

# Hepatitis B

2015 Regional Hepatitis Training  
for Local Health Departments  
and Regional Epidemiologists

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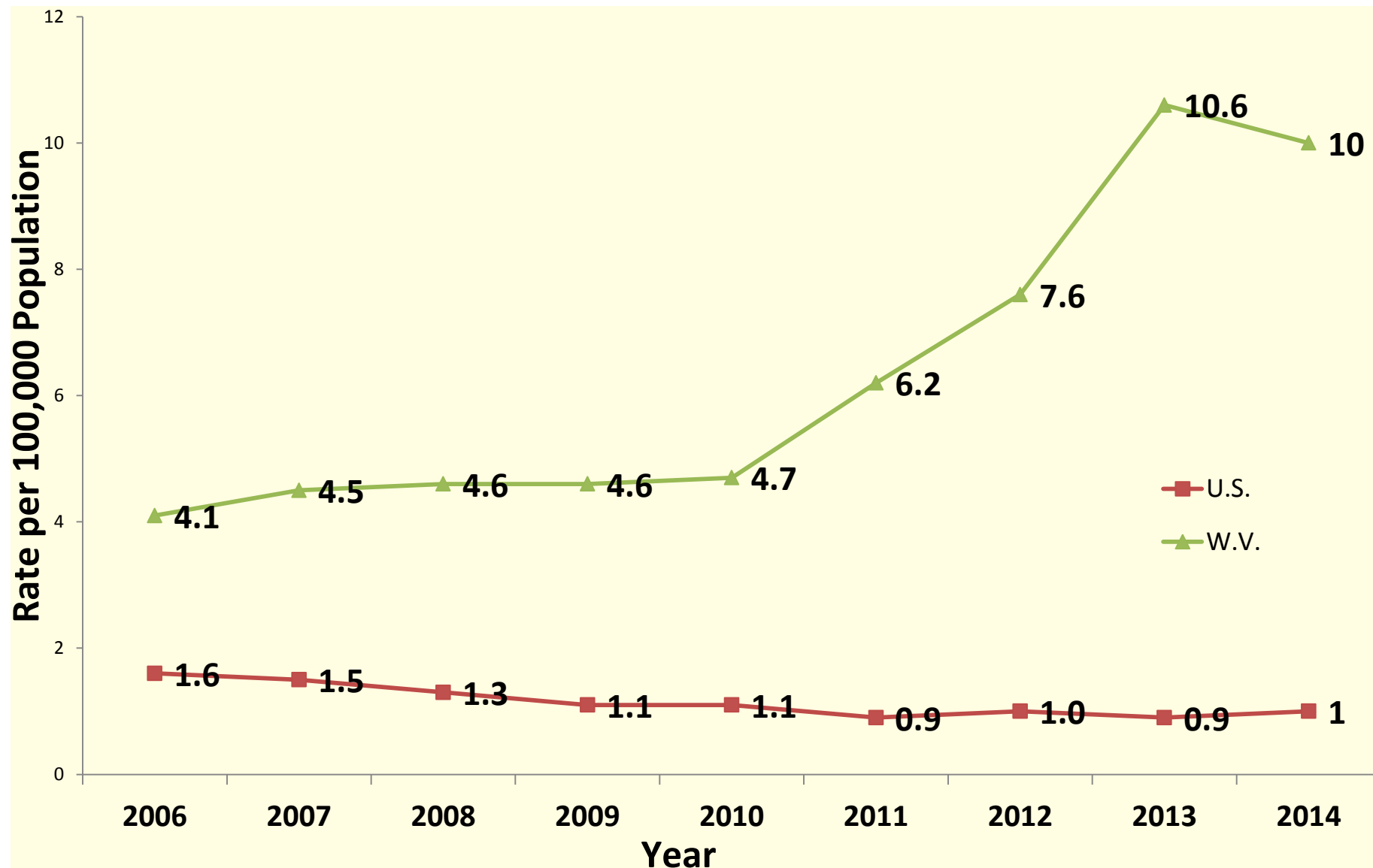
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Hepatitis B Epidemiologist



