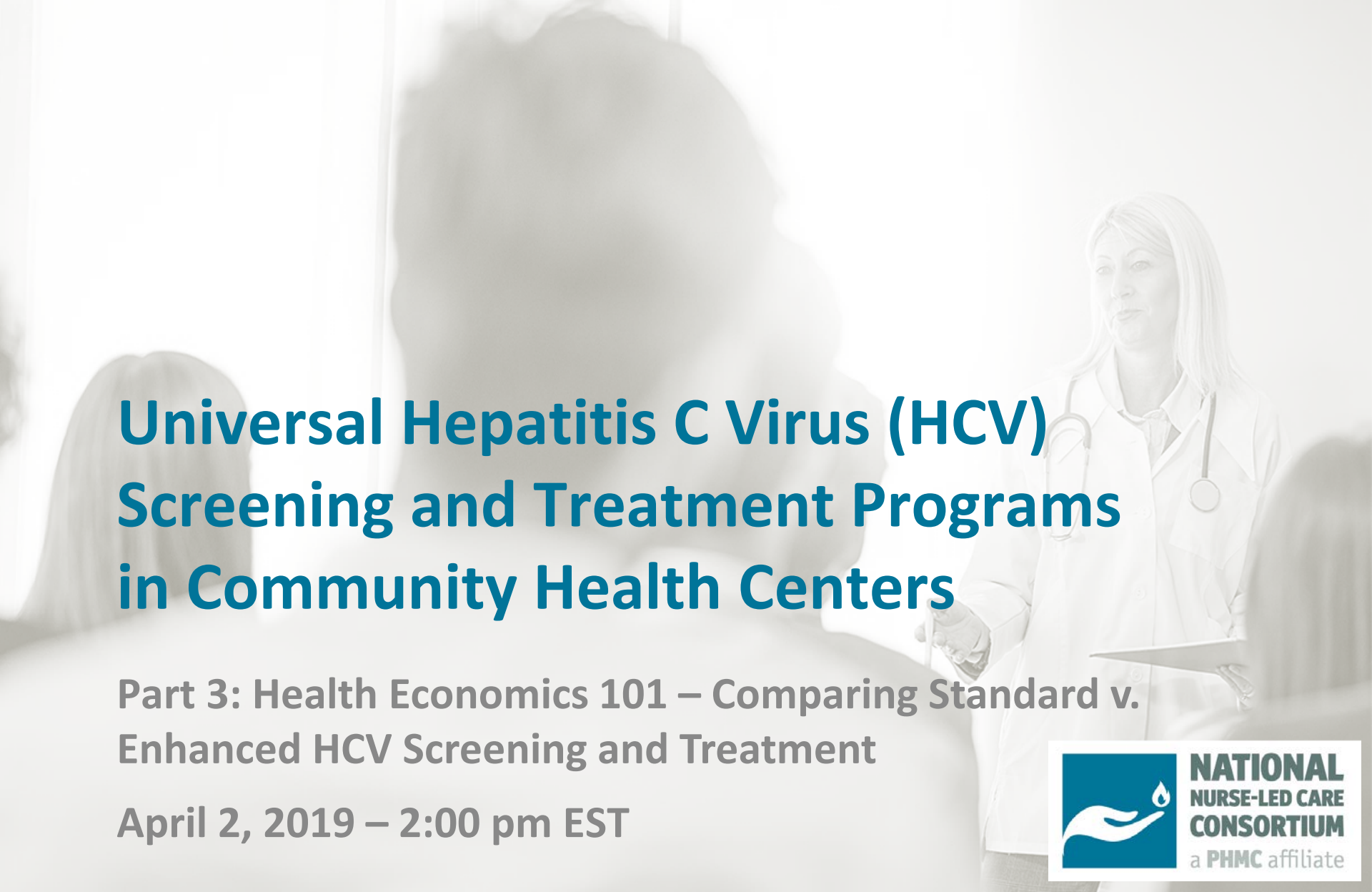

Universal Hepatitis C Virus (HCV) Screening and Treatment Programs in Community Health Centers

Part 3: Health Economics 101 – Comparing Standard v. Enhanced HCV Screening and Treatment

April 2, 2019 – 2:00 pm EST

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Housekeeping Items

To **download materials**, go to the Handouts section on your GoToWebinar control panel.

