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The Distribution of Opioid Settlement Funds in Northeast Tennessee

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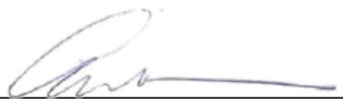

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Abstract

Opioid Use Disorder is defined by the NIH as "the chronic use of opioids that causes clinically significant distress or impairment."[1] Due to a number of factors, the overuse of opioids has become an epidemic in the United States. In recent years there have been a number of lawsuits against pharmaceutical companies and other parties who have benefitted from the proliferation of this issue. In most cases, it is up to the states or local governments who receive these funds to determine their best use. The purpose of this Thesis is to analyze the resources recommended by Ballad Health's Community Health Needs Assessments, and five additional panels of experts in this field, and to compare these recommendations with available resources, along with making recommendations for the distribution and use of funds coming from a number of lawsuits and settlements.

Background

Opioid Use Disorder (OUD) is defined by the NIH as "the chronic use of opioids that causes clinically significant distress or impairment."[1] It consists of an overpowering desire to use opioids, increased opioid tolerance, and withdrawal symptoms when discontinued. OUD includes dependence and addiction with addiction representing the most severe form of the disorder.[1] A patient is diagnosed with OUD if they have met at least 2 of the 11 the diagnostic criteria set by the DSM-5, within 12 months. The 11 criteria are listed below[1]:

- Continued use despite worsening physical or psychological health
- Continued use leading to social and interpersonal consequences
- Decreased social or recreational activities
- Difficulty fulfilling professional duties at school or work
- Excessive time to obtain opioids, or recover from taking them
- More taken than intended
- The individual has cravings
- The individual is unable to decrease the amount used
- Tolerance
- Using despite it being physically dangerous settings
- Withdrawal

The rate of death from overdoses of prescription opioids in the United States more than quadrupled between 1999 and 2010.[2] Overdose is now the leading cause of unintentional injury death in the United States, even surpassing motor vehicle deaths.[3] In the twelve month period from October 2020 to October 2021, the predicted number of drug overdose deaths nationwide was 105,752, and the reported number of deaths was 101,035.[4]

The overuse of opioids stems from a lack of awareness regarding the short term and long-term side effects of opioid use. Aggressive marketing practices from pharmaceutical companies has caused physicians to over-prescribe opioid medications.[5] In addition, pharmaceutical companies have engaged in unethical practices to ensure physicians prescribe their opioids. Physicians often receive additional payment from these companies, which encourages them to prescribe more of their drugs. In 2014, physicians who received meals from a pharmaceutical company were more likely to prescribe their opioid medications the following year. Nationwide 25,471 physicians reported payments for meals, which averaged $13.[5] Other forms of indirect persuasion included speaking fees and/or honoraria, travel, consulting fees, and education.[5]

The purpose of this Thesis is to examine the need for the use of evidence based practices in the Northeast Tennessee region of Appalachia, and make recommendations for new programs to fulfill that need. In 2018 overdose mortality rates for people ages 25–54 were 43 percent higher in Appalachia than the rest of the United States.[6] Factors that cause this epidemic to be worse in Appalachia are: higher rates of injury-prone employment, aggressive marketing of prescription pain medications to physicians, and an insufficient supply of behavioral and public health services targeting opioid misuse. Limited access to treatment along with high rates of poverty create a multidimensional threat to public health in the region. As a result, multidimensional intervention strategies are needed to address opioid misuse and overdose deaths in the region.[7]

One of the major health systems in Northeast Tennessee is Ballad Health. Ballad Health was formed in 2018 through the merger of Mountain States Health Alliance and Wellmont Health System. COPA, the Certificate of Public Advantage (Tennessee) & Cooperative Agreement (Virginia), is a legal agreement that governed the formation of Ballad Health. It was

created specifically to address the most critical healthcare needs of the communities in Northeast Tennessee and Southwest Virginia and was made possible through state oversight and was created with the support of local businesses, physicians, educators, and others who have a stake in improving the health of this region. The Ballad Health System consists 21 hospitals in Northeast Tennessee, Southwest Virginia, Northwest North Carolina, and Southeast Kentucky.[8]

Ballad Health has conducted individual Needs Assessments for 20 of its hospitals and medical centers to determine which areas of health they should focus on to better serve each of the communities. As a portion of these Needs Assessments, they have identified *Substance Abuse* as a Key Priority Area in 18 of the Needs Assessments, and have substance abuse as a main issue, either relating to mental health issues or ACEs for two of them.[9]

The *Ballad Health Community Needs Assessment* is an in depth community health needs assessment of the Ballad health region, conducted by Ballad Health from 2020-2021. Through a thorough analysis of the socioeconomic and environmental factors affecting residents of this region, Ballad Health aims to identify some top priority areas to better serve the needs of the region. The top three priority areas for Washington County are substance abuse, mental health, and adverse childhood experiences (ACEs). Along with identifying these priority areas, they made recommendations on how to better address these issues.[8] The recommendations made in the report to address substance abuse are listed in Table 1.

