Hepatitis C Treatment Knowledge and Practice Among Family Medicine Physicians in Wisconsin During the Current Hepatitis C Epidemic

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ABSTRACT

Background: Curative treatment for hepatitis C virus (HCV) exists, making elimination of HCV possible. However, most people with HCV have not received treatment. One barrier is limited access to treatment providers. HCV treatment can be effectively provided by primary care providers and, since 2017, Wisconsin Medicaid allows nonspecialists to prescribe treatment. We surveyed family medicine physicians in Wisconsin to evaluate capacity for the provision of HCV treatment.

Methods: We mailed a survey to family medicine physicians in Wisconsin from June 25, 2018 through September 7, 2018. Physicians were asked whether they prescribe HCV treatment and about their knowledge regarding HCV treatment and relevant statewide Medicaid policy. Using multivariable logistic regression, we evaluated physician characteristics associated with prescribing HCV treatment.

Results: Of 1,333 physicians surveyed, 600 (45%) responded. Few respondents reported prescribing HCV treatment independently (1%; n = 4) or in consultation with a specialist (6%; n = 35). Only 6% (n = 36) reported having a "great deal" of knowledge about HCV treatment. Most (86%; n = 515) were not aware that family medicine physicians can now prescribe HCV treatment covered by Medicaid. Physicians who practiced in offices affiliated with health systems were less likely to prescribe HCV treatment than physicians who practiced in an independent office or a Rural Health Clinic.

Conclusions: Among family medicine physicians in Wisconsin, experience with and knowledge of HCV treatment was limited. Developing knowledge and skills among primary care providers is needed to expand treatment access and make progress toward HCV elimination. Studies are needed to evaluate treatment access in primary care offices affiliated with health systems.

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INTRODUCTION

Hepatitis C virus (HCV) infection is the most commonly reported bloodborne infection in the United States,[1] and more than half of infected people develop chronic infection.[2] Chronic HCV progresses slowly, often without symptoms, but is a leading cause of hepatocellular carcinoma, a leading reason for liver transplantation, and a leading infectious cause of death.[3,4] Before 1992, when universal screening of the blood supply began, transmission commonly occurred through receipt of contaminated blood products and organs. Today, the most common method of HCV transmission is injection drug use. Historically, the majority of people living with HCV were born during 1945-1965 (ie, the baby boomer generation).[5] In recent years, however, increasing numbers of younger adults, particularly in rural areas, have become infected with HCV as a result of increased injection drug use driven by the opioid crisis.[6-8]

Until 2013, treatment for chronic HCV was complex, had suboptimal cure rates, and caused many side effects, requiring management by a specialist. In contrast, the currently available HCV treatments, which consist of an 8 to 12 week course of all-oral direct-acting antiviral (DAA) medication, have >95% cure rates, far fewer side effects, and can be safely administered to individuals with most other chronic health conditions.[9] Furthermore, multiple studies have demonstrated that DAA medications can be safely and effectively administered by primary care providers.[10-12]

Published online May 26, 2021.

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Despite these advances in the treatment of HCV, a recent literature review found that only 39% of people who attended a follow-up visit after diagnosis with HCV received treatment.[13] There are multiple barriers to receiving HCV treatment, including medical insurance policies. For example, despite clear guidance that limitations to HCV treatment through state Medicaid programs violate federal law,[14] the high cost of DAAs has motivated many state Medicaid programs to limit access by requiring treatment to be prescribed by a specialist and by limiting treatment to patients who meet certain clinical and sobriety criteria.[15] However, the current specialist workforce is insufficient—particularly in rural areas—to treat the increasing numbers of people diagnosed with HCV.[16-18] To improve access to HCV treatment and make progress toward HCV elimination, the US Department of Health and Human Services and the Centers for Disease Control and Prevention have called for expanding the HCV treatment workforce to include nonspecialists, such as primary care providers.[16,19,20]