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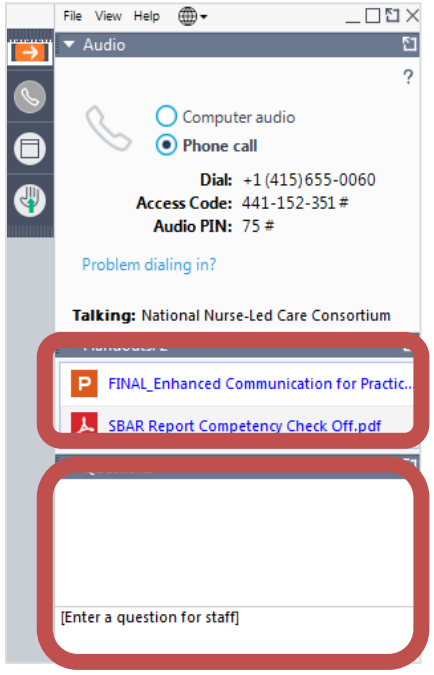

National Nurse-Led Care Consortium

The **National Nurse-Led Care Consortium (NNCC)** is a membership organization that supports nurse-led care and nurses at the front lines of care.

NNCC provides expertise to support comprehensive, community-based primary care.

- Policy research and advocacy
- Technical assistance and support
- Direct, nurse-led healthcare services

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HCV Learning Collaborative Overview

Part 1 (3/5/19): HCV Programming in Community Health Centers

Part 2 (3/19/19): HCV Care Team Formation and Linkage to Care

Part 3 (Today): Health Economics 101: Comparing Standard v. Enhanced HCV Screening and Treatment

Part 4 (4/16/19): Utilizing the HCV Cost Benefit Calculator to Evaluate Resources

You will receive a link for the survey from CDN for credentialing with the NNCC post webinar email within 1-2 days.

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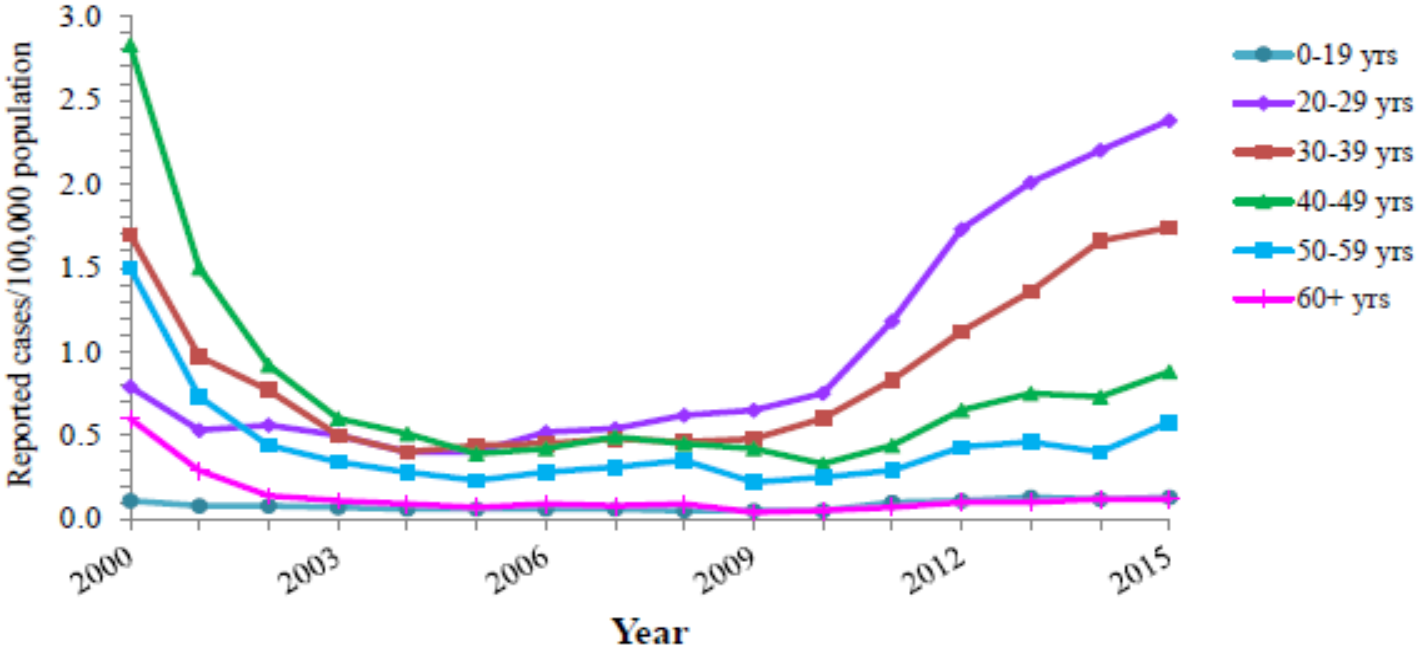
Reported number of acute HCV cases

