

CPSC Data Bases

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*This presentation was prepared by CPSC staff. It has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.

Surveillance Data Bases

- Incident Data (IPII)
- Death Certificates (DTHS)
- National Electronic Injury Surveillance System (NEISS)
- In-Depth Investigations (INDP)

CPSC Need for Death/Injury/Incident Data

- Set Priorities
- Support Ban or Recall of Hazardous Products
- Convince Industry and Others of Need for Product Standard
- Support Development of Product Standards
- Evaluate the Effectiveness of Product Standards
- Develop Information and Education Campaigns to Raise Public Awareness of Product Safety

Incident Data (IPII)

- MECAP
- News Clips
- Hotline Calls
- Internet Complaints
- Compliance Reports
- Federal/State Agency Referrals
- Other Incident Reports

MECAP Example

■ Infant Cushions

- Sentinel event - MECAP report
- MECAP News
- 30 deaths to children - limited geographic region
- Manufacturers agree to withdraw product from market

News Clips

- Window cord deaths
 - CPSC received 160 reports from 1991-2000 of deaths involving window cords
 - Many were from news clips
 - In 1994, CPSC worked with window blind manufacturers
 - » Redesign
 - » Repair kits
 - Since 1995, window blinds do not have cords ending in a loop

Hotline Call

- Drawstring death on slide
 - 16 other deaths and 42 other incidents of similar nature
 - Manufacturers agreed to remove drawstrings from jackets, coats, sweatshirts

Death Certificates (DTHS)

- Separate contracts with 50 states
- Purchase ~ 8,000 certificates annually
- Read all and code ~ 5,000 certificates
- Daily review
- Analytical use

Death Certificate Examples

- Sentinel events - bucket drowning
- Minimum count of deaths
 - Hair dryers
 - Cribs
- Capture/recapture analysis
 - ATV estimate