# Hepatitis B Training Objectives

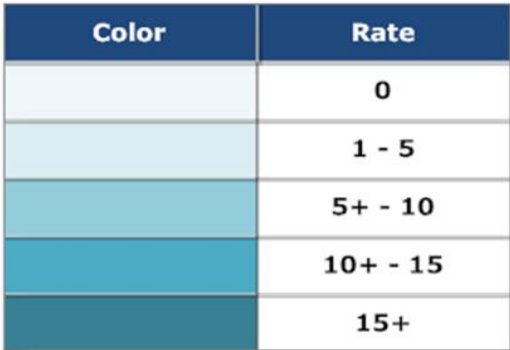
- 2014 hepatitis B surveillance overview
- Risk factors associated with hepatitis B virus (HBV)
- Case definition review - Acute vs Chronic
- Mastering case ascertainment and serology
- Learn to conduct a HBV investigation
- Determine when hepatitis B immune globulin (HBIG) is appropriate
- Methods to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

# Incidence of Acute Hepatitis B 2006 - 2014



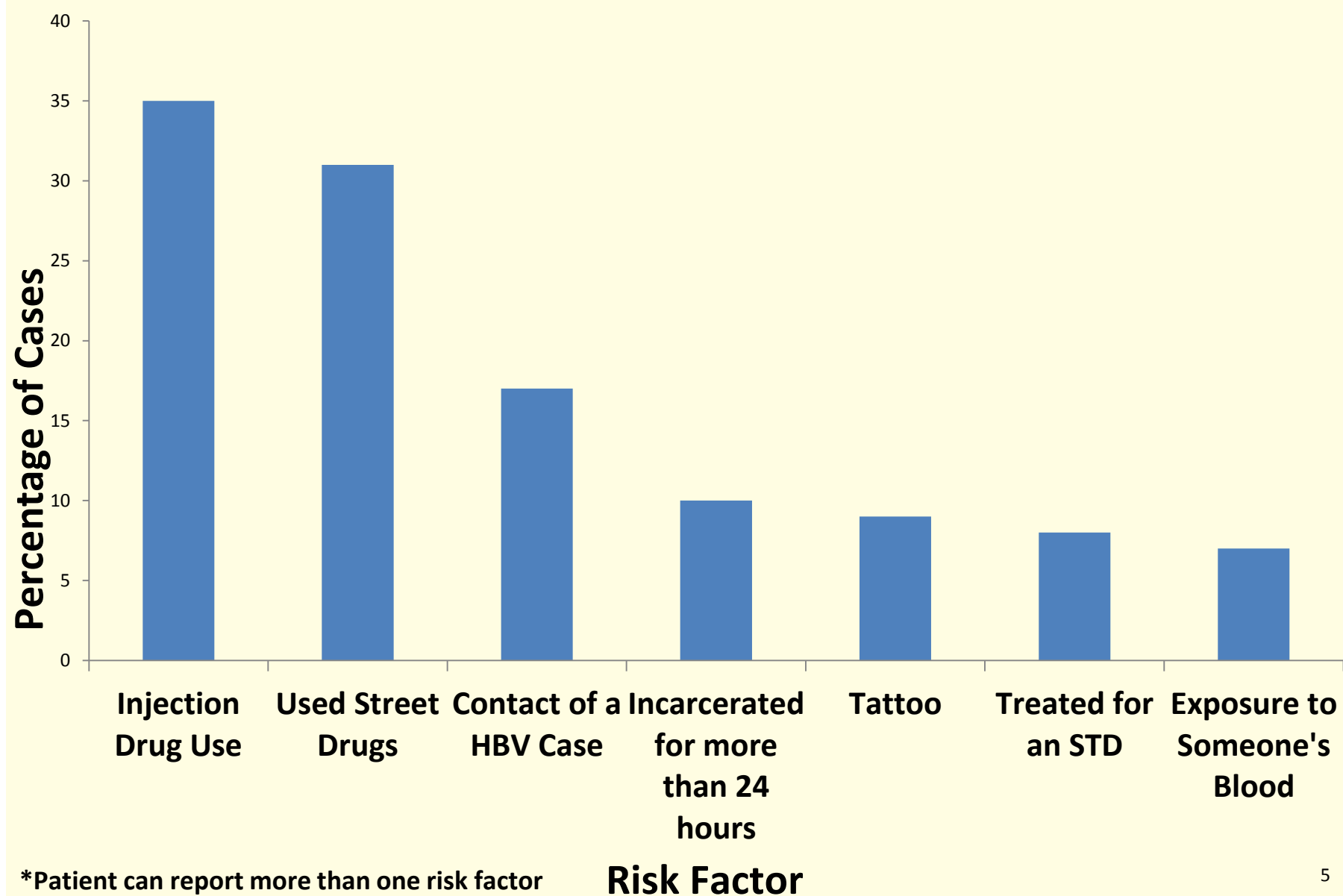
\*WV rate & US rate 2006 - 2011 - source: <http://www.cdc.gov/hepatitis/Statistics/2011Surveillance/Table3/1/htm> (2012-2014 CDC data are provisional)