In Wisconsin, as many as 70,000 people are estimated to be living with chronic HCV, and new HCV infections have increased as a result of increased injection drug use.[6,8] Rates of new infections are highest in rural areas where there are few HCV treatment providers.[8,17,18] In recent years, Wisconsin Medicaid has removed all barriers to prescribing and receiving HCV treatment, including removing prior authorization (effective July 2020), sobriety restrictions (effective July 2019), and disease severity restrictions (effective July 2017). Also, in July 2017, Wisconsin Medicaid removed the requirement that HCV treatment be prescribed by a specialist, allowing all primary care providers to prescribe HCV treatment paid for by Medicaid. To evaluate the capacity of primary care providers in Wisconsin to provide HCV treatment, we surveyed family medicine physicians in Wisconsin 1 year after this change to assess their experience with and knowledge of HCV treatment. Because HCV has increased in rural areas of Wisconsin, we investigated differences in experience and knowledge by whether the provider practiced in a rural or urban area. In addition, we investigated the characteristics of family medicine physicians who reported already prescribing HCV treatment to gain insight into possible facilitators of or barriers to providing HCV treatment.

METHODS

We conducted a cross-sectional survey of family medicine physicians in Wisconsin to understand their knowledge and practices regarding prevention and treatment of opioid use disorder and HCV. This manuscript focuses only on the findings specific to HCV. The survey was administered and data were collected by the University of Wisconsin Survey Center from June 25, 2018, through September 7, 2018. Physicians were selected from a list of all family medicine physicians in Wisconsin procured from the

Table 1. Characteristics of Family Medicine Physicians Who Responded to the Survey, Wisconsin, 2018

Provider Characteristic	No.	(%)
Total	**600**	**(100)**
Age		
30-39	131	(22)
40-49	136	(23)
50-59	149	(25)
60+	163	(27)
Unknown	21	(4)
Sex		
Male	343	(57)
Female	239	(40)
Unknown	18	(3)
Race/ethnicity		
White or Caucasian	499	(83)
Asian or Pacific Islander	38	(6)
Latino or Hispanic	16	(3)
Black or African American	7	(1)
Native American	3	(1)
Other	13	(2)
Unknown	24	(4)
Number of years in practice after residency		
0-5 years	92	(15)
6-10 years	64	(11)
11-15 years	59	(10)
16-20 years	94	(16)
More than 20 years	274	(46)
Unknown	17	(3)
Practice type		
Hospital or health system-affiliated office-based practice	349	(58)
Independent office-based practice	96	(16)
Urgent care center	34	(6)
Rural Health Clinic	27	(5)
Federally Qualified Health Center/community health center	26	(4)
Emergency department	17	(3)
Hospital inpatient	11	(2)
Other	27	(5)
Unknown	13	(2)
Practice location, by ZIP code		
Rural	241	(40)
Urban	327	(55)
Unknown	32	(5)
Number of adolescent and adult patients cared for in past year		
<1000	133	(22)
1000-1999	172	(29)
2000-2999	122	(20)
≥3000	115	(19)
Unknown	58	(10)
Percent of patients covered through Medicaid		
<10%	58	(10)
10%-19%	134	(22)
20%-29%	117	(20)
30%-39%	99	(17)
40%-49%	47	(8)
≥50%	93	(16)
Unknown	52	(9)
Compared to all of Wisconsin, how serious is opioid misuse in the community where you practice?		
Not a problem at all in my community	1	(0)
Less of a problem	68	(11)
As much of a problem	432	(72)
More of a problem	95	(16)
Unknown	4	(1)

Unknown responses are those where the respondent did not provide a response to the question.
As a result of rounding, percentages may not sum to exactly 100%.

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data science company IQVIA (Plymouth Meeting, Pennsylvania). One thousand five hundred physicians were selected from 3,052 physicians on the list. The selected sample included all physicians who were known to have a federal waiver to provide buprenorphine (a medication for opioid use disorder).[21] In addition, we oversampled physicians in rural areas to better understand their knowledge and practice. The survey design consisted of 3 mailings via the US Postal Service: a full mailing with cover letter to all 1,500 selected physicians (including a cover letter, questionnaire, a business reply envelope, and $5 bill), a postcard reminder, and 2 additional full mailings to those who had not responded to previous mailings. Physicians were excluded if they returned the survey and indicated they were no longer practicing medicine or if the survey was returned by the US Postal Service with no forwarding address.

