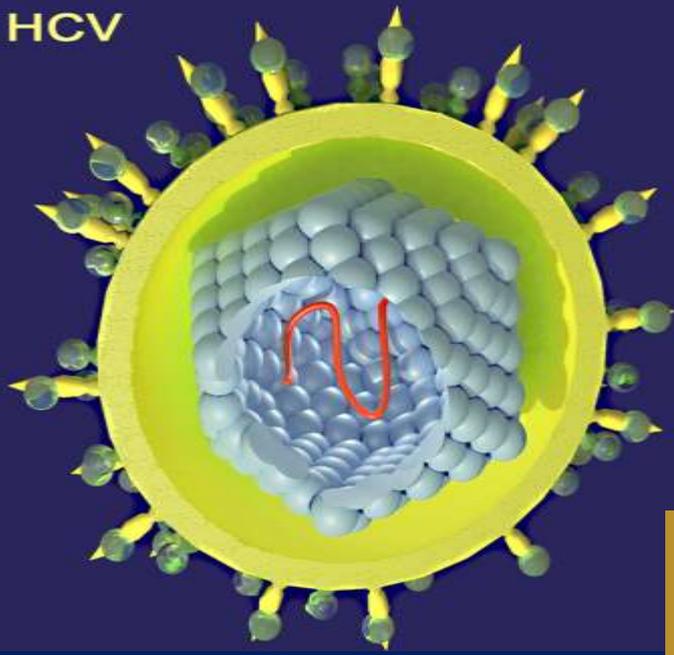


HCV



HEPATITIS C SCREENING AND LINKAGE TO CARE FOR HOSPITALIZED BABY BOOMERS

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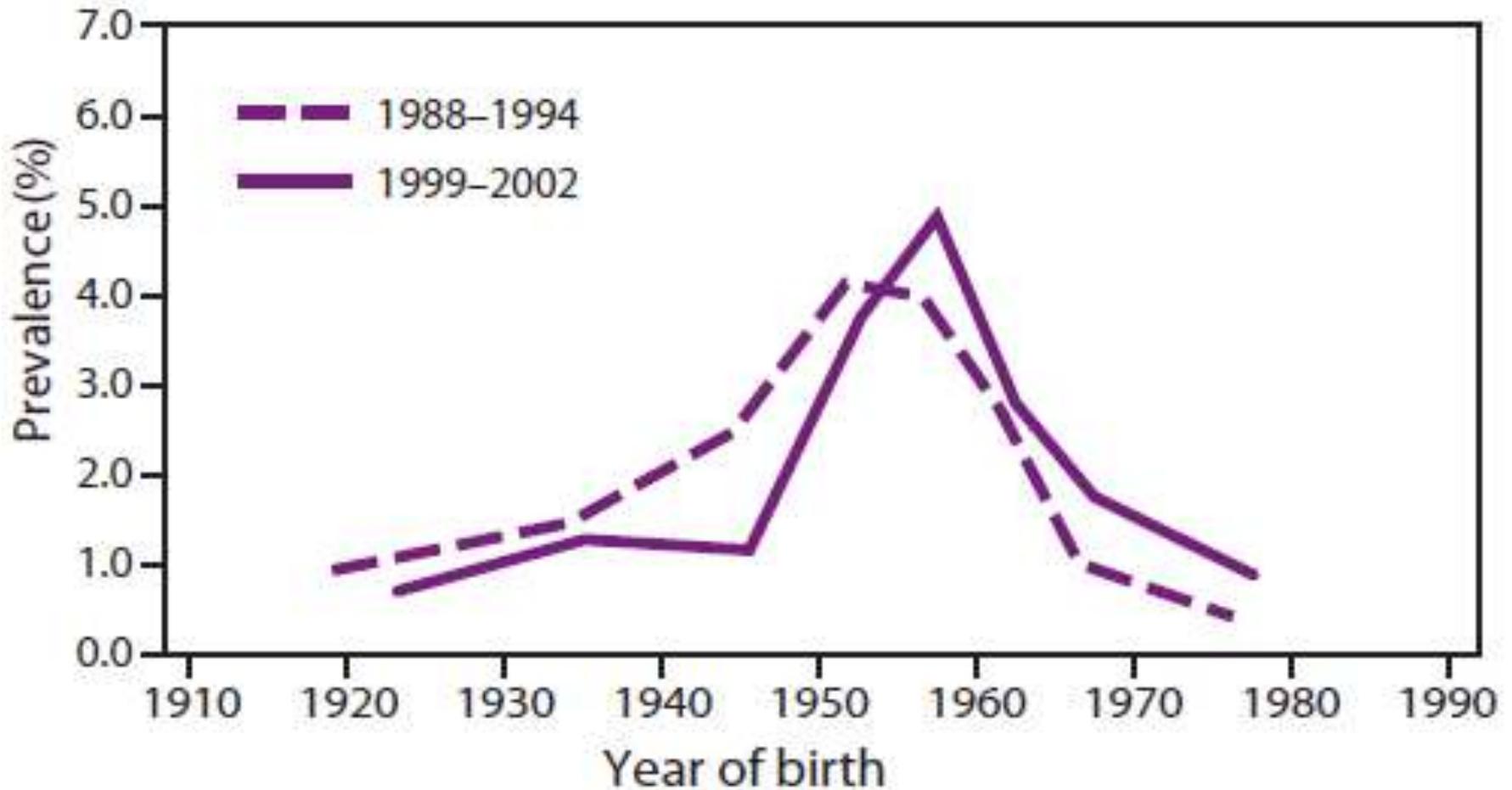
ReACH Center

