HCV SPECIAL POPULATIONS AND PRETREATMENT. OVERVIEW AND ABSTACTS FROM AASLD 2017

Mitchell L Shiffman, MD
Director
Liver Institute of Virginia
Bon Secours Health System
Richmond and Newport News, VA

TREATMENT OF HCC
SPECIAL POPULATIONS

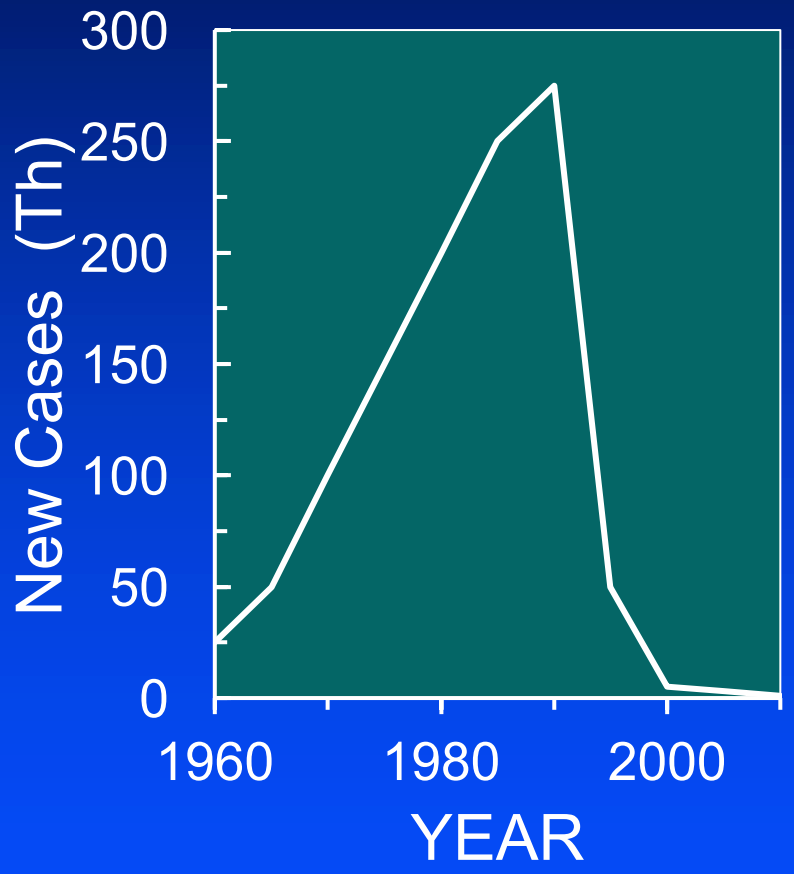
Prior to DAA	Current
African Americans	PWID
HIV-coinfection	HBV-coinfection
HBV co-infection`	Genotype 3
Cirrhosis	HCC
CKD and ESRD	ESRD/Pre-renal transplant
Post-liver transplant	Child class C/High MELD

THE HEPATITIS C EPIDEMIC
THE FIRST WAVE

- Began in the 1960s
- Transfusions of blood products became common
- Medical equipment was still reused in many countries
- Routine vaccinations
- Intravenous and intranasal administered narcotic became prevalent in many teenagers and young adults

MJ Alter
Clin Liver Dis 1997; 1:559-568.

