Hepatitis B

2015 Regional Hepatitis Training
for Local Health Departments
and Regional Epidemiologists

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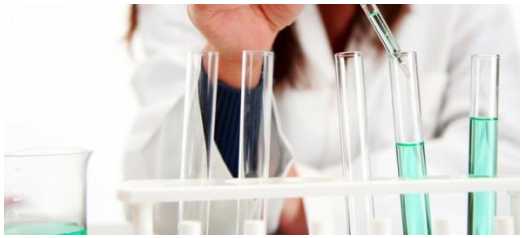

WEST VIRGINIA
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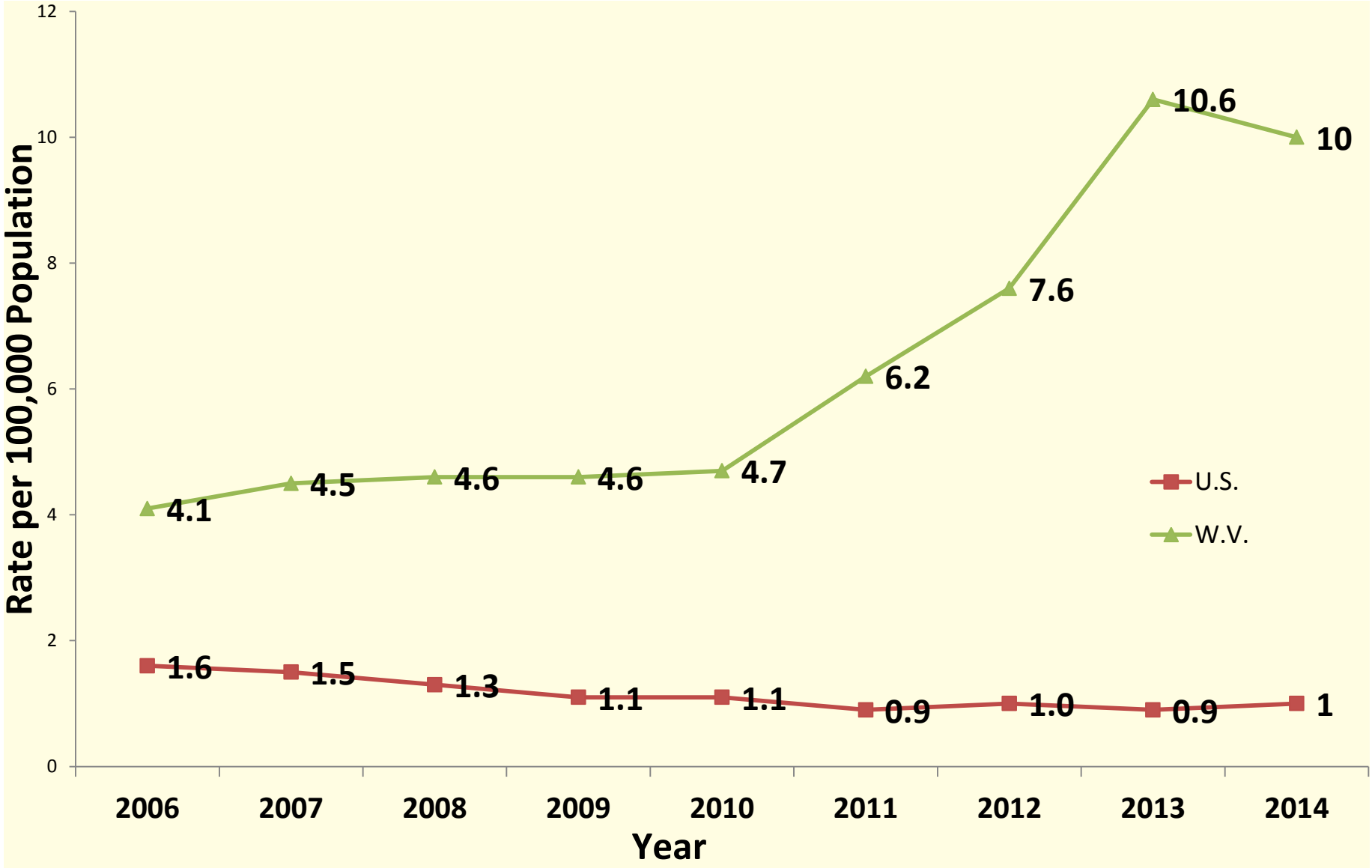
Hepatitis B Training Objectives

