



# Surveillance of Reproductive Outcomes in Environmental and Occupational Health

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# Reproductive Surveillance

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- Birth Certificates
- Birth Defect Registries
- Pregnancy Risk Assessment Monitoring
- NCHS Efforts
- NIH Sponsored Research
- WHO Surveys



# Application to Environmental and Occupational Health Exposures

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- On-going evaluation of variation over time and place.
- Response to community concerns or new exposures.
- Become the basis of hypothesis-testing epidemiological studies.

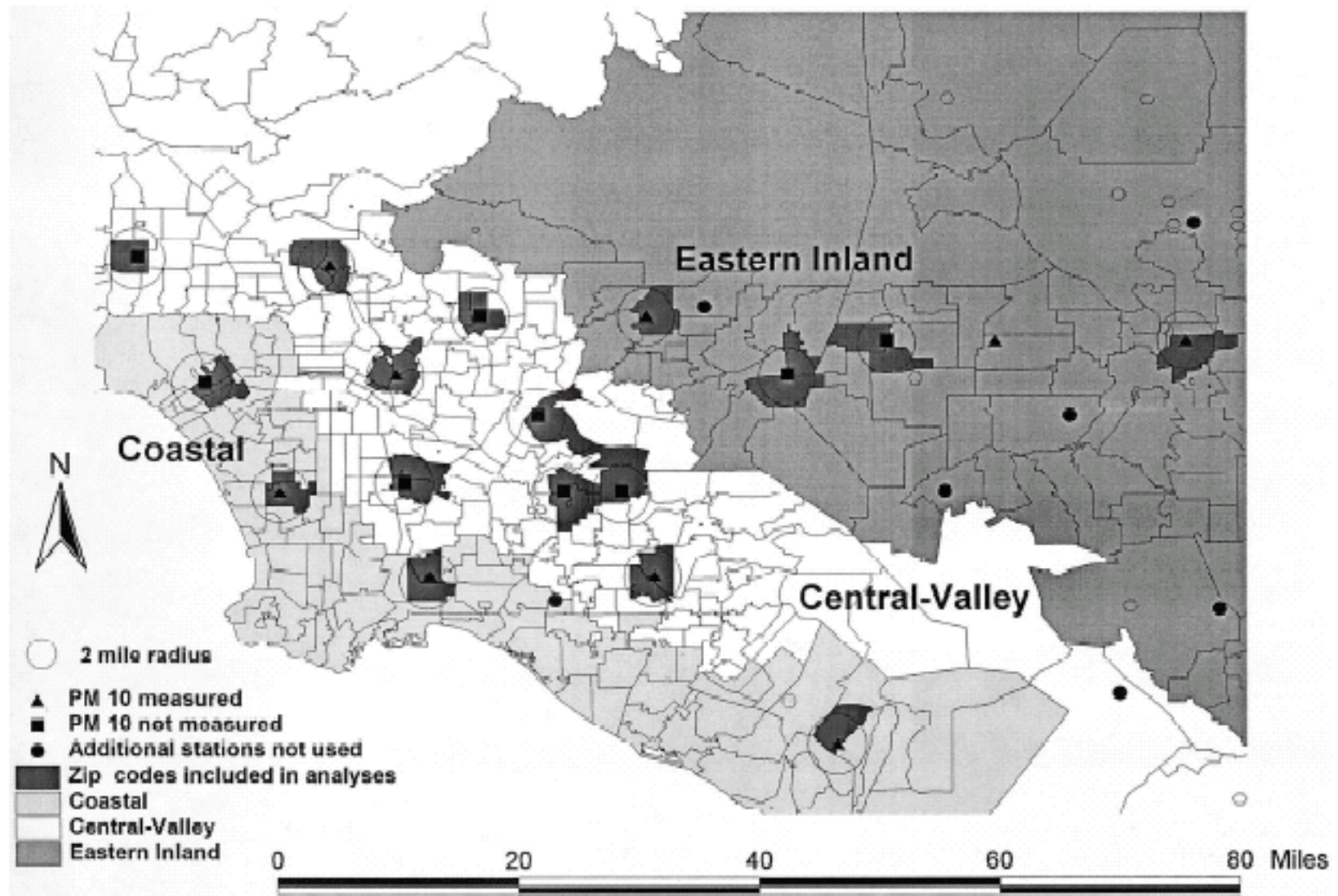


FIGURE 1. Map of the South Coast Air Quality Management District monitoring stations and zip codes included in the analyses.