The survey collected information on physician demographic and clinical practice characteristics in addition to 5 different domains related to the physician's (1) experience providing HCV treatment, (2) knowledge of HCV treatment, (3) knowledge of relevant statewide policy regarding HCV treatment, (4) treatment considerations for persons who inject drugs, and (5) self-identified knowledge gaps related to HCV. Physicians also were asked, "Compared to the epidemic of opioid misuse and opioid overdose across Wisconsin, how serious of a problem is opioid misuse in the community where you practice?". (See Appendix for survey.)

We categorized physician practice locations as rural or urban using the reported practice ZIP code and the designation by the Federal Office of Rural Health Policy.[22] Using chi-square and Fisher exact tests, physicians' knowledge and experience were compared by whether the physician was located in a rural or urban area.

To better understand the characteristics of family medicine physicians who have already started providing HCV treatment, we compared characteristics of 2 groups of physicians: (a) physicians who reported prescribing HCV treatment independently or in consultation with a specialist and (b) physicians who reported not prescribing HCV treatment, including physicians who reported that they do not prescribe HCV treatment but would if they could. We calculated percentages of physicians, by characteristic, who reported prescribing treatment. For each characteristic, we calculated bivariate odds ratios for prescribing HCV treatment. Characteristics significantly ($P < 0.05$) associated with prescribing HCV treatment were included in a multivariable logistic regression model to understand which characteristics were independently associated with prescribing HCV treatment.

All data were analyzed using SAS version 9.4. This study was approved by the University of Wisconsin-Madison Institutional Review Board.

Table 2. Physician Knowledge and Experience Related to Hepatitis C Treatment

	Total No. (%)
Total	**600 (100)**
Hepatitis C Treatment: Experience and Knowledge	
Do you prescribe treatment for hepatitis C?	
Yes	4 (1)
Yes, but only in consultation with a specialist	35 (6)
No, but I would prescribe if I could	105 (17)
No	441 (74)
Unknown	15 (2)
How much do you feel you know about current treatment guidelines for hepatitis C?	
A great deal	36 (6)
A moderate amount	247 (41)
A little bit	254 (42)
Nothing	41 (7)
Not applicable	5 (1)
Unknown	17 (3)
Consideration of Hepatitis C Among Patients Who Inject Drugs	
If you have a patient who injects drugs with hepatitis C, would you …? (select all that apply[a])[b]	
Encourage the patient to get treated	341 (59)
Treat the patient yourself	15 (3)
Make a referral to another provider for treatment	532 (92)
Tell the patient to return for treatment when he/she is no longer using/injecting drugs	19 (3)
Knowledge Gaps	
Which of the following training topics would help you improve your knowledge of hepatitis C? (select all that apply[a])	
Treatment of hepatitis C	436 (73)
Prevention of hepatitis C	204 (34)
Risk factors for contracting and transmitting hepatitis C	200 (33)
Liver disease, cirrhosis, and liver transplantation	189 (32)
I already know a lot about hepatitis C and do not need any more training	69 (12)
Knowing about hepatitis C is not very important to my job and I do not need training	18 (3)

[a]For questions where respondents were asked to "select all that apply," for each response, the percentage who chose this response was calculated using the total number of respondents as the denominator.
[b]Among 579 physicians who reported having patients who inject drugs.
Unknown responses are those where the respondent did not provide a response to the question.

