Family Planning Provider Referral, Facilitation Behavior, and Patient Follow-up for Abnormal Pap Smears

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SYNOPSIS

Objectives. Family planning (FP) clinics are important access points for cervical cancer screening and referrals for follow-up care for abnormal Papanicolaou (Pap) smears for a substantial number of U.S. women. Because little is known about referral and facilitation practices in these clinics or client action based on referrals, we sought to determine FP provider referral and facilitation practices when seeing FP clients with abnormal Pap smear results, and FP client follow-up for abnormal Pap smears due to FP provider referrals.

Methods. We conducted a mail survey of Medicaid-enrolled FP providers in Arkansas and Alabama, and conducted a telephone survey with a sample of FP clients of those providers responding to the provider survey.

Results. Major provider factors associated with referral included rural location, health department and clinic institutional setting, large Title X practice/clinic size, and high FP clinic focus. Major factors associated with facilitation included rural location, non-physician specialty, health department and clinic institutional setting, and small Title X clinic size. Of women reporting abnormal results, 62.4% reported follow-up care. Of those who received follow-up care, 40.0% received some care and a referral from their FP provider. A major factor associated with clients seeking follow-up care was being told by their FP provider where to go for follow-up care. Age was a major factor associated with clients actually obtaining follow-up care.

Conclusions. Where follow-up care is not available at the FP site, referrals are critical and are a major factor associated with whether women seek care for the condition. Interventions to increase follow-up rates should focus on provider and system features, rather than clients.

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A substantial number of U.S. women of childbearing age (15–44 years) receive family planning (FP) services through two federally supported programs: Title X and Medicaid FP demonstration programs.[1,2] These programs provide contraceptive services and FP-related counseling to low-income and uninsured women, as well as access to screenings for many sexual and reproductive health conditions, including Papanicolaou (Pap) smears to detect preinvasive lesions and invasive cervical cancer. Results from normal Pap smears are reported as negative for lesions or malignancy, epithelial cell abnormality, or other (when there are no cell abnormalities but findings indicate increased risk).[3] Women receiving abnormal results are given follow-up diagnostic recommendations that range from repeat Pap smears at six and 12 months, to colposcopic examination (with or without endocervical sampling), to human papillomavirus DNA testing, to loop electrosurgical excision.[4]

Early detection from Pap smears leading to treatment has been credited with dramatically reducing deaths from cervical cancer during the last half century.[5] Title X and FP waivers do not cover treatment for cervical cancer; however, un/underinsured and low-income women diagnosed with precancerous lesions or cervical cancer may be able to access treatment coverage through state Medicaid plans as a result of a 2000 federal law that permits states to expand Medicaid programs for such treatment.[6]

In 2004, 84% of U.S. women (≥18 years of age) reported having a Pap smear within the preceding three years.[7] Despite high rates of screening and reduced mortality, many women do not follow up after receiving abnormal Pap smear results. A review of follow-up adherence studies conducted between 1985 and 1999 found that an estimated 15% to 42% of women did not seek follow-up care for abnormal Pap smears.[8]

A number of studies have been conducted to identify factors associated with women following up on abnormal Pap smears. In 2007, Eggleston and colleagues published a comprehensive review of 26 published studies conducted between 1990 and 2005, which identified factors associated with following up on abnormal Pap smear results. Although the 26 studies defined the term "adherence" differently, they all represented a patient following through with additional diagnostic or treatment recommendations made in response to abnormal Pap smear results.

Individual factors moderately to strongly associated with follow-up adherence to abnormal Pap smears included minority race/ethnicity (African American and Asian), knowledge/understanding of the Pap smear and results, and severity of the results. The studies found cost of care to the patient as one reported barrier to follow-up adherence, and some, but not all of the studies suggested an association between private health insurance coverage and follow-up. Psychosocial factors moderately to strongly associated with follow-up adherence included social support and marital status. Health-care system factors having a moderate to strong association with adherence included enhanced provider-patient communication, on-site colposcopy, and referral facilitation activities (e.g., follow-up appointment reminders). The studies found no significant difference in adherence based on clinician specialty or the type of facility to which the referral was being made. No studies identified through this review investigated adherence rates based on the type of health-care site providing the referral (e.g., public health clinic vs. private physician office).[9]

