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A Comparative Study of Recovery Ecosystems for Opioid Use Disorder in Portugal and Appalachia

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A COMPARATIVE STUDY OF RECOVERY ECOSYSTEMS FOR OPIOID USE DISORDER IN PORTUGAL AND APPALACHIA

A comparison of the structure and effectiveness of recovery ecosystems for opioid use disorder in Portugal and Appalachia, with a focus on identifying areas for improvement within the Appalachian region.

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Introduction

In recent years there has been significant attention given to Portugal's 2001 decriminalization of all drugs. Over the past decade, conversation over this issue has intensified. Many high-profile editorials have been published in news outlets like *Time Magazine* and *The New York Times*, proposing that Portuguese inspired decriminalization could be the panacea for the United States' opioid epidemic. Attention to this topic has peaked this year with Oregon becoming the first state in the union to decriminalize the use of all drugs.

While Portugal's drug policy has gained international attention and has been frequently referenced in discussions on potential policy changes for the United States, there has been no research to date that has focused on a comparison between Portugal and a subregion of the United States, such as Appalachia. There are several reasons why it would be beneficial to compare Portuguese policy to a single region rather than the whole United States. There are relatively few Portuguese policies that could be effectively implemented at a federal level since many policies related to illicit substances are set at the State and local levels. Second, patterns of drug use vary greatly across the United States and thus using only one region as a comparison allows for more specific conclusions to be drawn.

Choosing Appalachia as a subject of comparison comes from its position as one of the hardest hit areas by the opioid epidemic. With average fatal overdose rates 72% higher than other parts of the country, Appalachia has been disproportionately affected by this epidemic (Harris, 2019). Appalachia has higher rates of poverty and lower educational attainment compared to the rest of the country. The rural nature of Appalachia also has made it more difficult for many to access healthcare.

There are many demographic similarities between Appalachia and Portugal. Both regions have historically been more economically depressed regions within a larger, more developed region. For example, both regions have comparable rates of poverty – 15.8% for the Appalachian region and 17.2% for Portugal (The World Bank). Furthermore, Portugal and central Appalachia have identical rates of unemployment at 6.9% and these regions share the same demographic trend of an aging population (Harris, 2019). For these reasons, the comparison of Appalachia and Portugal is reasonable due to the socioeconomic conditions present in both locations. The reforms made by Portugal were done under these economic and social constraints, providing support for the feasibility of implementation within the Appalachian region.

Due to the lack of previous research comparing Portugal's drug policies to the United States from a regional perspective, there is a need to identify areas of comparison and potential ways that policies could be implemented in an Appalachian context. Therefore, the goal of this paper will be to fill in this gap in research and allow for further research to build off the areas identified in this research.

This comparative investigation will proceed in the following manner. First, the historical context behind the Appalachian and Portuguese opioid epidemics will be discussed and the post-decriminalization outcomes in Portugal will be evaluated. Next, the concept of recovery ecosystems, as defined by the Appalachian Regional Commission, will be introduced and applied

to the systems in both Portugal and Appalachia. This evaluation focuses on the availability of treatment (e.g., availability of medication assisted treatment) and coordination of substance use recovery resources. Finally, areas in which Appalachia could improve will be identified and appropriate parts of Portuguese policy will be recommended for implementation and further research.

Historical Background

Between 1926 and 1974, Portugal was under the dictatorship of Antonio Salazar. This regime, called the *Estado Novo*, or *New State*, sought to stabilize the previously tumultuous Portuguese government at the cost of personal freedoms and access to the international community. During the *Estado Novo*, Portugal's economy grew but education, health, and social services still lagged behind most of Western Europe. After the death of Salazar in 1970, economic difficulties and changing public opinion on the conflicts in Portuguese colonies become too strong to quell and the *Estado Novo* was overthrown on April 25, 1974 in an event known as the Revolution of the Carnations (Wheeler, 2021).

The cultural vacuum created by the *Estado Novo* was quickly filled following its collapse in 1974. This brought with it many new freedoms for the Portuguese people and an end to the colonial wars in Africa and Asia. However, at the same time that Coca-Cola was introduced in Portugal, a drink once criticized by Salazar as being "Habit Forming" and "Harmful to Health", so were other trademarks of the western world (Howe, 1977).

Cannabis, cocaine, and heroin were among the many new drugs that began flowing into Portugal after the fall of the *Estado Novo*. Lacking knowledge on risks, addiction potential, and harm reduction, the Portuguese population was not prepared for the sudden influx of illicit substances into the country,. The issue of drugs finally came to a head during the 1990s. In 1997, drug use was identified as the most important issue facing Portugal. However, subsequent research has showed that drug use was not as common in Portugal as public opinion would have it seem. The reason for the concern over drug use stemmed in part from the way they were being consumed rather than the commonality of drug use (Domosławski, 2011). However, drug use was visible in public spaces throughout Portugal and particularly vivid in Lisbon's *Casal Ventoso* neighborhood. During its peak in the late 1990s, *Casal Ventoso* was commonly referred to as "the biggest open-air drugs market in Europe" (Bajekal, 2018).

While overall trends in drug use in Portugal were not above average, trends in risky drug use, like heroin, were alarming. In 1999, a survey of 16-year-old students (n=3609) revealed that 2.5% had smoked heroin and 0.6% have injected heroin intravenously (Annual Report on the Drug Phenomena, 2000). In 1999, the overdose rate for all drugs was 3.62 per 100,000 people, with opioids accounting for 88% of these deaths (Annual Report on the Drug Phenomena, 2000).

The first country-wide survey of drug use in 2001 showed that 0.7% of the Portuguese population had used heroin at least once in their lives (Instituto Português da Droga e da Toxicodependência, 2002). This prevalence of heroin use was one of the highest in Europe, only surpassed by the United Kingdom and Luxembourg. Furthermore, according to the European Monitoring Center

for Drugs and Drug Abuse (EMCDDA), Portugal had the highest rates of new HIV infections and new HIV infections among people who use IV drugs in Europe (Annual report 2005: the state of the drugs problem in Europe).

The move to decriminalize personal use of all recreational drugs came from recommendations of a panel of experts, led by Dr. João Goulão, created to find solutions for the drug crisis. The recommendations made by this panel were ultimately adopted and made into law due to the support of the country's progressive party, which was in control at the time. However, this policy has since gained bipartisan support and the Portuguese people generally see it as a great success (Domosławski, 2011).

