



Viral Hepatitis

Introduction: Sandra Graham

Hepatitis A:
Kimberly Kline, April 21, 2016

December 2015 to May 2016
Six Regional Hepatitis Trainings
for 54 Local Health Departments
and Regional Epidemiologists

Objectives

- Introduce hepatitis and why it is important
- Discuss types of viral hepatitis
- Discuss hepatitis epidemiology in West Virginia
- Understand surveillance and case ascertainment
- Identify, report and manage HBsAg positive pregnant women and their infants
- Discuss hepatitis prevention, transmission and treatment
- Detect healthcare associated infections (HAIs) from viral hepatitis

Hepatitis Information Contacts

Bureau for Public Health/Office of Epidemiology and Prevention Services Hepatitis Contact Information www.dhhr.wv.gov/oeps

Hepatitis Surveillance, Case Ascertainment and Data Information

Division of
Infectious Disease Epidemiology (DIDE)
Phone: (304) 558-5358 or
Toll Free: 1-800-423-1271
24 hours/day

Hepatitis A
Vacant

Hepatitis B Epidemiologist
Ashley Simmons, MS

Hepatitis C Epidemiologist
Leena Anil, PhD

Hepatitis C Registrar
Clarissa Smallridge, BA

Hepatitis Prevention, Referrals and Resource Information

Division of
STD, HIV and Hepatitis (DSHH)
Phone: (304) 558-2195 or
Toll Free: 1-800-642-8244
Monday—Friday 8:00 am—4:00 pm

Viral Hepatitis Prevention Coordinator
Sandy Graham, RN, BSN

Perinatal Hepatitis B and Case Management Information

Division of
Immunization Services (DIS)
Phone: (304) 558-2188 or
Toll Free: 1-800-642-3634
Monday—Friday 8:00 am—4:00 pm

Perinatal Hepatitis B Prevention Coordinator
Deborah Snaman, RN, BSN

Liver - Largest Solid Organ

The Liver:

- Performs more than 500 chemical functions
- Stores iron, vitamins, and minerals
- Converts food to energy
- Makes clotting factor and filters blood
- Refines and detoxifies: removes drugs, alcohol, and other harmful substances from blood
- Can regenerate, but exposure to toxins will cause serious damage



Viral Hepatitis – “Silent Epidemic”

70% to 75% of individuals with chronic hepatitis are unaware of their infection

Chronic viral hepatitis is a serious public health problem in the U.S. and poorly understood by:

- healthcare providers
- general public
- policy makers



Two Types of Hepatitis

“Viral and Non-Viral”

Hepatitis is Any Inflammation of the Liver

Viral

- 6 forms have been recognized
- A, B, C, most common viral hepatitis in U.S.
- D, E, G
- reservoir is humans

Non-Viral

- autoimmune
- fungal
- metabolic
- nonalcoholic fatty liver disease
- nonalcoholic steatohepatitis (NASH)
- toxins (drugs, alcohol, certain mushrooms)
- vascular
- other causes such as: bacteria, injury

The Ones We Don't Talk About Much

Hepatitis D	Hepatitis E	Hepatitis G
BBP Transmission	Fecal-oral Transmission	BBP Transmission
Similar to HBV	Similar to HAV	Similar to HCV
Relies on HBV to replicate		Relies on HCV to replicate
HBV vaccine protects against D	No vaccine	No vaccine
Rare in U.S.	Common in many parts of the world, rare in U.S.	Rare in U.S.

Hepatitis A

Hepatitis A - Clinical Symptoms

- Acute infection of liver
- Acute GI illness
 - Fever
 - Malaise
 - Nausea
 - Vomiting
 - Anorexia
 - Abdominal discomfort
(right upper quadrant)
 - Jaundice
 - Dark urine
- Recovery is the norm
- No treatment
- Incubation period 15-50 days (avg.-28 days)

- Virus replicates in the liver
- Virus is present in blood and feces after 10-12 days
 - Several orders of magnitude less in blood
- Viral shedding decreases once symptoms begin
 - Significantly decreases by 7-10 days after symptom onset
 - Most no longer shed at all by third week of illness
 - Children may shed longer than adults

- Humans are the only reservoir
- Infectious period begins 14 days before onset of symptoms and for 7 days after onset of symptoms
- Fecal-oral route
- Foodborne/waterborne
- Virus is spread in areas with poor sanitary conditions or where good personal hygiene is not observed
- Blood exposure (rare)