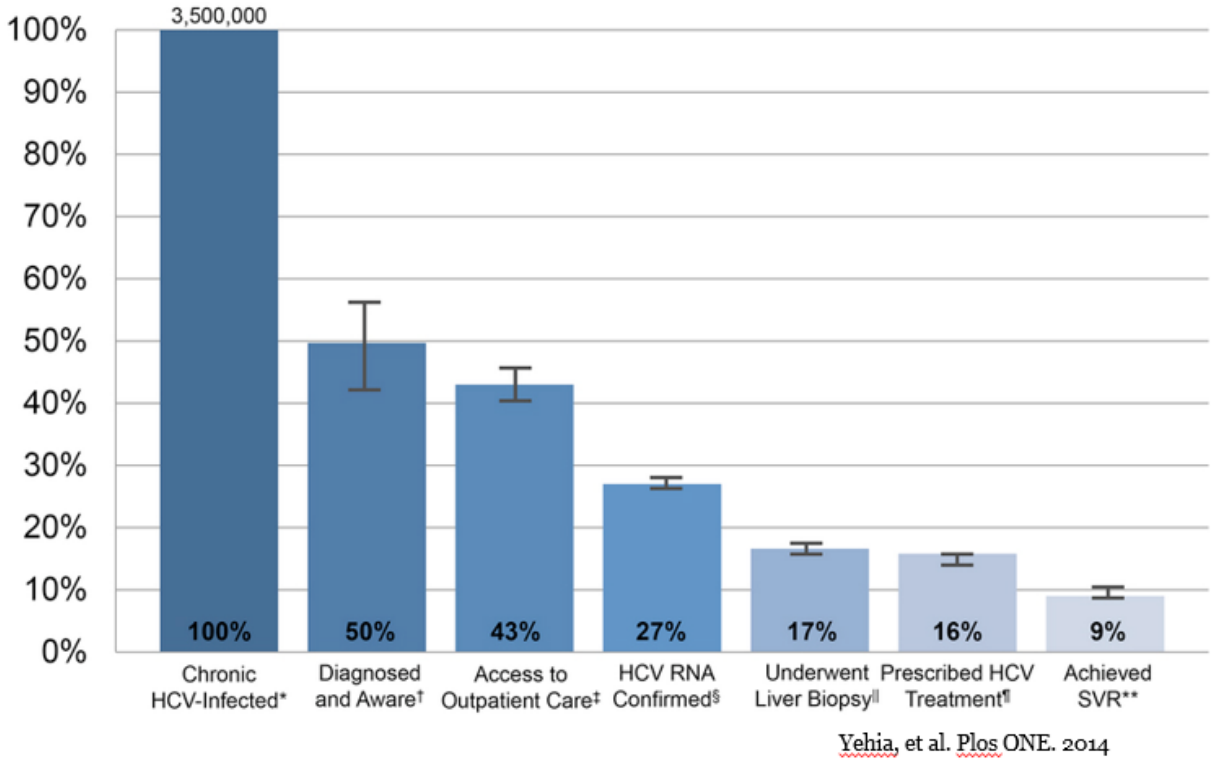
Figure 4.2. Incidence of acute hepatitis C, by age group — United States, 2000–2015



Source: CDC, National Notifiable Diseases Surveillance System.

https://www.cdc.gov/mmwr/volumes/66/wr/mm6618a2.htm

National Treatment Cascade for HCV



SVR = sustained virologic response.

Presenter

Michael Halpern, MD, PhD, MPH
Associate Professor,
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Health Economic Analyses for Community Health Centers

Michael Halpern, MD, PhD, MPH
April 2, 2019

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Need to Consider Costs in Health Care

- With limited resources, health care organizations can't provide all types of health care services.
- Community health centers need to determine costs and benefits of current and possible future health care service offerings to:
  - Evaluate the "value" of the service currently provided;
  - Prioritize the most important services; and
  - Determine the health and economic impacts of changing or expanding health care programs and services.

Goal of Health Economic Analyses

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- Assess the costs for providing specific health care services vs. the benefits resulting from that health care.
- Benefits of health care services can be:
  - Health outcomes: cases cured, diseases prevented
  - Economic benefits: revenue generated
  - Long-term projections: years of life saved

- Health economic analyses provide information to help make decisions about which health care programs to provide or prioritize.
  - Analyses don't make the decision; just part of evidence to consider.

Types of Health Care Economic Analyses

- Cost-benefit (return-on-investment)
- Cost-effectiveness

Poll:

Are you currently doing economic analyses at your health center?

