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On the cover: The first cohort of 15 students will graduate this May with a dual degree of MD and ScM in the Primary Care-Population Medicine Program at the Alpert Medical School of Brown University.

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The Maturation of the Primary Care-Population Medicine (PC-PM) Program at the Warren Alpert Medical School of Brown University

MICHAEL J. MELLO, MD, MPH; PAUL GEORGE, MD, MHPE

Almost four years ago in this journal, there were several articles describing a new program at the Warren Alpert Medical School of Brown University (AMS), the Primary Care-Population Medicine (PC-PM) Program.^{1,2} Population medicine, as defined by the Institute for Healthcare Improvement, is the design, delivery, coordination, and payment of high-quality health care services to manage the Triple Aim for a population using the best available resources within the health care system.³ Increasing knowledge and skills in population medicine for physician trainees has been endorsed by the American Medical Association.⁴ A vital component of AMS's program is having enrolled medical students obtain a Master of Science (ScM) in Population Medicine degree by successfully completing a nine-course curriculum to develop skills in this new field. Also, part of the curriculum is completion of a population medicine research project that pairs a student with a research mentor and is done longitudinally over the students' medical school years culminating in a manuscript for a peer reviewed journal. In addition to their mentor, ScM students have access to quantitative and qualitative faculty experts, stipend-funded time during the summer after the first year to work on their project and senior faculty to assist them in navigating their project to successful completion.

The first cohort of 15 students will graduate this May with a dual degree of MD and ScM in Population Medicine. Throughout the development of this novel program we had concerns that although this additional curriculum was important, it might negatively impact the students' traditional medical education. Although we have a limited sample, that is not the case by all objective measures. The PC-PM students have statistically equivalent scores compared to students in the traditional medical school curriculum on Step 1 and Step 2 National Board exams, as well as on exams for each clinical clerkship.

This month's *Rhode Island Medical Journal* contains five manuscripts from this pioneering group of PC-PM students. These manuscripts were chosen for this issue as they all examine a Rhode Island health concern. Recently, Accountable Care Organization-based payment models have grown nationally and within Rhode Island. **JONATHAN STALOFF**, et al. describe Rhode Island physicians' knowledge, attitudes, and confidence regarding Accountable Care Organization. Fundamental to population medicine work is having accurate health data. **JULIA SOLOMON**, et al. compare two databases of health in Rhode Islanders and finds differences between them that gives caution in selection of data to utilize moving forward. Providing healthcare to a prison

population is unique in its challenges. **ALEXA KANBERGS**, et al. probe being incarcerated and having a chronic illness. Mindfulness has been utilized as an adjunct therapeutic modality for health and **MATTHEW PERRY** examines participants' perspectives of it being incorporated into addiction treatment. The Rhode Island Food Bank is a valued community resource and **FAIZ KHAN**, et al. study its contribution to addressing food insecurity of older Rhode Islanders.

These five manuscripts are just a sample of the excellent research projects done by this initial cohort of MD-ScM students with other students in this group having also submitted manuscripts to other peer reviewed journals. There are more AMS students rising through the years working on interesting research with many of them focused on Rhode Island-specific health issues. We celebrate the research of the students in this current issue of the *Rhode Island Medical Journal* and anticipate further research from students in this program positively impacting the health of Rhode Islanders in the years to come. More importantly, we are pleased that nine of the 15 students in this group are committed to doing a residency in primary care, with many of these hoping to stay locally.

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Knowledge, Attitudes, and Confidence in Accountable Care Organization-Based Payment Models Among RI Physicians

JONATHAN A. STALOFF, MD-ScM¹⁹; KRISTINA A. MONTEIRO, PhD; MICHAEL J. MELLO, MD, MPH; IRA B. WILSON, MD, MSc

ABSTRACT

STUDY OBJECTIVE OR BACKGROUND: To assess Rhode Island (RI) physician knowledge, attitudes, and confidence to succeed in Accountable Care Organizations (ACOs).

STUDY DESIGN AND METHODS: We surveyed RI physicians' attitudes and beliefs about ACOs, including scales measuring Physician Knowledge (7 Multiple Choice and True/False items), Attitudes (8 Likert scale items), and Confidence (7 Likert Scale Items), and examined how physician characteristics related to these measures.

PRIMARY RESULTS: The response rate was 6 percent (72/1183). Means (100-point scale) and standard deviations were calculated for Knowledge 65.3 (22), Attitudes for ACO participants 56.3 (13.2) and ACO non-participants 42.7 (14.3), and Confidence 32.4 (25.9). Primary care physicians had higher Attitudes compared with specialists among ACO participants (60.2 vs. 51.8, $p=.047$) and ACO non-participants (48.2 vs. 34.4, $p=.030$).

PRINCIPAL CONCLUSIONS: RI Physicians have low scores in Knowledge, Attitudes, and Confidence scales in ACOs. Primary care physicians have more positive Attitudes about ACOs than specialists. This study is limited by its low response rate.

KEYWORDS: Population Medicine, Value-based Care, Accountable Care Organizations, Alternative Payment Models

INTRODUCTION

Since the initiation of the Medicare Shared Savings Program (MSSP) and Pioneer programs in 2012, Accountable Care Organizations (ACOs) have been at the center of the US healthcare system's transition from volume to value-based reimbursement.¹ As of January 2018, there were 619 ACOs participating in Medicare's ACO alternative payment model (APM) programs, caring for approximately 12.6 million beneficiaries.² When including Medicaid and commercial ACOs, current estimates indicate there are 1,011 ACOs participating in 1,411 ACO-type payment contracts, caring for 32.7 million Americans.³

While participation in ACO type APMs was voluntary in its first years of adoption, external payer-driven incentives are increasingly pushing provider organizations to participate in an ACO. The Medicare Access and CHIP Reauthorization Act encourages participation in "advanced APMs" through annual 5% bonus incentive payments and an exemption from participating in the new Merit-Based Incentive Payment System.⁴ Current HHS Secretary Alex Azar has indicated that acceleration of value-based care will be one of his HHS's four key foci.⁵

These strong external forces driving ACO adoption raise the question of how much of the ACO movement is driven by physician buy-in, as opposed to administrator decision-making in response to system level pressures and federal policies. With clinician wellbeing a central tenet of the expanded Quadruple Aim, a more complete understanding of physician knowledge, attitudes, and confidence in their ability to succeed in ACO-based APMs is essential.⁶

To address these issues, we surveyed physicians in Rhode Island, one of three states estimated to have at least 30% of lives covered by ACOs (others Maine and Massachusetts).³ As ACO-based APMs emphasize accountability to the cost and quality of care of a population over an extended period, with a focus on caring for multiple common chronic conditions and care coordination between groups of providers, we expected that primary care physicians would demonstrate greater knowledge, attitudes, and confidence in ACOs than specialists.⁷ Additionally, while smaller (ACOs with approximately 5,000 beneficiaries) physician-led ACOs have historically had higher success rates in receiving shared savings payments in Medicare ACOs, we suspected there would be no difference in overall engagement among physicians in large versus small provider practices, and in hospital-owned versus physician-owned healthcare systems versus solo practitioners.⁸ Lastly, we suspected that the majority of physicians, whether ACO-participants or non-participants, would indicate that they were not part of the decision-making process to join an ACO.

METHODS

Participants

The investigator-generated survey was administered in partnership with the Executive Office of Health and Human

Services of RI (EOHHS) and an academically affiliated group practice between January 2017 and October 2017. Initially, the survey was disseminated through EOHHS's January 2017 issue of its "Provider Update" e-newsletter; and then the Chief Medical Officer of an academic practice distributed the survey internally to member physicians twice in September 2017, with a one-month response deadline. No identifying information was collected and no incentives were offered for completion. At the time of survey dissemination, the academic practice had an estimated 200 physicians and the "Provider Update" newsletter had an estimated listserv of 983 Rhode Island physicians. The study was reviewed and approved by the Brown University Institutional Review Board (IRB).

Data

Survey Content

In collaboration with the Rhode Island Quality Institute we developed a survey with four main sections (Table 1). The full survey is shown in the Appendix. The survey is entirely investigator generated and not validated by prior reports.

Knowledge Scale

In an effort to assess how much physicians comprehend about ACOs and emerging developments around APMs, the Knowledge scale aimed to assess respondents' overall understanding of ACOs through six multiple choice and one true/false question.

Attitudes Scale

This eight-item scale aimed to assess how physicians feel ACOs impact their medical practice, career satisfaction, patient health, as well as the long-term importance of ACOs to the medical profession. ACO participants were asked to respond in the context of their experience with ACOs, and ACO non-participants were asked to respond how they anticipate ACO participation would impact the various constructs.

Confidence Scale

This seven-item scale aimed to assess the overall confidence level among ACO non-participants in their ability to

succeed in specific elements of participating in an ACO, if their organization chose to join one.

Additional Items

All participants were asked if they currently participate in an ACO, anticipate participating in an ACO in the next five years, and if they were included in decision-making to participate in an ACO. ACO participants identified with which types of payers (Medicare, Medicaid, or commercial) they had ACO contracts. ACO non-participants were given the opportunity to select reasons why their organization chose not to participate in an ACO from a list of 12 in a "select all that apply" format, with an option to name unlisted reasons in a free text section. Lastly, all respondents were given the opportunity to submit qualitative comments about ACOs.

Pilot Testing

In February 2016, the survey was pilot tested with six physicians including four primary care and two specialist physicians. The pilot participants reported the survey took between 8-15 minutes to complete. Adjustments were made based on feedback.

ANALYSES

The Knowledge, Attitudes, and Confidence sections were scored on a 100-point scale. The Knowledge section score was a raw percentage of questions answered correctly. For both the Attitudes and Confidence Sections, responses to Likert Scale questions were assigned a numerical value (0, 25, 50, 75, 100). The overall score for both the Attitudes and Confidence Sections were the mean of the individual item responses.

