

# Hepatitis A Outbreak Among Injection Drug Users Along the Texas Mexico Border

National Viral Hepatitis Prevention  
Conference

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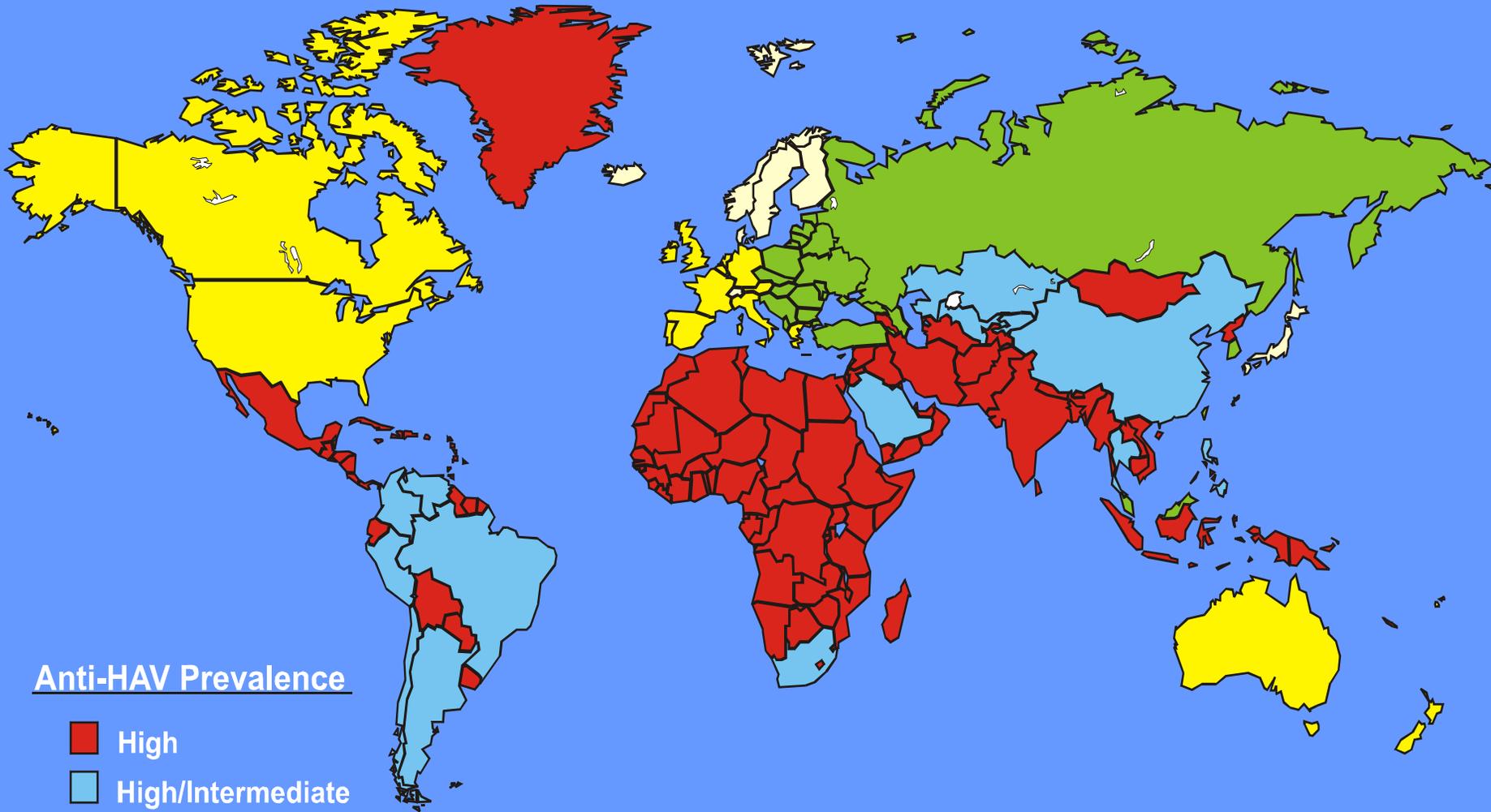
Texas Department of State Health Services



# The Mix

- Drugs
- Sex and sex workers
- Marginalized individuals
- Predominantly males
- Bustling cross border environment
- Hepatitis A virus
- Hepatitis C virus
- (Human Immunodeficiency virus?)
- Public health department