RESULTS

Of the 1,500 family medicine physicians who were sent a survey, 11 reported being ineligible to participate (no longer practicing medicine), and 156 had surveys returned indicating the address was invalid. Of the remaining 1,333 physicians sent the survey, 600 (45%) responded. Respondents and nonrespondents were not significantly different in terms of sex, whether their practice site was primary care only or multispecialty, whether they practiced in a hospital, or rural location based on ZIP code. Among respondents, median physician age was 50 years, 57% were male, 83% were White or Caucasian, and 46% had practiced medicine for >20 years (Table 1). The majority (58%) reported practicing in an office-based practice affiliated with a hospital or health system, 16% reported practicing in an independent practice,

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and 5% reported practicing in a Rural Health Clinic. Respondents were from 69 of Wisconsin's 72 counties, and 40% were categorized as practicing in a rural area. The estimated percentage of patients with Medicaid reported by this group of providers ranged from 0 to 90% (median: 25%). Most respondents (88%) reported that opioid misuse in the community where they practice is as much or more of a problem than it is statewide.

Experience Providing HCV Treatment

Few physicians reported prescribing HCV treatment independently (1%; n = 4) or in consultation with a specialist (6%; n=35) (Table 2). In total, 546 (91%) physicians reported they did not prescribe HCV treatment. Among these 546 physicians, 105 reported that they did not prescribe HCV treatment, but they would if they could (Table 2). Fifteen (2%) physicians did not answer the question.

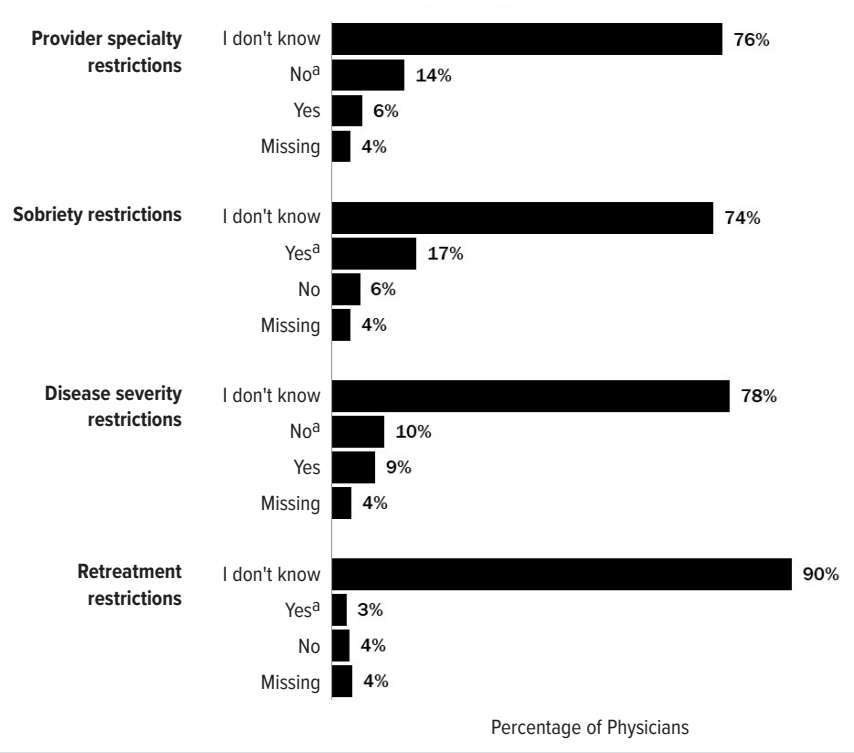
Knowledge of HCV treatment

When asked about knowledge of HCV treatment guidelines, 6% reported "a great deal," 41% reported "a moderate amount," 42% reported "a little bit," and 7% reported no knowledge of current HCV treatment guidelines (Table 2).

Knowledge of Relevant Statewide Policy Regarding HCV Ttreatment

Only 14% (n = 85) of physicians correctly responded that Wisconsin Medicaid does not require HCV treatment to be prescribed by a specialist. The majority of physicians reported they did not know whether Wisconsin Medicaid restricted HCV treatment based on patient sobriety, disease severity, or previous treatment (Figure).

