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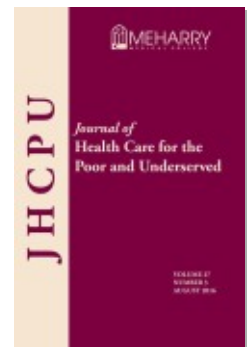
Access to and Disparities in Care among Migrant and Seasonal  
Farm Workers (MSFWs) at U.S. Health Centers

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## Access to and Disparities in Care among Migrant and Seasonal Farm Workers (MSFWs) at U.S. Health Centers

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**Abstract: Objectives.** This study describes the characteristics of migrant and seasonal farm workers (MSFWs) served by federally-funded health centers and examines disparities in access to primary and preventive care between migrant health center (MHC) and community health center (CHC) program patients. **Methods.** Cross-sectional analysis of the 2009 Health Center Patient Survey which has 2212 and 831 patients from CHC and MHC program patients, respectively. **Results.** Our study showed that the MHC program provided comparable health care access and quality for MSFWs relative to CHC patients. However, there were challenges with access to primary care, such as getting timely medical and dental care and prescription medicine. **Discussion.** These results affirmed the role of health centers in providing high-quality primary care and reducing disparities. However, continual efforts are needed to enhance access to and quality of care for MSFWs.

**Key words:** Access to care, quality of care, migrants and seasonal farm workers (MSFWs), community health centers.

Primary care is essential to good health.<sup>1-3</sup> In recent years, preponderance of research both in the U.S. and elsewhere has shown that primary care increases regular access to care, enhances patient outcomes, and reduces health disparities.<sup>4-13</sup> Nevertheless, millions of Americans experience difficulties obtaining primary care due to cost, social and economic tradeoffs, and lack of accessibility.<sup>14</sup> These challenges result in individuals forgoing necessary health care, leading to poorer health over the short and long term.<sup>14</sup> The economic and social consequences of health disparities are dire, totaling over \$1.24 trillion dollars over a three-year period, given medical

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costs, years of healthy life lost, premature death, reduced ability to work, and societal burden.<sup>15</sup>

The mission of the Bureau of Primary Health Care (BPHC), a department within the Health Resources and Services Administration (HRSA), is to provide quality primary care to all those in need regardless of racial or ethnic origin, insurance status, or socio-demographic characteristics.<sup>16</sup> For nearly 50 years, HRSA-supported health centers have provided comprehensive, culturally competent, high-quality care to underserved and vulnerable communities.<sup>17–33</sup> In 2013, health centers served over 21.7 million patients across more than 9,000 delivery sites.<sup>34</sup> Despite these successes, access to primary care remains problematic for vulnerable populations, particularly migrants and seasonal farm workers (MSFWs) who are likely uninsured and may not speak any English. Migrant and seasonal farm workers are one of the most vulnerable sub-populations served by health centers.<sup>35</sup> In light of this, HRSA's Migrant Health Center (MHC) program provides support to health centers to deliver the highest quality care to MSFWs and their families, with a particular focus on the occupational health and safety needs of this group.<sup>35</sup>

Estimates of the number of MSFWs living in the U.S. are difficult to obtain, due to factors such as a highly mobile lifestyle, limited English proficiency, varying levels of citizenship status, cultural barriers, and challenges classifying workers.<sup>36</sup> Estimates of the number of MSFWs in the country range from one million to five million.<sup>36–38</sup> Previous research has found that the majority of farmworkers are foreign-born (72%) and male (78%).<sup>36</sup> The average level of completed education among MSFWs is 8th grade.<sup>36</sup> The 2007–2009 National Agricultural Workers Survey (NAWS) results noted that as many as 48% of farmworkers lacked legal authorization to work in the U.S., and only 33% were citizens.<sup>39</sup> These characteristics further highlight the challenges faced by this subpopulation in accessing adequate primary care.

In 2013, HRSA-supported health centers served over 861,000 MSFWs.<sup>40</sup> However, little information is available regarding the personal and access-to-care characteristics of MSFWs who seek care through the MHC program. This is the first study that uses the latest national survey of health center patients, which includes a representative subsample of MSFWs, to provide a full profile of MSFWs and examine potential disparities in access to primary care and preventive care. Thus, the objectives of this study were to describe the characteristics of MSFWs served by federally-funded health centers and examine potential disparities in access to primary care and preventive care between MSFW patients relative to other patients served by health centers. Results of the study will help achieve a better understanding of this sub-population and the care they receive from health centers. To the extent significant disparities in care are observed, policy-makers will have a better idea of where to target effective interventions to address them.