# Hepatitis A is of low endemicity in the United States and high endemicity in Mexico

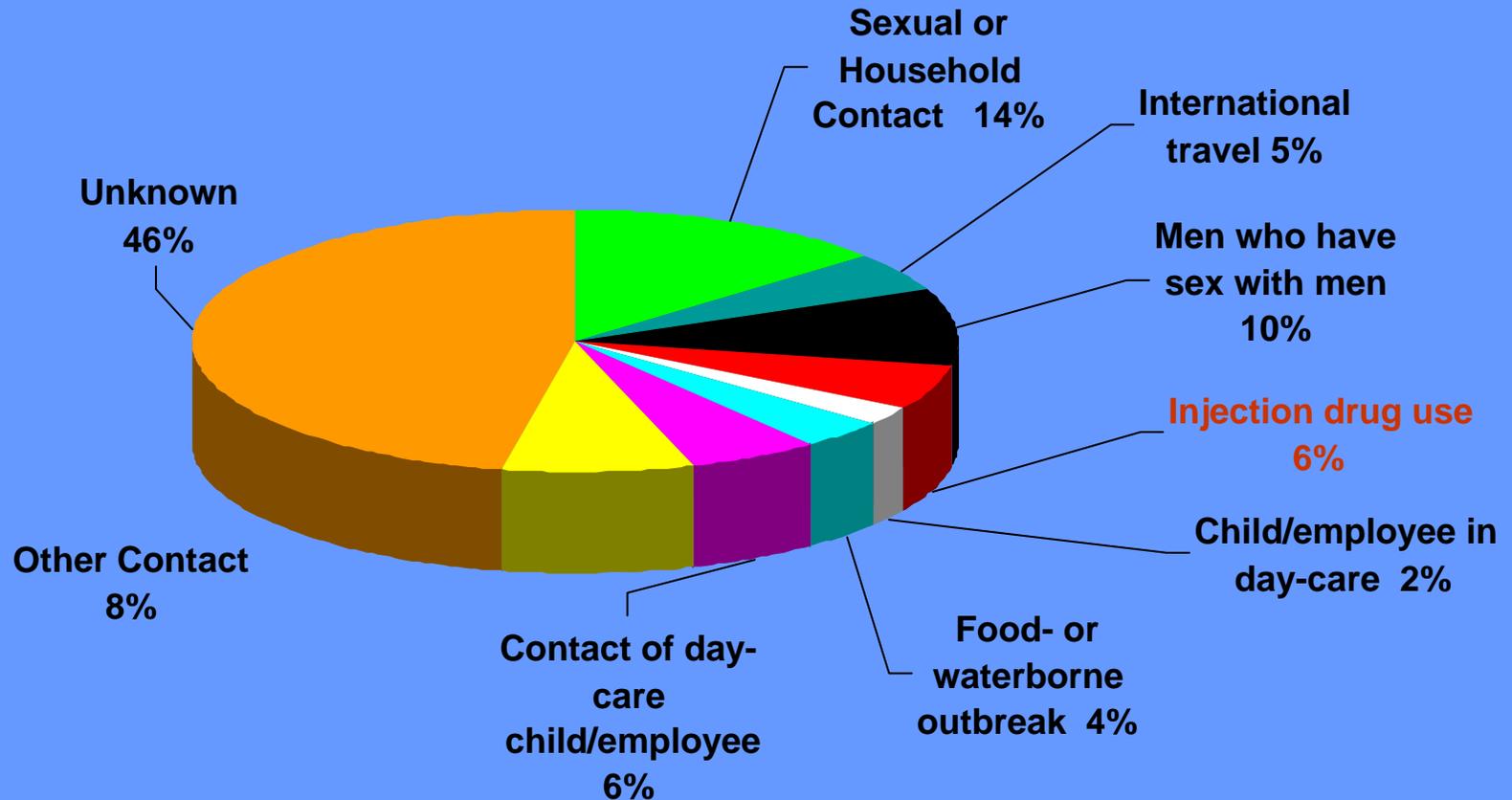


## Anti-HAV Prevalence

- High
- High/Intermediate
- Intermediate
- Low
- Very Low

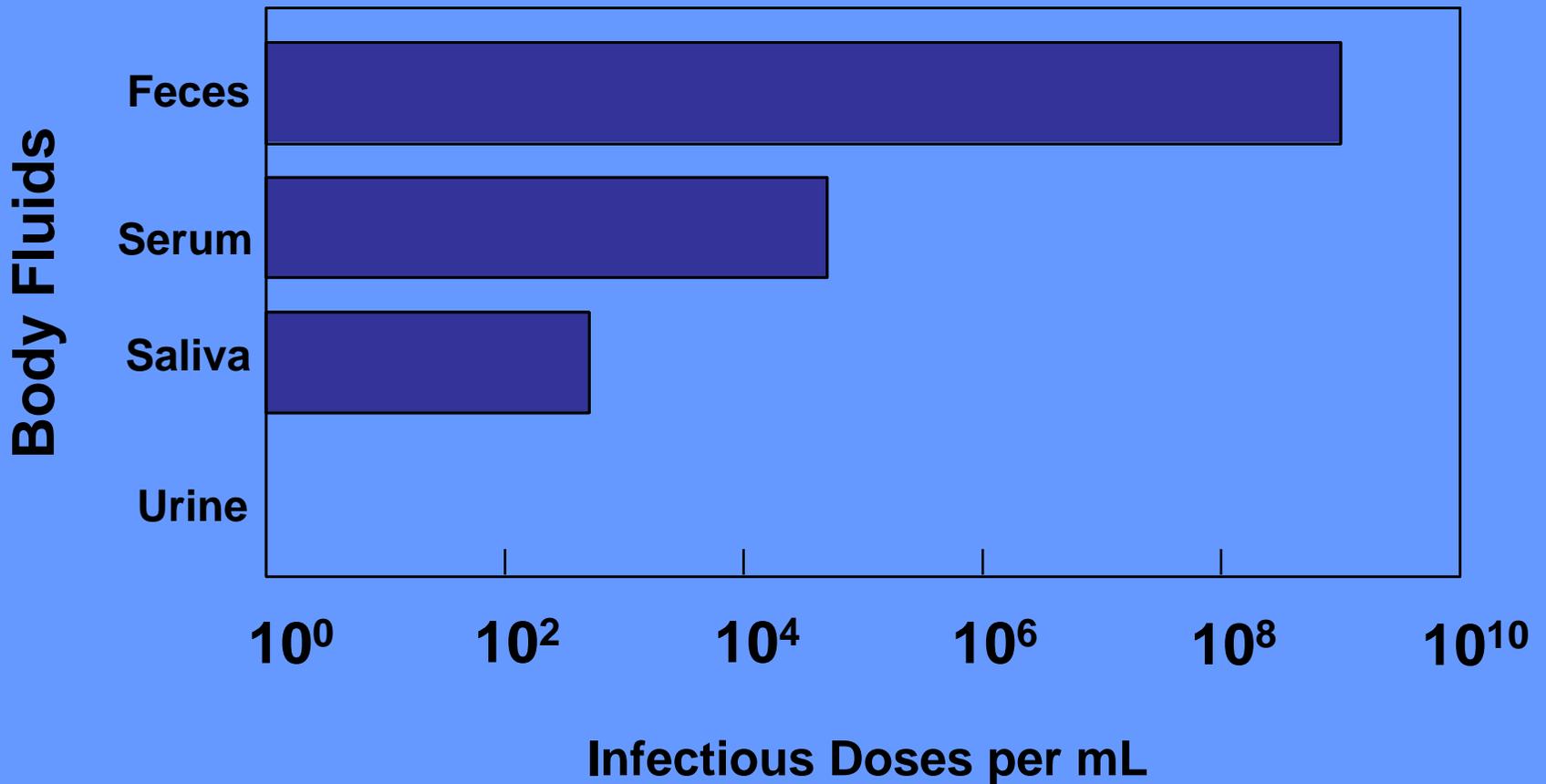
From CDC slide set

# Risk Groups for Hepatitis A



Risk Factors Associated with Reported Hepatitis A, 1990-2000, United States  
From CDC slide set

# Concentration of Hepatitis A Virus in Various Body Fluids



Source: Viral Hepatitis and Liver Disease 1984;9-22  
J Infect Dis 1989;160:887-890

Figure from CDC hepatitis A slide set

# Hepatitis A in Drug Users

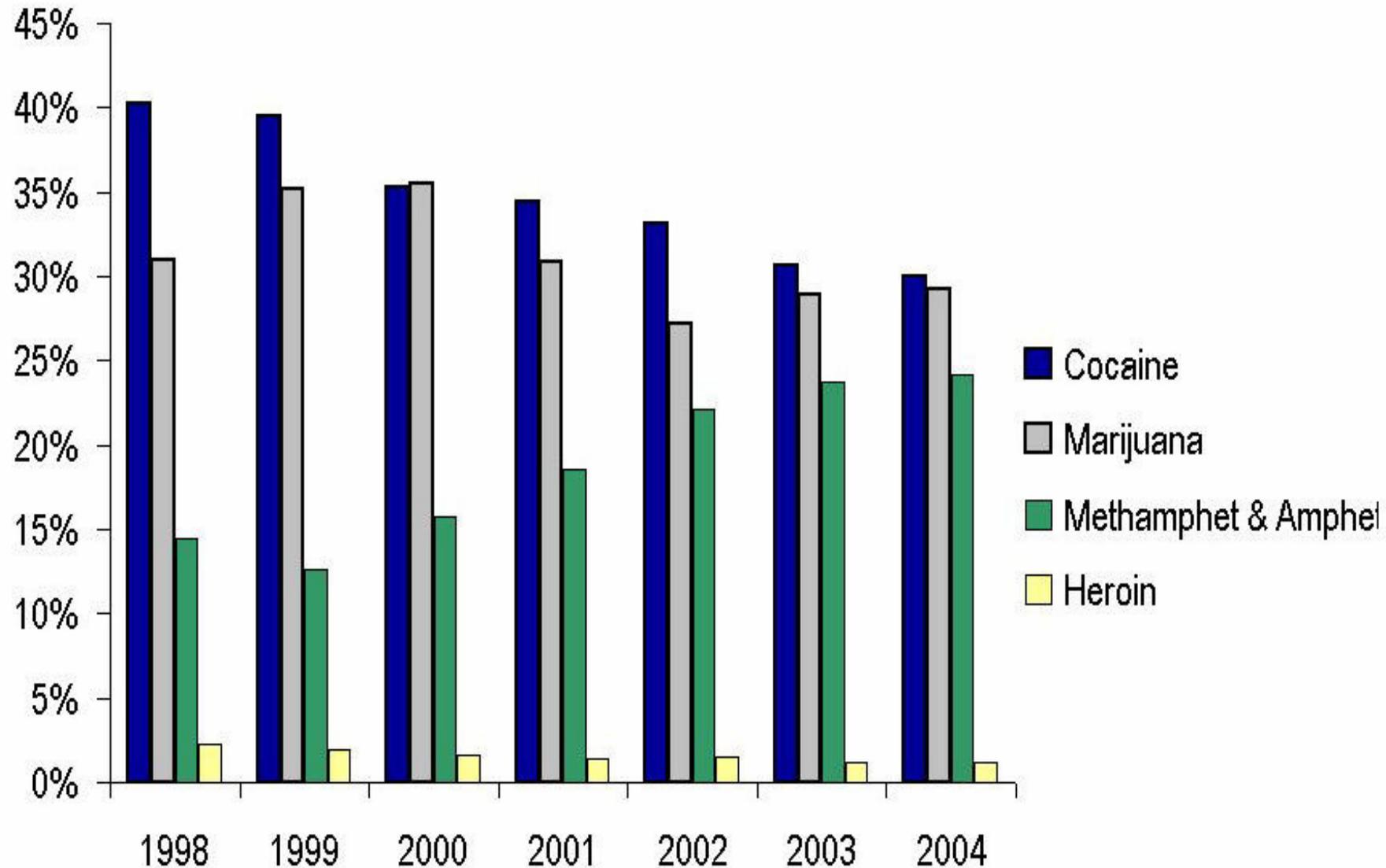
- Hepatitis A outbreaks among drug users have been reported from many places, including Europe, many US states, and Australia (Shaw 1997-98; Delpech et al 2000).
- Drugs associated with outbreaks include IV amphetamines such as methamphetamine, heroin, IV cocaine, and smoked marijuana (CDC 1988; Vong et al 2005).

