WELCOME TO
AK LIVER DISEASE ECHO

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

NPAIHB
Indian Leadership for Indian Health

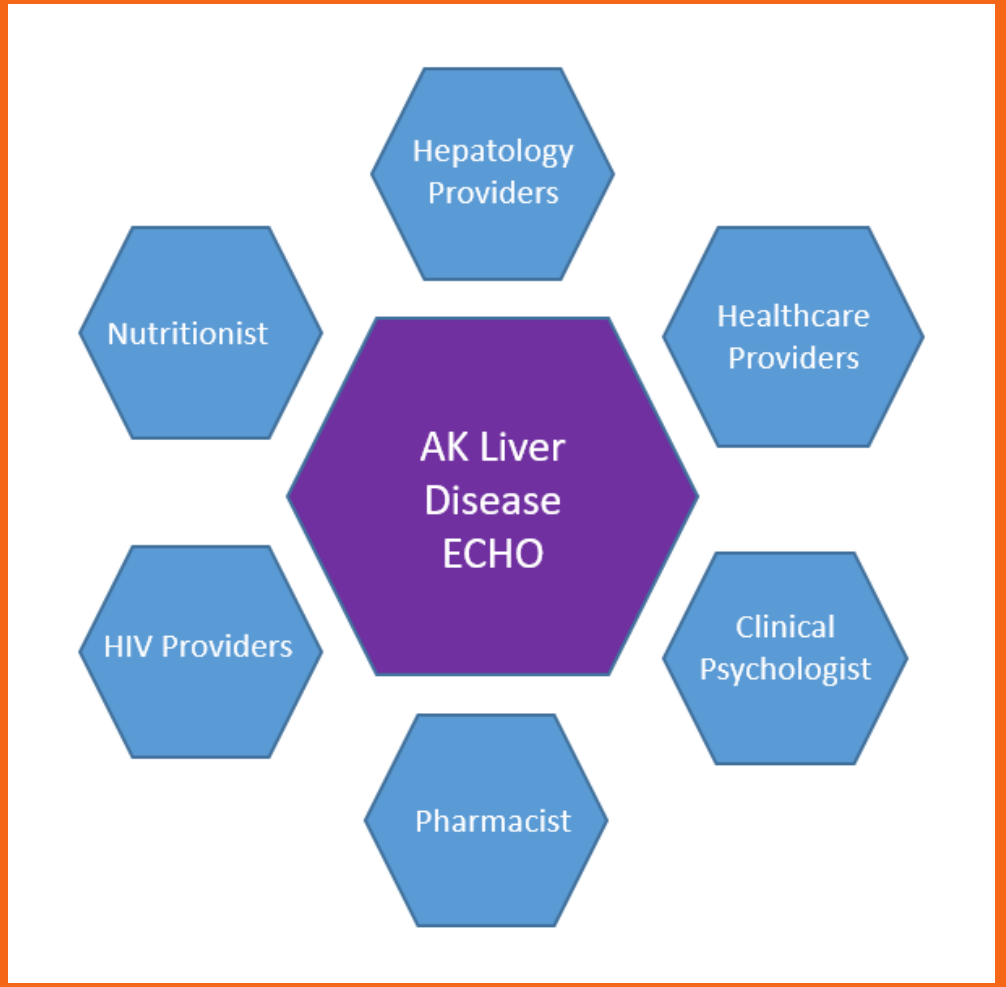
This project is supported by a grant from the Northwest Portland Area Indian Health Board and funding is provided from the HHS Secretary's Minority HIV/AIDS Fund.

WHAT WE DO

- Didactic Presentations pertaining to ECHO topics
- We're accepting **case presentations and questions pertaining to:**
  - Elevated Liver Function Tests
  - Cirrhosis
  - Managing Complications of Decompensated Cirrhosis – Ascites, encephalopathy, esophageal varices
  - Alcohol-related liver disease, including Alcohol Hepatitis
  - Autoimmune liver disease – Autoimmune Hepatitis, Primary Biliary Cholangitis, Overlap
  - Nonalcoholic fatty liver disease/Nonalcoholic steatohepatitis
  - Hepatocellular carcinoma
- Provide Expert Panelists

CONSULTANT TEAM

- Brian McMahon, MD Hepatologist
- Youssef Barbour, MD Hepatologist
- Lisa Townshend, ANP Hepatology Provider
- Annette Hewitt, ANP Hepatology Provider
- Leah Besh, PA-C HIV/Hepatology Provider
- Anne Fleetwood, MS, RDN, NDN
- Brittany Keener, PharmD, MPH, BCPS
- Kena Desai, MD, Internal Medicine Specialist



Welcome to Alaska Liver Disease ECHO

Approved Provider Statements:

JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Alaska Native Medical Center (ANMC) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Contact Hours:

ANMC designates this activity for a maximum of 12 contact hours, including 3 total pharmacotherapeutics contact hours, commensurate with participation.

Financial Disclosures:

Youssef Barbour, MD & Lisa Townshend-Bulson, APRN / faculty for this educational event, are primary investigators in an ANTHC sponsored hepatitis C study funded in part by Gilead Sciences. All of the relevant financial relationships listed have been mitigated.

Requirements for Successful Completion:

To receive CE credit please make sure you have actively engaged in the entire activity, your attendance is recorded by the facilitator, and complete the course evaluation form found here: https://forms.gle/R8vibUZgMbRcoScw9.

