HEPATITIS C

Whitney Dickson, PharmD, BCPS

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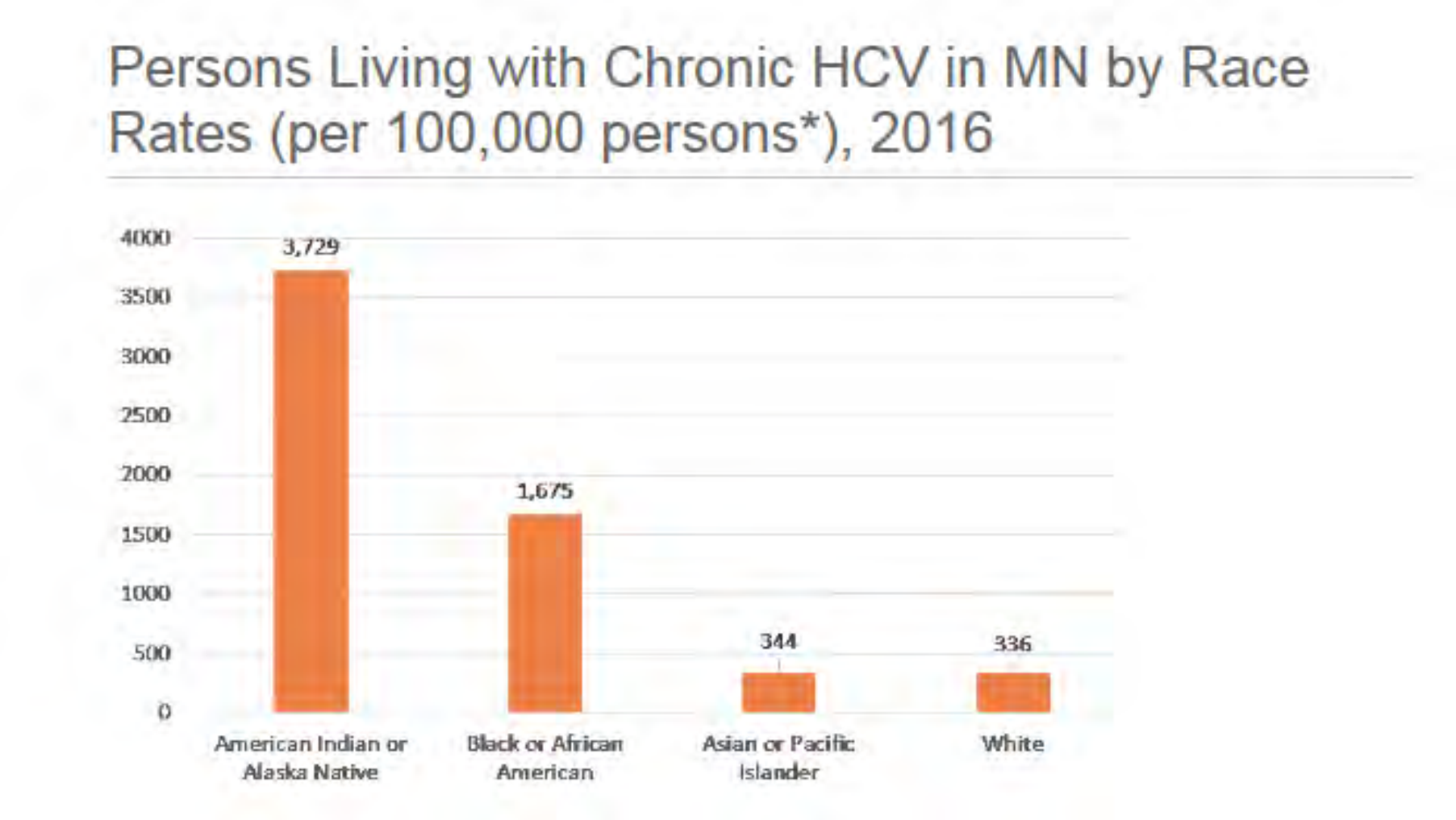
MY BACKGROUND

- Pharmacy School: University of California San Diego
- Pharmacy Practice Residency (PGY1): University of Illinois at Chicago
- HIV/Hep C Specialty Residency (PGY2): University of Illinois at Chicago
  - Cook County CORE Center
  - Illinois Department of Corrections: Hep C Telemedicine Program
  - UIC Hepatitis C Clinic
  - Inpatient liver service
- JPS Hospital, Fort Worth Texas: Healing Wings HIV Clinic