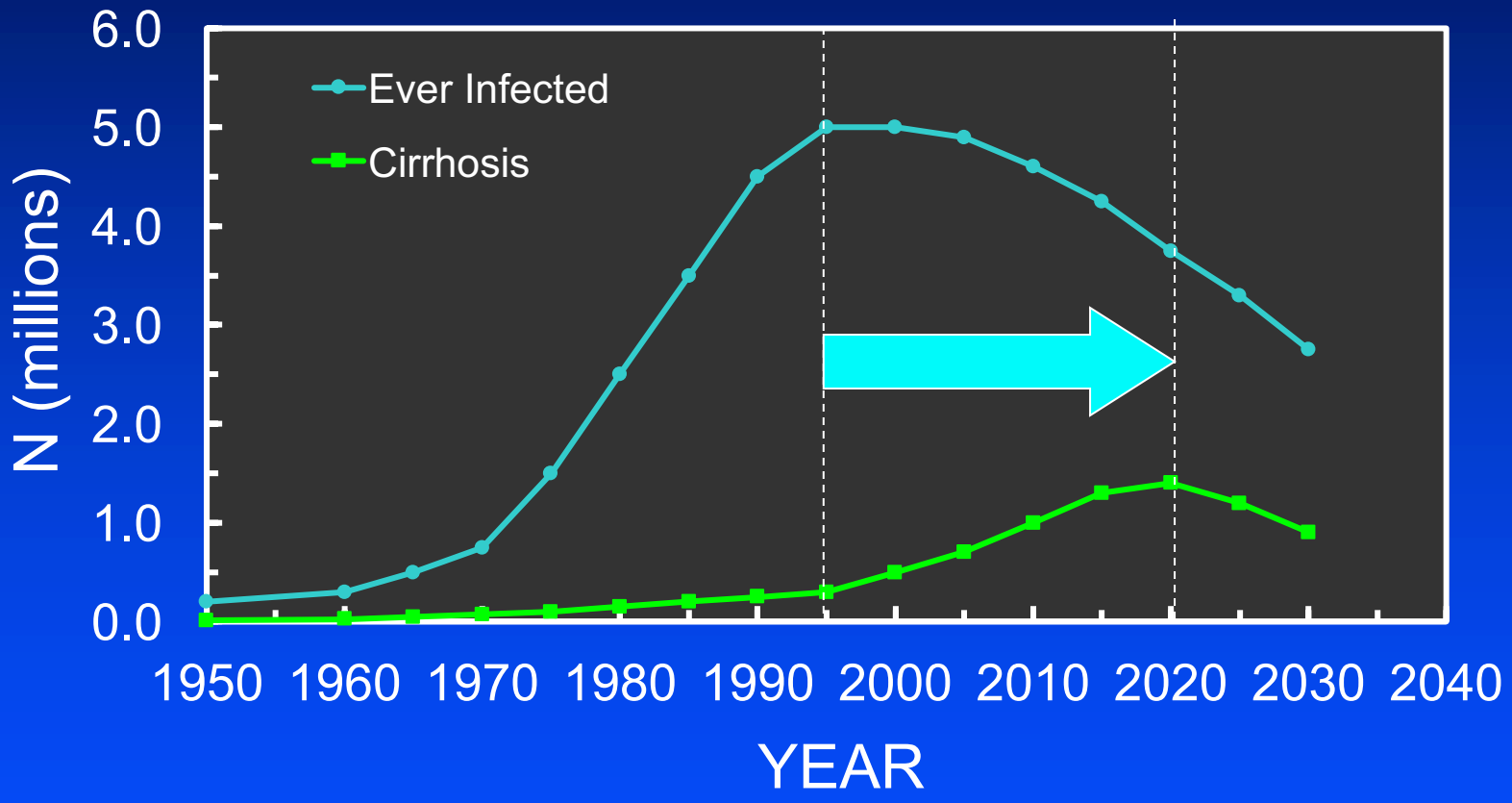
THE HEPATITIS C EPIDEMIC
THE FIRST WAVE



- Risk in 1960-70s: ~20%/unit
  - HCV could not be identified in donated blood
  - Non-A, Non-B hepatitis
- Risk in 1980s: 2-5%/unit
  - Screening donated blood for HBV, ALT and HIV
- After 1990:
  - HCV testing developed
  - HIV epidemic at its peak

FL Armstrong et al
Hepatology 2000; 31:777-782.

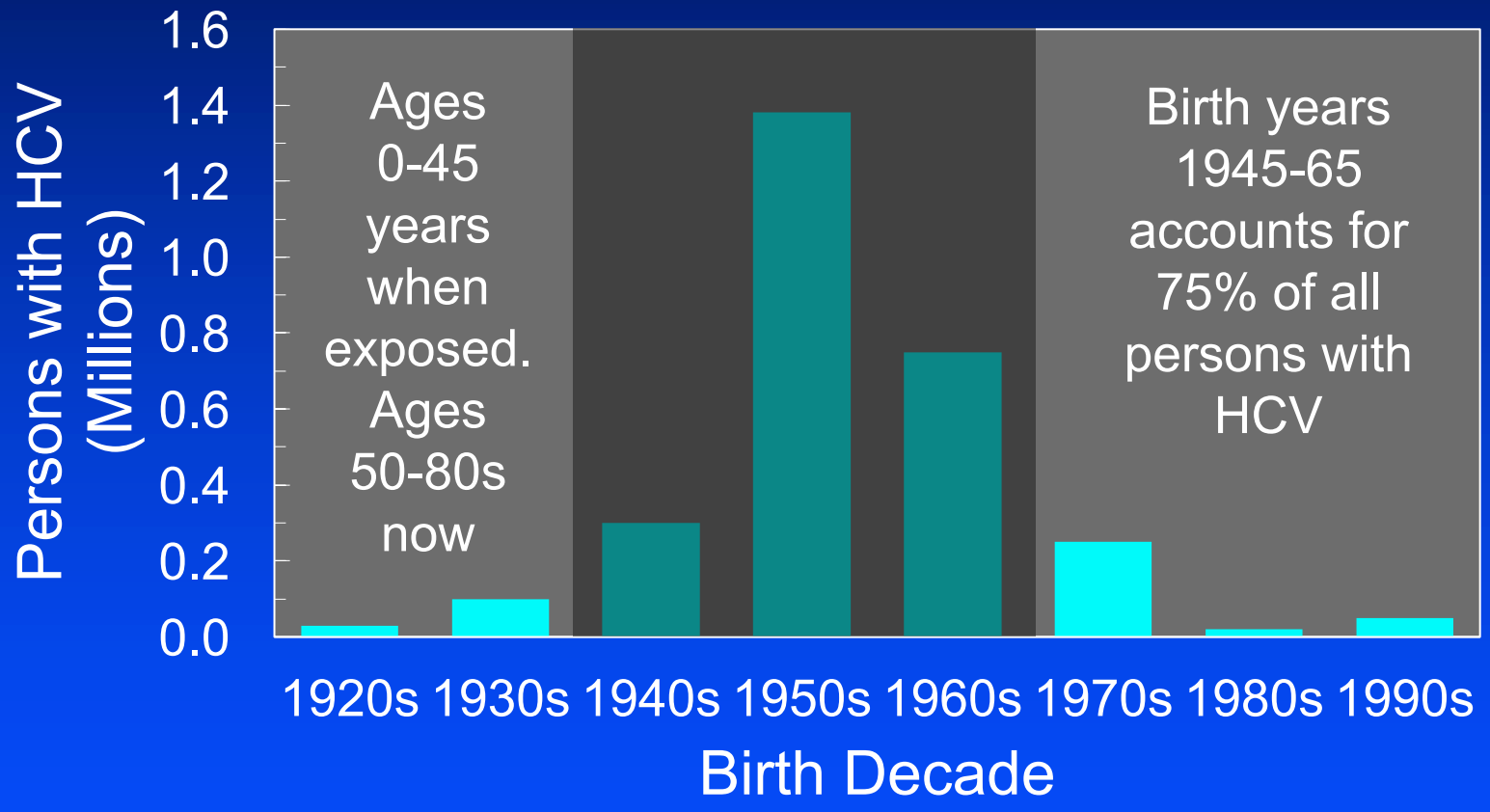
HEPATITIS C VIRUS INFECTION
THE BURDEN OF DISEASE



G Davis et al.
Gastroenterology 2010; 138:513-521.

