

Final Progress Report for Research Projects Funded by Health Research Grants

Instructions: Please complete all of the items as instructed. Do not delete instructions. Do not leave any items blank; responses must be provided for all items. If your response to an item is “None”, please specify “None” as your response. “Not applicable” is not an acceptable response for any of the items. There is no limit to the length of your response to any question. Responses should be single-spaced, no smaller than 12-point type. The report **must be completed using MS Word**. Submitted reports must be Word documents; they should not be converted to pdf format. Questions? Contact Health Research Program staff at 717-783-2548.

1. **Grantee Institution:** Thomas Jefferson University
2. **Reporting Period (start and end date of grant award period):** 01/01/2010 – 12/31/2013
3. **Grant Contact Person (First Name, M.I., Last Name, Degrees):** Joy Soleiman, MPA
4. **Grant Contact Person’s Telephone Number:** 215-955-5684
5. **Grant SAP Number:** 4100050910
6. **Project Number and Title of Research Project:** 6 - Development of a Decision Aid for Hepatitis C Testing in High Risk Populations
7. **Start and End Date of Research Project:** 01/01/2010 – 10/31/2013
8. **Name of Principal Investigator for the Research Project:** Amy Leader, DrPH
9. **Research Project Expenses.**

9(A) Please provide the total amount of health research grant funds spent on this project for the entire duration of the grant, including indirect costs and any interest earned that was spent:

\$ 789,978.13

9(B) Provide the last names (include first initial if multiple individuals with the same last name are listed) of **all** persons who worked on this research project and were supported with health research funds. Include position titles (Principal Investigator, Graduate Assistant, Post-doctoral Fellow, etc.), percent of effort on project and total health research funds expended for the position. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project	Cost
Leader, Amy	Asst. Professor	45% Yr.1, 80% Yr.2, 70% Yr.3, 35% Yr.4	\$ 264,509
Swan, Heidi	Decision Counselor	20% Yrs. 1,2,3	25,507
Quinn, Anna	Research Assistant	100% Yrs. 1,2,3	114,436
Sifri, Randa	Co-investigator	10% Yrs. 1,2,3	36,612
Daskalakis, C	Biostatistician	5% Yrs. 1,2,3	18,199
Navarro, Victor	Advisor	5% Yrs. 1,2,3	32,292

9(C) Provide the names of **all** persons who worked on this research project, but who *were not* supported with health research funds. Include position titles (Research Assistant, Administrative Assistant, etc.) and percent of effort on project. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project	Cost
None			

9(D) Provide a list of **all** scientific equipment purchased as part of this research grant, a short description of the value (benefit) derived by the institution from this equipment, and the cost of the equipment.

Type of Scientific Equipment	Value Derived	Cost
None		

10. Co-funding of Research Project during Health Research Grant Award Period. Did this research project receive funding from any other source during the project period when it was supported by the health research grant?

Yes _____ No X

If yes, please indicate the source and amount of other funds:

11. Leveraging of Additional Funds

11(A) As a result of the health research funds provided for this research project, were you able to apply for and/or obtain funding from other sources to continue or expand the research?

Yes X No _____

If yes, please list the applications submitted (column A), the funding agency (National Institutes of Health—NIH, or other source in column B), the month and year when the application was submitted (column C), and the amount of funds requested (column D). If you have received a notice that the grant will be funded, please indicate the amount of funds to be awarded (column E). If the grant was not funded, insert “not funded” in column E.

Do not include funding from your own institution or from CURE (tobacco settlement funds). Do not include grants submitted prior to the start date of the grant as shown in Question 2. If you list grants submitted within 1-6 months of the start date of this grant, add a statement below the table indicating how the data/results from this project were used to secure that grant.

A. Title of research project on grant application	B. Funding agency (check those that apply)	C. Month and Year Submitted	D. Amount of funds requested:	E. Amount of funds to be awarded:
Increasing Informed Decision Making about HCV Testing in Primary Care	<input checked="" type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify:_____) <input type="checkbox"/> Nonfederal source (specify:_)	October 2010 -----	\$3,101,688 -----	Not Funded -----
		Resubmitted: March 2012	\$2,787,682	Not funded
Increasing Informed Decision Making about HCV Testing in Primary Care	<input type="checkbox"/> NIH <input checked="" type="checkbox"/> Other federal (specify:_PCORI) <input type="checkbox"/> Nonfederal source (specify:_)	July 2012 -----	\$1,943,740 -----	Not funded
		Resubmitted: April 2013	1,796,288	Not funded
Using Health Information Technology to Increase HCV Testing	<input type="checkbox"/> NIH <input checked="" type="checkbox"/> Other federal (specify:_ARHQ) <input type="checkbox"/> Nonfederal source (specify:_)	December 2012 -----	\$246,518 -----	Not funded -----
		December 2013	\$431,090	Awaiting Decision

11(B) Are you planning to apply for additional funding in the future to continue or expand the research?

Yes X No _____

If yes, please describe your plans:

I will continue to pursue funding opportunities, to both federal and non-federal agencies, to expand my research in informed decision making about HCV screening in high-risk populations. It is important to me that this research continue in some capacity, and I will explore all options available to me.

12. Future of Research Project. What are the future plans for this research project?

Future plans of this research include: (1) Expanding the intervention to other populations that are at increased risk of HCV infection, such as the lesbian, gay, bisexual, and transgender (LGBT) community and (2) exploring other methods of delivering the intervention, such as through electronic patient portals and mobile applications.

13. New Investigator Training and Development. Did students participate in project supported internships or graduate or post-graduate training for at least one semester or one summer?

Yes _____ No X _____

If yes, how many students? Please specify in the tables below:

	Undergraduate	Masters	Pre-doc	Post-doc
Male				
Female				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
Hispanic				
Non-Hispanic				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
White				
Black				
Asian				
Other				
Unknown				
Total				

14. Recruitment of Out-of-State Researchers. Did you bring researchers into Pennsylvania to carry out this research project?

Yes _____ No X _____

If yes, please list the name and degree of each researcher and his/her previous affiliation:

15. Impact on Research Capacity and Quality. Did the health research project enhance the quality and/or capacity of research at your institution?

Yes No

If yes, describe how improvements in infrastructure, the addition of new investigators, and other resources have led to more and better research.