HEPATITIS C BACKGROUND

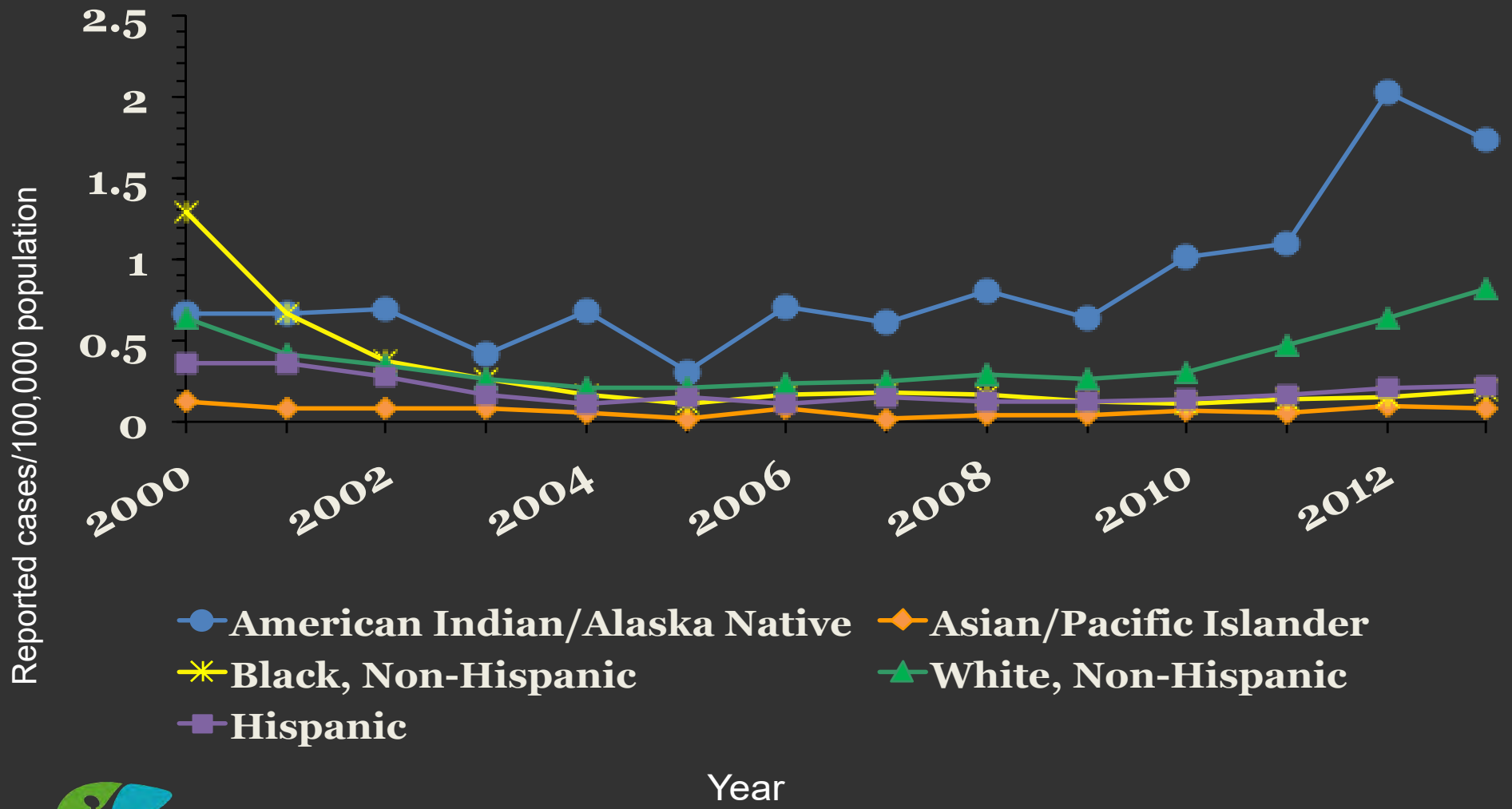
- 3.5 million people living with chronic HCV (HCV RNA positive)
- More people dying of HCV than all other 60 nationally notifiable infectious diseases combined
- Minnesota is one of the states that had >200% increase in HCV cases from 2007-2012
- Today over 80% of new HCV transmission occurs in PWID
- AI/AN are the most affected compared to other races or ethnicities

HCV IN MINNESOTA



MN Department of Health

Incidence of Acute Hepatitis C, by Race/Ethnicity – United States, 2000-2013



Division of Viral Hepatitis

Source: National Notifiable Diseases Surveillance System (NNDSS)