## Methods

**Data.** Data for this study were from the 2009 Health Center Patient Survey, a nationally representative survey sponsored by HRSA. A three-stage sampling strategy was used in the survey. First, health center grantees were stratified by funding stream, health center size, U.S. Census region, urban/rural location, and number of service sites per

health center. Within each stratum, eligible health centers were randomly selected. Next, eligible health center sites were randomly selected within each health center. Finally, eligible patients who had at least one medical visit to an eligible health center site in the past 12 months were randomly selected. Interviews were conducted between September and December 2009 in English and Spanish. The analytic data sample had 2,212 and 831 patients from CHC and MHC program patients, respectively.

**Measures.** In addition to program of funding information (CHC versus MHC), measures of demographic characteristics, socioeconomic status, health status, and access to primary care and preventive services were used in analysis. Specifically, demographic characteristics included age (coded as 0–18, 19–59, and 60 years or older), gender (male and female), and race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, and Other). Socioeconomic status measures included poverty status (at or below the federal poverty line) and language(s) spoken (whether English was spoken at home). Health status measures included self-perceived health status (excellent, very good, fair, or poor), health compared with last year (better, worse, or about the same), and chronic illness (whether respondent had hypertension, asthma, or diabetes).

Access to primary care measures included health insurance (private, Medicare, Medicaid, or uninsured), usual source of care (had vs. did not have), unable to get needed medical care (yes or no), delayed in getting needed medical care (yes or no), unable to get needed prescription medicine (yes or no), delayed in getting needed prescription medicine (yes or no), unable to get needed dental care (yes or no), delayed in getting needed dental care (yes or no), and rating for overall quality of care (excellent, very good, good, fair, or poor). Use of preventive services measures included last general physical exam (less than 1 year, 1–2 years, 2 or more years, never), ever had a Pap smear (yes or no), had a mammogram (yes or no), had colonoscopy/sigmoidoscopy (yes or no), and had a blood stool test (yes or no).

**Analysis.** The analyses examined the following two domains: 1. the characteristics of MHC program patients, compared with CHC program patients, in terms of measures of demographic characteristics, socioeconomic status, health status, and access to primary and preventive care using chi-squared tests for categorical variables and T-tests for continuous variables; and 2. disparities in access to primary and preventive care between MHC and CHC program patients, respectively, based on race/ethnicity, insurance status, and poverty-level status using chi-squared tests for categorical variables and ANOVA for continuous variables. Due to the multi-stage, disproportional random sampling design, all statistical analyses accounted for the design effect and the sampling weights. Analyses were performed using SAS 9.3 version (SAS Institute, Inc. 2011. Base SAS@9.3 Procedures Guide. Cary, NC: SAS Institute Inc.).

## Results

**Profile of Migrant Health Center (MHC) program patients compared with Community Health Center (CHC) program patients.** Table 1 shows patients' demographic, socioeconomic, health, and access to primary and preventive care characteristics among MHC and CHC programs. Most MHC patients were between 19–59 years old (69.07%), female (61.85%), and members of racial/ethnic minorities (96.15%). Compared with CHCs, MHCs reported a higher proportion of younger patients aged 0–18 (26.47% vs.

**Table 1.**

**PATIENTS' DEMOGRAPHIC, SOCIOECONOMIC, HEALTH, AND ACCESS TO PRIMARY AND PREVENTIVE CARE CHARACTERISTICS: MHC VERSUS CHC PROGRAMS<sup>a</sup>**

	CHC			MHC		
	Freq (%)	Weighted Freq	(%, SE)	Freq (%)	Weighted Freq	(%, SE)
<b>Demographics</b>						
Age***						
0 to 18	305(13.79)	2,777,887	(18.63,1.64)	220(26.47)	277,756	(37.97,2.7)
19 to 59	1571(71.02)	10,744,516	(72.05,1.74)	574(69.07)	423,429	(57.88,2.7)
60 +	336(15.19)	1,390,980	(9.33,0.85)	37(4.45)	30,415	(4.16,0.96)
Gender***						
Male	667(30.15)	5,934,534	(39.79,1.95)	317(38.15)	334,615	(45.74,2.7)
Female	1545(69.85)	8,978,849	(60.21,1.95)	514(61.85)	396,986	(54.26,2.7)
Race/Ethnicity***						
NH-White	838(37.88)	6,561,896	(44,1.9)	32(3.85)	37,082	(5.07,1.17)
NH-Black	484(21.88)	3,197,239	(21.44,1.68)	9(1.08)	15,560	(2.13,0.99)
Hispanic	818(36.98)	4,399,791	(29.5,1.69)	779(93.74)	659,253	(90.11,1.8)
Other	72(3.25)	754,457	(5.06,0.99)	11(1.32)	19,706	(2.69,1.19)
<b>Socioeconomic</b>						
Poverty***						
Do not Know/Refusal	401(18.61)	2,384,489	(16.51,1.43)	209(26.36)	159,267	(23.35,2.2)
No	830(38.52)	5,913,319	(40.93,1.94)	173(21.82)	176,723	(25.91,2.5)
Yes	924(42.88)	6,148,248	(42.56,1.92)	411(51.83)	346,023	(50.74,2.7)

