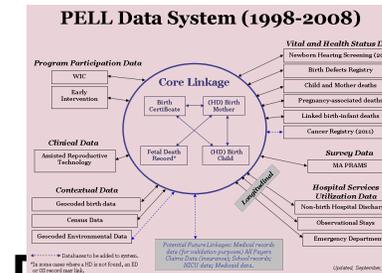
Summary Points

- Be open to using multiple datasets, but master at least one of them.

- The quality of a dataset is closely linked to the question you need to answer. Beware of the tendency to define your questions from your database rather than the reverse.

- Collaborating with others who are smarter and more experienced with your question's context than you is critical — that may involve technical skills or grounded community knowledge.

- Embrace, rather than avoid mixed methods.

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Ebere Allison Sarah Veronica Kali Maura Nairi Juliana

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