Table 1.

Law Enforcement Reform	Peer recovery programs in county jails.
Community Involvement	Recovery support in workplaces. Mobilize faith communities for faith-based initiatives to help individuals with addiction. Intensive treatment programs. Family programming Elevate the voice of those who have recovered/ are in recovery. Mental health support for homeless population.

MOUD Access	Consistent access to resources.
Safe Drug Use [Harm Reduction]	Needle Exchange Program Anti-stigma efforts.
Policy Changes	Increasing affordability of treatment. Policy changes to support syringe exchange programs and workplace recovery. Coordination of funding services.
Prevention in Young Populations	Mental health services for at risk populations. Prevention in teens. Identify root causes of ACEs. ACEs prevention. Infant mental health and healthy brain development programs/ education.
Health System Interventions	Long term care and follow up. Consistent access to resources. Train medical staff to better serve those with OUD. Community resources to connect with after emergency department.
Resource Coordination and Research	Coordination of funding opportunities and services.

Due to an increasing level of awareness from the public and from medical professionals about OUD and the ill effects of addiction, there have been several lawsuits against opioid manufacturing pharmaceutical companies in an attempt to curb this epidemic. These cases are being filed and heard all across the nation, and they are all based on two common allegations against drug manufacturers and distributors[10]:

- Pharmaceutical companies amplified the benefits and deemphasized the risks of their opioid medications and engaged in unethical marketing practices aimed at physicians through direct and indirect methods. [10]
- Opioid prescriptions were not detected, monitored, reported, or investigated for suspicious prescriptions by pharmacies and drug distributors. [10]

In July 2021, Cardinal Health, AmerisourceBergen, and McKesson, three of Americas largest drug distribution companies, came to a $21 billion settlement in response to three

thousand cases filed against them from states, counties, cities, and health agencies across America.[11] These three corporations are responsible for supplying a majority of the drugs found in American pharmacies. They have agreed to pay out $21 billion over the next eighteen years. Johnson and Johnson, which is the leading importer of raw opium, which is then used by other American drug manufacturers, has agreed to pay $5 billion over the next five years, for "misleading doctors and patients about these drugs' potential for addiction."[11] This money will be paid to the participating 42 states, five territories and Washington, D.C., and individual cities and counties within these states will have the opportunity to participate by January 2, 2022.[11,12] These funds will only be used for prevention and treatment measures.[11] On February 25, 2022, the combined $26 billion settlement among Cardinal Health, AmerisourceBergen, McKesson, and Johnson and Johnson was finalized, and money will begin to go out to the 46 participating state and local governments as early as April 2022.[13]

The Purdue Pharma litigations and bankruptcy case are another example of a national level legal operation in the matter of prescription opioids. Purdue Pharma is the manufacturer of OxyContin, a highly addictive pain medication.[14] They have played a central role in the advancement of the opioid epidemic. Purdue Pharma, downplayed the addictive properties of OxyContin for years and engaged in influential marketing campaigns which resulted in physicians over-prescribing it.[15] In September 2019 Purdue Pharma filed for bankruptcy in response to a number of lawsuits filed by state and local governments, tribes, hospitals, and individuals, to address a public health crisis that has led to the deaths of more than 800,000 people nationwide, since 1999.[15,16] The owners of Purdue Pharma, the Sackler family, will be turning over $4.5 billion over nine years to settle opioid claims. There are several states that have

decided to appeal the ruling because the Sackler family is exempt from any liability, and still remains one of the richest families in the world.[15]