Figure. Physician Knowledge of Whether Wisconsin Medicaid Has Restrictions to Prescribing and Receiving Hepatitis C Virus Treatment, by Type of Restriction



[a]Indicates the correct answer at the time of the survey (June 25, 2018–September 7, 2018). Starting in July 2019, Wisconsin Medicaid does not have sobriety restrictions or retreatment restrictions.

Percentages are of the 600 physicians surveyed.

The missing category includes respondents who did not respond to the question.

As a result of rounding, percentages may not sum to exactly 100%.

Physicians were asked if Wisconsin Medicaid had provider specialty restrictions (so that only gastroenterologists or infectious disease specialists can prescribe treatment), sobriety restrictions (so that patients must be abstinent from drugs or alcohol for at least 6 months), liver disease severity restrictions (so that only patients with documented fibrosis or cirrhosis are eligible), and retreatment restrictions (so Medicaid will only cover 1 treatment course per patient).

Consideration of Persons Who Inject Drugs

Among the 579 (97%) physicians who reported seeing patients who inject drugs in their practice, 59% (n = 341) reported they would encourage patients who inject drugs and have HCV to receive HCV treatment. However, only 3% (n=15) reported they would treat the patient themselves, and most (92%, n = 532) reported they would refer the patient for treatment. Few (3%; n=19) reported they would tell the patient to return for treatment when the patient is no longer using drugs (Table 2).

Knowledge Gaps

Physicians were asked which training topics would help improve their knowledge of HCV. Most (73%) reported that training regarding HCV treatment would help improve their knowledge (Table 2). Approximately one-third of physicians reported interest in each of the following training topics: HCV prevention, risk factors, and disease progression. Only 12% (n = 69) reported that they "already know a lot" about HCV and do not need additional training (Table 2).

Comparison of Rural and Urban Physicians

Experience with HCV treatment was minimal among physicians practicing in both rural and urban areas of Wisconsin, but physicians practicing in rural areas were more likely to report prescribing treatment (independently or in consultation with a specialist) than those practicing in urban areas (9% rural, 5% urban; $P < 0.05$) (Table 3). Only 7% of physicians practicing in rural areas and 6% of physicians practicing in urban areas reported having "a great deal" of knowledge about HCV treatment (Table 3). Similarly low percentages of physicians in rural (14%) and urban (16%) areas were aware that nonspecialists could now

Published online May 26, 2021.

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prescribe HCV treatment paid for by Medicaid. Physicians practicing in rural areas reported less often that they would tell a patient to return for HCV treatment when they are no longer using drugs (1% rural vs 5% urban; $P<0.05$) (Table 3). Physicians practicing in rural areas reported more often that training in HCV treatment (80% rural vs 71% urban; $P=0.01$) and prevention (40% rural vs 31%; $P<0.05$) would help improve their knowledge of HCV (Table 3).

Table 3. Comparison of Physician Knowledge and Experience by Whether the Physician Reported Practicing in a Rural or Urban Area

	Rural No. (%)	Urban No. (%)
Total	**241 (100)**	**327 (100)**
Hepatitis C Treatment: Experience and Knowledge		
Do you prescribe treatment for hepatitis C?		
Yes or Yes, but only in consultation with a specialist[a]	22 (9)	16 (5)
How much do you feel you know about current treatment guidelines for hepatitis C?		
A great deal	16 (7)	20 (6)
Consideration of Hepatitis C Among Patients Who Inject Drugs		
If you have a patient who injects drugs with hepatitis C, would you ...? (select all that apply[b])[c]		
Encourage the patient to get treated	147 (64)	186 (59)
Treat the patient yourself	8 (3)	6 (2)
Make a referral to another provider for treatment	218 (94)	295 (93)
Tell the patient to return for treatment when he/she is no longer using/injecting drugs[a]	3 (1)	15 (5)
Knowledge Gaps		
Which of the following training topics would help you improve your knowledge of hepatitis C? (select all that apply[b])		
Treatment of hepatitis C[a]	193 (80)	231 (71)
Prevention of hepatitis C[a]	96 (40)	102 (31)
Risk factors for contracting and transmitting hepatitis C	90 (37)	104 (32)
Liver disease, cirrhosis, and liver transplantation	81 (34)	104 (32)
I already know a lot about hepatitis C and do not need any more training	23 (10)	43 (13)
Knowing about hepatitis C is not very important to my job and I do not need training	6 (2)	12 (4)

[a] $P<0.05$.
[b] For questions where respondents were asked to "select all that apply," for each response, the percentage that chose this response was calculated using the total number of respondents as the denominator.
[c] Among 231 rural and 316 urban physicians who reported having patients who inject drugs.