While decriminalization has been the most attention-grabbing element of Portugal's policy changes, it only serves as foundational policy element that allows for flexibility in the treatment of those with substance use disorder. This policy change has also led to increased availability of treatment options and harm reduction programs, but most importantly, the move to decriminalize drug use in Portugal marked a paradigm shift; people who use drugs or those with a substance use disorder were no longer considered criminals, but people with a medical condition that deserved care and compassion (Domosławski, 2011). This shift can be seen in how the system is organized, instead of being arrested for drug use, people found with personal amounts of an illegal substance are sent to the Dissuasion Commissions, which operate under the Ministry of Health rather than the Ministry of Justice. These commissions will be discussed in length in the section on "Coordination of Resources".

Now, two decades after decriminalization, the outlook on illegal drugs is much different. Portugal has changed from having exceptionally high rates of problematic drug use to more or less fitting within European averages. As of 2017, Portugal is ranked seventh out of thirty European countries for problematic drug use; this is compared to the early 2000s when it was second or third, only behind the United Kingdom and Luxembourg. Additionally, drug related mortality rates in Portugal have decreased from 3.62 per 100,000 (369 total deaths) in 1999 to 0.26 per 100,000 (27 total deaths) in 2016. Furthermore, new cases of HIV in people who use drugs has fallen from 57% of all new HIV cases in 2000 to less than 10% in 2016 (Annual report 2005: the state of the drugs problem in Europe, 2005).

While Portugal was seeing progress with its change in drug policy, the seeds were being planted for what would grow into the American opioid epidemic. In the 1990s, new synthetic prescribed opioid-containing products like OxyContin were being heavily marketed across the country, and especially in the Appalachian region. Historically, the Appalachian region been home to accident prone professions like coal mining and forestry, leading to a large proportion of the population experiencing both acute and chronic pain. Combined with socioeconomic risk factors like high rates of unemployment and poverty and low educational attainment, Appalachia became the perfect environment for overprescribing these new opioids (Moody, Satterwhite, & Bickel, 2017).

Since the early 2000s, opioid use has increased across the country, but no region has been impacted as severely as Appalachia. Counties in Appalachia have over 70% higher opioid overdose rates and 45% higher opioid prescription rates than non-Appalachian counties (Harris, 2019).

The Appalachian region is in dire need of innovative solutions to address the opioid epidemic. While there has been international attention given to Portugal's drug policies, there has been no research done that compares these two regions. Therefore, it is a goal of this thesis to explore the similarities and differences between drug use and treatment in these two regions and illuminate areas that Portuguese policies could be implemented at state and local levels in Appalachia.

Access to Evidence Based Treatments for SUD in Portugal

Healthcare in Portugal is covered by three overlapping systems. The first is the *Serviço Nacional de Saúde (SNS)*, or Portugal's national health service. This is a taxpayer funded healthcare system that is available to all residents and is usually free of cost. In addition to the SNS, there are other healthcare programs in Portugal that cater to specific professions like government workers. Private insurance in Portugal is voluntary and can help to hasten the waiting period for elective procedures and expand healthcare provider choices. The Ministry of Health is in charge of national health policies as well as the SNS (European Observatory on Health Systems and Policies, 2017).

In regard to addiction treatment services, Portugal has three different levels of care based on the severity of the individual's substance use disorder.

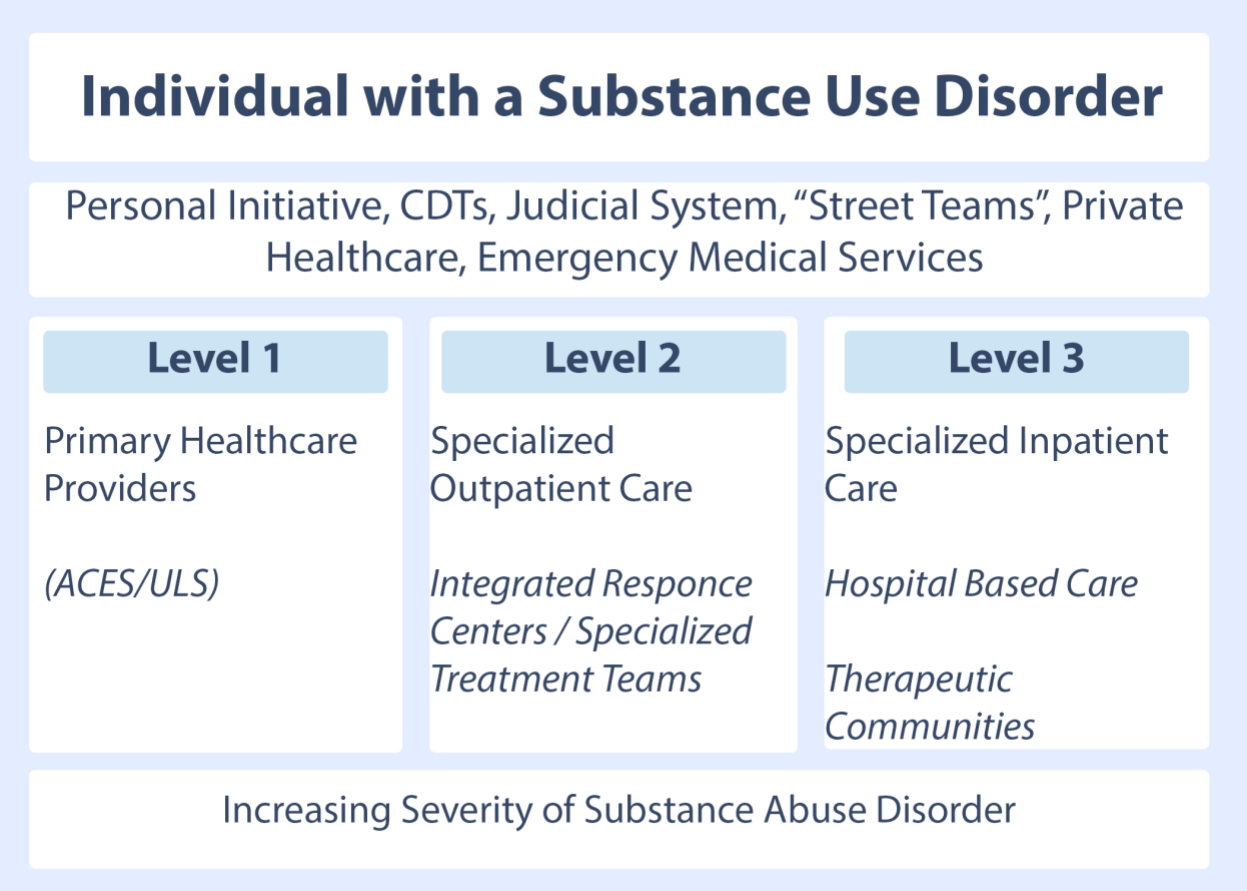

Figure 1, (Arquitetura da Rede, por Região de Saúde)

The first level consists of primary healthcare providers and outpatient treatment options and is for low to moderate risk drug users. Examples of providers at this level include community health centers called *Agrupamentos de Centros de Saúde* (ACES) or *Unidades Locais de Saúde* (ULS) which are integrated primary care and secondary services. The goal for this level of care is to identify problematic drug use early and set up effective interventions. Primary healthcare providers can also provide referrals to more specialized care if the patient's condition worsens (Modelos, Repostas e Intervenções).

