



An Electronic Health Record Alert for Hepatitis C Screening of Baby Boomers in Primary Care: A Cluster Randomized Controlled Trial

**K Krauskopf, N Kil, A Sofianou, W Toribio, J Lyons, M Singer,
J Kannry, A Yartel, B Smith, DB Rein, A Federman**

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EHR for HCV Screening

- HCV screening is acceptable to patients
- EHR interventions have increased age-based and infection screening
 - Cancer, osteoporosis
 - HIV, hepatitis B

Coffin. BMC Infectious Diseases. 2011; Green. Ann Intern Med. 2013; White. J Low Genit Tract Dis. 2013; Loo. Arch Intern Med. 2011; Clarke. Int J STD AIDS. 2013; Hsu. Dig Dis Sci. 2013



Aims

- Measure the impact of an EHR alert on Baby Boomer HCV screening in primary care
- Evaluate use of the alert

Study Design



- 2013-2014, Mount Sinai Medical System, NY
- Eligible participants:
 - Doctors (MD), Nurse Practitioners (NP)
 - Medical Assistants (MA)
- 3 Primary care sites: resident-attending clinic, hospital faculty practice, group practice
- EHR in all sites = EPIC

Cluster Randomized Controlled



3 Primary Care Sites
Clusters: 5 Control, 5 Intervention

Standardized Education Session

Control Clusters:
Routine use of EHR

Intervention Clusters:
Pop-Up Alert

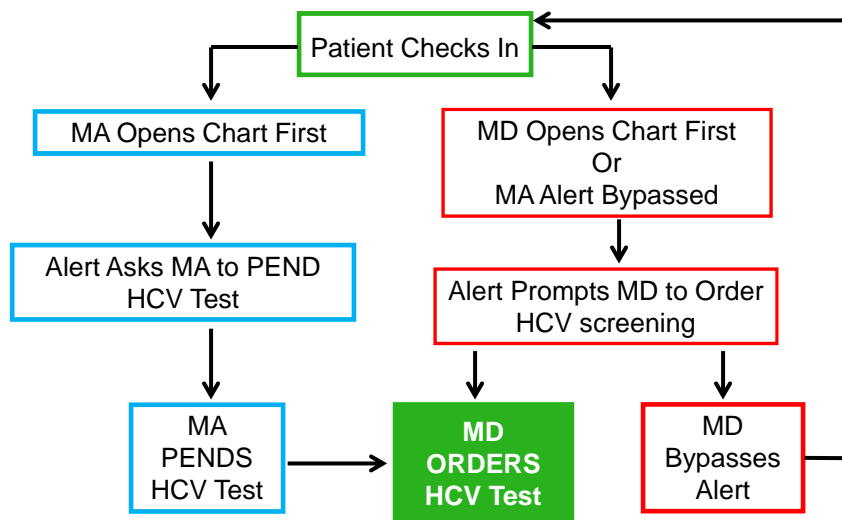
- Screening prompt
- HCV antibody order
- Diagnosis code

Intervention Alert Trigger



- Patient of an enrolled MD/NP:
 - Baby Boomer (b. 1945-1965)
 - AND
 - No evidence of HCV or prior screening
 - AND
 - Checked in for a scheduled visit with the enrolled provider

Two Alert Pathways





Outcomes

- Baby Boomer HCV screening rates
- Rates of intervention alert pathway utilization



Analysis

- Differences in visit characteristics by arm:
 - t test and X^2 test
- Comparisons of screening rates:
 - Generalized estimating equations
 - Adjusted for visit demographic characteristics