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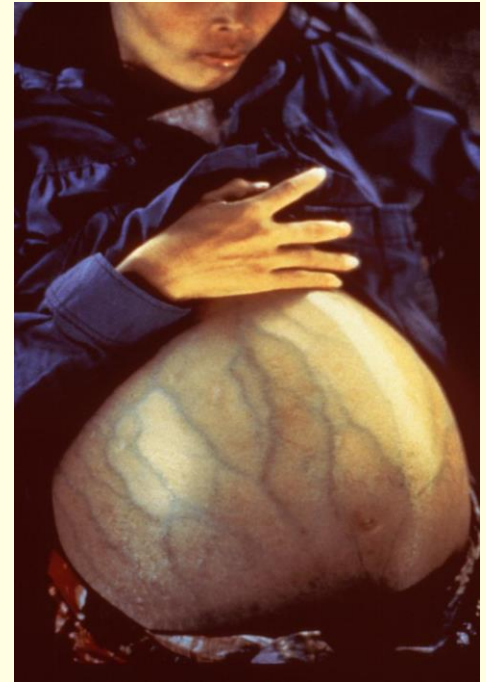
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# Acute Hepatitis B Risk Factors Reported - 2014 (n=186)



# 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



## 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)

**(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

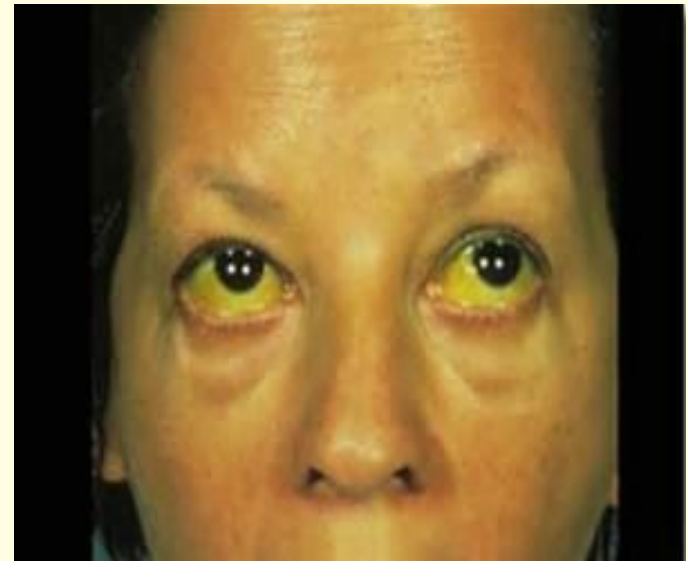
A HBsAg (-) result within 6 months prior to a (+) HBV result does NOT require an acute clinical presentation