Bon Secours
Liver Institute of Virginia

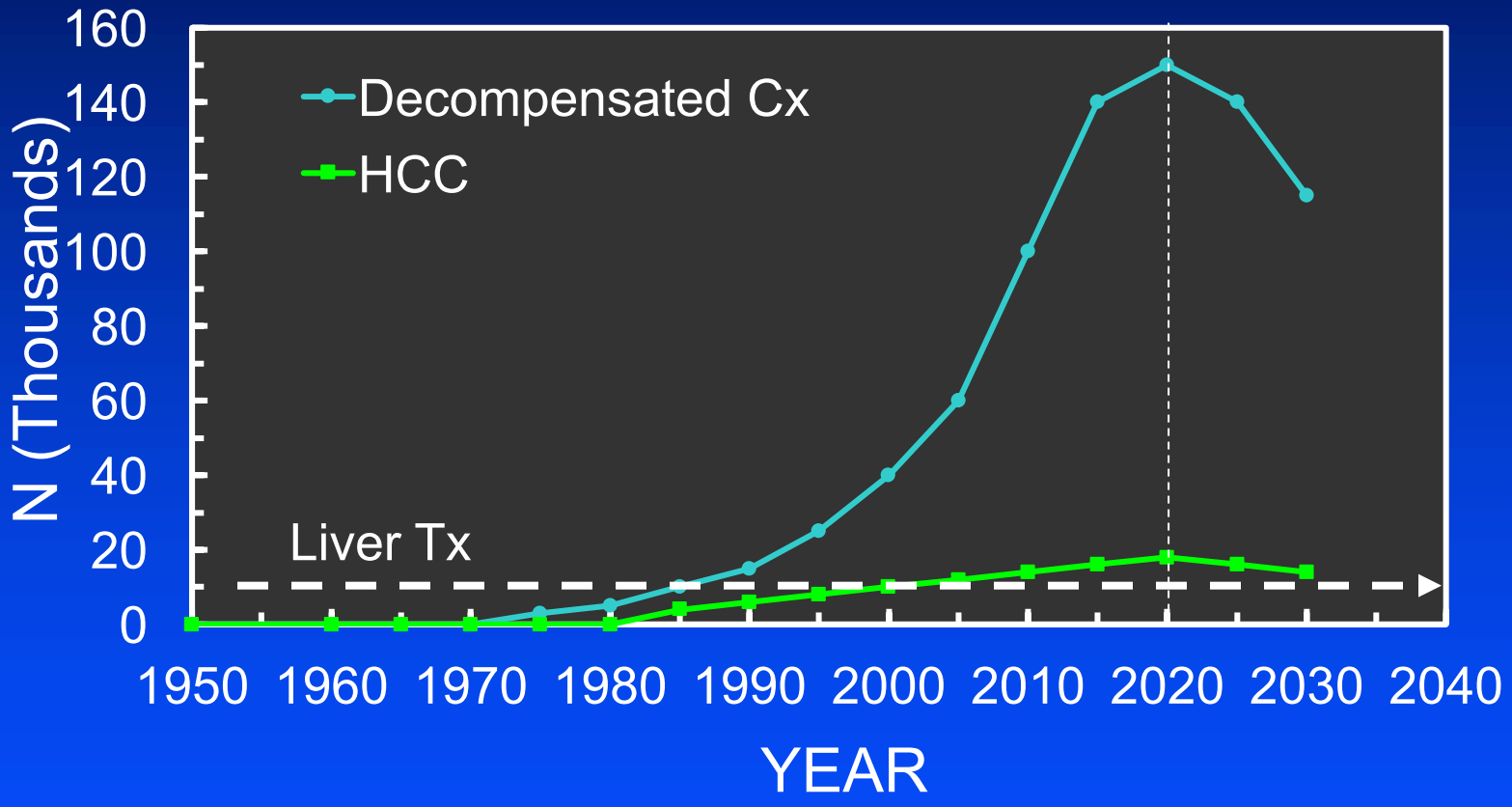
CHRONIC HCV
PREVALENCE BY BIRTH YEAR



BD Smith et al.
Am J Public Health 2014; 104:474-481.

Bon Secours
Liver Institute of Virginia

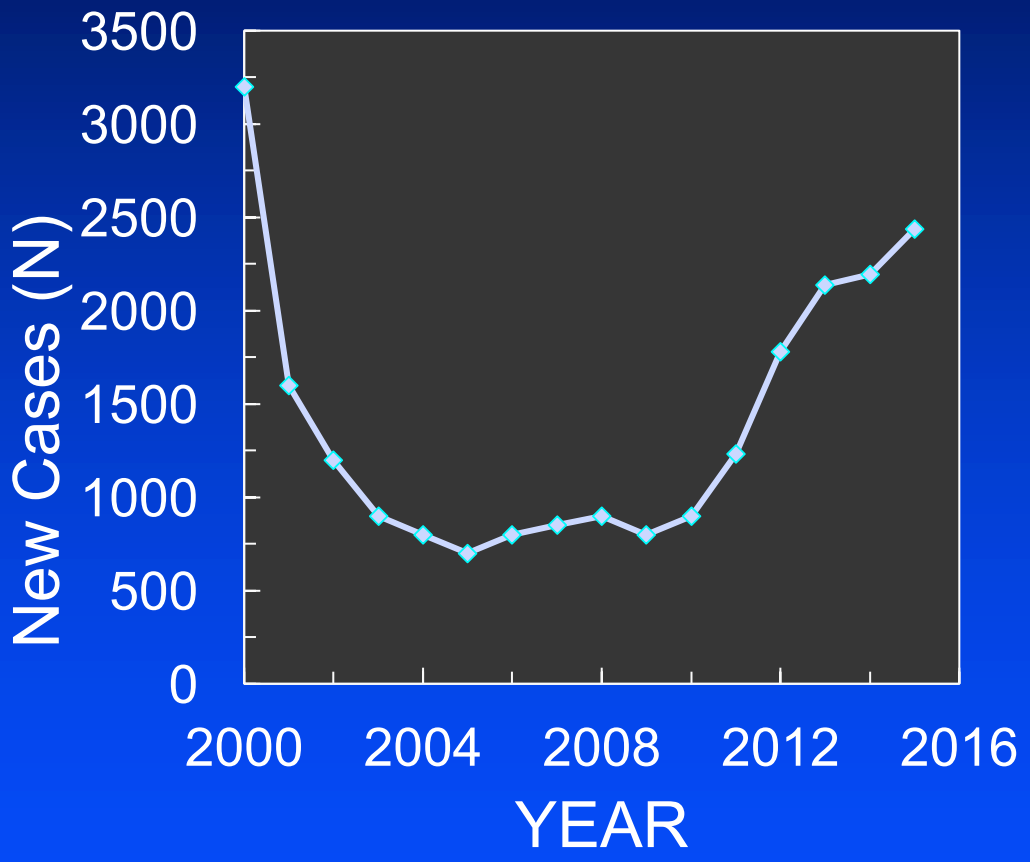
CHRONIC HCV
THE WAVE OF LIVER FAILURE



G Davis et al.
Gastroenterology 2010; 138:513-521.

