Overview of Vital Records and Public Health Informatics in CDPH

Este Geraghty, MD, MS, MPH/CPH, FACP, GISP

Deputy Director, Center for Health Statistics and Informatics

California Department of Public Health

"Population Health"

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CDPH Mission

Mission

The California Department of Public Health is dedicated to optimizing the health and well-being of the people in California.

Center for Health Statistics & Informatics

Mission

To provide our customers with timely, high quality, accessible data and information in convenient and readily usable formats to support public health research, planning, policy and programs.

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Vision

Usable data, effectively delivered!

Four Branches:

- Vital Records Registration Branch

- Vital Records Issuance and Preservation Branch

- Public Health Policy and Research Branch

- Administration Branch

History of Vital Records Collection in California

- One of the first Public Health functions established in California

- State health department has maintained a permanent public record of each birth, death, and fetal death in California since 1905

- Automated registration of births first began in 1981; deaths in 2005

California Vital Events

Annually California registers:

- more than 500,000 Births

- more than 240,000 Deaths

- more than 177,000 Marriages

- more than 110,000 Amendments

- more than 3,000 Fetal Deaths

Vital Records Uses

- Issuance, Verification, Certification
  - Legal purposes for individuals and for organizations
  - Foundation for revenue that supports the vital records system
- Data & Information Dissemination
  - Analysis and reporting by local, state and national health departments
  - Use of data by researchers and others

Vital Records Support Many Services

- Population Census
- Surveillance of Diseases & Conditions
  - Deaths from rare infectious diseases
  - Low birthweight & premature births
- Fraud Prevention
  - Benefits to deceased persons
- Genealogy

Electronic Verification of Vital Events (EVVE)

- Electronic system developed by the National Association for Public Health Statistics and Information Systems (NAPHSIS). Allows immediate confirmation to a government office of the information on a birth or death certificate.

- >18,000 verifications and certifications of birth and death records annually by:
  - Social Security Administration
  - State Department (Passports)
  - Office of Personnel Management
  - Army National Guard
  - District Health Offices
 - Various State Medicaid Offices (WA, MS, & MN)

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Vital Records Issuance & Preservation

- California issues more than 115,000 certified copies annually

- Preserves over 56 million records dating back to 1905
  - over 27 million records digitally imaged
    - Birth: 1969-current
    - Death: 1993-current
    - Marriage: 2011-current
  - Other formats: microfiche, microfilm, paper

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Processing Time – Certified Copies