- Travelers to countries where Hepatitis A is common and where there is little clean water or proper sewage disposal
- Men who have sex with men
- Contacts of recent international adoptees from Hepatitis A endemic countries
- Users of illegal drugs

Hepatitis A – Risk Factors (Continued)

	United States* 2013	West Virginia 2011-2014
Total number of cases	1,791	31
Cases with missing risk factor data	718 (40%)	1 (3%)
Cases reporting no risk factor	803 (45%)	23 (74%)
Cases with risk factor	260 (15%)	7 (23%)

*Centers for Disease Control and Prevention Surveillance for Viral Hepatitis – United States, 2013.
www.cdc.gov/hepatitis/statistics/2013surveillance

Hepatitis A – Risk Factors (Continued)

Risk Factor	United States* 2013	West Virginia 2011-2014
	(n=260)	(n=30)
International travel	18%	10%
Daycare employee/attendee	12%	0%
Contact of daycare employee/attendee	18%	0%
Household/sexual contact of infected person	16%	3%
Injection drug use	10%	3%

*Centers for Disease Control and Prevention Surveillance for Viral Hepatitis – United States, 2013.
www.cdc.gov/hepatitis/statistics/2013surveillance

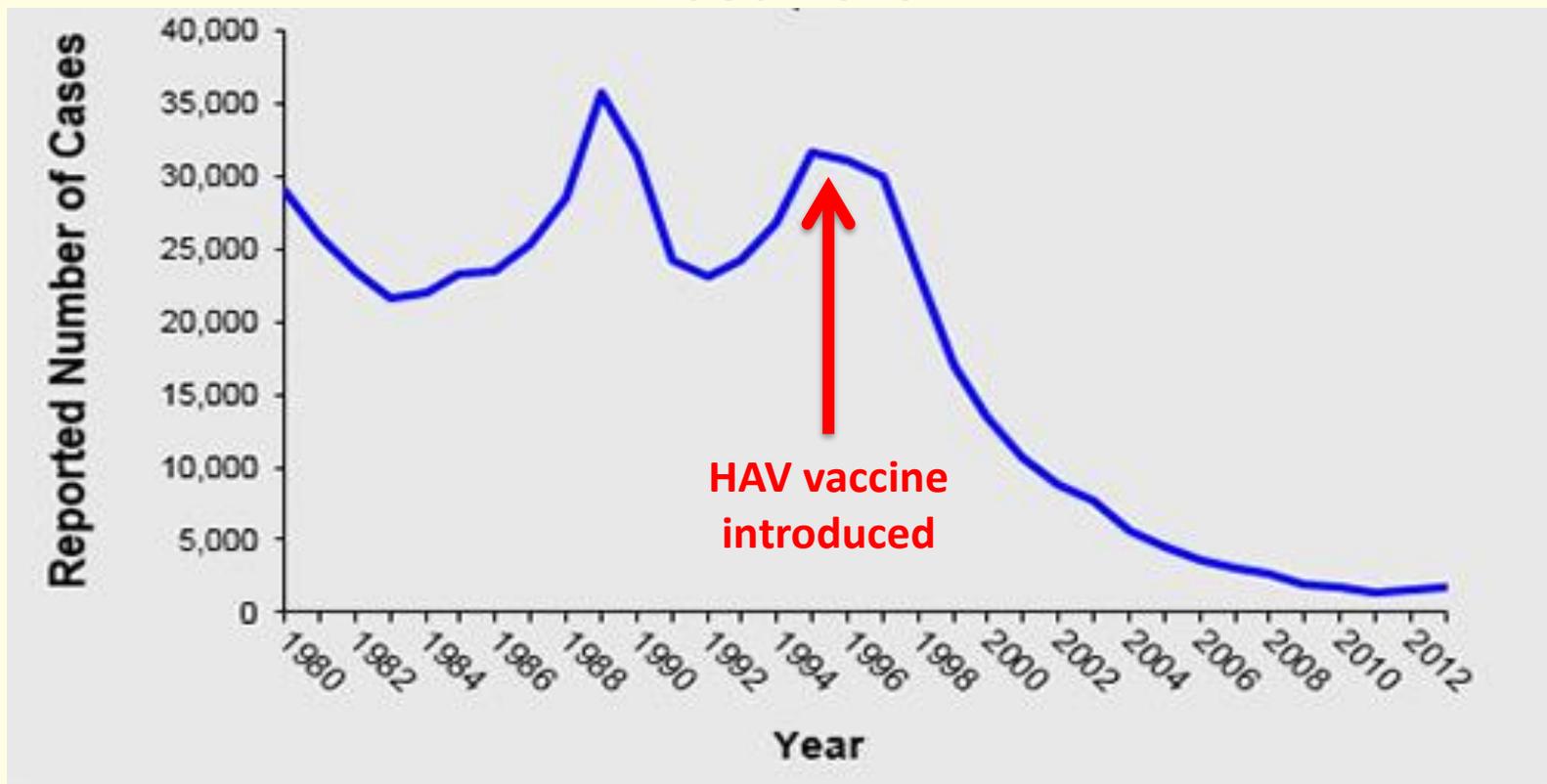
WASH YOUR HANDS!