WHY SHOULD WE TREAT HEPATITIS C

- Symptoms of Hepatitis C
  - Fatigue
  - Myalgias/arthrlagias
  - Depression
  - Impaired cognitive function
- Extrahepatic manifestations
  - Renal disease
  - Diabetes
  - Lymphomas
  - Dermatologic manifestations
  - Peripheral Neuropathy
- Prevent Cirrhosis → Hepatocellular Carcinoma → Transplant
- Future cost savings
- Treatment is shorter, less complicated, and better tolerated today

WHY SHOULD WE TREAT HEPATITIS C

- SVR (cure) of HCV is associated with:
  - 70% Reduction of Liver Cancer
  - 50% Reduction in All-cause Mortality
  - 90% Reduction in Liver Failure

Lok A. NEJM 2012; Ghany M. Hepatol 2009; Van der Meer AJ. JAMA 2012

IMPACT OF TREATMENT

- HCV cirrhosis risk = 40% over 30 years
- Hepatocellular carcinoma (HCC) risk in HCV Cirrhosis = 17% over 5 years
- When we cure 30 patients with HCV we will prevent:
  - 12 cases of HCV related cirrhosis
  - 2 case of HCV related HCC

If we treat 104 patients with hypercholesterolemia with statins (For 5 years), we will prevent 1 first time heart attack and ¾ of a stroke

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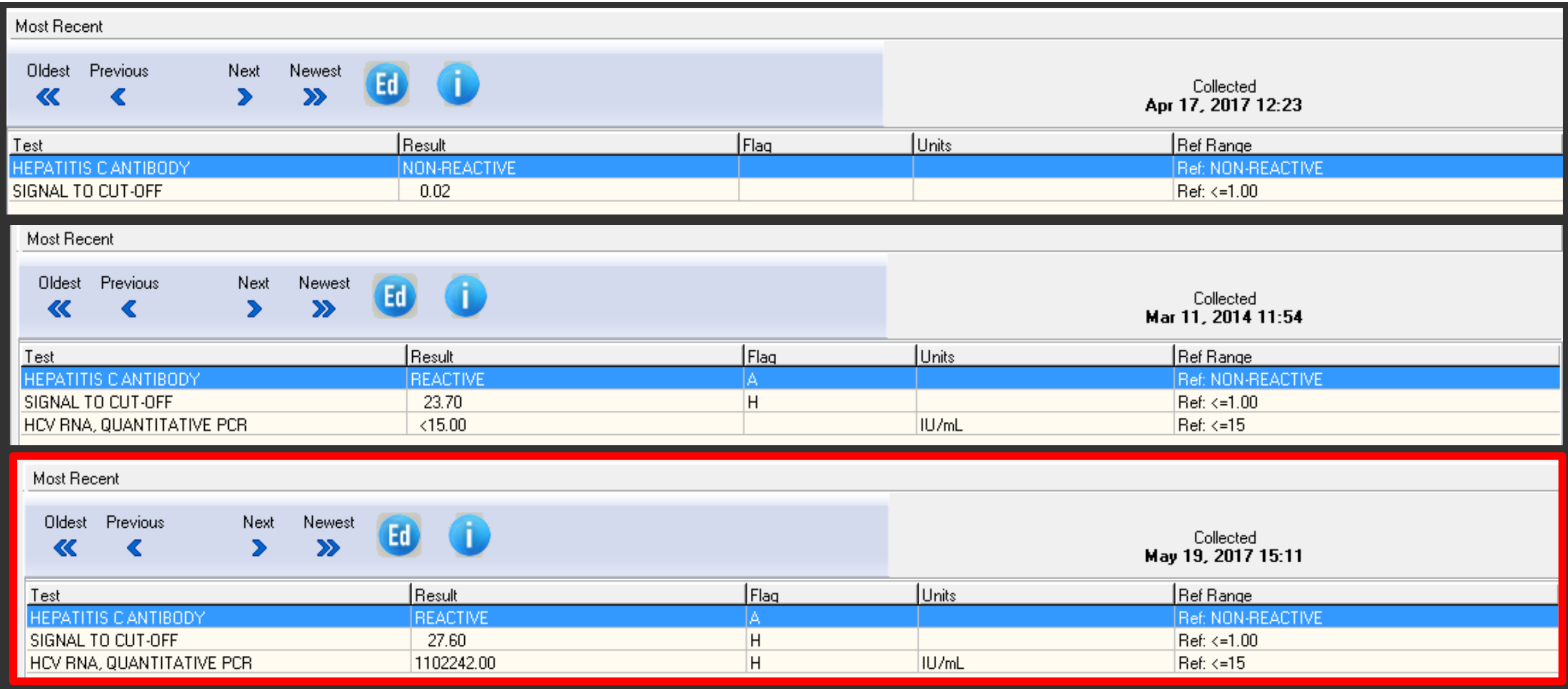
HEPATITIS C SCREENING

