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## Methadone prescribing by addiction specialists likely to leave communities without available methadone treatment

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### Abstract

Methadone treatment for opioid use disorder is not available in most suburban and rural US communities. We examined 2 options to expand methadone availability: (1) addiction specialty physician or (2) all clinician prescribing. Using 2022 Health Resources and Services Administration data, we used mental health professional shortage areas to indicate the potential of addiction specialty physician prescribing and the location of federally qualified health centers (ie, federally certified primary care clinics) to indicate the potential of all clinician prescribing. We examined how many census tracts without an available opioid treatment program (ie, methadone clinic) are (1) located within a mental health professional shortage area and (2) are also without an available federally qualified health center. Methadone was available in 49% of tracts under current regulations, 63% of tracts in the case of specialist physician prescribing, and 86% of tracts in the case of all clinician prescribing. Specialist physician prescribing would expand availability to an additional 12% of urban, 18% of suburban, and 16% of rural tracts, while clinician prescribing would expand to an additional 30% of urban, 53% of suburban, and 58% of rural tracts relative to current availability. Results support enabling broader methadone prescribing privileges to ensure equitable treatment access, particularly for rural communities.

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Supplementary material

Supplementary material is available at *Health Affairs Scholar* online.

Conflicts of interest

Please see ICMJE form(s) for author conflicts of interest. These have been provided as supplementary materials.

## Keywords

methadone; opioid use disorder; access; rural

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## Introduction

Overdose deaths within the United States exceeded 100 000 annual deaths in the context of the COVID-19 pandemic.<sup>1</sup> Methadone treatment can prevent overdose deaths and improve the health of people with opioid use disorder (OUD).<sup>2,3</sup> In the United States, methadone for OUD is only available within federally certified opioid treatment programs (OTPs),<sup>4</sup> and there is a shortage of these programs, leaving many suburban and rural communities with no available methadone treatment.<sup>5,6</sup> Ensuring that methadone is available within all communities is particularly critical for individuals who do not benefit from buprenorphine treatment.<sup>3</sup> Buprenorphine is a partial agonist opioid, while methadone is a full agonist opioid. Retention in methadone treatment is greater than retention in buprenorphine treatment.<sup>2</sup>

Allowing clinicians to prescribe methadone for OUD could expand the availability of locations for methadone treatment, but there is disagreement on the extent to which prescribing should be expanded.<sup>7</sup> One proposal under consideration in the US Congress would expand methadone prescribing to physicians with addiction specialty training.<sup>8</sup> Another option is to expand methadone prescribing to all clinicians (ie, physicians and advanced practice providers), including within primary care settings, regardless of addiction specialty training.<sup>7</sup> To better inform discussion of these policy options, we examined the potential of these 2 options to expand methadone treatment availability by determining how many communities without an available OTP are (1) located outside a mental health professional shortage area to approximate areas with physicians with addiction specialty training and (2) are with an available federally qualified health center (FQHC; ie, federally certified clinics providing primary care to underresourced populations).

## Data and methods

To examine the potential impact of different methadone-prescribing scenarios on availability, we included 2010 census tracts within all 50 US states and the District of Columbia. We estimated methadone availability for 3 scenarios: (1) current availability of methadone treatment within OTPs, (2) availability with the addition of specialist physician prescribing, and (3) availability with the addition of all clinician (ie, specialist and primary care physician and advanced practice provider) prescribing. We excluded census tracts with a population of zero ( $n = 412$ ) and without Health Resources and Services Administration (HRSA) mental health shortage data, using our 2-step method detailed below ( $n = 612$ ).