The second level is specialized care that usually occurs in an outpatient setting and is used for more serious substance use disorders. This includes the 34 *Centros de Respotas Integradas* (CRIs) and the 61 specialized treatment teams contained within these centers. These teams are usually the first point of contact for those wishing to begin treatment and can provide recommendations for other services as well. At this level, treatment of SUD is integrated with psychological, social, and other health interventions to fully address the complex needs of the patient (Arquitetura da Rede, por Região de Saúde).

The third level of treatment is for the most severe substance use disorders and consists of primarily inpatient care. This includes hospital based medical and mental health services, therapeutic communities for SUD, alcoholism treatment programs, and detoxification units. In Portugal there are 57 therapeutic communities where people in recovery can stay for a period of 3-12 months while receiving psychosocial and medication assisted treatment. Most of these communities (54 out of 57) are privately owned but funded, in part, by the government. People can enter treatment at any of the three levels listed above, but generally the CRIs are the first point of contact for those wishing to begin treatment (Portugal Country Drug Report 2019).

Medication assisted treatment is widely available in Portugal through specialized treatment programs, hospitals, and special low-threshold MAT units. Methadone is provided free of charge and buprenorphine is covered at 40% of the market value through the SNS (Portugal Country Drug Report 2019). As in the United States, methadone must be administered in an inpatient setting while buprenorphine can be prescribed by any physician and picked up from a pharmacy. In Portugal, about two thirds of people on MAT take methadone, with the remaining third of people taking buprenorphine. In 2017, a total of 16,888 people received MAT, more than half of the total number of people in treatment for drug addiction (Portugal Country Drug Report 2019).

The Recovery Ecosystem Model

In 2019, the Appalachian Regional Commission created the Substance Abuse Advisory Council to provide guidance on how to address the opioid epidemic in Appalachia. Later that year they created the "Recovery Ecosystem" model. This focuses on effective coordination of resources and collaboration between multiple stakeholders in Appalachian communities including recovery communities, peer support, health, human services, faith communities, criminal justice, public safety, housing, transportation, education, and employers. The goal of this model is to provide those with a substance use disorder the tools and support systems they need to maintain recovery

and gain meaningful employment (Appalachian Regional Commission's Substance Abuse Advisory Council, 2019).

As seen in the figure below, this model can be broken into four distinct parts, substance use disorder treatment, workforce training, employment, and recovery support services that help coordinate each step of the model.

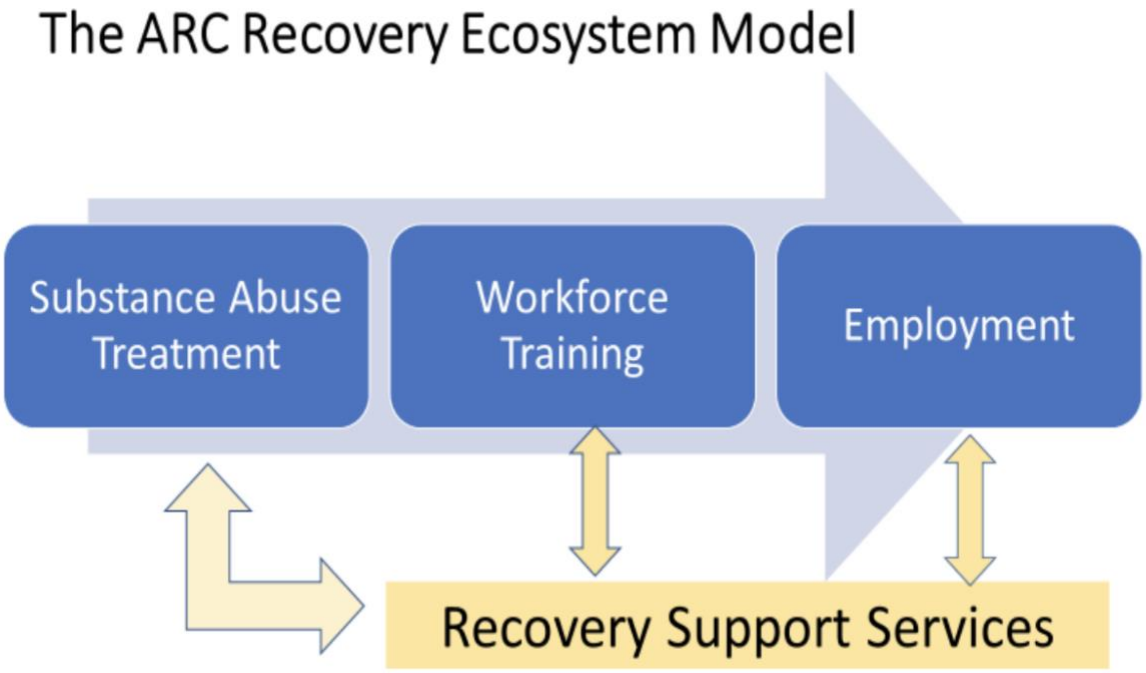

Figure 2, (Appalachian Regional Commission's Substance Abuse Advisory Council, 2019)

The Recovery ecosystem model is a relatively new perspective for SUD treatment in Appalachia, but Portugal has been following this framework for its recovery services for two decades. Similarities can be seen between these two systems in the way that support services are key elements linking together different recovery stakeholders. Looking through the recovery ecosystem model provides a framework in which elements of Portugal's policy can be applied to the Appalachian region with consideration given to current research and policy initiatives being developed in the region.