(Continued on p. 1488)

**Table 1. (continued)**

	CHC			MHC		
	Freq (%)	Weighted Freq	(%, SE)	Freq (%)	Weighted Freq	(%, SE)
Yes	1262(57.05)	8,741,405	(58.61,1.87)	146(17.57)	165873	(22.67,2.3)
No	950(42.95)	6,171,978	(41.39,1.87)	685(82.43)	565728	(77.33,2.3)
Health Status***						
Excellent	228(10.32)	1,849,116	(12.4,1.39)	106(12.77)	116,735	(15.96,2.1)
Very good	395(17.87)	3,440,135	(23.08,1.77)	93(11.2)	109,002	(14.9,2.11)
Good	738(33.39)	4,887,767	(32.79,1.76)	308(37.11)	283,486	(38.76,2.6)
Fair	633(28.64)	3,571,660	(23.96,1.54)	278(33.49)	194,945	(26.65,2.1)
Poor	216(9.77)	1,159,656	(7.78,0.92)	45(5.42)	27,225	(3.72,0.79)
Health Compared to last year**						
Better	644(29.21)	4,287,308	(28.82,1.74)	270(32.65)	259,913	(35.68,2.6)
Worse	312(14.15)	1,903,268	(12.79,1.22)	84(10.16)	74,432	(10.22,1.5)
About the same	1249(56.64)	8,687,812	(58.39,1.89)	473(57.19)	394,080	(54.1,2.71)
Had Hypertension***						
Yes	938(43.89)	5,053,826	(35.21,1.8)	193(24.71)	135,042	(20.2,2.03)
No	1199(56.11)	9,297,996	(64.79,1.8)	588(75.29)	533,463	(79.8,2.03)
Had Asthma***						
Yes	497(22.49)	3,096,393	(20.77,1.55)	69(8.32)	80,422	(11,1.85)
No	1713(77.51)	11,814,054	(79.23,1.55)	760(91.68)	650,807	(89,1.85)
Had Diabetes***						
Yes	459(20.78)	2,192,517	(14.73,1.17)	123(14.84)	71,950	(9.85,1.33)
No	1708(77.32)	12,462,435	(83.71,1.23)	700(84.44)	654,323	(89.55,1.3)
Border line	42(1.9)	231,916	(1.56,0.43)	6(0.72)	4,389	(0.6,0.33)

(Continued on p. 1489)

**Table 1. (continued)**

	CHC			MHC		
	Freq (%)	Weighted Freq	(%, SE)	Freq (%)	Weighted Freq	(%, SE)
Health Insurance***						
Private	251(11.35)	1,544,155	(10.35,0.99)	45(5.42)	46,816	(6.4,1.37)
Medicare	319(14.42)	1,532,802	(10.28,0.94)	26(3.13)	16,622	(2.27,0.66)
Medicaid	539(24.37)	3,993,970	(26.78,1.76)	242(29.12)	226,942	(31.02,2.4)
Uninsured	1103(49.86)	7,842,456	(52.59,1.91)	518(62.33)	441,221	(60.31,2.6)
Had a USC**						
Yes/More than one place	1869(84.57)	12,180,823	(81.74,1.58)	666(80.14)	610,738	(83.48,1.8)
There is no place	341(15.43)	2,721,105	(18.26,1.58)	165(19.86)	120,863	(16.52,1.8)
Unable to Get Medical Care	0.1925					
Yes	219(19.95)	1,327,998	(19.49,2.22)	48(24.24)	43,309	(26.11,4.5)
No	879(80.05)	5,484,758	(80.51,2.22)	150(75.76)	122,567	(73.89,4.5)
Delayed in Getting Medical Care	0.0673					
Yes	253(23)	1,349,703	(19.8,1.92)	52(26.4)	49,008	(29.56,4.8)
No	847(77)	5,466,414	(80.2,1.92)	145(73.6)	116,794	(70.44,4.8)
Unable to Get Needed Prescription Medicine**						
Yes	295(17.24)	1,801,816	(16.47,1.6)	50(10.96)	63,845	(16.37,2.8)
No	1416(82.76)	9,139,428	(83.53,1.6)	406(89.04)	326,133	(83.63,2.8)
Delayed to Get Prescription Medicine***	0.2975					
Yes	395(23.07)	2,652,544	(24.2,1.97)	68(14.81)	80,319	(20.41,3.0)
No	1317(76.93)	8,310,407	(75.8,1.97)	391(85.19)	313,171	(79.59,3.0)

(Continued on p. 1490)