Visit Distribution Across Sites

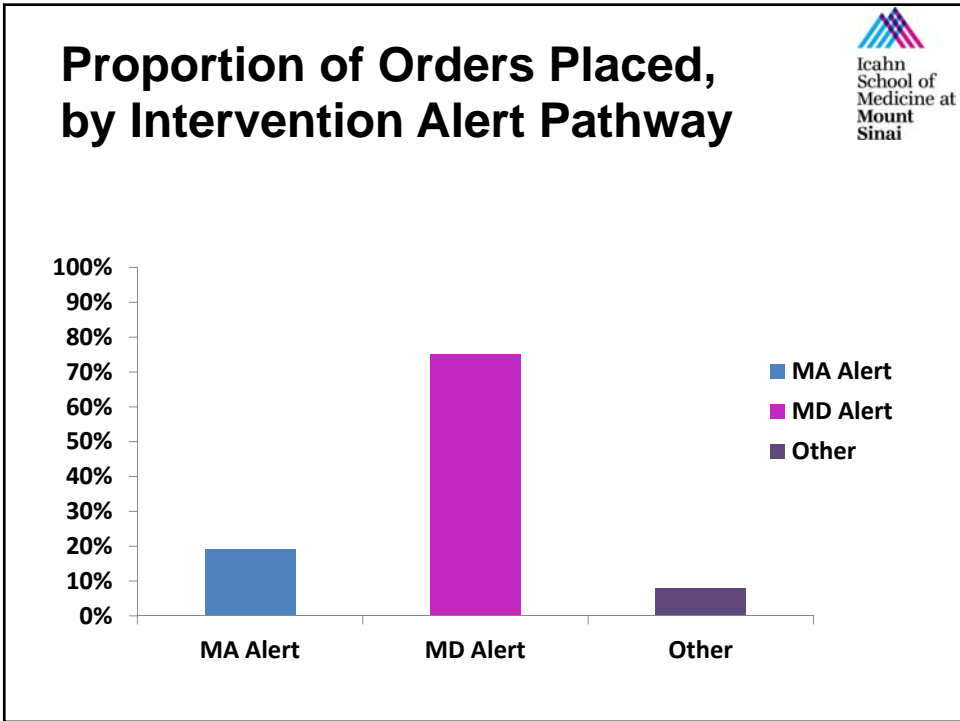
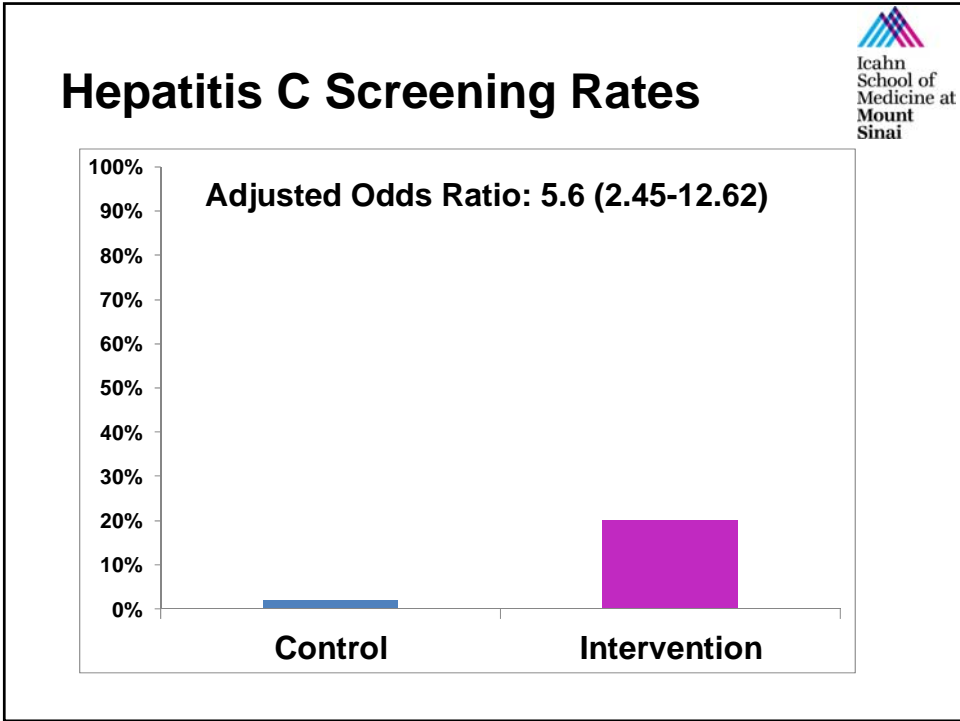