2010-2013 CRTS Average Processing Times
(Birth and Death Certified Copies)
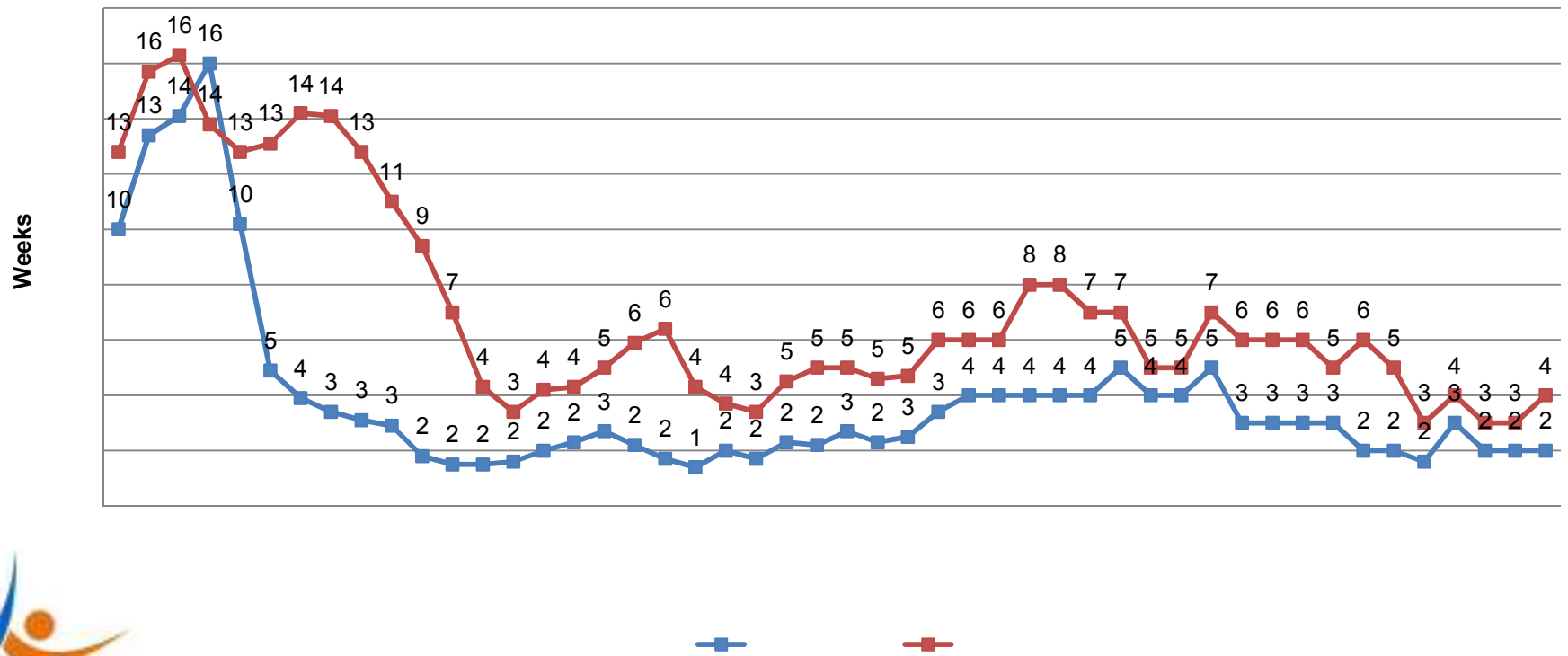
Public Health Policy and Research Branch

Supports a range of programs including:

- Public Health Informatics Program
- Vital Records Statistics and Reporting
- Vital Records Data Dissemination
- Medical Marijuana Program
- Policy and Legislative Development

County Health Status Profiles since 1993

- Compares selected health status indicators for California counties to the State rate and Healthy People goals where applicable.

  - Maps, tables, technical notes

- Published on CDPH internet page to coincide with National Public Health Week, the first full week in April.

- Produced in collaboration with the California Conference of Local Health Officers, and used by counties to help address health disparities and inequities.

- http://www.cdph.ca.gov/programs/ohir/Pages/CHSP.aspx

Death Data Trend Summaries

- Provides data tables and descriptive analysis of California mortality trends over 15 years as data becomes available, by sex, age, race/ethnicity, and county of residence for selected causes of death.

- Compares mortality trends to Healthy People objectives where applicable, and focuses on leading causes of death, which supplements *Profiles* with further detailed analysis in common areas.

- Presents a visual representation of data tables with County-level graphs.

- http://www.cdph.ca.gov/programs/ohir/Pages/DDTSummaryIndex.aspx

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California Leading Causes of Death, 2012

1. Disease of the heart

2. Malignant Neoplasms

3. Cerebrovascular Disease

4. Chronic Lower Respiratory Disease

5. Alzheimer's Disease

6. Accidents (Unintentional Injuries)

7. Diabetes Mellitus

8. Influenza and Pneumonia

9. Chronic Liver Disease & Cirrhosis

10. Essential Hypertension & Hypertensive Renal Disease

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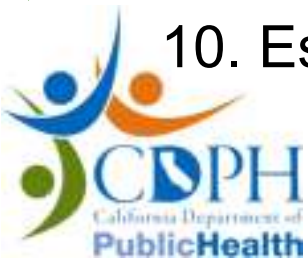
Vital Statistics Query System

- The Vital Statistics Query System, VSQ, offers summaries and statistical reports from California birth and death vital statistics databases covering data from 1994 to most current data available.