Funds described in the previous four paragraphs are going to be distributed to states, cities, and counties that participated in the overarching opioid multi-district litigation. Other, smaller lawsuits have been filed against individual companies by many different cities and counties. The Northeast region of Tennessee filed one such lawsuit against Endo Health Solutions Inc. and Endo Pharmaceuticals Inc. in the name of Tennessee Baby Doe. "Baby Doe" is meant to represent all the children born in Tennessee with Neonatal Abstinence Syndrome (NAS).[17] Babies who are exposed to opioids in utero will develop NAS and might show symptoms of withdrawal anywhere from a few minutes to a few days after birth. In 2016, 26 out of every 1,000 babies born in East Tennessee were diagnosed with NAS.[17] NAS has become a secondary epidemic to the overarching opioid epidemic in Tennessee. NAS has increased tenfold in the decade since the year 2000.[17] In July 2021, a $35 million settlement was reached with Endo Health Solutions Inc. and Endo Pharmaceuticals Inc after four years of litigations.[18] This is the highest settlement that Endo has agreed to pay until now. Unlike other opioid settlement funds, a portion of the money coming in from this settlement will be paid directly to the plaintiffs, and will be distributed among the participating counties and cities based on population. Additionally, there are no restrictions on how this money is to be spent as, "The municipalities understand their particular needs better than anyone else, and they can direct these funds to the areas and projects where they are the most needed."[18] Originally Purdue Pharma and Mallinckrodt were also included in this lawsuit, but both of them declared bankruptcy.[18]

Since there are several funding sources in the near future from opioid litigations, and because the need for expansion of evidence-based services in the region is known to be high, this

thesis analyses existing expert recommendations for ways to spend these funds and compare them with what is already available in our region, to make recommendations on how these funds can best be used to address the unique needs of this population.

Literature Review

Several organizations and expert panels have examined the state of opioid use and OUD treatment in America and specifically in the Appalachian region. Below is a table listing the recommendations made in five prominent studies.

The FXB Center for Health and Human Rights at Harvard University, Doris Duke Charitable Foundation, First Focus on Children, and Open Society Foundations convened a group of experts in public health, harm reduction, drug policy, and child welfare in Spring 2020 to share ideas on how to direct the opioid litigation settlement funds toward structural and policy reform that advances public health and health equity. *From the War on Drugs to Harm Reduction: Imagining a Just Overdose Crisis Response* released on December 16, 2020, as a result of this partnership. Their main focus was on two areas: improve the health and wellbeing of those with opioid dependence and prevent opioid use by addressing factors that cause addiction and dependence.[19] The specific recommendations from this report are listed in the table below.

Creating a Culture of Health in Appalachia - Disparities and Bright Spots was published in April 2019, through the joint efforts of The Robert Wood Johnson Foundation (RWJF) as part of its Culture of Health Initiative, Appalachian Regional Commission (ARC), and The Foundation for a Healthy Kentucky. Researchers from the Center for Rural and Appalachian Health in the College of Public Health at East Tennessee State University (ETSU), along with

researchers at NORC at the University of Chicago's Walsh Center for Rural Health Analysis, partnered to develop the brief. This brief is dedicated specifically to summarizes statistics on opioid misuse and overdose deaths in Appalachian communities, discuss key strategies and resources for addressing opioid misuse and overdose deaths, and provide recommendations for community leaders, funders, and policymakers. There are five general recommendations being made:[7] 1.Prevent opioid misuse.

2.Increase access to treatment for opioid use disorder.

3.Implement harm reduction strategies to reduce the consequences of OUD.

4.Support long-term recovery of OUD.

5.Implement community-based solutions to prevent substance misuse.

Specific implementation strategies for these recommendations are summarized in the table below.

Bringing Science to Bear on Opioids is the outcome of a yearlong extensive review of scientific literature and consultation with experts, by the Task Force on Public Health Initiatives to Address the Opioid Crisis (chaired by thesis advisor Dr. Pack) assembled by the Association of Schools and Programs of Public Health (ASPPH). It consisted of recognized experts in the field, from both within the ASPPH membership as well as from related academic fields. Their goal was to define "public health approaches" for the prevention and treatment of OUD and the mitigation of other consequences of opioid use; describing how such approaches should be assessed and clarifying for policy makers why such approaches are essential and how they complement other policy initiatives that address harmful substance use; and identifying a range of initiatives that reflect such an approach. The findings were published in November 2019 alongside a companion editorial in JAMA.[3]

Unlike the other reports, *Principles for the Use of Funds from the Opioid Litigation,* from the Johns Hopkins Bloomberg School of Public Health outlines five principles rather than recommendations that policymakers should abide by when determining the optimal use of settlement funds. This report aggregates existing evidence-based reports and synthesizes recommendations from the other reports to define its principles. Published in January 2021, they use the most up to date data on the opioid crisis in the nation and use the tobacco litigations of the 1990s as a guide for what should be done differently to ensure funds are used appropriately to solve this issue.[20]

Evidence Based Strategies for Abatement of Harms from the Opioid Epidemic attempts to provide a framework for the distribution of the anticipated funds that will be dispersed over the next few years from a number of high profile litigations. A team of experts from across the nation was congregated by Arnold Ventures, a nonpartisan philanthropy with the goal of "consolidating existing research, providing concrete, practical recommendations to policymakers on how to pay for what works in an array of different systems.[10]" This report includes in depth analysis of the costs that would be associated with the implementation of the recommendations being made, and of the six reports being analyzed, this is the lengthiest and most in depth analysis.