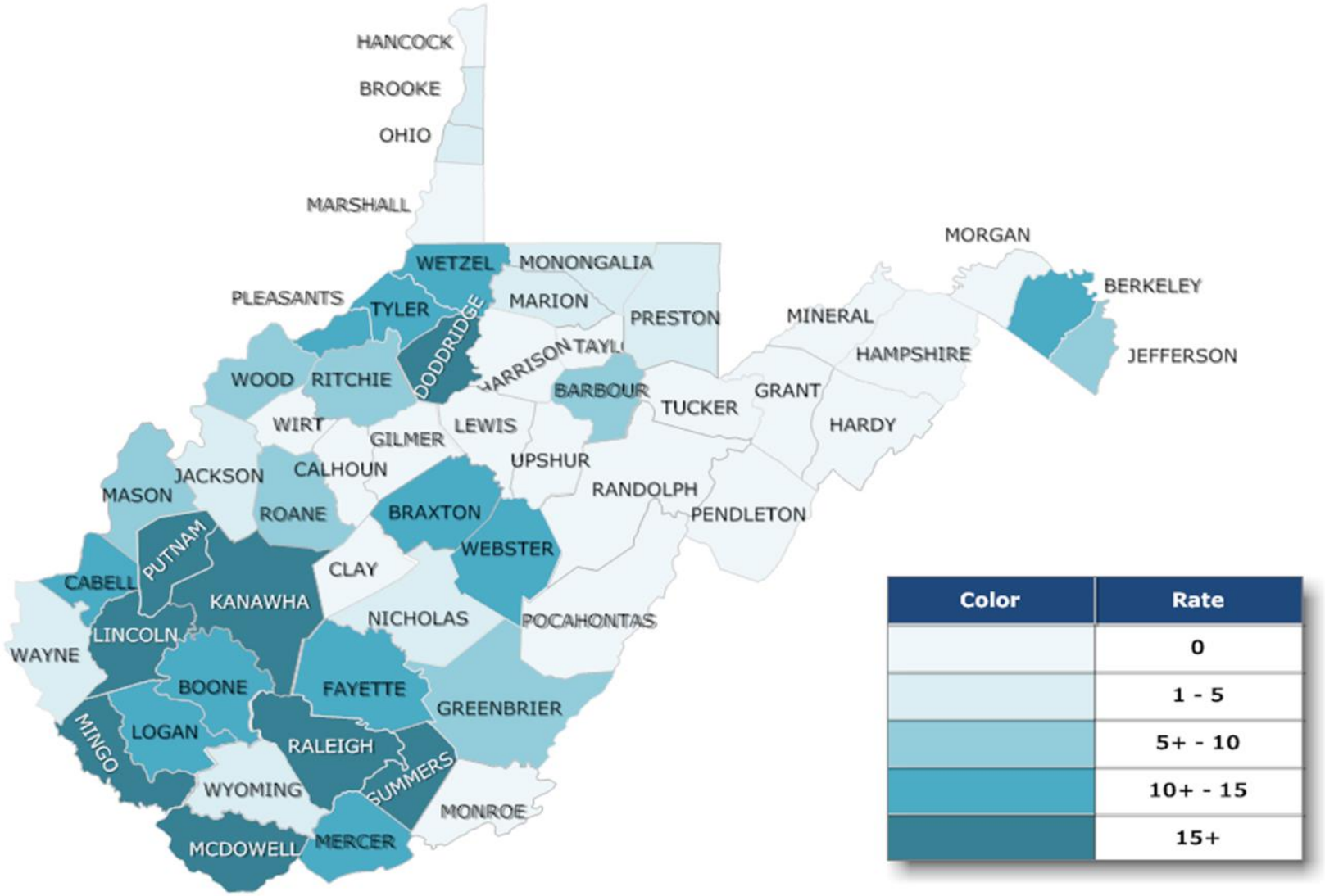
- 2014 hepatitis B surveillance overview
- Risk factors associated with hepatitis B virus (HBV)
- Case definition review - Acute vs Chronic
- Mastering case ascertainment and serology
- Learn to conduct a HBV investigation
- Determine when hepatitis B immune globulin (HBIG) is appropriate
- Methods to reduce lost to follow up
- Recognizing a healthcare associated infection