The research enhanced our knowledge about how to deliver patient education interventions in a primary care setting, through ancillary staff and health educators. The framework and methodology that we developed during this research project is being used to support other research topics in primary care, as a direct result of the work completed during this research project.

16. Collaboration, business and community involvement.

16(A) Did the health research funds lead to collaboration with research partners outside of your institution (e.g., entire university, entire hospital system)?

Yes No

If yes, please describe the collaborations:

As a result of this research, the principal investigators and others on the study team have developed a working relationship with the Mazzone Center for Family and Community Medicine (Mazzone Center), the leading provider of health care services for members of the LGBT community in Philadelphia. Because of the high rate of HCV infection in this patient population, we have collaborated together on a grant application (submitted to ARHQ, listed in Section 11(A) that aims to increase informed decision making about HCV screening among patients at the Mazzone Center. If funded, this research study will be conducted on-site at the Mazzone Center.

16(B) Did the research project result in commercial development of any research products?

Yes No

If yes, please describe commercial development activities that resulted from the research project:

16(C) Did the research lead to new involvement with the community?

Yes No

If yes, please describe involvement with community groups that resulted from the research project:

The principal investigator of the research project, Dr. Amy Leader, was a founding member

of a community advocacy group in Philadelphia that aims to increase knowledge about the HCV epidemic. HepCAP (hepatitis C Alliance of Philadelphia) is a coalition of researchers, patients, and advocates that foster education and promote screening about HCV across the Delaware Valley of Pennsylvania.

17. Progress in Achieving Research Goals, Objectives and Aims.

List the project goals, objectives and specific aims (as contained in the grant agreement). Summarize the progress made in achieving these goals, objectives and aims for the period that the project was funded (i.e., from project start date through end date). Indicate whether or not each goal/objective/aim was achieved; if something was not achieved, note the reasons why. Describe the methods used. If changes were made to the research goals/objectives/aims, methods, design or timeline since the original grant application was submitted, please describe the changes. Provide detailed results of the project. Include evidence of the data that was generated and analyzed, and provide tables, graphs, and figures of the data. List published abstracts, poster presentations and scientific meeting presentations at the end of the summary of progress; peer-reviewed publications should be listed under item 20.

This response should be a DETAILED report of the methods and findings. It is not sufficient to state that the work was completed. Insufficient information may result in an unfavorable performance review, which may jeopardize future funding. If research findings are pending publication you must still include enough detail for the expert peer reviewers to evaluate the progress during the course of the project.

Health research grants funded under the Tobacco Settlement Act will be evaluated via a performance review by an expert panel of researchers and clinicians who will assess project work using this Final Progress Report, all project Annual Reports and the project's strategic plan. After the final performance review of each project is complete, approximately 12-16 months after the end of the grant, this Final Progress Report, as well as the Final Performance Review Report containing the comments of the expert review panel, and the grantee's written response to the Final Performance Review Report, will be posted on the CURE Web site.

There is no limit to the length of your response. Responses must be single-spaced below, no smaller than 12-point type. If you cut and paste text from a publication, be sure symbols print properly, e.g., the Greek symbol for alpha (α) and beta (β) should not print as boxes (□) and include the appropriate citation(s). DO NOT DELETE THESE INSTRUCTIONS.

RESEARCH PROJECT AIMS

- (1) To develop the baseline and end-point surveys, and the HCV testing decision aid for the counseling sessions.
- (2) To recruit 100 high-risk individuals to participate in the pilot test of the decision counseling protocol.
- (3) To measure baseline rates of informed decision making during physician-patient encounters.
- (4) To determine which factors in decision-making predict HCV testing among high-risk individuals.

METHODS

Intervention Setting and Patient Recruitment

This study was conducted in a large, urban primary care practice at an academic medical center in Philadelphia, PA. Patients in the study were between 21 and 69 years of age, presented at a scheduled non-urgent care office visit at the practice, and self-reported at least one risk factor for HCV infection. In accordance with CDC guidelines¹, risk factors were: a history of injection drug use; donated blood or received an organ transplant prior to 1992; a tattoo or body piercing, not including ear piercing; a needle stick injury; kidney dialysis; a current or former partner with HCV; imprisonment for more than 24 hours.

Recruitment, Consent, and Baseline Survey

We employed two complementary strategies for recruitment. In the first strategy, a health educator approached patients in the waiting area of the practice. Patients were informed about the study and were asked if they would be interested in completing a survey to assess their risk for HCV infection. Patients with one or more risk factors were eligible to participate. The practice also provided study personnel with a list of potentially eligible patients who had a prescheduled appointment. The health educator called each patient, briefly described the study, and completed the risk assessment over the telephone. Eligible patients were asked to meet the health educator in the practice 45 minutes before their scheduled appointment the following week. All eligible patients, regardless of recruitment strategy, provided in-person informed consent on the day of their scheduled appointment. A subset of patients and their primary care providers also consented to have their provider interaction audio recorded. After providing consent to participate, patients completed a baseline survey.

After providing consent, patients completed a self-administered baseline survey. The survey documented each patient's specific HCV risk factor(s), as well as knowledge and attitudes towards HCV screening and demographic characteristics. Knowledge was measured with 8 items (response options: *true, false, don't know*) that corresponded to information reviewed with the health educator. A total knowledge score was computed by summing the number of correct answers. Attitudes and beliefs towards HCV and screening were assessed using 24 Likert-type items (1=*strongly disagree* to 5=*strongly agree*), which formed 8 scales: susceptibility to HCV (2 items, $\alpha = 0.63$), salience of HCV screening (6 items, $\alpha = 0.67$), curability of HCV (2 items, $\alpha = 0.30$), worries about HCV screening (4 items, $\alpha = 0.47$), self-efficacy for HCV screening (2

items, $\alpha = 0.32$), social support regarding HCV screening (2 items, $\alpha = 0.61$), social influence regarding HCV screening (2 items, $\alpha = 0.54$), and degree of comfort discussing HCV (4 items, $\alpha = 0.65$).

