CDC/ATSDR Activities and Role in Environmental Health EEH - 2005

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Agency for Toxic Substances and Disease Registry

Centers for Disease Control and Prevention

CDC ATSDR


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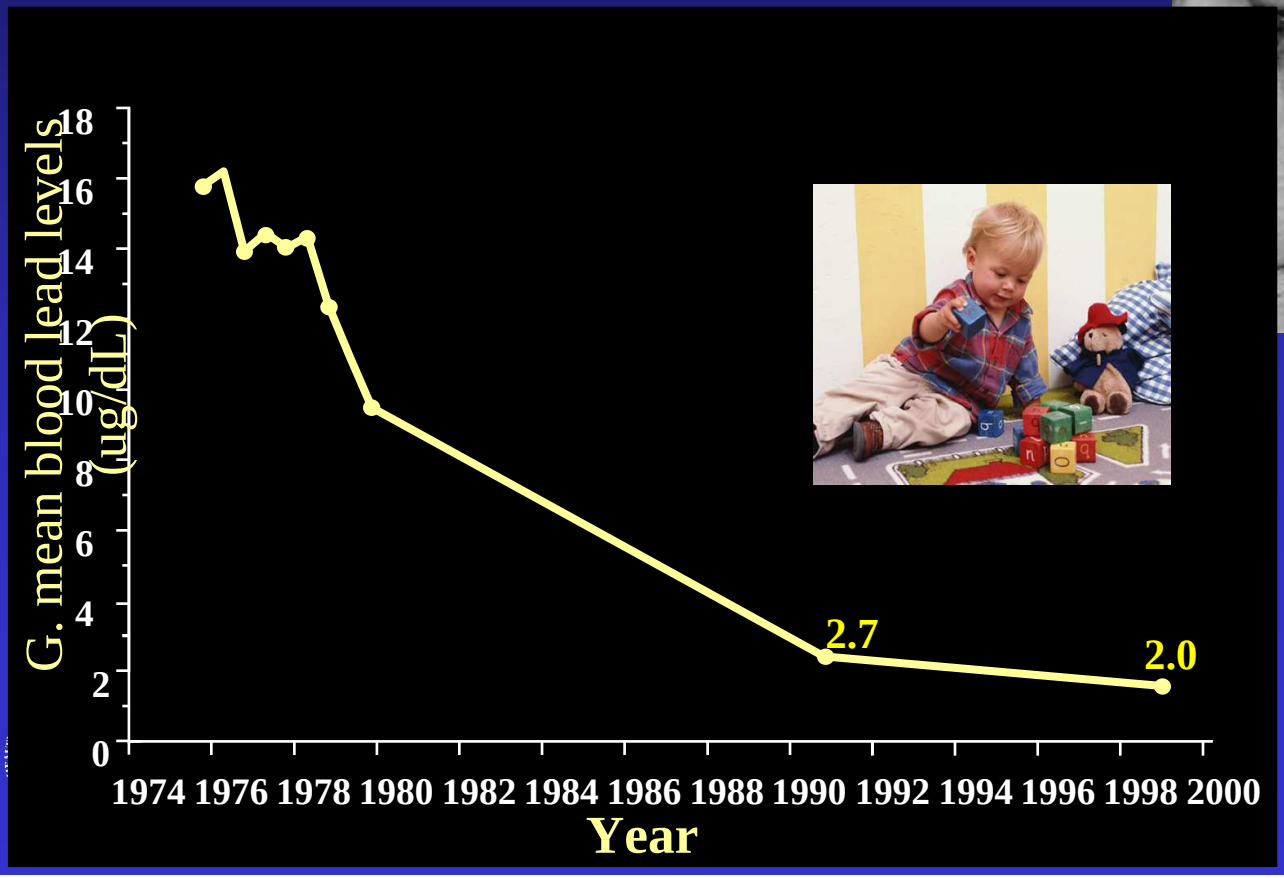
"Excuse me! Can we get a little Newborn Screening over here?"
Click here to learn how you can help!


WE'VE GOT BETTER THINGS TO DO THAN SIT AROUND AND BE CONTAMINATED!!


G. mean blood lead levels (ug/dL)
0
2
4
6
8
10
12
14
16
18
1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000
Year
2.7
2.0

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The National Center for Environmental Health

We don't regulate your environment …

- **Prevention programs (asthma, Pb poisoning)**
- **Measuring people's exposures to chemicals**
- **Investigating disease outbreaks**
- **Improving local/state environmental services**
- **Providing lab quality assurance programs**
- **Preparing and responding to chemical, radiation, and natural disaster events**
- **Inspecting cruise ships & chemical weapons sites**
- **Provide public health for refugees worldwide**

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ATSDR Major Program Areas

- **Site Assessments**
- **Health Investigations**
- **Exposure and Disease Registries**
- **Emergency Response Program**
- **Health Education and Promotion**
- **Toxicological Profiles**