Incidence of Acute Hepatitis B 2006 - 2014



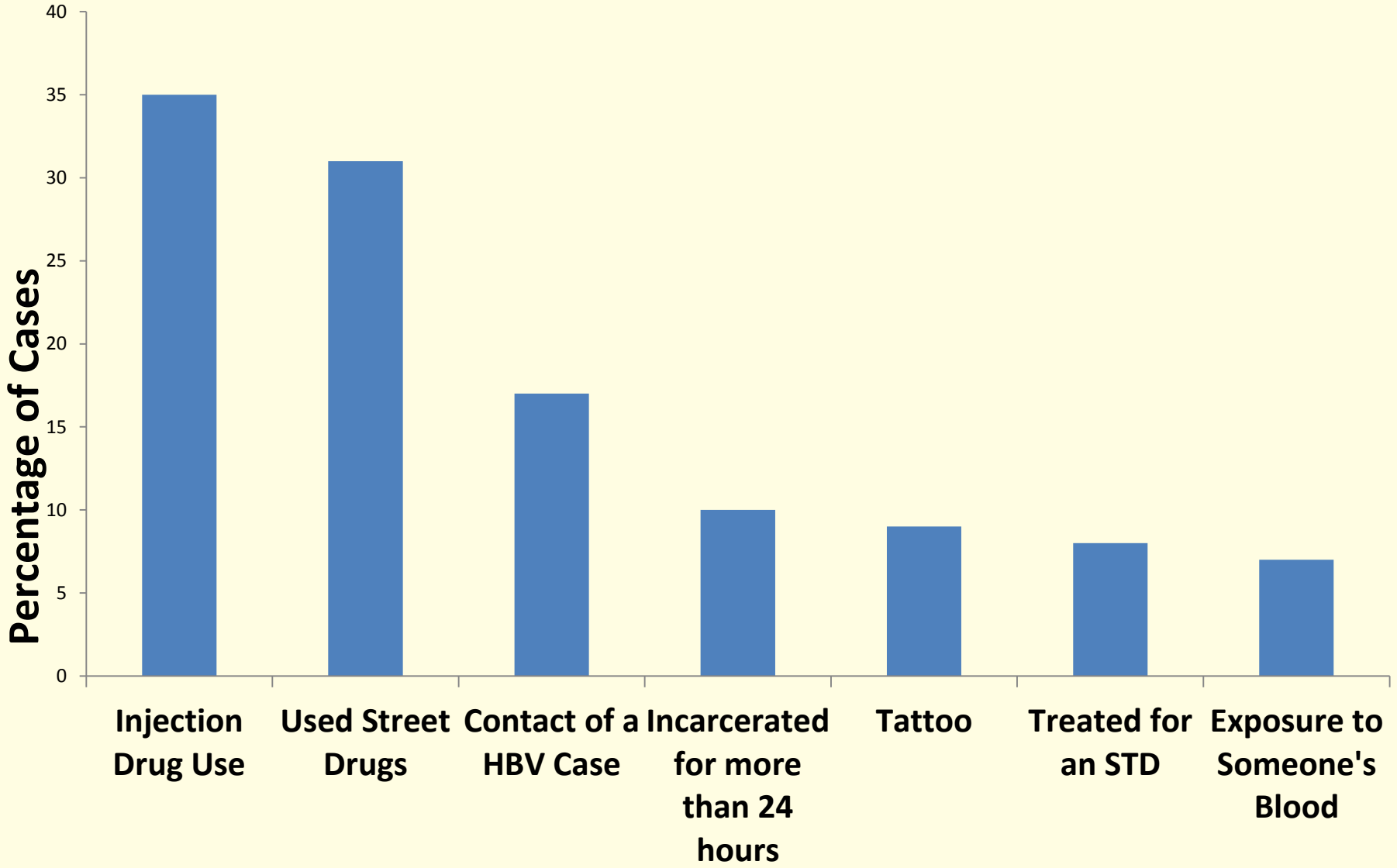
*WV rate & US rate 2006 - 2011 - source: http://www.cdc.gov/hepatitis/Statistics/2011Surveillance/Table3/1/htm (2012-2014 CDC data are provisional

Rate of Acute Hepatitis B in West Virginia - 2014



West Virginia acute hepatitis B incidence by county per 100,000 population by year of report.

Acute Hepatitis B Risk Factors Reported - 2014 (n=186)



*Patient can report more than one risk factor

Hepatitis B Statistics

- 80% to 90% of those infected clear the virus
- 30% to 50% develop symptoms of acute hepatitis B
- 10% develop chronic hepatitis B
- 15% to 25% of those infected develop liver disease

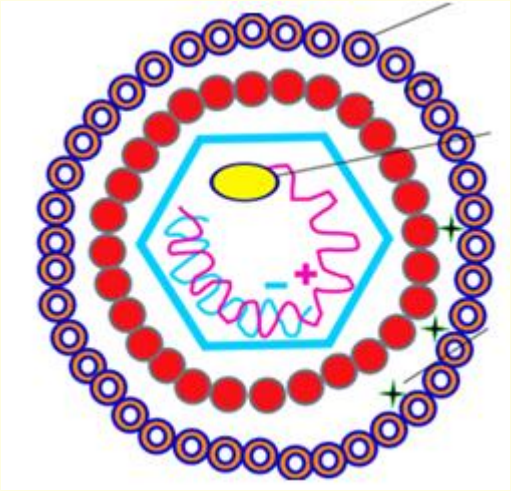
Foster, G., & Goldin, R. (2002). *Management of chronic viral hepatitis*. London: Martin Dunitz.

What's new for hepatitis B

- West Virginia electronic disease surveillance system (WVEDSS) (2012)
- New hepatitis B coordinator (2014)
- Date of public health action (2014)
- Electronic lab reporting (2015)
- Updated hepatitis B protocol (2015)

Surveillance cont.

HBsAg



HBV DNA Polymerase

HBeAg

HBsAg – hepatitis B surface antigen

HBV DNA – hepatitis B DNA

HBeAg – hepatitis B e antigen

(Incubation of 6 weeks – 6 months)

- All cases of HBV & positive lab results are reportable to the local health department of the patient's county of residence within 24 hours of diagnosis

West Virginia Communicable Disease Rule (64CSR7)

Acute Hepatitis B Case Definition

Clinical Description

1.) A discrete onset of symptoms:

- anorexia, nausea, vomiting, diarrhea, right upper quadrant pain, or clay colored stool

2.) **Either:**

- a) jaundice or b) elevated liver enzymes

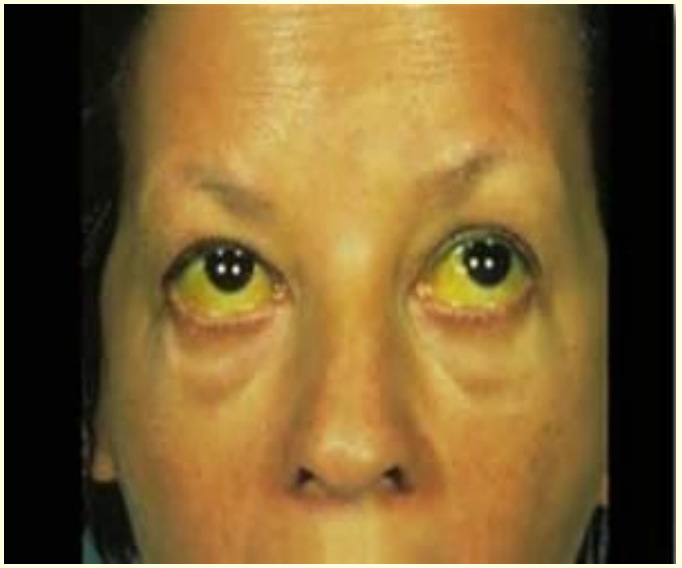
A HBsAg (-) result within 6 months prior to a (+) HBV result does NOT require an acute clinical presentation