To estimate the current availability of methadone treatment, data on the location of OTPs providing methadone treatment (ie, excluded detoxification-only programs) were sourced from the Substance Abuse Mental Health Services Administration's (SAMHSA's) Treatment Locator in June of 2022.<sup>9</sup> We considered methadone as available if the population-weighted center of the census tract was within a 20-minute drive time of an

OTP for urban census tracts and 30-minute drive time for suburban and rural census tracts. We used 30 minutes for suburban and rural census tracts because 30 minutes is a widely accepted access standard for Medicaid beneficiaries, and has been used to examine access to methadone for people with OUD and dialysis for people with end-stage renal disease.<sup>6</sup> We used a 20-minute drive time for urban census tracts to account for traffic and public transportation, and previous research suggests the 30-minute Medicaid standard overestimates access in urban areas.<sup>10</sup> We determined drive time using a travel cost matrix generated along the street network using the Open Source Routing Machine to US census tracts within 100 kilometers.<sup>11</sup> For each origin tract, we calculated drive times using the travel cost matrix of travel times, and identified the closest destination tract with an OTP (Figure 1 and Appendix Figure A1).

To estimate the potential availability of methadone with the addition of specialist physician prescribing, we used areal data on the 2022 location of mental health professional shortage areas from the HRSA and OTP location data from SAMHSA's Treatment Locator.<sup>9,12</sup> For this scenario, we considered methadone as available in census tracts with either an available OTP or in an area with mental health professional coverage, defined as an area with a mental health professional shortage score (HPSS) equal to or less than 13. A score equal to or greater than 14 is the breakpoint used by HRSA for federal shortage area program eligibility.<sup>13</sup> The mental HPSS is an index composed of indicators of the availability of and demand for addiction specialist physicians. The score guides federal workforce expansion programs to address the overdose epidemic.<sup>14,15</sup> The availability of psychiatrists is the most important provider indicator. Other indicators of provider supply include the availability of clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists. Indicators of demand for services include the percentage of the population below the federal poverty line, the prevalence of elderly and youth populations, and the prevalence of unhealthy alcohol and substance use.<sup>13,16</sup> We used HRSA areal data as the primary measure for this assessment.<sup>12</sup> To reduce the number of tracts with missing HRSA HPSS data, we introduced a second step to develop this measure. For tracts without HRSA areal measures, we averaged the HPSSs assigned to health care facilities within a 20-mile service area and used this average score from this second step (Appendix Figures A2 and A3). We removed 612 tracts missing data in both steps from analysis (ie, without areal or facility HPSS data). For specialist physician prescribing as well as specialist and primary care clinician prescribing (ie, all clinicians) scenarios, we considered methadone treatment available within all OTPs. Methadone prescribing provides a means to address workforce, resource, and regulatory limitations, which currently limit services to detoxification in a minority of OTPs.

To determine the potential availability of methadone with the addition of specialist and primary care clinician prescribing (ie, all clinicians), we used data on the 2020 location of FQHCs from HRSA.<sup>12</sup> For this scenario, we considered methadone as available in census tracts with either an available OTP or FQHC using the same 20- and 30-minute drive-time thresholds or inside of an area with a mental health professional coverage (ie, shortage score  $\leq$  13) (Appendix Figure A1). While FQHCs do not capture all possible primary care locations, they represent primary care clinics receiving a federal designation to serve underresourced populations and they are more spatially dispersed than independent facilities

(ie, clinic locations are informed by service needs).<sup>17</sup> For these reasons, FQHCs have been a priority for advancing equity in treatment access.<sup>18,19</sup>

We report availability results by census tract total population (2018 American Community Survey 5-year estimates)<sup>20</sup> and drug overdose deaths (Centers for Disease Control and Prevention [CDC] WONDER Underlying Cause of Death, 2009–2019).<sup>21</sup> County overdose data were reported based on the count of tracts in each policy scenario; if methadone was available in most of a county's tracts, methadone was considered available in that county. Counties missing more than 50% of their tracts by count were excluded for analyses by county. There were 2494 counties with available overdose data; 8 were excluded due to missing tract data. The remaining 2486 counties covered 70 486 census tracts. To examine the impact of rurality on availability, we also report availability among urban, suburban, and rural census tracts as we have defined previously using 2010 Rural-Urban Commuting Area (RUCA) codes from the US Department of Agriculture.<sup>6</sup> For analyses by rurality, we excluded tracts without an RUCA code ( $n = 25$ ).