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NHANES: Prevalence of HCV Infection



USPSTF Guidelines - 2012

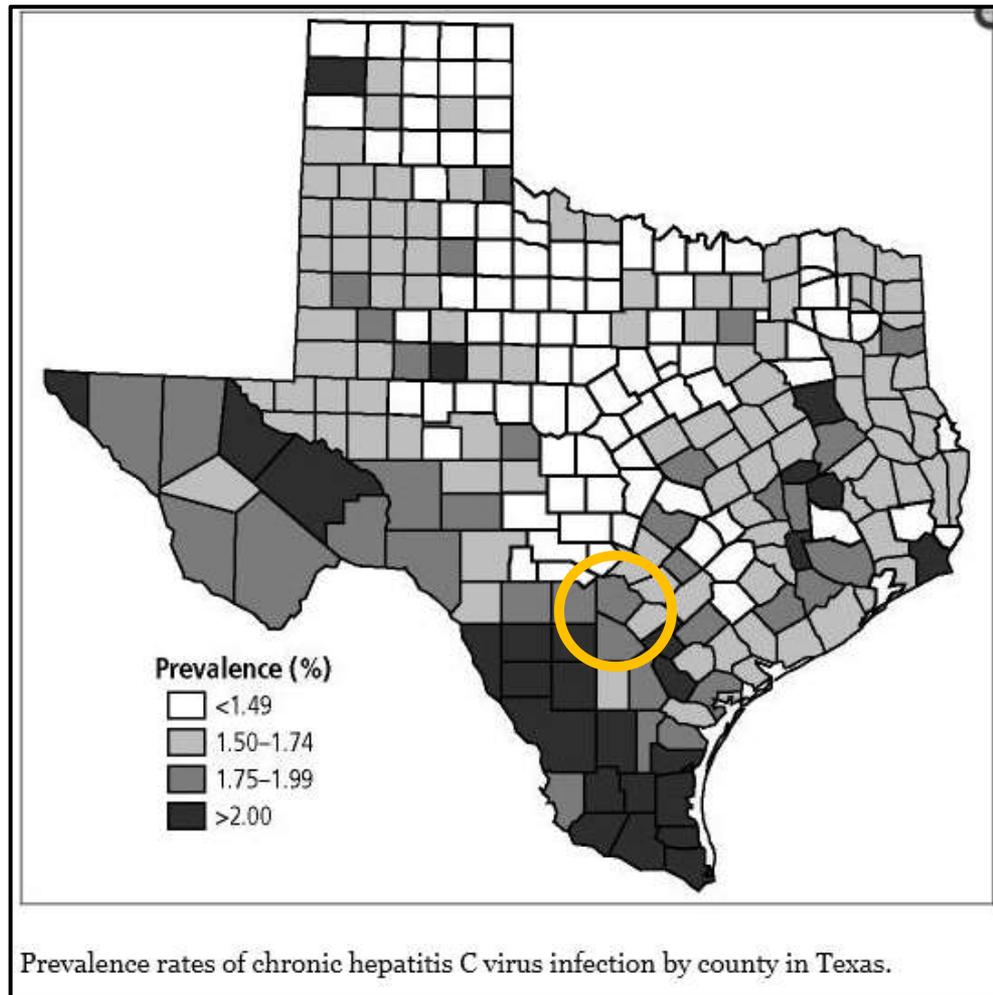
- One time screening of all baby boomers (born 1945 through 1965) for HCV infection
 - Grade B