Decision Support Protocol

The research team designed an educational booklet about HCV infection and screening (Specific Aim 1). The booklet described the role of HCV in liver disease, risk factors for transmission, common signs and symptoms of infection, the reasons for or against screening, and resources for more information. We pre-tested the booklet with 7 patients prior to initiating the study and made revisions based on their suggestions. The final booklet had a Flesch-Kincaid reading level of 6.5. The booklet was integrated into the DCP[®].

Specifically, the health educator reviewed the booklet with the patient, and then involved the patient in a preference clarification exercise. In this exercise, the patient identified factors that would influence his or her decision to have or not to have HCV screening. The patient ranked the top three factors in order of importance, and assigned weights to the factors. The health educator entered the data into the DCP[®] and a pre-determined algorithm computed a decision preference score. This score reflects the patient's preference for or against screening, as well as the strength of the preference. The health educator reviewed the score with the patient and verified that the score was in agreement with the patient's preference. Then, the health educator offered a prescription for screening, signed by a primary care provider who was a member of the research team, to each patient. Lastly, patients saw their primary care provider and were encouraged to discuss their screening preference during the encounter. Patients also had the option to request a prescription for screening from their provider during that time.

Physician-Patient Encounters and Coding for IDM

A subset of patient-physician encounters was audio recorded to assess IDM about HCV screening. We used the Braddock Informed Decision Making Scale to content analyze these encounters.² The scale includes discussion of nine key elements of IDM: (1) the patient's role in decision making; (2) the impact of the decision on the patient's daily life; (3) the nature of the decision or clinical issue; (4) alternatives; (5) pros and cons surrounding alternatives; (6) uncertainties regarding alternatives; (7) provider assessment of patient's understanding; (8) provider assessment of patient's desire for input from trusted others; and (9) provider solicitation and exploration of the patient's preference. These elements reflect patient empowerment (1), information sharing (2, 3, 4, and 5) and active engagement in preference clarification (6, 7, 8, and 9) – hallmarks of high quality informed, shared decision making.

Using an established training protocol³, two members of the study team coded each audio recording for the presence or absence of the nine elements of IDM. A total IDM score representing the sum of all IDM elements present (range = 0 to 9) was computed; higher IDM scores indicated more complete decision making. The two coders' IDM scores were averaged to create an overall IDM score for the encounter. The coders' IDM scores were correlated (Spearman rho = 0.97) and showed agreement (kappa = 0.45), with coder discrepancies never exceeding 1 point.

Endpoint Survey and Medical Records Review

Ten days after the office visit, patients were contacted by telephone to complete an endpoint survey. The endpoint survey contained the majority of items on the baseline survey, minus the demographic items. HCV screening was assessed 30 days after the office visit by medical chart audit to document an HCV blood test. Patients who tested negative for HCV were notified in writing of the result. The primary care physician on the research team was notified when a patient received a positive HCV test result, so that additional resources of care could be provided to that patient.

Statistical Analyses

Change in knowledge between baseline and endpoint was assessed through the paired t-test. Change in the proportion of correct responses on individual knowledge items was assessed through McNemar's chi-squared test. The proportion of those who screened was determined, along with an exact 95% confidence interval. Predictors of screening were identified via logistic regression. The final multivariable model for screening included total number of risk factors, sex, and age (and baseline knowledge score for the analysis of knowledge), irrespective of their statistical significance. Other variables were retained if they were significant at the 0.1 level. All analyses were conducted in SAS 9.3.

RESULTS

Participant Characteristics

We approached 1,047 patients and 290 (28%) agreed to be assessed for eligibility. Of these, 174 patients were eligible for the study. Of the 174 patients, 99 (57%) patients enrolled in the study (Specific Aim 2). A total of 91 participants completed decision counseling. All study analyses are based on these 91 individuals. Sociodemographic characteristics were as follows: female (69%), African American (75%), Hispanic (8%), 40 years of age or older (46%), greater than a high school education (60%), and married (35%). Table 1 describes the study population. The most common HCV risk factor was having a tattoo (77%), followed by having been in prison or jail (29%), and having received donated blood or an organ transplant prior to 1992 (11%). Patients were able to report more than one risk factor: 71% of patients reported 1 risk factor, while 29% reported 2 or more risk factors.

Table 1. Participant characteristics (N = 91).

Age (years), n (%)		
<30	31	(34)
30-39	18	(20)
40+	42	(46)
Sex, n (%)		
Male	28	(31)
Female	63	(69)
Race, n (%)		
African American	68	(75)
White	15	(16)
Other	8	(9)
Ethnicity		
Non-Hispanic	73	(80)
Hispanic	7	(8)
Unknown	11	(12)
Marital status, n (%)		
Married/Living with Partner	32	(35)
Not married	59	(65)
Education, n (%)		
High school or lower	36	(40)
Beyond high school	55	(60)
Health insurance, n (%)		
	88	(97)
Health status		
Poor / very poor	8	(9)
Average	27	(30)
Good	42	(46)
Very good	14	(15)

Sixty-nine (76%) patients preferred to screen, 7 (8%) patients were unsure about screening, and 15 (16%) patients preferred not to screen. Of the 69 patients who preferred to screen, 26 (38%) screened. Of the 7 patients who were neutral about screening, 2 (29%) screened. Among the patients who preferred not to screen, no screening was observed. Overall, 91 patients reported 176 decision factors. The majority of the factors (80%) were *pro factors*, such as “I’m curious to know my status” and “If I have it [HCV], I don’t want to give it to anyone else”. The remaining 20% were *con factors*, such as “I’m afraid to know if I have it [HCV].”

Knowledge and Attitudes about HCV Infection and Screening

Endpoint survey data were obtained from 87 (96%) patients. Baseline knowledge scores showed a substantial and significant increase at endpoint by an average of 2 points ($p = 0.001$), which corresponds to an improvement of about 50%. Participants' attitudes and beliefs also showed significant improvement between baseline and endpoint. For example, after exposure to the intervention, patients were more likely to view HCV as a curable disease ($p < .01$), have less worries about screening ($p < .01$), and feel more comfortable discussing screening with their primary care provider ($p < .01$). Detailed results are presented in Table 2.

Table 2. Participants' knowledge, attitudes/beliefs regarding HCV and screening at baseline and endpoint.