Table 2.

	From the War on Drugs to Harm Reduction: Imagining a Just Overdose Crisis Response (December 2020)[21]	**Creating a Culture of Health in Appalachia - ARC (April 2019)**[7]	**Bringing Science to Bear on Opioids (Nov 2019)**[3]	**Principles for the Use of Funds from the Opioid Litigation (January 2021)**[20]	**Evidence-Based Strategies for Abatement of Harms from the Opioid Epidemic (November 2020)**[10]

Law Enforcement Reform	Ending punitive approaches to drug use and reform the criminal legal system. Naloxone training for arrested, detained, incarcerated, and post-incarcerated individuals.	Address SUD in county jails Increase and promote drug courts.	Collaborative model with law enforcement (i.e., RxStat in New York) Develop policies and practices aimed at drug users. Collaboration between health providers and law enforcement to ensure continuity of care after discharge from jail/prison/drug court.	Diversion from arrest and incarceration by increasing community-based services like housing, employment, and recovery support.	Train first responders (EMS, fire and rescue, law enforcement) to carry and use naloxone. Train state and local court, corrections, and community corrections staff on opioid treatment services, medications, and recovery supports. Ease access to OUD treatment for incarcerated and detained people.
Community Involvement	Community-based distribution of naloxone and naloxone training. Investments in community development programs and removal of abstinence-only conditions.	Peer recovery/ support programs. Community training for naloxone administration. Identify and address social determinants of health that may prevent recovery. (sober housing programs, workplace support, etc.) Create multi-sector, community-based coalitions.	Elevate the voice of those in recovery.	Report to the public on where the money is going. Present reports so it is easy for the general population to understand the measures used to determine success/ failure of programs. Involve community members in solutions. Address root causes of addiction in minority communities.	Self-help/ mutual support groups (Alcoholics Anonymous, Narcotics Anonymous)
MOUD Access	Set up a find to bulk-purchase naloxone and Medication Assisted Treatment	Expand naloxone programs and access. Improve MAT by easing	Expanded access to medication for OUD.		Increase accessibility to naloxone for at risk populations, by easing restrictions on prescribing,

	(MAT) medications at lower prices. Expanded access to evidence-based treatment programs.	access to *methadone, buprenorphine*, and naltrexone.	Approve an over-the-counter form of naloxone.		dispensing, and possessing naloxone.
Harm Reduction	Increased community-based distribution of safer use supplies (syringes). Low threshold services.	Needle Exchange Program Safe Drug Disposal- to prevent misuse and diversion of expired and unused medications.	National level anti-stigma efforts, Syringe services programs (SSP), Supervised injection facilities (SIFs)	Anti-stigma campaigns. Community based harm reduction programs that promote health to drug users.	Syringe services programs Supervised drug consumption sites. Naloxone distribution and access Education on prevention/ transmission of hepatitis C and HIV. Anonymous hepatitis C and HIV testing. On-site drug treatment or referrals to that treatment.
Policy Changes	Expanded (Medicaid) funding for drug user services.	Ensure compliance with existing guidelines on opioid prescribing. Policies to expand naloxone training.	Prohibit/ limit marketing of opioids to physicians, health systems, law enforcement, justice systems. Ease the process of prescribing medications for OUD. Change FDA process of approving pain medications to include the analysis of effects on public health.	Establish guidelines for the use of the money, so it is not used for investments that do not relate to the OUD epidemic. If possible, accept payment over time rather than an upfront lump payment, to ensure money is spent over time rather than all at once. Enact state and local policy changes to	Insurer drug supply management policies - Prior Authorization (PA) programs, particularly for Medicaid.

			Discontinue opioid use for minor, non-cancerous pain. Include more alternative pain management programs in federal healthcare plans. Follow guidelines from the National Academies of Sciences for the approval of opioid products, and to gradually remove unsafe opioid products form the market.	implement evidence-based models. State regulations should not be more restrictive than federal guidelines. Eliminate discriminatory policies.	
Prevention in Young Populations		Prevent/ treat neonatal abstinence syndrome (NAS) School-based interventions that teach about resisting substance use (Too Good for Drugs, Students Against Destructive Decisions) Identify at-risk youth. Peer-recovery programs	Anti- stigma and harm reduction efforts Implement dynamic campaigns to educate the public about opioid misuse and treatment options.	Invest in youth primary prevention intervention programs. Conduct long term evaluation of such programs to monitor effectiveness.	Family therapy for adolescents. Behavioral therapies
Addiction Treatment Services	Anti-stigma training for healthcare providers. Compassionate pain management training.	Increase providers of MAT through project ECHO Telehealth Include behavioral	Anti-stigma training for health professionals Evidence based harm reduction programs.	Improve data collection capacities of local public health departments to better monitor the effectiveness	Personalized treatment plans based on patient history and severity of OUD. Treatment would include evidence-based medications, behavioral therapies,