Laboratory Criteria

- HBsAg(+) IgM(+)

Case Classification

- Confirmed: clinical case definition and laboratory confirmed



Acute Hepatitis B Detection

- Blood collection centers will *separately* report newly positive HBV and HCV incident cases identified among repeat donors to health departments
  - (Patients with a negative result and a positive result within 12 months)

- Regardless of symptoms, these donors now meet the recently updated 2015 CSTE acute HBV and HCV case definition

- Recently acquired viral hepatitis among repeat blood donors without common risk factors can be an event signaling a possible HAI in the donor

American Red Cross

Chronic Hepatitis B Case Definition

Clinical Description

- No symptoms are required

Laboratory Criteria for Diagnosis

- A (+) result on any: HBsAg, HBeAg, or HBV DNA
- Negative HBV core IgM
- Any combination of these tests with (2) (+) results 6 months apart

Case Classification

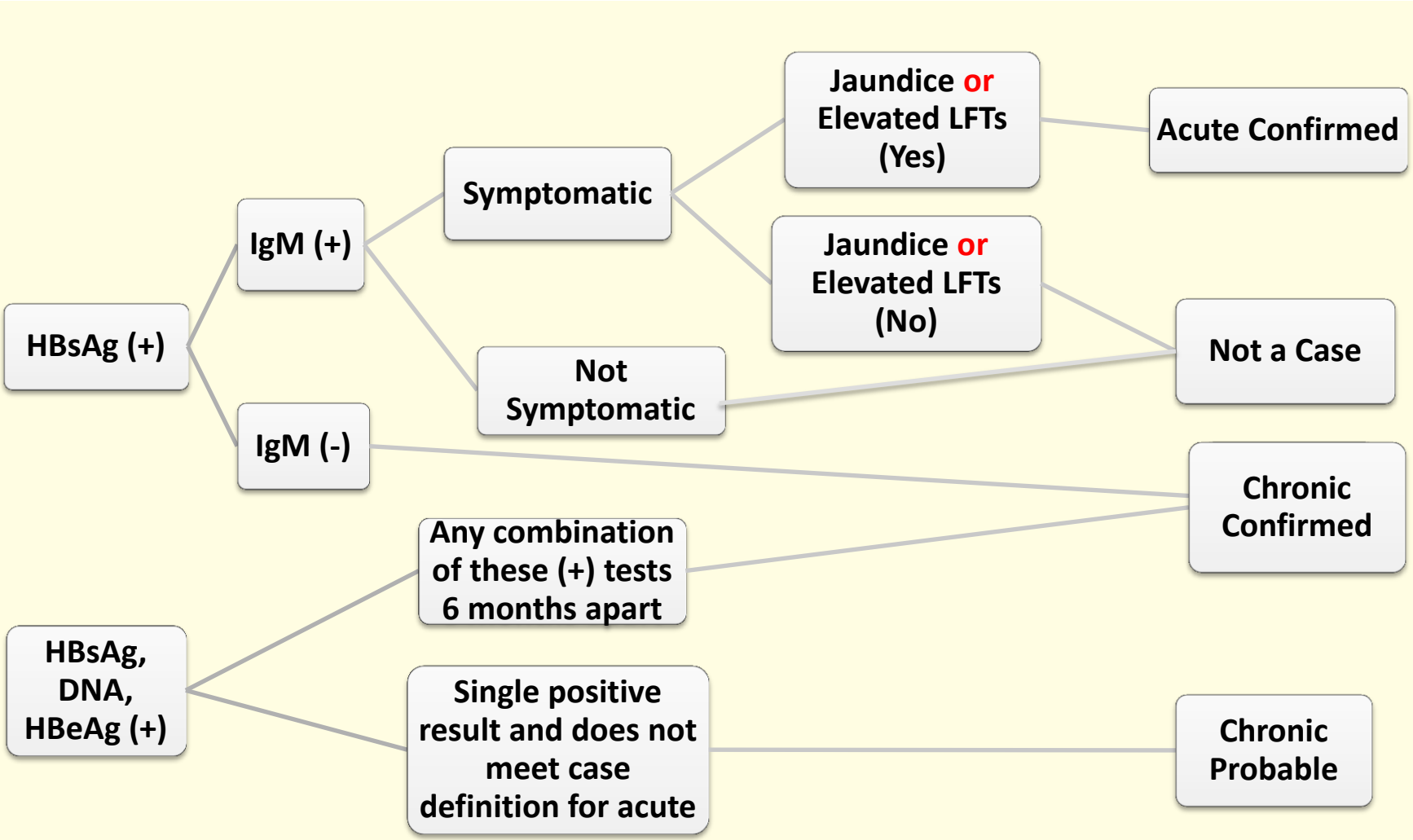
Probable

- A single positive HBV result and does not meet the case definition for acute hepatitis B