For descriptive statistics of respondent demographics, we calculated frequencies for categorical variables, and means and standard deviations for continuous variables. To assess differences in outlook toward ACOs between primary care physicians and specialists, we compared mean Knowledge, Attitudes, and Confidence scores. To assess whether any relationship exists between practice size or type and overall engagement toward ACOs, investigators compared Knowledge, Attitudes, and Confidence Score by practice size (four groups) and professional status (three groups).

RESULTS

Respondent Characteristics

Seventy-two physicians responded to the survey, for a response rate of 6% (72/1183). Eighty-six percent of participants were MD or DO providers, 69% identified as male, and there was an even split between primary care and specialist physicians (Table 2). Among all Rhode Island physicians, 33% are primary care physicians, 67% are specialists, 60% identify as male, and 40% identify as female.⁹

Table 1. Survey Composition

Section #	Construct	# of Items	Scales Used
1	Demographics	11	N/A
2	Knowledge	7	Correct/Incorrect Answers; Total Sum Score Correct
3	Attitudes	8	5-Point Likert (1=Most negative attitude, 5= Most positive attitude)
4	Confidence	7	5-Point Likert (1=Lowest Confidence, 5=Highest Confidence)

Table 2. Respondent Characteristics (N=72)

Respondent Characteristics		N	Respondents (%)
Degree Type	MD or DO	62	86%
	NP or PA	1	1%
	All Other	9	13%
Gender	Male	50	69%
	Female	22	31%
Age	<40	13	18%
	40-59	39	54%
	60+	20	28%
Ethnicity	Caucasian	56	78%
	African-American	2	3%
	Hispanic	1	1%
	Pacific Islander	2	3%
	Other	11	15%
Number of Active Licenses	1	55	76%
	2	12	17%
	3+	5	7%
Specialty	Primary Care	35	49%
	Specialist	36	50%
	N/A	1	1%
Professional Status	Employed by hospital, group, other entity	49	68%
	Practice owner, partner, associate	21	29%
	Other	2	3%
Practice Size	Solo	13	18%
	2-10 physicians	18	25%
	11-30 physicians	18	25%
	31+	21	29%
Use of EMR in practice	Yes	67	93%
	No	5	7%
Morale* (mean (SD))	3.5 (1.2)	72	100%
Optimism about Medical Profession** (mean (SD))	3.4 (1.3)	71	99%
Total Respondents		72	100%

* Morale and Feelings about Current State of Medical Profession (5-Point Likert Scale from Very Negative to Very Positive)

** Feelings about Future of Medical Profession (5-Point Likert Scale from Very Negative to Very Positive)

Survey Responses and Scales

The mean, median, and standard deviations of the three core constructs, the Cronbach's alpha of each construct, as well as of total number of reasons against participating in an ACO and total number of payer types with ACO contracts, are shown in **Table 3**. Respondents in an ACO had more positive Attitudes than those not in an ACO (56.3 vs 42.7).

Among the 22 ACO non-participants who completed the Reasons Against Participating in an ACO section of the survey, the most commonly selected reasons were the financial risk involved (N=13/22), uncertainty of long-term viability of APMs like ACOs (N=13/22), lack of proper financial incentive in payment models (N=12/22), and quality measure reporting burden (N=12/22).

Table 3. Scales and responses

Scale Name	Items	Scoring	Respondents	Median	Mean (SD)	Cronbach's Alpha
Knowledge	7	Percent Correct (out of 100)	72	71.4	65.3 (22)	0.41
Attitude Towards ACOs*	8	zero to 100				0.73
Respondents in an ACO	8	zero to 100	41	56.3	56.3 (13.2)	
Respondents not in an ACO	8	zero to 100	20	39.1	42.7 (14.3)	
Confidence in Ability to Succeed in ACO Model (Respondents Not in an ACO)*	7	zero to 100	28	25	32.4 (25.9)	0.94
Number of Reasons Against Participating in an ACO**	12	Total Reasons Selected (Out of 12)	22	3	3.9 (2.6)	--
Total Number of Payer Types with ACO Contracts	3	Total Number of Contract Types Among ACOs (Options 1, 2, 3)	43	2	1.97 (0.87)	--

* Scale ranges from zero to 100, with 100 = best attitude or highest confidence.

** Only non-ACO participants responded

Bivariate Relationships

There were no significant relationships between any of the independent variables measured and either the knowledge score or the confidence score.

Attitudes

Among ACO participants, primary care physicians had more positive attitudes about ACOs (higher scores) compared with specialists (60.2 vs. 51.8, $p=.047$, **Table 4**). Among ACO non-participants, the same trend held, with primary care physicians having more positive attitudes than specialists (48.2 vs. 34.4, $p=.030$). The number of reasons selected against ACO participation was significantly and negatively

correlated with Attitudes ($r=-0.626$, $p=.029$, data not shown). There were no significant relationships between Attitudes and sex, age, practice size, or professional status.

Involvement in Decision-Making to Become an ACO

Fifty-one respondents responded to the item about involvement with decision-making about joining an ACO, of which 24 said they were involved in their organization's decision-making (**Table 4**). Among ACO participants, those involved with decision-making had higher Attitude scores compared with those not involved (63.9 vs. 51.9, $p=.009$). Among ACO non-participants those involved with decision-making had a trend toward lower Attitude scores (37.5 vs. 49.2, $p=.071$).

Table 4. Attitude Score Comparisons by Specialty, Involvement in Decision-making

Significant Analyses	Population	N	Mean Attitudes Score (sd), Out of 100	P-value
Primary Care vs Specialists (N=60)				
Among ACO Participants (N=40)	Primary Care	23	60.2 (14.3)	$p=0.047$
	Specialists	17	51.8 (10.1)	
Among ACO Non-Participants (N=20)	Primary Care	12	48.2 (15.2)	$p=0.030$
	Specialists	8	34.4 (7.7)	
Impact of Involvement in Decision-making to Join ACO (N=51)				
Among ACO Participants (N=36)	Involved in Decision-making	13	63.9 (13.8)	$p=0.009$
	Not Involved in Decision-making	23	51.9 (11.8)	
Among ACO Non-participants (N=15)	Involved in Decision-making	11	37.5 (9.2)	$p=0.071$
	Not Involved In Decision-making	4	49.2 (12.1)	

Intentions to participate in ACOs in future

Thirty-four of 35 of respondents who currently participate in an ACO plan to continue to participate in the next five years, while one respondent answered "I don't know." Among non-ACO participants, 3 of 10 answered that they plan to join an ACO in the next 5 years.

Qualitative Analyses

Table 5 shows primary themes with representative quotes from respondents about ACOs.

Table 5. Open Responses

Theme	Representative Quotes
Positive outlook	- "Promotes inter-professional collaboration. Creates healthy community and good business climate if effective."
Suspicion of external influence on autonomy and patient care	- "I don't trust that people making these rules are looking at patients' or physicians' best interests. I believe they are insurance company driven and therefore acting based on financial incentives, not the welfare of patients or availability of medical services to those who cannot afford medical care." - "This is all about cost containment and provider productivity without positive quality impacts on patient care. I see the patient getting further lost in the system as a number not a person." - "I would prefer to run my own practice and enjoy the independence. I am not interesting in being involved with an organization that would change the work culture in a negative way - and yes I have worked for an ACO in the past."
Impact on practice sustainability	- "ACOs are forcing practices to participate or else be affected by lower reimbursements. The small practices will struggle or be unable to sustain the ability to practice." - "Primary care will remain under reimbursed and underappreciated. MIPS will constitute a money transfer from small practices to large."
Lack of knowledge about ACOs	- "I know nothing about ACOs so most of the previous answers about what I know are guess." - "The ACO has little effect on my practice since it is just another bureaucratic acronym in medicine"; "I honestly am not sure what an ACO is!?"
Concern about tasks involved in ACO participation	- "EMRs have not evolved sufficiently to support success in an ACO. They remain the most important drag on real efficiency and physician morale." - "I would ask do the providers feel supported in the participation of the ACO by assistance with entry of data and do the providers feel there is timely...reimbursements?"

DISCUSSION

Physicians may be more wary of ACOs than the rapid growth of ACOs indicates. Participants in this study suggest that physicians frequently do not participate in their organization's decision of whether to join an ACO, suggesting that ACO growth may be largely driven by administrators responding to system level economic incentives.

This study indicates that many physicians are poorly informed about ACOs, particularly specialists. Even among physicians who reported participating in the decision to participate in an ACO, the mean attitude score was only 63.9 (highest score=100). Opportunities for engaging physicians may be reflected by themes drawn from this study's qualitative assessment, in which physicians predominantly express concerns over the ACO movement's influence over physician autonomy, practice sustainability, and the ability to succeed in ACOs with current health information technology infrastructure. Physicians expressing a more positive outlook in qualitative responses indicate a hope that participation in ACOs might foster inter-professional collaboration.

Respondents who currently participate in an ACO have contracts with multiple payer types, and overwhelmingly plan to continue participating in an ACO in the coming years. In step with the Quadruple Aim, further cultivation of clinician-level understanding, buy-in, and confidence in ACOs will secure this payment reform's long-term viability.

There are several study limitations. Our response rate was low. The method of dissemination of the survey may have limited recruitment of participants, and specific recruitment efforts within a single large academic practice may have led to oversampling. It is difficult to determine the exact response rate, as the link to the survey in the "Provider Update" was at the bottom of the 15-page newsletter, and we do not know how many newsletter readers saw the participation request. Additionally, we do not know how many physicians in the sampled academic practice saw the email request to participate. Therefore, the results may not be generalizable to all RI physicians. However, the study was well balanced across age, specialty, gender, professional status, and participation status in an ACO. Further, this study is limited in that the scales involved were developed for the purpose of this study and have not been used before. The knowledge scale had a Cronbach's alpha of 0.41, below the threshold for acceptable range at 0.70.¹⁰ Additionally, as policies change, some of the material tested in the knowledge section may benefit from updating.