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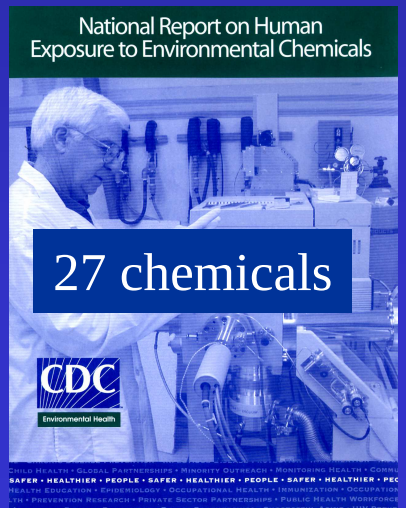
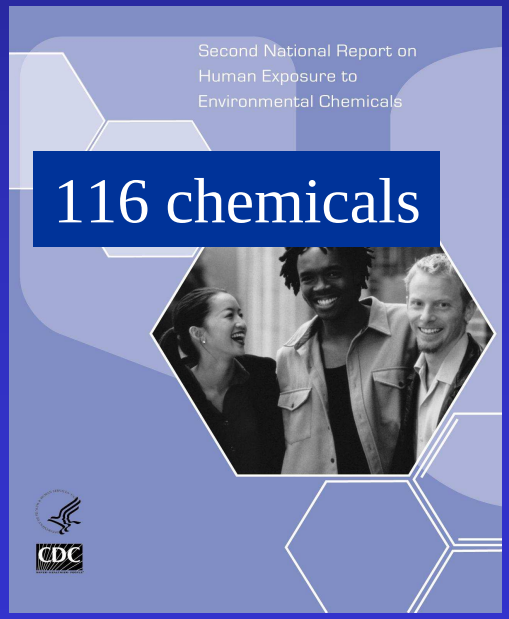
Today's Highlights

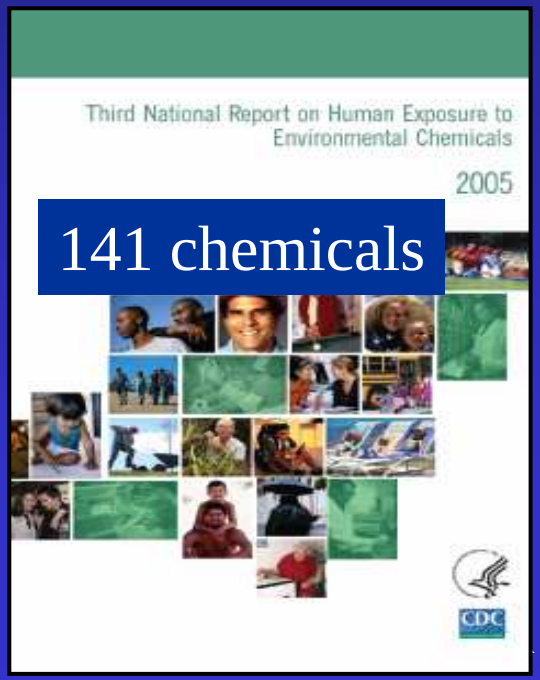
- **Third National Report on Human Exposure to Environmental Chemicals**
- **Asbestos**
- **Hurricane Katrina**

National Report on Human Exposure to Environmental Chemicals

- What chemicals get into Americans?
- How many people have elevated levels?
- Do exposure reduction efforts work?
- What are background levels?
- Do exposures to Americans change over time?
- Do exposures differ across susceptible groups?
- Set priorities for health research







National Report on Human Exposure to Environmental Chemicals

NHANES Survey

- National probability sample
- Data released every 2 years
- 30 localities via mobile trailers
- Behaviors + physical exam
- Medical and nutritional lab tests

Biomonitoring program

- Blood and urine
- 1/3rd sub-sample
- sample size ~ 2400
- 350,000 + analyses

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Chemicals in the Report

- Metals
- Polychlorinated biphenyls, dioxins and furans
- Organochlorine, organophosphate, carbamate, and pyrethroid pesticides
- Herbicides
- Polycyclic aromatic hydrocarbons
- Phthalates
- Phytoestrogens
- Pest repellants
- Cotinine