Access to Evidence Based Treatments for SUD in Appalachia

In the United States, healthcare insurance is primarily linked to employment through private insurance policies. Government funded insurance programs like Medicare and Medicaid cover senior citizens and those with financial need. People seeking treatment for opioid use disorder (OUD) have several options for treatment: residential programs, outpatient programs, group and individual therapy.

Residential programs can vary greatly in the amount and type of treatment provided. Some are simply halfway houses or sober living communities without a formal treatment program. Others provide psychosocial treatment, pharmacological treatment, or both. However, most residential programs do not offer MAT. 2017 data from SAMHSA showed that 31% offer buprenorphine, 34% offer naltrexone, and only 2.6% offer methadone. A little more than half of all residential programs offered medication for psychiatric disorders (Stewart, O'Brein, Shields, White, & Mulvaney-Day, 2019). MAT is shown to increase retention in treatment programs and its noted absence in many residential treatment programs highlights a key area for improvement in substance abuse disorder treatment.

Furthermore, there is a lack of consistency across the country in terms of residential treatment programs. Individual states require their own set of standards for these programs and differences between states have not been well-studied at this point. SUD treatment programs can be accredited through various private entities, but only about half of residential programs have this kind of accreditation. Inconsistency in residential programs continues with the kinds of insurance they will accept. 49.8% of residential programs accept Medicaid, 62.5% accept private insurances, and 18.6 accept Medicare. In 2017, 99,881 people were reported to be in a SUD residential treatment program, down slightly from 103,709 people in 2007 (Stewart, O'Brein, Shields, White, & Mulvaney-Day, 2019).

Outpatient SUD treatment is widely varied in terms of services offered and intensity of treatment. High intensity outpatient programs often require multiple hours per week of structured programming, while other arrangements, like seeing a buprenorphine waived physician and attending therapy can require less time commitment and give the individual more flexibility. A 2014 metanalysis of intensive outpatient SUD treatment programs found that there was no significant difference between these programs and inpatient SUD treatment programs (McCarty, et al., 2014). From this point forward, SUD treatment facilities will include both inpatient and outpatient modes of care but will exclude programs that do not offer actual treatment services like sober living arrangements or halfway houses.

In order to gain a specific understanding of the state of recovery ecosystems in Appalachia, data on SUD treatment centers was collected from the Substance Abuse and Mental Health Services Administration (SAMHSA) “Treatment Locator” tool for each of the 420 Appalachian counties, as defined by the Appalachian Regional Commission. Using the treatment locator tool from SAMHSA, facilities were identified using the filter “Substance Use facilities”.

Results that were listed at the same physical address were eliminated, therefore eliminating substance use facilities that offer different services, but would still be considered as one physical entity. In the end, this process resulted in 1143 distinct treatment centers for those with Substance Use disorder.

Data from SAMHSA was further sorted to separate substance use treatment facilities that prescribe MAT from those that do not. A distinction was also made between those that accept patients on MAT but do not prescribe, and those that do not prescribe or accept patients on MAT. From this search, it was found that of the 1143 treatment centers in Appalachia, only 629 (55%) prescribed MAT, with an additional 361(32%) accepting clients on MAT, but without the ability to prescribe

it. This means that in the Appalachian region there are 153 (13%) treatment centers that not only do not prescribe the evidence-based medications for treatment of Opioid use disorder but will not accept patients on these regiments.

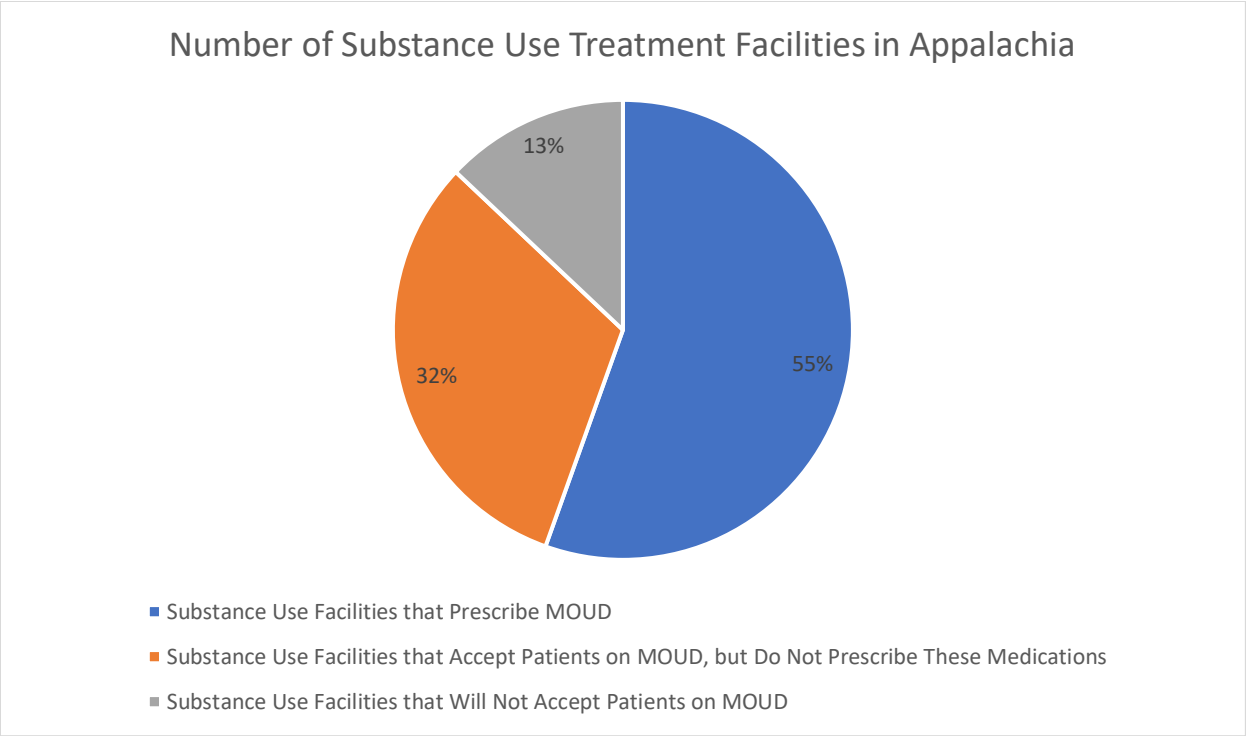

Figure 3 (Behavioral Health Treatment Services Locator)

Also from the SAMHSA databases, the number of buprenorphine waived physicians in each Appalachian county was determined for a total of 4078 physicians across the Appalachian region (Behavioral Health Treatment Services Locator).