**Table 1. (continued)**

	CHC		MHC	
	Freq (%)	Weighted Freq	Freq (%)	Weighted Freq
Yes	398(40.86)	2,430,513	87(28.43)	74,695
No	576(59.14)	3,694,265	219(71.57)	203,243
Delayed in Getting Dental Care**				
Yes	393(40.27)	2,322,474	99(32.46)	90,002
No	583(59.73)	3,770,430	206(67.54)	186,989
Rate Overall Quality***				
EXCELLENT	1247(56.4)	7,961,790	418(50.3)	366,501
VERY GOOD	658(29.76)	4,604,769	231(27.8)	206,084
GOOD	259(11.71)	2,052,497	144(17.33)	122,480
FAIR	42(1.9)	218,180	36(4.33)	33,958
POOR	5(0.23)	72,986	2(0.24)	2,578
<b>Preventive Care</b>				
Last General Physical Exam***				
Missing/Skip/Refusal				
Never	331(14.96)	2,769,473	227(27.32)	274,508
less than 1 yr	69(3.12)	517,095	96(11.55)	61,079
1-2 yr;	1228(55.52)	7,726,970	358(43.08)	240,710
2 + yr	300(13.56)	1,909,785	64(7.7)	75,070
Ever Had a Pap Smear	284(12.84)	1,990,061	86(10.35)	80,234
Yes	1331(95.62)	7,444,329	394(96.1)	273,556
No	61(4.38)	367,869	16(3.9)	7,112

(Continued on p. 1491)



**Table 1. (continued)**

	CHC			MHC		
	Freq (%)	Weighted Freq	(%, SE)	Freq (%)	Weighted Freq	(%, SE)
Yes	818(74.84)	3,214,746	(61.87,2.86)	162(56.84)	99,399	(58.92,4.3)
No	275(25.16)	1,981,344	(38.13,2.86)	123(43.16)	69,305	(41.08,4.3)
Had Colono/Sigmoidoscopy***						
Yes	393(49.25)	1,523,156	(45.3,3.2)	40(27.97)	24,328	(28.6,5.77)
2: No	405(50.75)	1,839,286	(54.7,3.2)	103(72.03)	60,740	(71.4,5.77)
Had a Blood Stool Test***						
Yes	423(33.89)	1,914,625	(31.64,2.43)	64(21.33)	36,822	(19.57,3.4)
No	825(66.11)	4,136,851	(68.36,2.43)	236(78.67)	151,357	(80.43,3.4)

\*=p<.05

\*\*= p<.01

\*\*\*= p<.001

<sup>a</sup>Weighted results are provided to reflect national estimates.

MHC = Migrant Health Center

CHC = Community Health Center

13.79%), but a lower proportion of older patients aged 60 or older (4.45% vs. 15.19%,  $p < .001$ ). There was a higher proportion of male patients in MHCs than CHCs (38.15% vs. 30.15%,  $p < .001$ ). In addition, most MHC patients were of Hispanic origin (93.74%) whereas patients from CHCs were approximately evenly distributed among Whites (37.88%), Hispanics (36.98%), and Blacks (21.88%) ( $p < .001$ ).

In terms of socioeconomic characteristics, most MHC patients were below the federal poverty line (FPL) (51.83%) and did not speak English (82.43%). Compared with CHC patients, MHC patients had both higher proportions of below-FPL patients (51.83% vs. 42.88%,  $p < .001$ ) and non-English speakers (82.43% vs. 42.95%,  $p < .001$ ). In addition, there were more CHC patients who reported poor health compared with MHC patients (9.77% vs. 5.42%,  $p < .001$ ). Community health center patients reported worsening health at higher rates than MHC patients (14.15% vs. 10.16%,  $p < .001$ ). Furthermore, greater numbers of CHC patients than MHC patients had hypertension (43.89% vs. 24.71%,  $p < .001$ ), diabetes (20.78% vs. 14.84%,  $p < .001$ ), and asthma (22.49% vs. 8.32%,  $p < .001$ ).

When considering access to care, most MHC patients were uninsured (62.33%) but identified a usual source of care (USC) (80.14%). About 24% were unable to get medical care and 26.4% had delays in getting medical care. Over 10% of MHC patients were unable to get needed prescription medicine, while 14.81% were delayed in getting needed prescription medicine. Moreover, 28.43% were unable to get needed dental care and 32.46% were delayed in getting needed dental care.

While most MHC patients rated overall quality as excellent (50.3%) or very good (27.8%), CHC patients rated quality of care more positively than MHC patients (56.4% vs. 50.3% rated as excellent; 29.76% vs. 27.8% rated as very good;  $p < .001$ ). Compared with CHC patients, MHC patients were more likely to be uninsured (62.33% vs. 49.86%,  $p < .001$ ) and less likely to have a USC (80.14% vs. 84.57%,  $p < .01$ ). However, CHC patients were more likely to report being unable to get needed prescription medicine (17.24% vs. 10.96%,  $p < .01$ ), delayed in getting needed prescription medicine (23.07% vs. 14.81%,  $p < .001$ ), unable to get needed dental care (40.86% vs. 28.43%,  $p < .001$ ), and delayed in getting needed dental care (40.27% vs. 32.46%,  $p < .001$ ) than MHC patients.