www.cdc.gov/exposurereport

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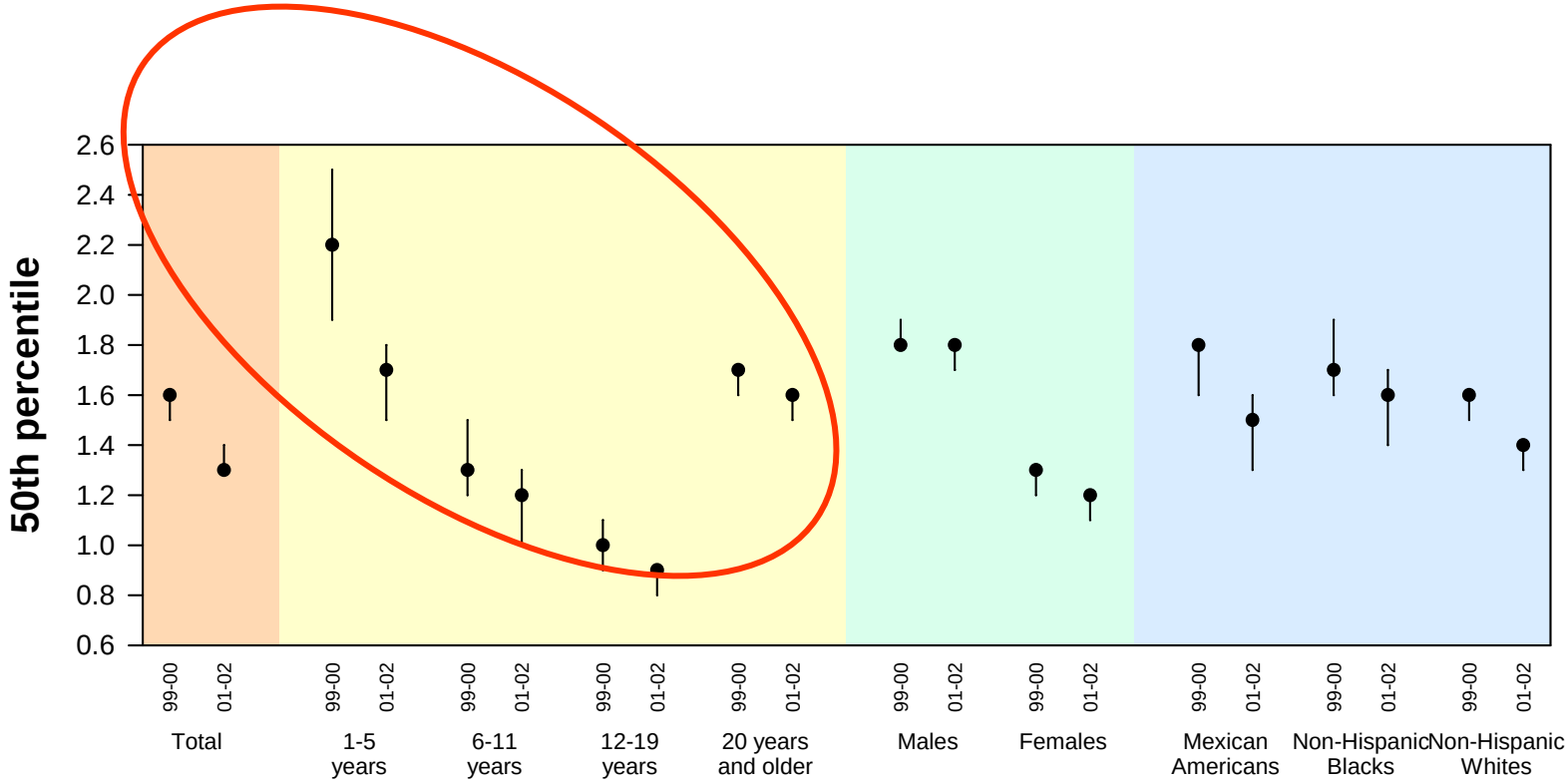
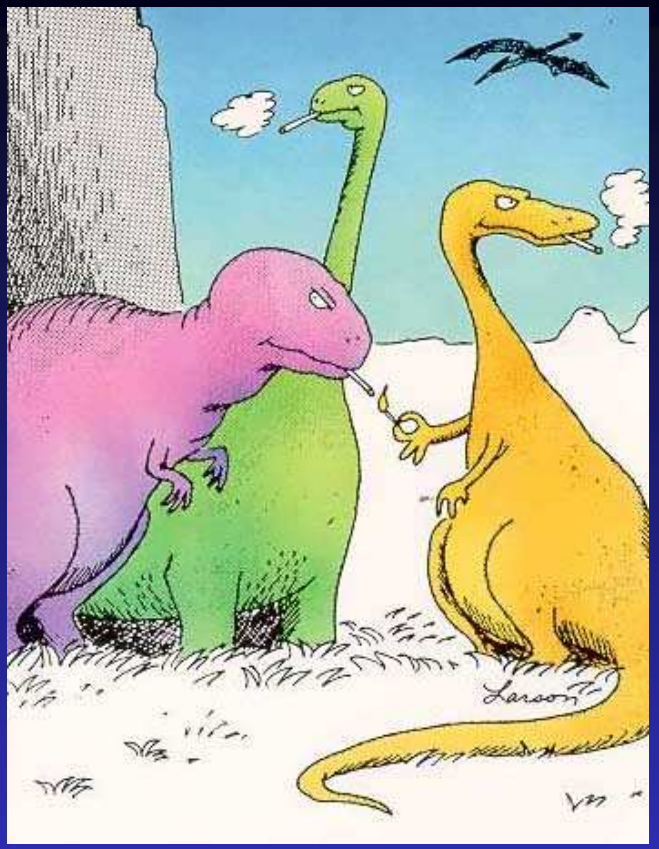
Figure 6. Lead in blood

Selected percentiles with 95% confidence intervals of blood concentrations (in µg/dL) for the U.S. population aged 1 year and older, National Health and Nutrition Examination Survey, 1999-2002.