From the data listed above, it was determined that there are almost three million Appalachians that live in counties without access to MAT, making up about 13% of the total population of the region. Access to MAT is defined as having a buprenorphine waived prescriber in the county, or a SUD treatment facility that can prescribe MAT. Of these three million people without access to MAT, 58% of them live in metropolitan areas[1].

While treatment for substance abuse in both Appalachia and Portugal both generally follow the same principals, there is great variation in the availability of these services between the two locations. The structure of healthcare in Portugal impacts SUD treatment in the following ways. First, treatment centers and healthcare providers (with the exception of residential SUD treatment) are operated and organized by the Portuguese Ministry of Health (Silvestri, 2015). In each administrative district of the country, there is a complete range of services provided, from intensive

[1] Demographic data comes from 2013 Urban Influence Codes dataset (United States Department of Agriculture Economic Research Service, 2013) and data on SUD treatment comes from SAMHSA treatment locator tool (Behavioral Health Treatment Services Locator)

in-patient treatment to a range of outpatient services. This is a key difference between Portugal and Appalachia, where the variety and quality of SUD treatment service available vary greatly from county to county. Second, because Portugal has a universal healthcare system, cost of treatment is no longer a key barrier to accessing treatment. In comparison, cost is often identified as being one of the most significant barriers to treatment in Appalachia (Moody, Satterwhite, & Bickel, 2017).

In addition to the structure of Portugal's healthcare system, the increased availably of MAT in this country when compared to Appalachia can be attributed to a couple key differences in policy. First, every physician in Portugal can prescribe Buprenorphine and every government operated treatment facility can prescribe buprenorphine and methadone. This has improved the availability of MAT in Portugal without significantly altering existing healthcare infrastructure.

In the US, physicians must obtain a special waiver to prescribe buprenorphine that allows them to prescribe to up to 100 patients. After one year, the physician can request to increase the limit to 275 patients (Substance Abuse and Mental Health Services Administration, 2021). MAT is more integrated into SUD treatment in Portugal than it is in Appalachia, where 45% of substance use treatment centers do not prescribe these medications.

While availability of MAT from a healthcare standpoint plays a large roll in treatment outcomes in Portugal, there are also important geographic factors at play. Portugal is geographically smaller, more urbanized, and better connected by public transportation than Appalachia. Perhaps Portugal is able to more with fewer treatment centers due to the increased mobility of its population. In the United States, most rural areas lack robust public transportation infrastructure, making it more difficult to travel without access to a car.

Regarding MAT, Portugal started in a similar situation as the one currently experienced in Appalachia. In the early 1990s, MAT was very difficult to obtain and anecdotal stories of patients having to travel hours to receive treatment were common (Domosławski, 2011). This mirrors the situation of many people in Appalachia. Outside of major cities, MAT is not a guaranteed service, and many people have to travel outside county lines to receive treatment. Further complicating the situation is insurance and other payment options.

This comparison provides context to the statistics of MAT use in Portugal and Appalachia. In Portugal, about 50% of people with opioid use disorder are on MAT, while only 17% of people in the United States are on these medications[2]. MAT has been associated with high retainment rates for treatment as well as a decrease in drug usage and improved social function (Bart, 2012).

By comparing the availably of treatment between these two regions, it becomes clear that more is not always better. Rather, attention needs to be focused on improving existing infrastructure by expanding patient limits for buprenorphine waived physicians, integrating MAT into all SUD treatment programs, and expanding low-threshold MAT programs.

[2] Based on a comparison of data from Portugal (Portugal Country Drug Report, 2017) and the United States (Alderks, 2017) from 2015.

Coordination of Resources in Portugal

Following the 2001 law that decriminalized drug use in Portugal, an alternate system was created to deal with people caught with illegal drugs. These dissuasions commissions, or *Comissões para o Dissuasão da Toxicodependência* (CDTs) as they are called in Portuguese, take a radically different approach to dealing with drug use than traditional criminal justice centered models do (Silvestri, 2015). There is one commission for every administrative district in Portugal, each consisting of three members; a legal expert appointed by the ministry of justice and two members appointed by the ministry of health. Usually, these members include healthcare professionals and a social worker. Furthermore, these commissions are supported by a multidisciplinary team of clinical psychologists, social workers, and other experts in relevant fields (Comissões para a Dissuasão da Toxicodependência).

The combination of legal and healthcare experts with trained social workers is essential for the operation of these commissions. These experts are able to differentiate occasional and recreational drug use from substance use disorders and dependencies. While they cannot force people to begin treatment, they do have the power to leverage a number of penalties when deemed appropriate. These can range from small fines to revocation of state issued licensure and involvement with the criminal justice system, although such measures are considered drastic and rarely implemented (Domosławski, 2011). Fines cannot be issued if the individual is deemed to be dependent on the substance at hand for fear that it would only lead to further crime as an effort to pay the fine (Silvestri, 2015).

When an individual is caught with an amount of an illegal substance deemed to be for personal use, they are not arrested, but instead their personal information is taken down and they are referred to the dissuasion committee. Under Portuguese law, "personal use" is defined as the amount of an illegal substance for ten days of use (Silvestri, 2015). This is an important distinction because the trafficking of drugs is still illegal in Portugal and is prosecuted through the criminal justice system.

Unlike a court appearance, these commission meetings are structured as conversation between the commission members and the individual found using drugs. The individual has the option to be accompanied by a lawyer or therapist during these meetings as well (Comissões para a Dissuasão da Toxicodependência). As the name suggests, the goal of these commissions is to dissuade individuals from further drug use and provide connections to treatment for those ready to begin the process of recovery. However, it is important to note that these commissions do not have the power to force people into treatment. Rather the overall goal is to make individuals reflect on their drug use habits and make informed decisions for their personal health (Silvestri, 2015).

If it is an individual's first appearance before the commission, the proceedings are usually suspended if they are deemed not to have a drug dependency. During the suspension of proceedings, the individual's health and relationship to drugs is monitored and at the end of the suspension period the hearings can be closed or continued based on their situation. These cases, which make up the majority of the workload of the CDTs, are focused on education and harm reduction. The goal is to promote health with safer drug use and prevent the formation of a substance use disorder (Silvestri, 2015).

