Barriers to Prescribing Buprenorphine in the Primary Care Setting:

Survey of Internal Medicine and Family Medicine Physicians in Rhode Island

By

Elizabeth Perry

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Thesis

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Date _________________                                    __________________________

Michael Mello, Advisor

Date _________________                                    __________________________

Kristina Monteiro, Reader

Date _________________                                    __________________________

Director, Master of Science in Population Medicine

Approved by the Graduate Council

Date _________________                                    __________________________

Andrew G. Campbell, Dean of the Graduate School
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Introduction

While the causes of the opioid epidemic and opioid use disorder (OUD) are multifactorial, there are several effective medications available for use in treating OUD. Both methadone and buprenorphine have been shown to be more effective than treatment without a medication adjunct, or abstinence-based treatment,\textsuperscript{1,2} and buprenorphine is particularly well-suited to be a treatment option in primary care.\textsuperscript{3,4}

Buprenorphine is a partial opioid agonist, which effectively prevents opioid withdrawal symptoms without the intoxicating effects or abuse potential of full opioid-agonists like methadone. While methadone is distributed daily, requiring patients to visit their treatment facility daily, buprenorphine may be distributed in 30-day supplies.\textsuperscript{5} Previous research has also described similar outcomes prescribing buprenorphine in the primary care setting to prescribing it in a specialty clinic.\textsuperscript{6}

The Drug Addiction Treatment Act of 2000 (DATA 2000) was passed to make medication-assisted treatments (MAT) more widely available. Under DATA 2000, qualified physicians may apply for a waiver from the Substance Abuse and Mental Health Services Administration (SAMHSA), granting them permission to prescribe buprenorphine outside of designated treatment facilities.\textsuperscript{7} To be waiver eligible, DATA 2000 requires that physicians complete at least 8 hours of training and be in a practice with the capacity to refer patients for counseling and other ancillary services.\textsuperscript{8} Up until 2016, this waiver allowed for the treatment of a maximum of 100 patients with buprenorphine; in 2016 the maximum was expanded to 275. As of 2015, 3% of primary care providers nationally were waivered to prescribe buprenorphine,\textsuperscript{9} and even among those prescribing, many were not prescribing to their capacity.\textsuperscript{10}
Rhode Island is one of the states in the US hit hardest by the opioid epidemic, surpassed only by West Virginia, Indiana, and Oregon for percentage of residents with OUD or dependence. While the number of opioid-related overdose deaths in Rhode Island has shown slight decreases in 2017 and 2018 from its peak in 2016, the number remains nearly 4 times what it was in 2002, and the rate of opioid-related deaths per 1000 individuals is approximately twice the national rate. In 2015 there were more than 20,000 individuals in Rhode Island with OUD not on MAT who could benefit from it, with only 75 physicians waivered to prescribe buprenorphine to 100 patients. Since that time the number of physicians waivered to prescribe to 100 patients has increased by nearly 100%, but that still leaves a gap of access to treatment for more than 15,000 Rhode Islanders. Even with an expanding population of providers waivered to prescribe buprenorphine, most do not prescribe to capacity, with the average prescribing to about 45% to two-thirds of their approved limit. This study sought to better understand the perceived barriers to becoming waivered to prescribe buprenorphine and opportunities for intervention for primary care physicians.

Methods

Attitudes toward perceived barriers to prescribing buprenorphine were assessed with a locally designed survey. To inform survey development, qualitative interviews were first conducted with four family medicine physicians. The sample included at least one participant waivered to prescribe buprenorphine, and one participant not waivered to prescribe buprenorphine. The interviews consisted of open-ended discussion questions regarding perceptions around buprenorphine treatment and the reasons behind choosing to become
waivered or choosing not to become waivered to prescribe. The data collected through these qualitative interviews, as well as through a review of previously published studies\textsuperscript{14,15,16} led to the development of a survey.

The survey was designed in Qualtrics and administered by email in January of 2019. It was sent to the email addresses of physicians listed as specializing in internal medicine (IM) or family medicine (FM) at the Rhode Island Department of Health, which keeps public contact information of all the licensed physicians in the state. Including an email address with this contact information is optional, and approximately 60\% of licensed IM and FM physicians included an email address. The survey was sent to this list of email addresses once, and a second time two weeks later.