The Eggleston et al. review indicated that most studies investigating factors associated with adherence focused primarily on patient characteristics, with few studies conducted to identify clinicians and health-care facility characteristics associated with adherence.[9] Furthermore, very little research has investigated the specific referral practices and facilitation activities of FP providers and the characteristics of adherent women receiving referrals through FP clinics. One known study set in an FP clinic found that unmarried, less educated, younger women with fewer health problems were less likely to adhere to follow-up recommendations.[10]

Our study focused on a population of women with public funding for FP services only, and the array of providers, including FP-focused clinics (many based in public health departments[11]) and private physicians participating in Medicaid, who provide FP services to this population. Publicly funded FP clinics are highly focused on providing preventive care[12] and are less likely than other providers to offer other sexual and reproductive health services (such as colposcopy) or primary care services.[13–15] Other settings may offer these services but require payment out of pocket or with insurance before they can be provided. They may refer patients with abnormal Pap smears to other providers who can offer follow-up services to patients without financial resources.

This article explores the various policies regarding follow-up for abnormal Pap smear maintained by this array of providers, and the impact that the reported actions of FP providers has on patients' decisions to seek follow-up care when they report having received an abnormal Pap smear.

METHODS

To collect information about referral practices and facilitation activities of FP providers and follow-up adherence to referrals for care for an abnormal Pap smear, we fielded two surveys: (*1*) a mailed survey sent to all Medicaid-enrolled providers in Arkansas and Alabama (as identified through provider lists obtained from the respective state Medicaid agencies), and (*2*) a telephone survey with women receiving FP services from providers who returned the provider survey. We sent the mail survey to all FP providers in Arkansas and Alabama. We stratified the client sample based on whether the responding provider had scored above or below the median on the weighted summary score regarding extent of facilitating referrals.

Provider survey

The provider survey asked providers about their referral practices, facilitation activities, and referral resources for follow-up care for abnormal Pap smears, as well as for nine other non-FP health conditions (data not shown in this article). Facilitation activities included identification of clients' usual primary care provider, providing contact information on referral provider, writing a referral, calling referral provider, making the referral appointment, reminding client of appointment, arranging transportation, following up with referral provider, and following up with the client. Using a scale of 1 to 5, with 1 indicating "always engages in activity" and 5 indicating "never engages in activity," we asked providers to indicate the extent to which they engaged in each of these facilitation activities should they decide to refer a patient with abnormal Pap smear results.

To ease interpretation, during the analysis phase, we inverted the facilitation score so that a higher score represented more engagement in facilitation activities and a lower score represented less engagement in facilitation activities. We created a facilitation score based on the sum of facilitation activities used with women receiving abnormal Pap smears (ranging from 9 to 45, with a high facilitation score indicating the maximum of "almost always engages" in all facilitation activities). The survey asked providers if there were any local providers who would accept referrals for abnormal Pap smears for patients who have difficulty paying for care, and, if such local providers existed, whether they had a professional relationship with those providers. Additionally, we asked providers about their concern regarding patient competence to adhere to referrals and systemic barriers to adherence, as well as demographic and practice characteristics.

We pretested and revised the survey before mailing it in May 2006 to all Medicaid-enrolled FP providers in Alabama and Arkansas, whose names and addresses were provided by the respective state Medicaid offices. Following the Tailored Design Method for mail surveys,[16] we made up to five attempts to encourage participation of nonresponding providers. Data collection ended in September 2006. Prior to mailing the survey, we distributed a press release to media outlets and provider organizations to inform providers of the survey and its purpose.

Twenty-six percent (n=459) of all Medicaid-enrolled FP providers (n=1,743) in Arkansas and Alabama returned completed surveys. The response rate for public clinic-based providers was higher (59%) than for office-based physicians (22%).

Client survey

The client survey asked clients of survey-responding FP providers about their use of and satisfaction with Medicaid FP waiver services, the presence of non-FP health conditions (presented as a list from which the respondent selected as many conditions as applied), whether they discussed these non-FP conditions with their FP provider, and whether their FP provider made a referral for the health condition and facilitated the referral. Additionally, we asked clients how they evaluated the urgency of the condition, whether they sought and received care for the condition, and what difficulties they faced in seeking and receiving care. The client survey included a measure of trust of physicians[17] and of self-efficacy,[18] along with demographic measures.