	<i>N</i>	Baseline		Endpoint		Change		<i>p</i>
		<i>mean</i>	<i>(sd)</i>	<i>mean</i>	<i>(sd)</i>	<i>mean</i>	<i>(95% CI)</i>	
Knowledge	87	4.2	(2.0)	6.1		2.0	(1.6, 2.4)	0.001
Susceptibility	85	2.7	(0.9)	2.2	(1.0)	-0.5	(-0.8, -0.3)	0.001
Salience	86	4.3	(0.5)	4.4	(0.5)	0.1	(0.0, 0.2)	0.084
Curability	85	3.8	(0.6)	4.0	(0.8)	0.2	(0.1, 0.4)	0.012
Worries	84	2.9	(0.7)	2.5	(0.8)	-0.4	(-0.5, -0.2)	0.001
Self-efficacy	86	3.9	(0.7)	4.1	(0.8)	0.2	(0.0, 0.4)	0.092
Social support	89	4.3	(0.6)	–		–		
Social influence	86	4.0	(0.8)	3.5	(0.9)	-0.4	(-0.6, -0.2)	0.001
Comfortable discussing	86	4.1	(0.6)	4.4	(0.5)	0.4	(0.2, 0.5)	0.001

CI: confidence interval

Informed Decision Making

We approached 30 patients for permission to audio-record their medical encounters and obtained consent from 21 (70%). Of these, 6 could not be coded for various logistical problems, resulting in 15 usable encoded encounters (Specific Aim 3). Total IDM scores ranged from 0 to 5.5 (mean = 2.9). One audio recorded encounter did not include a discussion about HCV; the remaining 14 discussions included various levels of IDM. The most frequently discussed element, present in 93% of discussions, was 'patient's role in decision making'. One element, 'assessing patient's desire for input from trusted others' was not present in any of the discussions. The distribution of the elements, as well as examples from audio recorded encounters, can be found in Table 3. Patients who were married ($p=0.061$) and those who perceived their health as good or very good ($p=0.048$) had higher IDM scores.

Table 3. Distribution and Examples of Braddock’s IDM Scale

Element	% Present	Definition	Examples
1	93%	Discuss patient’s role in decision making, invite patient to participate	"Yes, we can talk about hepatitis C" "Did you want to get checked for hepatitis C"
2	53%	Determine context for the decision, “big picture”, impact of decision on patient’s life	"Hepatitis C testing is for people who have a history of..." "it's not anything that can be prevented with a vaccine"
3	60%	Explain clinical nature of clinical issue or decision, uses layman’s terms, unrushed	"It's a simple blood test and it's either yes or no. Then the test results come back we'll discuss"
4	13%	Discuss alternatives (including no action), states that there are choices	"We do have a hepatitis panel from March of 2010 that was non-reactive for hepatitis C and hepatitis B. You have already been screened for it once."
5	7%	Discuss pros and cons of alternatives, balanced discussion	"There isn't a good cure rate, the treatments aren't that good"
6	13%	Discuss uncertainties around alternatives, acknowledges uncertainty, “facts”	"If you had hepatitis c there is not a good cure rate, there are some treatments. The treatments aren't that good. And It's a problem because people are at risk for developing pretty severe liver issues"
7	40%	Assess patient understanding, check understanding by solicitation of questions	"So what is your understanding of hepatitis C?"
8	0%	Assess patient’s desire for input in trusted others, acknowledges role of others	
9	60%	Assess patient’s preference	"We can definitely test again if that is something you would like."

HCV Screening

Twenty-eight patients (31%) screened for HCV. In multivariable analyses, those who were not married (OR=5.39, CI: 1.40-20.7, p=0.014) and those who had less worries about screening at baseline (OR=3.70, CI: 1.44-9.47, p=0.007) were more likely to undergo screening.

In contrast, a higher decision preference score was a positive predictor of subsequent HCV screening (OR=1.59, CI: 1.09-2.32, p<0.05). Detailed results can be found in Table 4 (Specific Aim 4).

Table 4. Predictors of HCV screening (N = 88).

	HCV screening					
	N	n	(%)	OR	(95% CI)	P
Total number of HCV risk factors (OR for each additional factor)				1.47	(0.74, 2.94)	0.275
1	63	19	(30)			
2	16	2	(13)			
3+	9	5	(56)			
Age (years)						0.377
<30	30	8	(27)	1.00	Ref	
30-39	18	4	(22)	0.41	(0.07, 2.39)	0.325
40+	40	14	(35)	1.26	(0.32, 5.03)	0.742
Sex						
Male	27	7	(26)	1.00	Ref	
Female	61	19	(31)	1.67	(0.48, 5.78)	0.417
Marital status						
Not married	58	21	(36)	5.39	(1.40, 20.70)	0.014
Married	30	5	(17)	1.00	Ref	
Knowledge (OR for a 1-point increment)				0.73	(0.52, 1.01)	0.058
0-2	17	6	(35)			
3-5	52	17	(33)			
6-8	19	3	(16)			
Worries about HCV testing (OR for a 1-point increment)				3.70	(1.44, 9.47)	0.007
1-2	21	10	(48)			
3	47	12	(26)			
4-5	20	4	(20)			
Decision counseling score (OR for a 0.1-point increment)				1.59	(1.09, 2.32)	0.017
Against testing (<0.45)	14	0	–			
Uncertain (0.45-0.55)	7	2	(29)			
In favor of testing (>0.55)	67	24	(36)			

OR: odds ratio (simultaneously adjusted for all variables shown). CI: confidence interval.

IMPLICATION OF THE RESULTS

We developed the study described here in response to an epidemic of undiagnosed HCV infection, coupled with a poor understanding among patients and providers about screening. After decision counseling, patient knowledge about HCV infection increased, most likely due to exposure to the educational booklet and discussion with the health educator. Patients had fewer worries about screening and felt more comfortable talking to their physician about screening.

The HCV screening rate in this study, 31%, is in line with what other studies that promoted screening have reported in the literature.⁴⁻⁶ However, it is worth noting that in our study, 69% of the patients preferred to be screened, yet only 38% chose to do so. It may be that to achieve higher screening rates, such as those documented by Drainoni,⁷ provider involvement needs to be included in the intervention. This could be in the form of provider training and education, chart notes to providers to encourage screening, or signs to promote screening in the exam rooms—all tactics used in other studies to promote screening. Provider recommendation has shown to be a strong predictor of the receipt of cancer screening services, such as colonoscopy,^{8,9} and may also be influential in the context of HCV screening as well. Alternatively, the additional steps required to actually be screened for HCV—screening required going to a separate location and waiting to be tested—may have been too much of a barrier, even among those who preferred to screen.