For more information contact
jlfielder@anthc.org or (907) 729-1387

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

Hepatocellular Carcinoma (HCC) Surveillance – Are We Doing Enough?

Brian J McMahon MD

Conflict of Interest

- None

Pre-Course Quiz: Only One Answer is Correct

1. Alaska Native Persons at risk for HCC receive a letter once a year recommending they have blood drawn for AFP and get a liver ultrasound (US) performed
2. Nationwide >50% of those at risk get screened at least once a year for HCC
3. Mortality due to HCC has dramatically improved US Nationwide due to better tests to screen for HCC
4. Alaska Native Persons at risk for HCC receive a letter every 6-months recommending they have blood drawn for AFP and get a liver ultrasound (US) performed
5. ANTHC finds 70% of HCC early enough to be treated for cure

Outline

- Surveillance means following persons at risk for HCC and testing them at the appropriate regular intervals?
- How is ANTHC and Alaska Native Regional Tribal Health Corporations doing at finding persons at risk for HCC?
- How good are the tests we are using for surveillance?
  - AFP
  - Liver ultrasound (US)
- What is our bottom line at finding HCC when curable?
- What can we do to improve the proportion of HCC tumors found when cure is possible?

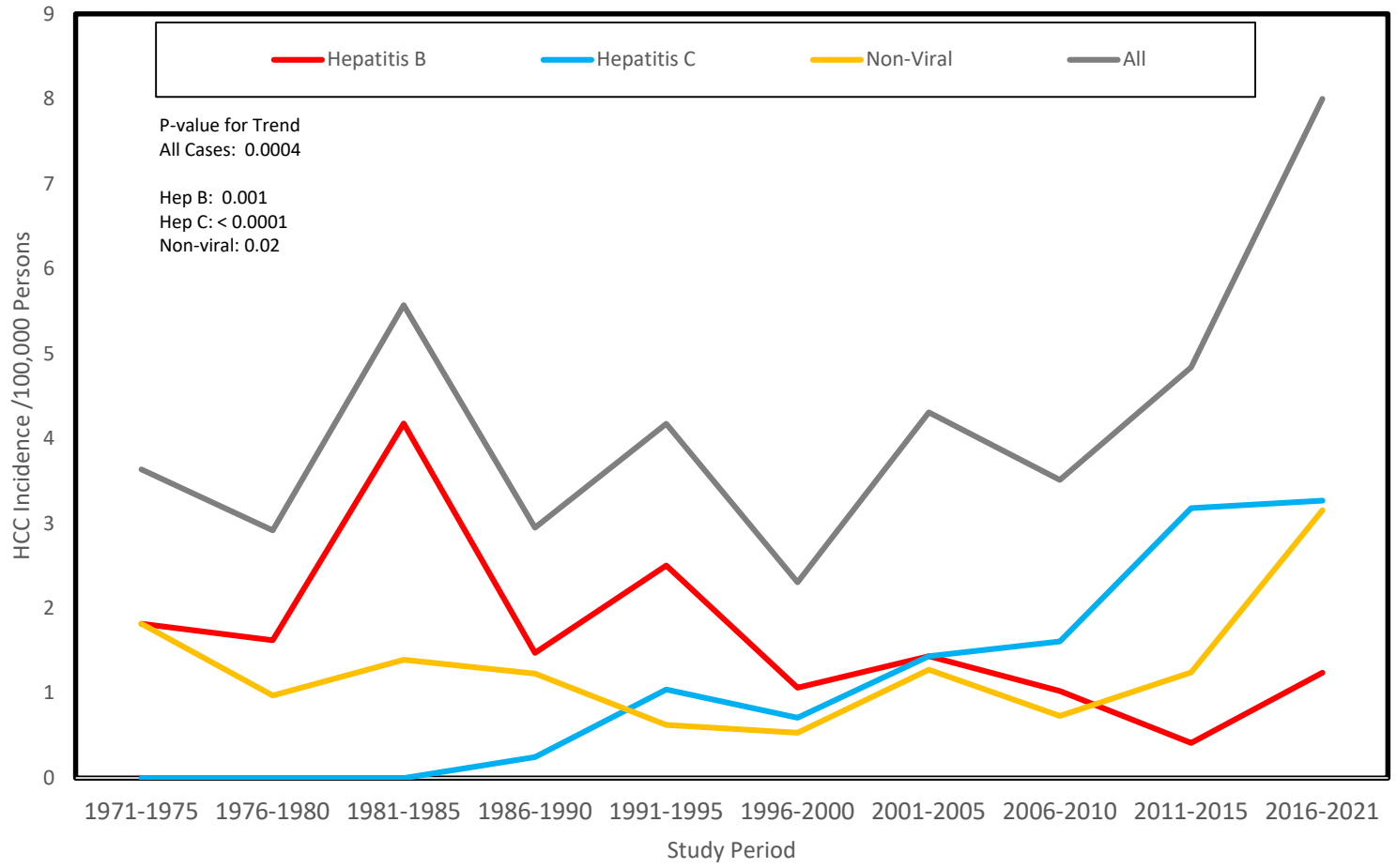
Whose at Risk for Developing HCC?