		health in primary care and emergency department settings.	Train peer-support specialists. Formal public health training focused on OUD. Telehealth Additional training for pharmacists to identify and assist patients with OUD.	of programs and policies. Determine areas of need, specific to the community being served. Include a diverse range of people in the planning of services (social services, prevention and treatment providers, law enforcement, community leaders, etc.)	and recovery support services with the goal of engaging patient participation, initiating clinically managed recovery and supporting transition to self-managed recovery. Continuity of care across the various types of addiction treatment settings. Providers should be connected to a network of care that facilitates referrals and coordination. Clinical health system interventions that notify providers of higher-risk patients.
Resource Coordination and Research	National anti-stigma campaign. Pharmaceutical opioid supply monitoring. A non-profit foundation for national-level response coordination and non-governmental watchdogging.	Prescription Drug Monitoring Programs (PDMP)	Improve metrics on all dimensions of the epidemic, like surveillance and prevalence of OUD, fatal and nonfatal overdoses, access to treatment, and the outcomes of opioid use. Create national open data sharing center for substance abuse, based on FAIR data standards (findable, accessible, interoperable, reproducible). Standardize and expand observational		Prescription Drug Monitoring Programs (PDMP)

			epidemiological surveillance tools. Collaboration between institutions for an effective, coordinated approach.		

There are eight main points that each of the reports focusses on as a means of reducing the Opioid Use Disorder epidemic in the US. The implementation and execution of these key points is where the funds from opioid related litigation settlements should be distributed.

Summary of Key Points

For Law Enforcement Reform, the ground level focus should be on improving access to naloxone and training on how to administer it. Prison officers along with first responders should be familiar with these elements. The law enforcement should ideally be working alongside public health officials to devise multilayered interventions to prevent, detect, and treat OUD. Law enforcement should not be used as a means to punish those who live with addiction. Instead, drug courts should be more accessible and a viable option for those who suffer from addiction. Continuity of care upon discharge is a commonality between all of the reports, along with training for law enforcement and prison officers.

Recovery support groups are recommended as a method of community involvement. Involving local community leaders and members in decision making about resources and funding is important in identifying areas of need and at-risk populations. *Bringing Science to Bear on Opioids* particularly recommends elevating the voices of those who are in recovery or have already recovered. *Principles for the Use of Funds from the Opioid Litigation* even recommends

publicly disclosing the spending of the funds to allow public determination of the success or failure of programs.

Another key recommendation is increasing MOUD access and availability. This includes naloxone and methadone. Lowering prices of these treatments is key. Harm reduction practices like syringe exchange and drug disposal sites were recommended by all the reports. *Bringing Science to Bear on Opioids* also encourages supervised injection sites, as a means of anti-stigma and harm reduction.

Expanding Medicaid funding for drug users is suggested by both *Evidence-Based Strategies for Abatement of Harms from the Opioid Epidemic* and *From the War on Drugs to Harm Reduction: Imagining a Just Overdose Crisis Response. Principles for the Use of Funds from the Opioid Litigation* recommends that there should be guidelines for distributing and using incoming funds. One key suggestion is that payments should be accepted over time rather than as an upfront lump amount, to make sure the money is spent over time rather than all at once.

For youth prevention it is key that we invest in anti-stigma and prevention programs, along with family and behavioral therapies. *Creating a Culture of Health in Appalachia* emphasizes the need to invest in prevention and treatment of Neonatal Abstinence Syndrome. The Baby Doe settlement funds should contribute mainly to this effort. For long term prevention, it is key that we invest in primary prevention interventions, and monitor their effectiveness, as suggested by *Principles for the Use of Funds from the Opioid Litigation.*

A high priority area in all the reports is anti-stigma and additional OUD training for healthcare providers. There is an emphasis on personalized treatment plans and continuity of care. Drug Monitoring Programs are recommended by all of the reports. Data sharing is particularly emphasized by *Bringing Science to Bear on Opioids,* which recommends improving

surveillance methods to improve knowledge on the epidemic in general, along with institutions coordinating their approach to address the issue as a united front.