Objective

- To implement a HCV screening and linkage to care program for all hospitalized baby boomers

Chronic HCV Prevalence Rates* by TX County



*Estimated from NHANES III –
1988 through 1994 from a Markov
model

Yalamanchili K, Saadeh S, Lepe R, Davis
GL. The prevalence of hepatitis C virus
infection in Texas: implications for future
health care. Proc (Bayl Univ
Med Cent). 2005 Jan;18(1):3-6

University Health System

- Third largest public health system in Texas
- Largest in South Texas
- Teaching hospital with 700 resident physicians

	2012
Operating Beds	496
Inpatient Discharges	21,214
Patient Days	127,379
Observation Days	6,802

Components of Screening Program

- Electronic medical record screen for eligibility
- Development of a new order for anti-HCV with reflex HCV RNA for positives*
- Automatic supplemented by manual entry of orders for eligible patients
- Opt out screening along with patient education
- In-person counseling for HCV+ patients
- Case management after discharge

*HCV antibody = Siemens HCV antibody chemiluminescent performed on Centaur Advia XP.
HCV RNA quantitative PCR = Roche Ampliprep-Taqman real-time PCR

EMR Screen for Eligible Baby Boomers

Inclusion

- Born 1945-1965

Exclusion

- Prior record of HCV diagnosis ICD-9-CM code in any field or
- Prior record of any HCV test within the system in past 7 years
- Admission to psychiatry
- Poor prognosis (e.g., metastatic cancer)

Patient Education: Posters & Flyers



If you were born between 1945 and 1965, we will include the hepatitis C test with your other lab work. If you have questions or concerns, please talk with your nurse.

Millones de Americanos tienen hepatitis C. La mayoría no lo saben.

Si usted nació entre los años 1945 y 1965, incluiremos la prueba de detección de hepatitis C con el resto de sus análisis de laboratorio. Por favor diríjase a su enfermero(a) si tiene preguntas al respecto.



**EARLY DETECTION CAN SAVE LIVES.
DETECCIÓN TEMPRANA PUEDE SALVAR VIDAS.**

www.cdc.gov/KnowMoreHepatitis



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Consent and Orders

- Opt out consent with flyers and educational handouts
 - ▣ Nurse asking consent resulted low performance rates
 - ▣ Opt out resulted in <5% refusal
- Informatics group – added order for HCV screening test to many admission order sets (>50)
- Still required daily manual entry for 1-10 patients

Daily Admissions Report

Eligible

Patient Name	MRN	Admit Date	Age	Gender Code	Current Location
ASR [REDACTED]	[REDACTED]	12/26/2013	61	Female	NS-MED CRITIC CARE UNIT (MCCU)
HED [REDACTED]	[REDACTED]	12/26/2013	54	Male	NS-TRANSPLANT TELEMETRY (TTTEL)
JIM [REDACTED]	[REDACTED]	12/26/2013	54	Female	NS-MED CRITIC CARE UNIT (MCCU)
				Count:	3