- Persons with cirrhosis
  - 20% of persons with cirrhosis may have regions of their liver with advanced or bridging fibrosis, so we usually include these persons
- Some persons who do not have cirrhosis
  - Persons with chronic hepatitis B virus infection (CHB):
    - Those with genotypes C, B2-6, F
    - Those also exposed to aflatoxin
    - Those with a family history of HCC
    - Men $\geq$ 40, women $\geq$ 50
  - Some persons with Metabolic Associated Fatty Liver Disease (MAFLD)

Rates of HCC Nationally and in Alaska

- Nationally incidence of HCC has doubled in last couple of decades
- HCC is the only cancer in the US where survival has decreased
  - All other malignancy, survival rates have improved
  - Unless tumors are found early when they can be ablated, resected or liver transplantation is possible, cure is not possible as no chemo or immunotherapy is curable nor is radiographic procedures.
- Bottom Line: HCC must be diagnosed early!
- Surveillance can only be undertaken if persons at risk are identified

Incidence of Hepatocellular Carcinoma (HCC) in the Alaska Native Population:1971 through 2022



Presented at AASLD 2022

Annual Incidence/1000 rates of HCC by Etiology in UK

- 3107 persons with cirrhosis followed for 12,977 persons years
- 10 year annual cumulative incidence of HCC was:
  - Overall incidence 3.9%
  - Alcohol 1.2%
  - Chronic viral hepatitis 4.0%
  - Autoimmune or metabolic disease 3.2%
  - Cryptogenic 1.1%
- Annual incidence is 2-3 times higher in persons with viral or autoimmune/metabolic cirrhosis than in alcoholic cirrhosis

West J et al. 2017 AP&T;45:983-990

How Many Alaska Native Persons at Risk for HCC have been Identified?

Liver Condition	Alaska Natives Proportion %	Alaska Native Number	Proportion at Risk for HCC	AN Estimated Not yet Identified
Hepatitis B	1%*	1100	800	<100 persons
Hepatitis C	3-5%	1688	700	2,000 to 3,000 persons
Metabolic Fatty Liver Disease (MAFLD)	25%-30%	Estimate 50,000#	10,000	40,000 persons
Alcoholic Liver Disease with Cirrhosis	Unknown	Unknown	1,000 to 1,500	1,000 to 2,000?
Autoimmune Liver Diseases	2%	210	50	<100

How Do We Identify Persons with Cirrhosis?

- 1st step is to calculate FIB4 or APRI
  - FIB4 score of <1.3 excludes cirrhosis (NPV 95%).
- Step 2: If FIB4 > 1.3, schedule FibroScan:
  - If FibroScan < 8.5 kPa, Repeat in 3-5 years if still at risk
- Step 3: If FibroScan >8.5 schedule MRE
- Step 4: If MRE is > 6.1 kPa suggests cirrhosis or advanced fibrosis
- Step 5 if needed: Liver Biopsy

‘Simple Scores’ for Predicting Presence of Advanced (F3/4) Fibrosis

NAFLD Fibrosis Score

= -1.675 + 0.037 x **Age** + 0.094 x **BMI** + 1.13 x **IFG/diabetes** + 0.99 x **AST/ALT ratio** - 0.013 x **Platelets** - 0.66 x **Albumin**.

- A score of less than -1.455 excludes fibrosis (NPV 88-93%).
- A score of greater than 0.676 predicts fibrosis (PPV 82-90%). AOC 0.85

FIB-4 Score

= (**Age** * **AST**) / (**Platelets** * Sqrt (**ALT**))

- A score of less than 1.3 excludes fibrosis (NPV 95%)
- A score greater than 3.25 predicts fibrosis (PPV ~70%)

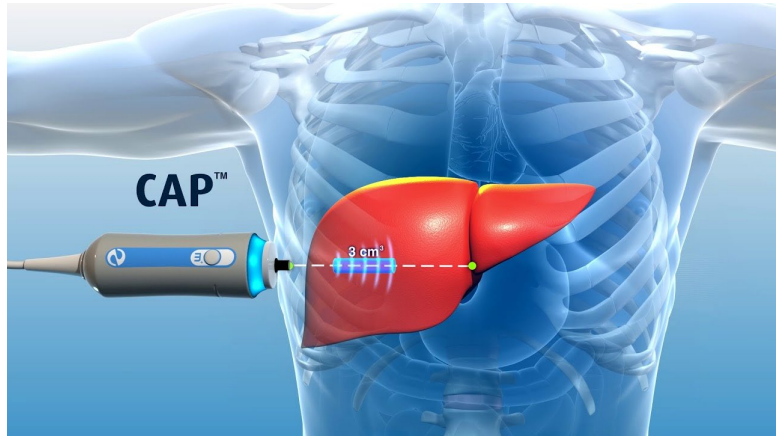
www.qxmd.com

ıgulo et al, Hepatology 2007: 45(4) 846

Sterling et al, Hepatology 2006: 43, 1317; McPherson et al, Gut 2010: 59(9), 1265