# HCV – HAV Superinfection

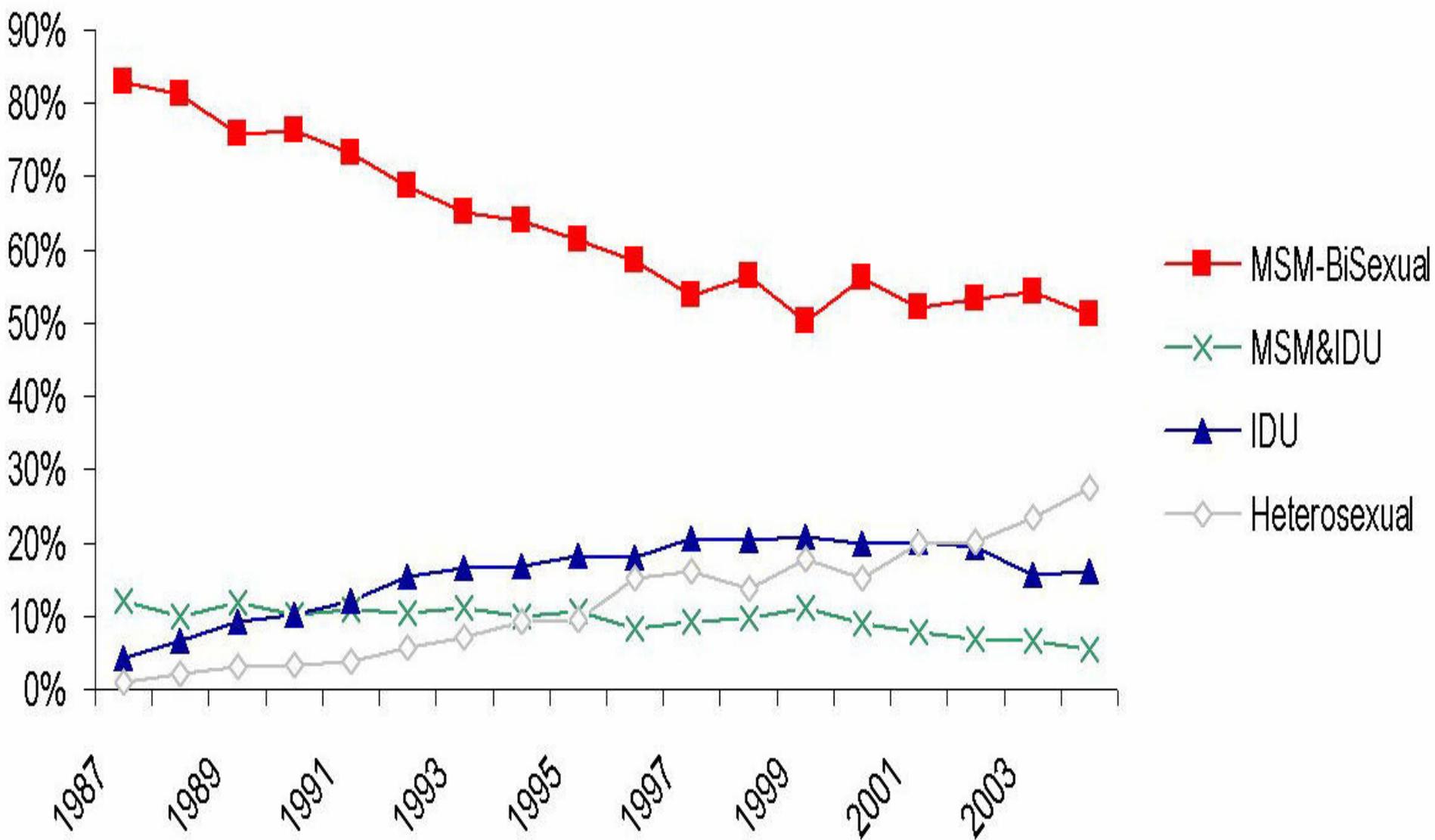
Vento et al, Jan 29, 1998 NEJM

- Prospective study 86 months, 432 patients HCV+
- All were seronegative for HAV at start
- 17 contracted HAV infection
- Fulminating hepatic failure in 7, 6 deaths
- None of the 7 had cirrhosis, 3 had HGV
- Remaining 10 had uncomplicated course
- 35% case fatality with HAV superinfection
- Autoimmune mechanism postulated
- Drop in HCV viral levels during infection

**Exhibit 5. Substances Identified by Texas DPS Labs:  
1998–First Half 2004**



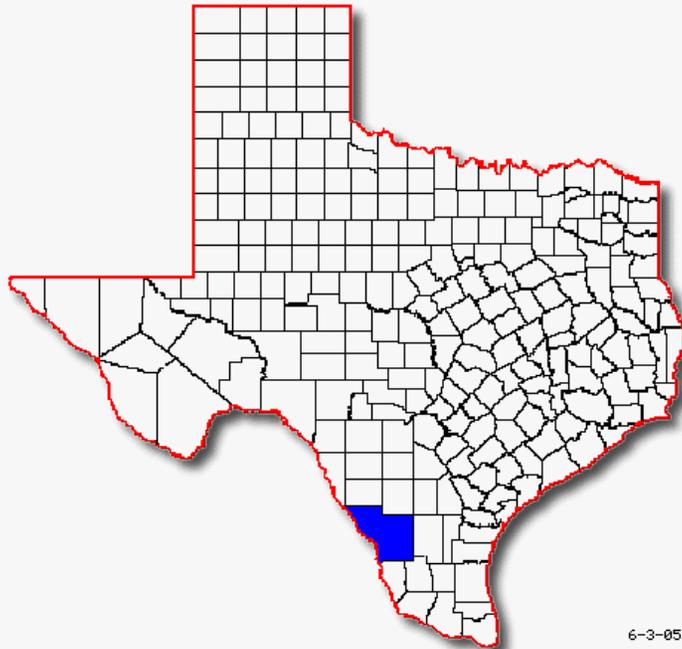
**Exhibit 26. AIDS Cases in Texas by Route of Transmission:  
1987–June 2004 (Cases with Risk Not Reported Excluded)**