When the commission meets with someone who has a dependency on one or more drugs, getting them into treatment becomes the main goal of the commission. Again, the CDTs have no power to force people into treatment, and at the end of the day an individual must make the choice to start treatment on their own. However, the trained team at the CDTs try to convince those with drug dependencies to enter treatment and they have a unique position and ability to do so. For many, a hearing with the CDT may be the first time they have had to discuss their drug use. The integrated nature of the CDTs means that treatment can be arranged quickly, before the "window of opportunity" closes following this intervention. In fact, for those deciding to enter treatment, an appointment with a substance use treatment facility (like the CRIs) is arranged as soon as possible, often within the same day (Silvestri, 2015).

If the individual decides not to pursue treatment, a sanction is applied but as stated before, this sanction will never be a fine in the case of someone who is drug dependent. For most people this sanction takes the form of requirements to see healthcare professionals or to check in with the commission on a regular basis. Even when a problematic user decides not to start treatment, there is still some benefit received through interaction with the CDTs, like routine contact with healthcare professionals that can help coordinate treatment for them when they are ready (Silvestri, 2015).

Sanctions are only required when it is an individual's second appearance before the CDTs. Like before, fines can never be levied against a problematic user and if they choose to enter treatment the hearings will be suspended. For other cases, attendance requirements (at locations like healthcare center, police stations, or the CDTS) are the most common sanctions followed by fines (Silvestri, 2015).

Overall, the CDTs serve and integral role in the success of Portugal's drug policy, acting as hubs for resource coordination for those that need it the most. Implementation of the CDTs has led to the following outcomes. By removing the fear of criminal punishment, more people feel comfortable reaching out for help and the system is able to reach users that would not have been seen in the previous system in Portugal. Secondly, the proportion Portugal's prison population incarcerated for drugs has been cut in half since decriminalization. Furthermore, the time it takes for an individual to go through the CDT is much shorter than the time it takes to go through a court. In many cases, an individual is seen by the CDT within a week, whereas it could take several months to have a case heard in court (Silvestri, 2015). Combined, these two aspects of Portuguese decriminalization have led to a decrease in spending on illegal drug control, going from almost 0.09% of their GDP in 2000, to 0.03% of their GDP between 2013-2016[3]. The economic benefit of this system combined with the observed positive impact on public health makes for a compelling case for the effectiveness of the dissuasion commissions.

[3] Based on comparison of spending on drug control programs in 2000 and 2016 (Instituto Português da Droga e da Toxicodependência, 2000) (Portugal Country Drug Report 2019, 2019) and GDP data from The World Bank (The World Bank, n.d.)

Coordination of Resources in Appalachia

In Appalachia, and the United States as a whole, one of the programs most similar to the dissuasion committees in Portugal are drug courts. Directly stemming from the "tough on crime" and "war on drugs" mentality popularized in the 1980s, drug courts were created to help courts deal with the overwhelming number of cases that came before them, many for drug possession. Drug courts are specialized parts of the court system that allow people who fit a certain set of criteria, which vary from place to place, an option to peruse treatment alongside routine drug tests and monitoring, in exchange for suspension and eventual elimination of the charges against them. Currently, two structures for drug courts exist, in many places the individual entering the drug court must plead guilty to the charges presented against them, while other drug courts take in the individual before a plea is entered. Through this system, judges work together with prosecutors and the defense attorney to create a treatment plan and establish recovery goals. Failure to complete these goals can result in legal repercussions for the participant, including imprisonment and removal from the drug court program (Huddleston & Marlowe, 2011).

Overall, drug courts have been regarded to as extremely successful at lowering recidivism and saving money by replacing the cost of incarceration with treatment, which is much cheaper. The positive results and bipartisan popularity of drug courts have led to exponential expansion of the program across the united states since their inception in the early 1990s (Matusow, et al., 2014). However, many regions, still do not have access to these programs. One quarter of Appalachian counties do not have a drug court, leaving almost seven million residents without access to these programs[4]. Furthermore, there has been great hesitancy to implement MAT in drug court programs. The last study published on this issue was published in 2013 and showed that less than half of drug courts in the US offered opioid agonist treatment, and only 56% percent offered MAT including opioid antagonists (i.e. Naltrexone) (Matusow, et al., 2014). The unwillingness to implement MAT may be tied to stigma and misunderstanding of these medications by the law enforcement community, who have some of the strongest negative perceptions towards MAT of any group surveyed in a 2020 qualitative study over perceptions of MAT in Appalachian counties in Ohio (Richard, et al., 2020).

While the drug court program and Portugal's dissuasion committees seem very similar, it is important to highlight several important differences. First, the dissuasion committees do not involve imprisonment and are actually organized under the Portuguese Ministry of Health. Police officers can confiscate illicit substances and take the users information, but at no point in the process are they under arrest. The CDTs in Portugal are able to operate much quicker than traditional courts since they are not subjected to the same formalities that typically slow proceedings in the criminal justice system. Seeing the CDT happens within weeks whereas a court date can take several months.

[4] This statistic comes from data collected from the following sources: (Adult Drug Courts , 2018) (Fast Facts: Certified Recovery Court Locations, n.d.) (Kane, 2015) (Kleppinger, 2018) (NC Recovery Courts Map, 2020) (Operational Problem-Solving Courts in Maryland, 2020) (Problem Solving Courts, 2020) (Problem Solving Courts , 2021) (South Carolina Commission on Prosecution Coordination, 2018) (State of Mississippi Judiciary Administrative Office of Courts, 2020) (Virginia Drug Treatment Court Dockets, 2021) (Wedell, 2019) (West Virginia Adult Drug Courts FY 2021, 2020) (The World Bank, n.d.) (Pollard & Jacobsen, 2020)

Since Portugal's dissuasion committees are not considered part of the criminal justice system, they are able to reach people before incarceration or hospitalization due to overdose. In the United States, there is no existing infrastructure that can reach users before they have an interaction with one of these two institutions. Research has shown that more the dissuasion commissions see more people than the courts did before decriminalization, providing more opportunities for intervention and education on the risks of drug use (Silvestri, 2015). In Appalachia, problem drug use is only addressed when someone has an encounter with law enforcement or the healthcare system.

Dissuasion committees hold very little power to enforce penalties, a contrast to drug courts in the United States. While many have claimed that the pressure of penalties is a helpful motivating factor for treatment success, Portugal's experience may offer contradictory evidence. In the creation of the dissuasion committees, it was a deliberate decision to limit the power of the commissions to "force" people into treatment. Their goal was to allow people to make their own decisions but to ensure that they were well educated and aware of potential problems stemming from their substance use. While they are not able to force people into treatment, they have maintained high attendance rates – the CDT in the city of Aveiro, Portugal reports that over 80% of people required to see the CDT are compliant (Silvestri, 2015).