Innovation: Measuring Steatosis and Fibrosis

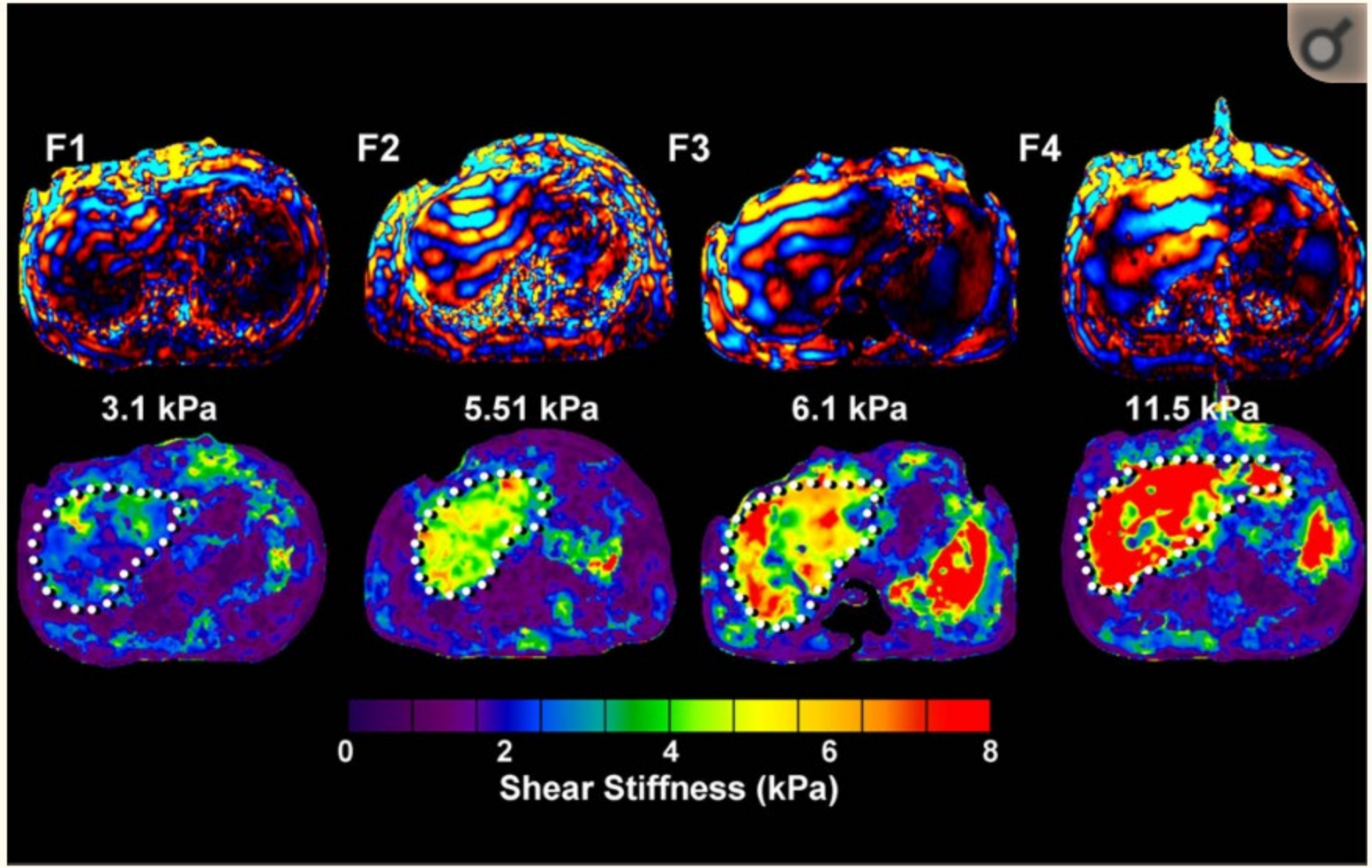
FibroScan® measures steatosis and fibrosis by measuring a sound wave that travels through 3cm^3 of the liver.



CAP Score	Steatosis Grade	Amount of Liver with Fatty Change
238–260 dB/m	S1	11 to 33%
260–290 dB/m	S2	34 to 66%
>290 dB/m	S3	67% or more

Stiffness Score	Fibrosis	Amount of Fibrosis
2–7 kPa	F0–F1	Absent or mild fibrosis
7.5–10 kPa	F2	Moderate fibrosis
10–14 kPa	F3	Severe fibrosis
>14 kPa	F4	Cirrhosis

Contact: svluna@anthc.org


F1
F2
F3
F4
3.1 kPa
5.51 kPa
6.1 kPa
11.5 kPa
0
2
4
6
8
Shear Stiffness (kPa)

Who Should We Evaluate for Cirrhosis

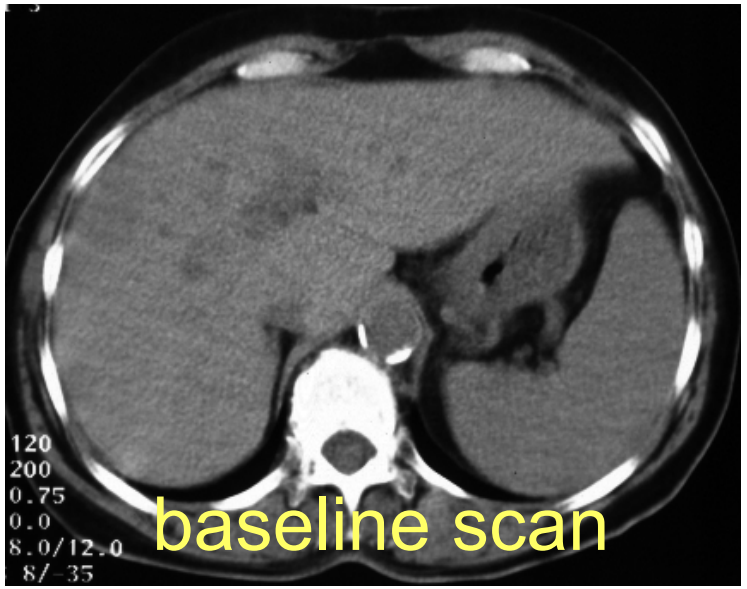
- All persons with type 2 DM or pre-diabetes
- All persons with metabolic syndrome having at least two of the following
  - Dyslipidemia
  - BMI >30
  - Hypertension
  - Sleep Apnea
- Persons with hepatitis C not yet treated
- Persons with HCV cured but also have NAFLD or heavy alcohol use