We pretested and revised the survey before fielding it from April to September 2007. We used computer-assisted telephone interviewing procedures to minimize data entry errors and to control survey administration. Calls were placed at various days and times with up to eight attempts or until final disposition. We attempted to reach respondents at least two times to participate in the survey, with those refusing to participate on two occasions being coded as a final refusal and not contacted again. The upper-bound response rate for the client survey—calculated as the number of completions (n=1,976) divided by the number of completions plus number of refusals and surveys terminated (n=2,517)—was 79%. Of those who completed the survey, 12% (n=234) reporting having an abnormal Pap smear. Of those with an abnormal Pap smear, 94% discussed with or learned about their abnormal Pap smear from their FP provider.

The University of Alabama at Birmingham (UAB) Survey Research Unit administered the surveys in both states to maintain consistency in mailing and telephone

interviewing, data collection, and data entry. Both surveys are available upon request to the authors.

Other data

The study team collected data on available safety net resources that provided services to low-income clients in each state. For abnormal Pap smears, we viewed sites that participated in the Breast and Cervical Cancer Early Detection Program (BCCEDP), operated by the Divisions of Health in each state, as available resources. We counted the number of resources available within 30 minutes driving time from each responding provider as the number of referral resources available. We used geographic information software[19] to identify the number of sites falling within the drive-time parameter for each respondent. We obtained rural/urban commuting area codes for providers and clients from U.S. Census files and used them to indicate the rural, suburban, or urban nature of their location.

Data analysis

We performed all analyses using SAS® software.[20] We generated descriptive statistics including proportions, means, and standard deviations for all variables. Univariate comparisons for continuous variables included two-sample *t*-tests and one-way analysis of variance, and for categorical variables Chi-square and Fisher's exact tests. We used multivariate logistic regression to identify characteristics associated with provider referral and characteristics associated with client seeking and receiving treatment for an abnormal Pap smear. We adjusted all odds ratios (ORs) produced by these models for covariates.

We restricted the multivariate analysis for the client behavior to those clients who either reported no treatment for the condition from the FP provider or reported receiving treatment from their FP provider as well as a referral for further care, to avoid confounding the analysis by including clients who received sufficient care at their FP provider site. We used multivariable linear regression to identify characteristics associated with provider facilitation. We considered associations to be significant at the alpha <0.05 level; however, we discussed associations with significance levels of 0.05–0.10 as indicative of possible trends.

In the final multivariate analyses of provider behavior, we included the measure of perceived resources but excluded the measure of actual resources because the two were highly correlated. The pattern of the correlation was generally that those who perceived having local resources were accurate relative to the measure of actual resources, although some of those who perceived that they did not have local resources were inaccurate, when local was defined as within a 30-minute drive time. To help address these perception issues, our project summarized the findings on referral resource availability as a handbook and distributed this handbook to all provider survey recipients.

The Institutional Review Boards at the UAB and the University of Arkansas for Medical Sciences approved the study design.

RESULTS

Provider survey

Slightly more than half (55%) of FP providers reported that they would refer a woman who had an abnormal Pap smear outside their clinic or practice for follow-up care. However, referral behavior varied significantly by the provider's institutional setting (Table 1). Private office-based providers were much more likely to report providing follow-up care personally or within their practice. Conversely, public providers (e.g., those from health departments and from other types of clinics) were more likely to report referring women for follow-up care to providers outside their clinic. Among providers from all institutional settings who reported that they would refer a woman who had an abnormal Pap smear (n=274), 70% reported the availability of local resources to which they could refer women for follow-up care for abnormal Pap smears. We found no significant difference in perception of available referral resources based on institutional setting. Overall, referring providers were equal in reporting having (50%) and not having (50%) professional relationships with providers to whom they could make referrals for abnormal Pap smears. We found no significant difference in provider relationships based on institutional setting.