- Who should be tested?
  - Guidelines
    - Birth Cohort: 1945-1965
    - Risk factors
      - PWID (even once)
      - Intranasal illicit drug use
      - Nonprofessional tattoo
      - Hemodialysis
      - Persons ever incarcerated
      - Blood transfusion before 1992
      - Clotting factors before 1987
      - Healthcare workers after exposure
      - Children born to HCV mothers
      - HIV infected patients or patients about to start PreP for HIV
  - May consider expanded universal testing
    - Anyone age 18-69

WHAT DOES THE TEST MEAN?

Test Outcome	Interpretation	Further Actions
HCV antibody nonreactive	NO HCV antibody detected	No further action in most cases *If recent exposure, test for HCV RNA or retest HCV Ab
HCV antibody reactive, HCV RNA detected	Current HCV infection	Provide person with appropriate counseling and link person tested to care and treatment
HCV antibody reactive, HCV RNA not detected	No current HCV infection	No further action in most cases In certain situations*, follow up with HCV RNA testing and appropriate counseling *If suspected exposure within the past 6 months, or clinical evidence of HCV disease, or concern for sample integrity

RESULTS IN EHR



HEPATITIS C CLINIC AT CLIHS

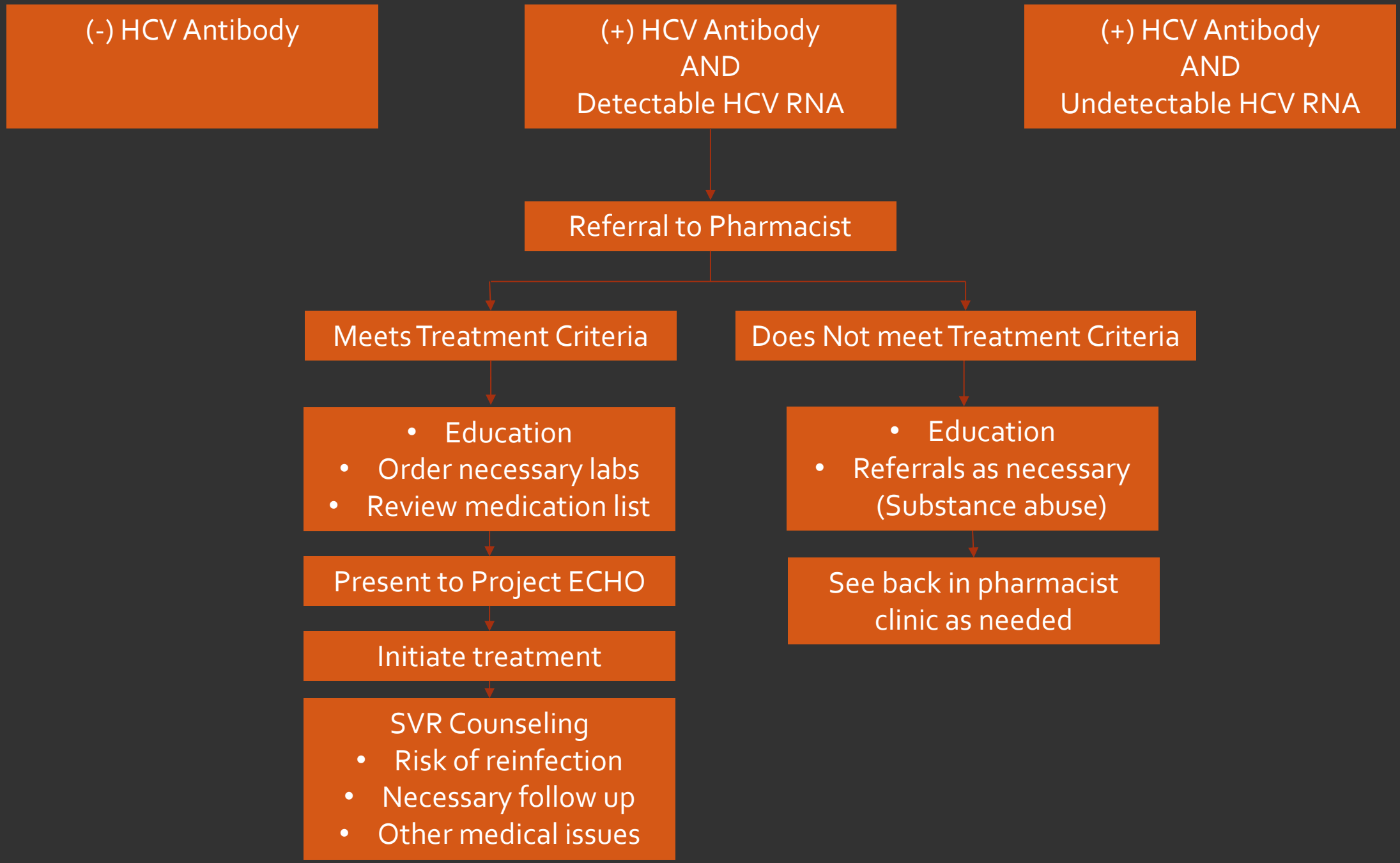
PROJECT ECHO

- ECHO: Extension for Community Healthcare Outcomes
  - Movement to de-monopolize knowledge and amplify local capacity to provide best practice care for underserved people all over the world
- Operating in more than 30 states
- Treating more than 65 complex conditions
- Experts mentor and share their expertise across a virtual network via case-based learning, enabling primary care clinicians to treat patients with complex conditions in their own communities
- ECHO model
  - 1. Use technology to leverage scarce resources
  - 2. Share "best practices" to reduce disparities
  - 3. Apply case-based learning to master complexity
  - 4. Evaluate and monitor outcomes

MOVING KNOWLEDGE INSTEAD OF PATIENTS

PHARMACIST RUN HCV CLINIC

- Patient with + HCV antibody and HCV RNA detectable
- Referral to pharmacist
- Initial pharmacy visit
  - Discuss treatment
  - Assess readiness/appropriateness for treatment
  - If ready/willing to be treated order required labs
  - If not ready for treatment (ex. Substance abuse)
    - Counsel on prevention of transmission
    - Requirements for treatment
- Presentation to project ECHO
- Initiate prior authorization or Patient assistance
- Start treatment
- Pharmacist monitoring/follow up throughout treatment and SVR