Regarding preventive care, most MHC patients received a general physical exam within the past two years (50.78%). Compared with CHC patients, MHC patients were less likely to have received a general physical exam within the past two years (50.78% vs. 69.08%,  $p < .01$ ), mammogram (56.84% vs. 74.84%,  $p < .01$ ), colonoscopy/sigmoidoscopy (27.97% vs. 49.25%,  $p < .001$ ), or blood stool test (21.33% vs. 33.89%,  $p < .01$ ). Additional descriptive information about MHC and CHC patients can be found in Table 1.

**Disparities between MHC and CHC program patients.** Table 2 compares access to care and preventive care measures across races/ethnicities, stratified by health center funding types (CHC and MHC). No significant disparities were found between CHC and MHC patients. Among CHC patients, potential racial/ethnic differences were noted in having a USC, being unable to get needed prescription medicine, delayed in getting needed prescription medicine, unable to get needed dental care, having a general physical exam, having a Pap smear, having a mammogram, and having a colonoscopy/sigmoidoscopy. However, the differences found were in favor of racial/ethnic minorities. Non-Hispanic Whites were more likely to have a USC than patients of other race/ethnicity (87.46% vs. 81.57%–83.42%,  $p < .05$ ). Non-Hispanic Whites were

**Table 2.**

**RACIAL DISPARITIES IN ACCESS TO CARE AND PREVENTIVE CARE: MHC VS. CHC PROGRAM PATIENTS<sup>a</sup>**

	CHC						MHC									
	NH-White		NH-Black		Hispanic		Other		NH-White		NH-Black		Hispanic		Other	
	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. SE	S. Freq (%)	W. SE	S. Freq (%)	W. SE	S. Freq (%)	W. SE	S. Freq (%)	W. SE	S. Freq (%)	W. SE
Had a USC	*															
1:Yes/More than one place	732(87.46)	394(81.57)	684(83.62)	59(81.94)	28(87.5)	5(55.56)	626(80.36)	7(63.64)	5459353(83.28)	2495808(78.19)	3581852(81.41)	643808(85.33)	34965(94.29)	12014(77.22)	552804(83.85)	10953(55.58)
	2.43	3.74	2.66	5.62	3.52	16.3	23.32									
2:There is no place	105(12.54)	89(18.43)	134(16.38)	13(18.06)	4(12.5)	4(44.44)	153(19.64)	4(36.36)	1096386(16.72)	696130(21.81)	817938(18.59)	110648(14.67)	2116(5.71)	3544(22.78)	106448(16.15)	8753(44.42)
	2.43	3.74	2.66	5.62	3.52	16.3	23.32									
Rate Overall Quality																
1:EXCELLENT	483(57.71)	253(52.27)	468(57.21)	43(59.72)	22(68.75)	5(55.56)	384(49.29)	7(63.64)	3668016(55.93)	1484044(46.42)	2370968(53.89)	438760(58.16)	27549(74.3)	14324(92.06)	316470(48)	8155(41.38)
	2.84	4.48	3.34	9.96	9.04	5.95	20.83									
2:VERY GOOD/GOOD	343(40.98)	218(45.04)	330(40.34)	26(36.11)	10(31.25)	3(33.33)	358(45.96)	4(36.36)	2826721(43.1)	1620885(50.7)	1925310(43.76)	284347(37.69)	9531(25.7)	520(3.34)	306960(46.56)	11551(58.62)
	2.84	4.52	3.35	9.86	9.04	2.53	20.83									
3:FAIR/POOR	11(1.31)	13(2.69)	20(2.44)	3(4.17)	0(0)	1(11.11)	37(4.75)	0(0)	63995(0.98)	92308(2.89)	103512(2.35)	31349(4.16)	0(0)	714(4.59)	35821(5.43)	0(0)
	0.39	1.75	1.13	3.24	0	4.89	0									
Unable to Get Medical Care																
1:Yes	109(20.8)	32(14.35)	72(23.08)	6(15.38)	6(54.55)	0(0)	42(22.7)	0(0)	698595(19.08)	192261(15.11)	383384(24.24)	53755(18.13)	6612(52.85)	0(0)	36696(24.64)	0(0)
	2.94	5.83	4.57	8.97	18.3	0	0									

(Continued on p. 1494)