Characteristics of Physicians Already Prescribing HCV Treatment

Overall, 39 physicians reported prescribing HCV treatment independently or in consultation with a specialist, and 546 physicians reported not prescribing HCV treatment. In bivariate analyses, physician characteristics significantly associated with providing HCV treatment included practicing in an independent practice or Rural Health Clinic (vs practicing in an office-based practice affiliated with a hospital or health system), practicing in a rural ZIP code (vs an urban ZIP code), and having a higher percentage of Medicaid-insured patients (Table 4). In addition, compared to physicians aged 60 years and older, younger physicians reported prescribing HCV treatment less often (Table 4).

In multivariable analysis, compared to practicing in a hospital or health system-affiliated practice, practicing in a Rural Health Clinic (odds ratio [OR] 5.37; 95% CI, 1.53-18.87) or an independent practice (OR 2.55; 95% CI, 1.01-6.42) was significantly associated with prescribing HCV treatment. Compared to the physicians age 60 years and older, physicians age 30-39 reported prescribing HCV treatment less often (OR 0.24; 95% CI, 0.07-0.83). Compared to physicians with <30% of patients insured by Medicaid, having ≥30% of patients covered by Medicaid was significantly associated with prescribing HCV treatment (OR 3.23; 95% CI, 1.38-7.56) (Table 4).

DISCUSSION

The results of this survey highlight the significant knowledge gap among family medicine physicians in Wisconsin regarding HCV treatment and Wisconsin Medicaid policy allowing for the delivery of HCV treatment in primary care settings. Only 7% of the respondents reported they had prescribed HCV treatment either independently or in consultation with a specialist, and most (86%) were not aware that family medicine physicians can now prescribe HCV treatment covered by Wisconsin Medicaid. This lack of experience with and knowledge of HCV treatment was similar among physicians in both rural and urban areas of Wisconsin. These findings suggest the need for additional training, clinical support, and incentivization of primary care providers to deliver HCV treatment. Engagement of family medicine physicians and other primary care providers—particularly in rural areas where there are few specialists[17-18]—will be critical to achieving HCV elimination throughout Wisconsin.

Coordinated efforts are needed to train primary care providers to treat HCV. In this survey, younger physicians reported prescribing HCV treatment less often. In addition, almost three-quarters of all physicians (and 80% of physicians practicing in rural areas) reported they would benefit from training about HCV treatment. Incorporating HCV treatment training into family medicine and other primary care training programs could equip new physicians with the knowledge and experience to treat HCV. For primary care providers already in practice, telementoring (eg, Project ECHO) is a demonstrated method for improving HCV treatment knowledge and practice among primary care providers and for increasing treatment access in rural areas.[10-12] Other specific knowledge gaps identified through this survey, including lack of knowledge about state Medicaid policy related to HCV treatment, also could be addressed through utilization of telementoring.