Pending

Patient Name	MRN	Admit Date	Age	Gender Code	Current Location
BR [REDACTED]	[REDACTED]	12/26/2013	54	Male	NS-INTER PROG CARE UNIT (IFCU)
LA [REDACTED]	[REDACTED]	12/26/2013	63	Female	NS-GENERAL MED (MED9)
RA [REDACTED]	[REDACTED]	12/27/2013	59	Male	NS-GENERAL SURGERY (SUR7)
RI [REDACTED]	[REDACTED]	12/26/2013	63	Male	NS-HARTMAN SURG PAV (HRTM)
RI [REDACTED]	[REDACTED]	12/26/2013	53	Male	NS-GENERAL SURGERY (SUR7)
RI [REDACTED]	[REDACTED]	12/26/2013	53	Female	NS-HARTMAN SURG PAV (HRTM)
VI [REDACTED]	[REDACTED]	12/26/2013	60	Male	NS-HARTMAN SURG PAV (HRTM)
				Count:	7

Hep C dx

Patient Name	MRN	Admit Date	Age	Gender Code	Current Location
AE [REDACTED]	[REDACTED]	12/26/2013	57	Male	NS-GENERAL MED (MED9)
				Count:	1

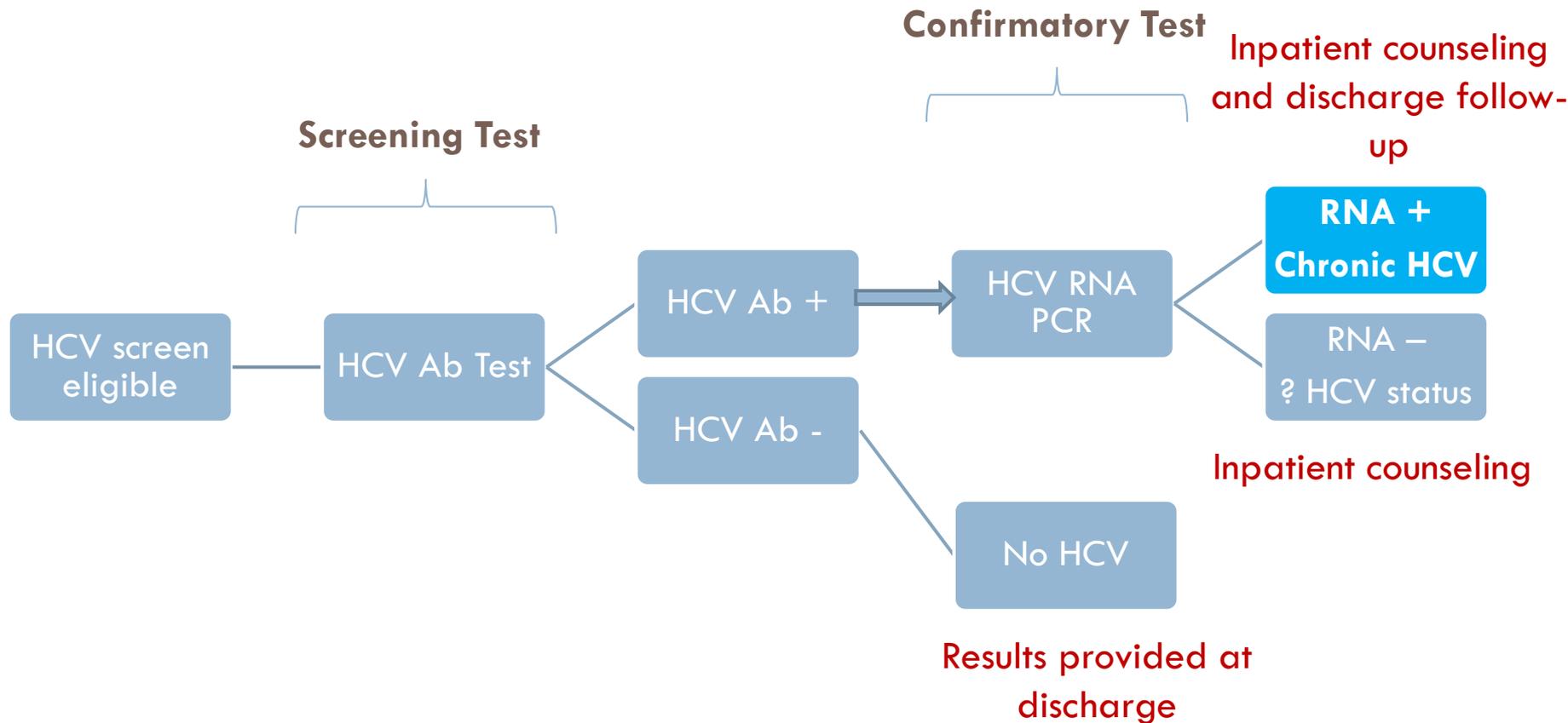
Psych

Patient Name	MRN	Admit Date	Age	Gender Code	Current Location
E [REDACTED]	[REDACTED]	12/26/2013	51	Male	NS-PSYCHIATRY UNIT (PSYL)
H [REDACTED]	[REDACTED]	12/26/2013	53	Female	NS-PSYCHIATRY UNIT (PSYL)
				Count:	2

Tested Prev

Patient Name	MRN	Admit Date	Age	Gender Code	Current Location
CA [REDACTED] JA	[REDACTED]	12/26/2013	55	Female	NS-NEUROSURG ICU (NSIC)
EE [REDACTED]	[REDACTED]	12/26/2013	54	Female	NS-HARTMAN SURG PAV (HRTM)
GI [REDACTED]	[REDACTED]	12/26/2013	68	Female	NS-GENERAL MED (MED9)
HI [REDACTED] IAL	[REDACTED]	12/27/2013	52	Female	NS-GENERAL SURGERY (SUR7)

Hepatitis C Screening Algorithm



Mobile App HCV Counseling Program

- Developed a tablet App-based HCV+ counseling program in English and Spanish
 - ▣ HCV epidemiology, transmission prevention, risks that can accelerate chronic HCV, management and treatment strategies
- Screening questions for alcohol, drug use and depression
- Bilingual inpatient counselor
 - ▣ Reviews mobile app with all HCV+ patients
 - ▣ Reviews treatment options and any support needs
 - ▣ Addresses substance abuse and mood disorders

What is Hepatitis?



Your liver is an important organ located in the upper right part of your abdomen.

Your liver helps your body use the food you eat.

It filters and helps your blood clot.

It also fights infections.

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Quick Question

What part of your body can Hepatitis C hurt?

Stomach

Bones

Liver

Eyes

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¿Qué es la Hepatitis?



Hepatitis es el nombre que se le da a cualquier cosa que lastima a su hígado.

Su hígado está localizado en la parte superior derecha del área de su estómago.

Su hígado ayuda a su cuerpo a usar la comida que come, a limpiar su sangre y a combatir infecciones.