Methods

I first studied the six reports and then looked for evidence that any of these recommendations have already been implemented in the Ballad Health region. I attempted to identify gaps in the findings for a gap analysis. Where we find the gaps, we will make new recommendations at the end.

Results: What is available?

Law Enforcement/ Judiciary

There is an acceptable distribution of drug courts in the 21 counties that are served by Ballad Health. Hancock County does not have a drug court located within its borders.[22] Currently the Tennessee Department of Mental Health and Substance Abuse Services provides Alcohol and Drug Addiction Treatment (ADAT) for those who are convicted on DUI, and Supervised Probation Offender Treatment (SPOT) for those on supervised probation.[23] The services offered by these programs include outpatient, intensive outpatient care, halfway house, social detox, and medically monitored detox.[23] In the fiscal year 2018, the government of Tennessee passed the Pre-Arrest Diversion Infrastructure Program, which invested $15 million in redirecting those with mental illness and substance abuse from the criminal justice system, to community based support and treatment.[23] As a result of this program, 7,180 individuals were redirected to community support. 4,951 law enforcement officers were trained on mental health topics.[23]

Day Reporting/ Community Resource Centers were implemented by the Public Safety Act of 2016 by the Tennessee Department of Corrections. This is a prison diversion program for high risk, high need, felony offenders with addiction, to help them become productive members of their community. Reporting an offender to a Day Reporting/ Community Resource Center costs $41.00 per day, while incarceration costs $79.00 per day.[24]

Community Resources

There are 46 community-based coalitions across Tennessee that have been working since 2008 to raise awareness on the ill effects of substance abuse. They use SAHMSA's guidelines for strategic prevention framework.[25] Several faith-based organizations work to help members who are suffering from substance abuse. In the Ballad Health area, *Uplift Appalachia* is one such group that provides education and training to churches to help them better serve their patrons who suffer from addiction.[26] *Adoration Life* is a non-profit public benefit ministry, through their *Restore Appalachia* initiative, they promote recovery support through churches.[27,28]

A community support source that Ballad has initiated is the PEERhelp Certified Peer Recovery Helpline.[29] Along with a 24/7 helpline, this group meets virtually and is a peer support group for those recovering from addiction.[29]

In 2020, the First Tennessee Development District (FTDD) received $1.3 million from the Department of Labor through their Workforce Opportunities in Rural Communities (WORC) grant to fund the Caring Workplace Initiative. This initiative helps recovering people re-enter the workforce.[30]

Another program in Tennessee is the Tennessee Recovery Navigators. These are people in long-term recovery that reach out to patients in hospitals who are receiving addiction

treatment to share their experience.[31] These individuals go through Certified Peer Recovery Specialist (CPRS) training. In 2021, 21 counties and 43 hospitals were served.[31] This program is an excellent way to elevate voices of those who are in recovery and include them in the process. Additional Mutual Aid Organizations are listed in the table below.

Mutual-Aid Organizations:
•Dozens of mutual aid organizations exist in the region including NA/AA, Celebrate Recovery, etc; Coordinated by Lifelines program from TDMHSAS; Local expert is Jason Abernathy •SMART Recovery groups at the Johnson City Day Center •Crossroads Community Support Group | Pathways to Recovery- Rogersville, TN (Jennifer N Jones, CPRS-TN |CPRS, RPRS-VA) •SMART Recovery at the Flag- Rogersville, TN (Jerame Nerren, CPRS-TN) •The Women's Way Support Group 12 Step- Rogersville, TN (Sue Vorhees) •Multiple virtual mutual aid meetings through Ballad Health's PEERhelp program •Christ-Centered Recovery by re:generation •Recovery and Counseling Program by Red Legacy Recovery •Uplift Appalachia provides trainings to churches •Al-Anon Family Group Meetings in the Tri-Cities (Johnson City/Kingsport/Greenville: Cumberland Pres Church, Greeneville Library, Harrison Christian Church, Covenant Pres Church, Renaissance Center, Watauga Assoc. of Baptists) •DAA •ETIAA AA (Alcoa, Bristol TN/VA, Clinton, Cosby, Damascus, Church Hill, Elizabethon, Erwin, Gatlinburg, Gate City, Knoxville, Greeneville, Harrogate, Johnson City, Kingsport, Kingston, Powell, LaFollette, Lenoir City, Loudon, Maryville, Maynardville, Morristown, Mountian City, Oak Ridge, Norris, Oneida, Oliver Springs, Rockford, Piney Flats, Rockwood, Rogersville, Rutledge, Sevierville, Seymour, Strawberry Plains, Tazewell, Townsend, Ten Mile) Celebrate Recovery, Meetings in Elizabethton, Johnson City, Kingsport, Chuckey, Boone (NC), Bristol (TN/VA), Bakersville (NC), Greeneville: Hosannah Fellowship, Crossroads Christian Church, Caldwell Springs Baptist Church, Preaching Christ Church, Bloomingdale Baptist Church, First Baptist Church, Liberty Free WIll Baptist Church, Christ Fellowship, Tennessee Ave Baptist Church, Crossroads United Methodist Church, Alliance Bible Fellowship, Highlands Fellowship, Midway Baptist Church, The City Center, Higgins CR, Bear Ceek CR, Greeneville FIrst Church of God, Christian Unity Baptist Church