**Table 2. (continued)**

	CHC						MHC									
	NH-White		NH-Black		Hispanic		Other		NH-White		NH-Black		Hispanic		Other	
	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)
Delayed in Getting Medical Care	2963505(80.92)	2.94	1080268(84.89)	5.83	1198202(75.76)	4.57	242781(81.87)	8.97	5900(47.15)	18.3	4199(100)	0	112205(75.36)	0	261(100)	
1: Yes	126(24)		47(21.08)		72(23)		8(20.51)		6(54.55)	*	0(0)		45(24.46)		1(100)	
	831522(22.69)		184136(14.47)		270561(17.09)		63482(21.41)		6612(52.85)		0(0)		42133(28.31)		261(100)	
2: No	2.83		3.91		3.31		9.09		18.3		0		0		0(0)	
	399(76)		176(78.92)		241(77)		31(79.49)		5(45.45)		1(100)		139(75.54)		0(0)	
	2832759(77.31)		1088393(85.53)		1312206(82.91)		233054(78.59)		5900(47.15)		4199(100)		106694(71.69)		0(0)	
Unable to Get Needed Presc. Medicine	2.83		3.91		3.31		9.09		18.3		0		0		0(0)	
1: Yes	144(19.81)		72(18.75)		67(12.32)		12(21.43)		4(25)		1(20)		44(10.21)		1(25)	
	1107813(20.54)		326593(13.7)		273296(10.11)		94112(20.52)		6570(35.38)		4825(39.81)		51984(14.7)		464(8.29)	
2: No	2.66		2.87		2		7.5		14.58		28.95		9.62		3(75)	
	583(80.19)		312(81.25)		477(87.68)		44(78.57)		12(75)		4(80)		387(89.79)		0(0)	
	4286224(79.46)		2058109(86.3)		2430638(89.89)		364454(79.48)		12000(64.62)		7294(60.19)		301700(85.3)		5137(91.71)	
Delayed to Getting Prescription Medicine	2.66		2.87		2		7.5		14.58		28.95		9.62		0(0)	
1: Yes	192(26.34)		99(25.78)		91(16.76)		13(23.21)		6(37.5)		1(20)		60(13.82)		1(25)	
	1421848(26.25)		666684(27.96)		429574(15.89)		134436(29.32)		7083(38.14)		4199(34.65)		68571(19.2)		464(8.29)	
2: No	2.78		5.2		2.71		8.97		14.64		27.54		9.62		3(75)	
	537(73.66)		285(74.22)		452(83.24)		43(76.79)		10(62.5)		4(80)		374(86.18)		0(0)	
	3995167(73.75)		1718018(72.04)		2273090(84.11)		324130(70.68)		11487(61.86)		7921(65.35)		288624(80.8)		5137(91.71)	
	2.78		5.2		2.71		8.97		14.64		27.54		9.62		0(0)	

(Continued on p. 1495)

Table 2. (continued)

	CHC						MHC									
	NH-White		NH-Black		Hispanic		Other		NH-White		NH-Black		Hispanic		Other	
	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)
Yes	185(46.72)	83(38.43)	118(35.98)	12(35.29)	4(40)	0(0)	82(28.08)	1(50)								
	1287273(44.89)	463410(33.09)	578169(35.87)	101659(41.5)	2370(18.97)	0(0)	72064(27.32)	261(20.69)								
	4.08	7.45	4.96	11.64	15.38	0	23.24									
No	211(53.28)	133(61.57)	210(64.02)	22(64.71)	6(60)	2(100)	210(71.92)	1(50)								
	1580287(55.11)	936979(66.91)	1033711(64.13)	143287(58.5)	10121(81.03)	412(100)	191709(72.68)	1001(79.31)								
	4.08	7.45	4.96	11.64	15.38	0	23.24									
Delayed in Getting Dental Care																
Yes	169(42.68)	81(37.5)	132(40.12)	11(31.43)	3(30)	1(50)	94(32.3)	1(50)								
	1219070(42.51)	441793(31.55)	581901(36.87)	79708(32.32)	2088(16.72)	262(63.76)	87389(33.25)	261(20.69)								
	4.05	7.5	4.88	11.33	14.9	32.69	23.21									
No	227(57.32)	135(62.5)	197(59.88)	24(68.57)	7(70)	1(50)	197(67.7)	1(50)								
	1648490(57.49)	958595(68.45)	996454(63.13)	166888(67.68)	10403(83.28)	149(36.24)	175434(66.75)	1001(79.31)								
	4.05	7.5	4.88	11.33	14.9	32.69	23.21									
Last General Physical Exam					*											
Missing/Skip/Refusal	93(11.1)	56(11.57)	173(21.15)	9(12.5)	1(3.13)	2(22.22)	220(28.24)	4(36.36)								
	926724(14.12)	707849(22.14)	1011077(22.98)	123821(16.41)	518(1.4)	6658(42.79)	258190(39.16)	9140(46.38)								
	1.91	4.29	2.75	9.11	1.42	23.49	21.97									
Never	14(1.67)	2(0.41)	48(5.87)	5(6.94)	0(0)	2(22.22)	94(12.07)	0(0)								
	140939(2.15)	4387(0.14)	290276(6.6)	81491(10.8)	0(0)	830(5.34)	60248(9.14)	0(0)								
	0.87	0.12	1.84	5.16	0	5.07										
less than 1 yr	462(55.13)	317(65.5)	408(49.88)	41(56.94)	20(62.5)	3(33.33)	330(42.36)	5(45.45)								
	3283436(50.04)	1958055(61.24)	2171906(49.36)	313571(41.56)	22570(60.87)	2989(19.21)	205106(31.11)	10043(50.97)								
	2.83	4.45	3.3	9.14	11.29	15.94	22.34									
1-2 yr;	130(15.51)	70(14.46)	92(11.25)	8(11.1)	5(15.63)	0(0)	58(7.45)	1(9.09)								
	1053796(16.06)	361711(11.31)	424604(9.65)	69672(9.23)	6992(18.86)	0(0)	67815(10.29)	261(1.33)								
	2.02	2.4	1.86	4.42	9.44	0	1.44									