## 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



# 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**

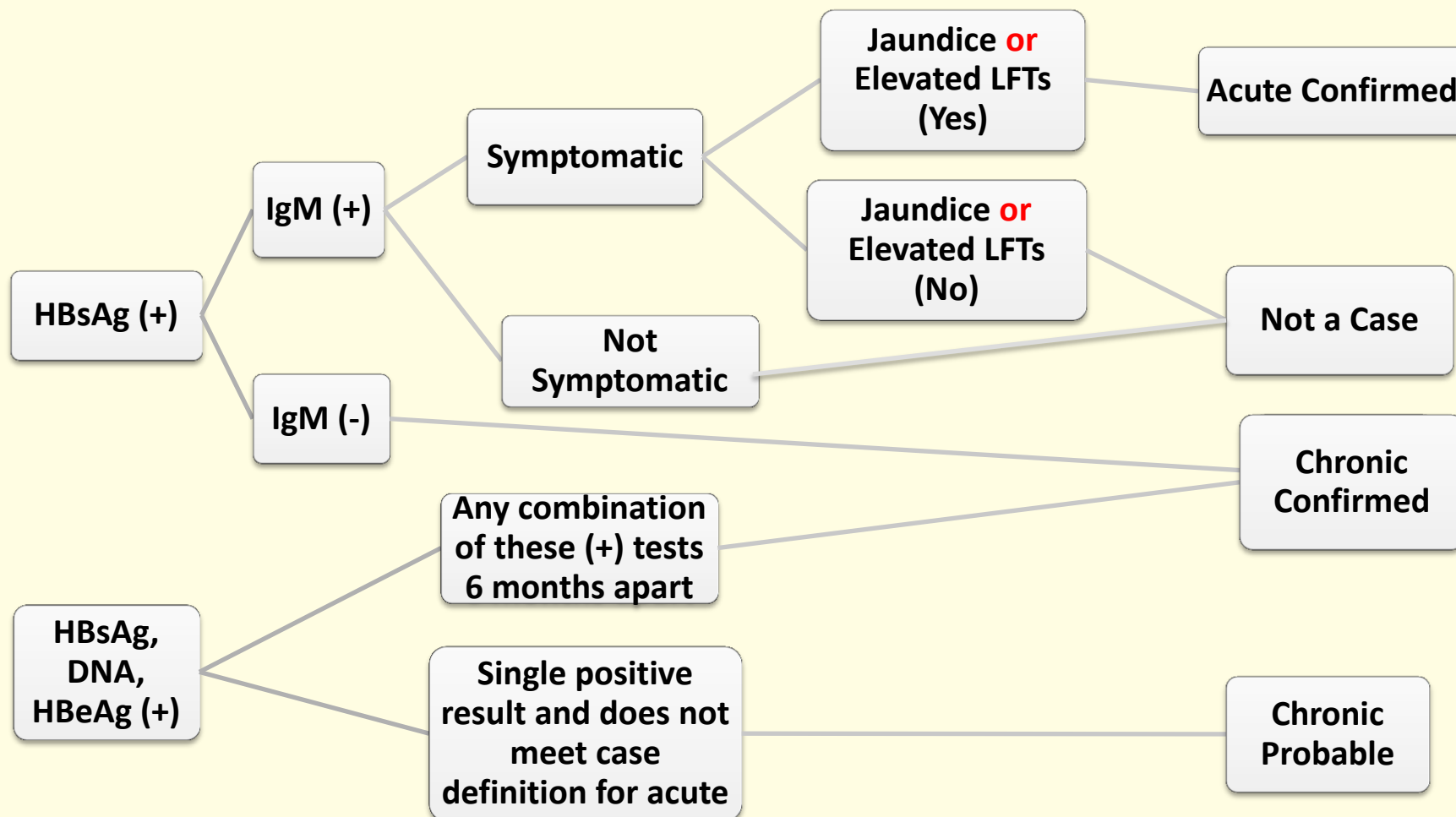
### **Probable**

- 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**

HBsAg(-), HBcAb(-), HBcIGM(-)