Our estimates have several limitations. The true impact of methadone prescribing on availability will be heterogeneous, with some physicians prescribing within mental health shortage areas and some communities outside of shortages still lacking methadone. These results are best understood as indicating whether a community is more or less likely to gain availability with methadone prescribing. While the HRSA HPSS measure does not include addiction medicine physicians, physician board certification data suggest that the measure overestimates the potential of addiction specialist physician prescribing because it is inclusive of all general psychiatrists. In 2018, there were 1883 physicians certified in addiction medicine and 1244 physicians certified in addiction psychiatry, while there were over 40 000 physicians certified in psychiatry.<sup>22</sup> Addiction psychiatrists were available in just 7% of US counties.<sup>23</sup> Our measures also overestimate true methadone availability, as drive times under 20 and 30 minutes may still represent a barrier for some individuals. Furthermore, not all OTPs accept new patients and incomplete uptake of methadone prescribing among clinicians is likely.<sup>24</sup> Finally, we only measure 1 dimension of methadone access and availability does not guarantee access.

## Results

Of the 71 768 census tracts used in the analysis across 50 US states and the District of Columbia, 9482 (13%) were classified as rural and 62 327 (87%) were classified as a mental health professional shortage area. The total population within all tracts was 321.9 million, with 428 016 drug-overdose deaths between 2009 and 2019.

Methadone was available in 49% census tracts under current regulations allowing treatment only in OTPs (Figure 2 and Table 1). Between 2009 and 2019, 193 599 (45%) overdose deaths occurred in counties without an available OTP (Figure 3). In the case of specialist physician prescribing, 63% of census tracts had an available OTP or were within an area with mental health professional coverage. With specialist physician methadone prescribing, 122 980 (29%) overdose deaths between 2009 and 2019 were in a county without available methadone. With clinician methadone prescribing, 86% of census tracts had an available

OTP or FQHC or were within a mental health professional coverage area. With all clinician methadone prescribing, 20 630 (5%) of overdose deaths between 2009 and 2019 were in a county without available methadone.

Upon stratifying our sample by rurality (urban, suburban, and rural), specialist physician methadone prescribing would expand methadone availability to an additional 12% of urban, 18% of suburban, and 16% of rural census tracts relative to current OTP availability. Clinician methadone prescribing would expand methadone availability to an additional 30% of urban, 53% of suburban, and 58% of rural census tracts relative to current OTP availability.

## Discussion

In this cross-sectional study of census tracts in 50 US states and the District of Columbia, 53% of census tracts were without an available OTP and these tracts contained almost half of drug-overdose deaths over a 10-year period. Specialist physician prescribing would expand methadone availability, but 37% of tracts were without an available OTP and were designated mental health professional shortage areas. Methadone prescribing within FQHCs would further expand methadone availability and leave only 14% of census tracts, representing 5% of drug-overdose deaths, without availability. Rural census tracts experienced the greatest increase in availability with FQHC prescribing. Together, these results suggest that addiction specialist methadone prescribing will fall considerably short of ensuring methadone treatment availability in all communities with people at risk of drug-overdose death. Wide uptake of methadone prescribing within FQHCs, facilitated by non-specialist prescribing, would come closer to ensuring universal availability of this life-saving treatment. Results are supportive of policies enabling broader methadone-prescribing privileges if equity in methadone availability, particularly for rural communities, is to be pursued.

Our results are consistent with prior studies showing limited methadone availability in the United States and the first to estimate the potential of methadone prescribing for closing the steep availability gap.<sup>5,6,25,26</sup> These results are also consistent with the previous research on Drug Addiction Treatment Act 2000 waiver uptake for buprenorphine prescribing. Expanding DATA 2000 waiver eligibility from physicians to physicians and advanced practice providers was associated with an expansion in buprenorphine availability particularly benefiting rural areas.<sup>27</sup> Our results suggest that limiting methadone prescribing to specialist physicians would similarly leave communities out of the benefits of methadone policy reform until broader prescribing privileges are enacted.