We also assessed rates of IDM about HCV screening between patient and provider, which we found to be low but consistent with other studies.^{3,10} The high frequency (93%) of one element, ‘discussing patient’s role in decision making’, reflects the broader concept of patient empowerment, while the other two concepts of information sharing and preference clarification were less represented. It may be that in audio-recording the physician-patient discussion, we captured a pivotal role of the physician in decision making, which is to empower patients to make informed decisions. The other two aspects of decision making, information sharing and preference clarification, may have occurred during discussions with the health educator, and were not captured by audio-recording. It may be that the full extent of informed decision making during this intervention occurred across the patient encounter, beginning with the health educator and ending with the primary care provider.

Alternatively, Braddock² and Whitney¹¹ have argued that as the complexity of the medical decision grows so too does the need for shared decision making. They suggest that there is a continuum of decision making, with less complex decisions requiring less shared decision making and more complex decisions requiring more shared decision making. The seemingly low score documented in this study may be a reflection of this argument. Screening for HCV, which could be viewed as a less complicated decision than, for example, choosing a cancer treatment therapy, may require less discussion to reach a satisfactory conclusion. However, others have argued that all decisions should be shared and discussed to the fullest extent, regardless of the level of complexity of the decision.¹²

There were limitations to this study. This was a small pilot study in a large, urban primary care practice. The findings from this study may not be generalizable to other populations. Additionally, only a subset of physician-patient encounters was audio recorded, providing insight, but not definitive data, about the extent of IDM related to HCV screening. Lastly, the study was a non-randomized longitudinal study and cannot truly attest to the effectiveness of the intervention when compared to standard care.

Yet, the methodology and results of this study may be particularly timely, given the changing landscape of HCV screening. Since the time that this study was conducted, both the CDC and the USPSTF have issued new guidelines for HCV screening, now recommending that those born between 1945 and 1965 receive one-time screening for HCV regardless of risk. These changes,

if adopted by providers and practices, bring entirely new cohorts of patients who may have little knowledge about HCV into the realm of HCV screening. The need for patient education about the risks and benefits of screening, as well as opportunities for informed decision making between patient and provider, will continue to grow as hundreds of thousands of patients are tested for HCV, many for the first time. Primary care practices will need to meet the needs of patients, and interventions such as ours effectively and efficiently provide patient education and counseling about HCV screening in a primary care setting.

PRESENTATIONS

Quinn A, Swan H, Sifri R, Miller C, Navarro V, Myers R, **Leader A**. Factors in informed decision making about hepatitis C testing. Annual Meeting of the Society for Medical Decision Making, Chicago, IL: October 24, 2011.

Leader A, Quinn A, Sifri R, Swan H, Myers R. Increasing Informed Decision Making about HCV Testing. Annual Meeting of the Society for Medical Decision Making, Baltimore, MD: October 25, 2013.

REFERENCES

1. Centers for Disease Control and Prevention. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. MMWR Recommend Rep. 1998;47(No. RR-19): 1-39.
2. Braddock, CH, Fihn SD, Levinson W, Jonsen, AR, Pearlman RA. How doctors and patients discuss routine clinical decisions: Informed decision making in the outpatient setting. J Gen Intern Med. 1997; 12(6): 339-345.
3. Leader A, Daskalakis C, Braddock CH, Kunkel EJ, Cocroft JR, Bereknyci S, et al. Measuring informed decision making about prostate cancer screening in primary care. Med Decis Making. 2012;32(2):327-36.
4. Trooskin SB, Navarro VJ, Winn RJ, Axelrod DJ, McNeal AS, Velez M, et al. Hepatitis C risk assessment, testing and referral for treatment in urban primary care: Role of race and ethnicity. World J Gastroenterol. 2007; 13(7): 1074-1078.
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6. Litwin AH, Smith BD, Drainoni ML, McKee D, Gifford AL, Koppelman E, et al. Primary care-based interventions are associated with increases in hepatitis C virus testing for patients at risk. Dig Liver Dis. 2012; 44: 497-503.
7. Drainoni M, Litwin AH, Smith BD, Koppelman EA, McKee MD, Christiansen CL, et al.

Effectiveness of a risk screener in identifying hepatitis C virus in a primary care setting. *Am J Public Health*. 2012;102(11):e115-21.

8. Brawarksy P, Brooks DR, Mucci LA, Wood PA. Effect of physician recommendation and patient adherence on rates of colorectal cancer testing. *Cancer Detect Prev*. 2004; 28(4): 260-268.
9. DuBard CA, Schmid D, Yow A, Rogers AB, Lawrence WW. Recommendation for and receipt of cancer screenings among Medicaid recipients 50 years and older. *Arch Intern Med*. 2008; 168: 2014-2021.
10. Ling BS, Trauth JM, Fine MJ, Mor MK, Resnick A, Braddock CH, et al. Informed decision making and colorectal cancer screening: Is it occurring in primary care? *Medical Care*. 2008; 46(9S1): S23-S29.
11. Whitney SN, McGuire AL, McCullough LB. A typology of shared decision making, informed consent, and simple consent. *Ann Intern Med*. 2004;140(1):54-9.
12. Elwyn G, Hutchings H, Edwards A, Rapport F, Wensing M, Cheung WY, et al. The OPTION scale: Measuring the extent that clinicians involve patients in decision-making tasks. *Health Expect*. 2005; 8(1): 34-42.

18. Extent of Clinical Activities Initiated and Completed. Items 18(A) and 18(B) should be completed for all research projects. If the project was restricted to secondary analysis of clinical data or data analysis of clinical research, then responses to 18(A) and 18(B) should be “No.”

18(A) Did you initiate a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

18(B) Did you complete a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

If “Yes” to either 18(A) or 18(B), items 18(C) – (F) must also be completed. (Do NOT complete 18(C-F) if 18(A) and 18(B) are both “No.”)

18(C) How many hospital and health care professionals were involved in the research project?