(Continued on p. 1496)

Table 2. (continued)

	CHC						MHC									
	NH-White		NH-Black		Hispanic		Other		NH-White		NH-Black		Hispanic		Other	
	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)
Ever Had a Pap Smear	1156998(17.63)	1652336(5.17)	501925(11.41)	165900(21.99)	7000(18.88)	5081(32.66)	67891(10.3)	261(1.33)								
Yes	2.15	1.24	1.9	10.81	8.23	23.96	1.44									
	*(**)															
No	509(96.95)	313(97.2)	474(93.49)	35(92.11)	20(100)	3(100)	368(95.83)	3(100)								
	3376318(96.05)	1643176(99.58)	2184450(91.96)	240384(88.51)	20447(100)	2989(100)	241004(97.13)	9115(100)								
	1.34	0.19	2.59	8.3	0	0	0	0								
	16(3.05)	9(2.8)	33(6.51)	3(7.89)	0(0)	0(0)	16(4.17)	0(0)								
	138797(3.95)	6931(0.42)	190943(8.04)	31197(11.49)	0(0)	0(0)	7112(2.87)	0(0)								
	1.34	0.19	2.59	8.3	0	0	0	0								
Had a Mammogram	**(**)															
Yes	330(78.38)	204(78.16)	262(68.95)	22(70.97)	12(80)	3(100)	146(55.09)	1(50)								
	1693333(71.04)	686037(61.53)	685120(47.09)	150253(61.92)	10344(77.54)	2989(100)	85775(57.09)	289(13.65)								
	4.22	6.14	4.8	12.55	13.64	0	16.68									
No	91(21.62)	57(21.84)	118(31.05)	9(29.03)	3(20)	0(0)	119(44.91)	1(50)								
	690142(28.96)	428845(38.47)	769951(52.91)	92404(38.08)	2996(22.46)	0(0)	64481(42.91)	1827(86.35)								
	4.22	6.14	4.8	12.55	13.64	0	16.68									
Had a Colonoscopy/Sigmoidoscopy	**(*)															
Yes	173(53.56)	112(54.63)	96(40.34)	12(37.5)	2(40)	2(100)	36(26.67)	0(0)								
	849683(50.78)	341417(54.43)	252161(33.03)	79893(26.77)	1888(31.01)	2693(100)	19745(25.98)	0(0)								
	5.06	5.71	5.26	9.81	23.13	0	0									
No	150(46.44)	93(45.37)	142(59.66)	20(62.5)	3(60)	0(0)	99(73.33)	1(100)								
	823726(49.22)	285821(45.57)	511189(66.97)	218547(73.23)	4201(68.99)	0(0)	56249(74.02)	289(100)								
	5.06	5.71	5.26	9.81	23.13	0	0									

(Continued on p. 1497)

**Table 2. (continued)**

	CHC						MHC									
	NH-White		NH-Black		Hispanic		Other		NH-White		NH-Black		Hispanic		Other	
	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)	S. Freq (%)	W. Freq (%)
Yes	200(39.76)	1143965(40.52)	105(33.44)	314771(22.55)	105(27.13)	334676(23.22)	13(29.55)	121210(30.94)	4(26.67)	4682(33.28)	1(14.29)	2577(31.15)	59(21.45)	29561(17.91)	0(0)	0(0)
	3.87	3.87	3.79	3.79	3.62	3.62	9.79	9.79	16.45	16.45	26.83	26.83	0	0	0	0
No	303(60.24)	1678920(59.48)	209(66.56)	1081011(77.45)	282(72.87)	1106344(76.78)	31(70.45)	270575(69.06)	11(73.33)	9387(66.72)	6(85.71)	5697(68.85)	216(78.55)	135461(82.09)	3(100)	811(100)
	3.87	3.87	3.79	3.79	3.62	3.62	9.79	9.79	16.45	16.45	26.83	26.83	0	0	0	0

p value from weighted results are listed in ().