Both specialist physician and primary care clinician prescribing will require significant implementation support and training. In Australia, adoption of office-based methadone prescribing and pharmacy dispensing occurred over a decade,<sup>28</sup> but now a majority of individuals in Australia receive methadone treatment this way.<sup>29</sup> Expansion of the addiction specialist physician workforce and utilization of telehealth prescribing are other possible strategies to expand methadone. Because specialist physicians tend to cluster in urban areas where OTPs are already available,<sup>30</sup> training more specialist physicians may not enable

equity in availability. The SAMHSA has placed greater restrictions on the utilization of telehealth for methadone initiation due to concerns about the risk of opioid overdose during medication initiation, and this may limit the potential of telehealth to expand methadone availability. Prior research demonstrated that pharmacy dispensing of methadone for OUD represents another means of expanding methadone availability and pairing telehealth with pharmacy dispensing may be a way to expand availability to communities without a prescriber.<sup>20,21</sup> This study did not examine the risk of methadone diversion with methadone prescribing; however, other wealthy nations have implemented methadone diversion control measures within primary care and pharmacy settings.<sup>28,29,31</sup>

Primary care clinician methadone prescribing may have benefits that extend beyond availability. Allowing both physician and advanced practice provider prescribing would expand the pool of potential prescribers and allow health care organizations greater workforce flexibility to meet community needs. Other barriers, such as the low acceptability of OTPs within predominantly urban minority communities,<sup>32</sup> suggest benefit by providing an alternative treatment setting to OTPs.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## Acknowledgments

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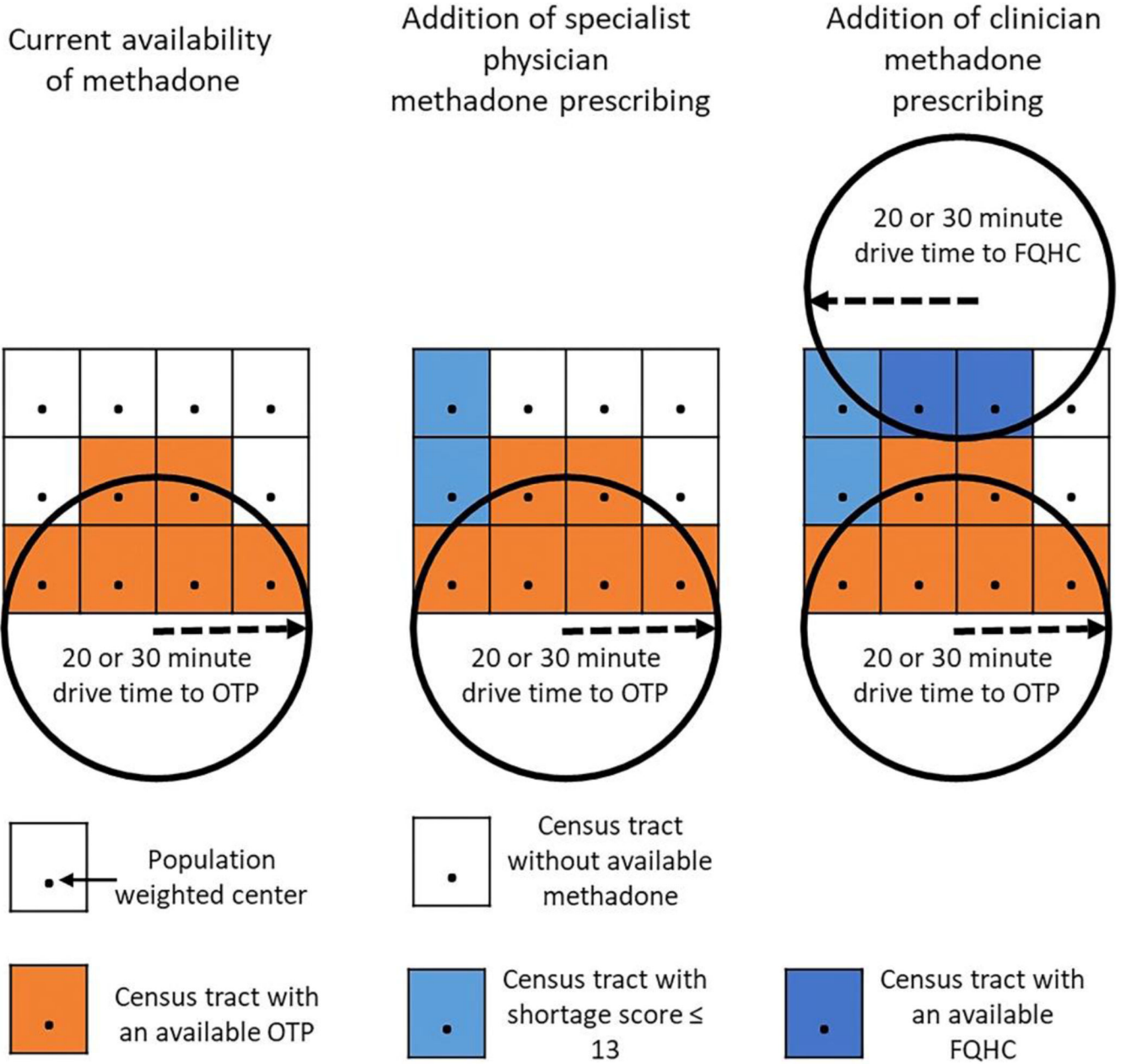
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**Figure 1.** Approach to measuring methadone treatment availability scenarios. Source: Authors' analysis. Methadone was currently available if the census tract was within a 20-minute drive time of an OTP providing methadone treatment for urban census tracts and a 30-minute drive time for suburban and rural census tracts. Methadone was available with specialist physician prescribing in census tracts with either an available OTP or outside of an area with a mental health professional shortage score of 14 or greater. Methadone was available with all clinician prescribing in census tracts with either an available OTP or FQHC using the same 20- and 30-minute drive-time thresholds or outside of an area with a mental health