Cadmium



- **Human carcinogen**
- **Injury to kidneys and bone at low levels**
  - **Occurs at occupational levels**
  - **New research indicating subclinical change in renal function and bone density as low as 1 µg/g creatinine**
  - **About 5% of adult U.S. population above this level**
  - **Mainly due to smoking**

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Table 11. Cadmium in urine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population aged 6 years and older, National Health and Nutrition Examination Survey, 1999-2002.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval)				Sample size
			50th	75th	90th	95th	
Total, age 6 and older	99-00	**.181** (.157-.209)	**.219** (.199-.238)	**.423** (.391-.446)	**.712** (.645-.757)	**.933** (.826-1.07)	2257
	01-02	**.199** (.181-.218)	**.212** (.194-.232)	**.404** (.377-.440)	**.690** (.630-.754)	**.917** (.813-.998)	2689
Age group							
6-11 years	99-00	*	**.085** (.063-.107)	**.147** (.123-.182)	**.210** (.171-.316)	**.300** (.184-.607)	310
	01-02	**.075** (.059-.094)	**.100** (.083-.112)	**.166** (.136-.192)	**.233** (.206-.281)	**.291** (.221-.440)	368
12-19 years	99-00	**.071** (.051-.098)	**.093** (.084-.106)	**.147** (.130-.163)	**.215** (.204-.240)	**.283** (.222-.404)	648
	01-02	**.078** (.067-.091)	**.091** (.085-.101)	**.136** (.123-.143)	**.191** (.175-.234)	**.280** (.234-.321)	762
20 years and older	99-00	**.267** (.247-.289)	**.288** (.261-.304)	**.484** (.433-.545)	**.769** (.727-.818)	**1.07** (.927-1.17)	1299
	01-02	**.261** (.236-.289)	**.273** (.247-.303)	**.481** (.426-.518)	**.776** (.691-.850)	**.979** (.874-1.12)	1559
Gender							
Males	99-00	**.154** (.131-.182)	**.174** (.158-.191)	**.329** (.293-.382)	**.617** (.537-.700)	**.788** (.696-.929)	1121
	01-02	**.159** (.143-.177)	**.168** (.157-.182)	**.334** (.304-.364)	**.532** (.491-.653)	**.757** (.690-.856)	1334
Females	99-00	**.211** (.170-.261)	**.267** (.239-.308)	**.473** (.423-.551)	**.783** (.690-.917)	**1.09** (.813-1.38)	1136
	01-02	**.245** (.216-.278)	**.263** (.228-.297)	**.479** (.414-.541)	**.792** (.687-.884)	**.985** (.876-1.16)	1355
Race/ethnicity							
Mexican Americans	99-00	**.175** (.137-.223)	**.181** (.144-.225)	**.331** (.266-.418)	**.612** (.441-.828)	**.843** (.674-1.13)	780
	01-02	**.156** (.136-.178)	**.170** (.150-.184)	**.282** (.263-.340)	**.501** (.388-.614)	**.693** (.507-.839)	682
Non-Hispanic blacks	99-00	**.183** (.140-.240)	**.201** (.168-.241)	**.414** (.343-.472)	**.658** (.516-.827)	**.873** (.722-.962)	546
	01-02	**.190** (.156-.232)	**.195** (.174-.225)	**.385** (.336-.449)	**.676** (.559-.850)	**.917** (.725-1.08)	667
Non-Hispanic whites	99-00	**.175** (.146-.209)	**.219** (.191-.250)	**.432** (.387-.470)	**.729** (.666-.783)	**1.00** (.826-1.16)	760
	01-02	**.205** (.184-.229)	**.224** (.208-.242)	**.421** (.382-.470)	**.719** (.668-.784)	**.931** (.806-1.05)	1132

* Not calculated. Proportion of results below limit of detection was too high to provide a valid result.

MMWR

November 5, 2004 / 53(43); 1018-1020

TABLE 2. Percentage of women aged 16–49 years with blood mercury (Hg) levels ≥5.8 µg/L, by race/ethnicity — National Health and Nutrition Examination Survey, United States, 1999–2002

Race/Ethnicity	No.	% with Hg levels ≥5.8 µg/L	(95% CI*)
Mexican American	1,106	1.70	(1.04–2.79)
White, non-Hispanic	1,377	5.77	(3.71–8.97)
Black, non-Hispanic	794	4.82	(2.55–9.11)
Total	**3,637**	**5.66**	**(4.04–7.95)**

* Confidence interval.