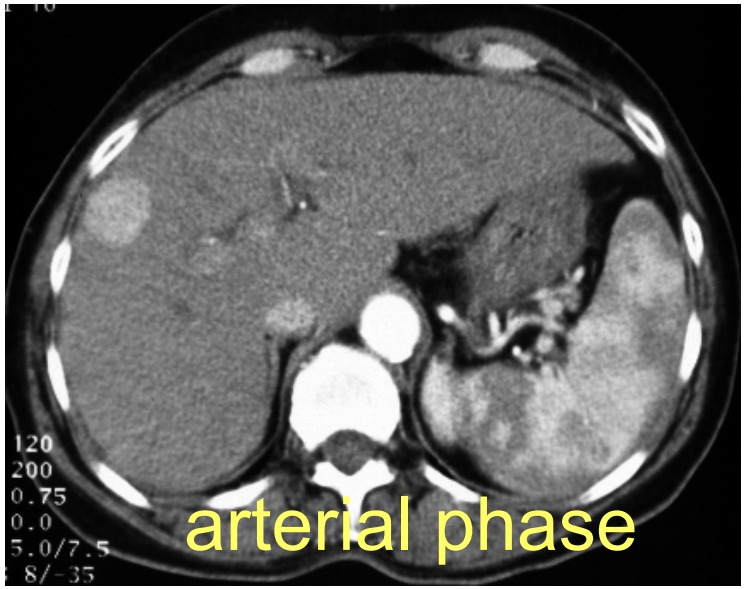
What Screening methodologies to use and how frequently

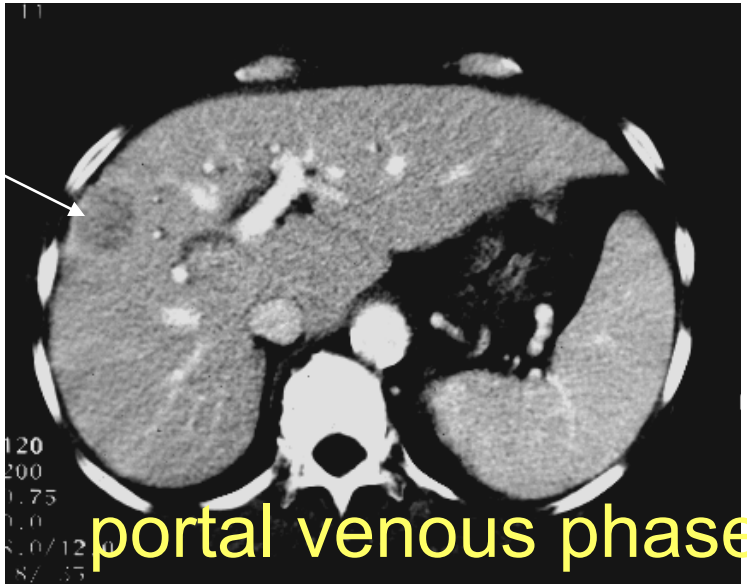
- Ultrasound of the liver and AFP every 6 months. Insurers will cover this in patients with cirrhosis or Hepatitis B
  - Challenges is getting US every 6 months on at risk AN persons living in remote communities
- If suspicious lesion found on liver US (hypoechoic lesion) next do
  - Quadraphasic CT or MRI

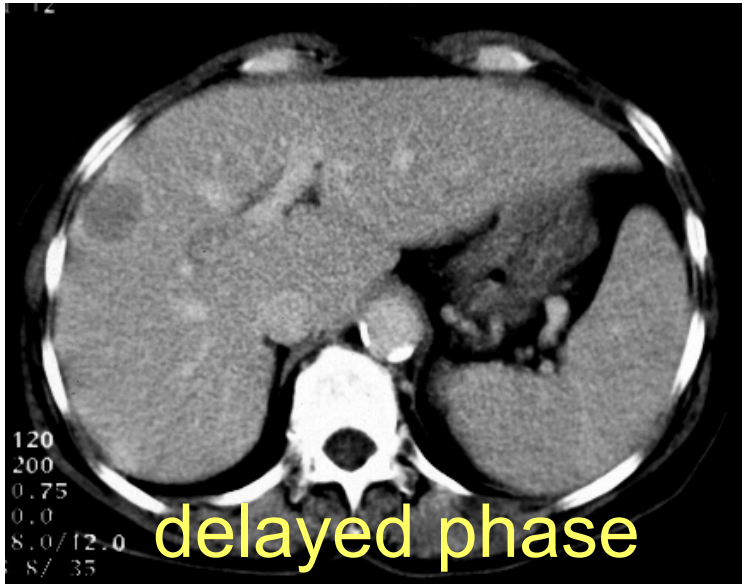
AASLD Guideline for HCC Hepatology 2018;67:358-380
Download for free at AASLD.org under practice guidelines

