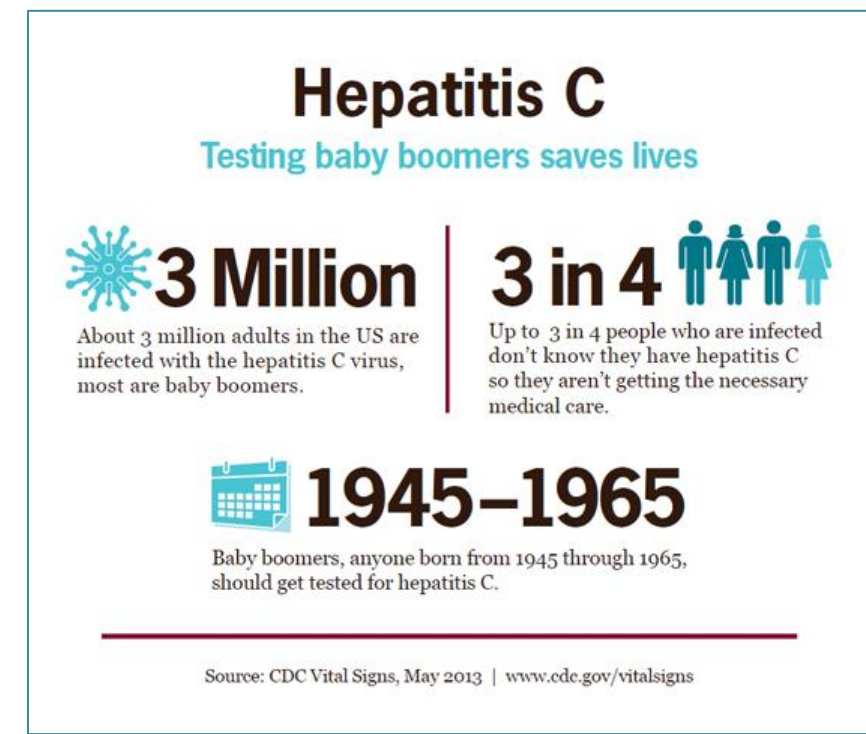


Significance

- The United States Preventive Services Task Force has endorsed one-time testing of baby boomers (born 1945-1965) for hepatitis C virus (HCV) infection
- In 2000, nearly 400,000 Texans (1.79%) were estimated to be chronically infected with HCV
- Baby-boomer screening may diagnose >800,000 persons with chronic HCV and avert 121,000 deaths with anti-viral therapy and lifestyle changes¹



Population and Setting

- **Eligible:** Persons born 1945 - 1965
- **Exclusion:** Prior HCV diagnosis or HCV test resulted in the system in past 7 years

In **Bexar County**, five primary care clinics:

- 3 serving insured, higher socio-economic mixed-ethnicity patients with real-time EMR flag identifying eligible (MARC)
- 2 serving underinsured, low-income, Hispanic patients with EMR flag requiring manual order entry (RBG)

In **Rio Grande Valley** (RGV), two Federally Qualified Health Centers in Brownsville and San Juan, serving primarily underinsured, low-income Hispanic patients

Practice Implementation

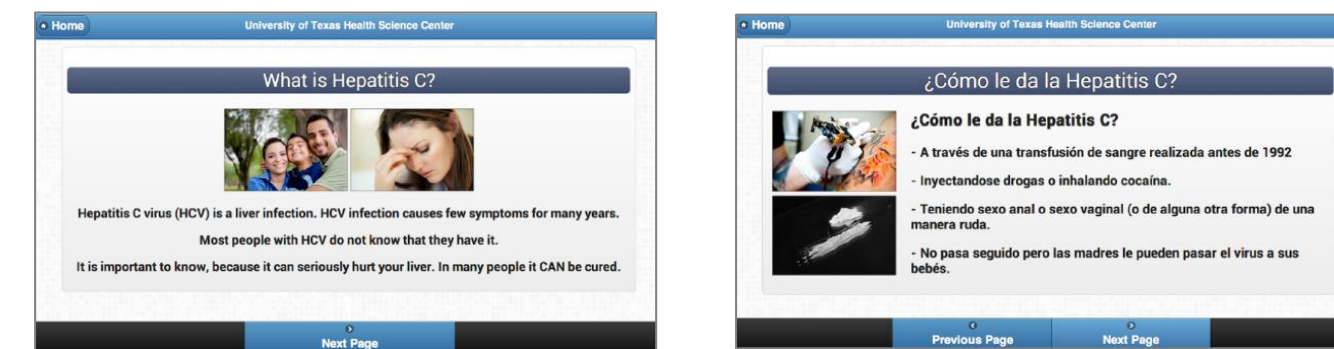
- Modified electronic medical records (EMR) to include health maintenance flag for HCV screening of never-tested BBs
- Test orders placed by clinicians or staff for never-screened patients
- Antibody (AB) screen with follow-up RNA test (reflex available at RBG and secondary blood draw required at MARC)
- Lab tests for uninsured RGV patients covered through program funds