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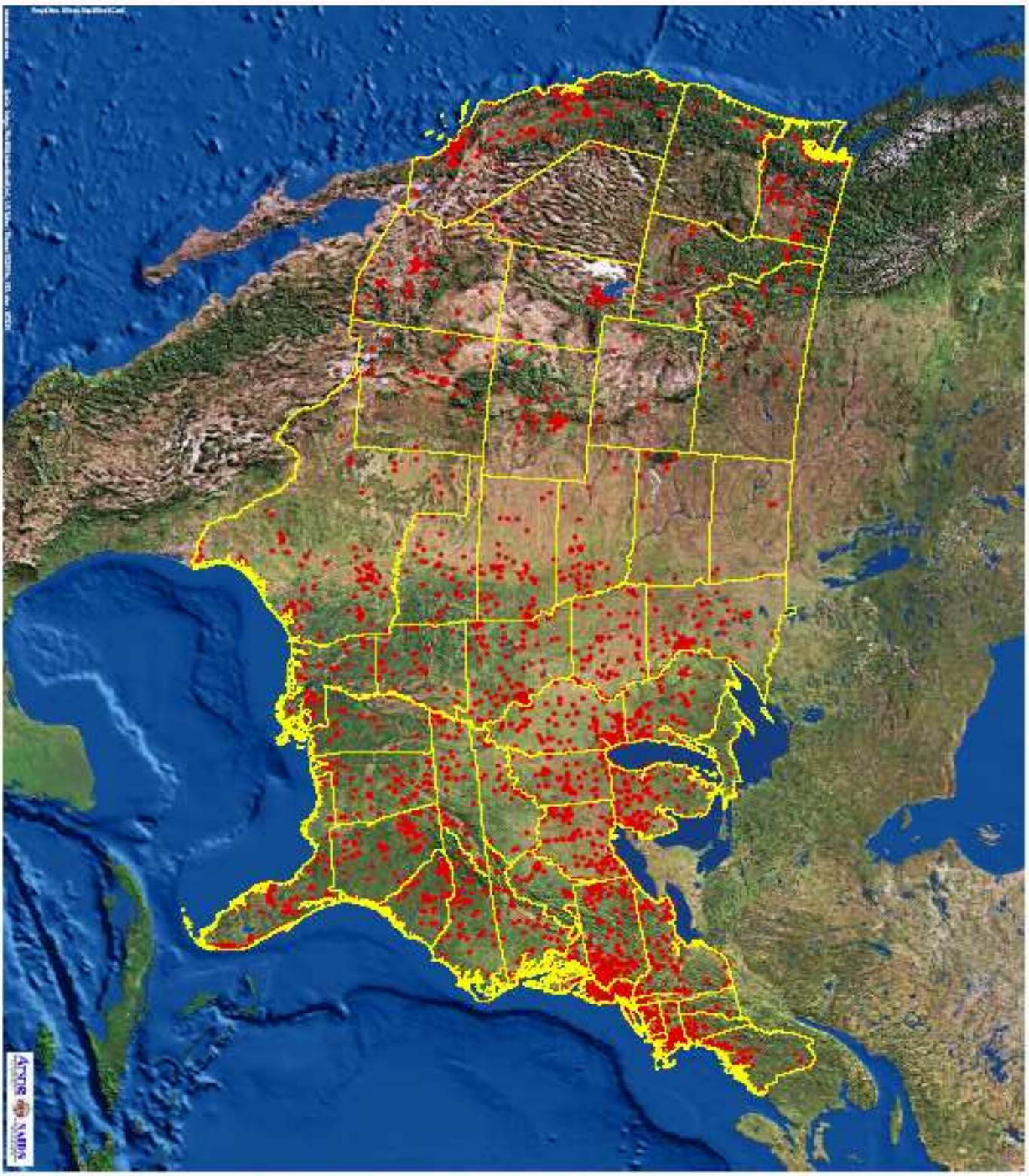
Biomonitoring of Emerging Contaminants

Contaminant	Tissue	3rd Report	National Sample
perchlorate	serum	No	Yes
PFOA/PFOS	serum	No	Yes
Acrylamide	urine	No	Yes
Polybrominated Fire retardents	serum	No	Yes
Speciated As & Hg	serum urine	No	Yes
Pharmaceuticals		No	No

Active NPL Sites for April, 2001



Tremolite Asbestos
Libby MT – Vermiculite

- **Mine operated from 1920's to 1990**
- **Raw ore contained up to 25% tremolite asbestos**
- **Contaminated ore was shipped all over the U.S. to over 200 locations**
- **80% of world's vermiculite came from the Libby mine**