professional shortage score of 14 or greater. Abbreviations: FQHC, federally qualified health center; OTP, opioid treatment program.

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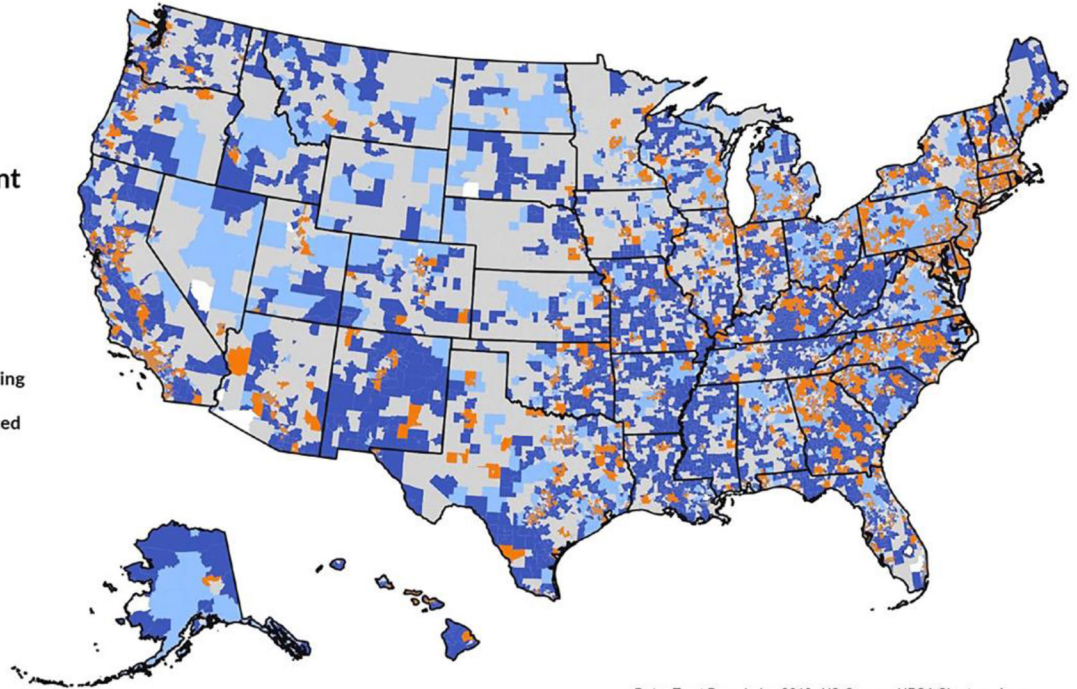
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### Methadone Treatment Access Scenarios