Product-Related Injuries

Consumer product injuries
= ~ 34 million

Treated in
physicians'
offices

Treated in
ambulatory
care clinics

**Consumer product
injuries treated in
EDs = ~ 13 million**

N*ational*

E*lectronic*

I*njury*

S*urveillance*

S*ystem*



U.S. Consumer Product Safety Commission

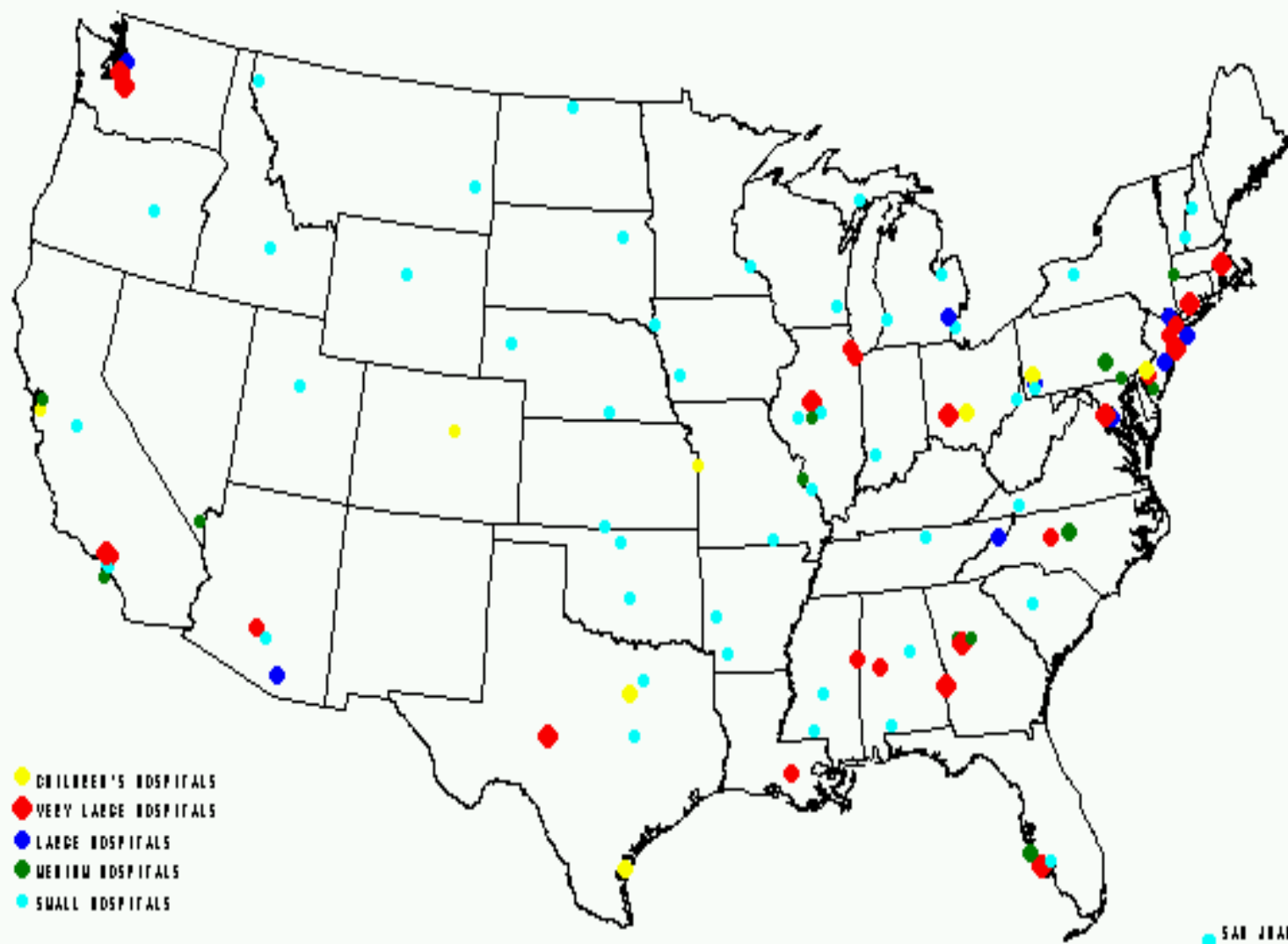
Overview/History

- National sample of 96 hospitals from all U.S. hospitals with at least 6 beds and 24-hour emergency service.
- Each hospital reports information on emergency treatments to CPSC.
- Hospital coder enters data in local PC and CPSC collects the data each night.
- System collects ~ 350,000 product-related injury reports each year.
 - (~ 300,000 non-CPSC injury reports each year).
- Multi-level system.
- Supports CPSC and other agencies.

Overview/History

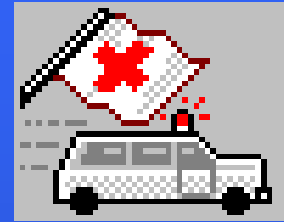
- Has been in use for over 30 years.
- Last updated with new hospital sample in 1997.
- Data available from 1980-2004 through FOI request.
- Internet
 - On-line estimates from 1991-2004.
 - Data available for download from 2002-2004.

U.S. Consumer Product Safety Commission NEISS Hospitals

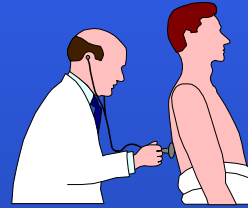


Why Emergency Department Data?

- Large numbers of injuries are treated there.



- Data are already being captured in ED record on these cases.



- Hospitals have been very cooperative in supporting CPSC data collection activities.

- The information is timely.



Hospital/CPSC Activities

Duties of NEISS Hospital

- Conduct orientation for ED staff
- Review all ED records
- Code reportable cases
- Enter data in PC
- Provide support for all special studies

CPSC Responsibilities

- Payment for reported cases and time spent
- Personal computer
- Training
- Quality control

NEISS Surveillance Variables

- Treatment date
- Case number
- Age
- Sex
- Injury diagnosis
- Body part injured
- Disposition from ED
- Products involved (2)
- Locale
- Type/work-related
- Fire dept. involvement
- Intent
- Race / ethnicity
- Narrative (2 lines)

NEISS Surveillance Variables

■ Automatic Variables

- Collection Date
- Change Date
- Hospital ID (PSU)
- Stratum
- Analysis Weight
- NEK

■ Coded Variables

- Mechanism of Injury
 - » Immediate (Direct)
 - » Precipitating
- Other variables for non-CPSC data

Statistical Basis

- Stratified random sample of U.S. hospitals with EDs.
 - By hospital size and
 - By geographic location
- Provides national estimates and statistical confidence intervals.
 - Generalized estimates of relative sampling errors are asymptotically about 6 % of estimate
- Follow-back investigations can be conducted within the statistical framework.

NEISS Analysis Weight

$$NEISS_{wt} = \frac{N_h}{n_h} \frac{n'_h}{r_h} R_h$$

where:

N_h = Number of hospitals in 1995 sampling frame for stratum h

n_h = Number of hospitals selected for the NEISS sample for stratum h

n'_h = Number of in - scope hospitals in the NEISS sample for stratum h

r_h = Number of NEISS hospitals responding in stratum h for a given month

R_h = Ratio adjustment for stratum h

NEISS Variance

$$\sigma^2 = \sum_{h=1}^m \frac{r_h}{r_h - 1} \sum_{i=1}^{r_h} \left(\frac{N_h}{n_h} \frac{n'_h}{r_h} R_h \right)^2 (x_{hi} - \bar{x}_h)^2 = \sum_{h=1}^m \frac{r_h}{r_h - 1} \sum_{i=1}^{r_h} (wgt_{hi} x_{hi} - wgt \bar{x}_h)^2$$