- After using the bathroom
- After cleaning the toilet
- After changing diapers
- After handling soiled towels or linens
- Before fixing food or eating

Receive vaccination before traveling to endemic areas

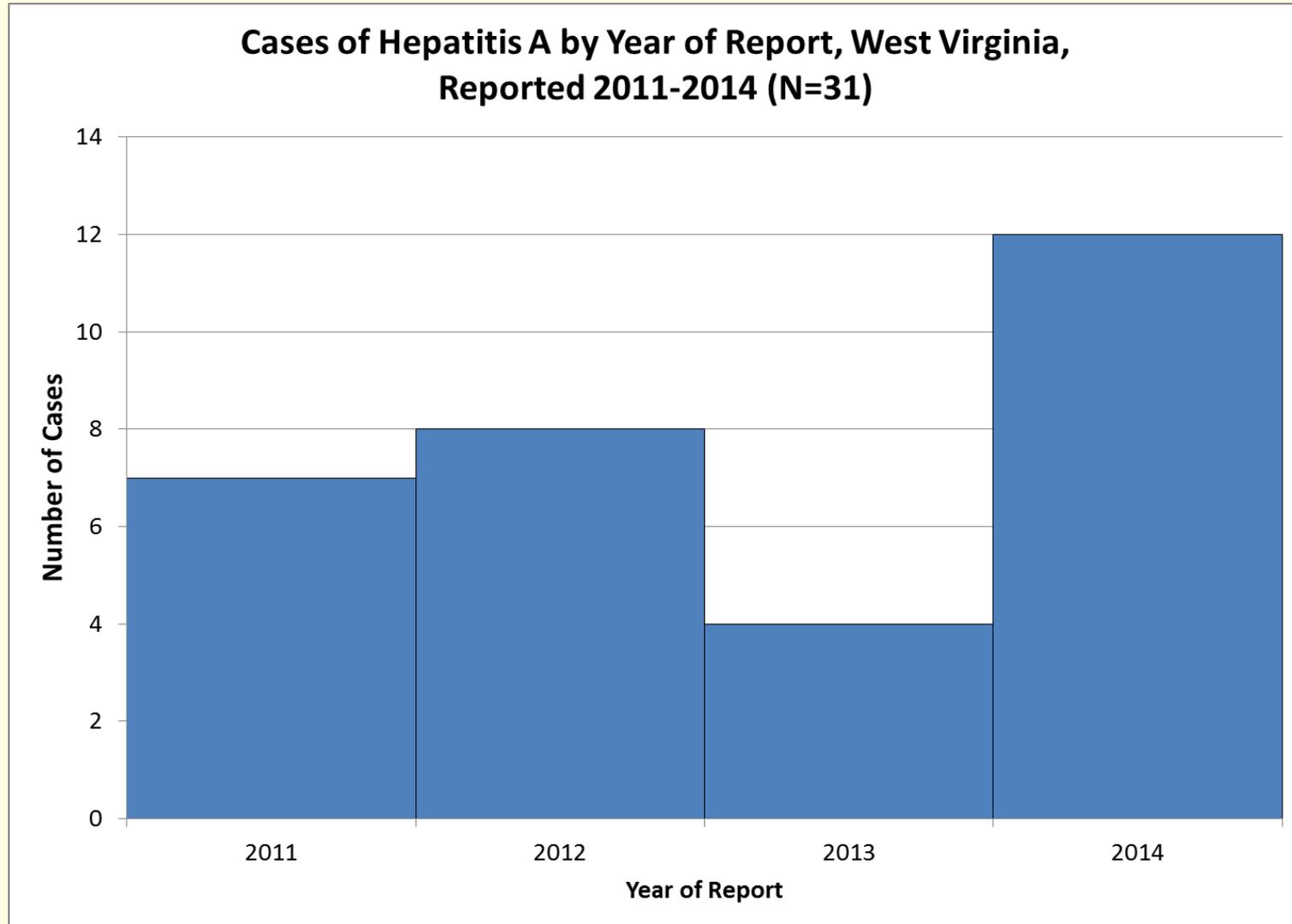
If exposed to Hepatitis A, ask your doctor about post exposure prophylaxis (PEP)