MOUD Access and Harm Reduction:

Tennessee has 20 Regional Overdose Prevention Specialists (ROPS) operating across 13 regional divisions. The Tennessee counties covered by Ballad Health are grouped together as Region 1 and have only one Regional Overdose Prevention Specialist allocated.[32] ROPS are responsible for naloxone training for first responders, individuals at high risk of overdose, friends and family of high-risk individuals, and agencies/ organizations that provide treatment

and recovery services or community resources. Additionally, other community members who wish to be trained should receive training.[32] Other areas of focus for ROPS are harm reduction, anti-stigma efforts, and public awareness. They also distribute naloxone. From October 2017 to June 2021, ROPS across Tennessee distributed more than 206,000 units of naloxone and trained more than 200,000 individuals on naloxone use, brain science of stigma, and compassion fatigue.[32]

There are a number of treatment clinics that provide MAT, including Overmountain Recovery, High Point Clinic, Frontier Health, East Tennessee Recovery, and Catalyst Health Solutions. Characterizing the treatment spaces would be beyond the scope of this report. Here is a table of many treatment services, recovery residencies, etc., that exist in the region.

Recovery Residencies	**Medical Treatment Services**	**Harm Reduction Organizations**
•Oxford House •Magnolia Ridge (Frontier) •Willow Ridge (Frontier) •Adult Residential Treatment by Comprehensive Community Services •Recovery Resources; Families Free; Frontier Health Housing •Frontier Health Victory Center •Families Free Storie House and Apartments transitional housing/Women & Children, TNDMHSAS/TDOH •Recovery Resources Supportive transitional housing for males •Comprehensive Community Services (CCS)- Johnson City, TN | Kingsport, TN |Greeneville, TN •Strong Futures •Honeysuckle Studios (with Hope Center - Greeneville) •Holston Home Center for mothers with children (Greeneville) •TDOC Approved Transitional Housing (NE TN only): Abundant Hope Ministry, Adult & Teen Challenge Great South, Angelic Ministries, Beauty 4 Ashes Freedom House, Blue Monarch, Bread of Life, Chance House, Coker Hall, Crossroads Transitional House, Emmanuel House, FMD Transitional, Eternal Life Restoration Outreach, Focus Hope House, Focus Ministries Faith House, Focus Ministries Freedom House, Friends House Ministries, Graduate Hall, HELP House, Haven of Rest Rescue Mission, House of Refuge, Independence Again, Irongate Recovery, Integrity House,	•Appalachian Counseling •Outpatient Treatment by Comprehensive Community Services •Catalyst Health Solutions •East TN Healthcare Holdings Overmountain Recovery •Outpatient treatment by Frontier Health •ETSU Family Medicine/Addiction Fellowship & OB/GYN •SAPT Block Grant Treatment Providers and Services TN Dept of Mental Health & Substance Abuse Services •Families Free Gender specific Male/Female, IOP Sullivan, Johnson, Washington & Carter counties, TNDMHSAS, Mental Health Services & Medication Management,	•Red Legacy applying for SSP for Carter County (new) •Regional Overdose Prevention Specialists at SCAD and SCORT (Sullivan county overdose response team) •Syringe Services by Live Free Claiborne •STEP TN by Cempa Community Care co-located at ETSU Center of Excellence for HIV/Aids Treatment (Johnson City) •Never Use Alone •PEERhelp Program/Ballad Health

Lazarus Project, Launch Pad, Lucious E. House of Light, Miracle Lake, Never Alone Recovery, Next Step, NSI Noon House, Open Door Recovery, Primary Purpose Recovery, Priority House, Reconciliation Resources Recovery Living, Recovery Trail, Recovery Soldiers, Renew for Women, Renovatus, Rick Ingram Ministries, Safe Harbor New Market, Springs of Life, Steps House Inc. Program, Straightway Ministry, The Mend House This is Living Ministries, True Purpose Ministries, Union Gospel Mission, Volunteers for Recovery, Women of Hope, YWCA"	Vivitrol •Overmountain Recovery-Johnson City, TN •ReVida recovery •ETSU Harm Reduction	