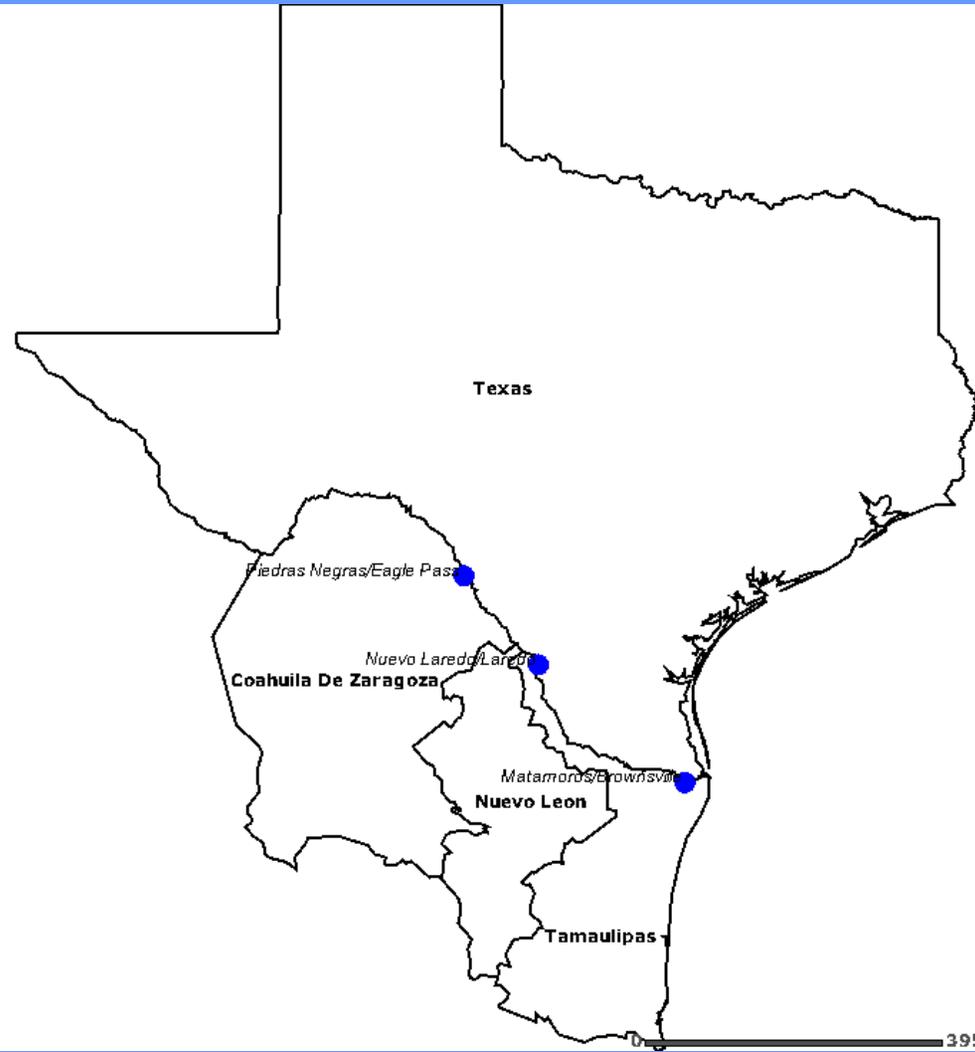
# Webb County, Texas

- In south Texas, bordering the states of Nuevo León and Coahuila, Mexico

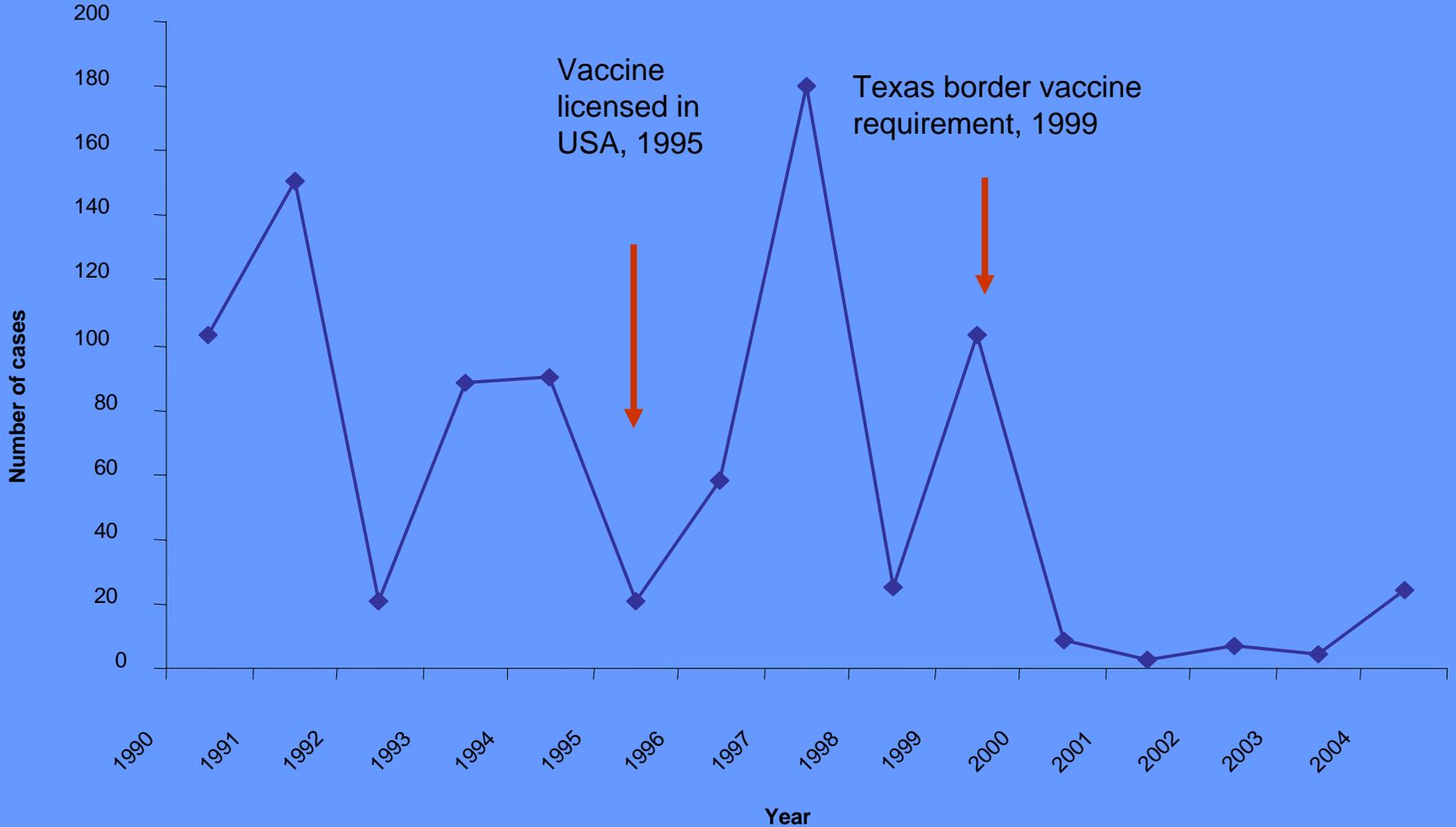
Webb County, Texas



6-3-05

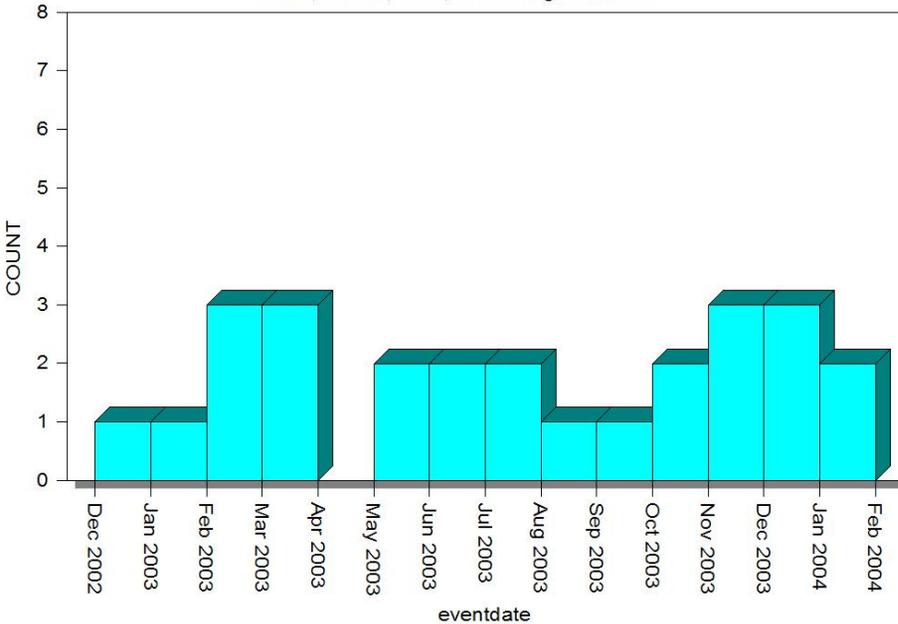


# Hepatitis A in Webb County, Texas



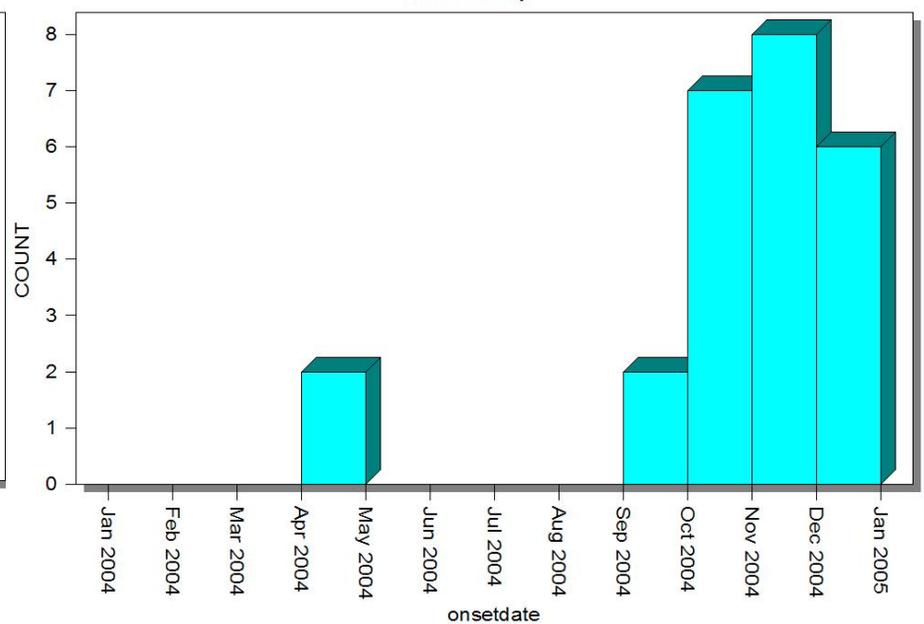
Hepatitis A cases, MMWR year 2003

Webb, Dimmit, Starr, and Hidalgo Counties



Hepatitis A cases, MMWR year 2004

Webb County

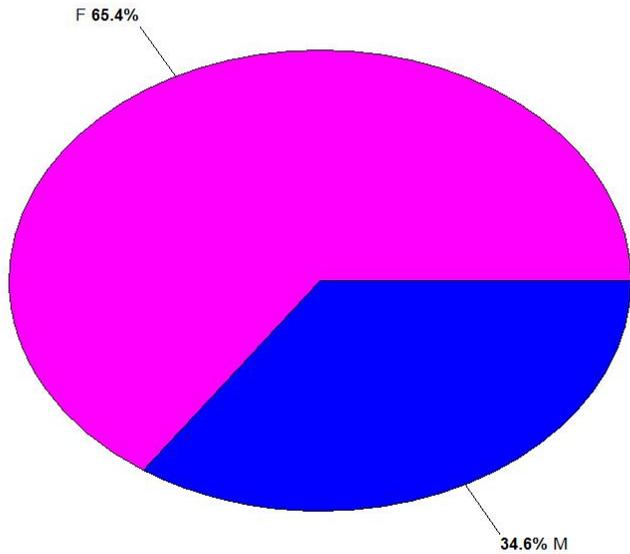


2003- Webb, Dimmit, Starr, and Hidalgo Counties

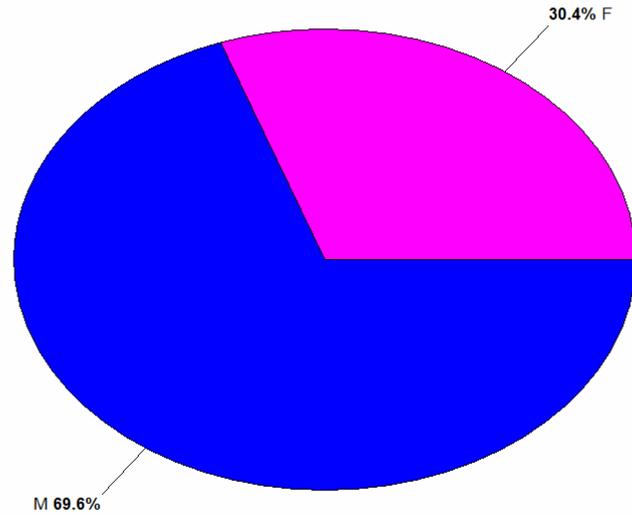
2004- Webb County

In 2003, hepatitis A cases occurred throughout the year. In 2004, most patients with lab-confirmed hepatitis A had an onset of symptoms during the last three months of the year