A. Return on Investment (Cost-Benefit)
B. Cost-effectiveness
C. Both A and B
D. Not doing these but thinking about it
E. Not doing these

Cost-Benefit (or Benefit-Cost) Analysis

- *Difference in costs* between two health care interventions or services relative to the *difference in savings (or revenue)* between the two
- Used to determine the Benefit-Cost Ratio: difference in dollars saved per each dollar spent of a health care intervention/program

$$\text{Benefit-Cost Ratio} = \frac{\text{Savings from a health care intervention}}{\text{Cost of the health care intervention}}$$

Cost Benefit Analysis Example

	Intervention 1	Intervention 2	Difference (Intervention 2 - Intervention 1)
Cost	$10,000	$20,000	$10,000
Benefit (Savings)	$25,000	$40,000	$15,000

Benefit-cost ratio = Difference in Benefit / Difference in Cost
= $15,000 / $10,000 = 1.50
= $1.50 saved for every $1.00 spent on Intervention 2

- Benefit-cost ratio > 1: intervention saves more than it costs (relative to the comparison intervention)
- Benefit-cost ratio < 1 intervention costs more than it saves

Example Cost-Benefit Analysis

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Workplace smoking cessation program at a large employer

	No Smoking Cessation Program	Smoking Cessation Program (over 10 years)
Cost	$0	$1,193,322
Benefit	$0	$2,575,511

- Benefit-Cost Ratio = Savings/Costs = $2,575,511/ $1,193,322
  = 2.16
- $2.16 saved for every $1.00 spent on smoking cessation
- Return on Investment (ROI) = (savings-costs)/costs
  = Benefit-cost ratio – 1 = 1.16 or 116%

Cost-Effectiveness Analysis (CEA)

- Compares change in cost to change in outcomes between two interventions:
  - Cost-Effectiveness Ratio = $\frac{\text{Difference in Costs of Interventions}}{\text{Difference Outcome of Interventions}}$
- Same as Cost-Benefit Analysis, but outcomes are health measures
  - Outcomes can be health benefit (patient screened, diseases cured), mortality (years of life saved), or quality of life
- Cost-Effectiveness ratio = additional dollars spent per additional health benefit obtained ("bang for the buck")
- CEA always compares two different interventions
  - But one of the interventions can be "do nothing"

Example Cost-Effectiveness Analysis

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Community-based patient navigation program to improve cervical cancer screening among Hispanic women (Li et al., 2015)

- Program included mass media communications regarding cervical cancer and personalized education about the benefits of screening
- Modeled the impact of patient navigation program vs. standard care on costs per patient and life expectancy
- Found that the patient navigation program was more expensive, but increased screening rates, leading to increased life expectancy:

	Patient Navigation Group	Standard Care Group	Difference: Patient Navigation – Standard Care
Cost	$642.80	$597.90	$44.90
Life Expectancy	36.49 years	36.29 years	0.20 years

Cost-effectiveness of patient navigation = $44.90 / 0.20 years = $224.50 per additional year of life

Health Care Economic Analyses Key Points

- Analyses are important to assess the benefits of health care services and programs relative to their costs
- Analyses compare costs and benefits of two alternative services/programs/initiatives.
- Benefit-cost analysis determines the $ saved per $ spend on a program
- Cost-effectiveness analysis determines the cost per increased health outcome
- Health care economic analyses provide information for making decisions – they don’t make the make the decisions.

HCV Screening and Treatment Programs in Community Health Centers

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Hepatitis C Virus (HCV)

- Viral infection transmitted by blood/blood products, use of injected drugs, and unprotected sex
  - 3.5-fold increase in HCV infections 2010-2016, parallels increased opioid use
- Initial acute infection; approximately 75%–85% of people who become infected with hepatitis C virus develop chronic infection

HCV Screening and Treatment Programs in Community Health Centers

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- Approx. 3.5 million people in U.S. have chronic hepatitis C
  - Many haven't been screened, unaware of their HCV status
- Chronic HCV infection associated with liver cancer, non-Hodgkin's lymphoma, possibly pancreatic and head and neck cancers
  - Liver cancer increased 72% from 2003-2012; ~25,000 deaths in 2014
- No HCV vaccine; direct-acting antiviral (DAA) drugs available for treatment

Why Should Health Centers Think about Enhancing their HCV Services?

- Many infected individuals are 18-54, younger than the CDC-recommended target agents for HCV screening.
  - This is a key group served by CHC.
- Complex medical and insurance systems may make getting all the care needed difficult.
  - Confirmation of initial HCV screening results.
  - Behavioral health counseling and substance use services.
  - Prior authorization and other state-level Medicaid requirements before the start of treatment.
- Health center populations may have barriers to receiving needed HCV screening and treatment.
  - Time to come to health centers for multiple visits.
  - Transportation and childcare issues.

Poll:

Which HCV Screening are you currently providing?