8 Number of hospital and health care professionals involved in the research project

18(D) How many subjects were included in the study compared to targeted goals?

100 Number of subjects originally targeted to be included in the study
99* Number of subjects enrolled in the study

*A total of 91 participants completed decision counseling. All study analyses are based on these 91 individuals.

Note: Studies that fall dramatically short on recruitment are encouraged to provide the details of their recruitment efforts in Item 17, Progress in Achieving Research Goals, Objectives and Aims. For example, the number of eligible subjects approached, the number that refused to participate and the reasons for refusal. Without this information it is difficult to discern whether eligibility criteria were too restrictive or the study simply did not appeal to subjects.

18(E) How many subjects were enrolled in the study by gender, ethnicity and race?

Gender:
28 Males
63 Females
 Unknown

Ethnicity:
7 Latinos or Hispanics
73 Not Latinos or Hispanics
11 Unknown

Race:
 American Indian or Alaska Native
 Asian
68 Blacks or African American
 Native Hawaiian or Other Pacific Islander
15 White
 Other, specify: _____
8 Unknown

18(F) Where was the research study conducted? (List the county where the research study was conducted. If the treatment, prevention and diagnostic tests were offered in more than one county, list all of the counties where the research study was conducted.)

Philadelphia County, PA

19. Human Embryonic Stem Cell Research. Item 19(A) should be completed for all research projects. If the research project involved human embryonic stem cells, items 19(B) and 19(C) must also be completed.

19(A) Did this project involve, in any capacity, human embryonic stem cells?

Yes
 No

19(B) Were these stem cell lines NIH-approved lines that were derived outside of Pennsylvania?

Yes
 No

19(C) Please describe how this project involved human embryonic stem cells:

20. Articles Submitted to Peer-Reviewed Publications.

20(A) Identify all publications that resulted from the research performed during the funding period and that have been submitted to peer-reviewed publications. Do not list journal abstracts or presentations at professional meetings; abstract and meeting presentations should be listed at the end of item 17. **Include only those publications that acknowledge the Pennsylvania Department of Health as a funding source** (as required in the grant agreement). List the title of the journal article, the authors, the name of the peer-reviewed publication, the month and year when it was submitted, and the status of publication (submitted for publication, accepted for publication or published.). Submit an electronic copy of each publication or paper submitted for publication, listed in the table, in a PDF version 5.0.5 (or greater) format, 1,200 dpi. Filenames for each publication should include the number of the research project, the last name of the PI, and an abbreviated title of the publication. For example, if you submit two publications for Smith (PI for Project 01), one publication for Zhang (PI for Project 03), and one publication for Bates (PI for Project 04), the filenames would be:

Project 01 – Smith – Three cases of isolated
Project 01 – Smith – Investigation of NEB1 deletions
Project 03 – Zhang – Molecular profiling of aromatase
Project 04 – Bates – Neonatal intensive care

If the publication is not available electronically, provide 5 paper copies of the publication.

Note: The grant agreement requires that recipients acknowledge the Pennsylvania Department of Health funding in all publications. Please ensure that all publications listed acknowledge the Department of Health funding. If a publication does not acknowledge the funding from the Commonwealth, do not list the publication.

Title of Journal Article:	Authors:	Name of Peer-reviewed Publication:	Month and Year Submitted:	Publication Status (check appropriate box below):
A Decision Support Intervention for Patients At-Risk for Hepatitis C: Impact on Knowledge, Informed Decision Making, and Testing	Amy E. Leader, Anna M. Quinn, Randa Sifri, Constantine Daskalakis, Heidi Swan, Victor Navarro, Ronald Myers	Medical Decision Making	December 2013	<input checked="" type="checkbox"/> Submitted <input type="checkbox"/> Accepted <input type="checkbox"/> Published

20(B) Based on this project, are you planning to submit articles to peer-reviewed publications in the future?

Yes _____ No X

If yes, please describe your plans:

21. Changes in Outcome, Impact and Effectiveness Attributable to the Research Project.

Describe the outcome, impact, and effectiveness of the research project by summarizing its impact on the incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of outcome, impact or effectiveness of the research project. If there were no changes, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

This research methodology, when deployed in a clinical setting, aims to decrease the amount of time that a patient would have undiagnosed HCV infection, therefore potentially decreasing morbidity and mortality related to HCV infection. Because the study was designed to enroll a small sample of patients, no overall impact on the incidence of disease, or on morbidity and mortality, was observed. However, if in the future the study methodology is disseminated to a large number of patients, for example—through a health network or an insurance network—one could surmise observing noticeable impacts on disease burden.

22. Major Discoveries, New Drugs, and New Approaches for Prevention Diagnosis and Treatment.

Describe major discoveries, new drugs, and new approaches for prevention, diagnosis and treatment that are attributable to the completed research project. If there were no major discoveries, drugs or approaches, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

Interventions such as this one, which utilized a trained health educator to counsel about HCV infection and screening, are part of a growing trend of innovations that aim to provide health education and decision support outside of the realm of the provider, yet within the context of the primary care visit. Asking primary care providers to routinely provide in-depth advice and counseling during the typical 10-minute patient encounter, which is already filled with competing demands, is not tenable. Instead, providing ancillary resources in the practice setting may be a way to provide comprehensive care to patients while encouraging positive behavior change. However, only a few studies have addressed the use of implementing these types of interventions in routine clinical settings, and feasibility data is limited.

The movement toward “patient centered care”, in which the patient is involved in assessing the value of available healthcare options and makes an informed decision about his or her care, will only increase the need for effective decision making tools. The use of decision support interventions (DSIs) in the clinical encounter encourages patient centered care by educating patients, informing them of available options, and allowing them to have a central role in the decision making process. Indeed, our study found that a DSI integrated into primary care increased knowledge and screening related to HCV infection in at-risk population. While this is the first time, to our knowledge, that a DSI has been used to facilitate IDM about HCV screening, it is not unreasonable to expect that the role of the DSI could be expanded in the future to include decisions about treatment for HCV among newly diagnosed patients.

23. Inventions, Patents and Commercial Development Opportunities.

23(A) Were any inventions, which may be patentable or otherwise protectable under Title 35 of the United States Code, conceived or first actually reduced to practice in the performance of work under this health research grant? Yes _____ No X

If “Yes” to 23(A), complete items a – g below for each invention. (Do NOT complete items a - g if 23(A) is “No.”)