- SVR Counseling
  - Risk of reinfection
  - Necessary follow up (ex. Cirrhotic patients still require ultrasounds and monitoring for HCC)
  - Opportunity to discuss other medical issues with motivated patients (ex. Tobacco cessation, diabetes management)


(-) HCV Antibody
(+) HCV Antibody AND Detectable HCV RNA
(+) HCV Antibody AND Undetectable HCV RNA
Referral to Pharmacist
Meets Treatment Criteria
Does Not meet Treatment Criteria
• Education
• Order necessary labs
• Review medication list
• Education
• Referrals as necessary (Substance abuse)
Present to Project ECHO
See back in pharmacist clinic as needed
Initiate treatment
SVR Counseling
• Risk of reinfection
• Necessary follow up
• Other medical issues

BARRIERS

- Substance abuse
- Keeping appointments
  - Transportation
  - Social factors
- Insurance restrictions
- Reinfection with continued risk factors
- Obtaining medications
  - $$$
  - Paperwork

BENEFITS

- Patients do not have to be referred out for care
- All care is documented in our EHR
- Patients are more familiar with our system
- Potential cost savings
- Greater efficiency
- Reduced disparities
- Better access for rural and underserved communities

WHO WILL WE TREAT

- Patients need to be ready/willing to be treated
- All patients that meet insurance requirements will be evaluated for treatment
  - Uninsured patients can still be treated through patient assistance programs
- May consider prioritizing patients depending on number of patients referred
  - More severe liver staging (stage 4 first)
  - Extrahepatic manifestations
  - Older age

- Goal is to treat all patients who would like to be treated

TREATMENT OPTIONS

Medication	NS5B	NS5A Inh	NS3 PI	Other
Sovaldi®	sofosbuvir			
Harvoni®	sofosbuvir	ledipasvir		
Epclusa®	sofosbuvir	velpatasvir		
Zepatier®		elbasvir	grazoprevir	
Viekira Pak®	dasabuvir	ombitasvir	paritaprevir	Ritonavir
Daklinza®		daclatasvir		
Olysio®			simeprevir	
Ribavirin				Ribavirin
Vosevi®	sofosbuvir	velpatasvir	voxilaprevir	
Mavyret®		pibrentasvir	glecaprevir	

NEXT STEPS

- Continue to screen patients
  - Consider universal screening at CLIHS
- Refer patients to opioid treatment programs
- Refer patients to alcohol treatment programs
- Treat mental health conditions
- Continue to screen for and immunize against Hepatitis B
- Immunize against Hepatitis A
- Hepatitis C education
  - Prevention of transmission
  - Slow fibrosis progression (ex. Avoid alcohol, marijuana, other drugs, infections)
- Needle exchange program

QUESTIONS