\*p<.05

\*\*p<.01

\*\*\*p<.001

<sup>a</sup>Weighted results are provided to reflect national estimates

S.Freq = Sample Freq.

W.Freq= Weighted Freq.

W.SE = Weighted Percent SE

MHC = Migrant Health Center

CHC = Community Health Center

also more likely to report being unable to get or delayed in getting needed prescription medicine, and being unable to get needed dental care. Blacks had the highest rates for physical examination within the past year (65.5% vs. 56.94%,  $p < .001$ ) and Pap smear exam (97.2% vs. 92.11%–96.95%,  $p < .05$ ). Blacks and Non-Hispanic Whites had higher rates of mammogram (78.16%–78.38% vs. 68.95%–70.97%,  $p < .01$ ) and colonoscopy/sigmoidoscopy (53.56%–54.63% vs. 37.5%–40.34%,  $p < .01$ ) than Hispanics and other minorities. These significant results were also noted in separate multivariate logistic regression analysis (results not shown but available upon request).

Among MHC patients, potential racial/ethnic differences were only noted in delayed medical care and having a general physical exam. Non-Hispanic Whites were more likely to report delays in getting needed medical care than others. This group also reported higher rates for physical exam within the past year than other racial/ethnic groups (62.5% vs. 32.33%–45.45%,  $p < .05$ ).

## Discussion

This is the first study to provide a profile of MSFWs served by HRSA-supported health centers, specifically MHCs. Our study found that MHC patients were typically between age 19–59 (69.07%), female (61.85%), members of racial/ethnic minorities (96.15%), living below federal poverty line (FPL) (51.83%), and not English-speaking (82.43%). Most MHC patients reported good/very good/excellent health (61.08%) and indicated improvements in health over last year (32.65%). 24.71% of MHC patients had hypertension, while 14.84% had diabetes and 8.32% had asthma.

Our study also showed that the MHC program under HRSA was able to provide comparable health care access and quality for the MSFWs relative to CHC patients. Specifically, in terms of access to primary care, most MHC patients were uninsured (62.33%) but identified the health center as their usual source of care (USC) (80.14%). Most MHC patients rated overall health care quality as excellent (50.3%) or very good (27.8%). In terms of access to preventive care, most MHC patients received a general physical exam within the past two years (50.78%). Over 96% of women had a Pap smear, 56.84% of women had a mammogram, 27.97% had a colonoscopy/sigmoidoscopy, and 21.33% had a blood stool test. These results have affirmed the important role of health centers in providing quality primary care to all, regardless of vulnerability status. The results also show the continued success of the Health Center program in providing high quality care to the patients that they serve.

Our study further showed that there were insignificant racial/ethnic disparities in access and quality between MHC and CHC patients. Indeed, among MHC patients, racial/ethnic differences were only noted in delays in getting medical care and having a general physical exam among Non-Hispanic Whites. Non-Hispanic Whites were more likely to report delays in getting needed medical care than others. No significant racial/ethnic disparities were noted in other 11 measures of access to primary and preventive care between the two groups. These results have corroborated the role of health centers in providing equitable care to all, regardless of vulnerability status, as well as the role of health centers in reducing disparities in the communities they serve.

Despite these achievements, our study found challenges with access to primary care



among MHC patients. For example, 24.24% of patients were unable to get medical care, 26.4% were delayed in getting medical care, 10.96% were unable to get needed prescription medicine, and 14.81% were delayed in getting needed prescription medicine. In addition, 28.43% were unable to get needed dental care, while 32.46% were delayed in getting needed dental care. These results suggest continual efforts are needed to enhance access to care for MSFWs, perhaps through stronger efforts at outreach, transportation assistance, and linguistic and cultural competence. With its emphasis on enabling services, health centers are uniquely poised to expand outreach and services to MSFWs. Additional social and financial resources would be necessary for MHCs to expand operations. As a result of MHCs playing a greater role in care provision, primary care could be further improved, leading to reductions in health disparities in this population.

Our study had several limitations. First, the study focused on patients (i.e., the user group) rather than the entire MSFW population. Therefore, the actual access barrier could be considerably bigger among this population. Second, the cross-sectional nature of the study precludes any causal association between access and its predictors. Third, the limited sample size for the MSFW patients made it difficult to conduct sub-population analysis and may be a contributing factor to the low statistically significant findings in our analysis. Further research should consider the use of a larger MSFW sample to strengthen study power and findings.

In conclusion, this study described the characteristics of MSFW patients served by health centers and examined potential disparities in access to primary care and preventive care between MHC and CHC patients across racial/ethnic and insurance groups. While no significant disparities were uncovered between these groups, this research is an important first step in understanding the MSFW population and its health services needs. Health care policy that targets the needs of MSFW and similar groups should consider the unique demographics of this population, as well as gaps in care, in developing a tailored outreach and care treatment strategy.

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