MultiPhasic CT for Hepatocellular Carcinoma









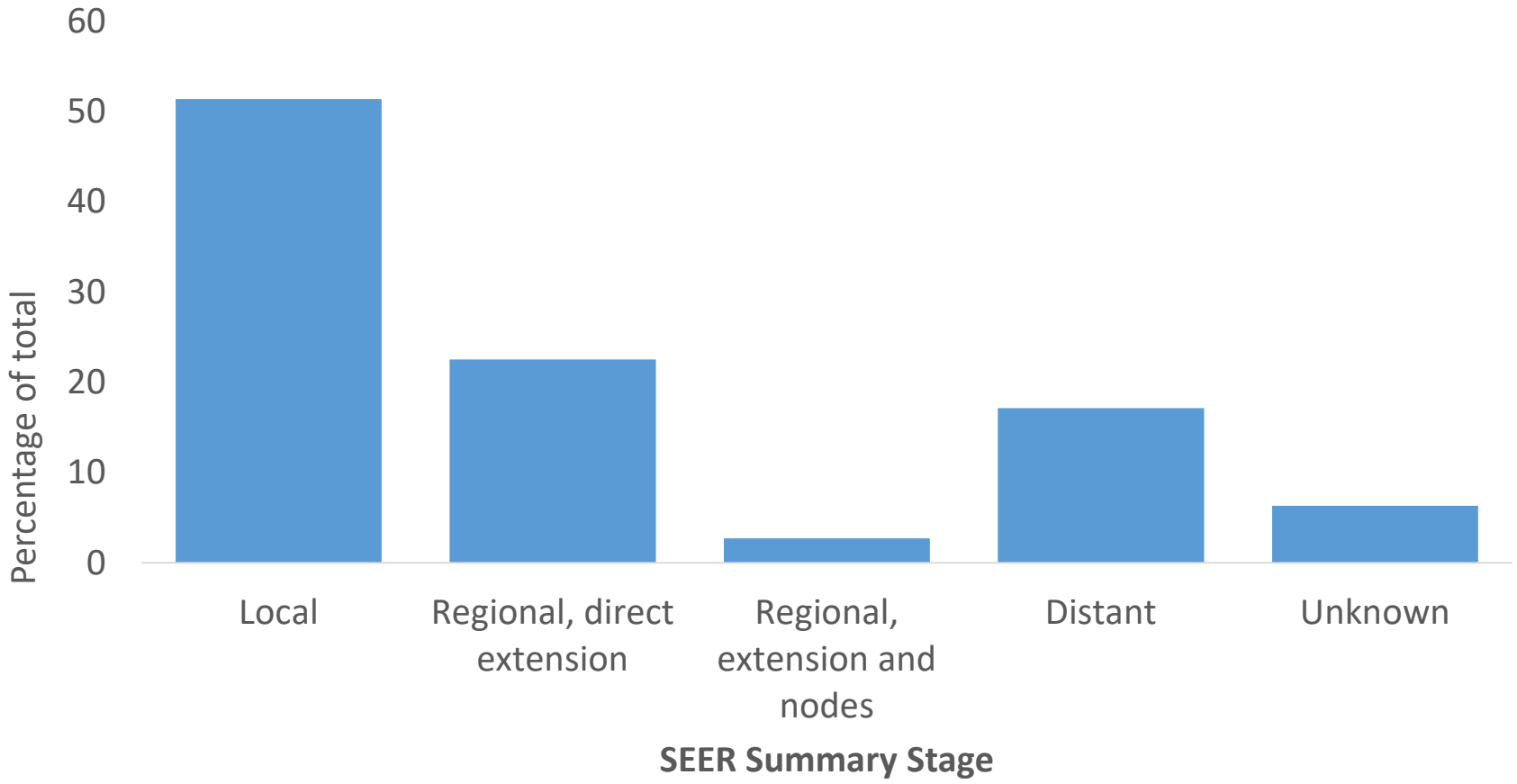
Sensitivity of HCC detection

Size	US	CT	MRI
Per-nodule	92/200 (46%)	126/194 (65%)	126/175 (72%)
<2cm	20/96 (21%)	35/88 (40%)	33/70 (47%)
2-4cm	44/71 (62%)	59/74 (80%)	66/77 (86%)
≥4cm	28/33 (85%)	32/32 (100%)	27/28 (96%)
Per-patient	88/138 (64%)	113/149 (76%)	99/117 (85%)