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Table 4. Physician and Practice Characteristics Associated With Providing Hepatitis C Virus Treatment

	Physician Reported Prescribing HCV Treatment Independently or in Consultation With a Specialist				
	No (n=546)	Yes (n=39)	Percentage Yes	Odds Ratio and 95% CI of Prescribing HCV Treatment	
Characteristics	**No. (%)**	**No. (%)**	**% (n/N)**	**Unadjusted**	**Adjusted**
Age					
30-39	126 (23)	5 (14)	4% (5/131)	0.34 (0.12-0.94)	0.24 (0.07-0.83)
40-49	124 (23)	11 (30)	8% (11/135)	0.75 (0.34-1.67)	0.57 (0.21-1.56)
50-59	145 (27)	4 (11)	3% (4/149)	0.23 (0.08-0.71)	0.33 (0.10-1.08)
60+	144 (27)	17 (46)	11% (17/161)	ref	ref
Sex					
Male	318 (59)	23 (59)	7% (23/341)	ref	
Female	222 (41)	16 (41)	7% (16/238)	1.00 (0.52-1.93)	
Race/ethnicity					
White or Caucasian	464 (87)	32 (84)	6% (32/496)	ref	
Asian or Pacific Islander	36 (7)	2 (5)	5% (2/38)	0.81 (0.19-3.50)	
Latino or Hispanic	15 (3)	1 (3)	6% (1/16)	0.97 (0.12-7.55)	
Black or African American	6 (1)	1 (3)	14% (1/7)	2.42 (0.28-20.69)	
Native American	2 (0)	1 (3)	33% (1/3)	7.25 (0.64-82.11)	
Other	12 (2)	1 (3)	8% (1/13)	1.21 (0.15-9.59)	
No. of years in practice after residency					
0-5 years	86 (16)	6 (16)	7% (6/92)	0.86 (0.34-2.22)	
6-10 years	62 (12)	1 (3)	2% (1/63)	0.20 (0.03-1.51)	
11-15 years	53 (10)	5 (14)	9% (5/58)	1.17 (0.42-3.24)	
16-20 years	87 (16)	5 (14)	5% (5/92)	0.71 (0.26-1.95)	
More than 20 years	247 (46)	20 (54)	7% (20/267)	ref	
Practice type					
Hospital/health system affiliated office-based practice	328 (63)	16 (50)	5% (16/344)	ref	ref
Independent office-based practice	83 (16)	10 (31)	11% (10/93)	2.47 (1.08-5.64)	2.55 (1.01-6.42)
Rural health clinic	22 (4)	5 (16)	19% (5/27)	4.66 (1.56-13.9)	5.37 (1.53-18.87)
Urgent care center	32 (6)	1 (3)	3% (1/33)	0.64 (0.08-4.99)	0.6 (0.07-4.98)
Federally Qualified Health Center/community health center	25 (5)	0 (0)	0% (0/25)		
Emergency department	17 (3)	0 (0)	0% (0/17)		
Hospital inpatient	11 (2)	0 (0)	0% (0/11)		
Practice location, by ZIP code					
Rural	218 (41)	22 (58)	9% (22/240)	1.95 (1.00-3.80)	1.23 (0.51-2.98)
Urban	309 (59)	16 (42)	5% (16/325)	ref	ref
No. of adolescent/adult patients cared for in past year					
<1000	123 (25)	8 (24)	6% (8/131)	0.61 (0.24-1.57)	
1000-1999	158 (32)	9 (26)	5% (9/167)	0.53 (0.21-1.33)	
2000-2999	113 (23)	6 (18)	5% (6/119)	0.50 (0.18-1.39)	
≥3000	103 (21)	11 (32)	10% (11/114)	ref	
% Patients covered through Medicaid					
<30%	292 (58)	11 (34)	4% (11/303)	ref	ref
≥30%	213 (42)	21 (66)	9% (21/234)	2.62 (1.24-5.54)	3.23 (1.38-7.56)
Compared to the epidemic of opioid misuse and opioid overdose across Wisconsin, how serious of a problem is opioid misuse in the community where you practice?					
As much or more of a problem	480 (88)	37 (95)	7% (37/517)	2.43 (0.57-10.32)	
Not a problem at all in my community/less of a problem	63 (12)	2 (5)	3% (2/65)	ref	

Abbreviations: HCV, hepatitis C virus; ref, reference.

Data for physicians with unknown or missing responses are not included in Table 4. In the first 2 columns, percentages were calculated excluding physicians with unknown or missing responses and, as a result of rounding, percentages may not sum to exactly 100%.