The survey contained 35 items for participants who self-identified as not being waivered to prescribe buprenorphine, and 30 items for participants who self-identified as being waivered. Most of the survey items were structured with a Likert-type scale providing five possible responses ranging from \textit{strongly agree} to \textit{strongly disagree}, including a neutral option. Several of the questions were free text boxes allowing for open-ended responses. All items were optional. The survey was designed in Qualtrics and it was distributed as a link imbedded in the email. No IP addresses or other identifiable information were collected. There was no compensation for participation.

The Likert-type scale items were categorized into one of the following five constructs: knowledge, skills, utilization, barriers, and attitudes. Each response was given a numerical value with \textit{strongly disagree} being equal to one and \textit{strongly agree} being equal to five. Several questions were reverse scored (with \textit{strongly disagree} being equal to five and \textit{strongly agree} being equal to one) in order for the sentiment of responses to be consistent. Higher scores
indicate stronger positive sentiment to become waivered or toward being waivered, while lower scores indicate stronger negative sentiment, with the exception of the barriers construct. A higher barrier score indicates more barriers to becoming waivered or being waivered, and a lower score indicates less barriers.

Summary scores were calculated for each participant for the five constructs described above. Descriptive statistics were conducted for the entire sample, including means and standard deviations for continuous variables, and frequencies and percentages for categorical variables (SEE TABLE 1). Independent samples t-tests were conducted via SPSS (v. 24) to identify mean differences between waivered and non-waivered participants on the five constructs. In addition to comparing the responses for each construct, selected items from the survey were analyzed using Mann-Whitney U tests to identify any significant differences between responses of individuals who were waivered and non-waivered.

Finally, the responses to the open-ended text boxes were reviewed for common themes with the common themes reported. This study was classified as exempt by the Brown University Institutional Review Board.

Results

Participant Characteristics

Of the 1095 unique email addresses sent the link to the survey, 16 were invalid. From those 1079 valid email addresses, 118 individuals answered one or more of the questions on the survey, and 96 completed the survey. Approximately half of the sample (47%, n=55) reported
being waived to prescribe buprenorphine, and 53% (n=63) indicated not being waived to
prescribe.

Of the 96 participants who completed the demographic information portion at the end of
the survey, 53% (n=51) identified as male and 47% (n=45) as female. Almost half of respondents
(49%, n=47) had completed residency greater than 20 years ago. Overall, 24% (n=23) of
respondents indicated family medicine as their specialty, which included 31% (n=14) of the
waivered respondents. 29% (n= 28) of respondents indicated a subspecialty with addiction
medicine being most commonly indicated (n=5), followed by psychiatry (n=3), and geriatrics
(n=3). Specific questions regarding prescribing practices were only asked of those waived
including how long ago they received their waver, and the number of patients to whom they
prescribe buprenorphine. 77% (n=33) of respondents waived prescribe to less than 50 patients,
even though only 11% (n=5) have had their waiver for less than 1 year. Information was also
collected about practice type. The two most common practice types listed were working in a
private practice with more than 3 physicians (19%, n=21), and academic medical center (19%,
N=20). Additional details are located in Table 1.

Table 1: Survey respondent’s descriptors

<table>
<thead>
<tr>
<th>Gender</th>
<th>Non-Waivered</th>
<th>Waivered</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>28 (56%)</td>
<td>16 (36%)</td>
<td>45 (47%)</td>
</tr>
<tr>
<td>Male</td>
<td>22 (44%)</td>
<td>29 (64%)</td>
<td>51 (53%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of time waived to prescribe buprenorphine</th>
<th>Non-Waivered</th>
<th>Waivered</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td></td>
<td>5 (11%)</td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td></td>
<td>19 (42%)</td>
<td></td>
</tr>
<tr>
<td>5-10 years</td>
<td></td>
<td>7 (16%)</td>
<td></td>
</tr>
</tbody>
</table>
### Number of patients taking buprenorphine

<table>
<thead>
<tr>
<th>Category</th>
<th>Non-Waivered</th>
<th>Waivered</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>33 (77%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-100</td>
<td>4 (9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-200</td>
<td>4 (9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;200</td>
<td>2 (5%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Time since completing residency