Portugal's dissuasion commissions highlight several key areas from which policy makers in Appalachia could learn. Research from the past two decades have shown that drug courts are effective and cost saving programs that greatly help those with a substance use disorder. The programs need to stop being treated as novel approaches that are reserved for only select people and be applied as standard practice across the region. This includes expanding the number of drug courts to cover all parts of Appalachia and expanding capacities of existing drug courts so that all those who qualify can benefit from these programs.

MAT should be expanded within drug court programs. These medications are the gold standard for OUD treatment and have a large body of scientific evidence supporting their use. Efforts need to be made to educate law enforcement on these medications and reduce stigma surrounding their use.

Drug courts need to ensure that the maximum benefit is being provided to all drug court participants, regardless of their completion of the program. An argument against drug courts is that those who do not graduate the program are often subjected to jail time, negating any benefits gained by entering the program in the first place. A key element of Portugal's drug courts is their ability to provide substance use and harm reduction education to those who do not have a substance use disorder or are not ready to enter treatment. If U.S. drug courts adopted this principal, they would be able to greatly expand their outreach and foster better conversations on drug use in their communities.

Finally, efforts need to be made across the region to reach those at risk for developing an SUD before they experience significant morbidity, non-fatal or fatal overdose or have interactions with the criminal justice system. Portugal was able to accomplish this through decriminalization, which removed the fear of legal persecution that prevented many from seeking help. In Appalachia, expansion of laws that provide immunity for those who overdosed need to be implemented across the region and expanded to include those seeking treatment for SUD. Additionally, small scale

resource coordination programs could help supplement the services offered by drug courts without involving the legal system.

Conclusion

While decriminalization has been the subject of focus for most headlines and opinion pieces on Portugal's drug policy, it most fundamentally serves as a foundation for the other, more innovative latticework of health promoting components of their policy. From highly integrated treatment models to a health-centered approach that focuses on treatment rather than persecution, Portugal has innovative elements throughout their national policy. Policymakers in the Appalachian region can learn from those in Portugal who faced similar economic and social conditions when developing and implementing what are now proven policies.

The first key takeaway from Portugal is the importance of access to medication assisted treatment and changing the stigma associated with its use. In Appalachia, access to medications need to be expanded so that everyone who needs them can do so. To do this, barriers to treatments like cost, availability, and stigma need to be addressed, using Portugal as model. Furthermore, the structure of treatment for those with a SUD in Portugal highlights the importance of improving the quality and interconnectedness of existing treatment infrastructure, rather than focusing solely on physical expansion of these programs.

In Portugal, the dissuasion commissions (CDT) are the primary entities responsible for resource coordination for those with a SUD. These commissions share many similarities with drug courts in the United States and therefore present another area for policy exchange. First, drug courts need to be expanded so that everyone who qualifies can participate in their programs, similar to how everyone caught with drugs for personal use in Portugal goes through the CDTs. Second, MAT needs to be expanded to all drug courts in Appalachia as access to these medications has been a key part of Portugal's success. Finally, structural elements from the CDTs can be applied to drug courts in Appalachia to ensure that all individuals who start these programs receive maximum benefit, regardless of their ability to successfully complete the program.

Further research and comparison of Appalachian and Portuguese policies would most definitely be useful as there is a general lack of literature surrounding this topic and this comparison in specific. For example, there has been no previous comparison of drug courts in the United States with Portugal's dissuasion commissions. This could potentially be an area where innovative policies could be adapted for use in Appalachia in a way that would be easy to facilitate and quick to implement. Furthermore, research into qualitative aspects of addiction treatment like perceptions of stigma and treatment adequacy could help researchers and policy makers better understand the current state of treatment in these two locations as well as providing context that will help when implementing new policies.

Bibliography

Adult Drug Courts . (2018, May). Retrieved from Alabama Administrative Office of Courts: https://www.alacourt.gov/docs/Adult%20Drug%20Courts.pdf

Alderks, C. E. (2017). *Trends in the Use of Methadone, Buprenorphine, and Extended-release Naltrexone at Substance Abuse Treatment Facilities: 2003-2015 (Update).* Substance Abuse and Mental Heath Services Administration .

(2005). *Annual report 2005: the state of the drugs problem in Europe.* Lisbon: European Monitoring Center on Drugs and Drug Addiction.

Appalachain Regional Commission's Substance Abuse Advisory Council. (2019). *Report of Recommendations.* Appalachain Regional Commission.

Arquitetura da Rede, por Região de Saúde. (n.d.). Retrieved from serviço de intervenção nos comportamentos aditivos e nas dependências: http://www.sicad.pt/PT/Intervencao/RedeReferenciacao/SitePages/Arquitetura.aspx

Bajekal, N. (2018, August 1). Want to Win the War on Drugs? Portugal Might Have the Answer. *Time*.

Bart, G. (2012). Maintenance Medication for Opiate Addiction: The Foundation of Recovery. *Journal of Addiction Diseases* , 207-225.

Behavioral Health Treatment Services Locator . (n.d.). Retrieved from Substace Abuse and Mental Health Services Administration : https://findtreatment.samhsa.gov/

Comissões para a Dissuasão da Toxicodependência. (n.d.). Retrieved from serviço de intervenção nos comportamentos aditivos e nas dependências: http://www.sicad.pt/PT/Dissuasao/SitePages/cdt.aspx

Domosławski, A. (2011). *Drug Policy in Portugal: The Benefits of Decriminalizing Drug Use.* Warsaw: Open Society Foundation.

European Observatory on Health Systems and Policies. (2017). *Portugal: Country Health Profile 2017, State of Health in the EU.* Paris: OECD Publishing.

Fast Facts: Certified Recovery Court Locations. (n.d.). Retrieved from Tennessee Department of Mental Health and Substance Abuse Services: https://www.tn.gov/behavioral-health/research/fast-facts/recovery-court-locations.html

Harris, J. (2019). *Opioids in Appalachia, The Role of Counties in Reversing a Regional Epidemic.* National Association of Counties and Appalachain Regional Commission.

Howe, M. (1977, January 18). Portugal, Ending Long Opposition, To Allow Production of Coca-Cola. *The New York Times*.

Huddleston, W., & Marlowe, D. B. (2011). *Painting the Current Picture: A National Report on Drug Courts and Other Problem Solving Court Programs in the United States.* Bureau of Justice Assistance U.S. Department of Justice, National Drug Court Institute.