- VSQ typically provides user friendly directions to generate custom reports based on user-selected criteria for event counts, and rates for vital statistics, age-adjusted, and infant deaths.

- VSQ has provided reliable service since its origins in 1998.

- http://www.apps.cdph.ca.gov/vsq/default.asp

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Researcher Use

- Birth and Death Statistical Master Files

- Birth Cohort Files

- Other data files

- Requires:

  – Committee for the Protection of Human Subjects review and approval

  – VSAC (vital statistics advisory committee) review and approval

  – Fee

Public Health Informatics Section

- eHealth program, policy and planning
- Communication and coordination related to the EHR Incentive Program and Meaningful Use
- Coordination and expert input in CDPH data initiatives
- Public Health Informatics education and workforce development
- Coordination of data use policies within CDPH through the Public Health Informatics Advisory Committee (PHIAC)

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Examples of CDPH Data Resources

- Vital Records systems – EDRS and AVSS
- Immunization Registry - CAIR
- Reportable Diseases - CalREDIE
- California Cancer Registry
- Genetic Diseases Screening Program
- Surveys (CHIS, BRFSS, etc)

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Current Public Health Informatics Projects

- Assisting CDPH programs in assessing how MU and HIE impact their programs
  - CDPH HIE Gateway: http://hie.cdph.ca.gov/
- Exploring options for a statewide Syndromic Surveillance system
- Researching ways that CDPH can better use and share data
  - Open Data initiative
- Coordinating CDPH program responses to statewide or nationwide informatics issues
  - ICD-10 transition

CDPH's HIE Gateway

- Fully operational since 10/1/13
    - Helps eligible professionals & hospitals meet Meaningful Use Stage 1 and 2 public health-related objectives

- CDPH Programs Participating
    - CAIR (immunizations)
    - CalREDIE (electronic laboratory reporting)
    - Cancer Registry
    - Childhood Blood Lead Prevention Program

- Planning for Stage 3 and bi-directional functionality

CAIR 2.0
California's Immunization Registry

Leveraging Immunization Data: Benefits to Parents

- Consolidate a child's immunizations in one record
- Provide an accurate, official copy of a child's immunization history for personal, day care, school, or camp entry requirements
- Help ensure that a child's immunizations are up to date
- Provide reminders when an immunization is due or if one has been missed

My Story

- I had all of my regular childhood immunizations

- No record could be found for when I was entering college as an undergrad – so I had to have all immunizations repeated

- No record could be found for when I was entering medical school – so I had to have all immunizations repeated

Providers, Plans, Purchasers

- Provide a reliable immunization history for any child

- Reduce paperwork

- Generate coverage reports for managed care (e.g., Healthcare Effectiveness Data and Information Set [HEDIS®]) and other organizations

- Facilitate introduction of new vaccines or changes in the vaccine schedule

- Help manage vaccine inventories

Communities

- Identify high-risk populations and under-immunized populations
- Help control vaccine-preventable diseases
- Provide information on community and state coverage rates
- Streamline vaccine management

