## History of Viral Hepatitis

### 1942-1950
Experiments conducted confirming transmissibility of two distinct forms of viral hepatitis (Hepatitis A and B).

### 1963
Major Hepatitis B protein identified that allows for testing of the blood supply.

### Mid 1970s
Discovery of Non-A, Non-B Hepatitis as cause for acute hepatitis after transfusion.

### 1982
Hepatitis B vaccine becomes available, recommended for at-risk groups.

**Current Guidelines for HBV vaccination**
- Universal HBV vaccination starting within 24 hours of birth
- Vaccination of children < 19 years old who have not received vaccine prior
- People at risk by sexual exposure
  - Partners of individuals who are HBsAg positive, more than one sexual partner in six months, People seeking evaluation or treatment for STI, men who have sex with men
- People at risk by percutaneous or mucosal exposure
  - Current or recent IDU, household contacts of individuals who are HBsAg positive, residents/staff of facilities for mentally disabled People, health care and public safety personnel, hemodialysis patients, People 19-59 with diabetes
  - People with HIV or Hepatitis C
  - International travelers to areas with HBsAg prevalence ≥ 2%
  - People with chronic liver disease
  - Incarcerated People
  - Anyone seeking protection from Hepatitis B

### 1984
Treatment trials using interferon-based therapies used to treat Non-A, Non-B Hepatitis.

### 1989
Identification of Hepatitis C.

### 1990
Routine screening of blood supply for HCV begins (more accurate screening implemented in 1992).

### 1991
- Interferon-based therapy for HBV and HCV approved by FDA
- Anti-HBV activity of Lamudine discovered
- CDC recommends universal childhood vaccination against HBV

### 1995-1996
Approval of first vaccines against Hepatitis A, recommended for higher-risk individuals.

**Current Guidelines for HAV vaccination**
- All children starting at age 12 months
- International travelers or anticipated close contact with international adoptee
- Men who have sex with men
- People who use drugs
- Occupational risk for exposure
- People living with HIV (PLWH)
- People with chronic liver disease (including HBV and HCV)
- People experiencing homelessness
- Anyone requesting protection from HAV
1998 CDC recommends HCV screening for at-risk populations; Lamivudine is first nucleoside analogue approved for HBV treatment; anti-HBV activity of Entecavir discovered

1998 HCV screening recommendations for the following at-risk groups:
- Injection Drug Use
- Blood/blood product recipients or organ transplantation prior to July 1992
- Non-sterile tattoos/piercings
- Hemodialysis patients
- HIV or HBV infection
- Children born to mothers with HCV
- Occupational exposure
- Persistently abnormal ALT levels
- Any person requesting HCV testing

2001 Twinrix vaccination approved for use

Current guidelines for Twinrix vaccination:
- Adults 18+ who have not received documented full series vaccine.
- Full series available at no cost through DPH in NC for any 18+ who have no documented series of hepatitis B vaccine

2005 Entecavir approved for treatment of HBV

2006 CDC recommends expansion of Hepatitis A vaccination to all children

2007 Deaths due to HCV surpass HIV-related deaths in US

Figure. Annual age-adjusted mortality rates from hepatitis B and hepatitis C virus and HIV infections listed as causes of death in the United States between 1999 and 2007.

Because a decedent can have multiple causes of death, a record listing more than 1 type of infection was counted for each type of infection.
History of Viral Hepatitis

2008
Tenofovir approved for treatment of HBV

2012
CDC recommends expanding Hepatitis C screening to baby boomer cohort (1945-1965)

2013
Beginning of Direct Acting Antiviral (DAA) era in HCV treatment

2014
First all-oral HCV DAA regimen approved

2016
First pan-genotypic regimens available for HCV treatment; syringe exchange programs made legal in North Carolina

- NC State Laboratory of Public Health (SLPH) HCV risk-based testing begins in NCALHD Regions 1, 2, 3, 8 following vulnerability index identifying counties at highest risk for HCV outbreak

NC COUNTIES SERVED OR REACHED AS OF JUNE 30, 2021

For a continuously updated list of registered SSPs, visit https://tinyurl.com/NCSSIList

2017
- North Carolina Medicaid removes fibrosis restriction for Hepatitis C treatment approval
- Initiation of the Carolina Hepatitis Academic Mentorship Program (CHAMP)
- Viral Hepatitis Bridge Counselor Program begins
SLPH risk-based HBV and HCV testing available to all 85 local health departments in NC;

**Hepatitis B virus testing:**
- People and their sexual partners who currently use drugs not as prescribed
- People with a history of drug use
- People who are HIV positive
- Men who have sex with men
- People who have Hepatitis C

**Hepatitis C virus Testing:**
- People and their sexual partners who currently use drugs not as prescribed
- People with a history of drug use
- People who are HIV positive
- People with a history of incarceration
- People born between the years of 1945 and 1965

**Hepatitis A outbreak prevention response begins**

**Hepatitis A Outbreak Related Vaccine Eligibility**
- Individuals in the below at-risk groups may receive one no cost dose of HAV at any North Carolina Immunizations Branch provider site
  - Men who have sex with men (MSM)
  - People who inject drugs (PWID)
  - People experiencing homelessness or housing instability

**2019**
- First DAA regimens approved for children and adolescents
- HCV linkage program begins for incarcerated individuals
- Drug User Health Resource Guide created
- First State Viral Task Force begins

**2020**
North Carolina Medicaid lifts substance use restrictions for HCV treatment approval
2020
CDC recommends expanding HCV screening to all adults 18 and older and to pregnant women during each pregnancy

Universal hepatitis C screening:
- Hepatitis C screening at least once in a lifetime for all adults aged 18 years and older, except in settings where the prevalence of HCV infection (HCV RNA positivity) is less than 0.1%*
- Hepatitis C screening for all pregnant women during each pregnancy, except in settings where the prevalence of HCV infection (HCV RNA positivity) is less than 0.1%*

Hepatitis C testing regardless of age or setting among people with recognized conditions or exposures:
- People living with HIV (PLWH)
- People who ever injected drugs and shared needles, syringes, or other drug preparation equipment
- People with selected medical conditions, including:
  - people who ever received maintenance hemodialysis
  - people with persistently abnormal ALT levels
- Prior recipients of transfusions or organ transplants, including:
  - people who received clotting factor concentrates produced before 1987
  - people who received a transfusion of blood or blood components before July 1992
  - people who received an organ transplant before July 1992
  - people who were notified that they received blood from a donor who later tested positive for HCV infection
- Healthcare, emergency medical, and public safety personnel after needle sticks, sharps, or mucosal exposures to HCV positive blood (pdf)
- Children born to mothers with HCV infection

Routine periodic testing for people with ongoing risk factors, while risk factors persist:
- People who currently inject drugs and share needles, syringes, or other drug preparation equipment
- People with selected medical conditions, including:
  - people who ever received maintenance hemodialysis

Any person who requests hepatitis C testing should receive it, regardless of disclosure of risk, because many People may be reluctant to disclose stigmatizing risks

2021
- HCV testing adopted in NC SLPH perinatal panels; Perinatal HCV linkage project kickoff
- Quantitative HCV screening