Instituto Português da Droga e da Toxicodependência. (2000). *Annual Report on the Drug Phenomena.* Lisbon: European Monitoring Center on Drugs and Drug Abuse.

Instituto Português da Droga e da Toxicodependência. (2001). *Annual Report on the Drug Phenomena.* Lisbon: European Center for Drugs and Drug Addiction.

Instituto Português da Droga e da Toxicodependência. (2002). *Annual Report on the Drug Phenomena.* Lisbon: European Monitoring Center on Drugs and Drug Addiction.

Kane, K. (2015). Total Number of Courts Available by County Density Map. Georgia Accountability Courts .

Kleppinger, B. (2018, October 5). *A Missing Piece? Certified Drug Court for Boyle, Mercer Could Help Reduce Jail Population*. Retrieved from The Advocate Messenger : https://m.amnews.com/2018/10/05/a-missing-piece-certified-drug-court-for-boyle-mercer-could-help-reduce-jail-population/

Matusow, H., Dickman, S. L., Rich, J. D., Fong, M. C., Dumont, D. M., Hardin, C., . . . Rosenblum, A. (2014). Medication Assisted Treatment in US Drug Courts: Results from a Nationwide Survey of Availability, Barriers and Attitudes. *Journal of Substacne Abuse Treatment*, 473-480.

McCarty, D., Braude, L., Lyman, D. R., Dougherty, R. H., Daniels, A. S., Ghose, S. S., & Delphin-Rittmon, M. E. (2014). Substance Abuse Intensive Outpatient Programs: Assessing the Evidence. *Psychiatry Services*, 718-726.

Modelos, Repostas e Intervenções. (n.d.). Retrieved from serviço de intervenção nos comportamentos aditivos e nas dependências: http://www.sicad.pt/PT/Intervencao/TratamentoMais/SitePages/ModelosRespostas.aspx

Moody, L., Satterwhite, E., & Bickel, W. K. (2017). Substance Use in Rural Central Appalachia: Current Status and Treatment Considerations. *Journal of Rural Mental Health*, 123-135.

NC Recovery Courts Map. (2020, June). Retrieved from North Carolina Judicial Branch: https://www.nccourts.gov/assets/inline-files/NC-Recovery-Courts-Map-07282020.pdf?93qQhzETupDdZdJbWyFrQUOUyy6wUYvu

Operational Problem-Solving Courts in Maryland. (2020, October 28). Retrieved from Maryland Courts : https://mdcourts.gov/sites/default/files/import/opsc/pdfs/problemsolvingmap.pdf

Pollard , K., & Jacobsen, L. A. (2020). *The Appalachain Region: A Data Overview From the 2014-2018 Community Survey Chartbook.* Appalachain Regional Commission.

(2017). *Portugal Country Drug Report.* Lisbon: European Monitoring Center on Drugs and Drug Addiction.

(2018). *Portugal Country Drug Report 2018.* Lisbon: European Monitoring Center on Drugs and Drug Abuse.

(2019). *Portugal Country Drug Report 2019.* Lisbon : European Monitoring Center on Drugs and Drug Addiction .

Problem Solving Courts . (2021, February 26). Retrieved from The Unified Judicial System of Pennsylvania : http://www.pacourts.us/assets/files/setting-2502/file-3585.pdf?cb=b09ae1

Problem Solving Courts. (2020, April). Retrieved from NYCourts.gov: http://ww2.nycourts.gov/COURTS/problem_solving/opioid-courts-locations.shtml

Richard, E. L., Schalkoff, C. A., Piscalko, H. M., Brook, D. L., Sibley, A. L., Miller, W. C., . . . Go, V. F. (2020). “You are not clean until you're not on anything”: Perceptions of medication-assisted treatment in rural Appalachia. *International Journal of Drug Policy*.

Silvestri, A. (2015). *Gateways from Crime to Heatlh, Portuguese Drug Commissions* . Winston Churchill Memorial Trust, Prison Reform Trust .

South Carolina Commission on Prosecution Coordination. (2018, August 15). *Drug Court Costs & Diversion Prog. Recidivism Rates.* Retrieved from South Carolina Legislature : https://www.scstatehouse.gov/CommitteeInfo/HouseLegislativeOversightCommittee/AgencyWebpages/ProsecutionCoordination/Cost%20and%20Recidivism%20Rates%20for%20drug%20courts%20and%20other%20diversion%20programs.pdf

State of Mississippi Judiciary Administrative Office of Courts. (2020, October 29). Retrieved from Mississippi Drug Intervention Courts - Contact Information:

https://courts.ms.gov/trialcourts/interventioncourts/2020%20Intervention%20Courts%20database%20for%20website.pdf

Stewart, M. T., O'Brein, P. L., Shields, M. C., White, M. C., & Mulvaney-Day, N. (2019). *State Residential Treatment for Behavioral Health Conditions: Regulation and Policy Envirnmental Scan.* U.S. Department of Health and Human Services.

Substance Abuse and Mental Health Services Administration. (2021, January 27). *Become a Buprenorphine Waivered Practitioner*. Retrieved from Substance Abuse and Mental Health Services Administration: https://www.samhsa.gov/medication-assisted-treatment/become-buprenorphine-waivered-practitioner

The World Bank. (n.d.). *Portugal*. Retrieved from The World Bank | Data: https://data.worldbank.org/country/portugal

United States Department of Agriculture Economic Research Service. (2013). *2013 Urban Influence Codes.* Retrieved from https://www.ers.usda.gov/data-products/urban-influence-codes.aspx

Virginia Drug Treatment Court Dockets. (2021, March 29). Retrieved from Virginia's Judicial System: http://www.courts.state.va.us/courtadmin/aoc/djs/programs/sds/programs/dtc/general_info/dtc_directory.pdf

Wedell, K. (2019, Febuary 9). *This local drug court cut rate of new felonies by more than half.* Retrieved from Dayton Daily News: https://www.daytondailynews.com/news/local/this-local-drug-court-cut-rate-new-felonies-more-than-half/7bG2ivJC8GxRgh9NWl83GM/

West Virginia Adult Drug Courts FY 2021. (2020, September 15). Retrieved from West Virginia Judiciary: http://www.courtswv.gov/lower-courts/adult-drug-courts/ADCMap9-15-2020.pdf

Wheeler, D. L. (2021, April 3). Portugal. *Encyclopedia Britannica*.