Source: Ritz et al, Epidemiology 2000;11:502-11



## Known and Suspected Occupational Reproductive Hazards with Little Surveillance

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- Heavy metals
- Air pollutants
- Environmental Tobacco Smoke
- Pharmaceuticals
- Infections
- Shift work



## Occupational Information in On-going Surveillance of Reproductive Outcomes

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- Occupation and industry is included for both parents on birth certificates.
- Difficulty and expense of coding limits usefulness.
- Case-control studies can provide possible sources of data for surveillance.



## Department of Defense Birth Defects Surveillance

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- Approximately 90-95,000 births to military families per year.
- 19% of births involve active duty mother.
- Captures birth and birth defect data for military births.

Source: Ryan et al, Teratology 2001;64:S26-29



## Birth outcomes present unique challenges in surveillance

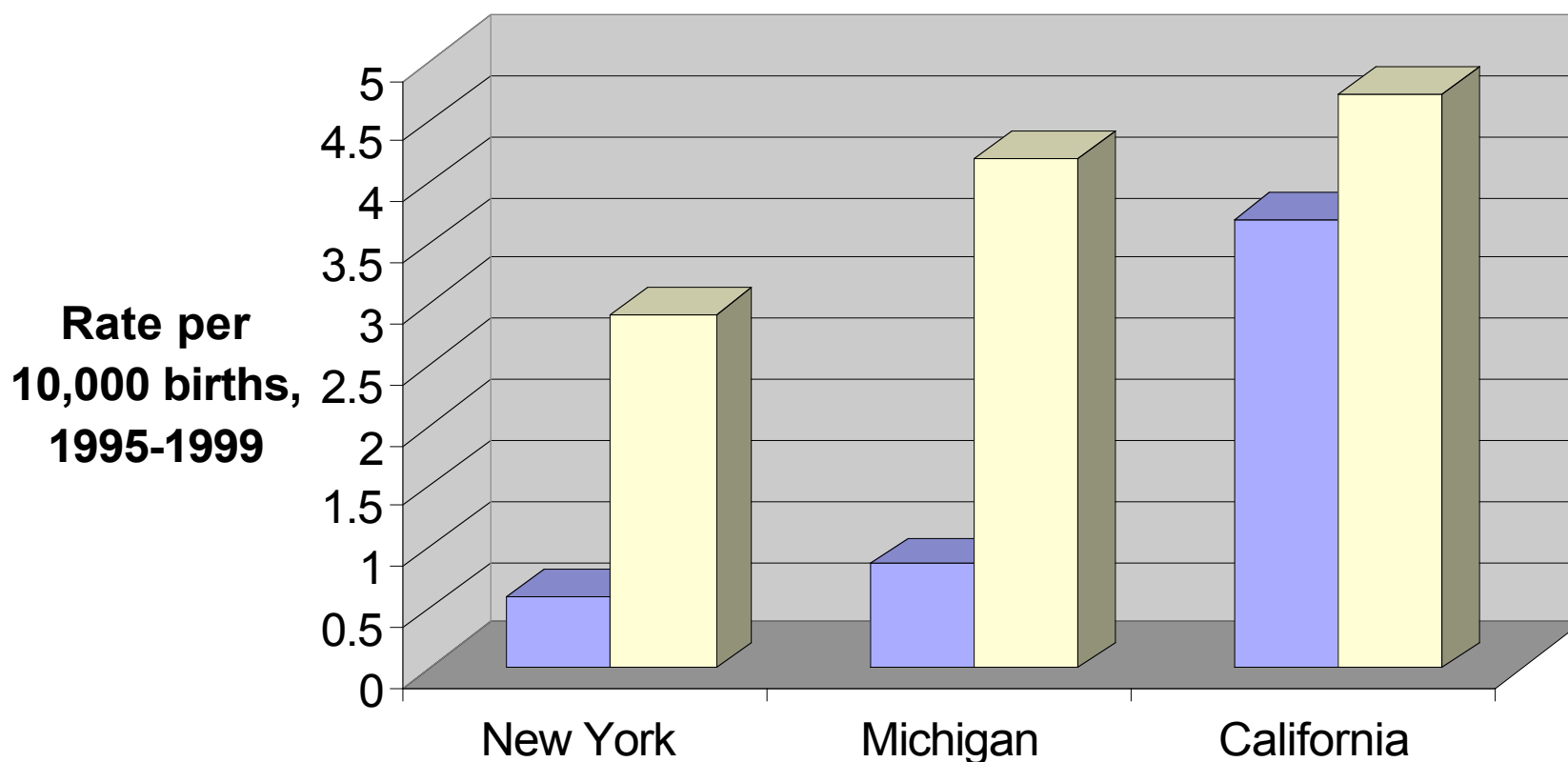
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- Description of outcomes among all pregnancies, not just live births, is difficult.
- Birth weight and gestational age are uniformly collected, but diagnosis and reporting of birth defects vary.
- Current data collection systems are not useful for a rapid public health response.