In conclusion, based on these data, RI physicians do not have positive attitudes, high confidence, or detailed knowledge of ACOs. Further, fewer than half were involved in their organization's decision-making of whether to join an ACO. Primary care physicians and ACO-participating physicians who were part of the decision-making process to join an ACO have more positive overall Attitudes than specialists and those not involved in decisions to join an ACO. Efforts to engage and educate physicians about ACOs are needed.

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Appendix

Prevalence of Tobacco Use and Overweight/Obesity in Rhode Island: Comparisons of Survey and Claims Data

JULIA G. SOLOMON, MD-ScM¹⁹; KRISTINA A. MONTEIRO, PhD; MARK R. ZONFRILLO, MD, MSCE

ABSTRACT

Many states, including Rhode Island, have begun to collect insurance claims data to better understand health-care spending and local health outcomes. In this study, we sought to determine whether or not the prevalence of tobacco use and overweight/obesity in the Rhode Island All-Payer Claims Database (APCD) was comparable to that predicted by national behavioral survey data. We found that the prevalence of these lifestyle-related health problems was lower in local claims data than in survey data, suggesting that this database should be used with caution when exploring issues related to the prevalence of tobacco use and overweight/ obesity in Rhode Island.

KEYWORDS: obesity, tobacco, population health

INTRODUCTION

While Rhode Island (RI) has just over one million residents,¹ it also has greater than \$500 million per year in healthcare costs related to tobacco use², and obesity-related healthcare costs of nearly \$2 billion annually.³ Given the magnitude of these costs, as well as the human toll of chronic illness, it is important to better understand who in RI is at risk of tobacco and obesity-related health problems.

Previous research indicates that inpatient diagnoses of behavior-related chronic health conditions may not be accurate.⁴ Electronic health records may not match the Centers for Disease Control and Prevention's (CDC) estimates of obesity, but might be comparable to survey estimates of tobacco use.⁵ RI recently implemented an All-Payer Claims Database (APCD), HealthFactsRI, that incorporates diagnoses connected to any claim processed by a private or public insurer for an RI resident.⁶ The RI APCD therefore captures both inpatient and outpatient diagnoses of tobacco use and overweight/obesity, though excludes diagnoses from the uninsured.

The availability of this APCD data allows for an updated local examination of how diagnoses of chronic conditions such as tobacco use and obesity, as seen in International Classification of Diseases (ICD) codes, are related to survey-based estimates of prevalence. The APCD dataset is particularly

valuable because it includes information on outpatient diagnoses, which have been examined less in previous literature due to lack of availability of data, and represents the healthcare encounters of a larger share of the population than emergency department or inpatient-only data.

The aim of this study was to compare population-level estimates of the prevalence of tobacco use and obesity in Rhode Island, as established by the CDC, with APCD diagnoses of those same conditions. Knowing a patient's probability of being diagnosed with a condition compared to the estimated population-level likelihood of having a behavior-related medical condition can help to clarify whether APCD data is useful to complete population-level analyses. A secondary aim was to examine diagnoses by age, sex, and type of insurance to determine if there is divergence along demographic lines between diagnoses and population estimates. We hypothesize that the APCD and CDC data generated from the Behavioral Risk Factor Surveillance Survey (BRFSS) will not show significant discrepancies in their estimates of obesity or tobacco use. Insurance reporting requirements and the increasing use of electronic health records (EHRs) both incentivize the documentation of these chronic health conditions and make it easier to record and maintain diagnoses.^{7,8}

METHODS

Study Design

This is a cross-sectional study comparing estimated obesity and tobacco use in RI as generated by the BRFSS telephone survey administered annually by the CDC and provider documentation as recorded in insurance claims.

Study Setting and Population

We analyzed data from the 2014 Rhode Island Behavioral Risk Factor Surveillance Survey and HealthFactsRI, the Rhode Island APCD. BRFSS is a CDC-administered, landline and cell-phone, randomized, weighted survey of the adult (ages 18 years and older), non-institutionalized civilian populations of each state.⁹ HealthFactsRI 2014 is an opt-out claims APCD for all privately insured patients (including beneficiaries of self-insured plans) as well as Medicaid and Medicare recipients in RI. The state database includes claims from all

insured persons, adults and children, but our analysis was restricted to adults older than 18. Fewer than 2% of beneficiaries whose claims are eligible for inclusion have opted out (personal communication, database administrator James Lucht).

Study Protocol

Publicly available BRFSS data from the CDC was used.¹⁰ The BRFSS codebook was also obtained from the CDC website. APCD data was extracted from the state database by RI Department of Health employees and sent to the researchers. Multiple ICD 9 codes from the APCD were collected into two variables related to obesity (BMI <25 (normal weight), (BMI 25+ (overweight and obese) and two discrete variables for smoking (current smoker and non-smoker/not recorded).

Measurements

To measure obesity, BRFSS respondents were asked their height and weight, from which BMI was calculated and reported.

Tobacco use was determined both by asking respondents if they have “smoked at least 100 cigarettes in your entire life” and if they now smoke cigarettes “every day,” “some days,” or “not at all.”⁹

The APCD was queried for ICD 9 codes previously correlated with BRFSS questions on obesity and tobacco (Table 1).⁵

Table 1. ICD 9 codes correlated with BRFSS questions on tobacco use and obesity.

Tobacco-related ICD 9 codes	Obesity-related ICD 9 codes
305.1 (non-dependent tobacco use disorder)	278 (obesity unspecified)
649.0 (tobacco use disorder complicating pregnancy, childbirth, or the puerperium)	278.01 (morbid obesity)
989.84 (toxic effect of tobacco)	278.03 (obesity hypoventilation syndrome)
	649.1 (obesity complicating pregnancy, childbirth, or the puerperium)
	793.91 (image test inconclusive due to excess body fat)
	V77.8 (screening for obesity)
	V85.30 (BMI 30.0-39.0, adult)
	V85.40 (BMI 40.0 and above, adult)
	V85.2 (BMI 25.0-29.9, adult)
	V85.530 (BMI, pediatric, greater than or equal to 95 th percentile for age)
	V85.54 (BMI, pediatric, 85 th to less than 95 th percentile for age)
	278.02 (overweight)

Data Analysis

Analysis was completed using STATA 14.0 (College Station, TX), SPSS (Armonk, NY) and Microsoft Excel.

RESULTS

BRFSS for RI in 2014 had 6450 participants, 61% of whom were female. The APCD data included claims for 788,914 insured persons in Rhode Island, 57% of whom were female. (Table 2)

The APCD dataset has a higher proportion of younger persons, and no uninsured persons. The APCD data has a much higher percentage of persons covered by Medicaid than does BRFSS, while the percentage of women, Medicare recipients, and commercially insured persons are similar.

For every measure, the APCD prevalence is lower than that estimated by the Behavioral Risk Factor Surveillance Survey. A weighted Chi-squared statistic for the overall prevalence of tobacco use and overweight/obesity showed that there was a statistically significant difference between the prevalence of both tobacco use and obesity based on which data set the information came from. (Table 3)

Table 2. Demographic characteristics of BRFSS survey respondents and APCD patients

	BRFSS	APCD
Number of Respondents	6,450	788,914
Sex (percent female)	61% (n=3905)	57% (n=452631)
Age distributions (%)		
18-24	4% (n=230)	11% (n=84579)
25-29	3% (n=218)	7% (n=54589)
30-34	4% (n=229)	7% (n=53783)
35-39	5% (n=331)	6% (n=51190)
40-44	6% (n=387)	7% (n=56813)
45-49	8% (n=504)	8% (n=66101)
50-54	10% (n=649)	9% (n=73440)
55-59	12% (n=769)	9% (n=73200)
60-64	13% (848)	8% (n=62294)
65-69	11% (n=718)	8% (n=62054)
70-74	8% (n=527)	6% (n=45579)
75-79	6% (n=362)	4% (n=34193)
80+	9% (n=573)	9% (n=70919)
Uncertain/incomplete	2% (n=105)	0% (n=0)
Insurance frequency		
Commercial	56% (n=3610)	52% (n=409886)
Medicaid	5% (n=347)	23% (n=180820)
Medicare	24% (n=1525)	25% (n=198208)
Uninsured	0.7% (n=43%)	not in data, by definition
Other (includes Tricare, Indian Health Service, unsure)	0.07	not in data, by definition

Table 3. Prevalence of overweight/obesity and current tobacco use in Rhode Island as estimated by BRFSS and the APCD.