Referring providers from each of the three institutional settings had relatively high overall referral facilitation scores (indicating that they often engaged in the facilitation activities); however, referring providers from health departments had significantly higher overall facilitation scores compared with referring providers from private offices and referring providers from other types of clinics.

We found significant differences in the use of six of the nine individual facilitation activities by referring providers from the three different institutional settings: provider referral contact information, write a referral, remind clients, arrange transportation, follow up with providers, and follow up with clients (all $p<0.05$). Specifically, referring providers from health departments reported engaging in seven of the nine facilitation activities (all activities except calling the referral provider and making a referral appointment) more than

Table 1. Referral behavior of family planning provider by institutional setting and characteristics of providers who refer for abnormal Pap smears

Characteristic	*Private offices* N *(percent)*	*Health department* N *(percent)*	*Other clinics* N *(percent)*
Referral behavior[a]			
Treat self/within clinic	172 (77.8)	10 (4.5)	39 (17.6)
Refer outside clinic	80 (29.2)	103 (37.6)	91 (33.2)
Providers who report referring clients with abnormal Pap smears			
	Private offices (n=80)	*Health department (n=103)*	*Other clinics (n=91)*
Perception of resources			
No	25 (30.5)	35 (42.7)	22 (26.8)
Yes	55 (28.7)	68 (35.4)	69 (35.9)
Provider relationships			
No	41 (30.6)	48 (35.8)	45 (33.6)
Yes	37 (27.6)	54 (40.3)	43 (32.1)
	Mean (SE)	*Mean (SE)*	*Mean (SE)*
Individual facilitation activity score[b]			
Identify primary care physician	4.3 (0.1)	4.7 (0.1)	4.5 (0.1)
Provide referral contact information[a]	4.3 (0.1)	4.9 (0.1)	4.6 (0.1)
Write a referral[a]	3.9 (0.1)	4.7 (0.1)	4.2 (0.1)
Call referral provider	3.5 (0.2)	3.2 (0.2)	3.0 (0.2)
Make referral appointment	4.1 (0.1)	4.2 (0.1)	4.5 (0.1)
Remind clients[a]	3.0 (0.2)	4.2 (0.1)	3.6 (0.1)
Arrange transportation[c]	2.3 (0.2)	2.9 (0.1)	2.8 (0.2)
Follow up with providers[a]	3.2 (0.1)	4.2 (0.1)	4.0 (0.1)
Follow up with clients[a]	3.1 (0.1)	4.3 (0.1)	3.7 (0.1)
Overall facilitation activity score[b]	24.4 (0.7)	29.5 (0.6)	27.5 (0.7)

[a]$p<0.0001$

[b]Individual facilitation scores are based on Likert scale response, ranging from 1 = never engages in facilitation activity to 5 = always engages in facilitation activity. Overall facilitation scores are the sum of individual facilitation scores, ranging from 9 = never engaging in any facilitation activity to 45 = always engaging in all facilitation activities.

[c]$p<0.05$

SE = standard error

referring providers from other institutional settings. Referring private office-based providers reported calling referral providers more frequently than referring providers from other settings. Referring providers from other clinics reported making referral appointments more than referring providers from other settings. Referring private office-based providers reporting identifying primary care physicians and providing referral contact information more than other facilitation activities. Referring health department providers and referring providers from other clinics reported providing referral contact information more often than the other facilitation activities. Providers from all three institutional settings reported identifying a transportation source as the least used facilitation activity.

Provider referral. Characteristics associated with provider referral are presented in Table 2. Characteristics related to the urban/rural nature of the community, institutional setting, and Title X status were associated with greater odds of referring outside of the practice for follow-up of abnormal Pap smears as opposed to providing initial treatment within the FP practice/clinic. Specifically, providers from rural areas, health departments, other clinics, and large patient-volume Title X practices/clinics had adjusted ORs (AORs) that were statistically significant at the ≥90% level (AOR=1.81, 95% confidence interval [CI] 1.08, 3.04; AOR=3.75, 95% CI 1.23, 11.43; AOR=1.78, 95% CI 1.00, 3.17; and AOR=2.82, 95% CI 0.98, 8.10, respectively) for referring out abnormal Pap smears compared