## Comparison of Neural Tube Defect Rates for States Using Different Sources of Ascertainment

■ Anencephaly ■ Spina Bifida

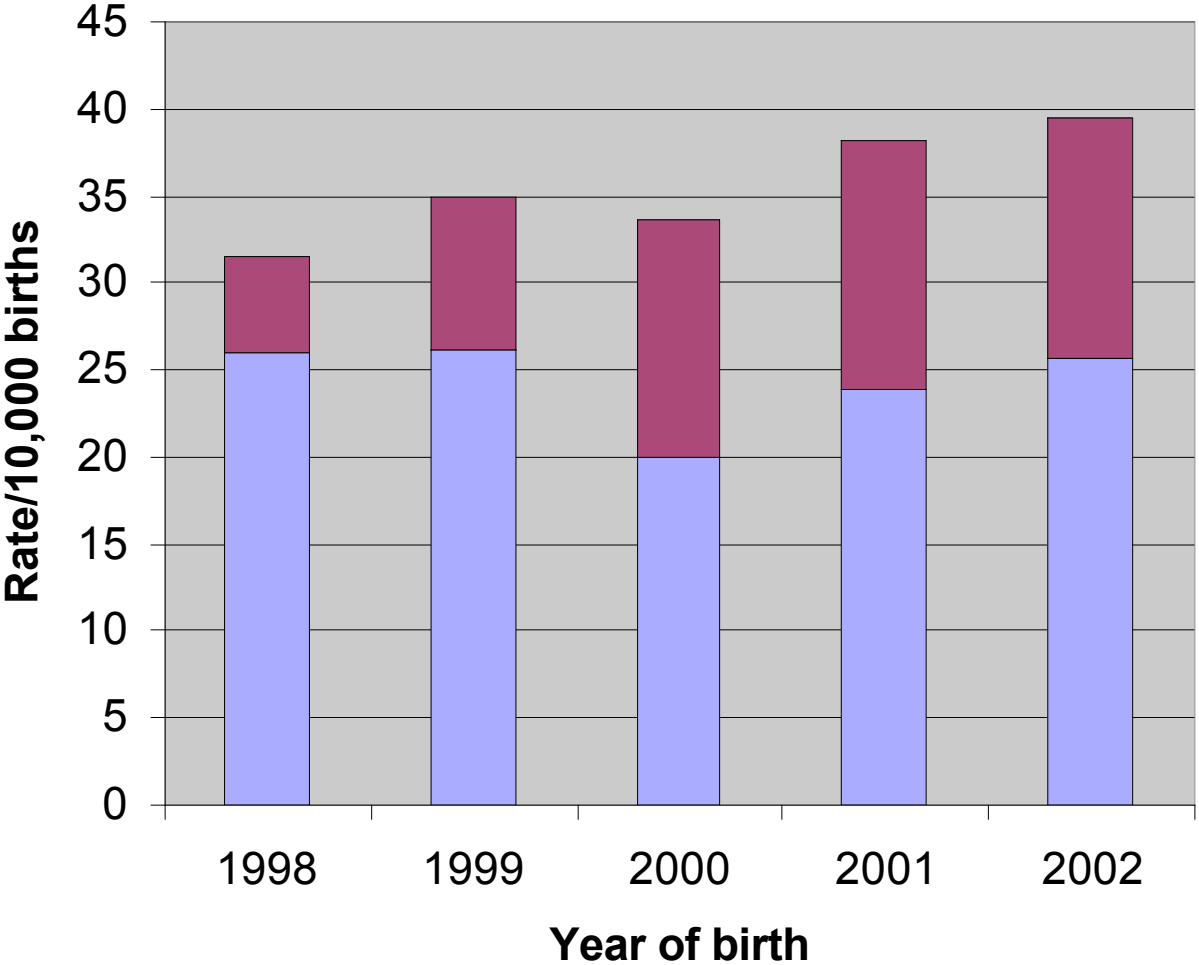


Rate per  
10,000 births,  
1995-1999

Source: Teratology 2002; 66:S129-211

### Hypospadias Reported Among New Jersey Newborns

1st degree 2nd or 3rd degree