Bon Secours
Liver Institute of Virginia

ACUTE HCV
INCREASING INCIDENCE SINCE 2010

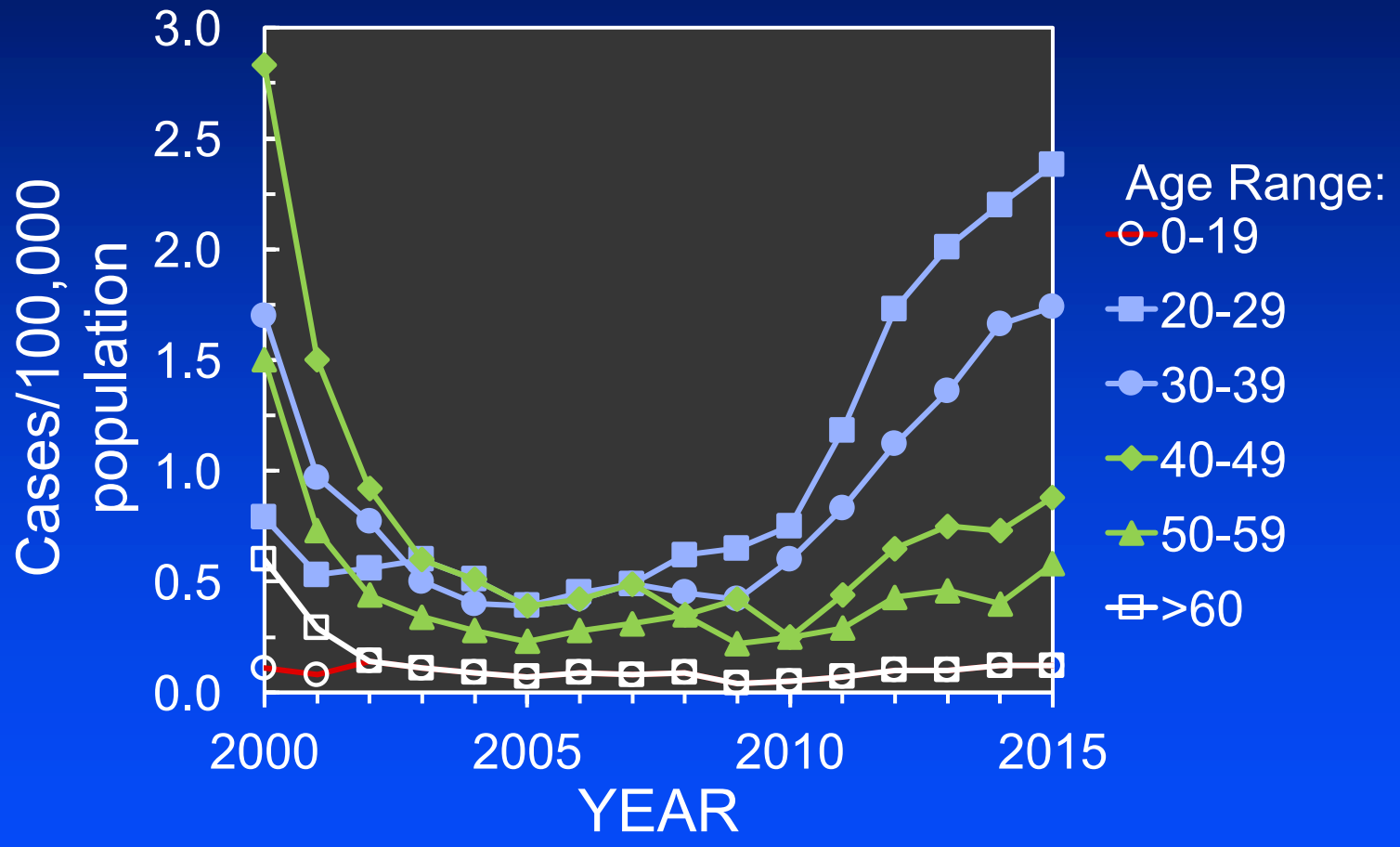


- The increasing incidence of acute HCV is almost exclusively in the age range 20-39 years
- Due to increased prevalence of IV drug use in this age group