Table 2. Characteristics associated with family planning provider referral for and with facilitation of referrals for abnormal Pap smears

	Referral logistic regression model		*Facilitation linear regression model*	
Characteristic	*AOR*[a]	*95% CI*	*Beta*	*95% CI*
Perception of patient competence				
Not a problem	1.00		0.00	
Somewhat of a problem	1.20	0.32, 4.44	1.13	5.78, 3.51
Moderate problem	1.28	0.37, 4.47	1.28	-5.71, 3.15
Almost major problem	1.42	0.40, 5.11	1.21	-5.76, 3.34
Major problem	1.06	0.25, 4.55	0.89	-5.96, 4.17
Provider profession				
Physician	1.00		0.00	
Non-physician	1.30	0.72, 2.37	2.14	−4.30, 0.01[b]
Perceived resources				
No	1.00		0.00	
Yes	1.00	0.59, 1.71	0.37	−1.53, 2.28
Provider relationships				
No	1.00		0.00	
Yes	1.26	0.77, 2.06	−1.25	−2.98, 0.47
Urban/rural nature of community				
Metropolitan	1.00		0.00	
Suburban	0.79	0.41, 1.50	0.42	−1.83, 2.67
Rural	1.81	1.08, 3.04[c]	2.01	0.14, 3.88[c]
Medicaid FP focus				
Few Medicaid FP clients	1.00		0.00	
Many Medicaid FP clients	0.45	0.25, 0.81[d]	−1.08	-3.05, 0.88
Institutional setting				
Private office (solo or group)	1.00		0.00	
Health department	3.75	1.23, 11.43[c]	5.85	1.86, 9.84[b]
Other type of clinic	1.78	1.00, 3.17[c]	5.41	3.31, 7.51[b]
TX status				
Small non-TX practice/clinic	1.00		0.00	
Small TX practice/clinic	1.18	0.63, 2.24	−3.43	−6.43, −0.43[c]
Large non-TX practice/clinic	0.51	0.21, 1.28	1.47	−0.88, 3.81
Large TX practice/clinic	2.82	0.98, 8.10[c]	1.94	−1.80, 5.69
Additional direct care personnel				
No	1.00		0.00	
Yes	0.72	0.38, 1.34	−1.82	−4.08, 0.43
Patient support personnel				
No	1.00		0.00	
Yes	0.97	0.55, 1.70	0.69	−1.35, 2.73
Information support personnel				
No	1.00		0.00	
Yes	1.11	0.52, 2.37	2.04	−0.72, 4.80

[a]Adjusted for other covariates listed in table

[b]$p<0.0001$

[c]$p<0.05$

[d]$p<0.01$

AOR = adjusted odds ratio

CI = confidence interval

FP = family planning

TX = Title X

with their provider counterparts. The wide CIs indicate high variability in the practice policies on referrals out for follow-up of Pap smears.

We found a significant difference in the odds of making referrals based on the level of provider participation in the Medicaid FP program. Providers from practices/clinics with a high Medicaid FP focus (i.e., practices/clinics with many FP patients with Medicaid coverage) had significantly lower odds (AOR=0.45, CI 0.25, 0.81) of referring out abnormal Pap smears compared with providers from practices/clinics with a low Medicaid FP focus (practices/clinics with few FP patients with Medicaid coverage), controlling for institutional setting.

Provider and practice characteristics not significantly associated with higher or lower odds of referring out for abnormal Pap smears included perception of patient competence, provider profession (physician/nonphysician), perception of referral resources, relationships with referral providers, availability of additional direct care staff, availability of patient support staff, and availability of information support staff.

Provider facilitation. We asked all providers to indicate the extent to which they would engage in facilitation activities should they decide to refer a client for an abnormal Pap smear. Provider and practice characteristics significantly associated with an increased likelihood of facilitating referrals for abnormal Pap smears included provider profession (physician/nonphysician), urban/rural nature of the community, and institutional setting (Table 2). Specifically, nonphysician providers were significantly more likely to facilitate referrals than physicians. Providers from rural communities were significantly more likely to facilitate referrals than providers from urban communities. Providers from both health departments and from other types of clinics were significantly more likely to facilitate referrals than providers from private practices. In addition, providers from small patient volume Title X practices/clinics were significantly less likely to facilitate referrals than providers from small patient volume non-Title X practices/clinics.