Sex distribution of hepatitis A cases, MMWR year 2003  
Webb, Dimmit, Starr, and Hidalgo Counties



Sex distribution of hepatitis A cases, MMWR year 2004  
Webb County



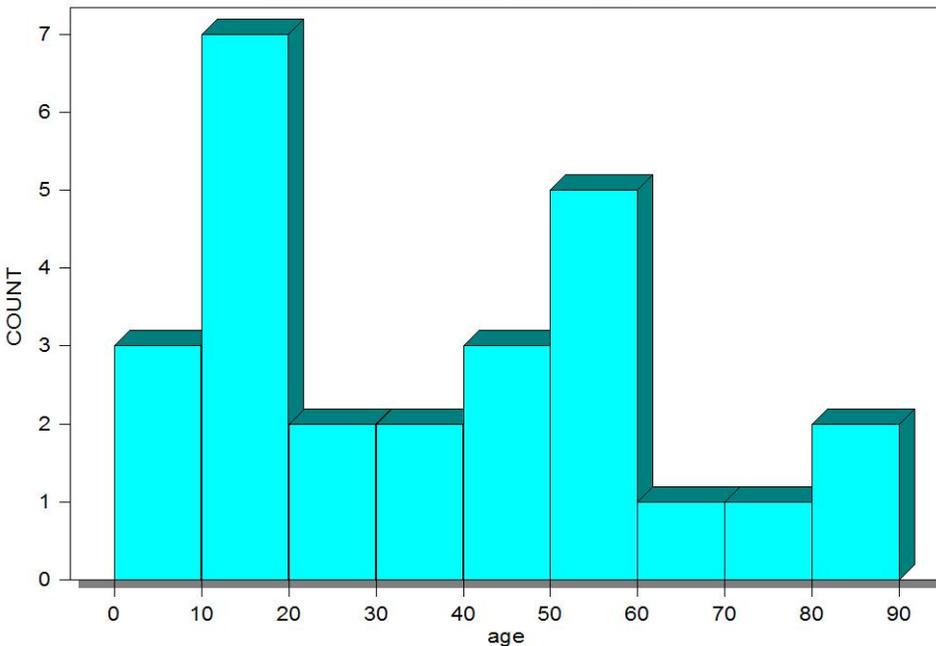
2003- Webb, Dimmit, Starr,  
and Hidalgo Counties

2004- Webb County

In 2004, there was a higher percentage of males among the hepatitis A confirmed cases. This pattern is common during drug-related outbreaks.

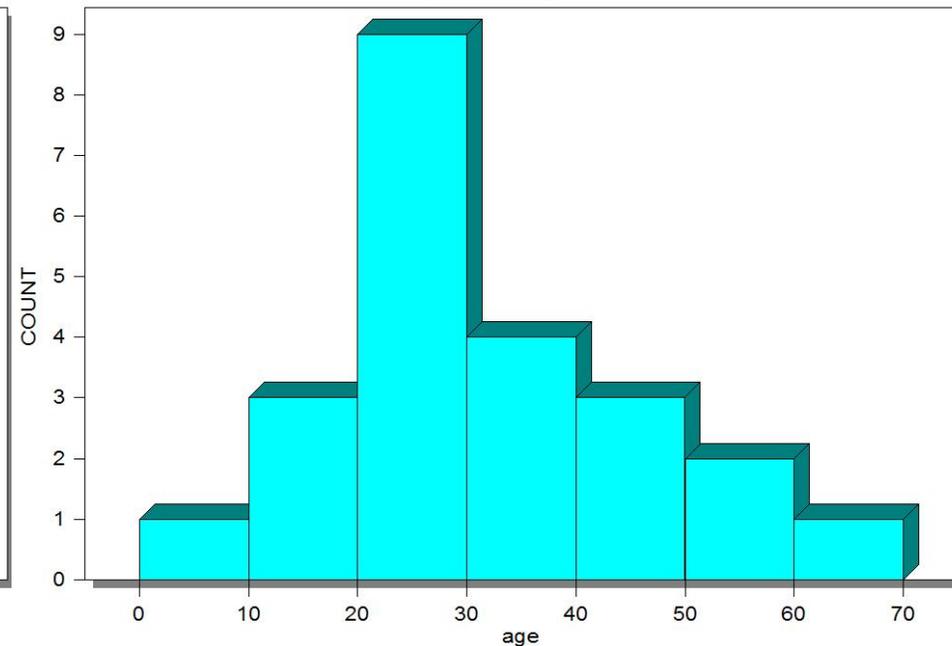
Age distribution of hepatitis A cases, MMWR year 2003

Webb, Dimmit, Starr, and Hidalgo Counties



Age distribution of hepatitis A cases, MMWR year 2004

Webb County



2003- Webb, Dimmit, Starr,  
and Hidalgo Counties

2004- Webb County

In 2004, there was a greater concentration of young adults among the laboratory confirmed hepatitis A cases. This pattern is common during drug-related outbreaks.

# Risk factors associated with outbreak, October 2004 – January 2005, n = 27

Risk Factor	n (%)
Male	21 (78%)
Hepatitis C co-infection	10 (37%)
IV drug use	16 (59%)
Non-IV drug use	6 (22%)
IV and/or non-IV drug use	19 (70%)
Drug use or close contact of user	20 (74%)
Homeless or marginally homeless	4 (15%)
Drug association and/or homeless	21 (78%)

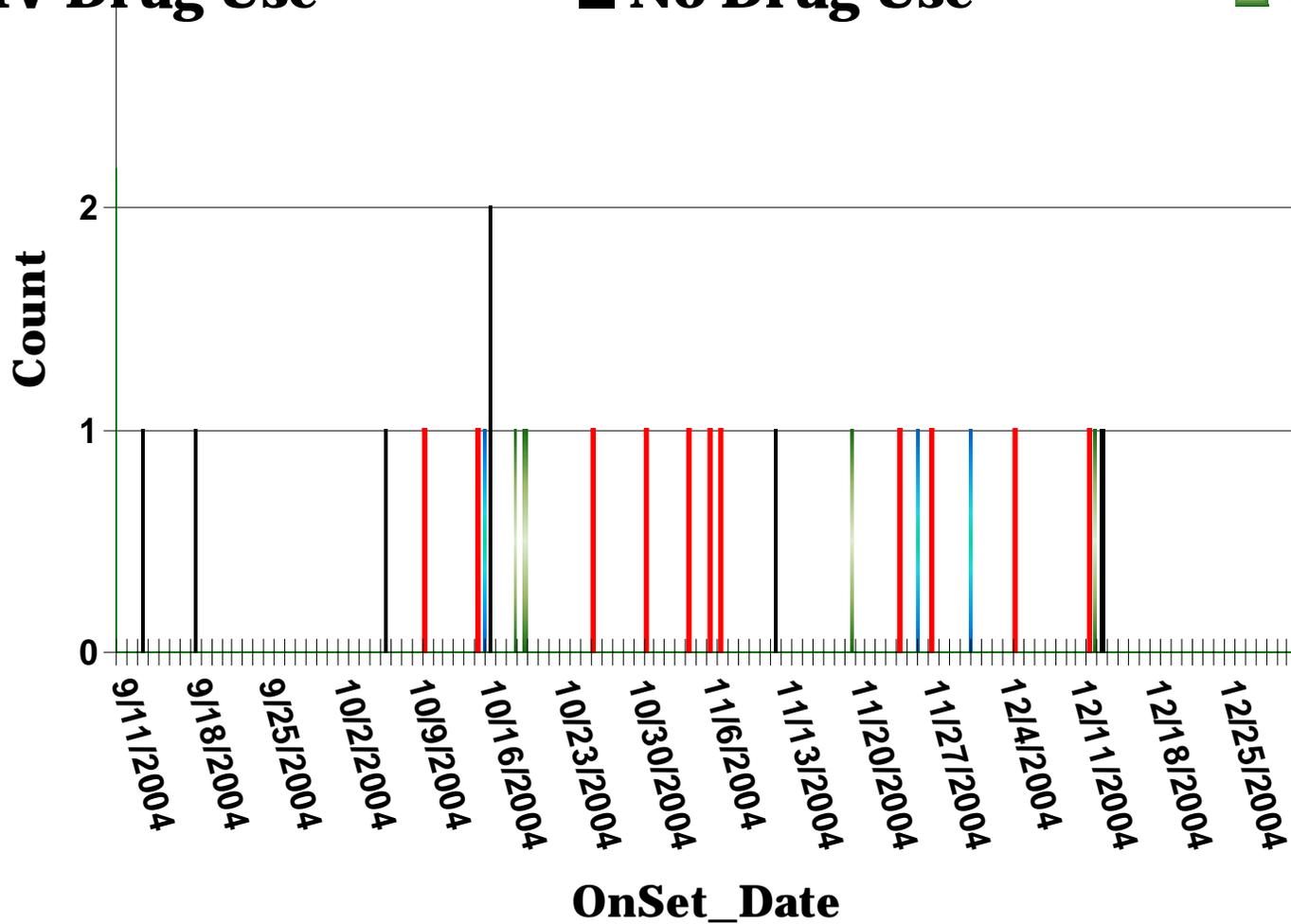
# Profile of the 20 drug-associated cases