Incidence of Hepatitis A, by Year United States, 1980-2013

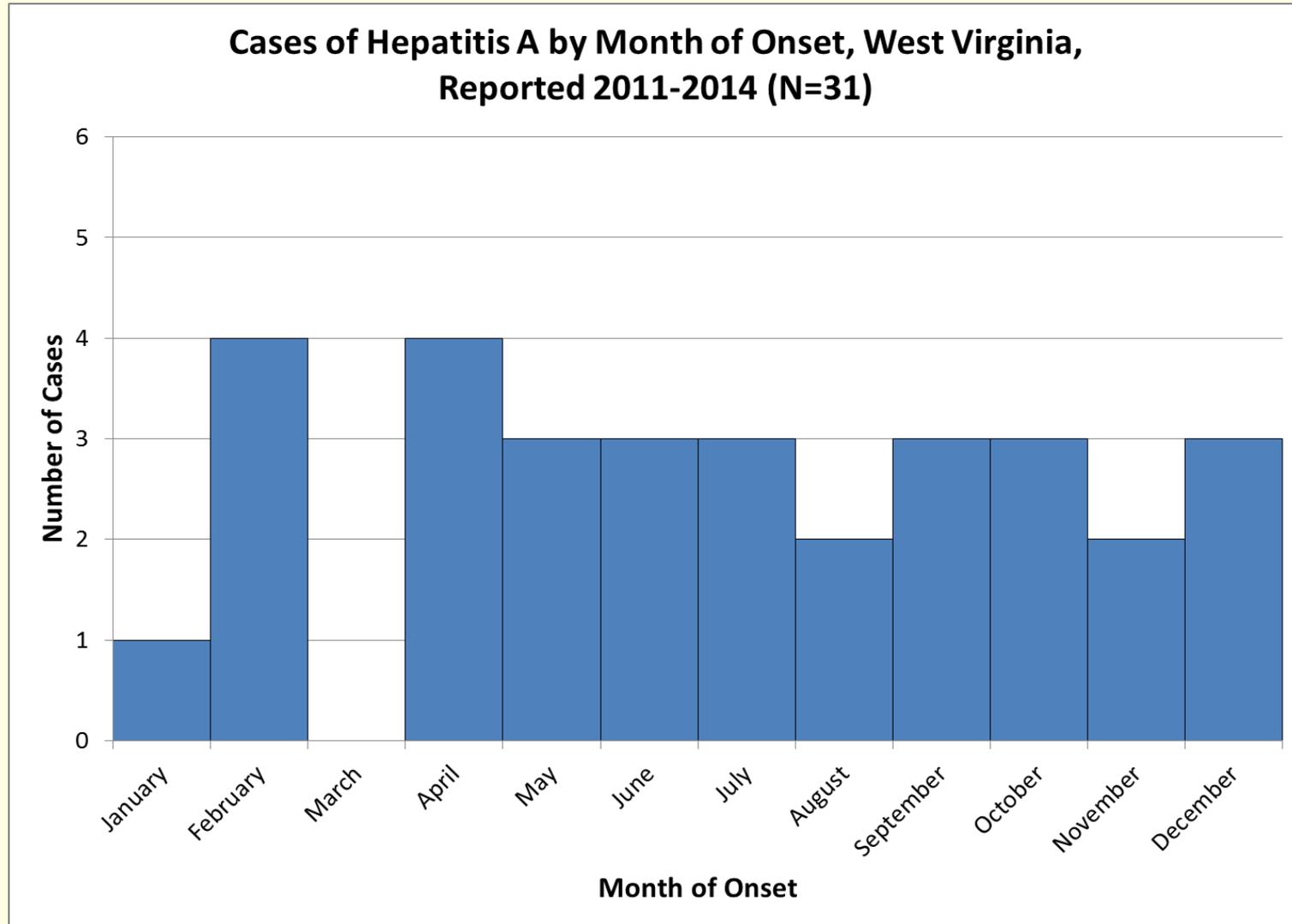


2013 US rate 0.6 per 100,000