A. CDC Recommendations (baby boomers and at-risk)
B. Universal (age 18 and older)
C. Not Screening for HCV

Poll:

Are you currently providing HCV treatment onsite at your health center?

A. Yes
B. No

Comparing Standard v. Enhanced HCV Screening and Treatment

- In 2012, Public Health Management Corporation (PHMC) community health centers in Philadelphia instituted enhanced care for HCV screening and treatment:
  - Opt-out screening: all individuals age 18+ screened unless refuse
  - Reflex (automatic) RNA screening for HCV Ab-positive patients
  - Care coordination and patient navigation throughout treatment of individuals with confirmed chronic HCV
  - Integrated behavioral health consultations and substance use counseling

Cost-Benefit Analysis of Enhanced HCV Screening and Treatment Services at CHCs

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- Costs and benefits (health and economic) of enhanced HCV care vs. standard HCV care are unknown
  - Increased need for CHCs to justify value of new programming, demonstrate return on investment of expanded service lines
- Collaboration with the National Nurse-Led Care Consortium to develop a **model to assess costs and benefits of enhanced vs. standard HCV care**
- Development of a user-friendly and flexible tool to allow other CHCs to project their own costs and benefits of providing enhanced HCV services – the **HCV Cost Calculator**

Enhanced HCV Care Cost-Benefit Model Development

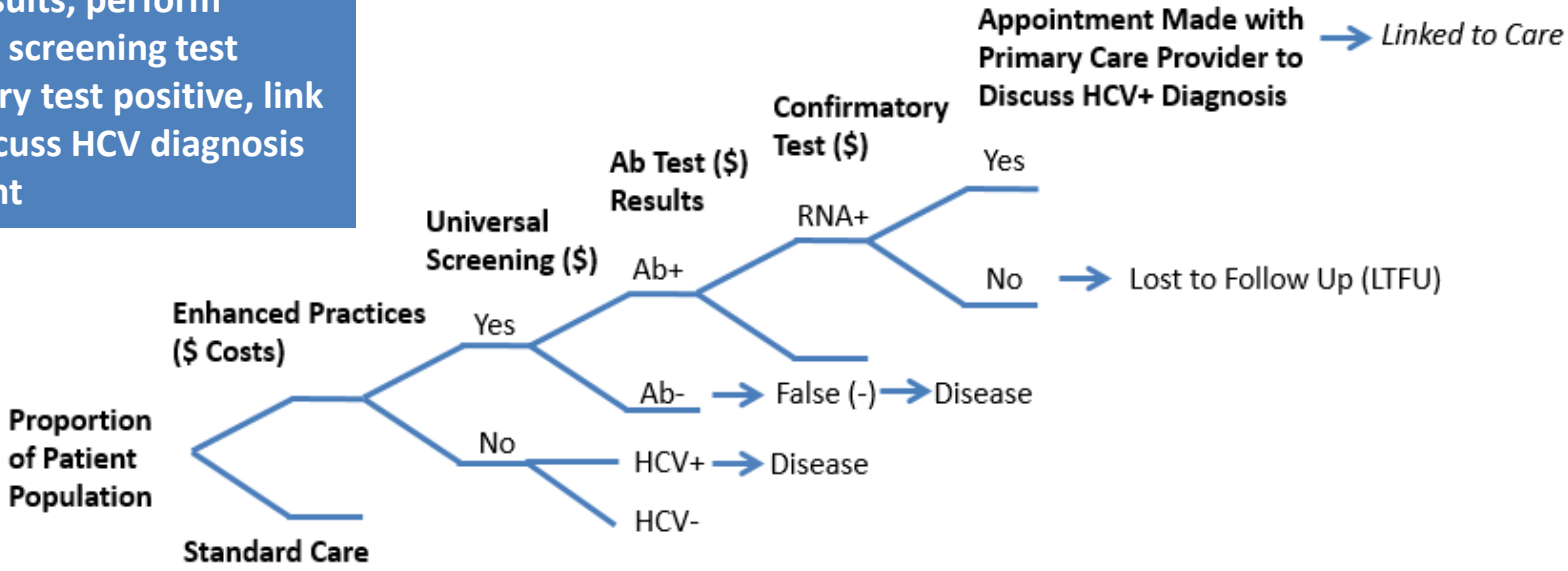
STEP 1: Develop model pathway ("decision trees") showing each step in standard vs. enhance HCV care

- Enhanced care includes increased screening, care coordination, behavioral health integration, and onsite HCV treatment.
- HCV care pathway decision trees are in three parts:
  - Screening and Testing
  - Care for HCV-positive Individuals Prior to Treatment
  - Treatment