**8/15/2014**

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? \_\_\_\_\_

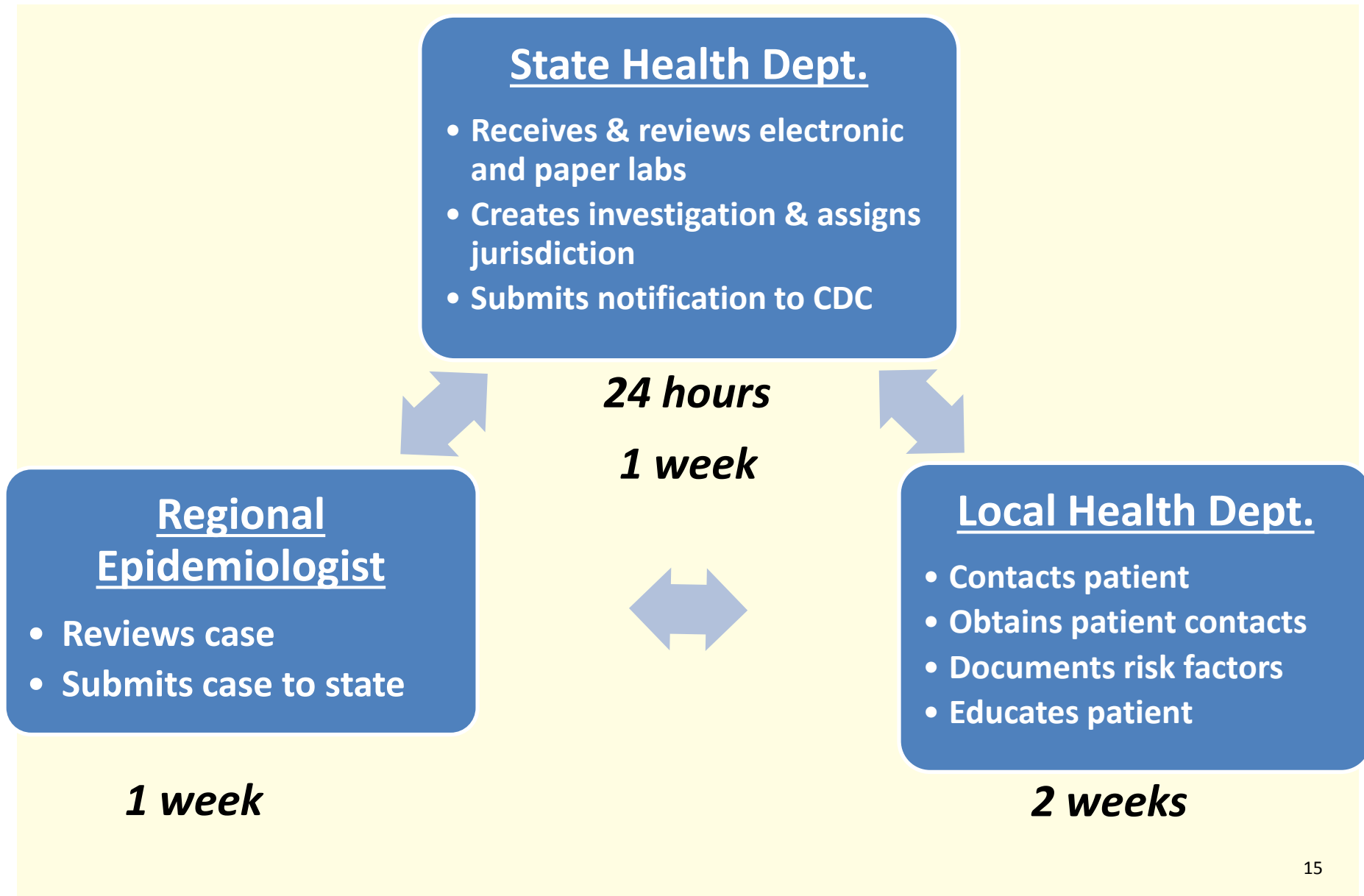
**This patient is an acute confirmed case of hepatitis B. A HbsAg (-) result within 6 months prior to a (+) HBV result does NOT require an acute clinical presentation**

# 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



## 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



## **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

Condition Specific Custom Fields

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### Public Health Issues/Actions

Patient education/counseling provided?

If yes, indicate date:

