Healthy Hearts in the Heartland (H3): Feasibility of and Barriers to Systematizing Referrals to Community-Based Resources for Diabetes and Hypertension Self-Management at Small Primary Care Practices

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BACKGROUND & OBJECTIVES

- Cardiovascular disease is the leading cause of death in the US[1]
- H3 is an AHRQ EvidenceNOW initiative to evaluate small, Midwest primary care practices' capacity to implement quality improvement strategies to prevent CVD
- CommunityRx is a health IT intervention that provides patients with personalized information ("HealtheRx") of health-promoting resources[2]

STUDY DESIGN & POPULATION

- Participants included 76 Midwest adult primary care practices with <20 providers
- Practices were asked to complete an inventory of local CVD-related community resources; research staff collected information about resources when practices did not complete the inventory
- The HealtheRx-H3 included resources used in the original CommunityRx hypertension algorithm, additional resources identified by guidelines for CVD prevention and resources practices requested
- Practice-specific HealtheRx-H3s were given to practices; practices could request changes to the HealtheRx-H3 over time

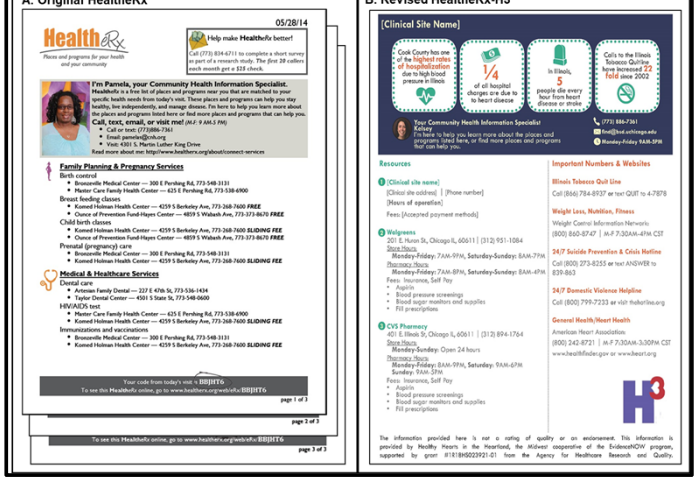
Table 1. Types of cardiovascular disease-related community-based resources listed on the HealtheRx-H3.

	CRx Hypertension algorithm	Included on every HealtheRx-H3	Requested by practices
Blood pressure monitors	■		
Aspirin	■	■	
Blood pressure screenings	■	■	■
Fill prescriptions	■	■	
Classes to help you quit smoking	■		■
Quit smoking hotline	■	■	
Individual counseling	■		
Stress management classes	■		
Group exercise classes	■		■
Weight loss classes	■		
Cooking class	■		
Food pantry	■		■
Fresh fruits and vegetables	■		■
Healthy eating classes	■		
Blood sugar monitors and supplies	■		
Domestic violence helpline		■	
Suicide prevention & crisis hotline		■	
Weight control information hotline		■	
Substance abuse treatment			■
Health education classes			■

OUTCOMES

- We assessed implementation outcomes,[3] including:
- Appropriateness: Assessed by 1) qualitatively describing the generation of the CVD risk algorithm to determine if it could be designed to include resources indicated for each of the "ABCS" for CVD risk reduction (appropriate aspirin therapy, blood pressure control, cholesterol management, and smoking cessation) and 2) by examining practices' performance on the ABCS quality measures using survey data collected prior to randomization
- Feasibility: Assessed by 1) feasibility of implementing CommunityRx-H3 digitally and 2) availability of resources to populate the HealtheRx-H3, measured by mean distance to resources from the clinic
- Adoption: Assessed by 1) quantifying practice participation in implementation, including completion of the inventory and requesting changes to the HealtheRx-H3 and 2) associations between completing the inventory and patient and practice characteristics obtained from a survey completed prior to randomization

Figure 1. CommunityRx HealtheRx Example (Panel A) and HealtheRx-H3 Example (Panel B)



RESULTS

- Appropriateness: 1) Each HealtheRx-H3 listed 3 nearby places addressing all 7 ABCS-related resources. 2) Among practices that provided data (n=56), few practices met the target ABCS quality performance measures prior to randomization
- Feasibility: 1) It was infeasible to integrate CRx-H3 with the practice's EHR. 2) Practice-specific HealtheRx-H3s contained local CVD resources located on average 1.5 miles from each practice.
- Adoption: 39% of practices proactively requested changes to the HealtheRx-H3. Overall, 73% of practices implemented the HealtheRx-H3; being part of an ACO was a predictor of not completing the service inventory (Table 2)

Table 2. Completion of the resource inventory survey by patient population and practice characteristics (N=76)

	Total	Completed Inventory	Did Not Complete Inventory	p-value
Patient Population Characteristics, Mean % (SD)				
Male	43.9 (1.1)	44.6 (1.5)	43.2 (1.6)	0.52
Medicare beneficiaries	21.9 (1.9)	23.4 (2.9)	20.4 (2.6)	0.44
Medicaid beneficiaries	22.2 (2.4)	22.4 (3.6)	22.1 (3.3)	0.94
Uninsured	10.0 (1.8)	10.3 (3.1)	9.6 (1.9)	0.85
White race	58.2 (3.8)	63.4 (4.7)	53.1 (5.8)	0.18
Practice Characteristics				
Part of an ACO, N (%)	**45 (60.0)**	**18 (48.6)**	**27 (71.0)**	**<0.05**
MUA designation, N (%)	27 (37.5)	15 (41.7)	12 (44.4)	0.47
Prevention guidelines posted, N (%)	58 (77.3)	31 (83.8)	27 (71.1)	0.19
Chronic condition management guidelines posted, N (%)	61 (81.3)	32 (86.5)	29 (76.3)	0.26
Multi-specialty, N (%)	17 (29.8)	10 (32.3)	7 (26.9)	0.66
>100 visits/week, N (%)	52 (68.4)	25 (65.8)	27 (71.1)	0.62
# of patients/provider/day, Mean % (SD)	20.7 (1.1)	20.5 (1.4)	20.8 (1.9)	0.91
# of full-time equivalent staff, Mean % (SD)	5 (1.2)	4.3 (0.7)	6.1 (2.3)	0.45

CONCLUSIONS AND IMPLICATIONS

- Barriers to digital implementation of CRx-H3 included: practice's capacity for EHR integration activities, technology fatigue and IRB issues. Implementation of a manual adaptation of CommunityRx was appropriate and feasible
- ACO practices were less likely to signal adoption.
- While this study highlighted challenges with implementing a community resource referral system in small clinical practices as a QI strategy, it demonstrated that more than half of all small practices did signal adoption of a more resource intensive manual community resource referral tool

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