Model Part 1 – HCV Screening & Testing

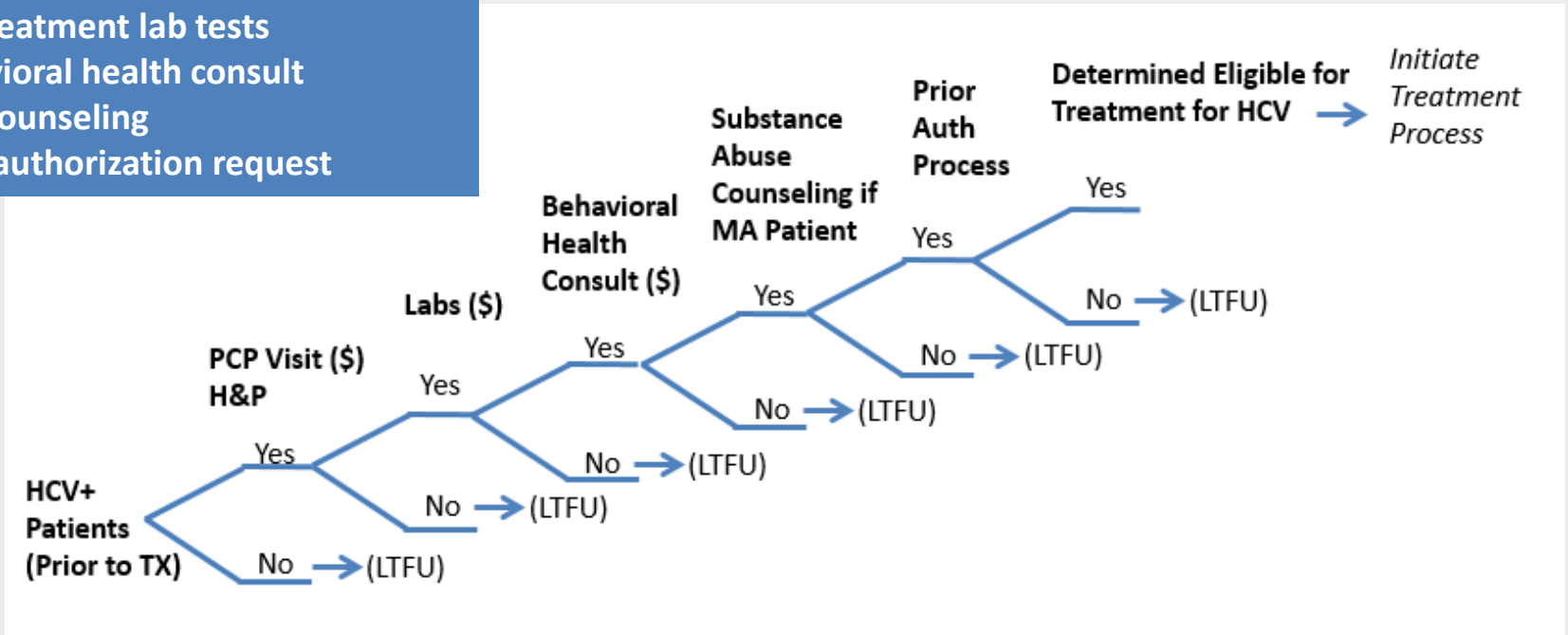
Components of decision tree:

- **Identify population to be screened**
- **Perform initial HCV screening**
- **If positive results, perform confirmatory screening test**
- **If confirmatory test positive, link to PCP to discuss HCV diagnosis and treatment**