Confirmed

- A person who meets either form of laboratory criteria for diagnosis

Hepatitis B Case Ascertainment



Example #1 – Case Ascertainment

- **There is a new open investigation in WVEDSS with older labs and newer labs**

5/2/2014	**8/15/2014**
HBsAg(-), HBcAb(-), HBcIGM(-)	HBsAg(+), HBcAb(+), HBcIGM(+)

- **You review this patient's labs and begin the investigation.**
  - The patient has elevated LFTs, but is asymptomatic
  - How should this case be classified?_____ _____

This patient is an *acute* *confirmed* case of hepatitis B. A HbsAg (-) result within 6 months prior to a (+) HBV result does NOT require an acute clinical presentation

Example #2 – Case Ascertainment

- **You see an open investigation in your queue on Jane Doe**
- **Jane's hepatitis panel includes:**
  - **HAV IgM (+)**
  - **HBsAg (+), HBcIgM (+), HBcAb(+)**
  - **HCVab (+)**
- **Jane is experiencing nausea, vomiting, and jaundice**
- **Her symptoms came on suddenly and she can pin point a date of onset of July 1 , 2015**
- **How should her HBV case be ascertained?_____ _____**

The investigation for HBV should be *Chronic Probable*. Since she is being investigated as an acute Case of hepatitis A, hepatitis B will be considered Chronic, the same for hepatitis C

Investigation

State Health Dept.

- Receives & reviews electronic and paper labs
- Creates investigation & assigns jurisdiction
- Submits notification to CDC

24 hours

1 week

Regional Epidemiologist

- Reviews case
- Submits case to state

1 week

Local Health Dept.

- Contacts patient
- Obtains patient contacts
- Documents risk factors
- Educates patient

2 weeks

Investigation

Within 24 hours of receipt of a HBV (+) lab

1. **Determine if the patient has been previously investigated**
   - Check WVEDSS and old databases
2. **Contact the physician and obtain**
   - Demographics
   - Clinical information
   - Pregnancy Status
   - Any other labs (including LFTs)
   - History of drug/alcohol abuse
   - Vaccination history
   - Determine whether the patient has been notified of their disease status
   - Inform the provider that the LHD will contact the patient

Investigation cont.

3. **Interview the patient and obtain**
   - Missing clinical information
   - Exposure and risk factors
   - Evaluate for potential HAI
   - HBV vaccination records
   - Information about contacts (name, type, contact info)
4. **Response**
   - Provide education on HBV prevention/transmission
   - Refer the patient to a physician
   - Notify and investigate the contacts
     - Provide education on prevention/transmission
     - Provide testing and vaccine to contacts

Investigation cont.

5. Document Public Health Action (PHA) and date action was taken in WVEDSS

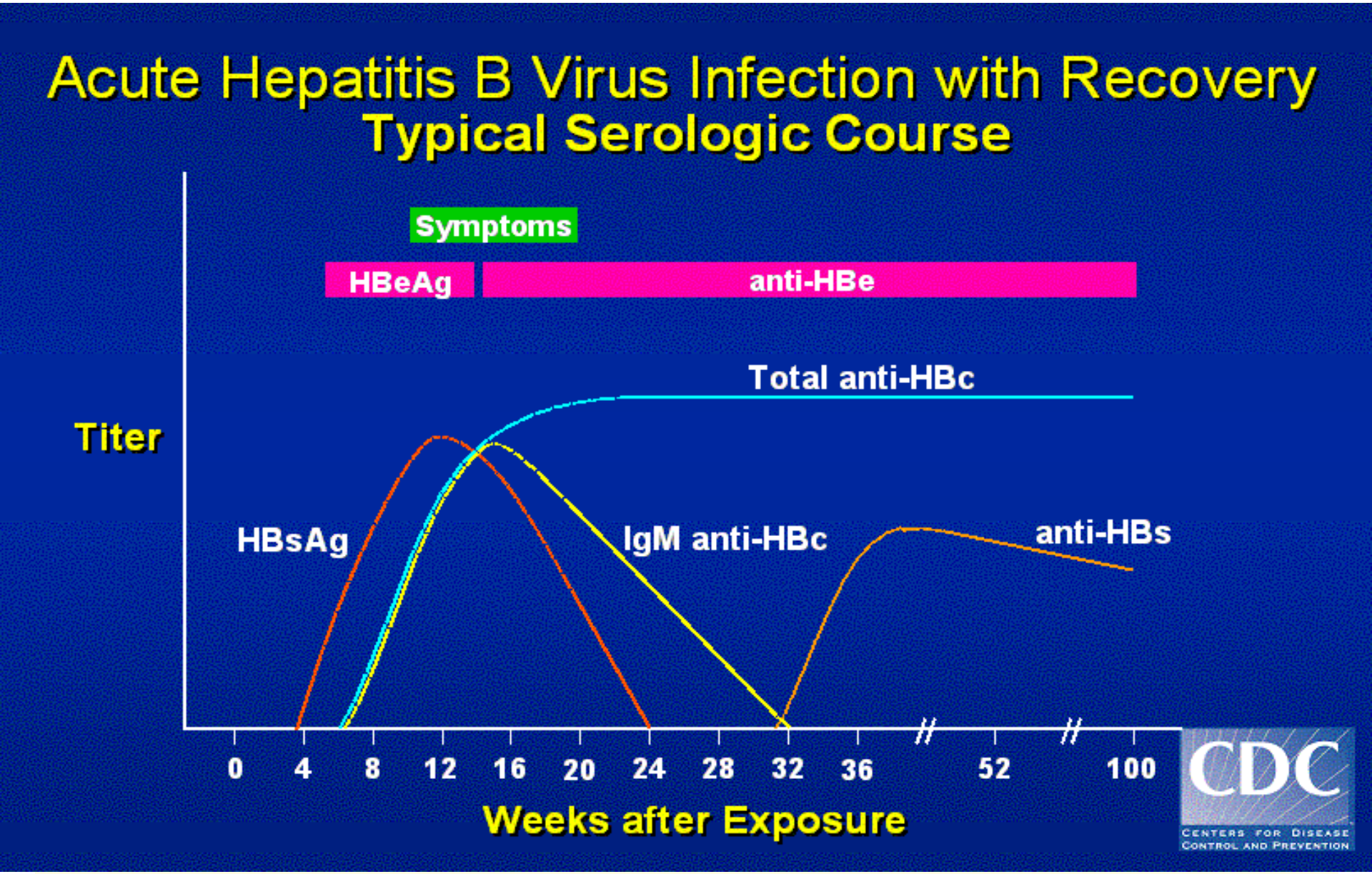
6. Complete the hepatitis B case investigation in WVEDSS