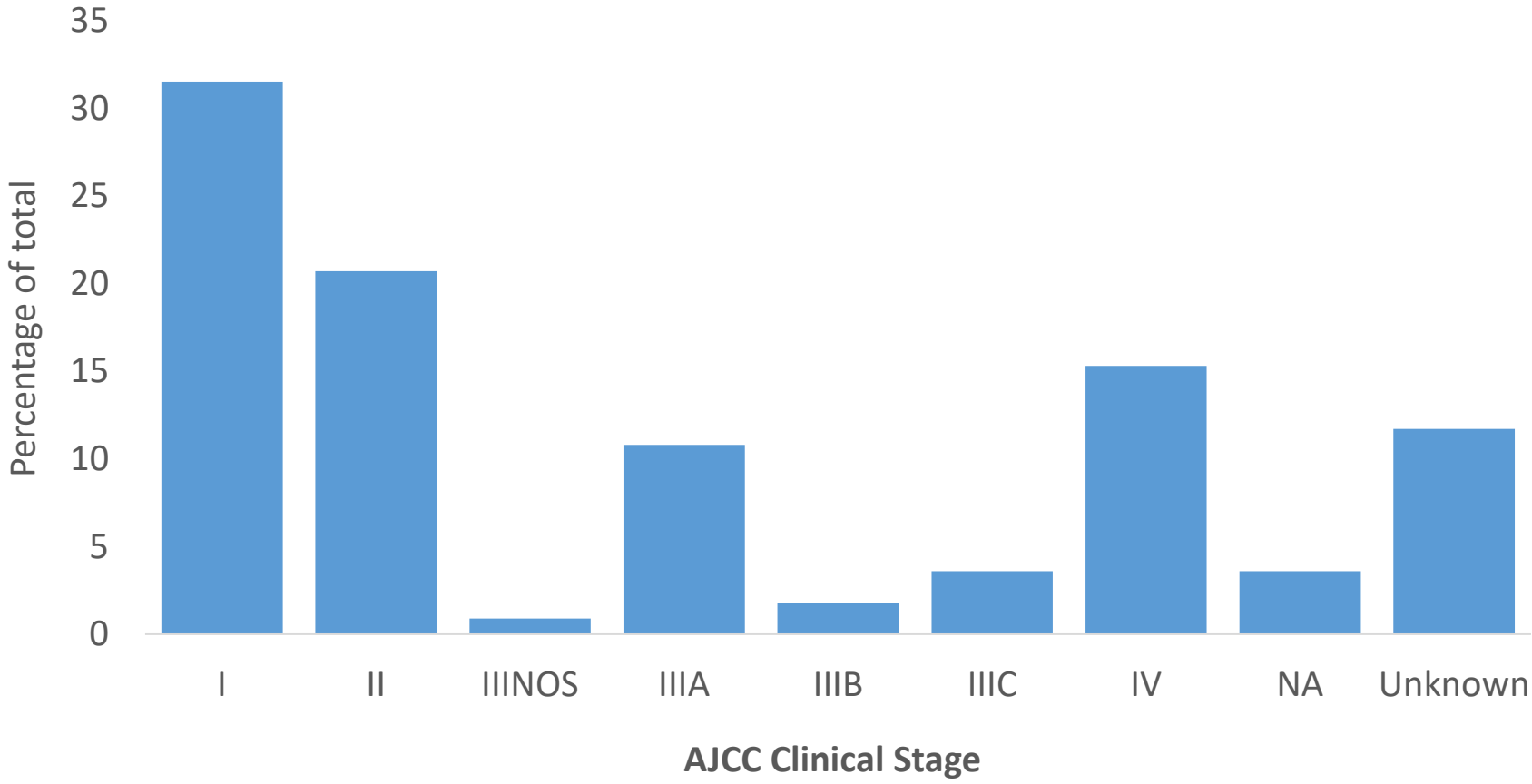
638 Liver transplant 225 (35%) HCC,
23 excluded *(infiltrative, multifocal)*

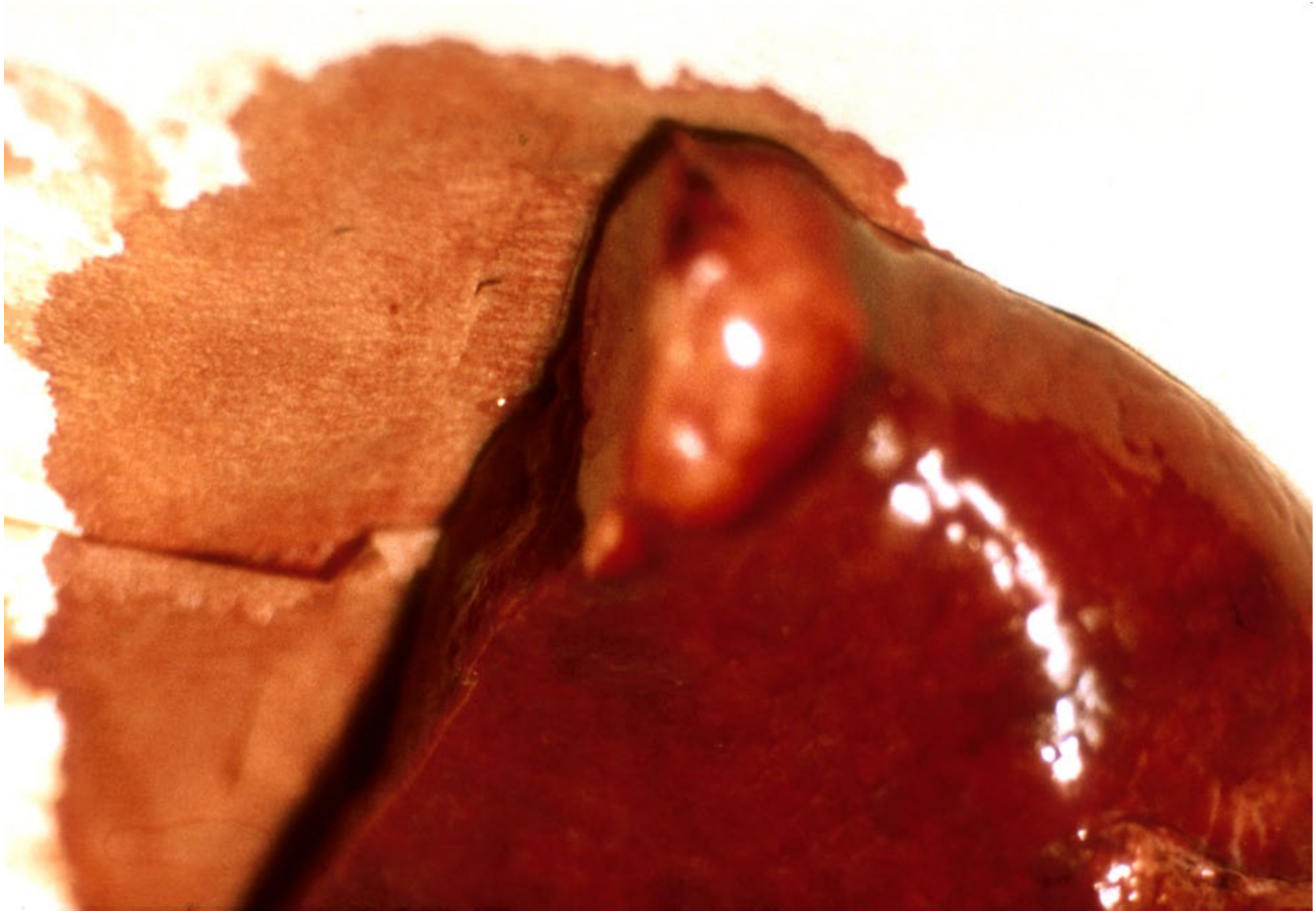
Yu NC. et al Clin Gastroenterol Hepatol 2011;9:161-167