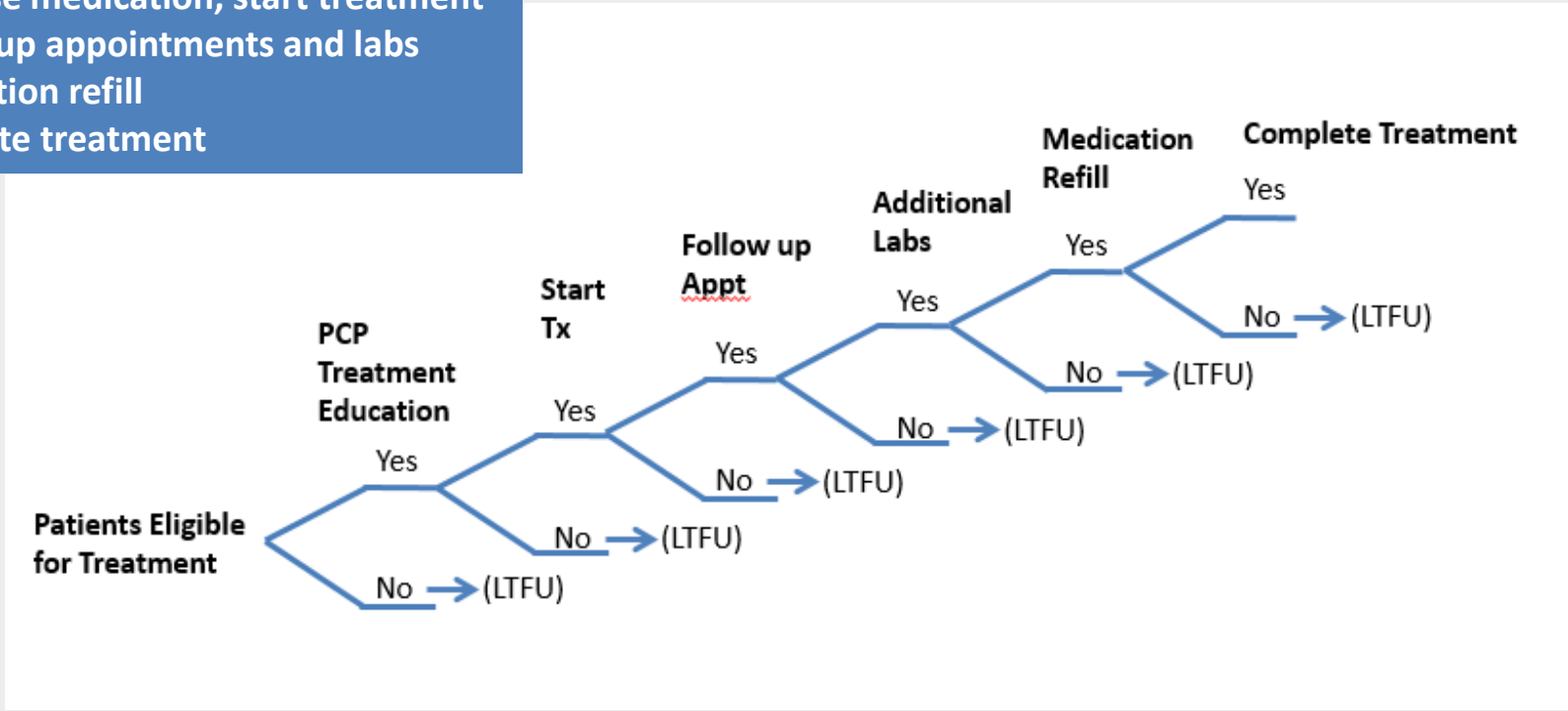
Model Part 2 – Care Prior to Treatment for HCV Positive Individuals

- PCP visit to discuss HCV diagnosis
- Pre-treatment lab tests
- Behavioral health consult
- SUD counseling
- Prior authorization request



Model Part 3- HCV Treatment

- Dispense medication, start treatment
- Follow-up appointments and labs
- Medication refill
- Complete treatment



Enhanced HCV Care Cost-Benefit Model Development (con't)

STEP 2: Gather information needed for cost-benefit model

- Characteristics of the population to be screened (for standard care and enhanced care)
- Rates/probabilities for each health care event in the decision tree
  - E.g., % of HCV+ patients who receive a PCP consult after diagnosis
- Costs and reimbursements (or patient co-payments) for each screening and treatment step in the care pathways (decision trees)
- Costs for developing systems/programs for enhanced HCV care

Information Needed for Health Center HCV Cost-Benefit Model

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1. Characteristics of the HCV population to be screened

- How many individuals to be screened?
  - Screening based on CDC recommendations (adults born 1945-1965, injected drug users, and certain other high-risk groups) vs.
  - Expanded screening (e.g., all individuals age 18 and older)
- Estimated proportion HCV positive
  - Based on experience at health centers or state/local data
- Distribution of insurance coverage among screened population
  - Medicaid, Medicare, uninsured
  - Needed to estimate health center reimbursement to health center for providing screening/treatment services

Information Needed for Health Center HCV Cost-Benefit Model

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2. Rates/probabilities for each HCV health care service

- Proportion of individuals with a positive antibody screening who get a confirmatory (RNA) test
- Proportion of individuals confirmed as HCV+ who meet with a PCP and receive needed lab tests
- Proportion who get behavioral health counseling, substance use disorder counseling/treatment, and receive prior authorization
- Proportion who start treatment and proportion of complete treatment

Costs and Reimbursements for each Health Care Event

3. Costs paid by and reimbursements paid to health center for HCV services

- Cost to a Health Center for each type of HCV health care service:
  - Screening tests
  - Lab tests
  - PCP visits and behavioral health counseling (based on salary of clinician providing the services, time required per patient)
  - HCV medications – 340B costs
- Revenue Generated for the Health Center by each of these services:
  - Medicaid
  - Medicare
  - Uninsured patient co-payments