Crude vermiculite

Exfoliated vermiculite

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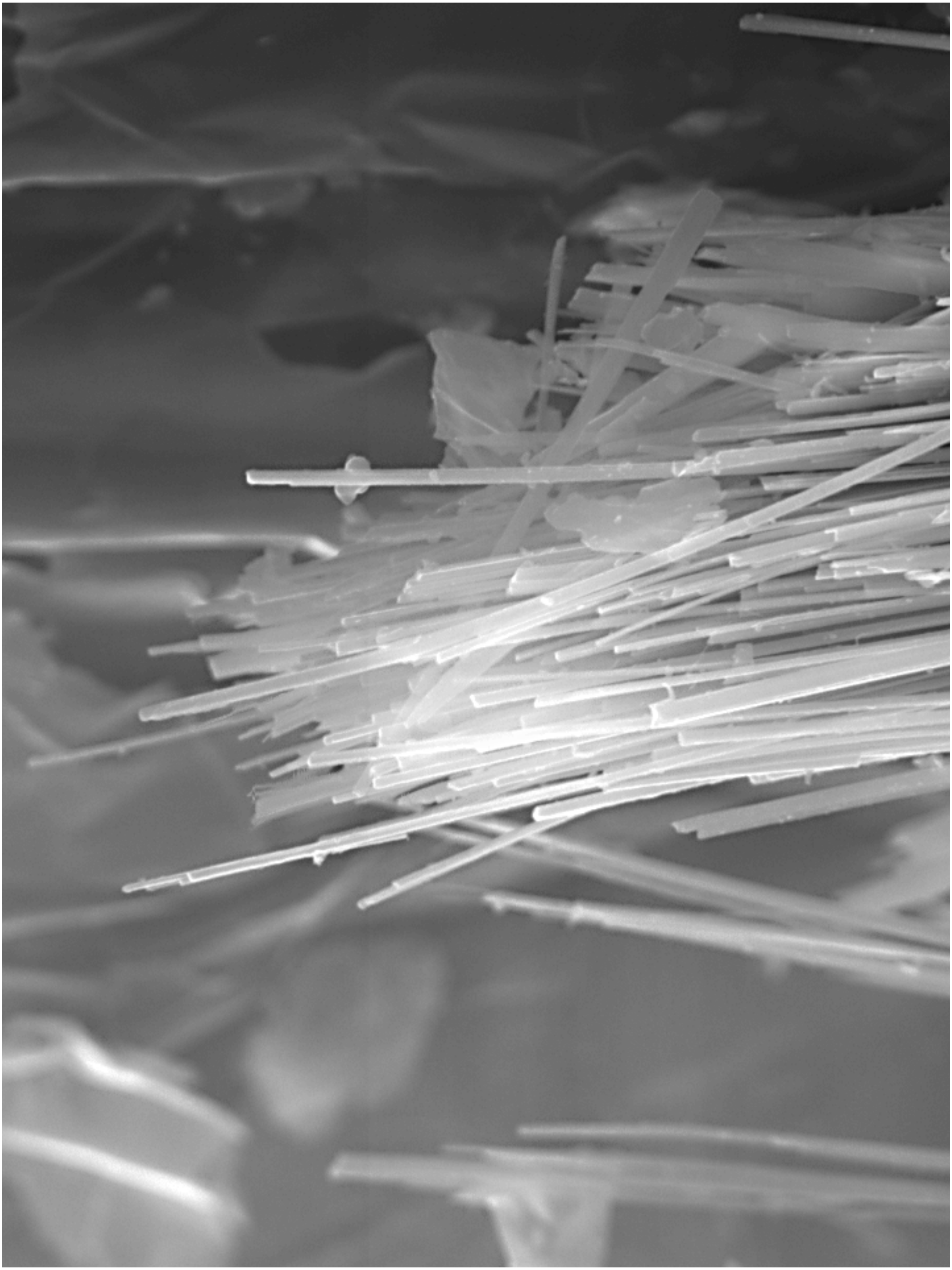

Findings in Libby, MT

- **Overall prevalence of pleural abnormalities (18%) in over 7,300 people evaluated**
- **Among workers and household contacts, prevalence was 51% and 26% respectively**
- **Lung cancer and asbestosis both increased in Libby**

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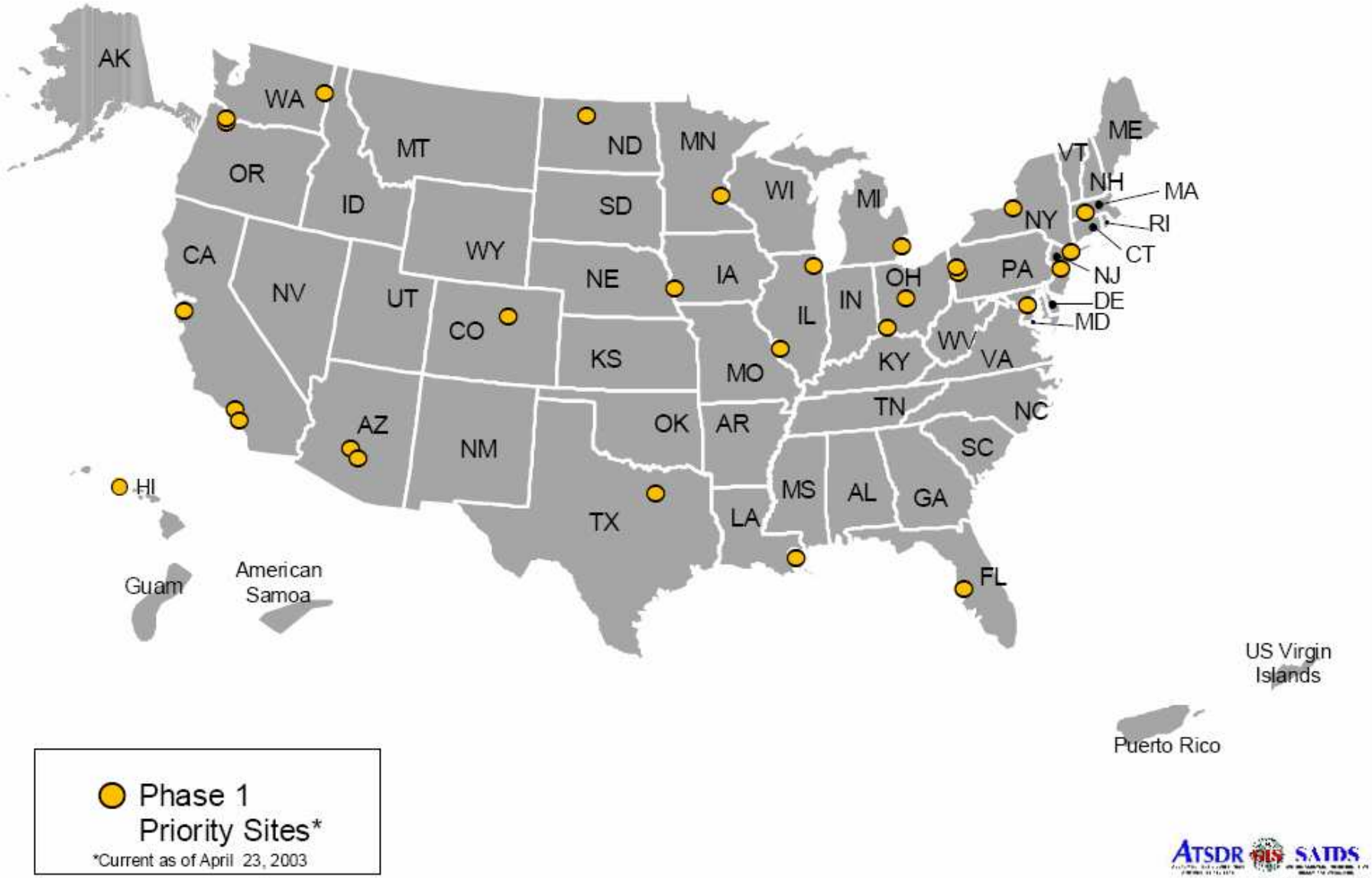
ATSDR National Asbestos Exposure Review
Phase 1 Priority Sites