WV rate 0.2 per 100,000

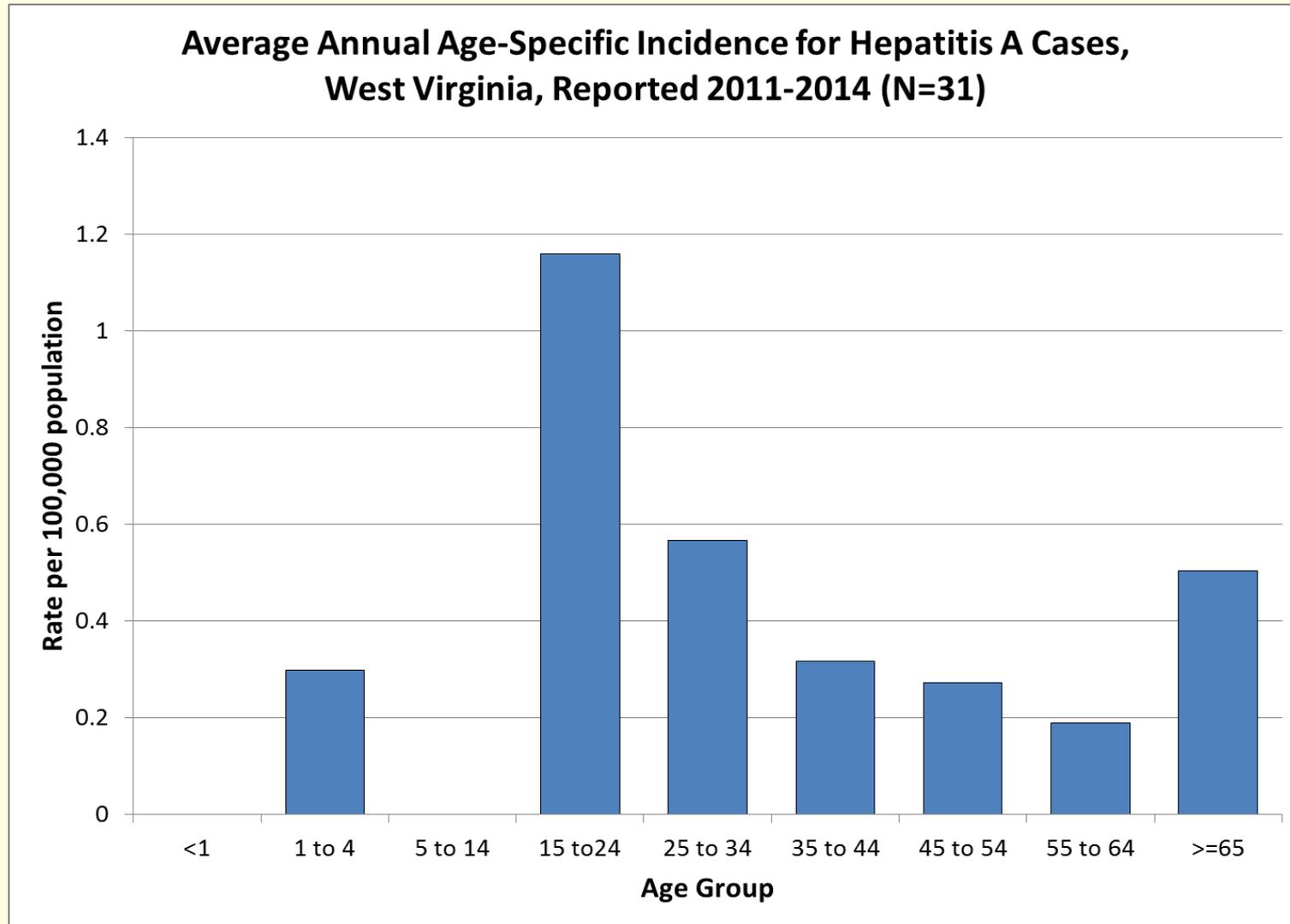
Hepatitis A – Surveillance (Continued)