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Patient Navigation

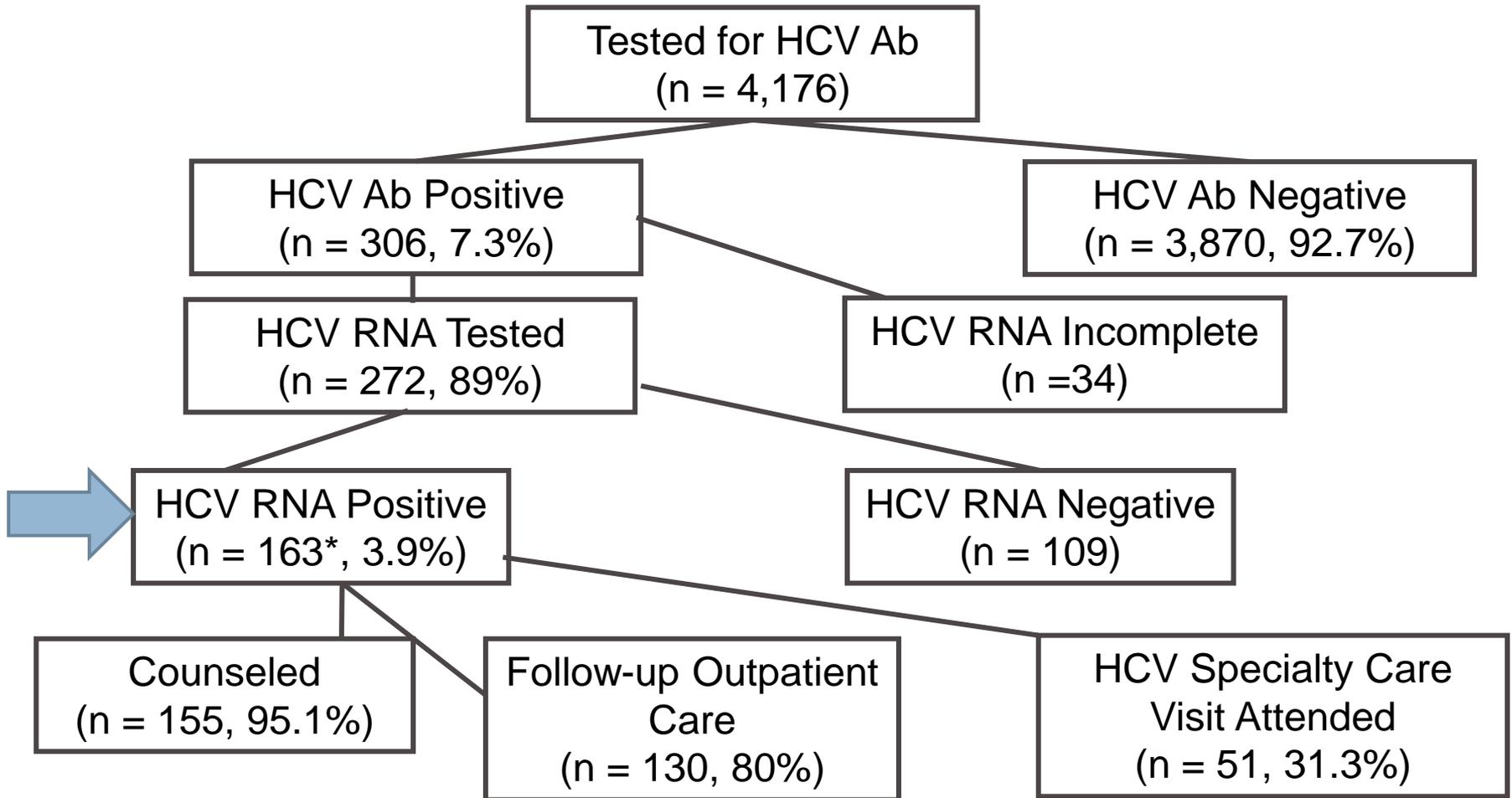
- Bilingual navigator contacts patients with chronic HCV shortly after discharge
- Sends records to primary care provider (if has one)
- If no insurance, helps apply and find primary care provider
- Sends providers list of needed tests and preventive care (e.g.. immunizations)
- Provides assistance with HCV specialty care referral
- Helps make and remind about appointments, lab tests
- Assists with paperwork for HCV medication compassionate use
- Links to support services -- alcohol, drug abuse, mental health counseling

Results: All Admissions to University Hospital 12/1/12 through 6/30/14

- Unique admissions: 8,059
 - ▣ Median birth year 1956
 - ▣ Women 50%
 - ▣ Self-identified Hispanic 59%
 - ▣ Eligible† and tested in HCV screening program:
4,176 (52%)

† No prior HCV diagnosis or test, poor prognosis (e.g., metastatic cancer) or psych admission

Flow Diagram Testing and Follow-up Care



60% of HCV Ab+ tested for RNA

HCV Ab Positive versus HCV Ab Negative Patients

Characteristics	HCV Ab + N=306	HCV Ab – N=3870
Mean birth year	1957.6	1955.8
Sex		
Women	75 (25%)	1,743 (45%)
Men	231 (75%)	2,127 (55%)
Hispanic Ethnicity	158 (52%)	2,279 (59%)
Race		
Non-White	25 (8%)	320 (8%)
White	281 (92%)	3,550 (92%)
Uninsured	160 (52%)	1,730 (45%)