- Be sure to answer ALL questions in the investigation
- Only use “unknown” when the patient is unsure or is LTFU

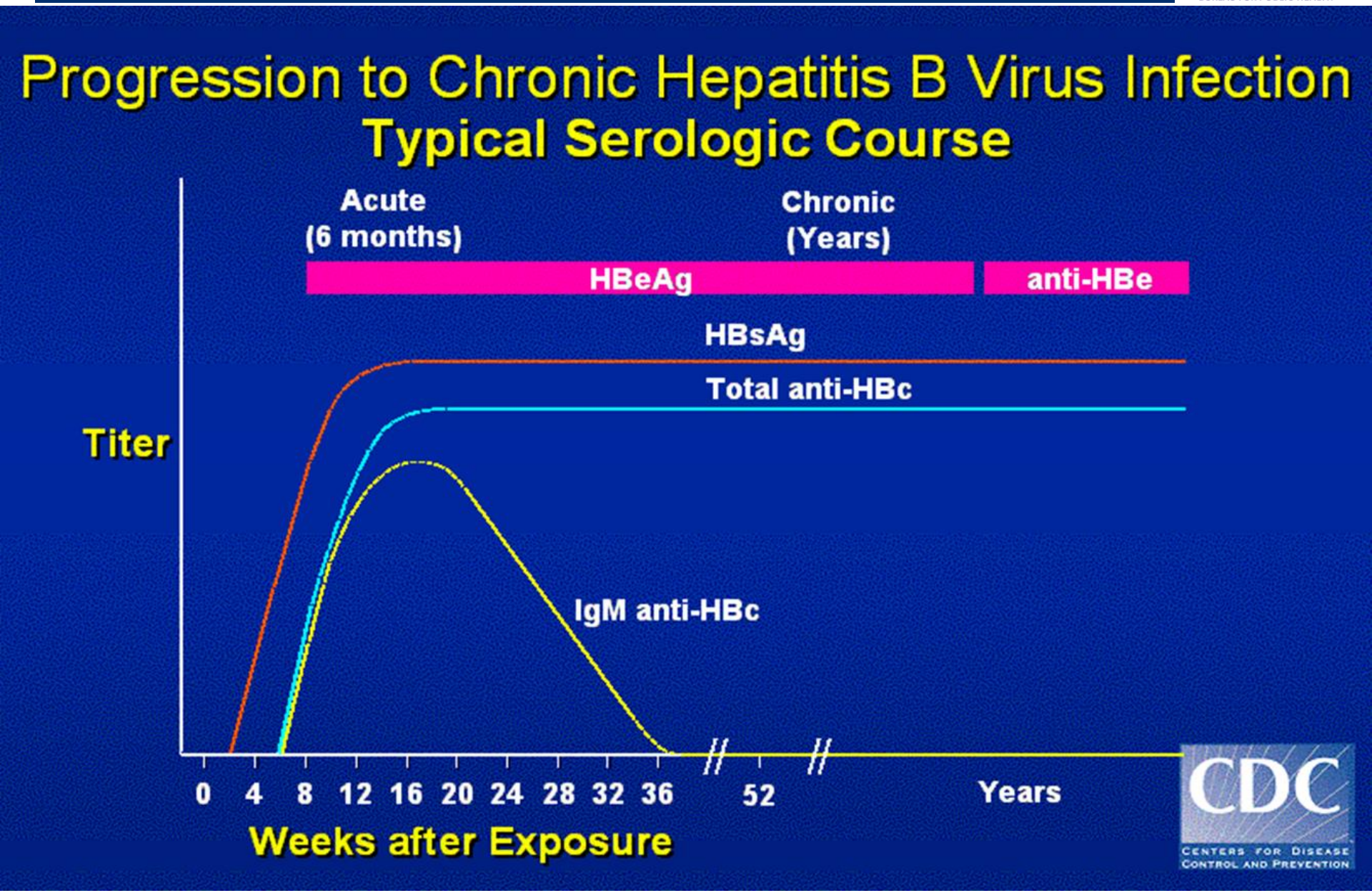
7. Submit report for regional review

8. Submit report for state review

Acute Hepatitis B Recovery



Progression to Chronic Hepatitis B



Example #3 – Case Ascertainment

Serology

- HBsAg +, HBcIGM -, HbcAb –

Clinical

- Nausea, upper back pain and jaundice

LFTs

- AST- 200
- ALT- 150

How should this case be investigated? Acute or Chronic?