Patient

Hepatitis

Contact Tracing

## 6. Complete the hepatitis B case investigation in WVEDSS

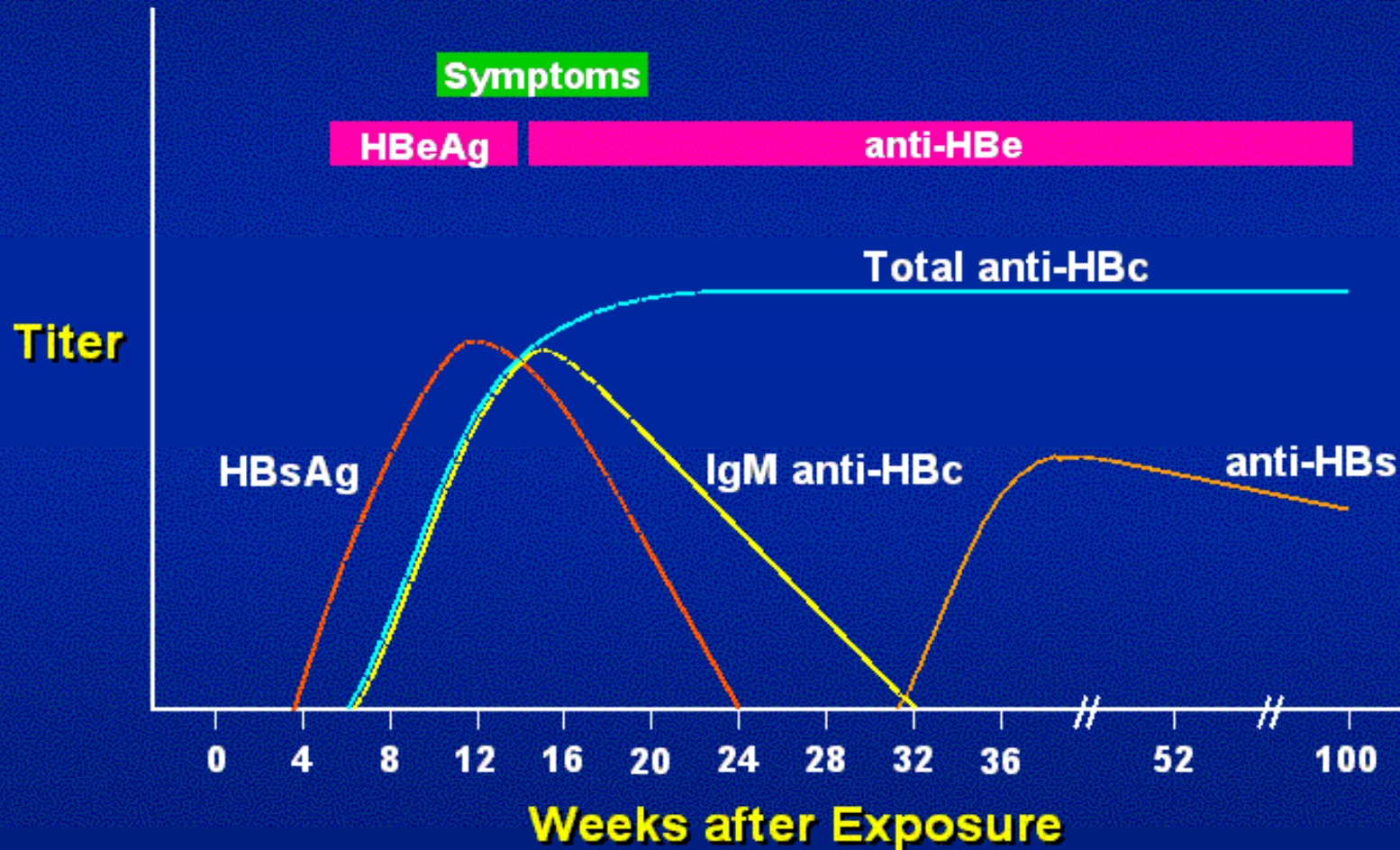
- Be sure to answer ALL questions in the investigation
- Only use “unknown” when the patient is unsure or is LTFU

## 7. Submit report for regional review

## 8. Submit report for state review

# Acute Hepatitis B Recovery

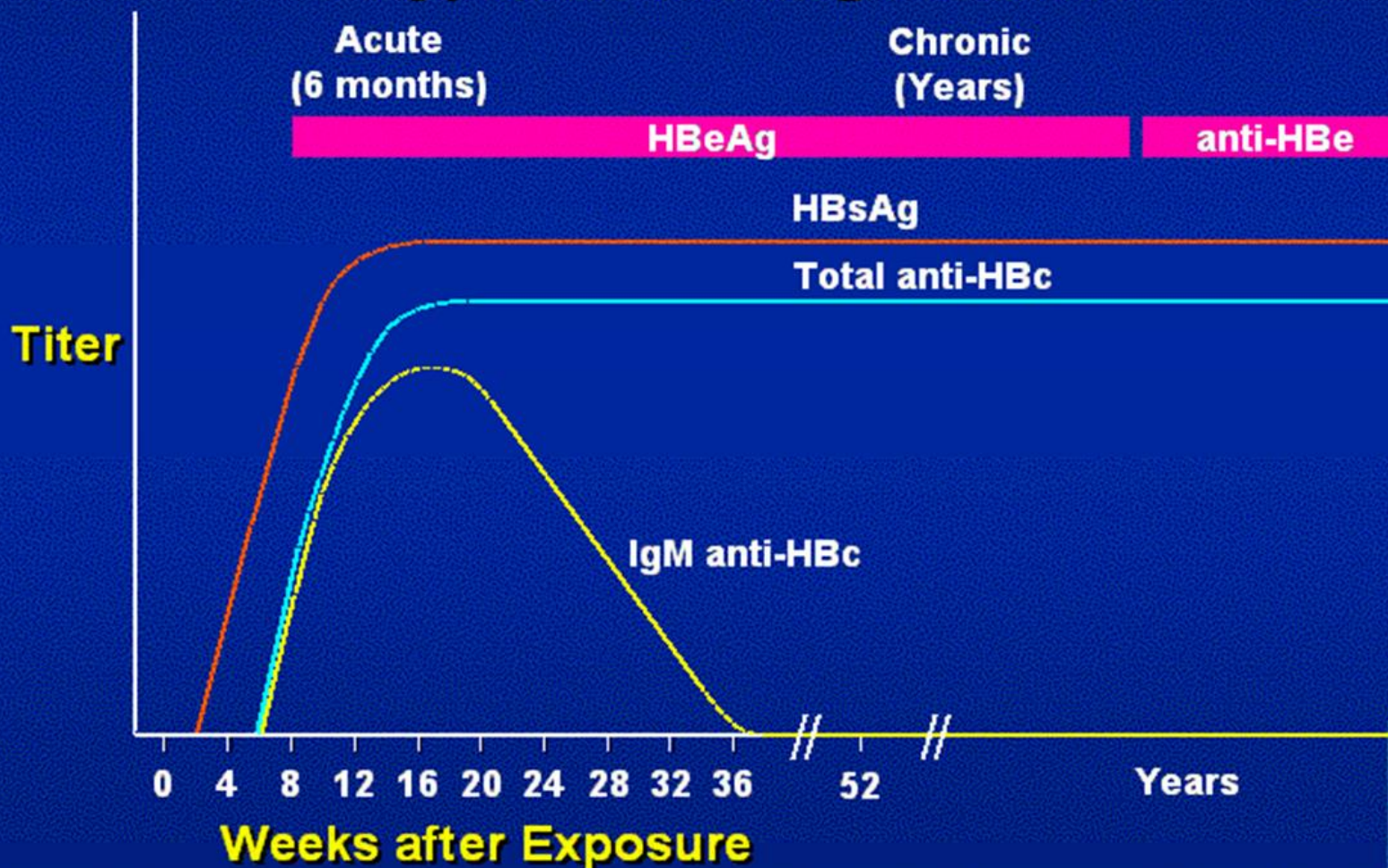
## Acute Hepatitis B Virus Infection with Recovery Typical Serologic Course