<table>
<thead>
<tr>
<th>Category</th>
<th>Non-Waivered</th>
<th>Waivered</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 years</td>
<td>8 (16%)</td>
<td>6 (13%)</td>
<td>14 (15%)</td>
</tr>
<tr>
<td>5-10 years</td>
<td>13 (26%)</td>
<td>5 (11%)</td>
<td>18 (19%)</td>
</tr>
<tr>
<td>11-20 years</td>
<td>7 (14%)</td>
<td>10 (22%)</td>
<td>17 (18%)</td>
</tr>
<tr>
<td>&gt;20 years</td>
<td>22 (44%)</td>
<td>24 (53%)</td>
<td>47 (49%)</td>
</tr>
</tbody>
</table>

### Specialty

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Non-Waivered</th>
<th>Waivered</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Medicine</td>
<td>9 (18%)</td>
<td>14 (31%)</td>
<td>23 (24%)</td>
</tr>
<tr>
<td>General Internal Medicine</td>
<td>26 (52%)</td>
<td>18 (40%)</td>
<td>45 (47%)</td>
</tr>
<tr>
<td>Other</td>
<td>15 (30%)</td>
<td>13 (29%)</td>
<td>28 (29%)</td>
</tr>
</tbody>
</table>

Total: 50 | Total: 45 | Total: 96

### Comparison of Constructs:

Means across all five constructs for all participants are located in Table 2. Statistically significant differences in responses between waivered and non-waivered participants were found on the following three constructs: attitude, utilization, and knowledge. See Table 3 for additional details. Items related to attitude include comfort discussing addiction and opioid use with patients, belief in the efficacy of buprenorphine as a treatment for OUD, stigma attributed to buprenorphine prescribers and patients with OUD. Items related to knowledge include understanding how to manage addiction, and how to identify when a patient has transitioned from appropriate opioid use to opioid misuse. Items related to utilization include the frequency
of collaboration or referral to mental health and addiction services (for a complete list of items and their construct designations see Appendix A).

Table 2: Mean score for all respondents for each construct.

<table>
<thead>
<tr>
<th>Construct</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>94</td>
<td>2.00</td>
<td>5.00</td>
<td>3.76</td>
<td>0.69</td>
</tr>
<tr>
<td>Skill</td>
<td>94</td>
<td>1.00</td>
<td>5.00</td>
<td>3.86</td>
<td>0.90</td>
</tr>
<tr>
<td>Utilization</td>
<td>94</td>
<td>1.33</td>
<td>5.00</td>
<td>3.67</td>
<td>0.78</td>
</tr>
<tr>
<td>Knowledge</td>
<td>94</td>
<td>1.00</td>
<td>5.00</td>
<td>3.56</td>
<td>1.04</td>
</tr>
<tr>
<td>Barrier</td>
<td>94</td>
<td>1.00</td>
<td>5.00</td>
<td>3.14</td>
<td>0.74</td>
</tr>
</tbody>
</table>

Table 3: Mean scores for each construct separated by waiver status.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Waiver Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Not-waivered</td>
<td>50</td>
<td>3.62</td>
<td>0.48</td>
<td>.043</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>44</td>
<td>3.92</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>Skill</td>
<td>Not-waivered</td>
<td>50</td>
<td>3.69</td>
<td>0.86</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>44</td>
<td>4.04</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>Utilization</td>
<td>Not-waivered</td>
<td>50</td>
<td>3.45</td>
<td>0.75</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>44</td>
<td>3.91</td>
<td>0.74</td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>Not-waivered</td>
<td>50</td>
<td>3.24</td>
<td>1.00</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>44</td>
<td>3.93</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Barrier</td>
<td>Not-waivered</td>
<td>50</td>
<td>3.21</td>
<td>0.77</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>44</td>
<td>3.06</td>
<td>0.71</td>
<td></td>
</tr>
</tbody>
</table>

While overall, barriers were not found to be statistically significant between waived and non-waived physicians, when individual questions were analyzed separately some items classified as barriers were noted to be different for each group. In particular, the perception of
additional work and experienced additional work, as well as the perception and experience of the additional regulations with a buprenorphine waiver. See Table 4 for additional details.