https://www.cdc.gov/hepatitis/statistics/2015surveillance

Bon Secours
Liver Institute of Virginia

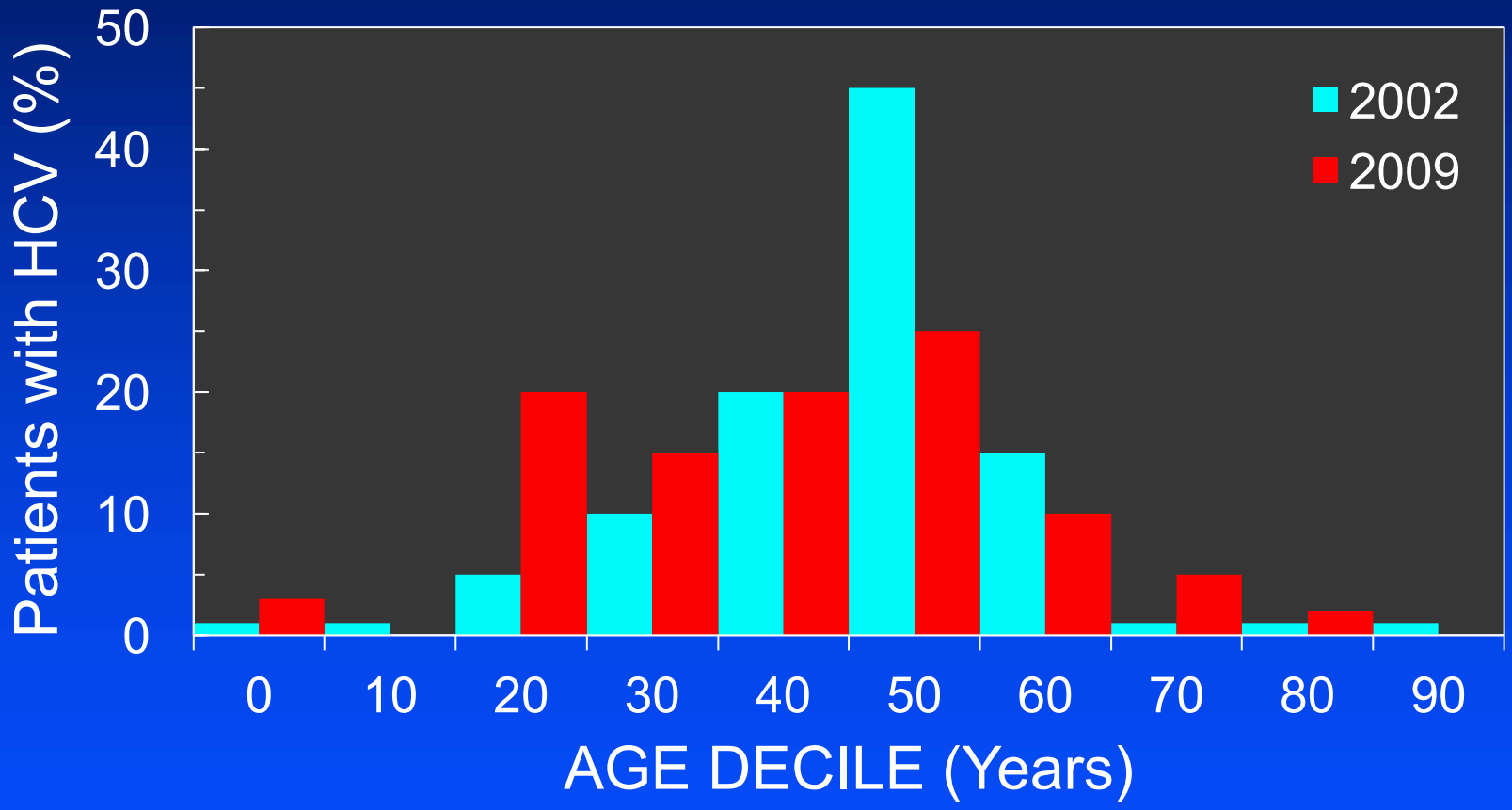
INCIDENCE OF NEW CASES OF HCV
IMPACT OF AGE



https://www.cdc.gov/hepatitis/statistics/2015surveillance

Bon Secours
Liver Institute of Virginia

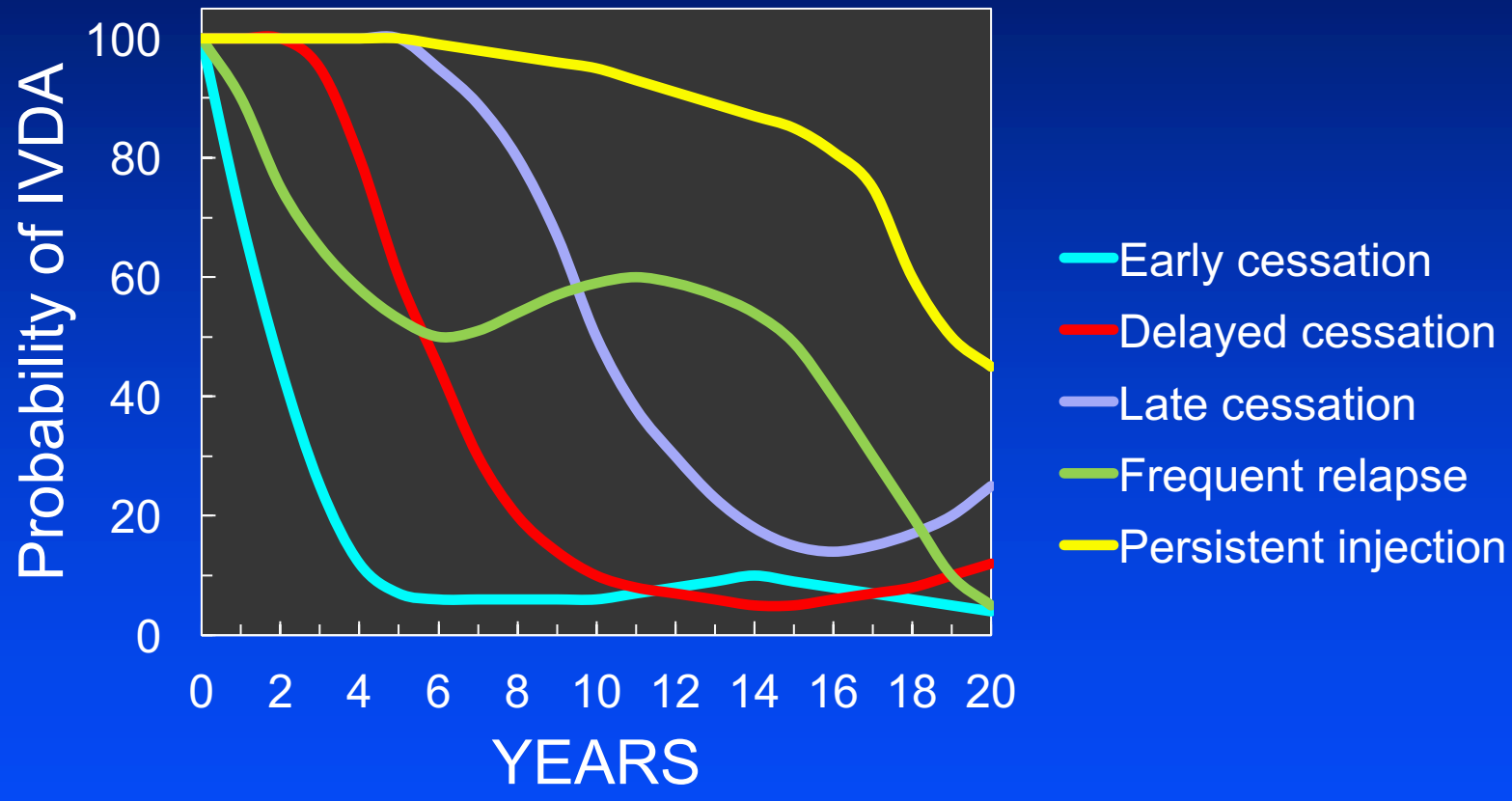
PREVALENCE OF HCV IS CHANGING
TWO POPULATIONS



MMWR 2011; 60:537-541.