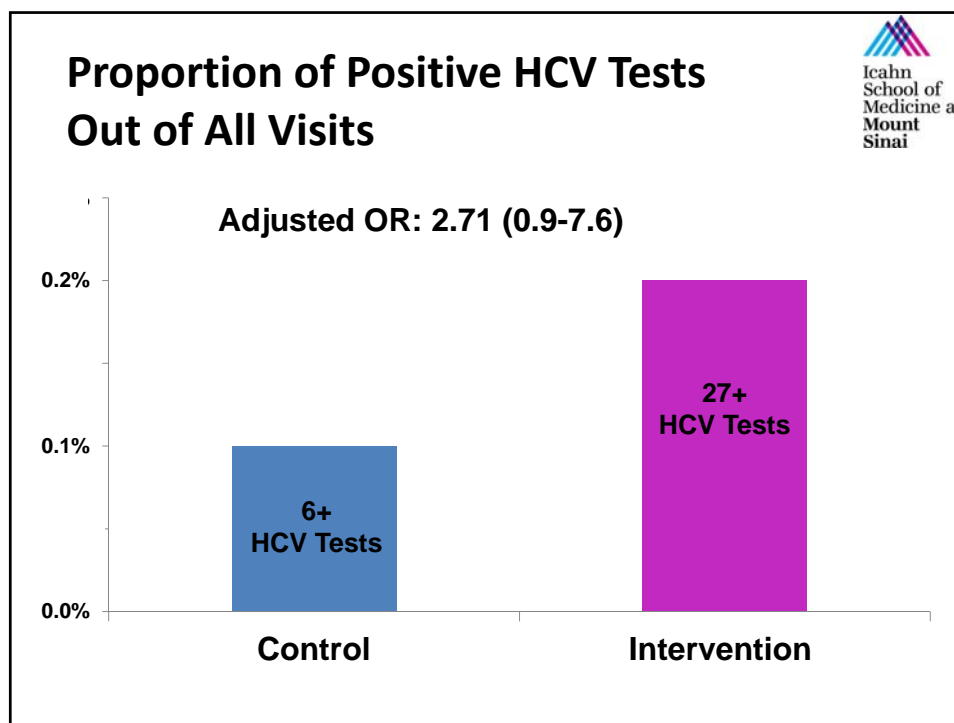
Sites	n = 26,697 visits	
	Control 11,220	Intervention 15,477
Resident- Attending Clinic, %	7	16
Faculty Practice, %	15	18
Group Practice, %	78	66

Visit Demographics



Characteristic	Control 11,220	Intervention 15,477	p-value	
Age (mean, SD)	58 ± 6	58 ± 6	0.64	
Race/Ethnicity (%)	White	80	72	<0.001
	Black	6	12	
	Hispanic	8	10	
	Asian	2	2	
	Other	4	4	
Marital status (%)	Married	72	68	<0.001
Insurance (%)	Medicaid	3	5	<0.001
	Medicare	21	20	
	Private	75	73	
	Uninsured	1	1	





Confirmed Chronic HCV Infections

- Total +HCV screening tests (both arms): 33
- 94% (31) had follow-up and viral load to confirm chronic HCV
- 55% (17) with + viral load/chronic HCV



Limitations

- Small number of clusters
- Predominance of orders from clusters in one site
- Potential contamination due to practice structures



Conclusions

- Alert led to ~10x greater HCV screening rate
- Rates of screening remain relatively low (20%)
- MD/NP more commonly reacted to alert



Implications

- Targeted EHR Alerts should be considered to increase HCV Baby Boomer screening
- Alerts should be tailored to workflow within a given practice
- Other EHR modalities to implement Baby Boomer HCV screening should be explored



Next steps

- Complete evaluation of visits
 - Number of other alerts, length of visit
- Understand predictors of not testing
 - Complexity of patients (# of comorbidities)
- Qualitative analysis to refine pathways, determine ideal use of EHR for HCV screening



Thank you!

Coauthors

Natalie Kil, Anastasia Sofianou, Wilma Toribio, Tianyun Sheng, Joanne Lyons, Mark Singer, Joseph Kannry, Anthony Yartel, Bryce Smith, David Rein, Alex Federman

ISMMS EPIC Team:

Daniel Edonyabo, Paul Francaviglia, Egan Visker

Mount Sinai Division of General Internal Medicine

Teresa Soriano, Eva Waite, Aida Vega, Stefani Russo, Jon Arend, Linda Pagan, Faculty, Residents, and Clinical Staff

Mount Sinai North Shore Medical Group

Janet Street, Primary Care Providers, and Clinical Staff