Providers' perception of patient competence, available resources, relationships with referral providers, volume of Medicaid FP clients, and availability of additional direct care staff, patient support staff, and information support staff were not significantly associated with facilitation levels for referrals. Again, the wide CI indicated the high variability of responses to this question across the respondents.

Client survey

Nearly all respondents who reported having an abnormal Pap smear (94%) reported that they discussed with or learned about the abnormal Pap smear result from their FP provider. Table 3 shows the portion of clients who reported receiving a referral from their FP provider (asked as "Did your FP provider tell you a place that you could go to get care for the condition?"), and who reported seeking and receiving care from other providers for their abnormal Pap smear, broken out by those who reported being treated or not being treated by their FP provider for the abnormal test.

Overall, of the 234 respondents who reported having an abnormal Pap smear, 146 received follow-up

Table 3. Client action taken for abnormal Pap smear

Action taken N *(percent)*	*Referred by FP provider for follow-up* N *(percent)*	*Sought care from other source* N *(percent)*	*Received care from other source if sought* N *(percent)*
Reports treatment by FP provider 86 (36.7)	Yes: 59 (68.6)	Yes: 31 (52.5)[a]	Yes: 28 (90.3) No: 3 (9.6)
	No: 27 (31.4)	Yes: 8 (29.6)[a]	Yes: 7 (87.5) No: 1 (12.5)
Reports no treatment by FP provider 148 (63.2)	Yes: 75 (50.7)	Yes: 54 (72.0)[b,c]	Yes: 34 (63.0) No: 20 (37.0)
	No: 73 (49.3)	Yes: 36 (49.3)[b]	Yes: 26 (72.2) No: 10 (27.8)

[a] $p<0.05$

[b] $p<0.01$

[c] There were two nonresponders to this question.

FP = family planning

care, including 86 who received this care from their FP provider and 60 who received care elsewhere. This constitutes a 62% follow-up completion rate. However, this rate may be an overestimate of the follow-up completion rate, because 31 of the 86 clients who were treated by their FP provider were also referred to another provider for care, but either did not seek or sought but did not receive that follow-up care. If we consider that their follow-up treatment was not really complete, then the actual number of completions was 115, constituting a 49% completion rate. Table 3 also shows that clients who received referrals were more likely to seek care, but were not necessarily more likely to receive care. Overall, 74% of those who sought care reported receiving care for the abnormal Pap smear.

Table 4 shows that when other factors are controlled with multivariate analysis, clients receiving referrals were more likely to seek care from other sources, although those with referrals who had also received treatment from the FP provider were less likely to seek other care than those who had not received treatment. We also found trends toward seeking care among clients reporting high trust in physicians ($p=0.05$) and those who reported having a usual source of care ($p<0.10$). Among those who sought care from a source other than the FP provider, clients were more likely to report having received care if they had also been treated by their FP provider, if they were younger than age 30, and if they had some college education. They were less likely to report receiving care if they perceived themselves to be in poorer health and if they believed that they could solve new health problems. We noted a trend toward a greater likelihood of receiving care among those reporting a usual source of care ($p=0.06$).

DISCUSSION

To date, little has been known about the referral practices and referral facilitation behaviors of FP providers for FP clients with abnormal Pap smears or the follow-up action taken by FP clients who receive referrals from their FP providers. Our study fills this gap by providing several new findings to the existing literature on this subject.

Among our most important results, we found that private office-based FP providers were significantly more likely to provide treatment for clients with abnormal Pap smears personally or within their practice. And, should they make referrals for follow-up care for these abnormal Pap smears, they were significantly less likely to engage in referral facilitation activities compared with referring FP providers based in health departments and other types of clinics. Conversely, we found that health department-based FP providers were significantly more likely to refer clients with abnormal Pap smear results and less likely to provide treatment.