Bon Secours
Liver Institute of Virginia

PWID
PATTERNS OF DRUG USE



BL Genberg et al.
Am J Epidemiol. 2011; 173:829-836.

HCV SIG PROGRAM
PREVENTION AND TREATMENT IN PWID

- Archived in Liver Learning
  - Best of AASLD 2017. Special Interest Group Sessions
- Topics:
  - Global perspective on burden of HCV in PWID
  - OST: Should more Hepatologists become providers
  - Treatment as prevention
  - Opioid use/misuse and factors influencing transmission
  - Embedding treatment in needle exchange programs
  - Treatment access for PWID
  - Reinfection after treatment

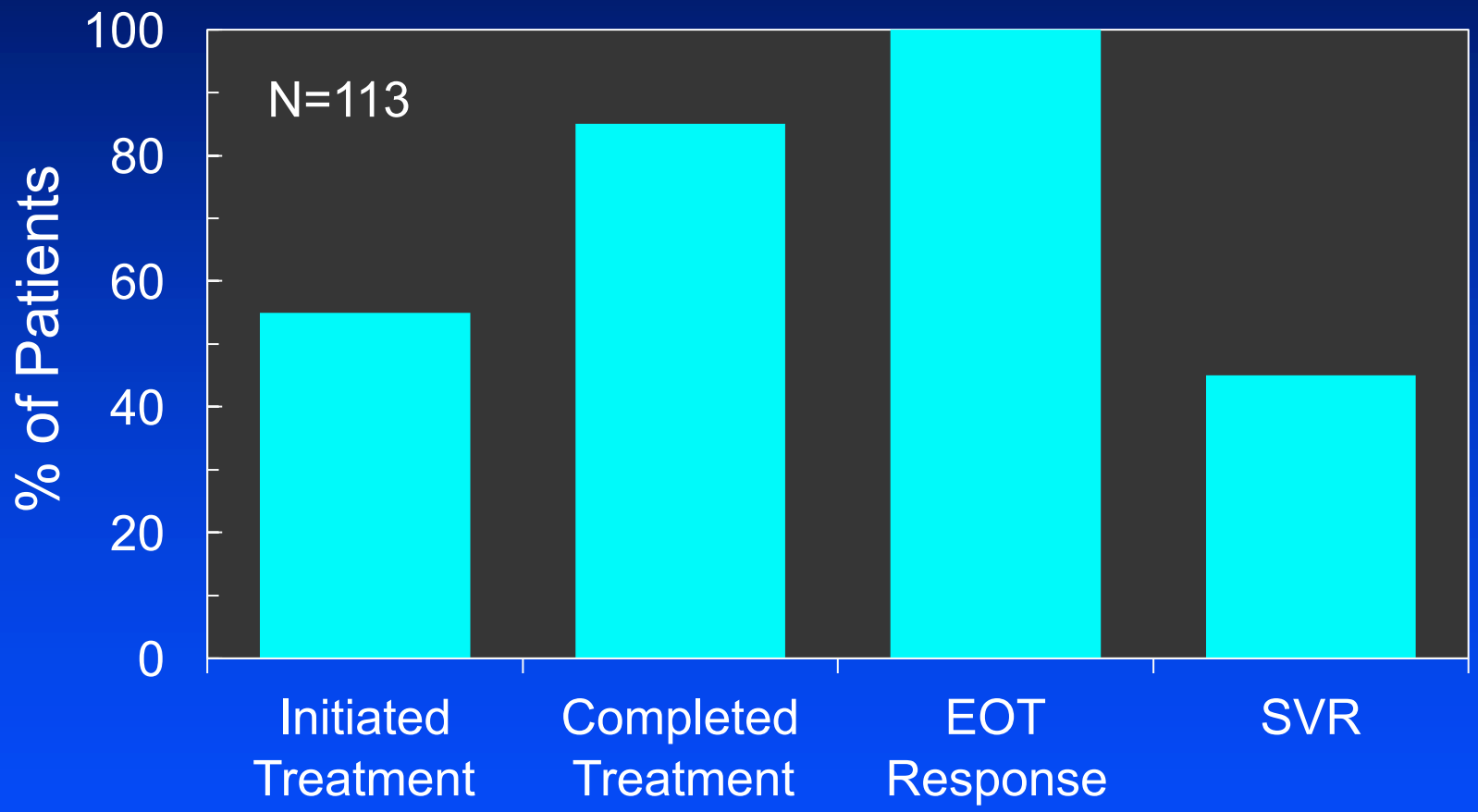
https://liverlearning.aasld.org/aasld/

PREVENTION AND TREATMENT IN PWID
MY TAKE AWAY POINTS

- PWID now represent the majority of persons with HCV in most developed countries
- Approximately 50% of PWID have chronic HCV
- 25% are under the age of 25 years
- Unlike the baby boomer generation PWID:
  - Do not access health care
  - Do not consume alcohol
  - Most have disease for <10 years (mild)
  - Treatment with DAA is equally effective
  - Many are not committed to stopping drug use or interested in treating HCV
  - Rate of reinfection in low

Bon Secours
Liver Institute of Virginia

HCV TREAMENT
ACTIVE USERS IN NSP



D Sylvestre
AASLD, HCV SIG Workshop. 2017

Bon Secours
Liver Institute of Virginia

ABSTRACT 76:
CASH INCENTIVES FOR TREATMENT

RANDOMIZED CONTROLLED TRIAL OF CASH INCENTIVES TO PEER MENTORS TO IMPROVE HCV LINKAGE AND TREATMENT AMONG HIV/HCV COINFECTED PERSONS WHO INJECTION DRUGS: THE CHAMPS STUDY

K Ward, M Sulkowski, O Falade-Nwulia, et al.