Public Health Officials

- Provide information to identify pockets of need, target interventions and resources, and evaluate programs
- Ensure providers follow the most up-to-date recommendations for immunization practice
- Facilitate introduction of new vaccines or changes in the vaccine schedule
- Integrate immunization services with other public health functions
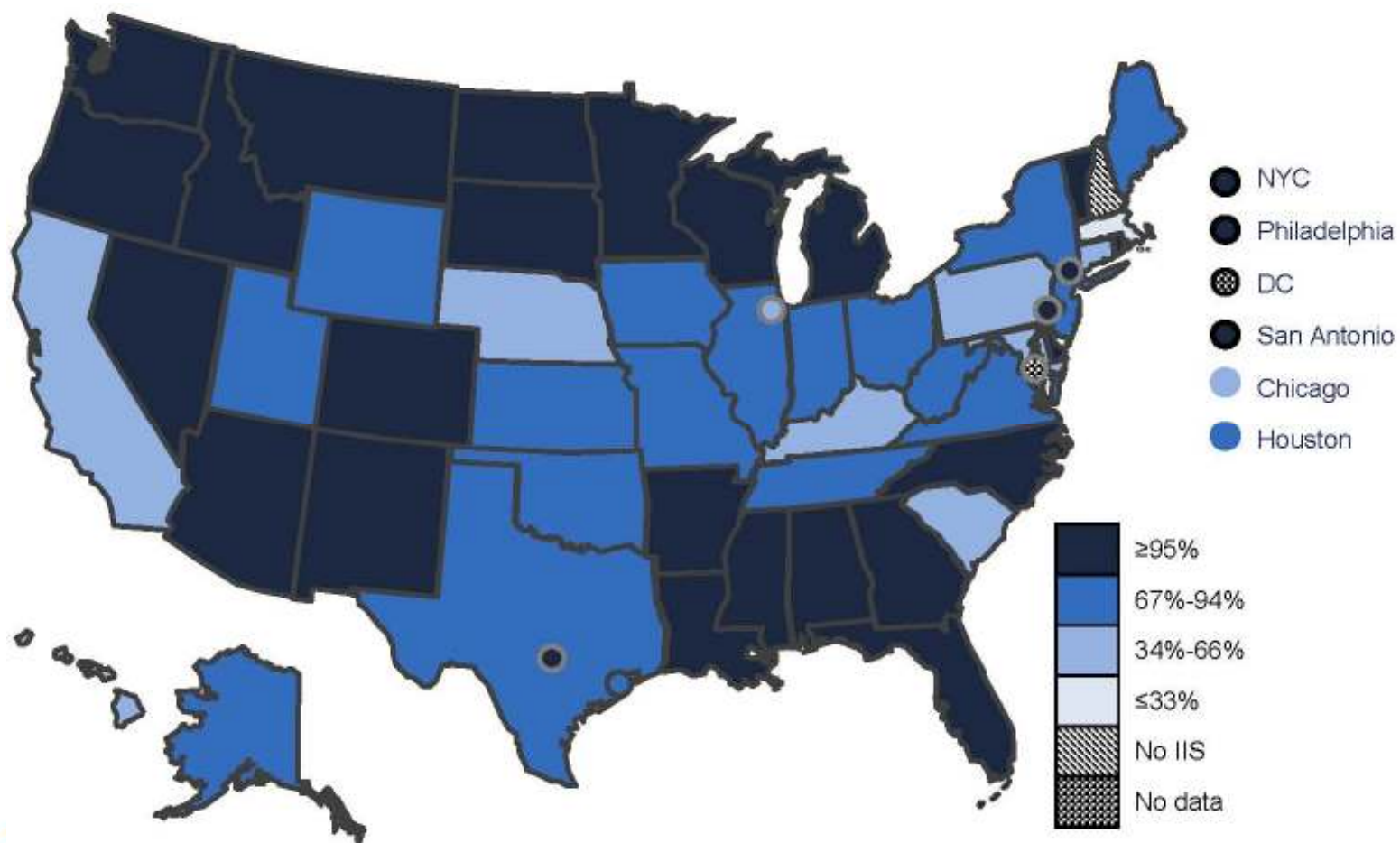- Help to monitor adverse events