Referring providers from health departments were significantly more likely to engage in referral facilitation activities than referring providers from other institutional settings. We also found that clients who received a referral from their FP provider were more likely to seek care for the abnormal Pap smear. In addition, clients who actually received some treatment from their FP provider for abnormal Pap smears along with a referral were more likely to actually receive additional follow-up care than those who did not receive treatment. This may be because they were better able to use the resources of the BCCEDP after having received additional diagnostic procedures from their FP provider. We also found an association between having a usual source of general medical care and an increased likelihood of seeking and receiving care for an abnormal Pap smear, suggesting that general access to care issues play a role in Pap smear follow-up completion rates.

As other studies have suggested, there are several mediating factors that affect clients' receipt of follow-up care for abnormal Pap smears, no matter what actions are taken by the FP provider. Women younger than age 30 and women with more college education were most likely to receive follow-up care. These factors are important, but difficult to alter with an intervention at the FP provider level. However, we found an association between higher trust in physicians and a greater likelihood of seeking care, as well as between measures of self-efficacy and being less likely to seek and receive treatment. The latter finding suggests that clients were not aware of or convinced of the negative implications of having an abnormal Pap smear. However, given the positive association found with physician trust, this may indicate an important intervention point for FP providers to educate patients on these implications.

Health departments are among the largest providers of Title X and Medicaid FP demonstration waiver services[21,22] and are thus in a position to provide initial cervical cancer screenings for a substantial number of women. However, health departments are less likely than other providers to offer additional diagnostic services on-site (e.g., colposcopy)[13–15] and do not provide on-site treatment for precancerous lesions and cervical cancer. Where follow-up treatment is not available at the FP site, referrals are critical and a driving factor in whether women seek care for the condition. We found that referring FP providers based in health departments were significantly more likely to engage in referral

Table 4. Client characteristics associated with seeking and receiving treatment for abnormal Pap smear

Characteristic	*Total percent of sample with abnormal Pap smear (n=234)*	*Portion of sample either treated by FP provider and referred for other care, or not treated by FP provider (n=207)*			
		Tried to get care from a provider besides the FP provider (n=203)		*Of those who sought care, received treatment for abnormal Pap smear (n=119)*	
	N *(percent)*	*AOR*[a]	*95% CI*	*AOR*[a]	*95% CI*
FP provider action					
Treated by FP	86 (36.7)	0.40	0.18, 0.87[b]	6.48	1.51, 27.85[b]
Referred by FP	134 (57.3)	2.80	1.33, 5.88[c]	0.63	0.22, 1.84
Race/ethnicity					
White	112 (47.9)	1.00		1.00	
Nonwhite	122 (52.1)	0.74	0.40, 1.37	0.78	0.28, 2.18
Age group (in years)					
>30	64 (27.3)	1.00		1.00	
<30	170 (72.6)	0.63	0.31, 1.28	3.34	1.11, 10.05[b]
Education level					
High school graduate	89 (38.0)	1.00		1.00	
<High school graduate	26 (11.1)	1.00	0.36, 2.81	0.45	0.09, 2.23
Any college	119 (50.8)	1.36	0.70, 2.62	2.89	1.01, 8.30[b]
Urban/rural nature of community					
Urban zip code	162 (69.2)	1.00		1.00	
Rural zip code	71 (30.3)	0.75	0.38, 1.46	1.13	0.36, 3.61
Usual source of health care					
No	141 (60.3)	1.00		1.00	
Yes	93 (39.7)	1.70	0.91, 3.19[d]	2.83	0.98, 8.17[d]
Health insurance status					
No	162 (69.2)	1.00		1.00	
Yes	71 (30.3)	1.31	0.65, 2.63	0.67	0.22, 1.99
Health status					
Excellent to very good	95 (40.6)	1.00		1.00	
Good to poor	139 (59.4)	0.76	0.40, 1.47	0.28	0.09, 0.83[b]
Trust in doctors					
Disagree: overall trust doctors completely	107 (45.7)	1.00		1.00	
Agree: overall trust doctors completely	127 (54.3)	1.88	0.99, 3.57[d]	1.63	0.55, 4.82

continued on p. 742

Table 4 (continued). Client characteristics associated with seeking and receiving treatment for abnormal Pap smears