Table 4: Individual questions compared with significant p-values.

<table>
<thead>
<tr>
<th>Question</th>
<th>Non-waivered</th>
<th>Waivered</th>
<th>N</th>
<th>Mean Rank</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional regulations are/will be a burden</td>
<td>Non-waivered</td>
<td>50</td>
<td></td>
<td>51.94</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>43</td>
<td></td>
<td>41.26</td>
<td></td>
</tr>
<tr>
<td>Has led to/will lead to a lot of additional work</td>
<td>Non-waivered</td>
<td>50</td>
<td></td>
<td>53.86</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>43</td>
<td></td>
<td>39.02</td>
<td></td>
</tr>
<tr>
<td>Has been/will be difficult to get reimbursed</td>
<td>Non-waivered</td>
<td>49</td>
<td></td>
<td>46.46</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Waivered</td>
<td>43</td>
<td></td>
<td>46.55</td>
<td></td>
</tr>
</tbody>
</table>

Qualitative Responses:

38 survey respondents (14 not waivered, and 24 waivered) included optional free-text comments providing additional information. Of the non-waivered respondents, two indicated a barrier of access to the training course, and two indicated that they work for college health services, therefore, they did not see opioid use as a significant issue in their patient population. Other themes indicated by one person each included: concern there would be difficulty with physician coverage, lack of interest, concern that chronic pain patients are difficult to work with, and lack of support at their practice/among their support staff.

Respondents (n=24) who are waivered to prescribe buprenorphine also offered additional comments. The most common theme mentioned among those waivered was the support of working in a clinical environment with easily accessible interdisciplinary teams including pharmacists on-site to assist with medication induction and mental health providers with addiction expertise (n=5). Two respondents reported that they became waivered in order to be
able to cover for other providers in their practice, but that they do not regularly prescribe (or have never prescribed). Six other respondents indicated that they no-longer prescribe, or no longer accept new patients for buprenorphine; two did not provide a reason, two listed regulatory barriers, one described previous issues with medication diversion, and one cited difficulties managing psychiatric co-morbidities for patients with opioid-use disorder.

Discussion

This study assessing barriers to becoming waived and prescribing buprenorphine among primary care providers in Rhode Island found key differences in responses between waived and non-waived physicians in survey items relating to attitude – which includes perceptions around efficacy of buprenorphine, stigma as a prescriber or of the patient population, and comfort discussing substance use disorders with patients; utilization – which includes frequency of referral to mental health and addiction specialists; and knowledge – which includes understanding of the steps to becoming waived. Similar to previous research both in primary care settings and specialty settings, a theme that emerged from this study is the importance of a multidisciplinary team supporting the physician in the management of patients with OUD.17

Another well documented finding that this study also supports is that a significant percentage of waived physicians are prescribing buprenorphine below their capacity.18 While other published works have identified this pattern as a place to intervene in order to assist providers to meet their prescribing capacities, another theme that emerged may indicate this is a potential strength. A key attitude among non-waived physicians is a fear that becoming waived will lead to changes in practice or patient panel. Our findings suggest that becoming
waivered does not lead to immediate changes, if any at all, particularly to patient panels. It has also been shown that becoming waivered, even without the intention to prescribe, increases the likelihood of prescribing buprenorphine in the future.\textsuperscript{19} Therefore, encouraging completion of the waiver may decrease the fear around prescribing and increase access for patients in the future.

Regulations and reimbursement have also frequently been listed as barriers to prescribing buprenorphine.\textsuperscript{5} While additional regulations were strongly cited as a perceived barrier in our study’s non-waivered group, the waivered group reports they have not been burdened by additional regulations. This may be indicative of the success of the multidisciplinary teams shielding providers from any cumbersome regulations, or it may be that there is a perception of regulations that do not play out in practice. In contrast to other studies, reimbursement was neither cited as a burden to waivered physicians, nor as a barrier to becoming waivered for the non-waivered group indicating that in Rhode Island reimbursement for this treatment may not be an issue compared to its reimbursement in other states.

This study has several limitations. Although physician surveys consistently have lower response rates, only 10\% of emailed recipients responded to the survey. This may indicate a group of respondents with stronger feelings either for or against buprenorphine than the general population. Additionally, those indicating association with an academic medical center were overrepresented. This may be due to the primary author’s affiliation with the single medical school in the state and the email address from which the survey was sent being associated with that institution.