and Nationwide…

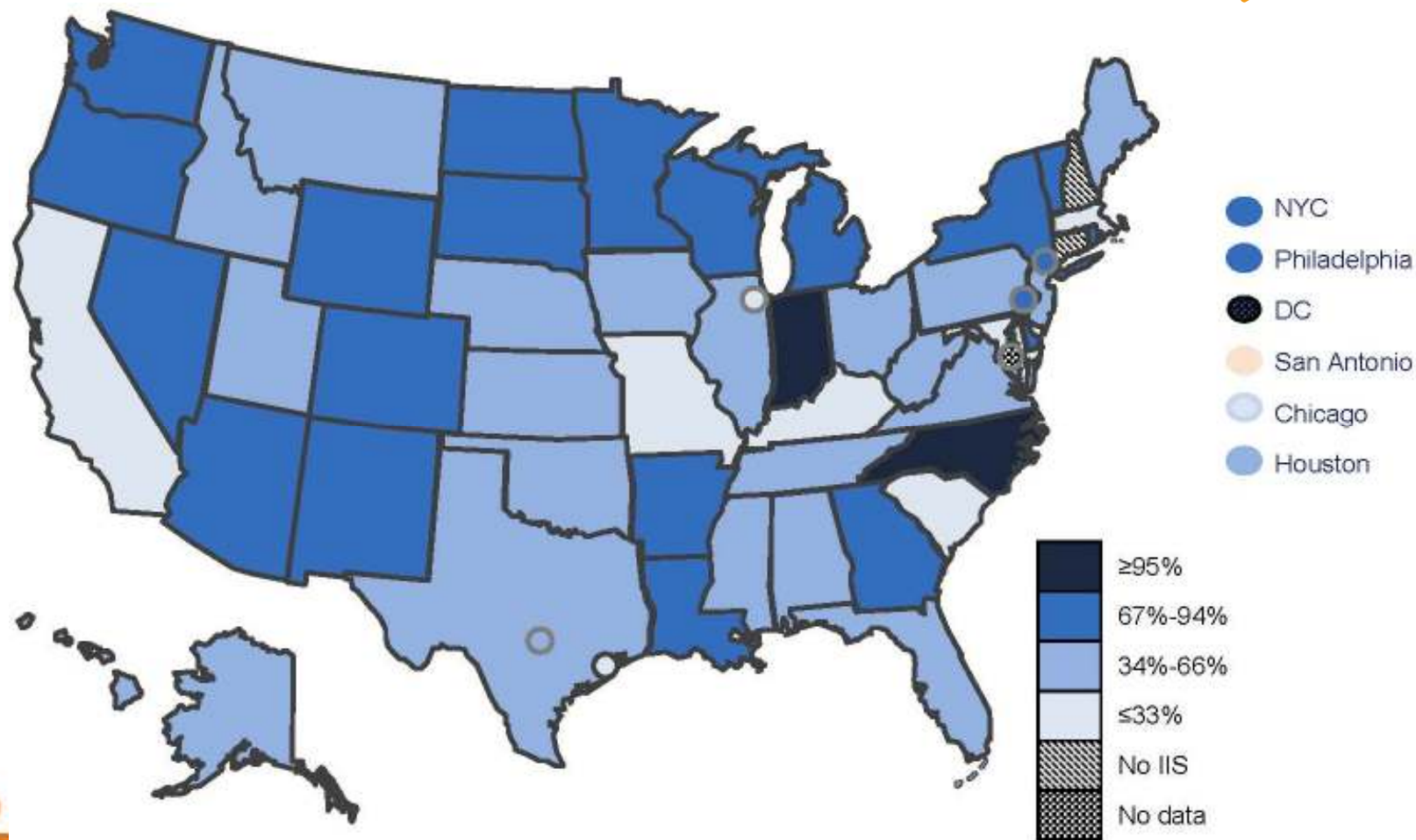- For each US birth cohort that is immunized:
  - Saves 33,000 lives
  - Prevents 14 million cases of disease
  - Reduces direct health care costs by $9.9 billion
  - Saves $33.4 billion in indirect costs

Children (< 6) in an IIS, 2012

Legend:
- NYC
- Philadelphia
- DC
- San Antonio
- Chicago
- Houston

- ≥95%
- 67%-94%
- 34%-66%
- ≤33%
- No IIS
- No data

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Adolescents (11-17) in an IIS, 2012