	BRFSS	APCD	χ^2
Tobacco use (current) overall	13% (n=822)	6%	580 (p<0.001)
Overweight and obese overall	59% (n=3799)	11%	151610 (p<0.001)
Overweight/obese by age in years			
18-24	37% (n=85)	6% (n=5361)	
25-29	51% (n=111)	9% (n=4859)	
30-34	52% (n=120)	11% (n=6011)	
35-39	56% (n=186)	13% (n=6760)	
40-44	63% (n=242)	14% (n=7990)	
45-49	62% (n=312)	14% (n=9381)	
50-54	61% (n=398)	14% (n=10528)	
55-59	60% (n=459)	14% (n=10564)	
60-64	62% (n=529)	14% (n=9017)	
65-69	66% (n=471)	12% (n=7496)	
70-74	66% (n=346)	11% (n=5039)	
75-79	59% (n=259)	9% (n=3121)	
80+	52% (n=299)	4% (n=3034)	
uncertain/incomplete	25% (n=26)	n/a	
Overweight/obese by sex			
Male	70% (n=1795)	11% (n=36127)	
Female	51% (n=2004)	12% (n=53034)	
Overweight/obese by insurance type			
Commercial	59% (n=2121)	12% (n=49487)	
Medicaid	60% (n=208)	0% (n=17565)	
Medicare	61% (n=929)	11% (n=22109)	
Uninsured	65% (n=28)	n/a	
Other (includes Tricare, Indian Health Service, unsure)		n/a	
Tobacco by age in years			
18-24	13% (n=29)	4% (n=3364)	
25-29	19% (n=42)	6% (n=3459)	
30-34	16% (n=36)	7% (n=3927)	
35-39	17% (n=55)	7% (n=3821)	
40-44	20% (n=78)	8% (n=4403)	
45-49	15% (n=77)	8% (n=5522)	
50-54	18% (n=118)	9% (n=6471)	
55-59	15% (n=117)	8% (n=5971)	
60-64	13% (n=111)	6% (n=4018)	
65-69	10% (n=69)	5% (n=3036)	
70-74	8% (n=40)	4% (n=1808)	
75-79	6% (n=22)	3% (n=963)	
80+	3% (n=19)	1% (n=790)	
Uncertain/incomplete	9% (n=9)	n/a	
Tobacco by sex			
Male	14% (n=351)	7% (n=23034)	
Female	12% (n=471)	5% (n=24519)	
Tobacco by insurance type			
Commercial	10% (n=367)	5% (n=19586)	
Medicaid	29% (n=102)	9% (n=16843)	
Medicare	11% (n=172)	6% (n=11124)	
Uninsured	21% (n=9)	n/a	
Other (includes Tricare, Indian Health Service, unsure)	17% (n=73)	n/a	

DISCUSSION

These results suggest that discrepancies exist between the prevalence of tobacco use and overweight/obesity as measured in survey data and RI's statewide claims database. These differences may stem from issues of how representative the APCD population is, or failure of healthcare providers to screen or diagnose, even if data such as height and weight are readily available within the medical record and typical workflow of a medical office.

Because there were differences in the demographics between the two data sets, it is not surprising that the overall percentage of persons estimated to be overweight/obese or using tobacco would not be the same.

However, given the weighting of BRFSS, the results from each demographic group should be representative of prevalence of this condition in the corresponding APCD share of the Rhode Island population, which we did not find. Another potential reason for the differences is that the population characteristics of people who see a healthcare provider in given year may be different from those who do not interact with the healthcare system. In addition, the APCD, by definition, only includes data from insured persons; the health and tobacco usage of insured and uninsured persons may be different.¹¹ However, if differences in health status and behavior of insured versus uninsured person are the cause of the prevalence discrepancy, the difference should not persist when we look at tobacco and obesity by insurance type. The disparity persists, though, when broken down by type of insurance. Furthermore, there are nearly 800,000 patients represented in the APCD, and just over one million residents of Rhode Island; thus, the likelihood of there being a chance difference between the tobacco use and weights of those 800,000 who have claims data and the remaining approximately 200,000 Rhode Islanders whose behavior was imputed based on survey data in 2014 seems unlikely.

The other possible reasons for the discrepancy are related to physician or medical provider behavior. Part of the standard physical, as recommended by the US Preventive Service Task Force, is measurement of height and weight.¹² With the advent of electronic health records, these measurements are often automatically calculated into an easy-to-access BMI, which can even be auto-populated into a provider note. Notes, however, are not the source of billing codes and diagnoses; those must be entered separately. Problem lists may also not populate into a billing code, even though they are used by providers to help manage patient care. Previous studies suggest that it is not uncommon for hospital records to contain BMI information, but for that information to not be entered as a diagnosis.⁴ In addition, some cohort of patients may only come to the doctor when they are sick, and physicians are less likely to perform and bill for health maintenance tasks at a sick visit.

The major limitation in our study was not having the ability to directly compare sub-group prevalence from the

APCD to BRFSS data because of lack of reported variances in the publicly available data extract. We attempted to correct for this with use of the weighted Chi-square statistic for analysis.

While these results are not conclusive, caution should be used when interpreting APCD data surrounding trends in tobacco use and obesity in Rhode Island.

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Incarcerated Individuals' Perspectives on Living with Serious Illness

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ABSTRACT

The object of this study was to elicit patient perspectives on the experience of living with serious illness while incarcerated. The study was conducted at the Rhode Island Adult Corrections Institutions (ACI) in both the men's medium security and women's (all levels) facilities in June of 2016. Semi-structured interviews were conducted with participants, who met study criteria for serious illness. Interviews were coded following the template organizing style. Eighteen participants were enrolled, 13 males and five females with majority Caucasian (n=11) and ages 40-59 (n=9). Incarcerated individuals with serious illness perceived diverse healthcare deficits, including access to care, quality of care, and accommodations for medical needs and physical disabilities. Deficits were somewhat mitigated through prison programs and support from community advocates. The findings of our study support a quantitative needs assessment of available physical accommodations in prisons, national standardization of what constitutes adequate care, and reevaluation of the prison co-pay system.

KEYWORDS: correctional health care, incarceration, chronic illness, user's views, qualitative research

INTRODUCTION

The United States incarcerates a higher proportion of its population than any other country in the world. Although the nation has less than 5% of the world's population, it is home to 25% of the world's incarcerated individuals.¹ One rapidly growing subset of the incarcerated population is individuals over the age of 55. Since 1990 the number of incarcerated individuals over the age of 55 has doubled, bringing with them a high prevalence of chronic illness.^{2,3} Approximately 40% of the incarcerated population suffers from at least one chronic medical condition, with a higher rate of diabetes, hypertension, and asthma than their non-incarcerated counterparts.⁴ All incarcerated individuals are legally guaranteed health care "at a level reasonably commensurate with modern medical science and of a quality acceptable within prudent professional standards."⁵ This requirement places pressure on the penal system to provide community equivalent health services in an environment historically built for the purpose of punishment.⁶⁻⁸

Existing research on illness among incarcerated individuals has identified multiple factors that complicate the delivery of health services in prisons, including security protections for providers, formulary and other limitations on medications available to providers and their incarcerated patients, co-pays for often indigent prisoners, and overcrowding with limited resources for an increasingly large population.⁷⁻¹¹ However, there is a paucity of data analyzing the prisoner perspective on the quality of and barriers to care provided in this setting. The critically important voice of the seriously ill incarcerated individual is largely missing from prison health research despite being the most important stakeholder perspective.¹²

Through interviews with inmates with serious illness, this study seeks to understand the experience of seriously ill, incarcerated individuals and how the prison system in one state meets or fails to meet the healthcare needs of these individuals.

METHODS

This study was conducted within The Rhode Island Adult Corrections Institutions (ACI) in the men's medium and women's (all security levels) facilities. In June and July of 2016, the principal investigator (PI) conducted semi-structured oral interviews with seriously ill, incarcerated individuals. Participants were eligible for the study if they had a chronic serious illness, defined as "permanent or long-term conditions (such as Amyotrophic Lateral Sclerosis (ALS), Chronic Obstructive Pulmonary Disease (COPD), or cancer), chronic conditions requiring complex treatments (including chemotherapy or dialysis), and/or chronic conditions requiring recurring inpatient care in a hospital setting (such as congestive heart failure)." These criteria were developed to capture participants with chronic, serious illness who have frequent interactions with the prison health care system.

Participant Recruitment

All primary care practitioners working in the prison facilities were briefed on the study and asked to refer eligible individuals using a permission-to-be-contacted sheet. Contact sheets were collected until providers no longer had additional referrals. Prior to beginning the interview, informed consent was obtained and participants were assured of confidentiality.

Interviews

Interviews were single sessions conducted in a clinical suite without prison or medical staff present, and were audiotaped

without including any identifying information. Questions for the interviews were designed to elicit participants' experiences with, perceptions of, and attitudes toward the health care system while incarcerated. The questions focused on concepts of autonomy, access, and quality, as identified in prior studies.^{7,8} The interview guide was reviewed and approved by both the medical director of the prison system, and a human rights lawyer with extensive experience in prison health. The guide was composed of eleven open-ended questions. Each participant was asked these core questions, followed by unscripted questions for clarification or to probe more deeply into participant answers.

Data Analysis

Data was analyzed following the template organizing method.¹³ A codebook was created based on an initial literature review, interview questions, and preliminary scanning of the text, and was then used to assign codes to interview transcripts. Interview transcripts were analyzed and segments were assigned relevant codes. The two authors coded groups of three transcripts independently and met to reconcile inconsistencies as well as add, remove, or refine codes. This process was repeated until all transcripts had been coded. After completing the coding process, focused coding was used to group codes into largest segments, identify relationships between segments, and then derive overarching themes.

This study was approved by the Institutional Review Board of Brown University and the prison system's Medical Review Advisory Group.

RESULTS

Participant characteristics

A total of 18 interviews were conducted, 13 identified as male and five female. Participant decade of life ranged from 20s–80s, with the greatest number of participants (9 out of 18) between 40–59. Participants' self-reported medical conditions were diverse; the most common included cancer, poorly controlled/complicated diabetes, and severe mental health conditions requiring frequent hospitalization (Table 1). Interviews ranged in length from 10:09 to 48:18 minutes, with an average length of 27:03 minutes.

During interviews, three major themes emerged: accommodations, access to care, and quality of care.

Theme 1. Accommodations

Multiple participants discussed the availability of appropriate accommodations for their illness or disability, particularly those related to structural deficiencies of the physical environment.

Based on participant comments, the physical structure of the prison was not equipped to accommodate numerous inmates with physical limitations. Many participants with impaired ambulatory conditions had trouble navigating the prison facilities. For example, accessing bathrooms and showers was a common challenge. Most importantly, the need for handicap accessible cells far outstripped the supply. One inmate summarized the discrepancy:

"The biggest problem is this facility holds 1200 people

Table 1. Participant Characteristics

Baseline Characteristics	Number of Participants (n=18)
Gender	
Male	13 (72%)
Female	5 (28%)
Age	
20-39	4 (22%)
40-59	9 (50%)
60-79	4 (22%)
80 or >	1 (6%)
Race/Ethnicity	
Caucasian	11 (61%)
Hispanic/Latino	2 (11%)
African American	4 (22%)
Other	1 (6%)
Medical Condition^a	
Amyotrophic lateral sclerosis	1 (6%)
Cancer	3 (17%)
Chronic osteomyelitis	1 (6%)
Congestive heart failure	2 (11%)
Chronic obstructive pulmonary disease	1 (6%)
Diabetes mellitus	3 (17%)
Epilepsy	2 (11%)
Inflammatory bowel disease	1 (6%)
Severe Mental Health Condition	3 (11%)
Other	2 (11%)

^aIncludes multiple conditions for each patient if present, percentage indicates percent of total study population

and there are only two handicapped cells in the whole place. I was fortunate to get one of them, but there are other people here that have similar disabilities like me and cannot get the same level of care."