There are several directions for future research that would continue to answer questions posed and expanded upon in this study. Many of the respondents in this study cited multidisciplinary teams as a factor in their success in treating OUD with buprenorphine. As
multidisciplinary teams are not easy to implement or accessible in all practices, an area of future research is among physicians in individual practices. Additionally, our study findings suggest that large numbers of physicians prescribing below their capacity may facilitate the waiving of additional physicians who have thus far been hesitant. This finding should be explored with further research.

Conclusions

Waivered and non-waivered primary care physicians provided meaningfully different responses on items related to the perceived additional work of becoming waivered and the experienced additional work, as well as in areas of knowledge around the process to become waivered, and the perceived and actual changes to practice and patient panel. While non-waivered providers perceive that becoming waivered will lead to significant changes, waivered providers respond primarily that these changes do not occur, in part because many do not prescribe to large numbers of patients. While this has been identified as an area for future interventions, it may also be information that can lead some physicians who are currently hesitant to complete the training and become waivered, which will increase access to buprenorphine for those needing treatment.

References


Appendix A:  
Survey Items with Designated Constructs

For non-waivered providers:

- **Attitudes:**
  - I have considered prescribing buprenorphine.
  - I do not feel comfortable talking with my patients about illicit drug use.*
  - I do not feel comfortable talking with my patients about opioid use.*
  - I have patients who could benefit from medication-assisted opioid treatment.
  - Buprenorphine is not effective in treating opioid misuse disorders.*
  - Buprenorphine should only be prescribed by addiction medicine specialists.*
  - I feel that buprenorphine prescribers are stigmatized.*
  - My staff wouldn't mind working where drug users are.
  - Having drug users as patients is stressful.*
  - Drug addiction is a criminal act, not a disease.*

- **Knowledge:**
  - I can tell when a patient has transitioned from medically appropriate opioid use to opioid misuse.
  - I know the steps to becoming waivered to prescribe buprenorphine.
  - I understand how opioid misuse should be treated.

- **Skills:**
  - I am able to assist my patients with accessing behavioral or mental health care when it is needed.
  - I am able to assist my patients with accessing addiction health services when they are needed.
  - I know how to manage my patients' pain.

- **Utilization:**
  - I frequently refer to behavioral or mental health providers.
  - I frequently refer to addiction specialists.

- **Barriers:**
  - If I began prescribing, any additional regulations would be a burden to me.
  - If I began prescribing, it would be a lot of additional work.
  - Prescribing buprenorphine would lead to longer appointments.
  - I would prescribe buprenorphine if more primary care physicians were prescribing it.
  - Getting reimbursed for treatment such as buprenorphine would be difficult.

- **Questions analyzed separately:**
  - If I began prescribing, I believe my patient panel would change.
  - I have patients who need medication-assisted treatment for their addiction, but who were not able to receive it.

* Indicates scoring was reversed for question
For waivered providers:

- **Attitudes:**
  - Prescribing buprenorphine is fulfilling.
  - Buprenorphine has not been effective in helping my patients stay sober long-term.\
  - I feel stigmatized as a buprenorphine provider.\
  - Having drug users as patients is stressful.\
  - Drug addiction is a criminal act, not a disease.\

- **Knowledge:**
  - I can tell when a patient has transitioned from medically appropriate opioid use to opioid misuse.

- **Skills:**
  - I am able to assist my patients with accessing behavioral or mental health care when it is needed.
  - I am able to assist my patients with accessing addiction health services when they are needed.
  - I know how to manage my patients' pain.

- **Utilization:**
  - I frequently refer to behavioral or mental health providers.
  - I frequently refer to addiction specialists.

- **Barriers:**
  - My buprenorphine patients are more complex than my other patients.
  - Prescribing buprenorphine has made a lot of additional work for me.
  - Prescribing buprenorphine has led to longer appointments.
  - The additional regulations from prescribing buprenorphine are a burden to me.
  - Getting reimbursed for managing buprenorphine has been difficult.

- **Questions analyzed separately:**
  - Becoming waivered to prescribe buprenorphine has changed my patient panel