Primary Care Clinician Education

- Clinicians and staff educated about: 1) HCV epidemiology, national guidelines for HCV prevention, 2) implementation procedures; 3) patient education; 4) evaluation of chronic HCV infection; 5) treatment options and linkage to care

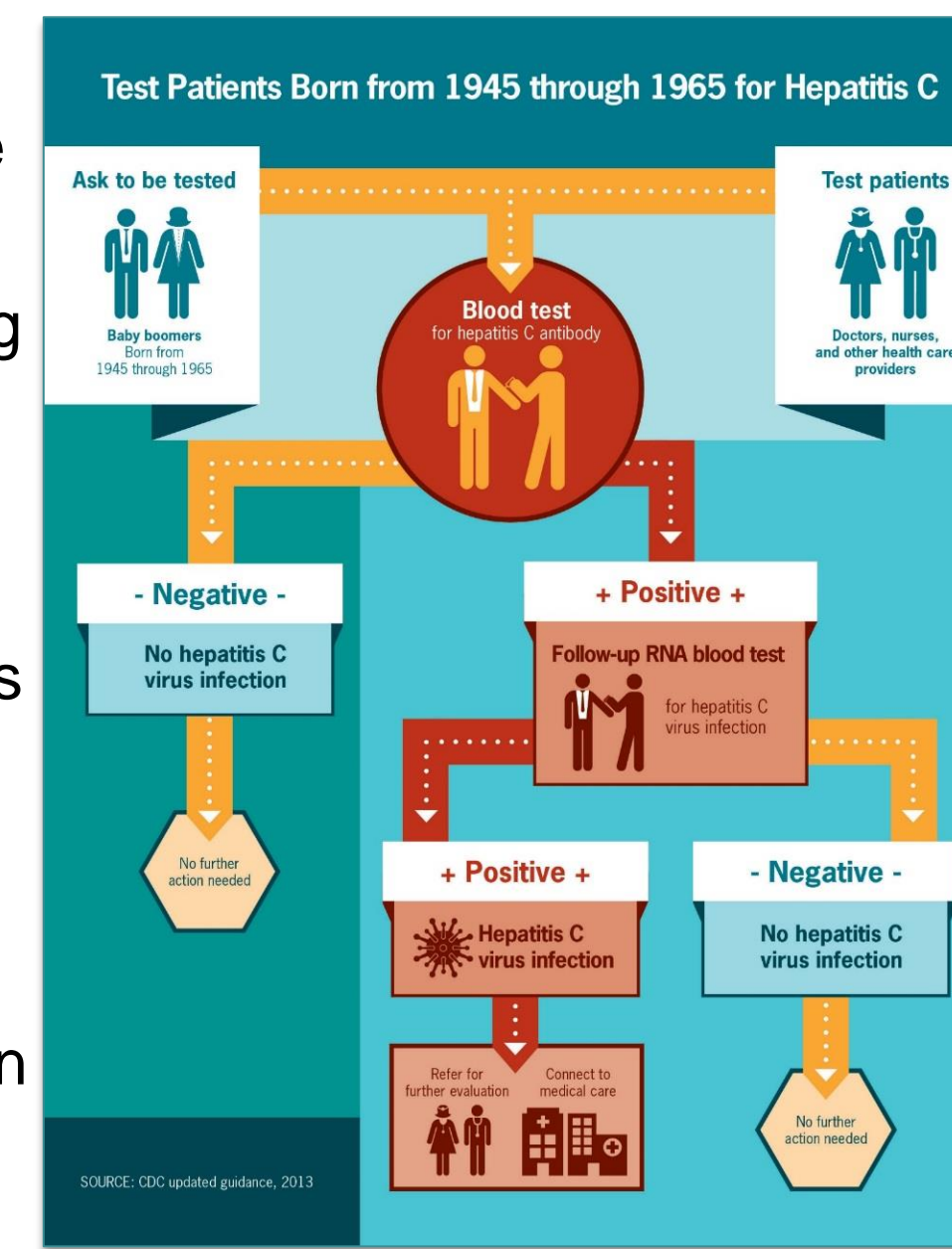
Patient Education

- Posters/flyers summarize HCV screening guidelines and offer opt-out testing
- Brochures about HCV from Texas Dept. State Health Services on HCV risk factors, symptoms, diagnosis, and treatment
- Bilingual case managers offer individual counseling and review of HCV epidemiology, transmission, prevention, reducing risks for disease progression, and treatment in English/Spanish on a mobile app



Linkage to Care

- In **Bexar County** and **Rio Grande Valley**: Bilingual case managers:
 - Offer ongoing navigation for tests to evaluate HCV genotype and disease stage
 - Address barriers to care, including counseling for substance use and risky behavior, and acquisition of health insurance
 - Support linkage to Hepatology for specialty care, including compassionate drug programs
- In **Rio Grande Valley**:
 - Bilingual case managers (LVNs) connect patients with follow-up testing to stage HCV
 - PCPs and LVNs prepare for and participate in remote conferences with consulting San-Antonio-based hepatologist who offers treatment recommendation
 - LVNs monitor patients through treatment to gauge compliance and offer support for visit and medication adherence
 - LVNs, onsite social services, and remote CHWs collaborate to submit application to compassionate drug programs or to enroll patients in clinical drug trials



Findings

Table 1: Rates of HCV AB screening and confirmatory RNA testing within RBG, MARC, and RGV primary care (9/1/2014 – 3/31/2016)

	MARC	RBG	RGV
Eligible	3239	3474	12,325
Screened (%)	2435 (75.2)	1257 (36.2)	6,226 (50.5)
Female (%)	1504 (61.8)	744 (59.2)	4439 (71.3)
Hispanic (%)	696 (28.6)	955 (76.0)	4296 (96.8)
Uninsured (%)	960 (39.4)	710 (56.5)	4694 (75.4)
Age (SD)	58.9	58.6	57.5
AB+ (%)	51 (2.1)	117(9.3)	124 (2.0)
Received PCR Quant	26 (60.0)	93 (79.5)	120 (96.7)