Johns Hopkins Hospital and School of Public Health

ABSTRACT 76: CASH INCENTIVES FOR TREATMENT

- Barriers to DAA treatment for PWID exist
- Compared cash incentive for treatment vs Peer mentors
- Methods:
- Patients randomized: 1:2:2
  - Usual care in HIV clinic (UC)
  - UC plus peer mentor counselors who achieved SVR
  - UC plus cash incentive up to $200/visit
  - All patients received LDV/SOF at no cost
- Primary endpoint: Initiation of HCV treatment
- Secondary endpoint:
  - SVR
  - Reinfection

ABSTRACT 76:
CASH INCENTIVES FOR TREATMENT

	UC	PM	Cash
N	36	54	54
>50% over 50 years of age, 61% male, 93% Black, GT1A: 78% Depression: 61%, Ongoing drug use: 25%, Ongoing ETOH use: 42% HIV treatment: 97%, HIV RNA undetectable 81%			
Initiation of Tx	66%	83%	76%
SVR	61%	76%	68%
Reinfection: 1 (1%) Relapse: 2 (2%) SAE (mostly related to ongoing drug use): 10%			

ABSTRACT 195:
HCV REINFECTION IN PWID

HEPATITIS C VIRUS REINFECTION AND INJECTING RISK BEHAVIOR FOLOWING ELBASVIR/ GRAZOPRAVIR TREATMENT IN PARTICIPANTS ON OPIATE AGONIST THERAPY: CO-STAR PART B

GJ Gore, J Grebely, F Altice, et al.

Australia, Canada, Norway, New Zealand, Israel, USA, China

Bon Secours
Liver Institute of Virginia

ABSTRACT 195: HCV REINFECTION IN PWID

- Co-Star Part A (N=296):
  - SVR rates of 97-99% observed in patients on OAT
  - 58% continued to use drugs during treatment
  - HCV recurrence though FU week 24 was 2% (6/296)
- Co-Star Part B:
  - 3 year observational study of Co-Star part A cohort
  - Urine drug screen
  - Questionnaires regarding drug use
  - Sequencing of virus in those with recurrence

ABSTRACT 195: HCV REINFECTION IN PWID

- 6 reinfections in Co-Star Part A (through 24 weeks FU).
- 4 reinfections in Co-Star Part B (through 2 years FU)
- UDS positive in 59-62% of patients over 2 years
- Continued IVDA 37% of patients
  - 4.2 reinfections/100 patient years
  - 0.4 reinfections/100 patients years in 63% with no reported IVDA
- Of 10 patients with reinfection:
  - 3 cleared viremia,
  - 2 with persistent spontaneous resolution
  - 8 persistent recurrent HCV

ABSTRACT 125.
IMPACT OF HCV TESTING ON DRUG USE

THE IMPACT OF HEPATITIS C DIAGNSIS ON SUBSTANCE-USE AND BEHAVIORS IN PATIENTS ENGAGED IN OPIOD SUBSTITUTION THERAPY

HF Zangneh, JK Eibl, G Gauthier, et al.

Northern Ontario School of Medicine, Sudbury, Canada

ABSTRACT 125.
IMPACT OF HCV TESTING ON DRUG USE

- The impact of knowing or even testing for HCV exposure in PWID is not know
- Methods:
  - Retrospective cohort study through EMR
  - Persons attending 43 addition clinics in Ontario, CA
  - Between 2000-2013
  - HCV identified by anti-HCV
  - Urine drug screening prior to and after HCV testing

ABSTRACT 125.
IMPACT OF HCV TESTING ON DRUG USE

	HCV (+)	HCV (-)
N	527	1879
Male	62%	62%
Mean Age	41	37
Urban living	88%	83%
Decrease in: Opioids Benzodiazapines Cocaine	 26% 37% 38%	

ABSTRACT 122.
RECTIVATION OF HBV WITH HCV TX

HEPATITIS B REACTIVATION AND OUTCOMES IN PERSONS TREATED WITH DIRECTLY ACTING ANTIVIRAL AGENTS AGAINST HEPATITIS C VIRUS

AA Butt, P Yan, OS Shaikh, et al.

VA Pittsburgh Healthcare System and
Weill Cornell Medical Center, NYC

ABSTRACT 122.
RACTIVATION OF HBV WITH HCV TX

- In 2016 the FDA reported on a number of patients who developed reactivation of HBV while being treated with oral-DAA therapy for HCV
- Many of these cases did not have complete HBV serology
- A warning was issued by the FDA and AASLD guidelines were changed to ensure that all HBV serologies were checked prior to initiating HCV treatment
- The true risk to a patient is unknown

TREATMENT OF HCV WITH DAA
HBV REACTIVATION

Author	# patients	Description	Rate of HBV Reactivation
Yeh	57 7	HBsAg +, HBV DNA - HBsAg -, anti-HBcore +	14% 0%
Belperio	377 ?	HBsAg + HBsAg -, anti-HBcore +	2% <1%
Kawagishi	87	HBsAg -, anti-HBVcore +	1%
Wang	10 124	HBsAg +, HBV DNA + HBsAg -, anti-HBcore +	30% 2%
Londono	10 64	HBsAg +, HBV DNA + HBsAg -, anti-HBcore +	50% 2%

ML Shiffman, NT Gunn
Curr Hepatology Rep 2017; 16:169-177.

ABSTRACT 122.
REACTIVATION OF HBV WITH HCV TX

		ALT flare	HBV reactiviation
HBsag	(+) (-)	0.25 0.19	0.11 0.02
Anti-Hbcore	(+) (-)	0.13 0.33	0.06 0.01
HBeAg	(+) (-)	0.00 0.33	0.00 0.11
HBV DNA	(+) (-)	0.34 0.57	0.42 1.15

DAA treated: 43,137
HBsAg test: 32,882
HBsAg (+): 4,413
HBsAg (-): 32,882

HBV reactivation:
HBsAg (+): 12 (0.03%)
HBsAg (-): 7 (0.02%)

Not known if any and which patients with HBV were treated with anti-viral therapy

Bon Secours
Liver Institute of Virginia

ABSTRACT 62
HCV GT3 GEVAPREVIR/PIBRENTASVIR

EFFICACY AND SAFETY OF GLECAPREVIR/ PIBRENTASVIR FOR 8 OR 12 WEEKS IN TREATMENT NAÏVE HCV GENOTYPE 3: AN INTEGRATED PHASE 2/3 ANALYSIS