where :

m = Number of strata in the NEISS sample for the time period

r_h = Number of NEISS hospitals responding in stratum h for a given month

N_h = Number of hospitals in 1995 sampling frame for stratum h

n_h = Number of hospitals selected for the NEISS sample for stratum h

n'_h = Number of in - scope hospitals in the NEISS sample for stratum h

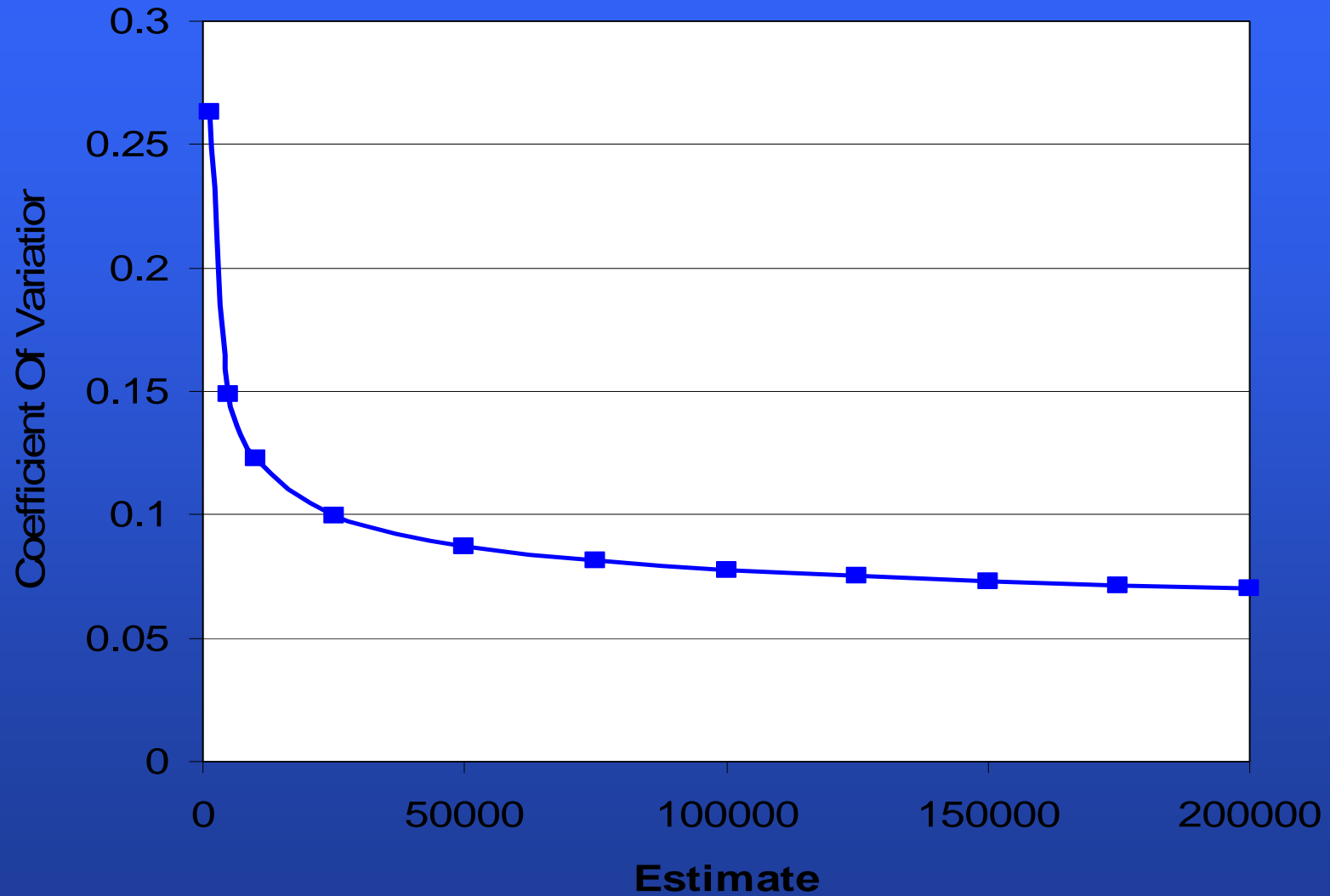
x_{hi} = Number of injuries reported for the time period in the i - th hospital in stratum h

wgt_{hi} = NEISS weight of hospital i in stratum h for the time period

R_h = Ratio adjustment for stratum h

$$\bar{x}_h = \sum_{i=1}^{r_h} \frac{x_{hi}}{r_h} \quad \text{and} \quad wgt \bar{x}_h = \sum_{i=1}^{r_h} \frac{wgt_{hi} x_{hi}}{r_h}$$

