

FHOP Publications - Hospitalizations/ Trends and Outcomes

Longitudinal trends for diabetes during pregnancy: California 1983-2015 [1]

Over the period 1983-2015, 18,952,079 pregnant California-resident women age 15 to 44 were admitted to hospital. Of these, 212,631 (1.1%) had pre-existing diabetes mellitus (PDM) and 787,361 (4.2%) had gestational diabetes mellitus (GDM). At start-of-period 1983-1987, the percent of admissions with either condition was about 1% each. By 2013-2015, the PDM rate rose to 1.5% while the GDM rate rose to 9.1%. Compared to women without diabetes, those with any diabetes had greater risk and rising trends for co-morbidities and adverse outcomes. It is not clear if these trends reflect real underlying changes in population health or changes in professional attention to these conditions. Trends may be rising because of different diagnostic criteria, because of underlying changes in risk factors, or for both reasons. Regardless of the underlying reason, PDM and GDM pose significant risk to a growing proportion of California's pregnant women.

Hospital, health, and community burden after oil refinery fires, Richmond, California 2007 and 2012 [2]

Emergency Departments experience a significant census burst after disasters. This study describes patient presentations at Emergency Departments in Contra Costa County, California following chemical release incidents at an oil refinery in 2007 and 2012. Specific areas of focus include hospital and community burden with an emphasis on disease classes. The number of visits meeting selection criteria totaled 105,020 records. Visits increased modestly but statistically significantly after the 2007 incident. After the 2012 incident, two Emergency Departments took the brunt of the surge. Censuses increased from less than 600 a week each to respectively 5,719 and 3,072 the first week, with the greatest number two days post-event. It took four weeks for censuses to return to normal. The most common diagnosis groups that spiked were nervous/sensory, respiratory, circulatory, and injury. Bayside communities had statistically significant increases in residents seeking care. Specifically, visits of residents in warned communities nearest the refinery increased by a factor of 3.7 while visits of residents in other nearby un-warned communities increased by a factor of 1.5. The paper ends with a discussion of the implications for public safety and hospital closures.

Reproductive outcomes after non-occupational exposure to hexavalent chromium, Willits California, 1983-2014 [3]

From 1963-1995, a factory in Willits, Mendocino County, CA used toxic hexavalent chromium (Cr(VI)) without adequate measures to protect the population. We use longitudinal hospital data to compare reproductive outcomes for two generations in Willits and two generations in the Rest of County (ROC). This is the first study to quantify the reproductive impact of Cr(VI)

in a non-occupational population. We searched California hospital discharge data (1983-2014) to find Mendocino County residents born 1950 or later. ZIP-code 95490 identifies Willits residents, with all others living in ROC. We used the Multi-Level Clinical Classification Software (CCS) to classify health outcomes. While the Plant was open, respiratory conditions, perinatal jaundice, and birth defect rates were higher for Willits infants compared to ROC, but improved post-closure. Risk for abnormal birth weight and term was high and remained high over the study period. Willits women had significantly higher risk of pregnancy loss compared to ROC, whether stratified by generation, age group, or pre- and post-closure. Regardless of when exposed, Willits women continued to have significantly higher rates of in-hospital terminations, as animal studies of Cr(VI) exposure predict. In life course models, non-pregnant Willits women have significantly higher risk of reproductive organ conditions and neoplasms compared to ROC. Adverse reproductive outcomes are elevated and consistent with animal studies. General health outcomes reflect the same broad effect reported for occupationally exposed workers. For the first time, the detrimental reproductive effects of non-occupational Cr(VI) exposure in human females and their infants is reported. (March 2017)

Longitudinal analysis of health outcomes after exposure to toxics, Willits California, 1991-2012: application of the cohort-period (cross-sequential) design [4].

About 1963, a factory in Willits, Mendocino County (County), California added chrome plating to the manufacture of steel products. This exposed Willits residents to hexavalent chromium (Cr6) and a variety of other toxics. After years of residents reporting high illness rates, the State undertook a series of investigations. They found exposures to various toxics had been high and warranted further research into possible health effects. Focusing on the reproductive age population and applying the seldom-used cross-sequential design, we tested if Willits had an excess rate of adverse health conditions, compared to people of the same sex and cohort living in the rest of county (ROC). Relative to the State longitudinally, Willits and ROC had comparable demographic and access disadvantages. Yet Willits had more illness per population. This may be one of the first reports on long-term health outcomes for a population exposed non-occupationally to Cr6. (December 2014)

Longitudinal analysis of health outcomes after exposure to toxics, Willits California, 1991-2012: methodologic issues [5]

Following publication of the original Willits paper, the principal author defended the methodology and assumptions underlying this line of research. (October 2015)

The Impact of a Birth Clerk Training Program on California Birth Data Quality 1998-2009

[6]

The Birth Certificate Statistical Master File (BSMF) is the primary source of data elements used to calculate a variety of maternal and infant population health indicators. In addition, it is useful in documenting racial, ethnic, income, and geographic disparities. Many state and local health programs and agencies use these indicators to assess the health of women and children, compare their rates with national standards, and evaluate the effectiveness of various program and policy initiatives.