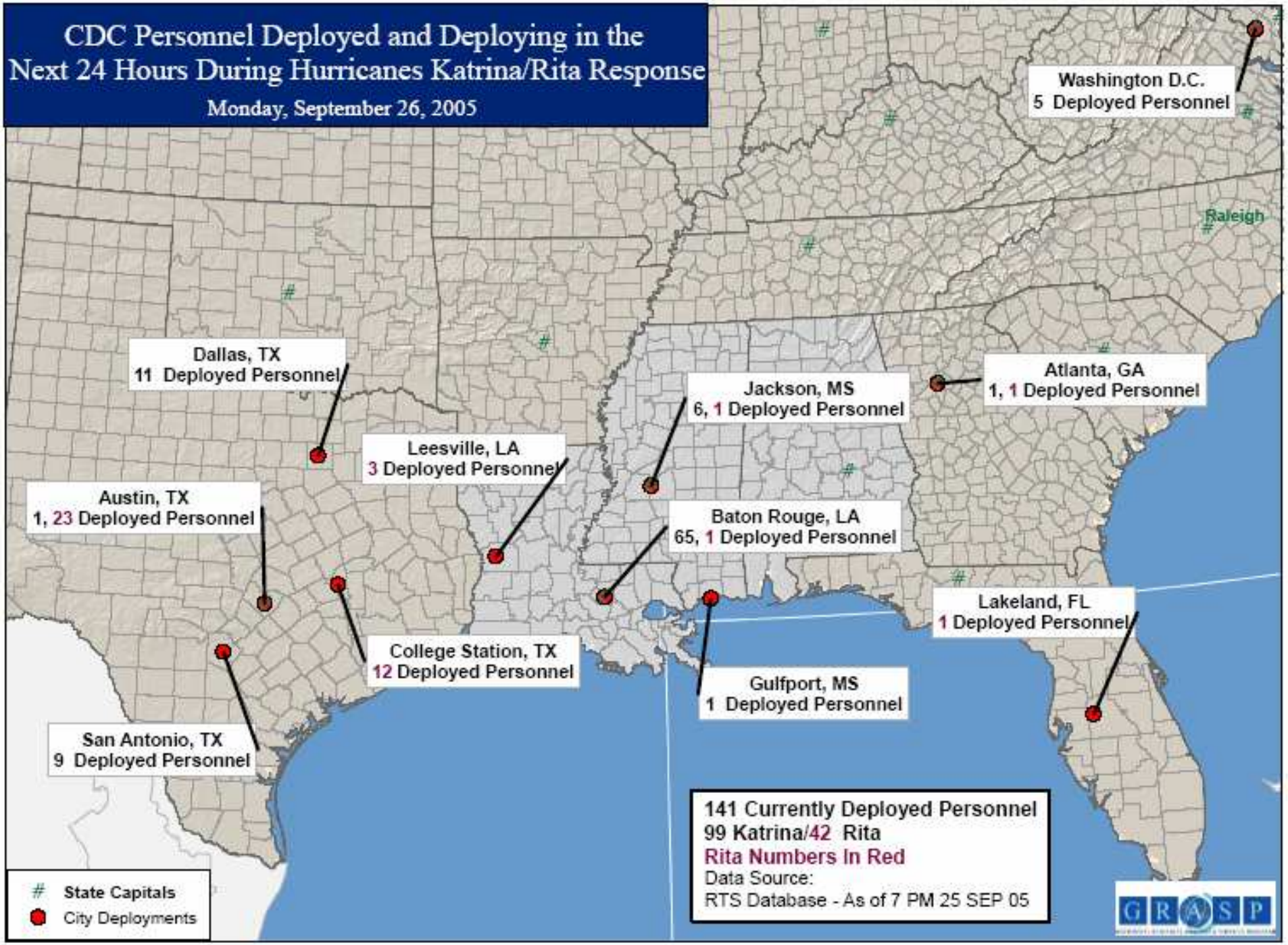


ATSDR SATDS

LMR 04/2003

CDC/ATSDR Katrina/Rita Response

- **Preparedness and Planning**
- **Pre-impact and Impact**
- **Response**
- **Recovery**