Inmates requiring higher levels of care can elect to have a fellow inmate serve as a 'caretaker.' Caretakers were paid by the prison to provide a broad range of services, including transporting wheelchair-bound participants around the large facility. Caretakers also assumed greater care for their fellow inmates by becoming cellmates.

Theme 2. Access to Care

Multiple factors, including cost, wait times, social supports, and a lack of health-related educational materials influenced inmates' ability to access appropriate health care.

Cost

Participants focused on two distinct forms of cost related challenges: 1) prison cost-saving policies, and 2) co-pays for medical visits as a financial burden. Many participants felt that cost was the prison administration's largest barrier to

providing medically-indicated pharmaceuticals or assistive devices such as canes or walkers. Some described being denied their previously prescribed medications upon prison entry. Substitute prescriptions were often considered by the participants to be less effective or inferior. Due to cost, participants also struggled to access devices including outdoor wheelchairs, lumbar support pillows, and night guards.

"I grind my teeth at night. I have told [the provider] I grind my teeth at night, I need a night guard. Night guards cost a lot of money and he doesn't want to order me a night guard. He is telling me put a towel between my teeth or something crazy."

Seven of 18 participants specifically mentioned co-pays, charged by the prison, as a barrier to care. Generally, co-pays are charged for medical visits, medications, and trips to outside appointments, and range in price from \$3 to \$6. There are several exemptions for which the co-pay requirements are waived, including emergency services, initial intake physical, immunizations, dressing changes, visits initiated by medical staff, yearly dental cleaning, and prenatal care. Multiple participants, who predominantly relied on wages from prison jobs (\$1–3 dollars per hour) for income and amenities, reported deferring care due to the co-pay. However, individuals with outside sources of income, primarily from family members depositing money into prison accounts, did not perceive co-pays as a significant barrier.

Wait times

Many participants discussed long wait times and delays for in-prison medical care and outside visits to specialists, particularly for non-emergent chronic care or specialty health care needs. To access healthcare services, an incarcerated individual would "put in a slip" to the medical unit and wait for their name to appear on a "med unit list" indicating they would be seen that day. Inmates described wait times for non-urgent needs ranging from a few days to a few weeks. Non-urgent specialty appointments took even longer given the need for a minimum number of patients before an outside specialist would come to the prison. However, even though inmates were frustrated with wait times, many voiced an understanding that delays were inevitable and providers were doing their best given the limited resources.

"You got to understand, there is 1200 guys here so you know things don't just happen at the snap of a finger. But with a little bit of patience, you will get whatever treatment you need done."

Health Information

Due to security concerns, inmates had access to medical literature available in the library, but could not freely access the Internet or outside books. Inmates relied on providers and family members for information related to their illness. Some participants described apathetic providers who ignored requests for health education, while others described positive experiences with providers who worked to educate them about their illness.

"She [my NP] will go over anything you want to go over and she is very helpful in pointing out side effects and advantages and disadvantages; she will give you the total lowdown of any situation."

Family members often served as sources of medical information, financial supports, and essential advocates for accessing necessary medical accommodations. One participant described the importance of her family supports:

"They try to do whatever they can. They have called here. Like I said, now they are calling lawyers. They do whatever they can for me. If I have a problem, I call them. Because I got nowhere else to turn, no one is going to listen."

Theme 3. Quality

Some of the factors impacting the perceived quality of healthcare in the prison were 1) the quality of healthcare providers, 2) limited choice of providers and 3) inadequate pain management.

Participants' health care teams often changed due to high provider turnover; participants commented on discrepancies in quality of care between different providers. Well-regarded providers were those who were perceived to be patient-centered and knowledgeable.

"She was thorough. She listened to me. She tried everything she could to help me. She treated the whole person. She was really, really good. The best doctor I have ever had."

Conversely, participants considered providers to be of poor quality if they were perceived to be primarily concerned about cost or were perceived to be burnt out. This perceived poor quality was compounded by the limited number of providers available to inmates.

Ineffective pain management also impacted perceptions of quality for multiple inmates. One common experience among participants was the transition from their community pain regimen when entering prison:

"Yeah, they cut out a lot of the meds...dealing with the pain, you just tough it out. I mean they are giving me some [pain meds], but very little. There is a huge difference, I mean I was on a lot of pain meds on the outside."

DISCUSSION

Our study contributes important qualitative data to the understanding of the seriously ill, incarcerated individuals' lived-experience. Study participants perceived deficits across multiple healthcare domains, including access to care, quality of care, and medical accommodations. Many participants experienced substantially limited healthcare resources in prison, including inadequate structural accommodations and limited access to healthcare staff.

Importantly, the findings of our study highlight that both prison authorities and incarcerated individuals need to rely on third parties to mitigate the larger structural and bureaucratic barriers that impact healthcare delivery. In prison, authorities hire other incarcerated individuals, or "caretakers," to transport immobile, seriously ill inmates across penitentiary grounds, or to serve as caretakers for those with conditions in need of monitoring, including epilepsy. These "caretakers" are largely considered a positive component to participants' care. Incarcerated individuals also benefit from social supports outside of prison who would advocate on their behalf for items such as outdoor wheel chairs and drugs that were not on the formulary. With legal requirements

to provide a community standard of care for incarcerated individuals,⁵ third parties appear to be one means through which prison authorities attempt to fill gaps in services and incarcerated individuals can obtain the care they need. Our study supports prior research findings that seriously ill inmates face multiple barriers to receiving care that meets their health needs. These include co-pays, long wait times, and prison facilities that offer inadequate accommodations for illness-related needs.^{8,14} To keep up with a growing population of aging and chronically ill inmates, prisons would ideally need to design or retrofit facilities that accommodate the complicated serious diseases of incarcerated individuals. This is an expensive proposition that is unlikely to happen without external incentives including legal challenges based on the Americans with Disabilities Act, among other laws that have been successfully used to change prison policy and practice. Also, further efforts could be made to expand and utilize polices including those that facilitate the medical release of elderly and terminally ill inmates.¹⁵ In the interim, given the enormity of undertaking large structural changes, expanding alternative programs such as the “caretaker” model where able-bodied prisoners provide simple services to inmates who have special care needs could provide immediate and widespread benefit. Additionally, prior studies suggest that interventions designed to empower patient autonomy through self-directed education, peer education, or group education visits can benefit incarcerated individuals.^{8,16}

LIMITATIONS

There are several limitations to consider when interpreting this study. First, the study took place in a single state that uses a unified system for all incarcerated individuals; its conclusions may not be generalizable to other facilities that utilize a dual system (with separate prisons and jails). However, given that this is a novel qualitative study, it provides information upon which future studies could expand. Second, the study has a small sample size, with heterogeneous gender and disease status. Prior research has focused on single genders and diseases; more research is needed to examine the population of seriously ill incarcerated individuals.^{8,12}

CONCLUSION

To summarize our findings, incarcerated individuals with serious illness face numerous challenges including poor accommodations, long wait times and prohibitive costs while incarcerated, and rely on programs such as peer caretakers and advocacy from family members to meet their health care needs.

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Perceptions of Mindfulness: A Qualitative Analysis of Group Work in Addiction Recovery

MATTHEW B. PERRY, MD-ScM'19

ABSTRACT

IMPORTANCE: While mindfulness as a treatment for addiction has been objectively studied in a variety of settings, relatively little focus has been given to the subjective experience of program participants.

OBJECTIVE: To elicit best practices for mindfulness work in addiction recovery.

DESIGN AND SETTING: Participant observation and semi-structured interviews with participants in a mindfulness course set within a residential addiction recovery program.

RESULTS: Many participants found the practice to be a useful skill for relaxation and impulse control. Most planned to continue with mindfulness practice upon completion of the course. Of particular emphasis was the importance of genuine relationships, trust, and mutual respect between participants and instructors. Some participants reported feelings of patronization, which led to decreased investment in the coursework.

CONCLUSION: Mindfulness is a promising treatment for addiction. Several benefits and barriers were identified. This study was limited by a small sample size; generalizability may be limited due to particularly severe socioeconomic stressors of the study population.

KEYWORDS: mindfulness, addiction recovery, qualitative analysis

INTRODUCTION/BACKGROUND

As the opioid epidemic continues to unfold, strategies for addiction treatment have increased in breadth and nuance. The body of data has grown regarding mindfulness and other therapies for addiction treatment.^{1,2,3} However, relatively little focus has been given to the lived experience of program participants. While perceptions of treatment are important in any context, they find particular salience in conditions where ongoing buy-in and participation are required.

This study was designed in partnership with a long-term recovery program to explore, through qualitative interviews, and program participants' perceptions about the use of mindfulness in addiction recovery. The objective of the study is to

provide information in the form of "lessons from the field," to enhance relevance and appropriateness in the development of mindfulness programming for addiction treatment.

METHODS

Study Design

The study was located at a wraparound housing and recovery program in southern New England. Two data sets were used – a series of semi-structured, face-to-face qualitative interviews and notes from the author's participant observation. Interviewees were those involved in the recovery program either as participants or staff. The mindfulness course was designed as a 12-week linear course and interviews took place at the end of a 12-week cycle. It was taught in the context of a number of other weekly therapeutic and life-skills' groups, most of which were taught by program counselors, not third-party instructors. Admission to the recovery program is rolling, so not all interviewees had completed the entire 12-week meditation course at the time of interview; all had attended at least 6 sessions. The 90-day recovery program is typically the first and most intensive phase of recovery. Participants were recruited via in-person sign-ups during the final two sessions of the course. The author's participant observation data was derived from attending an entire 12-week cycle of the course.