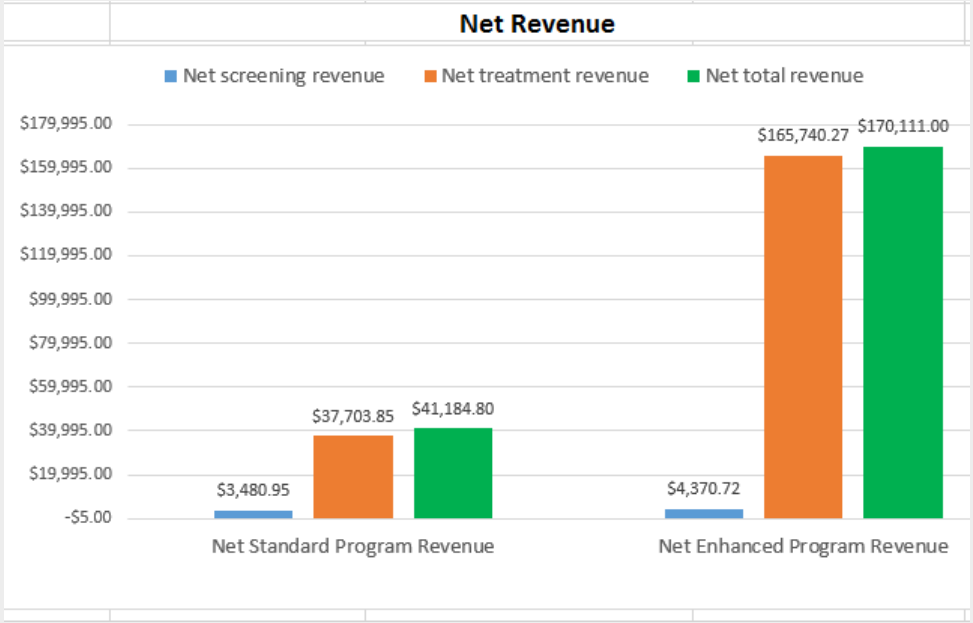
Enhanced HCV Care Cost-Benefit Model (con't)

- Step 3: Consider results of economic analysis

	Standard Care	Enhanced Care
# screened	677	1888
Increased number screened		1211
Increased number of HCV+ identified		**74.0**
Behavioral Health Consult	4.8	82.8
Substance Abuse Counseling	2.7	47.6
Start Treatment	3.2	70.8
Complete Treatment (number)	2.2	59.9
Complete Treatment (% of HCV + patients)	12.43%	65.24%
Increased number of patients completing treatment		**57.7**
Increased proportion of patients completing treatment		52.8%

Screening and Treatment Net Revenue

Total screening cost	$8,710.30	$29,569.81
Total treatment cost	$141,018.14	$1,727,903.33
Total cost (screening + treatment)	$149,728.44	$1,757,473.14
Total screening insurance reimbursement	$10,509.14	$25,808.69
Net screening revenue (total reimbursement + copayments - costs)	$3,480.95	$4,370.72
Increase in net screening revenue		$889.77
Total treatment insurance reimbursement	$178,437.65	$1,886,381.36
Net treatment revenue (total revenue - costs)	$37,703.85	$165,740.27
Increase in net treatment revenue		$128,036.42
Total revenue (reimbursement + co-payments)	$190,913.24	$1,927,584.13
Net total revenue (total revenue - costs)	$41,184.80	$170,111.00
Increase in total revenue		$128,926.19
Benefit Cost Ratios, enhanced vs. standard		
Screening revenue vs cost, enhanced vs. standard		1.043
ROI		4.27%
Treatment revenue vs cost, enhanced vs. standard		1.081
ROI		8.07%
Benefit Cost Ratio, enhanced vs. standard		**1.080**
ROI		**8.02%**



After this webinar, will you utilize economic analysis?

A. More likely to use this at my health center
B. Less likely
C. Interested but want more information
D. No Change

HCV Cost Calculator – Next Steps

- Developed web-based version of HCV Cost Calculator for easier use by CHCs
  - Includes a “simplified” version of the Cost Calculator including many default values; requires limited work by health centers to use
- Distribution and use of online Cost Calculator at next webinar


Questions

Next Module: April 16, 2019 at 2:00 pm EST

Part 4: Utilizing the HCV Cost Benefit Calculator to Evaluate Resources

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What to fill out…

1. Follow up NNCC survey if you want to join our newsletter

2. Survey from CDN within 1-2 days for 1 CNE or CME credit

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