HCV RNA Positive vs HCV RNA Negative Patients

Characteristics	HCV RNA + N = 163	HCV RNA – N = 109
Mean birth year	1957.5	1956.9
Sex		
Women	36 (22%)	33 (30%)
Men	126 (77%)	76 (70%)
Hispanic Ethnicity	82 (50%)	59 (54%)
Race		
Non-White	16 (10%)	6 (6%)
White	146 (90%)	103 (94%)
Uninsured	91 (56%)	53 (49%)

Imaging Follow-up

- Ultrasound (n=76)
 - Normal (n=13)
 - Fatty infiltration/steatosis/fibrosis (n=20)
 - Cirrhosis (n=42)
 - HCC or HCC concern (n=1)
- CT scan (n=75)
 - Normal (n=30)
 - Fatty infiltration/steatosis/fibrosis (n=10)
 - Cirrhosis (n=31)
 - HCC or HCC concern (n=4)
- US no CT (n=38); CT no US (n=37)

Socio-behavioral Challenges

- Failure to receive HCV care (N=104)
 - ▣ Refusal (other health priorities, no show, refuses HCV treatment) (n=59)
 - ▣ Lost to follow-up (jail, homeless, no insurance, etc) (n=40)
 - ▣ Other (died, moved out of state) (n=5)
- Substance abuse (N=97)
 - ▣ Problem drinking (n=67)
 - ▣ Drug abuse (n=12)
 - ▣ Alcohol and drug abuse (n=18)

Comparison with National Data

- NHANES 2010: 3.6% of all baby boomers were anti-HCV+ and, of all anti-HCV+, 67% were HCV RNA+*
- UHS study: 7.3% of baby boomers were anti-HCV+ and, of these, 60% were HCV RNA+*
- NHANES 1999-2008: anti-HCV+ among baby boomers, Mexican-Americans (3.3%), non-Hispanic Whites (2.9%), non-Hispanic Blacks (6.4%)†
- NHANES 2003-10: 2.6% of baby boomers were chronically HCV-infected‡
- UHS Study: 3.9% chronically HCV-infected

NHANES = National Health and Nutrition Examination Survey

*Ditah I et al J Hepatol. 2013; †Smith BD et al. AJPH. 2014; ‡Denniston MM et al. *Ann Intern Med.* 2014

Lessons learned

- Automatic screening order entry with reflex HCV RNA promotes high rates of inpatient screening
- Opt out system for patient consent necessary
- Hospital-based physicians want a support service for their patients who are HCV Ab+
- Mobile app increases the consistency and completeness of HCV education for HCV Ab+ patients
- Virtually all patients appreciative of this HCV screening and linkage to care program
- Nevertheless, refusal and loss to followup compromise care in this vulnerable population

Merci beaucoup

Thank You

お疲れ様

Danke

Gracias

Grazie

谢谢你

Dank u

Thanks

Obrigado

Comparison Data from Population-based Studies in other Countries

- France - national population-based seroprevalence surveys carried out in 1994 and 2004
 - HCV Ab+ prevalence for adults aged 20–59 years decreased from 1.05% (0.75–1.34) to 0.71% (0.52–0.97).
 - During the same period, those HCV Ab+ with detectable HCV RNA decreased from 81% to 57%,
 - May reflect positive impact of HCV treatment in France
- Germany - HCV seroprevalence in adults aged 18+ visiting two tertiary care emergency departments in Berlin and Frankfurt
 - HCV Ab+ prevalence was 2.6% (2.4–2.8)
 - Detectable HCV RNA in 68% of HCV Ab+ cases (not likely to be explained by treatment)

Delarocque-Astagneau E et al. The impact of the prevention programme of hepatitis C over more than a decade: the French experience. *J Viral Hepat.* 2010;17(6):435-43.

Vermehren J et al . High prevalence of anti-HCV antibodies in two metropolitan emergency departments in Germany: a prospective screening analysis of 28,809 patients. *PLoS One.* 2012;7(7):e41206