Stage distribution of liver cancers among AN people, 2004-2016



Stage distribution of liver cancers among AN people, 2004-2016





What Can We Do to Improve Early Detection of HCC Now

- We follow almost 2,000 persons who are at risk for HCC: They all receive a letter reminding them to get AFP and liver US every 6-months as does their provider and clinic
- We can, in addition, identify those persons at highest risk of HCC and see them in clinic yearly or provide patient navigation to help them get tested every 6-months
  - Persons with hepatitis B: those with
    - Genotype F at all ages
    - Genotype C and A over age 40 males, 50 females
    - Those with family history of HCC
  - Persons with hepatitis C and cirrhosis

Conclusions: What do We Need to Do?

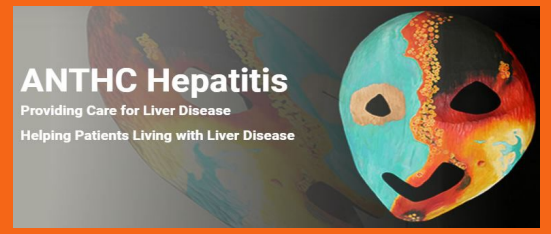
- Improve the detection of liver fibrosis in all persons at risk for liver disease
  - Screen all adults one time for hepatitis C and determine which have cirrhosis using FIB4, followed by FibroScan
  - Screen all persons with the metabolic syndrome with LFTs, FIB4 and if needed FibroScan
- Find ways to improve proportion of persons with cirrhosis to get liver US, AFP and LFTs every 6 months
- Workup all suspicious lesions on US

Post-Course Quiz: Only One Answer is Correct

1. Alaska Native Persons at risk for HCC receive a letter once a year recommending they have blood drawn for AFP and get a liver ultrasound (US) performed
2. Nationwide >50% of those at risk get screened at least once a year for HCC
3. Mortality due to HCC has dramatically improved US Nationwide due to better tests to screen for HCC
4. Alaska Native Persons at risk for HCC receive a letter every 6-months recommending they have blood drawn for AFP and get a liver ultrasound (US) performed Correct Answer
5. ANTHC finds 70% of HCC early enough to be treated for cure

ADDITIONAL LEARNING OPPORTUNITIES

- AK ID ECHO: HCV, HIV, PrEP, STIs
  - The 2nd Tuesday of every month from 12:00-1:00PM Alaska Standard Time
    - 1CE/CME offered per session
  - anthc.org/project-echo/hcv-hiv-prep-stis-echo
- LiverConnect Webinar Program
  - Second Tuesday of every month 8:00-9:00AM Alaska Standard Time
    - Full Hour didactic topics on Liver Disease and related topics 1CE/CME offered
  - anthc.org/what-we-do/clinical-and-research-services/hep/liverconnect/



AK LIVER DISEASE ECHO -TEAM CONTACTS

- Lisa Townshend-Bulson, MSN, FNP-C, Program Manager, ltownshend@anthc.org
- Marla Wehrli, Program Coordinator, mjwehrli@anthc.org
- Wileina Rhodes, RN Nurse CE Coordinator, wsrhodes@anthc.org
- Annette Hewitt, FNP-C Pharmacology Content Reviewer, amhewitt@anthc.org
- Cindy Decker, RN Liver Disease ECHO Nurse Case Manager, cadecker@anthc.org
- ANTHC Liver Disease and Hepatitis Program: 907-729-1560
- Northwest Portland Area Indian Health Board
  - David Stephens: Director Indian Country ECHO, dstephens@npaihb.org
  - Jessica Leston: Clinical Programs Director, jleston@npaihb.org

Thank you

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

NPAIHB
Indian Leadership for Indian Health

This project is supported by a grant from the Northwest Portland Area Indian Health Board and funding is provided from the HHS Secretary's Minority HIV/AIDS Fund.