- **This patient should be investigated as a case of *acute hepatitis B*. A chronic hepatitis B carrier should have a positive core total. It is recommended that the patient repeat lab testing in 4 weeks; he/she may be in the beginning stages of an infection.**

Example #4 – Case Ascertainment

Serology

- HBeAg+

Clinical

- Nausea and malaise

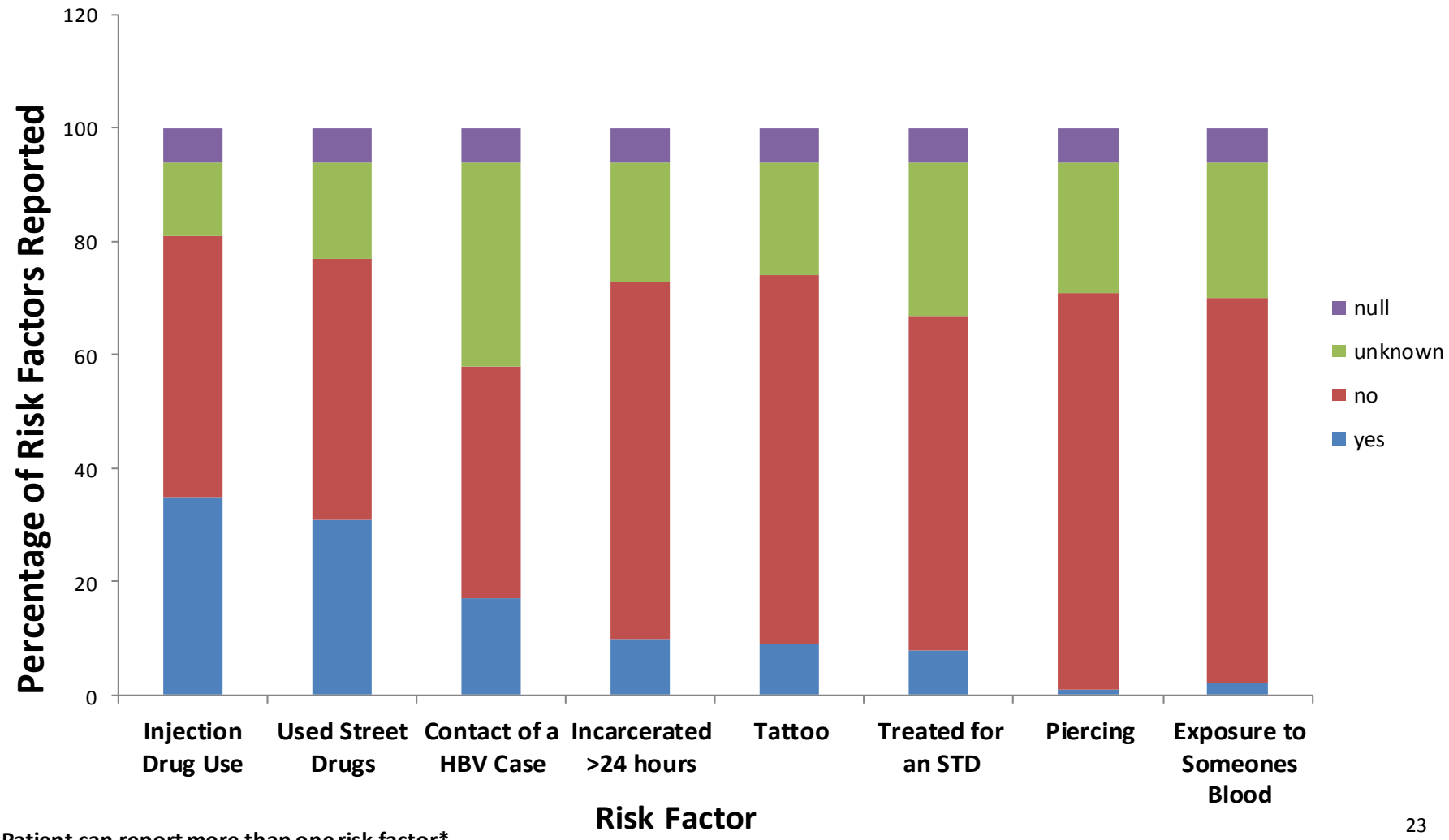
LFTs

- AST- 50
- ALT- 25

How should this case be ascertained? _____ _____

- **This should be investigated as *chronic probable*. A single positive result where the case does not meet the case definition for acute hepatitis should be considered chronic probable. The patient is considered infectious.**

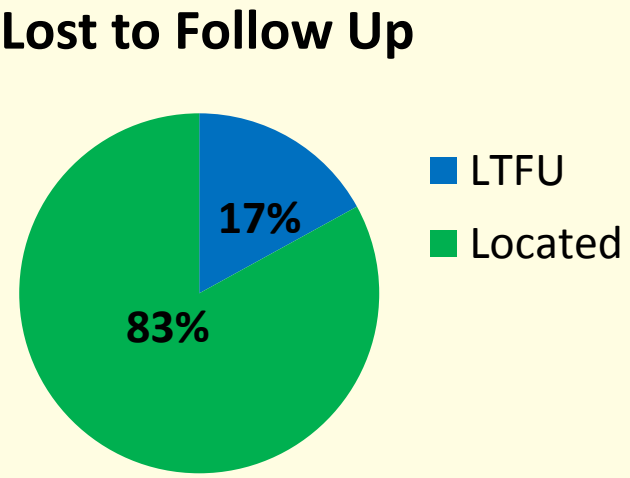
What is the Influence of Missing Information?