Interview guide development and data collection

The interview guide was developed in consultation with staff at the recovery program. This analysis included data from all parts of the interviews with specific focus on reception of the course and relationships between participants, course instructors, and program counselors. All interviews were conducted in July and August 2016. Interviews ranged from 20-60 minutes. Participants were provided with a \$15 Visa gift card upon interview completion. Interviews were digitally recorded in a private setting, de-identified, uploaded to a secure drive, and transcribed.

Consent forms were signed by all interviewees prior to interview. During the participant observation period, information regarding the project was provided to all program participants, teachers, and counselors; all parties were given the assurance of anonymity. This project was reviewed and approved by the Brown University Institutional Review Board.

Immersion/Crystallization⁴ was used for data analysis, whereby the author thoroughly read through all transcripts and interview and participant observation notes to identify themes and patterns and associated quotations, while maintaining running notes to document the analysis process. A second pass of immersion/crystallization reading was conducted to compare with the first-pass analysis. Next, the interview transcripts were placed into a grid format sorted by question, which was used for a third round of immersion/crystallization where the emerging interpretation was confirmed or disconfirmed and supportive quotes were identified. Finally, findings were again compared to the author's participant observation notes to further contextualize the analysis and arrive at final interpretation.

RESULTS

Interviews were conducted with 14 adults who were participating in the treatment program, as well as two counselors from the program and three third-party mindfulness instructors contracted specifically for the mindfulness course. One participant interview was excluded from analysis due to a medical concern that arose during the interview. Participants ranged in age from 23 to 57. People self-identified as a number of races including black, white, Latino, and others. All participants lived on-site at the treatment program, and 57% were born in the state. Prior exposure to mindfulness ranged from none to previous completion of similar courses. Third-party mindfulness teachers all self-identified as white and ranged in age from 63 to 67. Program counselors ranged in age from 27 to 55 and self-identified as white, black, and/or Latino.

Emotion and Cognition: Regulation, relaxation, decision-making

The most reported positive impact of the class was stress relief, both as a direct result of time in class and from skills applied later. This was noted to be important in the context of the stressors of early recovery in a residential program. "It taught me how to breathe right and pay attention to my breathing, and when I get tensed up I know what to do – the exercise to just loosen up and relax."

Participants noted the ability to make decisions more thoughtfully and avoid reflexive reactions that might normally lead to conflict. Some interviewees brought this change to a deeper level, endorsing an improvement in perspective and outlook. This change was attributed to a combination of the mindfulness work and the overall recovery process. "The way I see it is that I'm starting to come out of the gray shadows of my growth and aspects of life, you know? I'm starting to see color now instead of the black and white, you know, which is a good thing for me."

Personal Investment as Essential

Eleven participants reported an intention to continue with meditation and/or yoga upon completion of the course. Degree

of engagement in the course varied. Engagement with the course was attributed by some to a recognized need to change thinking patterns and develop recovery skills. Some described being frustrated with those who took it less seriously:

"What I would change about the class? Attendance. Be on time. Don't put your feet on top of the table and on top of the chairs. Don't think it's a lounging place. You're not here to be lounged. You're here to understand about your addiction and learn how to fight with your addiction."

Disengagement was connected by interviewees to physical symptoms of detox. Instructors felt it was important to be flexible with participants whose level of attention and engagement varied. "Granted they're all dealing with [detox]... So some people just close their eyes and fell asleep... some of [them] need to sleep. Let them sleep."

Religious conflict was not a concern for the majority of interviewees. Three of 14 participants felt it was a religious practice. Of those three, one reported this as a conflict with personal values.

Relationships and Community as Foundations of Recovery

Participants generally did not feel close with the third-party instructors; this lack of relationship was described as a barrier to engagement. Some participants expressed frustration over conflicts with the course teachers, and a sense of alienation resulted. "I felt like I never wanted to participate because I was going to get either yelled at or put down."

The lack of connection with third-party instructors stood in contrast to the strong relationships participants described with the recovery program counselors. Multiple interviewees noted family connections and a shared background between counselors and participants, reinforcing the sense of community that was described as a core strength of the program. This led to increased trust in the program and investment in the work of recovery.

"So to me it's like a family... I'm learning how to trust more and more every day. I know that they're not there to hurt me like sometimes outside people or somebody that's relapsed will say things that make you feel like they're against you. [This program] has never done anything to me to make me feel like that; so, it's like why wouldn't I trust them and learn how to have a healthy relationship with people?"

Overall, interviewees expressed that the stable, close community of the residential program was foundational to their recovery process. "It's like you can come in the door and work around your family."

Set and Setting

Participants in this study had attended mindfulness sessions in multiple environments – an old basement classroom, a yoga studio, and a classroom within a brand new facility. Many participants and teachers noted the effect of the environment on the effectiveness of the course. They reported that having appropriate equipment instilled a greater sense

of being in a peaceful space, which led to increased engagement. “We could sit down on pillows and do everything the right way with the yoga.”

Complexity of Recovery

Interviewees described the difficulty of recovering from long-standing addiction. Some reported having initially underestimated the intensity required to achieve sobriety. Other common themes included difficulty leaving residential treatment facilities and maintaining sobriety after reintegrating to normal life.

“Like you know when 9/11 had hit, when they saw all the survivors come out, you know you go running to the people that survived. That’s how we see people that come out of addiction; when someone makes it the next day. You go running to that person because it’s like that’s the battle. You just give that person a hug because it’s a battle.”

DISCUSSION

Particular themes emerged through the interview and analysis process. These themes can be grouped into salient learning points for members of the recovery and mental health community who seek to integrate mindfulness work into existing programs.

Timing of the Coursework (Wait until detox is over)

Course participants, teachers, and research observers all noted that participants who were new to the program were more likely to fall asleep in class, have trouble concentrating, and generally be less likely to participate. The most apparent contributing factor was the physical state of withdrawal, including fatigue, depressed mood, difficulty concentrating, and physical discomfort. The three primary elements of the mindfulness program were lecture, group discussion, and contemplative practices, all of which were a challenge within the context of withdrawal.

Opt-Out Opportunities for Group Work

Formalized meditation practice is not for everyone. Previous studies have shown that people can experience re-traumatization, anxiety and panic, and other adverse effects.⁵ Furthermore, we know more colloquially that mindfulness work is only successful if it is undertaken voluntarily. As such, in group settings such as partial hospitals or residential programs, where it may not be feasible for people to leave the room during a formal meditation, it may be helpful to have other quiet, relaxing options for those who do not wish to meditate. These could include adult coloring books, headphones with relaxing music, or books to read. It can be a challenge to maintain a quiet atmosphere conducive to meditation for those who do wish to engage, and providing alternatives can mitigate audible distractions.

Relaxation Itself is Valuable

As medical professionals, we are oriented towards maximizing the effects of any intervention. We look for prolonged sobriety, improved depression, and other tangible, measurable outcomes. This study found that the most common benefit reported by program participants was that it helped them relax. This in and of itself is a valuable benefit. For individuals dealing with the stress of recent homelessness, early recovery, and the many co-morbidities that accompany these challenges, a chance to relax is a diamond in the rough. People reported looking forward to returning to the weekly mindfulness sessions because, regardless of the emotional state they brought into the space, they would come out feeling more relaxed.

Meaningful Relationships are a Cornerstone of Recovery

Consistently throughout the study, the strengths and weaknesses of the recovery process hinged on personal relationships. Reported problems with the class correlated with a feeling of disconnect between participants and the course instructors, and clear strengths of the recovery program were its senses of family, genuine love, and of being seen by participants and staff. This was further reinforced by the fact that many people employed by the organization were graduates of its programs. Addiction treatment programs would do well to consider the identities and backgrounds of staff and to foster relationship building. This may seem to conflict with medicalized notions of professionalism, which leads to a complex conversation that should be weighed against the realities of what it takes to maintain sobriety.

CONCLUSION

Mindfulness instruction is a promising component of addiction recovery and other group-based therapeutic modalities. While its effectiveness has been demonstrated quantitatively, it is important to consider the context, content, and quality of such training. This study was limited in that its sample size was small and studied only one program. Generalizability may be difficult because results could vary across different recovery settings, with instructors of different backgrounds, or with recovery populations with fewer socioeconomic barriers than this population face, such as homelessness. Moving forward, this study would ideally be part of a best-practices conversation for recovery-service providers to minimize harm and bring patient perspective to the discussion in a meaningful way. Additional research on incorporating patient voices into the mindfulness intervention design process and developing facilitation skills for people in recovery would further increase the utility and reach of mindfulness interventions for the treatment of addiction.

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Impact of Participation in the Commodity Supplemental Food Program on Food Insecurity Among Low-Income Elderly Rhode Islanders

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ABSTRACT

BACKGROUND: Food insecurity continues to impact low-income elderly Americans. The Commodity Supplemental Food Program (CSFP) is a federal food-box program targeted specifically to this population. However, the effectiveness of this program has not been well studied.

DESIGN: We conducted a cross-sectional survey evaluating the effects of CSFP participation on food insecurity status of elderly low-income Rhode Islanders. This study was conducted during June and July 2016.

PARTICIPANTS: A total of 93 responses was received. About 50% was from individuals receiving boxes at food pantries and 50% was from those receiving boxes at senior housing.

RESULTS: About 85% of the survey population was found to be food insecure prior to CSFP participation. Overall, CSFP participation was associated with a 20.7% decrease in food insecurity. Reduction of food insecurity was stronger among senior housing participants.

CONCLUSIONS: CSFP participation can help reduce food insecurity among elderly low-income Rhode Islanders.