- 75% were male
- Median age 28.5 years (range 21-52 years)
- 9 were reported to use cocaine and 5 had a reported connection to heroin. Of these, 2 were reported to use both cocaine and heroin.
- 11 had stayed at or visited a particular hotel, where drugs and sex were shared

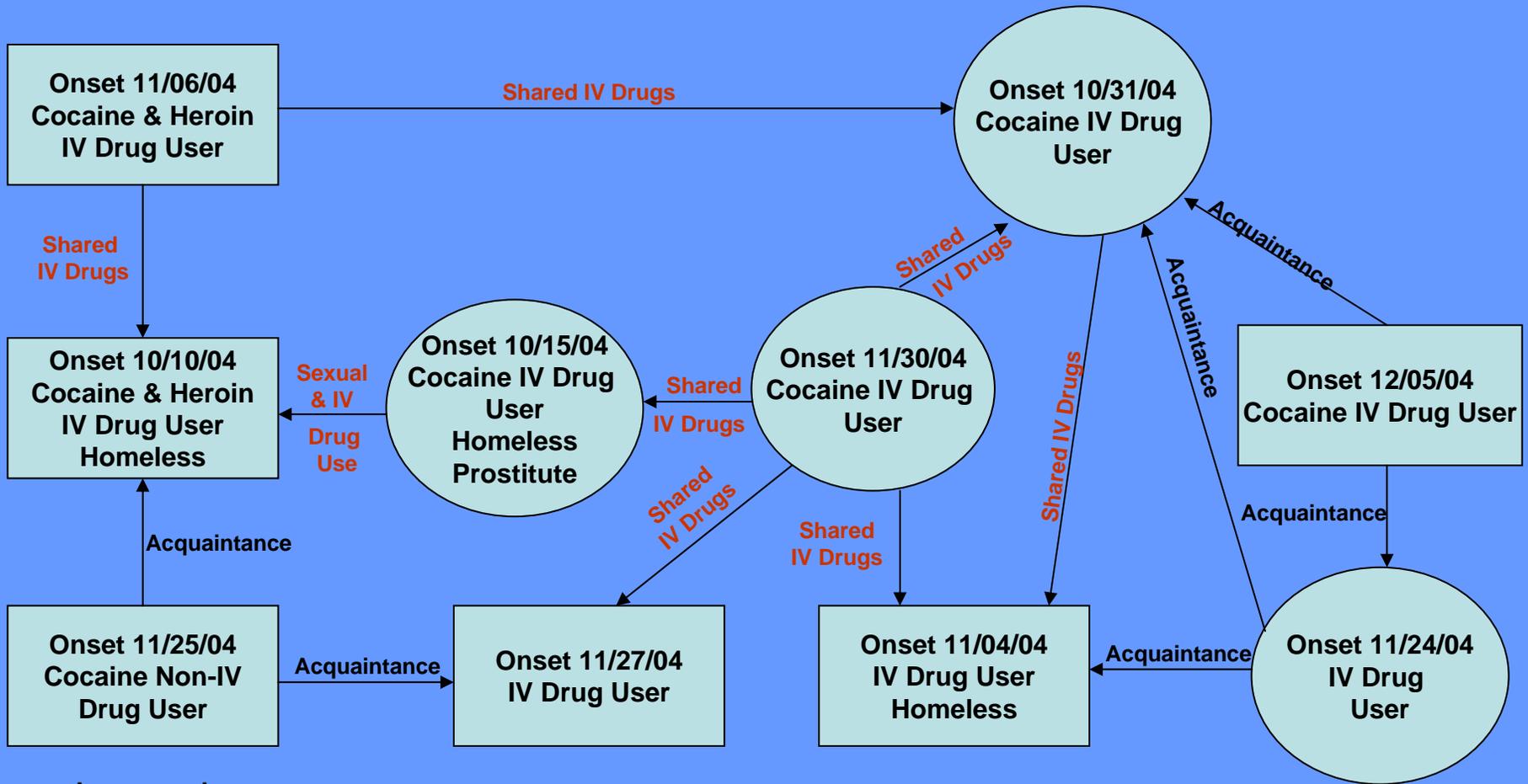


# Drug Use Associated with Hepatitis A Webb County

■ **IV Drug Use**      ■ **No Drug Use**      ■ **Unknown**



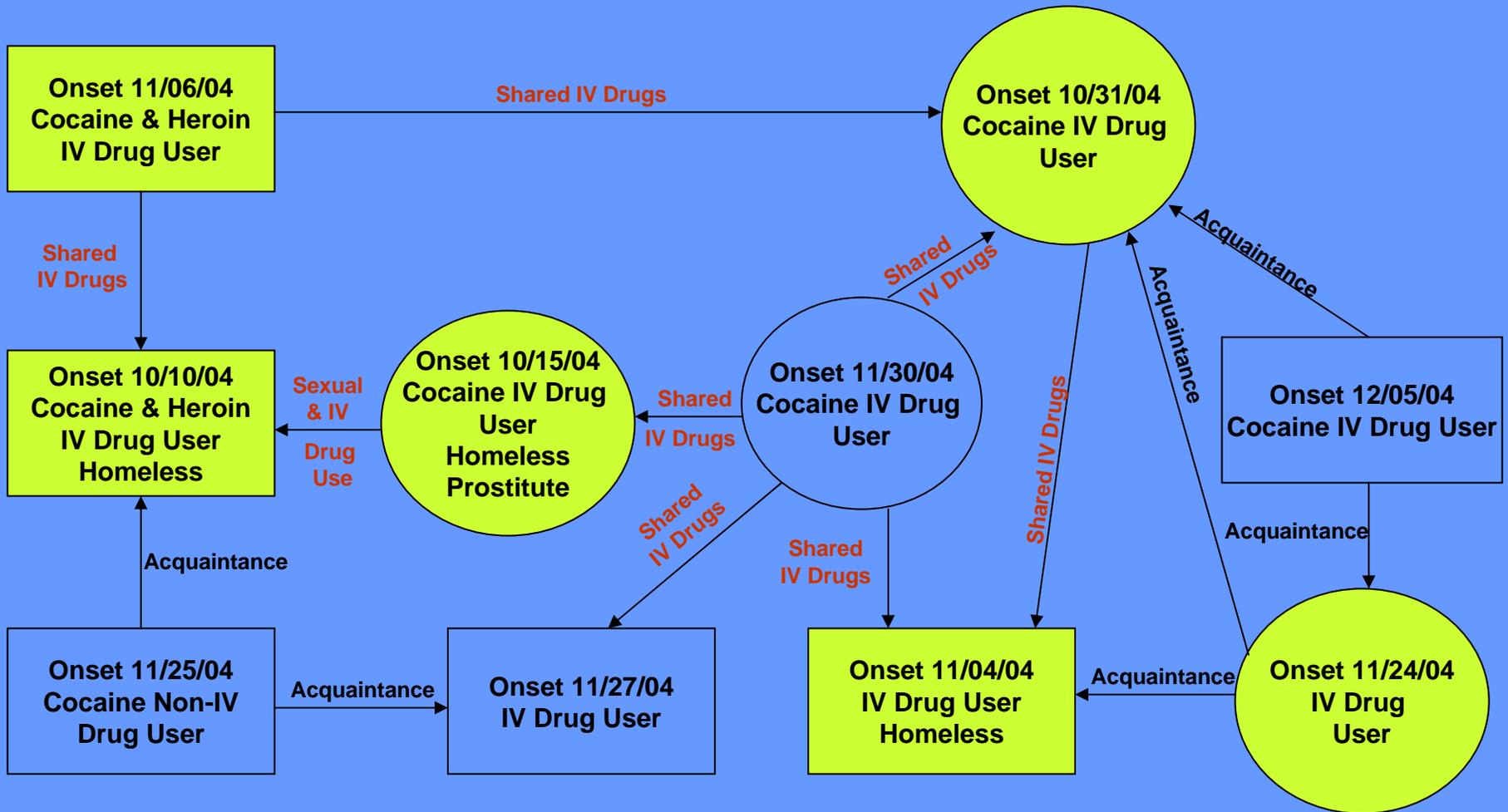
# Drug Associated Cases – Hotel C Link



## Legend

- ◆ Frequented Hotel C
- Females
- Males

# Drug Associated Cases – Hepatitis C Co-infection



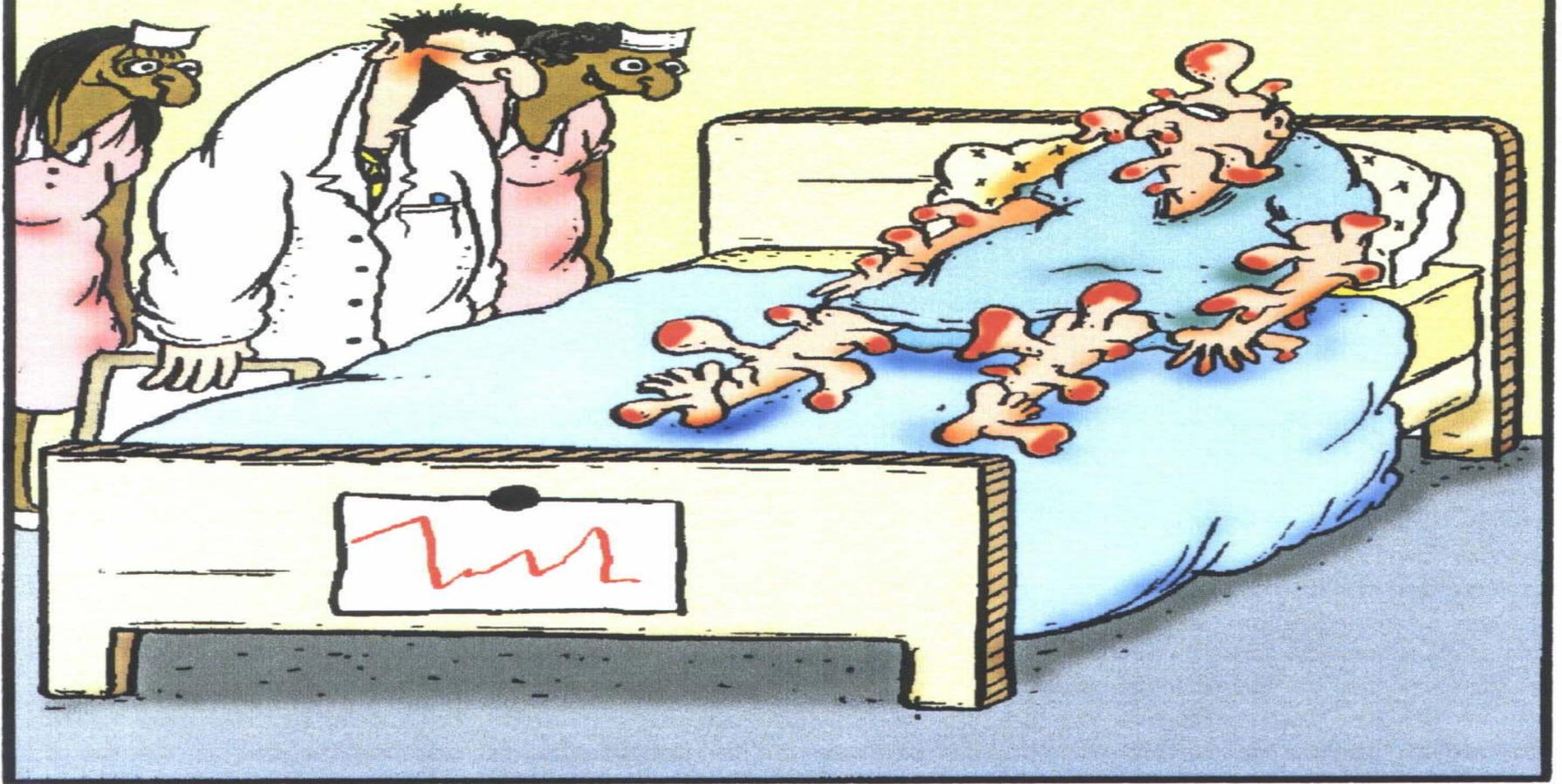
## Legend

- ◆ Hepatitis C
- Females
- Males

# Interventions to contain the cluster

- Case investigations and contact tracing
- Immune globulin to close contacts who were identified in time for the IG to be effective
- Outreach to homeless and IDU populations
  - Information on disease shared
  - Hygiene education provided
  - Immunizations provided to high-risk adults: 14 for hepatitis A and 23 for hepatitis B
- Outreach to medical providers to be on alert for the possibility of hepatitis A in IDU or homeless patients

McPHERSON



**“Congratulations! You’re going to have a disease named after you!”**

# Special Thanks To:

Allison J. Abell, PhD<sup>1</sup>

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Linda K. Gaul, PhD, MPH<sup>3</sup>

Elida Torres<sup>1</sup>

1 Texas Department of State Health Services, Health Services Region 11, Harlingen