SL Flamm, DL Wylers, S Wang, et al

Multicenter, International study

Bon Secours
Liver Institute of Virginia

ABSTRACT 62
HCV GT3 GEVAPREVIR/PIBRENTASVIR

	8 weeks	12 weeks
No cirrhosis	208	294
Stage F3	18%	11%
Cirrhosis		69
65% h/o IVDA, 17% OST, 22% RAS,		
ITT No cirrhosis Cirrhosis	95%	 95% 97%
PP No cirrhosis Cirrhosis	97%	 98% 99%
Relapse	2.5%	1.4%

ABSTRACT 63
GENOTYPE 3 IMPACT OF RBV AND RAS

DO RESITANCE ASSOCIATED SUBSTITUTIONS (RAS) OR RIBAVIRIN USE INFLUENCE TREATMENT SUCCESS OF SOFOSBUVIR/VELPATASVIR IN CHRONIC HEPATITIS C GENOTYPE 3 INFECTION. RESULTS FROM THE GERMAN HEPATITIS C COHORT (GECCO)

S Christensen, P Ingiliz, S Mauss, et al.

ABSTRACT 63
GENOTYPE 3 IMPACT OF RBV AND RAS

	ITT	PP
N=232, Mean age 47 years, Male 69%, BMI 24.8, HCV-HIV 11%, OST 37%, Previous HCV treatment 26%, Cirrhosis 22%, RAS 9%		
SVR All patients Cirrhosis VEL/SOF VEL/SOF/RBV	 140/148 (95%) 16/17 (94%) 13/15 (87%)	 140/141 (99%) 16/17 (94%) 13/13 (100%)
RAS No RAS	10/10 (100%) 98/104 (94%)	10/10 (100%) 98/99 (99%)

ABSTRACT 193
DAA IN HCV KIDNEY TRANSPLANTS

COMPARISON OF OUTCOMES AFTER DAA THERAPY AMONG HCV-INFECTED KIDNEY TRANSPLANT RECIPIENTS WHO RECIVED GRAFTS FROM EITHER HCV-POSITIVE OR NEGATIVE DONORS

M Sedki, C Cortesi, C O'Brien, et al.

University of Miami, Miami, FL

Bon Secours
Liver Institute of Virginia

ABSTRACT 193
DAA IN HCV KIDNEY TRANSPLANTS

	Recipient +/ Donor -	Recipient +/ Donor +
N	14	25
Age (years)	57	59
Male	64%	77%
GT 1, 3	83%, 0%	92%, 4%
Time to transplant (d)	806	58
Time to start DAA	405	124
SVR	100%	96%
Renal graft rejection	7%	16%
Change in Scr	0%	Decline in 12%
Change in TAC dose	Increase in 21%	Increase in 20%

Bon Secours
Liver Institute of Virginia

ABSTRACT 197
IMPACT OF DAA TX ON TIME TO KT

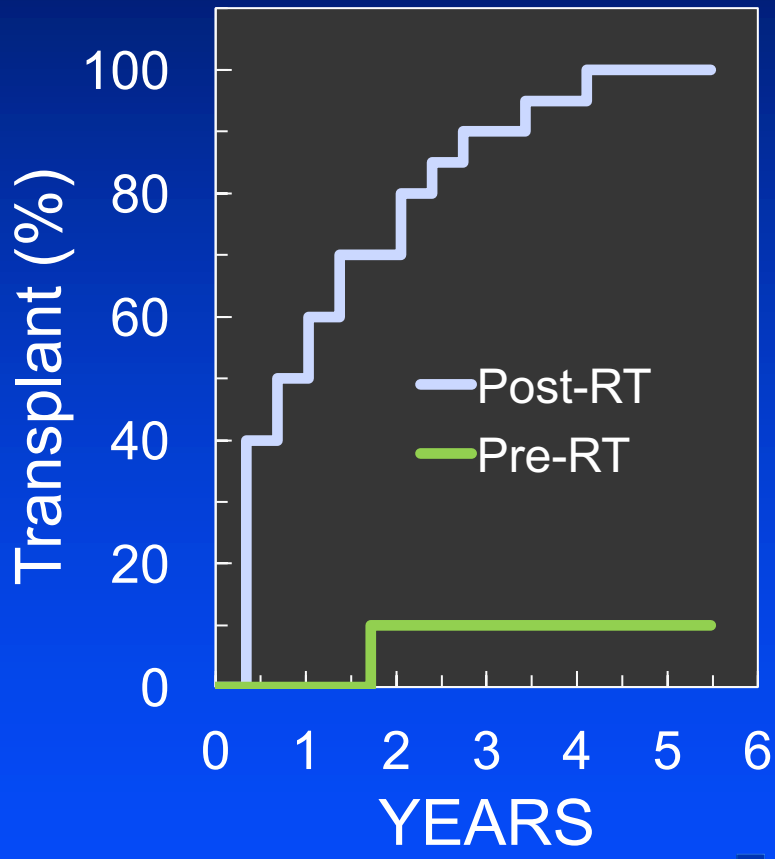
IMPACT OF HCV TREATMENT BEFORE VS AFTER RENAL TRANSPLANTATION ON TIME FROM LISTING TO TRANSPLANTATION: A MULTICENTER STUDY

DM Chasca, OY Mousa, S Pungpapong, et al.

Mayo Clinic, Phoenix, AZ and Jacksonville, FL

ABSTRACT 197
IMPACT OF DAA TX ON TIME TO KT

	HCV treatment	
	Pre-RT	Post-RT
N	21	33
No difference age, gender, race, %HCV GT1, % cirrhosis		
Caucasian	33%	79%
Renal Transplant	1	33
Died prior to RT	1	0
Wait time to RT (d)	650	167
Time to DAA tx (d)		77



Bon Secours
Liver Institute of Virginia

HCV SUMMARY

- PWID are now the largest group of patients with HCV
  - Some are not interested in treatment
  - Treatment is highly successful.
  - Reinfection rate is low (<10%)
  - Knowing they have HCV may change their behavior
- Reactivation of HBV uncommon
  - Even with inactive HBV
  - Close monitoring during treatment
- Treatment of GT 3 is now highly successful
- Treat HCV after the kidney transplant if a candidate
  - Take an HCV + kidney