Legend:
- NYC
- Philadelphia
- DC
- San Antonio
- Chicago
- Houston

- ≥95%
- 67%-94%
- 34%-66%
- ≤33%
- No IIS
- No data

Adults (19+) in an IIS, 2012

Legend:
- NYC
- Philadelphia
- DC
- San Antonio
- Chicago
- Houston

- ≥95%
- 67%-94%
- 34%-66%
- ≤33%
- No IIS
- No data

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Open Data

- CDPH is considering development of an open data portal

    – A tool for innovation putting data directly in the hands of Californians and others around the world to use government data to solve problems

Thinking about Data

- High demand (often requested)
- High leveraging value (good indicators)
- Supports strategic goals and interests
  - California Wellness Plan
  - Public Health Accreditation
- Engages the public
- Helps to solve a problem or inform policy

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CDPH Initial Datasets Considered

- Birth data
- STD data (excluding HIV)
- Healthcare Associated Infections (HAIs)
- California Wellness Plan
- Healthy Community Indicators
- Directories, lists, resources
- Baby names

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Birth Profiles by Zip Code

Birth Profiles by ZIP Code consist of the number of live births, based on the mother's residence at the time of delivery and include aggregates by Race/Ethnic Group of Mother, Age of Mother, Infant Birthweight, and Prenatal Care Trimester by ZIP Code. These key health status indicators at the ZIP code level can be used to perform small area analysis to identify and target areas within cities and counties where public health programs may be needed.

Race and Ethnic Categories

Mother's race/ethnicity was classified into seven mutually exclusive groups from 1989 through 1999: Asian/Pacific Islander, Black, Filipino, Hispanic, Native American, White, and [...] ated in the "Hispanic" group. Therefore, with [...] they were non-Hispanic. The "Asian/ [...] an, Pacific Islander, Samoan, Thai, Vietna [...]

Effective with 2000 da [...] other Asian), Southeast Asian (Car [...] nd Other Pacific Islander). Furthermore, mothers now have the option to report more than one race. Those who reported two or more of the above categories we tabulated as "Two + Races."

PDF: >5800 downloads in 2013
Excel: >6800 downloads in 2013

Trend Data

Data are presented for ZIP codes with five or more live births. When examining data in ZIP codes with very small live birth numbers (n < 100), caution must be exercised because very small numbers may be unreliable and subject to significant variability from one year to the next. Additional information concerning the data source and limitations is discussed in Vital Statistics of California reports.

While these tables present data only for a single year, multiple years of these tables may be used to observe trends within ZIP codes of interest. Additional trend data on low birth weight infants, prenatal care, and mother's age and race/ethnicity can be found in the Reports Section and on the Birth Statistical Data Tables page.

Profiles

Birth Profiles by ZIP Code tables for live births occurring between 1989 and 2008 are available in PDF and Microsoft Excel and may be accessed by clicking on the corresponding year below:

» 2011 (PDF) ...2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 | 1990 | 1989

» 2011 (Excel, 1.6 MB) ...2010 (Excel, 2MB) |2009 (Excel, 2MB) | 2008 (Excel, 1.7MB) 2007 (1.6MB) | 2006 (1.6MB) | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 | 1990 | 1989

Hard copies of these tables are available for purchase. Each year costs $5. To order hard copies of any of these tables, please use this order form.

What would success look like?

- Internally:

  - Increased efficiency through reduced demand for custom data

  - Streamlined management of data – increased access, more timely updates, more efficient exchange

What would success look like?

- Externally:

  – Evidence of interagency collaboration – agreement on data standards, implementation and coordination

  – Range of external stakeholders and level of engagement are increased - evidence of a vibrant user community

Future Possibilities

- CDPH Informatics can leverage analytics to improve PH outcomes and clinical performance by:
  - Linking disparate PH datasets
  - Integrating data with community indicators to assess Social Determinants of Health
  - Integrating data with clinical quality indicators to better assess clinical performance

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Thank you for your attention!

Este Geraghty, MD, MS, MPH/CPH, FACP, GISP

Deputy Director

Center for Health Statistics & Informatics

California Department of Public Health

Office: 916-440-7350

Email: Este.Geraghty@cdph.ca.gov