Generalized NEISS Sampling Errors



Statistical Analysis of NEISS

- SAS

- Programs using stratified sample design
- SAS version 9 - PROC SURVEYMEANS

- SUDAAN

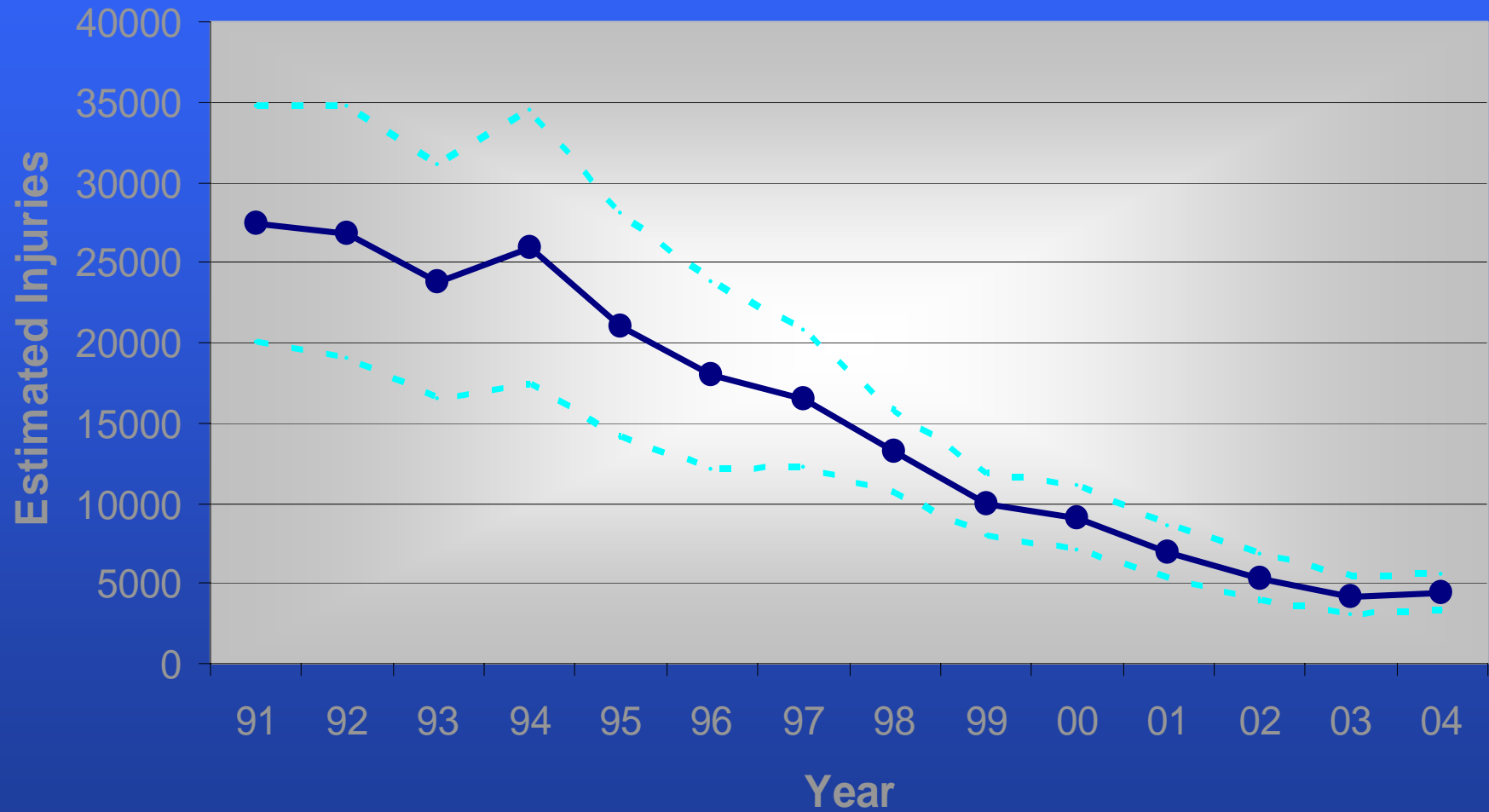
Multi-level Data Collection Capability

- Routine emergency department data
- Emergency department special study - “2nd screens”
- Telephone investigations
- On-site investigations

Level 1- Surveillance Data

- Baby walkers

Baby Walkers and Jumpers (1508)



Level 2-Emergency Department Questions (2nd Screen)

- Poisonings to children <5
- Fireworks Study

Level 3 - Telephone Investigations

- All NEISS follow-up studies
 - ATV studies
 - Bicycle helmets
 - Scooters
 - Baby walkers
 - Lawn mowers
 - Circular saws
 - Household fires
 - Etc.

Level 4 - On-site Investigations

- Power mower study
- ATV studies
- Chain saw study