Hepatitis A – Surveillance (Continued)



Hepatitis A – Surveillance (Continued)



Hepatitis A – Laboratory Testing

Total Antibody HAV	IgM Antibody HAV
Marker of exposure -combination of IgG and IgM	Marker for acute infection
Positive indicates: -vaccination -previous infection -possible acute infection	Test indicated if patient has symptoms of acute hepatitis
IgM is a subset of the test	High false positivity rate
Some labs reflex positive results to IgM	Positive results must be evaluated in context with clinical picture

WV Communicable Disease Rule (64CSR7)

All cases of Hepatitis A and all IgM + Anti-HAV lab results are reportable to the local health department of the patient's county of residence within **24 hours**.

Clinical Description

An acute illness with:

- Discrete onset of symptoms AND
- Jaundice or elevated serum aminotransferase levels

Lab Criteria

IgM antibody to Hepatitis A (anti-HAV) positive

Case Classification

Confirmed:

- Case that meets the clinical case definition and is laboratory confirmed OR
- Case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory confirmed Hepatitis A (i.e., household or sexual contact with the infected person in the 15 to 50 days before onset of symptoms)

There are no “Suspect” or “Probable” classifications for Hepatitis A

Step by Step

1. Make sure the lab report is a (+) Anti-HAV-IgM
2. Call the ordering provider and ask reason for testing
 - *Not symptomatic – they are not a case – you are done!*
3. If case has acute illness with discrete onset of symptoms, ask about jaundice *or* elevated liver enzymes

4. Interview case using West Virginia Electronic Disease Surveillance System (WVEDSS) form
5. Find out if case is a food handler
6. Collect information on household and other contacts
7. Begin contact tracing and follow-up

Disease control is your FIRST priority!

Hepatitis A – Disease Control

Infectious Period:

For onset date: jaundice (1st choice) symptoms (if no jaundice)

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25 onset	26	27	28	29	30	31
1	2	3	4	5	6	7

Hepatitis A – Disease Control (Continued)

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1	2	3	4	5	6	7

For household and sexual contacts:

- Educate on
 - signs and symptoms of disease
 - preventing transmission
 - handwashing
- Administer PEP if exposed to infectious case within 14 days
- Exclude from work/school only if symptomatic

Persons recently exposed to HAV (within 14 days) and who previously have not received Hepatitis A vaccine:

- For healthy persons aged 12 months to 40 years: 1 dose (age-appropriate) of single antigen HAV vaccine
- Persons aged > 40 years, IG is preferred; vaccine can be used if IG is not available
- Children < 12 months, immunocompromised persons, persons with chronic liver disease, or persons for whom vaccine is contraindicated, IG should be used

See MMWR for full recommendation: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5641a3.htm>

Hepatitis A – Post Exposure Prophylaxis (PEP) (Continued)

If the 21st is the last day of exposure, the 4th is the last day you can give PEP.

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21 *	22	23	24
25 onset	26	27	28	29	30	31
1	2	3	4 Last day	5	6	7

Healthcare Workers

- Should be excluded from “hands on” patient care for 7 days following the onset of symptoms
- In a healthcare setting:
 - Nosocomial transmission rare
 - Use standard precautions (also use contact precautions for diapered or incontinent patients)

Day Care Center

- PEP should be administered to all staff and attendees of a day care center or home if:
 - 1 or more cases of Hepatitis A are recognized in children or employees
 - or**
 - Cases are recognized in 2 or more households of center attendees

If a foodhandler is diagnosed with Hepatitis A:

- Appropriate PEP should be given to other foodhandlers at the same location
- PEP administration to patrons may be considered if:
 - the foodhandler directly handled uncooked foods or foods after cooking during the infectious period; **and**
 - had diarrhea or poor hygienic practices; **and**
 - patrons can be identified and treated within 2 weeks after exposure

Hepatitis A - Important to Remember

- Transmitted by fecal-oral route
- Infectious before symptoms start
- Call ordering physician first
- Quick follow up needed
- Connection to high risk settings (day care/foodhandler)
- PEP available

Contact

March 21, 2016

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April 21, 2016

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