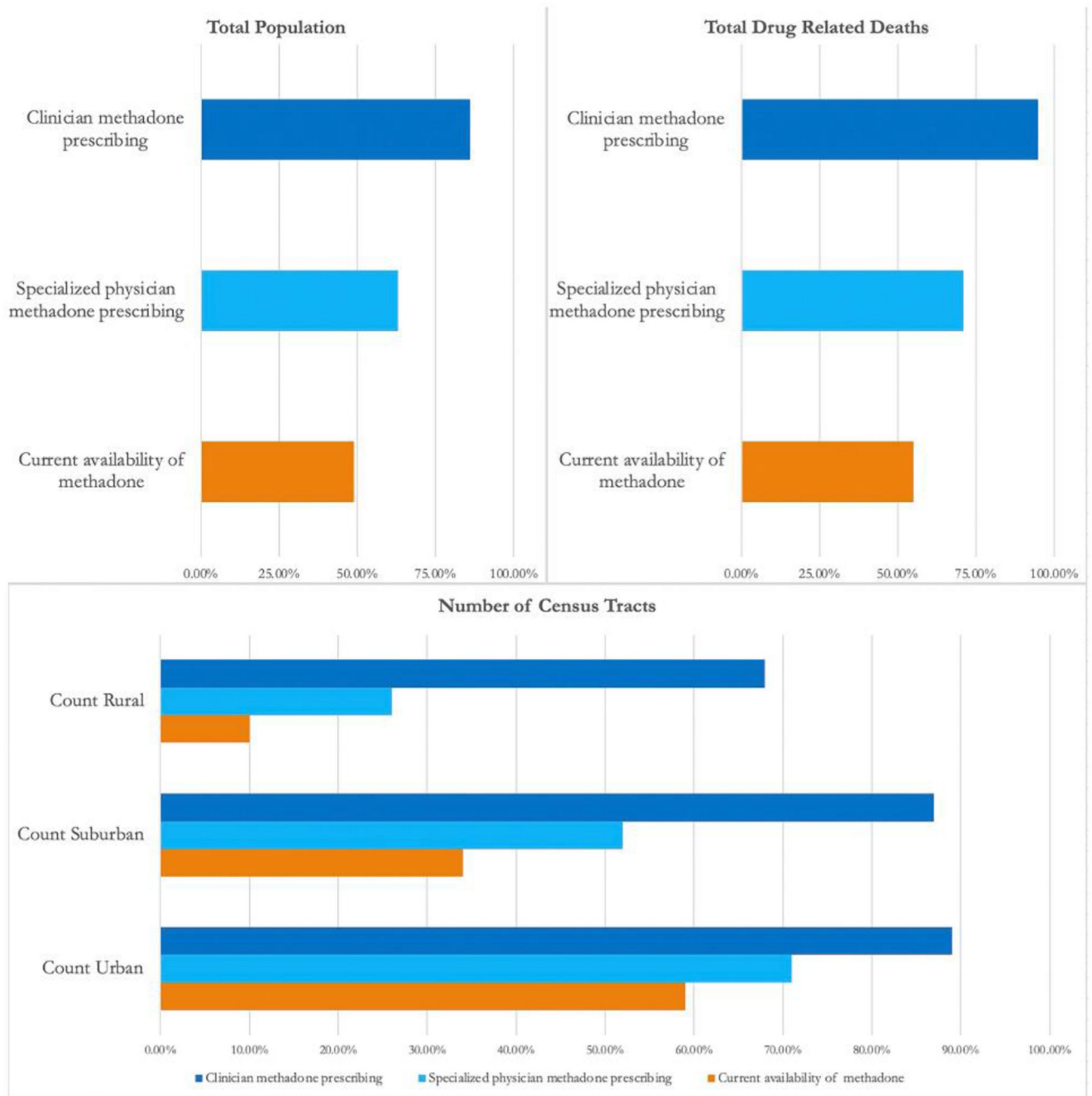
- Current availability
- Addition of specialist physician prescribing
- Addition of clinician prescribing
- Still no access under enhanced
- Missing Data / Excluded