CDC Personnel Deployed and Deploying in the Next 24 Hours During Hurricanes Katrina/Rita Response
Monday, September 26, 2005
Washington D.C.
5 Deployed Personnel
Raleigh
Dallas, TX
11 Deployed Personnel
Atlanta, GA
1, 1 Deployed Personnel
Jackson, MS
6, 1 Deployed Personnel
Leesville, LA
3 Deployed Personnel
Austin, TX
1, 23 Deployed Personnel
Baton Rouge, LA
65, 1 Deployed Personnel
Lakeland, FL
1 Deployed Personnel
College Station, TX
12 Deployed Personnel
Gulfport, MS
1 Deployed Personnel
San Antonio, TX
9 Deployed Personnel
141 Currently Deployed Personnel
99 Katrina/42 Rita
Rita Numbers In Red
Data Source:
RTS Database - As of 7 PM 25 SEP 05
State Capitals
City Deployments
GRASP

Response: Issues

- **Infectious Diseases**
  - Outbreaks (Noro, vibrio, TB, scabies, etc)
  - Immunizations
  - Vector control
  - Infection control
- **Environmental Health**
  - food, water, shelter sewage
  - chemicals
- **Occupational Safety and Health**
- **Surveillance**
- **Mental Health/Resiliency**
- **Communications**

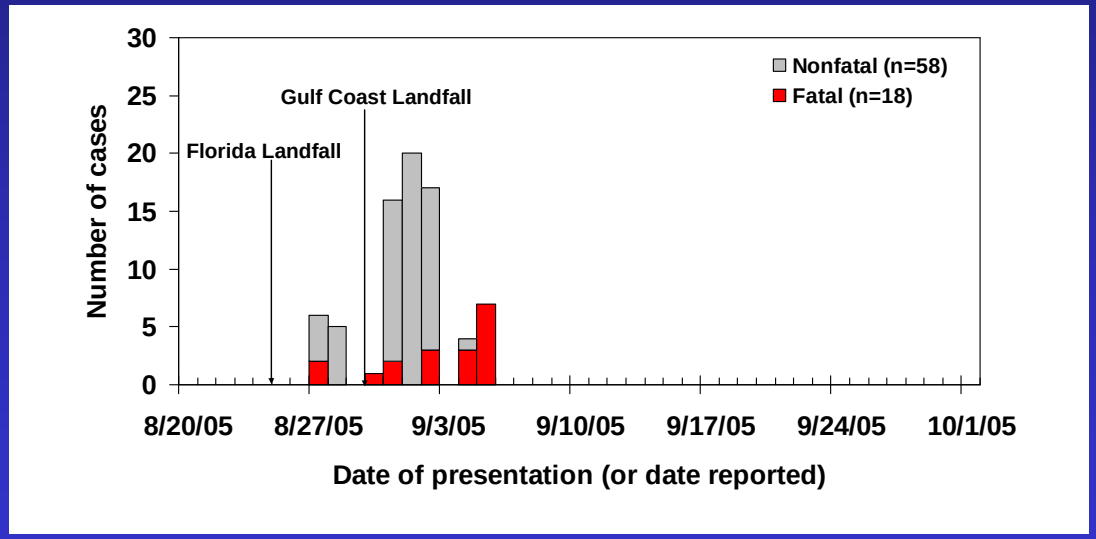


Figure 3. CO poisonings by outcome (FL, AL, LA,MS), media report surveillance (n=76)

Response: Selected Products

Response & Cleanup Workers **Sep 24**
Evacuation Centers **Sep 24**
Evacuees & Affected Persons **Sep 24**
Evacuee Educational Materials **Sep 24**
Volunteers **Sep 15**
Health Professionals **Sep 24**
Schools **Sep 12**
Pet Shelters **Sep 14**
Grantees **Sep 23**

Approximately 150 CDC staff assisting DEOC

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Recovery

- Repopulation of New Orleans
- Rebuilding New Orleans Public Health Department
  - Disease Surveillance
  - Exposure Monitoring
  - Infrastructure
    - Clinics
    - Water, food, sanitation
- Built environment
- Research

Environmental Health Needs & Habitability Assessment Issue Categories

Level 1	Level 2	Level 3	Level 4
• Unwatering • Power • Natural Gas • Vector, Rodent, & Animal Control • Underground storage tanks (e.g., gasoline) • Food Safety	• Drinking Water • Wastewater • Road Conditions	• Solid Waste/Debris • Sediments/Soil Contamination (Toxic Chemicals)	• Housing

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Environmental Health Needs & Habitability Assessment

Joint Taskforce

Centers for Disease Control and Prevention &
U.S. Environmental Protection Agency

Hurricane Katrina Response

Initial Assessment

September 17, 2005