Patient can report more than one risk factor

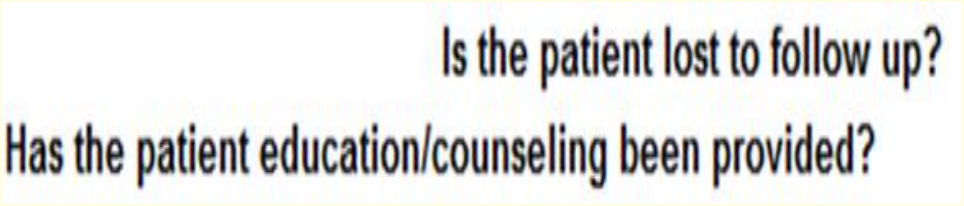
Influence of Lost to Follow Up

- Patients who are unaware of their infectious status can continue to unknowingly infect others
- Incomplete picture of the actual rate of HBV in WV
- Most labs and cases are those seeking medical care
- Rates of hepatitis B in WV can be much higher because those not seeking medical care may go unreported
- Missed opportunities for providing prophylaxis for contacts



Investigation – Avoiding Lost to Follow Up

- Attempt at least 3 phone calls
- Interview patient <u>before</u> leaving the health department
- Send the patient a certified letter
- Determine if the patient is incarcerated
- Conduct a web search; find out if the patient uses social networking
- Collect any additional information from the physician
- Contact the regional DIS for assistance
- <u>Document everything</u>



Investigation - Contact Tracing

- Provide partner notification to contacts who were exposed within 6 weeks to 6 months of the patient's positive lab result
- Educate contacts on hepatitis B transmission and measures
- Offer hepatitis B testing and vaccine
- HBIG is available
- This will help piece together missing links to the investigation when there are ***missing risk factors***
- <u>HBIG</u>
- Sexual partners and household contacts <14 days of positive result
- Blood exposure <7 days of positive result

Is HBIG Recommended?

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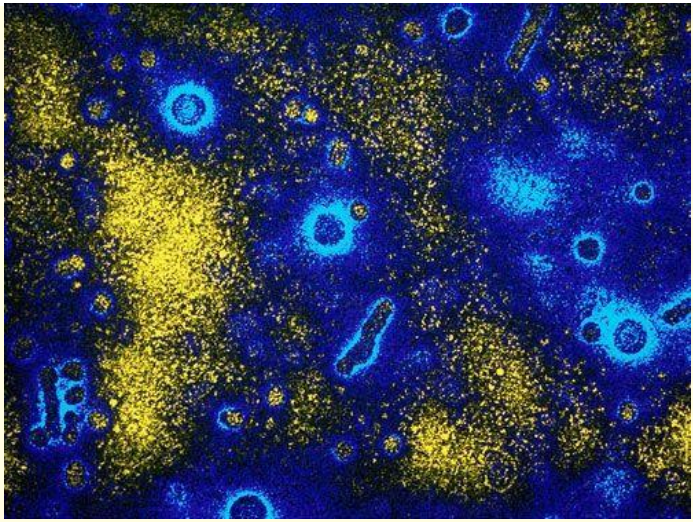
	Testing Recommended	Immunization Recommended	HBIG Recommended
Contacts – Hepatitis B Acute Case			
Sexual contact of acute case of hepatitis B within last 14 days	Yes	Yes	**Yes**
Household contact of acute case, no known blood/body fluid exposure	Yes	Yes	**No**
Household contacts of acute case, known exposure within last 14 days (e.g. shared toothbrush, razor, blood contact)	Yes	Yes	**Yes**
Needle sharing contact within last 7 days	Yes	Yes	**Yes**
Contacts – Hepatitis B Chronic Case			
Sexual contact of chronic case of hepatitis B	Yes	Yes	**No**
Household contact (any) of chronic case of hepatitis B	Yes	Yes	**No**
Needle sharing contact	Yes	Yes	**No**

Concentration of HBV in Body Fluid



High

- Blood, serum or wound exudates

Moderate

- Vaginal fluid, semen or saliva

Low/Not Detectable

- Urine, feces, sweat, tears or breast milk

No Evidence of HBV Transmission

- Mosquitos, hugging, kissing, food, water, casual contact, coughing and/or sneezing

Investigation - HAIs

How to detect HAIs?

- Be *suspicious* of acute hepatitis B among adults >50 years of age
- The only risk factor during the patient's incubation period is a healthcare procedure
- A single case of HAI HBV is considered an outbreak

In Conclusion

- The rates of HBV in WV are the highest in the US
- IDU is an increasing problem in WV that is directly affecting rates of HBV
- Finding risk factors through investigation is vital to target groups at highest risk for infection
- We must make it a priority to close the gap on the amount of patients who are lost to follow up
- Any suspected healthcare associated HBV needs quick action

Contact

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