PCR+ (chronically infected) (%)	7 (0.3)	69 (5.5)	71 (1.1)

Conclusions

- Rates of infection were significantly higher in primarily uninsured, Hispanic patients (RBG) than in clinics serving primarily insured, non-Hispanic BBs (MARC), and significantly lower than national predictions within rural, underserved settings (RGV)
- Real-time EMR alert about patients needing HCV screening resulted in a higher proportion of eligible patients being successfully screened, while reflex RNA testing increases follow-up testing of anti-HCV+ patients by averting the need for a second blood draw
- Programs should avoid manual processes (i.e., distribution of daily lists, provider entry of orders) unless required by EMR infrastructure limitations
- Key factors to successful program implementation include:
 - 1) Educating the community about the prevalence and risk of HCV as well as its treatment
 - 2) Modifying existing EMRs to align HCV flag with other preventive alerts (i.e. breast or colon cancer screening)
 - 3) Integrating new preventive screening into established clinic flow
 - 4) Engaging patients for follow-up counseling and care
 - 5) Pathways to specialty services, especially for uninsured patients

References and Related Publications

1. Moyer VA, on behalf of the U.S. Preventive Services Task Force*. Screening for Hepatitis C Virus Infection in Adults: U.S. Preventive Services Task Force Recommendation Statement. *Ann Intern Med.* 2013 Jun 25.
2. Turner BJ, Taylor BS, Hanson JT, et al. High priority for hepatitis C screening in safety net hospitals: Results from a prospective cohort of 4582 hospitalized baby boomers. *Hepatology.* In press.
- Taylor BS, Hanson JT, Veerapaneni P, Villarreal R, Fiebelkorn K, Turner BJ. Successes and Barriers to Implementation of Hospital-based Hepatitis C Screening of Baby Boomers in a Majority Hispanic South Texas Cohort. *Public Health Reports.* In press.
- Turner BJ, Taylor BS, Hanson JT, Perez ME, Hernandez L, Villarreal R, et al. Implementing hospital-based baby boomer hepatitis c virus screening and linkage to care: Strategies, results, and costs. *J Hosp Med.* 2015.