In 2003, the CDC/NCHS notified California Center for Health Statistics (CCHS) that rates of missing values for key data elements on the birth certificate did not meet Federal standards.

The next year CCHS began to offer voluntary Birth Data Quality Trainings (BDQT) for birth clerks and others. After controlling for time, hospital volume, and hospital auspice, we found little evidence that the BDQT had an impact on improving data quality. The extent to which results were impacted by data quality issues addressing BDQT attendance is unknown. However, trends are clear. Data quality deteriorated steadily or remained about the same over the study period for most measures evaluated. Most important, we confirmed that data were missing not at random (MNAR), a serious and statistically non-ignorable data problem. Data quality varied by hospital volume and auspice, with considerable variation within and across years and geography (hospitals, counties). In a study with mainly moderate results for predicting birth certificate data quality as reflected by effect size (ES), hospital auspice was the most consistent predictor. (Jan 2013)

Maternal Morbidity and Outcomes Including Mortality, California 2001-2006^[7]

- **Appendix A: Methods^[8]**
- **Maternal Quality and Safety Indicators Databook 2001-2006^[9]**

The purpose of this study was to identify regional variation in California's maternal morbidity and mortality that are associated with poor outcomes, have a large population impact, and are amenable to intervention. The analysis addressed the following questions: 1. Between 2001 and 2006, how many pregnant women age 10 to 60 sought care in California hospitals? 2. How many women had an adverse pregnancy outcome or died within 1 year of a pregnancy-related discharge? 3. What differentiated women who had adverse outcomes or died? (Apr 2008)

The Impact of Birth Certificate Data Quality in California On Birth Related Health Indicators in 2003 ^[10]

This report reviews variation in data quality in 1992 and 2003 for several perinatal indicators that use birth certificate variables. We compare the overall state picture to that in one local jurisdiction, to illustrate the importance and utility of routine quality reports when using birth certificate data for monitoring. The report examines birth weight differences for cases with and without gestational age, preterm birth differences for cases with and without gestational age, and race/ethnic disparities in data quality. The focus is on the impact of data quality on population-based rates. (August 2006)

Acute Episodes of Mental Illness among the Population of Reproductive Age 1991-2005

^[11]

Over many decades, health providers learned a great deal about how to deliver recovery oriented mental health care, improve service quality, achieve desired improvements in quality of life outcomes, and implement needed care systems. Today, our goal is a healthy life in the community for everyone. As treatment knowledge increased, significant changes occurred in the number, capacity, structure, and operation of hospitals providing mental health services. This report analyzes hospital-based care in the reproductive age (15-44) population for acute episodes of mental illness or substance abuse between 1991 and 2005. It explores differences by age group, gender and race/ethnicity. At this life stage, MISA can have a particularly negative impact on family formation, family functioning, and inter-generational

family health. (Nov 2007)

Hospital Capacity to Treat Mental Illness 1991-2005 ^[12]

In 1968, California began the national movement to deinstitutionalize the mentally ill by making it more difficult to hospitalize them involuntarily. Instead of treating them in state mental hospitals, they would be treated in community settings. As treatment knowledge increased, significant changes occurred in the number, capacity, structure, and operation of hospitals providing mental health services. Today, many people find services are inaccessible due to distance, cost, or coverage limitations. Others are able to access care, but services may not be evidence based; of the highest quality; respectful of the recipient's culture, race, and ethnicity; or recovery oriented. This report reviews the history of health planning in California. Then we describe changes in the hospital infrastructure since California abandoned planning and evaluate the impact on utilization for the reproductive-age population. The utilization analysis examines changes in patterns of admissions to appropriately licensed facilities and use of facilities out of the county (OOC) of residence. Our concerns about treating the mentally ill and substance abuse (MISA) population in appropriately licensed facilities and in their county of residence arise from equity as well as safety issues. (August 2007)

The Impact of Changing Public Policy on California's Hospital Infrastructure and Children's Hospital Outcomes, 1983 - 2000 ^[13]

This study was undertaken to explore the consequences of conflicting health policies and lack of statewide planning on the healthcare infrastructure and health outcomes of California's child population. We describe and evaluate changes in hospital management and physical capacity. Then we examine the impact of those changes on children's hospital access and outcomes. The results are expected to provide guidance to the state legislature in evaluating the way health care dollars are allocated and in promulgating regulations to affect hospital infrastructure. (July 2004)

The Impact of Changing Public Policy on Hospital Care for California Children Age 0 to 4 - 1983 to 1997 ^[14]

In this report FHOP reviews -- from the hospital point of view -- the longitudinal impact of changing public policy on children admitted to California's general acute care hospitals with an eye to quality of care. (June 2000)

The Impact of Changing Public Policy on Hospital Admission Patterns for California Children Age 0 to 4 - 1983 to 1997 ^[15]

The purpose of this study was to explore changes in rates and patterns of hospitalization for children 0 to 4 over the 15-year period from 1983-1997 to determine whether changes over this period could be related to changes in health policy for children. Between 1983 and 1997, California hospitals discharged 1,687,886 children age 0 to 4 excluding neonates (the study group). In this report, we focus on two variables of critical importance to policy makers that

directly reflect health equity. These are the race/ethnicity of the discharged child, the anticipated payor at discharge, and the interplay between these. (June 2000)

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