Characteristic	*Total percent of sample with abnormal Pap smear (n=234)*	*Portion of sample either treated by FP provider and referred for other care, or not treated by FP provider (n=207)*			
		Tried to get care from a provider besides the FP provider (n=203)		*Of those who sought care, received treatment for abnormal Pap smear (n=119)*	
	N *(percent)*	*AOR*[a]	*95% CI*	*AOR*[a]	*95% CI*
Believes active role important					
Disagree: health depends on taking charge	30 (12.8)	1.00		1.00	
Agree: health depends on taking charge	204 (87.2)	1.18	0.46, 3.07	0.35	0.06, 2.19
Confidence and knowledge to take action					
Disagree: can tell when need to get medical care	69 (29.5)	1.00		1.00	
Agree: can tell when need to get medical care	164 (70.1)	0.64	0.31, 1.32	2.34	0.73, 7.48
Taking action					
Disagree: can solve new health problems	140 (59.8)	1.00		1.00	
Agree: can solve new health problems	94 (40.2)	0.95	0.48, 1.86	0.29	0.09, 0.98[b]
Concern level for condition					
Not concerned about abnormal Pap smear	59 (25.2)	1.00		1.00	
Concerned about abnormal Pap smear	175 (74.8)	1.31	0.64, 2.68	0.51	0.15, 1.74

[a]AOR adjusted for all other covariates listed

[b]$p<0.05$

[c]$p<0.01$

[d]$p<0.1$

FP = family planning

AOR = adjusted odds ratio

CI = confidence interval

facilitation activities compared with referring providers from other settings. This may be due in part to health department providers' access to resources available through BCCEDP, which is funded by the Centers for Disease Control and Prevention but operated by state health departments. Although these programs differ by state,[23] they provide funds for diagnostic services and case management.[6]

Other studies have shown that provider facilitation activities, such as those reported by health department providers in our study, are effective in improving follow-up adherence.[24] Given the importance of these activities, interventions to increase client follow-up rates should focus on provider and system features, rather than clients. Such interventions may include educational programs aimed at improving providers' knowledge of referral resources, or programs aimed at expanding diagnostic and treatment services within health departments.

Limitations

Our study had several limitations. This study relied on the FP providers' self-report of their referral and facilitation behavior and on FP clients' report of FP providers' referral and facilitation behavior. Given the discordance between providers' self-reported behavior (nearly all reported they treated or referred clients with abnormal Pap smears) and clients' reports of providers' referral behavior (one-third reported their provider neither treated nor referred them), these reports may not reflect actual referral and facilitation practices. However, the results may also reflect a problem in communication between providers and patients.

While our provider survey had a low overall response rate (26%), the response rate among public providers was much higher (59%). This is important because these providers serve the majority of the low-income women of interest to this study in Arkansas (79%)[21] and Alabama (71%).[22] In addition, low response rates from health-care providers compared with the general population are not uncommon in survey research.[25] Also, because some of the providers to which the instrument was mailed are no longer practicing, our denominator may be inflated, meaning our true response rate is higher.

We had a relatively low sample size of those reporting an abnormal Pap smear on the client survey, thereby limiting the robustness of the multivariate analysis. Also, because the questions were generic to multiple health conditions, we do not know the content of the treatment that clients reported receiving for abnormal Pap smears from their FP providers. Thus, it is possible that clients who reported being treated and also referred elsewhere for care were being referred based on the results of a colposcopy or other biopsy procedure.

CONCLUSIONS

Our study findings indicate that the settings at which most low-income women receive FP services are precisely those settings that are less likely to provide follow-up care for abnormal Pap smears on-site. Expanding the availability of additional diagnostic services and treatment for abnormal Pap smears within health departments may facilitate improvements in follow-up adherence rates, as well as improve outcomes for many women—in particular, women of racial/ethnic minority groups who have poorer follow-up adherence rates[9] and higher mortality from cervical cancer.[26,27] Inclusion of treatment of abnormal Pap smears as a reimbursable service under Medicaid FP coverage would greatly facilitate provision of this care. However, given the wide CIs for some variables included in the different multivariate models, further research in this area is also warranted.

This research was supported by the Department of Health and Human Services Office of Population Affairs, Family Planning Service Delivery Improvement Award 4FPRPA 006018-02.

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