- a. Title of Invention:
- b. Name of Inventor(s):
- c. Technical Description of Invention (describe nature, purpose, operation and physical, chemical, biological or electrical characteristics of the invention):
- d. Was a patent filed for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?
Yes _____ No _____

If yes, indicate date patent was filed:

- e. Was a patent issued for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?

Yes _____ No _____

If yes, indicate number of patent, title and date issued:

Patent number:

Title of patent:

Date issued:

- f. Were any licenses granted for the patent obtained as a result of work performed under this health research grant? Yes _____ No _____

If yes, how many licenses were granted? _____

- g. Were any commercial development activities taken to develop the invention into a commercial product or service for manufacture or sale? Yes ___ No ___

If yes, describe the commercial development activities:

23(B) Based on the results of this project, are you planning to file for any licenses or patents, or undertake any commercial development opportunities in the future?

Yes _____ No X _____

If yes, please describe your plans:

24. Key Investigator Qualifications. Briefly describe the education, research interests and experience and professional commitments of the Principal Investigator and all other key investigators. In place of narrative you may insert the NIH biosketch form here; however, please limit each biosketch to 1-2 pages.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Amy E. Leader, Dr.PH	POSITION TITLE Research Assistant Professor
eRA COMMONS USER NAME (credential, e.g., agency login) ael017	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Pennsylvania, Philadelphia PA	B.A.	05/97	Biology
George Washington University, Washington DC	M.P.H.	05-01	Public Health
George Washington University, Washington DC	Dr.PH	05/07	Health Behavior

A. Personal Statement – Not Applicable

B. Positions and Honors

Positions and Employment

1997-1999: Research Specialist, Center for Research on Reproduction and Women’s Health, Univ. of Pennsylvania Health System

2000-2001: Researcher, Jacobs Institute of Women’s Health, American College of Obstetricians and Gynecologists

2001-2005: Data Manager, DC Breast and Cervical Cancer Early Detection Program, DC Department of Health

2004- 2005: Research Specialist, NIH-DC Initiative to Reduce Infant Mortality, GWU Medical Center/ GWU School of Public Health

2005: Student Practicum, Applied Cancer Screening Research Branch, National Cancer Institute, National Institutes of Health

2005-2009: Research Director, Center of Excellence in Cancer Communication Research, Annenberg School for Communication, University of Pennsylvania

2008-Present: Adjunct Assistant Professor, Health Education and Behavioral Science, School of Public Health, Rutgers University

2009-Present: Research Assistant Professor, Department of Medical Oncology, Division of Population Science, Thomas Jefferson University

Honors

2010 NIH Advanced Training Institute on Health Behavior Theory

2011-2013 NIH Loan Repayment Program Fellow, Health Disparities Research

2012 AAMC Early Career Professional Development Training Seminar Series

2012 NIH, Center for Scientific Review, Early Career Reviewer Program

C. Selected Peer-reviewed Publications

Yabroff KR, Washington KS, **Jacobs AE**, Neilson E, Mandelblatt JS. Delayed or incomplete follow-up after abnormal screening tests: A systematic review of barriers to care and related interventions. *Oncology Proceedings* 2002;

Yabroff, KR, Washington KS, **Leader AE**, Neilson E, Mandelblatt JS. Is the promise of cancer screening programs being compromised? Quality of follow-up care after abnormal screening results. *Medical Care Research and Review* 2003; 60: 294-331.

Meissner HI, Yabroff KR, Dodd KW, **Leader AE**, Ballard-Barbash R, Berrigan D. Are patterns of health behavior associated with cancer screening? *American Journal of Health Promotion* 2009; 23(3): 168-175.

Kelly BJ, **Leader AE**, Mittermaier DM, Hornik RH, Cappella JN. The HPV vaccine and the media: How has the topic been covered and what are the effects on knowledge about the virus and cervical cancer? *Patient Education and Counseling* 2009; 77(2): 308-313.

Nguyen GT, **Leader AE**, Hung WL. Awareness of anti-cancer vaccines among Asian American women with limited English proficiency: An opportunity for improved public health communication. *Journal of Cancer Education* 2009; 24(4): 280-283.

Leader AE, Weiner J, Kelly BJ, Hornik RH, Cappella JN. Effects of information framing on Human Papillomavirus vaccination. *Journal of Women's Health* 2009; 18(2): 225-233.

Leader AE, Lerman C, Cappella JN. Nicotine vaccines: Will smokers take a shot at quitting? *Nicotine and Tobacco Research* 2010; 12(4): 390-397.

Leader AE, Daskalakis C, Braddock CH, Kunkel EJ, Cocroft JR, Berecknyei S, Riggio JM, Capkin C, Myers RE. Measuring informed decision making about prostate cancer screening in primary care. *Medical Decision Making* 2012;32(2):327-36.

Leader AE, Cashman R, Voytek C, Baker J, Brawner B, Frank I. An exploratory study of adolescent female reactions to direct-to-consumer-advertising: The case of the human papillomavirus (HPV) vaccine. *Health Marketing Quarterly* 2011; 28(4): 372-385.

Kim HS, Bigman C, **Leader AE**, Lerman C, Cappella JN. Narrative health communication and behavior change: The influence of exemplars in the news on intention to quit smoking. *Journal of Communication* 2012; 62: 473-492.

BIOGRAPHICAL SKETCH.