KEYWORDS: Commodity Supplemental Food Program (CSFP), food insecurity, senior hunger, Rhode Island Community Food Bank

BACKGROUND

In 2015, nearly 5.4 million Americans over the age of 60 were food insecure, defined as having limited or uncertain access to adequate food.¹ This reflects 8.5% of the senior population, up from 5.5% in 2001. By 2025, the number of food insecure seniors is predicted to increase by 50%.² A variety of federal programs, such as the Commodity Supplemental Food Program (CSFP), has been established to assist low-income seniors in obtaining enough food. Prior to 2014 the CSFP also targeted children under 6 years old and pregnant, postpartum, and/or breastfeeding women, but now exclusively serves the elderly. The USDA requires that participants be at least 60 years of age and at or below 130 percent of the Federal Poverty Income Guidelines to be eligible for CSFP. Each month, eligible individuals receive a

box of food that includes vegetables, grains, juice, and other products that the USDA claims provides adequate nutrition for its target population. While the CSFP is federally funded, state agencies administer the program. According to the USDA, the program served 630,000 individuals monthly nationwide in 2016. In Rhode Island, the Rhode Island Community Food Bank manages over 1,500 CSFP boxes per month.³ The agency packages CSFP boxes and delivers them to community partner sites, which distribute the boxes to program enrollees. Enrollees then return monthly to community sites, which include food pantries and senior housing, to verify enrollment and receive their boxes.

Despite the financial investment in the program, there is a dearth of literature on the impact of CSFP and whether it achieves its core objectives. A 2005 evaluation of the program in New York suggested CSFP recipients have similar levels of food security as seniors participating in the Supplemental Nutrition Assistance Program (SNAP), another federally funded and state-run program.⁴ Furthermore, a qualitative 2008 study from the USDA highlighted the role of CSFP as the sole source of food assistance for many seniors and as a gateway to other services.⁵ However, studies are inconclusive about whether the program effectively relieves food insecurity. This research is crucial for informing state and federal policy, especially as the current administration has proposed eliminating CSFP funding in the 2019 fiscal year budget.⁶ This present study investigates whether CSFP has reduced food insecurity for low-income RI recipients. In addition, this study will explore whether the effect of the CSFP on food insecurity on this population varies based on other factors.

METHODOLOGY

A 10-item survey was administered at food pantries and senior housing in RI during June and July 2016 at monthly box distributions. The survey assessed demographic information, SNAP participation status, health status, and food-insecurity risk. Food insecurity was assessed using a 2-item screen using questions from the USDA Food Security Module. This screen, known as the Hunger Vital Sign,⁷ was previously validated.^{8,9} To observe changes in food security status after program enrollment, participants were instructed to answer each item of the screen twice in the

following manner: "I am going to read you three statements. First, think about the time before you started receiving these boxes, and tell me if each of these statements was 'Often true,' 'Sometimes true,' or 'Never true.' Now, think about the time since you started receiving these boxes, and tell me if each of these statements was 'Often true,' 'Sometimes true,' or 'Never true.'" The three statements were read in succession to minimize response bias.¹⁰

Surveys were administered in English or Spanish to CSFP participants who had been enrolled in the program for at least one month at the time of box distribution.

Site Selection

Sites were pre-selected by a RI Community Food Bank staff member based on geographic variability, logistical feasibility and how representative they were of the overall RI CSFP population. Furthermore, only sites where distributions had also taken place at least one month prior to the time of survey administration were included in the study. Communities chosen for recruitment of participants included Providence, Coventry, Cumberland, Newport, Central Falls, Little Compton, Cranston, and Warwick. In total, 35.9% (n=14) of all RI CSFP partner sites were selected for inclusion in the study.

Participants enrolled in the CSFP after being identified by a manager at their respective sites. At food pantries, participants who had already been utilizing the site for food would pick up their CSFP boxes in person on specific dates. At senior housing, eligible residents enrolling in the program would have their CSFP boxes delivered directly to them.

At the selected sites, program enrollees were notified about the survey as they received their boxes. Those who agreed to take the survey would approach a separate table and complete the survey either before or after receiving their box. Before beginning the survey, they were notified that completing the study was voluntary and would not affect their continued participation in the CSFP, and that their answers would remain anonymous. The survey was administered with the researcher reading the questions to participants who were unable to read. Following survey completion, participants could choose between various incentives (bag clips, air fresheners, jar grips, measuring spoons, or small containers of Tupperware) as compensation.

Data Analysis

Respondents were considered food insecure if they answered "Sometimes true" or "Always true" to either of the two items in the food security screen. We further characterized food insecurity by a scoring system – any response of "Often true" was assigned 2 points, "Sometimes true" was assigned 1 point, and "Never true" was assigned 0 points. "High food insecurity" was defined as a score of 3–4 for the two items; "moderate food insecurity" was defined as a score of 1–2, and "Food secure" was defined as a score of 0. We used

a McNemar's chi square test for paired nominal data to compare respondents' levels of food insecurity before and after starting the program. A $p < 0.05$ indicates a significant difference in responses.

RESULTS

Overall, 93 participants completed the survey. Of those approached for the survey, 10.5% (n=11) refused to participate. **Table 1** outlines the characteristics of this survey sample, the survey site population, and the overall RI CSFP recipient population. No differences in gender or age existed between these groups. 75.3% of respondents completed the form in English, versus 24.7% who completed the form in Spanish. A slightly greater proportion of respondents in the sample identified as white (57.0%) compared with those in the survey site (40.2%) and overall population (45.8%). A similar proportion of respondents received their food boxes at senior housing (49.5%) as did from food pantries (50.5%).

The majority (83.7%, n=77) of CSFP recipients in the sample were concurrently enrolled in SNAP. A slight majority of respondents were in self-reported good health (58.1%), defined as having "Excellent", "Very Good", or "Good" health. 41.9% of respondents were in self-reported poor health, defined as having "Fair" or "Poor" health.

Table 2 outlines the food insecurity status of respondents before and after program enrollment. Overall, baseline food insecurity was high (84.8%), with program participation

Table 1. Baseline Characteristics of the RI CSFP Recipients

Characteristic	Survey Sample (n=93) n (%)	Survey Site Population (n=699) n (%)	Overall CSFP Population (n=1,785) n (%)
Average Age	71	71	72
Age Range	60-91	60-100	60-100
Gender			
Female	60 (64.5)	486 (69.7)	1,240 (69.7)
Male	33 (35.5)	211 (30.3)	540 (30.3)
Language			
English	70 (75.3)	383 (54.8)	1,085 (60.8)
Spanish	23 (24.7)	316 (45.2)	700 (39.2)
Race			
White	53 (57.0)	281 (40.2)	818 (45.8)
Hispanic	26 (28.0)	301 (43.1)	682 (38.2)
Black/African American	6 (6.5)	54 (7.7)	142 (8.0)
Other	8 (8.6)	63 (9.0)	143 (8.0)
Site Type			
Food Pantry	47 (50.5)	450 (64.4)	1,079 (60.5)
Senior Housing	46 (49.5)	249 (35.6)	654 (36.6)

significantly decreasing insecurity levels (84.8% to 64.1%, $p < 0.05$). Results remained significant when stratified by gender ($p < 0.05$ for both males and females) and health status ($p < 0.05$ for both participants with relatively poor and

relatively good health). However, differences emerged based on site type and SNAP status. Interestingly, respondents receiving their boxes at senior housing experienced a significant drop in food insecurity (84.4% to 48.9%, $p < 0.05$), while those receiving their boxes at food pantries did not (85.1% to 78.8%, $p = 0.37$). Additionally, SNAP recipients experienced a significant drop in food insecurity ($p < 0.05$), while non-SNAP recipients did not ($p = 0.37$).

Table 2. Food Insecurity Status of Survey Sample

	Variable	Before Receiving Boxes n (%)	After Receiving Boxes n (%)	Chi-Squared Value	Chi-Squared P-Value
	Overall	78 (84.8)	59 (64.1)	15.4290	<0.001*
Site type	Food pantry	40 (85.1)	37 (78.8)	0.8000	0.3711
	Senior housing	38 (84.4)	22 (48.9)	14.0620	<0.001*
Gender	Male	27 (84.4)	21 (65.6)	4.1667	0.0412*
	Female	51 (85.0)	38 (63.3)	9.6000	0.0019*
Health Status	Self-reported good health	43 (81.1)	32 (60.4)	7.6923	0.0055*
	Self-reported poor health	35 (89.7)	27 (69.2)	6.1250	0.0133*
SNAP status	SNAP recipients	65 (84.4)	49 (63.3)	14.0620	<0.001*
	Non-SNAP recipients	13 (92.9)	10 (71.4)	0.8000	0.3711

*Indicates significant drop in food insecurity after program participation, $p < 0.05$

Table 3. Food Insecurity Score by Site Type

Food insecurity status	Food Pantry		Senior Housing	
	Before Receiving Boxes n (%)	After Receiving Boxes n (%)	Before Receiving Boxes n (%)	After Receiving Boxes n (%)
No food insecurity	7 (14.9)	10 (21.3)	7 (15.6)	23 (51.1)
Moderate food insecurity	20 (42.6)	31 (66.0)	22 (48.9)	17 (37.8)
High food insecurity	20 (42.6)	6 (12.8)	16 (35.6)	5 (11.1)

Figure 1. Participant Food Insecurity Status

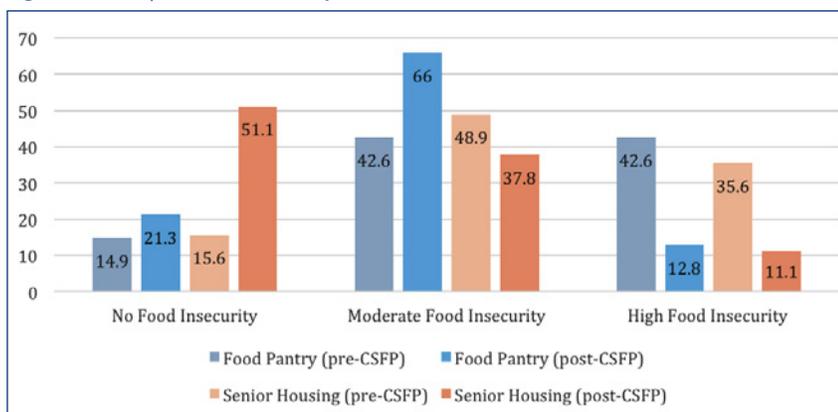


Table 3 and **Figure 1** further characterize effects of program participation on food insecurity for food pantry versus senior housing recipients. Prior to program administration, both groups had similar levels of food insecurity. However, differences emerged when looking at moderate versus no food insecurity. Post-CSFP, many more senior housing recipients had no food insecurity (51.1%) versus food pantry recipients (21.3%). Concurrently, food pantry recipients appeared to have greater levels of moderate food insecurity (66%) versus senior housing residents (37.8%). Of note, levels of high food insecurity appeared to drop markedly for both food pantry (42.6% to 12.8%) and senior housing (35.6% to 11.1%) participants.