New Jersey Department of Health and Senior Services Data

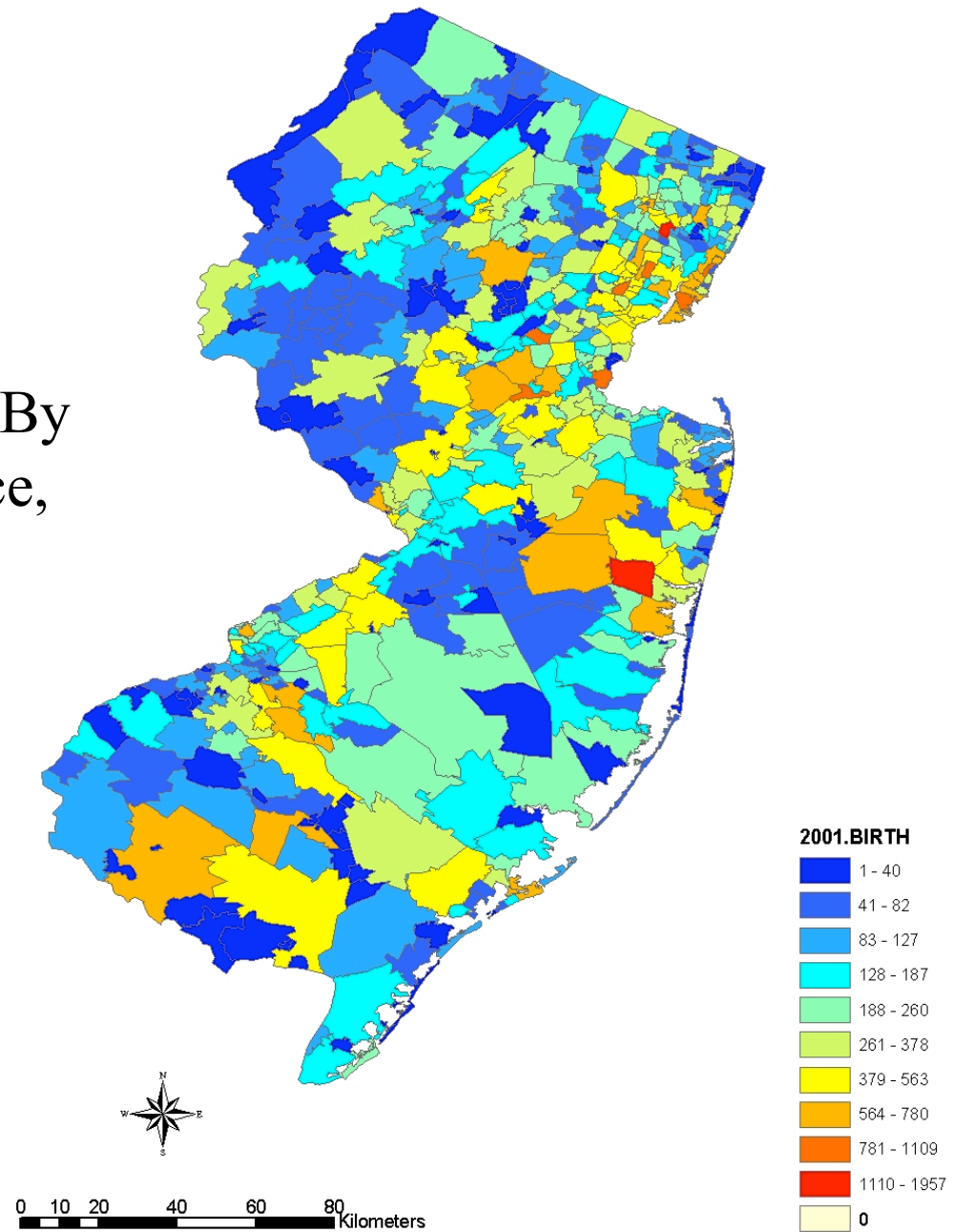


# Timely Surveillance and Access for Research

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- Vital statistics systems are slow to finalize birth data.
- State health departments are not always set up for research.
- Health departments operate in political environments.