In addition to identifying important knowledge gaps among family medicine physicians in Wisconsin, the findings of this survey also suggest there may be institutional barriers limiting family medicine physicians from providing HCV treatment. For example, in this survey, physicians practicing in offices affiliated with a hospital or health system were less likely to report prescribing HCV treatment than physicians practicing in an independent practice or Rural Health Clinic. Little has been documented in the peer-reviewed literature about the barriers to accessing HCV treatment within health systems. It is possible some health systems have restrictions, including that treatment be provided by a specialist. Alternatively, it is possible that physicians working in health systems have easier access to specialists or are more familiar with the specialists in their system and, therefore, are more likely to refer than to prescribe treatment themselves. Additional research is needed to understand what

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barriers—institutional or otherwise—might be contributing to family medicine physicians in health systems not prescribing HCV treatment.

Barriers to prescribing and receiving HCV treatment covered by state Medicaid programs are well-documented, and many states, including Wisconsin, have removed restrictions in recent years.[15] At the time of this survey, Wisconsin Medicaid allowed nonspecialists to prescribe HCV treatment but still restricted access based on patient sobriety. In this survey, physicians who reported higher percentages of patients covered by Medicaid were more likely to report prescribing HCV treatment. This could be because physicians in these settings have more patients with HCV (national results indicate Medicaid-insured patients have a higher prevalence of HCV than commercially insured patients[23]) and have recognized a need among their patient population. Alternatively, having higher percentages of patients with commercial insurance might be a barrier to prescribing treatment. Little is documented in the peer-reviewed literature about barriers to accessing HCV treatment through commercial insurance. However, one study of HCV treatment prescriptions submitted to a national pharmacy found that more than half of persons insured by commercial plans had their HCV treatment medication claims denied.[24] In addition to removing all barriers to receiving HCV treatment within Medicaid programs—as Wisconsin Medicaid has now done—efforts must be undertaken to identify and remove barriers to HCV treatment among commercial insurance plans.

This study has several limitations. Because the survey focused on HCV and opioid use disorder, physicians who chose to respond might have more interest, knowledge, or experience with HCV treatment than nonrespondents. Nevertheless, few respondents reported HCV treatment knowledge or experience. This study included only family medicine physicians. Future studies should explore whether similar trends are found among primary care providers of different specialties (eg, internal medicine) and disciplines (advance practice nurses and physician assistants). We did not assess barriers to providing HCV treatment that may be specific to employer type (health system vs independent practice) or commercial insurance plans. We also did not explore facilitators or incentives that may support or encourage physicians who already prescribe HCV treatment. Future studies should evaluate the extent to which employers and insurers can encourage primary care providers to prescribe HCV treatment, including but not limited to educational opportunities, clinical staff support in treatment delivery, mentorship programs, alleviation of insurance administrative barriers such as prior authorizations, and financial incentive programs.

CONCLUSION

Our study highlights the need to engage more Wisconsin family medicine physicians in efforts to eliminate HCV. Primary care providers should be encouraged and supported in providing HCV treatment, and coordinated efforts are needed to train and mentor these providers to prescribe HCV treatment. Further research is needed to better understand both the barriers and facilitators to delivering HCV treatment in primary care settings. Health insurers and health systems have important roles to play in examining existing policies that may promote or limit access to HCV treatment. Given the increasing rates of HCV infection and the highly effective, simplified HCV treatment regimens, now is an opportune time to expand access to HCV treatment through primary care.

Acknowledgements: We gratefully acknowledge the University of Wisconsin Survey Center for conducting the survey.

Funding/Support: Research reported in this publication was supported by the National Cancer Institute of the National Institutes of Health under Award Number P30CA014520 and the National Institute on Drug Abuse of the National Institutes of Health under Award Number UG3DA044826. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Additional funding for survey distribution was provided by the Wisconsin Department of Health Services, Division of Care and Treatment Services.

Financial Disclosures: None declared.

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Published online May 26, 2021.

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