Data: Tract Boundaries 2019, US Census; HPSA Shortage Areas, HRSA; Methadone, OTP, and FQHC driving times, Opioid Environment Policy Scan 2022

**Figure 2.**

Availability of methadone treatment for opioid use disorder with specialist physician and clinician prescribing in populated US census tracts in 2022. Source: Authors' analysis. Methadone was currently available if the census tract was within a 20-minute drive time of an OTP providing methadone treatment for urban census tracts and a 30-minute drive time for suburban and rural census tracts. Methadone was available with specialist physician prescribing in census tracts with either an available OTP or outside of an area with a mental health professional shortage score of 14 or greater. Methadone was available with all clinician prescribing in census tracts with either an available OTP or FQHC using the same 20- and 30-minute drive-time thresholds or outside of an area with a mental health professional shortage score of 14 or greater. An interactive version of the map is available at <https://maps.healthyregions.org/mtas>. Abbreviations: FQHC, federally qualified health center; HPSA, Health Professional Shortage Area; HRSA, Health Resources and Services Administration; OTP, opioid treatment program.



**Figure 3.**

The total population, overdose deaths between 2009 and 2019, and census tracts with and without available methadone treatment with specialist physician and clinician prescribing compared with current availability in populated US census tracts in 2022. Source: Authors’ analysis. Methadone was currently available if the census tract was within a 20-minute drive time of an OTP providing methadone treatment for urban census tracts and a 30-minute drive time for suburban and rural census tracts. Methadone was available with specialist physician prescribing in census tracts with either an available OTP or outside of an area with

a mental health professional shortage score of 14 or greater. Methadone was available with all clinician prescribing in census tracts with either an available OTP or FQHC using the same 20- and 30-minute drive-time thresholds or outside of an area with a mental health professional shortage score of 14 or greater. Abbreviations: FQHC, federally qualified health center; OTP, opioid treatment program.

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**Table 1.**

Current methadone availability and estimated availability with specialist physician and clinician prescribing in populated US census tracts in 2022.

Metric	Current availability of methadone		Specialist physician methadone prescribing		Clinician methadone prescribing	
	Available	Unavailable	Available	Unavailable	Available	Unavailable
Total tracts ( <i>n</i> = 71 768, % of all tracts)	35 178 (49%)	36 590 (51%)	44 913 (63%)	26 855 (37%)	61 830 (86%)	9938 (14.0%)
Total population ( <i>n</i> = 321.9 million)	151 760 552 (47%)	170 160 971 (53%)	195 262 912 (61%)	126 658 611 (39%)	274 171 188 (85%)	47 750 335 (15%)
Total drug-related deaths (2009–2019)	235 417 (55%)	192 599 (45%)	305 036 (71%)	122 980 (29%)	407 386 (95%)	20 630 (5%)
Urban tracts ( <i>n</i> = 51 356, % of all urban tracts)	30 477 (59%)	20 879 (41%)	36 679 (71%)	14 677 (29%)	45 871 (89%)	5485 (11%)
Suburban tracts ( <i>n</i> = 10 930, % of all suburban tracts)	3755 (34%)	7175 (66%)	5727 (52%)	5203 (48%)	9511 (87%)	1419 (13%)
Rural tracts ( <i>n</i> = 9482, % of all rural tracts)	946 (10%)	8536 (90%)	2507 (26%)	6975 (74%)	6448 (68%)	3034 (32%)

Source: Authors' analysis. Methadone was currently available if the census tract was within a 20-minute drive time of an OTP providing methadone treatment for urban census tracts and a 30-minute drive time for suburban and rural census tracts. Methadone was available with specialist physician prescribing in census tracts with either an available OTP or outside of an area with a mental health professional shortage score of 14 or greater. Methadone was available with all clinician prescribing in census tracts with either an available OTP or FQHC using the same 20- and 30-minute drive time thresholds or outside of an area with a mental health professional shortage score of 14 or greater.

Abbreviations: FQHC, federally qualified health center; OTP, opioid treatment program.