# Progression to Chronic Hepatitis B

## Progression to Chronic Hepatitis B Virus Infection Typical Serologic Course



# 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

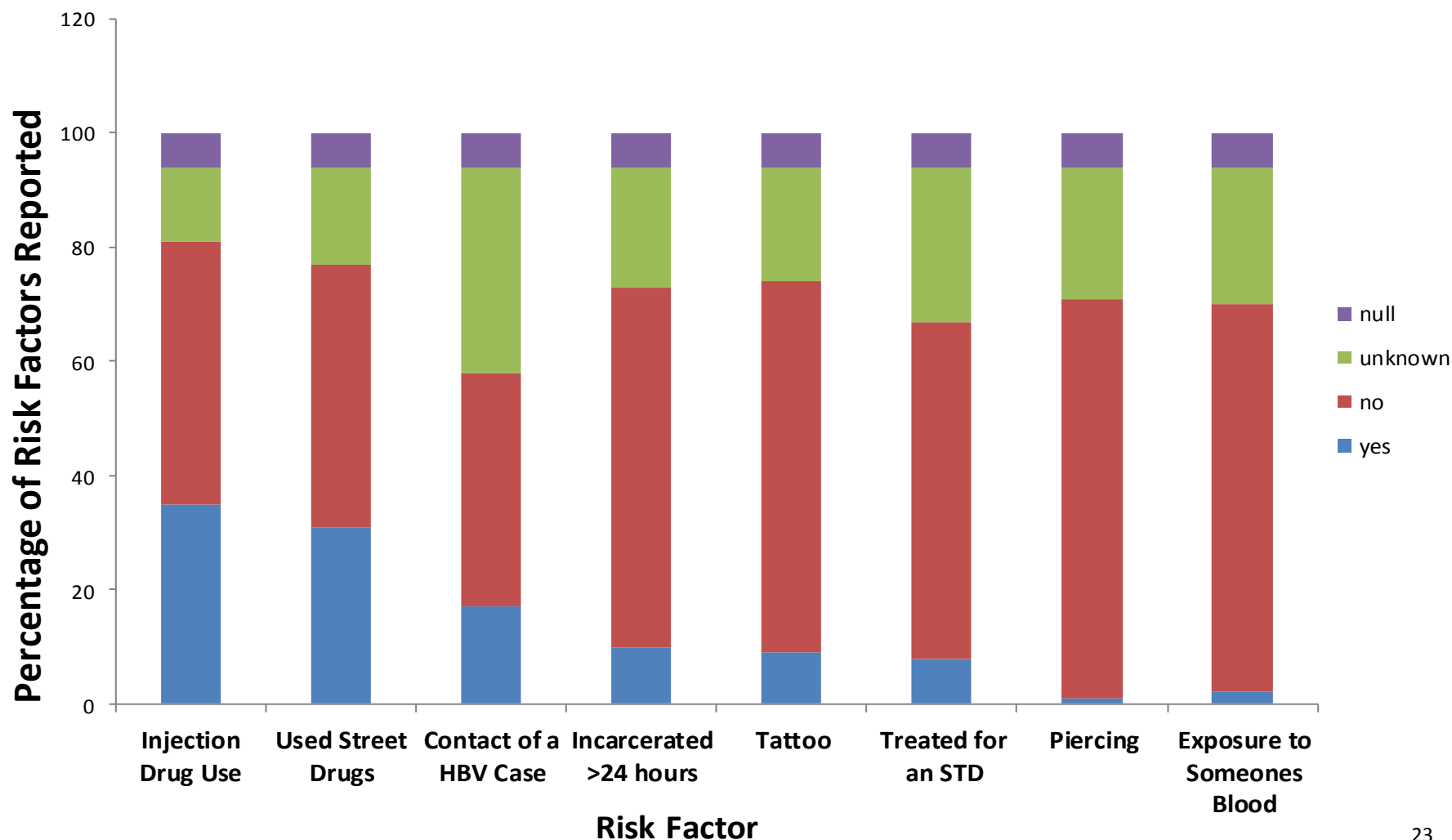
How should this case be ascertained? \_\_\_\_\_