DISCUSSION

Our data show an alarming level of baseline food insecurity among this sample of the senior low-income RI population. Prior to program participation, 84.8% of the survey population was found to be food insecure, compared with 12.8% of the overall RI population between 2014 and 2016.¹¹ Participation in the CSFP was associated with a 20.7% decrease in food insecurity, representing a marked decrease compared with baseline levels.

The effects of CSFP participation on food insecurity remain significant when stratifying by gender and health status. However, differences in the effects of program participation emerged when stratifying by site type. Our data indicate that senior housing recipients, as compared to food pantry recipients, demonstrate the greatest gains from CSFP in terms of improved food security. Senior housing recipients have the food boxes delivered directly to them, which is likely an important benefit for this population of frail, low-income seniors.

Because the survey inquired about prior food security status, this study potentially introduced recall bias. Future studies involving a prospective cohort design would further clarify effects of CSFP participation on food security status over time. In addition, in-depth interviews exploring participants' views on the program may help explain differences between sub-groups of this population. Analysis of subgroups, including the food pantry and senior housing populations,

is also limited by the study's small sample size. Finally, while our study stratifies participants by baseline health status, no conclusions can be made about whether the program improves health. Food insecurity among the elderly has been associated with poorer nutritional intake and self-reported health status.¹² A follow-up study that tracks specific health and nutrition metrics would further delineate the relationship between CSFP participation and health.

Apart from the above limitations, it is important to caution that the results of this study may not be applicable outside of RI. Not all food banks operate similarly, and characteristics of recipients may differ in other states.

In conclusion, this study shows that the CSFP can have an impact on lowering food insecurity levels among RI recipients. As food insecurity levels of low-income elderly Rhode Islanders remain quite elevated, such programs can be an asset to address this issue. Furthermore, this study suggests that individuals receiving their food boxes at food pantries are particularly food insecure even after program administration.

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Knowledge, Attitudes, and Confidence in Accountable Care Organization-Based Payment Models Among RI Physicians

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APPENDIX

KNOWLEDGE SCALE: QUESTIONS AND PERFORMANCE (N=72)		
Question	Answer Choices (Correct Choice in Bold)	Respondents Answering Correctly
Which of the following accurately describes an Accountable Care Organization (ACO)?	<p>a. An ACO is a group of doctors, hospitals, and other health care providers who come together voluntarily to give coordinated high quality care to their patients.</p> <p>b. An ACO is an employer that chooses to provide health or disability benefits to employees with its own funds.</p> <p>c. An ACO is a health insurance organization to which subscribers pay a predetermined fee in return for a range of medical services from physicians and healthcare workers registered with the organization.</p> <p>d. An ACO is a group of primary care physicians who arrange for patients to pay an annual fee or retainer for advanced care.</p>	81%
What kind of ACO payment arrangement does the following situation describe: An ACO that is paid on a fee-for-service basis with an opportunity to share in savings based on their financial and quality performance, but is not financially responsible for any potential losses?	<p>a. One-sided risk</p> <p>b. Two-sided risk</p> <p>c. Capitation</p> <p>d. Pay-for-performance</p>	68%
Which of the following kinds of providers can participate in an ACO?	<p>a. All health professionals including primary care physicians, specialist physicians, nurse practitioners, and physician assistants</p> <p>b. Only primary care physicians, nurse practitioners, and physician assistants</p> <p>c. Primary care physicians</p> <p>d. Primary care physicians and specialist physicians</p>	85%
In January 2015, Secretary of Health and Human Services Sylvia Burwell made specific goals about transitioning fee-for service payments to alternative payment models (APMs). According to that announcement, what percentage of Medicare fee-for-service payments will be tied to APMs in 2018?	<p>a. 10%</p> <p>b. 50%</p> <p>c. 95%</p> <p>d. 99%</p>	43%
Beginning in 2019, Medicare will transition all healthcare providers who are not participating in an alternative payment model to what new payment system?	<p>a. Sustainable Growth Rate (SGR)</p> <p>b. Medicare Physician Fee Schedule (MPFS)</p> <p>c. Merit-based Incentive Payment System (MIPS)</p> <p>d. Medicare Star Ratings Program</p>	74%
Which of the following is a quality measure used in Medicare's Accountable Care Organization programs?	<p>a. Blood Pressure Screening</p> <p>b. MRI utilization rates</p> <p>c. All cause hospital readmissions</p> <p>d. Percent of beneficiaries with diabetes whose HbA1c above 9 percent</p>	32%
True/False: All Medicare Accountable Care Organizations participate in a shared savings AND shared losses model.	<p>a. True</p> <p>b. False</p>	75%

ATTITUDES SCALE AMONG ACO PARTICIPANTS: QUESTIONS AND RESPONSES (N=41)		
Question	Response Choices (Rated 0,25,50,75,100)	Mean Response (SD)
Evaluate the effect of participating in an ACO has on:		
1) Time available to spend with patients	0= A lot less time 100= A lot more time	50 (17.7)
2) Improving the overall health of your patients	0= Very negative impact 100= Very positive impact	63.8 (13.8)
3) Your overall compensation	0= Lowers a lot 100= Raises a lot	53.2 (14.3)
4) Your overall job satisfaction	0= Lowers a lot 100= Raises a lot	46.3 (21.3)
Please evaluate how you perceive:		
5) The quality measures correlate to the quality of care provided to patients	0= No correlation 100= Strong correlation	56.1 (32.0)
6) The relevance of preparing to participate in new payment systems (e.g. ACOs) to the long-term viability of your practice	0= Not at all relevant 100= Very Relevant	86.6 (15.9)
7) The long-term viability of practices with 5 or fewer physicians in a healthcare environment based on ACOs	0= Not at all viable 100= Very Viable	40.2 (32.5)
8) The focus on containing costs in ACO-based payment models influences my medical decision making	0= Strongly Disagree 100= Strongly Agree	58.5 (21.4)

ATTITUDES SCALE AMONG NON-ACO PARTICIPANTS: QUESTIONS AND RESPONSES (N=20)		
Question	Response Choices (Rated 0,25,50,75,100)	Mean Response (SD)
Although you may not participate in an ACO, please evaluate what you anticipate the effect of participating in an ACO would have on:		
1) Time available to spend with patients	0= A lot less time 100= A lot more time	37.5 (28.8)
2) Improving the overall health of your patients	0= Very negative impact 100= Very positive impact	47.2 (16.9)
3) Your overall compensation	0= Lowers a lot 100= Raises a lot	30.6 (26.5)
4) Your overall job satisfaction	0= Lowers a lot 100= Raises a lot	26.4 (26.3)
Although you do not participate in an ACO, please evaluate what you anticipate the effect of participating in an ACO would have on:		
5) The quality measures correlate to the quality of care provided to patients	0= No correlation 100= Strong correlation	57.9 (31.2)
6) The relevance of preparing to participate in new payment systems (e.g. ACOs) to the long-term viability of your practice	0= Not at all relevant 100= Very Relevant	68.4 (23.4)
7) The long-term viability of practices with 5 or fewer physicians in a healthcare environment based on ACOs	0= Not at all viable 100= Very Viable	38.2 (22.6)
8) The focus on containing costs in ACO-based payment models influences my medical decision making	0= Strongly Disagree 100= Strongly Agree	60.5 (22.5)

CONFIDENCE SCALE (N=28)	
Question Rate your confidence level for the following on a 5 Point Likert Scale, 0=Not at all Confident, 100= Extremely Confident	Mean Response (SD)
1) Use meaningful data reports about my population's health and healthcare utilization in a timely manner	31.25 (28.6)
2) Identify meaningful and actionable insights from the data I receive about my population's health and healthcare utilization	30.4 (27.5)
3) Negotiate care coordination agreements with other providers in my community that are beneficial to my practice and my patients	30.4 (27.5)
4) Provide high quality care to my patient population at low total cost	32.1 (31.1)
5) Reduce unnecessary hospitalizations in my patient population	32.1 (29.5)
6) Succeed in sharing savings in a shared savings or risk-based contract	32.1 (33.2)
7) Manage the care of my patients as they transition between healthcare settings	38.4 (33.7)

POTENTIAL REASONS AGAINST PARTICIPATING IN AN ACO (N=22)	
Available reasons for respondents to endorse why their organization chose not to participate in an ACO (check all apply format)	Number of Endorsements
Lack of understanding in what it means to be in an ACO	5
Financial risk involved	13
Lack of EHR	7
Lack of proper staff	5
Lack of financial resources for needed investments	11
Uncertain of how to succeed in managing population health	10
Uncertain of long term viability of alternative payment models like ACOs	13
Potential pressure to ration care to patients to contain costs	9
Lack of proper financial incentive in payment model	12
Quality measure reporting burden	12
Disagreement over chosen quality measures	5
Lack of business relationships with other providers to achieve scale	11