# Births in New Jersey By Zip Code of Residence, 2001





## Current and Future Improvements

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- Electronic birth certificates
- Expanded birth defect surveillance
- NIH initiated studies that might be useful for environmental and occupational surveillance
- Expanded collaboration between public health and researchers

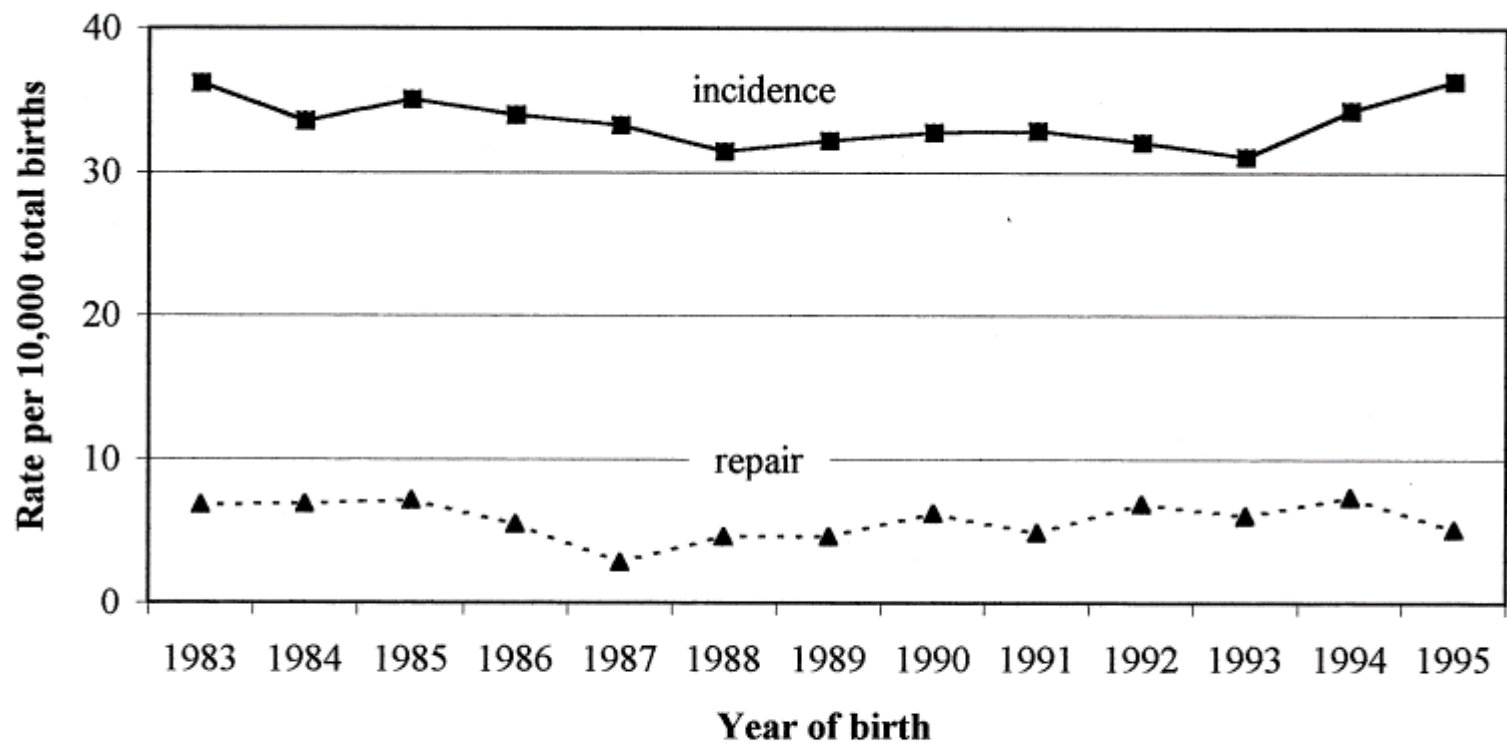


FIGURE 1. *Incidence and repair rates of hypospadias in NYS.*

**Source: Choi J, et al. Urology 2001;57:151-153**