- 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?

## Acute Hepatitis B - West Virginia, 2014

### Risk Factors\* Reported Among Acute Hepatitis B Cases WV, 2014 (N=186)

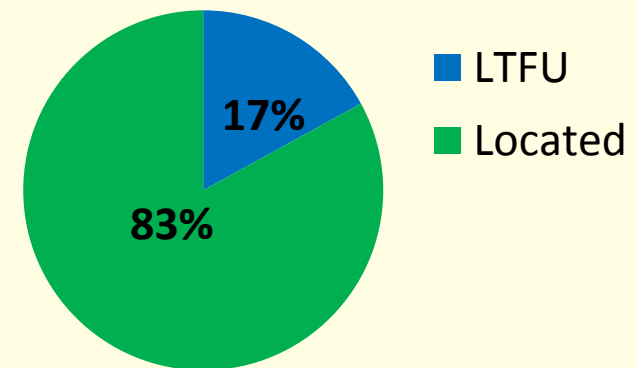


\*Patient can report more than one risk factor\*

# 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

**Lost to Follow Up**





# Investigation – Avoiding Lost to Follow Up

- Attempt at least 3 phone calls
- Interview patient before 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
- Document everything

Is the patient lost to follow up?

Has the patient education/counseling been provided?

# 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***
- HBIG
  - Sexual partners and household contacts <14 days of positive result
  - Blood exposure <7 days of positive result



# Is HBIG Recommended?

	Testing Recommended	Immunization Recommended	HBIG Recommended
<b>Contacts – Hepatitis B Acute Case</b>			
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
<b>Contacts – Hepatitis B Chronic Case</b>			
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

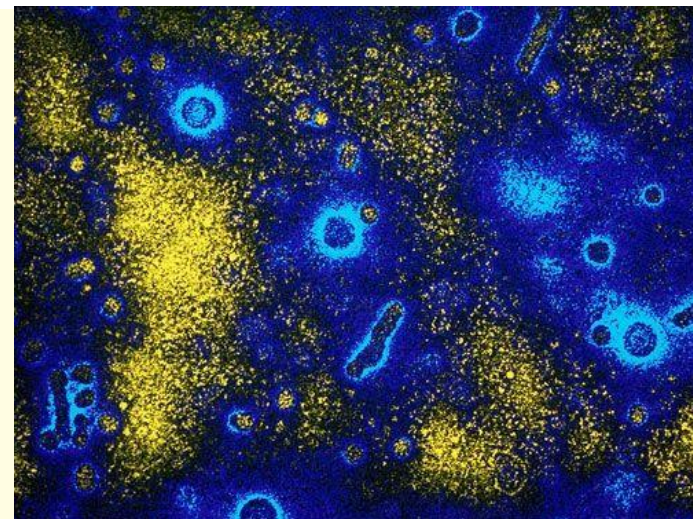
- Vaginal fluid, semen or saliva

## 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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