NAME Randa Sifri, MD		POSITION TITLE Associate Professor	
EDUCATION			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Duke University	BA	12/83	Political Science
University of Cincinnati College of Medicine	MD	6/89	Medicine
Thomas Jefferson University	Residency	6/92	Family Medicine
Thomas Jefferson University	Fellowship	6/93	Family Medicine

Professional Experience

1993-1995: Instructor, Department of Family Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA

1995-2006: Clinical Assistant Professor, Department of Family Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA

2006-Present: Associate Professor, Department of Family and Community Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA

2010-Present: Director, Research Development, Department of Family and Community Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA

2012-Present: Director, Faculty Development Research Fellowship, Department of Family and Community Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA

Committees:

American Cancer Society, Pennsylvania Division:

1995 Primary Care Work Group, Chairperson

1997-present Cancer Prevention and Control Lecturer

2009-2010 Board of Directors, Pennsylvania Division

2009-2010 Colorectal Cancer Task Force

1996-present Preventive Health Advisory Committee, PA Independence Blue Cross

Thomas Jefferson University Committees:

2001-present Population Science Group, Thomas Jefferson University

2001-2006 Kimmel Cancer Center Internal Advisory Committee

2003-2006 Tobacco Project III Committee

2006-2008 Kimmel Cancer Center Minority Report Committee

2010-2011 University Research Advisory Committee

2010-present Student Promotions Committee

2002-2010 Pennsylvania Cancer Control Consortium (PAC3)

2002-2007 Research Sub-Committee

2003-2010 Early Detection and Screening Committee

2005-present National Colorectal Cancer Roundtable

2005-present Professional Education and Practice Task Group

C. SELECTED PEER-REVIEWED PUBLICATIONS

Sifri R, Wender R, Paynter N. Family History Taking and Cancer Risk: Gaps in Primary Care Practice. J Fam Prac, 2002; 51(10): 856

Sifri R, Myers R, Hyslop T, Turner B, Cocroft J, Rothermel T, et al. Use of Cancer Susceptibility Testing Among Primary Care Physicians. *Clinical Genet*, 2003; 64:355-360

Sifri R, Gangadharappa S, Acheson L. Identifying and Testing for Hereditary Susceptibility to Common Cancers, *CA Cancer J Clin*. 2004; 54: 309-326

Palomaki G, McClain M, Steinort K, Sifri R, LoPresti L, Haddow J. Screen-Positive Rates and Agreement among Six Family History Screening Protocols for Breast/Ovarian Cancer in a Population-Based Cohort of 21-55 Year Old Women. *Genet Med* 2006; 8(3): 161-168

Myers RE, Weinberg DS, Manne SL, Sifri R, Cocroft J, Kash K, Wilfond B. Genetic and Environmental Risk Assessment for Colorectal Cancer Risk in Primary Care Practice Settings: A Pilot Study. *Genet Med* 2007; 9(6):378-84

Myers, RE, Sifri R, Hyslop T, Rosenthal M, Vernon SW, Cocroft J, Wolf T, Andrel J, Wender R. A Randomized Controlled Trial of the Impact of Targeted and tailored Interventions on Colorectal Cancer Screening. *Cancer* 2007; 11(9):2083-91

Lairson DR, DiCarlo M, Myers RE, Wolf T, Cocroft J, Sifri R, Rosenthal M, Vernon SW, Wender R. Cost-effectiveness of Targeted and Tailored Interventions on Colorectal Cancer Screening Use. *Cancer* 2008; 112(4):779-88

Myers RE, Hyslop T, Sifri R, Bittner-Fagan H, Katurakes NC, Cocroft J, DiCarlo M, Wolf T. Tailored Navigation in Colorectal Cancer Screening. *Med Care* 2008; 46(9 Suppl 1):S123-31

Sifri R, Wender R, Lieberman D, Potter M, Peterson K, Weber TK, Smith R. Developing a Quality Screening Colonoscopy Referral System in Primary Care Practice: a Report from the National Colorectal Cancer Roundtable. *CA Cancer J Clin* 2010; 60(1):40-9

Sifri R, Rosenthal M, Hyslop T, Andrel J, Wender R, Vernon S, Cocroft J, Myers R. Factors Associated with Colorectal Cancer Screening Decision Stage. *Prev Med* 2010; 51:329-31

Myers RE, Manne SL, Wilfond B, Sifri R, Ziring B, Wolf TA, Cocroft J, Ueland A, Petrich A, Swan H, DiCarlo M, Weinberg DS. A Randomized Trial of Genetic and Environmental Risk Assessment (GERA) for Colorectal Cancer Risk in Primary Care: Trial Design and Baseline Findings. *Contemp Clin Trials* 2011; 32(1): 25-31.

Siddiqui AA, Sifri R, Hyslop T, Andrel J, Rosenthal M, Vernon SW, Cocroft J, Myers RE. Race and Response to Colon Cancer Screening Interventions. *Prev Med* 2011; 52(3-4):262-4.

Fagan HB, Myers RE, Daskalakis C, Sifri R, Mainous AG 3rd, Wender R. Race/Ethnicity, Gender, Weight Status, and Colorectal Cancer Screening. *J Obes*. 2011;2011:314619.

Sarfaty M, Myers RE, Harris DM, Borsky AE, Sifri R, Cocroft J, Stello B, Johnson M. Variation in Colorectal Cancer-Screening Steps in Primary Care: Basis for Practice Improvement. *Am J Med Qual*. 2012; 27(6):458-66.

Fagan HB, Sifri R, Wender R, Schumacher E, Reed JF. Weight Status and Perception of Colorectal Cancer Risk. *J Am Board Fam Med* 2012, Nov;25(6):792-7.

Myer RE, Fagan HB, Daskalakis C, Sifri R, Vernon SW, Cocroft J, DiCarlo M, Katurakes NC, Andrel J. A Randomized Controlled Trial of Tailored Navigation and Standard Intervention in Colorectal Cancer Screening. *Cancer Epidemiol Biomarkers Prev*. 2013 22(1):109-17.

Sarfaty M, Stello B, Johnson M, Sifri R, Borsky A, Myers RM. Colorectal Cancer Screening in the Framework of the Medical Home Model: Findings from Focus Groups and Interviews. *Am J Med Qual*. 2013 Sep-Oct;28(5):422-8.

Lairson D, DiCarlo M, Deshmuk A, Bittner-Fagan H, Sifri R, Katurakes N, Cocroft J, Sendecki J, Swan H, Vernon S, Myers R. Cost-effectiveness of Standard vs. a Navigated Intervention on Colorectal Cancer Screening Use in Primary Care. *Cancer Epidemiol Biomarkers Prev.* 2013, in press.

Ahnen D, Wade S, Jones W, Sifri R, Silveiras J, Greenamyre J, Guiffre S, Axilbund J, Spiegel A, You Y. The Rising Incidence of Young-Onset Colorectal Cancer: A Call to Action. *Mayo Clin Proc.* 2013, in press.