2 City of Laredo Health Department

3 Texas Department of State Health Services, Austin

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# Literature cited

Centers for Disease Control and Prevention. 1988. Hepatitis A among drug abusers. *MMWR Morb Mort Wkly Rep* 37(19): 297-300, 305.

Delpech VC, Thackway SV, Young L, Pontivivo G, Smedley E, Morgan K, and Ferson MJ. 2000. Hepatitis A in south-eastern Sydney 1997-1999: continuing concerns for gay men and an outbreak among illicit drug users. *Comm Dis Intell* 24: 203-206.

Drug pictures from <http://www.drugs.indiana.edu/graphics/photographs>

Shaw, Frederic E. 1997-98. Drug-linked HAV outbreaks tax health departments. *Hepatitis Control Report*, Vol 2, No 4. <http://www.hepatitiscontrolreport.com/v2n4.html>

Vong S, Fiore AE, Haight DO, Li J Borgsmiller N, Kuhnert W, Pinero F, Boaz K, Badsgard T, Mancini C, Nainan OV, Wiersma S, Bell BP. 2005. Vaccination in the county jail as a strategy to reach high risk adults during a community-based hepatitis A outbreak among methamphetamine users. *Vaccine* 23: 1021-1028.

# Summary

In Texas, the incidence of hepatitis A declined from about 16 per 100,000 population in the mid-1990s to just under 3 per 100,000 in 2003. The median age of a case in 1995 was 17 years, while in 2003 it was 38 years. Mandatory vaccination for school attendance began in 1999 with 32 counties and expanded to cover 41 counties by 2004. The targeted counties had the highest hepatitis A incidence rates and included the 14 counties along the Texas-Mexico border.

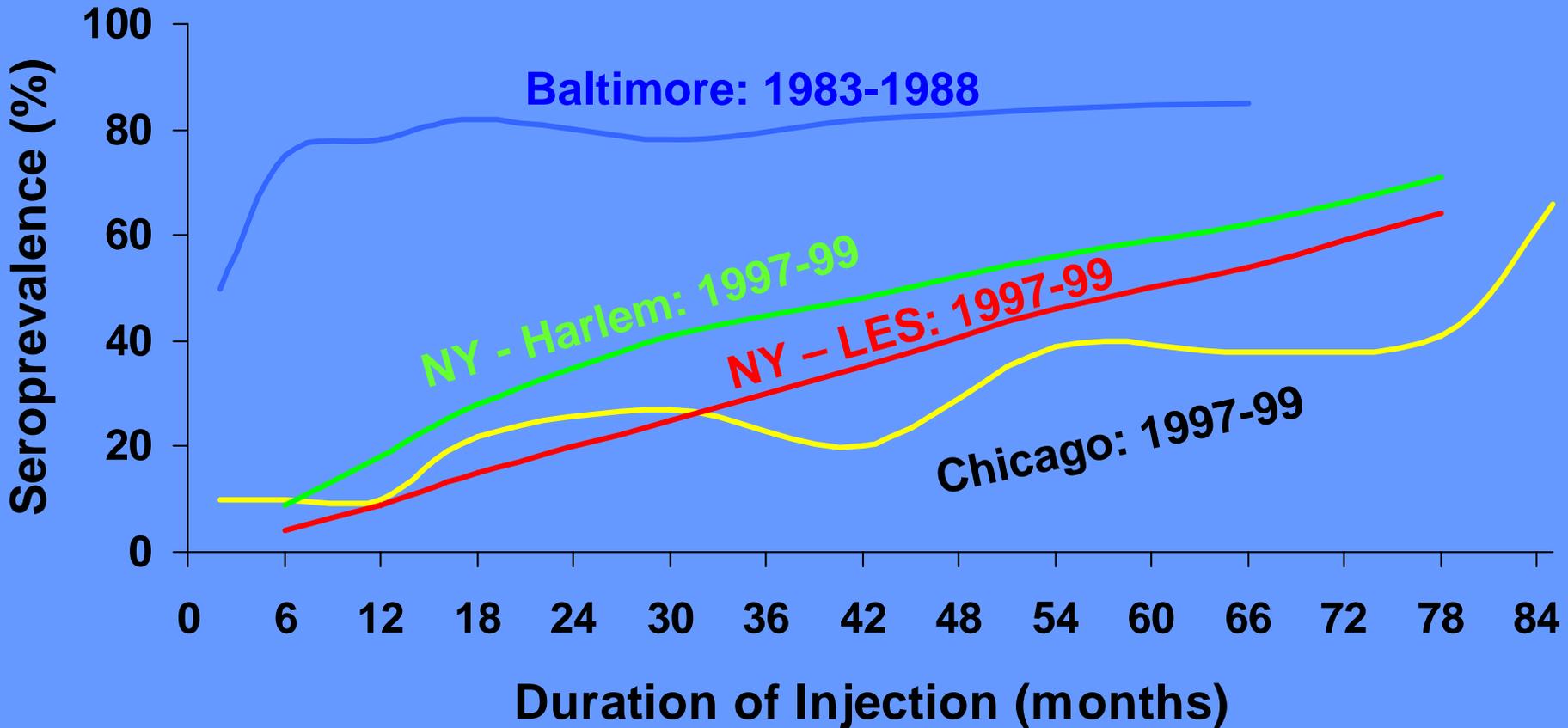
Between mid-October 2004 and mid-January 2005, a cluster of 27 laboratory-confirmed cases of hepatitis A was recorded in Webb County. Investigations revealed that 19 of the 27 cases had a history of injecting and/or noninjecting drug use during the 2-6 weeks preceding symptom onset; an additional case patient had an association with a drug user. Two of the drug-related case patients had a recent history of cross-border travel. Four of the drug-using case patients were homeless and at least 11 frequented a hotel/abandoned building where sex and drugs were shared. The median age of the drug-related cases was 28.5 years and 75% were males. About two-thirds cases were hospitalized. At least nine of the 20 drug-related case patients also had hepatitis C infection. None of the co-infected cases died.

The local health department administered immune globulin to close contacts of case patients as appropriate. Additionally, hepatitis A and B vaccine was administered to members of this cluster with the hepatitis A vaccine being more broadly offered to all identified homeless persons, injection drug users, and prostitutes within the city during this period.

# Injecting Drug Use and HCV Transmission

- Highly efficient
  - Contamination of drug paraphernalia, not just needles and syringes
- Rapidly acquired after initiation
  - Incidence 15% per year
  - Prevalence 30% after 2-3 years; >50% after 5 years
- Four times more common than HIV

# Risk of HCV Infection Among Injection Drug Users



Garfein RS *Am J Public Health* 1996; 86:655. Thorpe LE *JID* 2000;182:1588-94. Diaz T *Am J Public Health* 2001; 91(1): 23-30.

**EXhibit 9. Characteristics Clients****TDSHS-Funded Treatment with a Primary Problem  
with Heroin by Route of Administration: Jan-June 2004**

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	<b>Inject</b>	<b>Inhale</b>	<b>Smoke</b>	<b>All*</b>
<b># Admissions</b>	2,394	255	27	2,702
<b>% of Heroin Admits</b>	89	9	1	100
<b>Lag-1st Use to Tmt-Yrs_</b>	16	8	7	15
<b>Average Age</b>	37	29	28	36
<b>% Male</b>	69	53	48	67
<b>% Black</b>	6	33	7	9
<b>% White</b>	37	18	44	35
<b>% Hispanic</b>	55	47	41	54
<b>% CJ Involved</b>	31	29	15	30
<b>% Employed</b>	11	16	7	12
<b>% Homeless</b>	13	10	7	13

\*Total includes clients with other routes of administration.

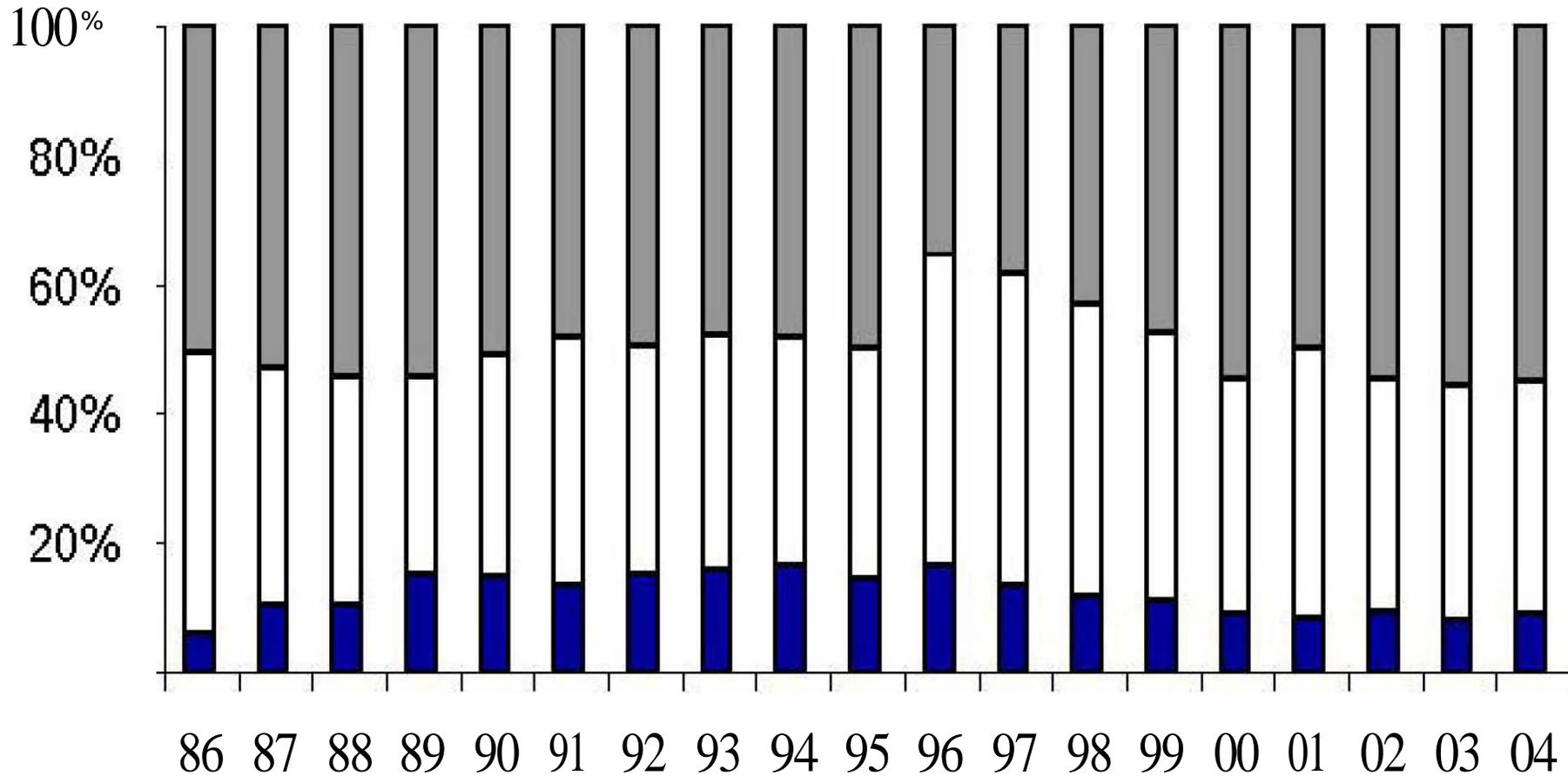
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**Exhibit 17. Characteristics of Clients Admitted to TDSHS-Funded Treatment with a Primary Problem of Amphetamines or Methamphetamines by Route of Administration: First Half 2004**

	Smoke	Inject	Inhale	Oral	<b>All*</b>
# Admissions	911	1,292	299	103	2,607
% of Stimulant Admits	35	50	12	4	100
Lag-1st Use to Tmt-Yrs.	9	13	10	11	11
Average Age-Yrs.	28	31	31	31	30
% Male	44	47	48	48	46
% Black	1	0	1	2	1
% White	86	95	87	84	90
% Hispanic	10	4	9	13	7
% CJ Involved	48	51	48	52	50
% Employed	22	16	25	26	19
% Homeless	7	10	6	11	9

\*Total includes clients with "other" routes of administration

# Exhibit 10. Heroin Admissions to TCADA-Funded Treatment by Race/Ethnicity: 1986-First Half 2004



Source: TDSHS

• Black 0 White 0 Hispanic