Policies

Public Chapter 1039 strengthens existing guidelines for physicians for the prescription of opioids. It limits initial prescriptions to a three-day supply, along with lowering maximum dosage guidelines. Cancer treatments and major surgical operation are exempt from these rules.[33] *Public Chapter 1040* is related to the judiciary. It encourages incarcerated people to participate in substance abuse and treatment programs. It also establishes the inclusion of several synthetic opiates to the controlled substance categories, to improve the monitoring and penalization of synthetic opioid distribution.[34]

Youth Prevention

The Strong BRAIN Institute (Building Resilience through ACEs Informed Networking) at ETSU is funded through a five-year donation from Ballad Health. The Strong BRAIN Institute aims to engage in the study of adverse childhood effects and promote a trauma-informed citizenry and workforce in the Appalachian Highlands region and beyond.[35]

Adoration Life was founded by local college students and college graduates in 2017. By uniting churches on one campus, they strive to bring unity in the approach that faith-based organizations take on drug abuse in the Appalachian region.[28]

Youth prevention services from the region are listed in the table below.

Adolescent Recovery Services:	**Recovery High Schools:**
•Student Assistance Program by Frontier Health •Therapeutic Family Services by Families Free •Comprehensive Community Services Adolescent Treatment Program (The Farm) •Adventure Program Adolescent IOP by Frontier Health •Steppenstone Youth Treatment Center- Limestone, TN (specific to children and adolescents that have also experienced and/or demonstrated sexual abuse) •Comprehensive Community Services (CCS)- Johnson City, TN | Kingsport, TN |Greeneville, TN •Joyful Life Private Recovery Services-Morristown, TN •Helen Ross McNabb Center- Morristown, TN •Camelot of NE Tennessee- Kingsport, TN | Morristown, TN | Greeneville, TN •PEERhelp Program/Ballad Health (Coming Soon: Select NE TN School Systems) •Healthy Transitions - Frontier Health Greene County •Freewill Baptist Residential Group Home	•None in NE Tennessee •There is one in Nashville called Ridgecrest Academy

Addiction Treatment Services

High Point Clinic, located in Northeast Tennessee is a non-profit Medication Assisted Treatment Clinic. They provide naloxone prescriptions and counselling services for addiction patients, along with education for pregnant women regarding Neonatal Abstinence Syndrome. They also provide rotations and anti-stigma training for ETSU medical students.[27]

Overmountain Recovery is another outpatient opioid treatment facility which offers MAT through methadone and suboxone in Johnson City, TN. Along with medication, they provide support in other facets of treatment, such as behavioral therapy, individual and group counselling, and access to housing and job support.[36,37] Overmountain Recovery is a joint project of Ballad Health, East Tennessee State University's Addiction Science Center and Frontier Health. Education, outreach, prevention, and research are also their areas of focus.[36]

Frontier Health is a leading provider of mental health and substance abuse treatment in the region. They have a MAT program with multiple locations across the region. They also operate telephone crisis response hotlines for Tennessee and Virginia.[38,39]

Catalyst Health Solutions is another addiction treatment facility in the Northeast Tennessee and Southwest Virginia region which utilizes MAT and provides patients with psychiatric support, OB/GYN, individual and group counseling, and social work. They are funded by the Tennessee Department of Mental Health and Substance Abuse Services and are not affiliated with Ballad Health.[40]

ETSU's Addiction Science Center is involved in a multifaceted approach to combatting the issue of OUD in the region. Along with their involvement with Overmountain Recovery, they facilitate a Prescription Drug Abuse/Misuse (PDA/M) Working Group that is composed of physicians, pharmacists, social workers, researchers, research staff and masters, professional and doctoral graduate students.[41]

Resource Coordination and Research

Unite Tennessee is a branch of the Unite Us' network. [42] It is a partnership between Ballad Health and the STRONG Accountable Care Community. The health and social service providers who take part are able to improve community health by sharing referral information with one another at no cost to community-based organizations. Resources are accessible across state lines. Ballad Health is one of the main funding partners for *Unite Tennessee*.[42]

ETSU's Addiction Science Center is involved in research for the OUD epidemic. The PDA/M Working Group meets monthly and brings together scholars, physicians, pharmacists, students, and researchers to coordinate opportunities for research, education, outreach and development. Research is a key area of focus for this organization. Some of their research projects include a collaboration with Virginia Tech, funded by The National Institute on Drug Abuse to advance recovery support.[43] They also have a number of state funded projects,

including the Tennessee Opioid SBIRT (Screening Brief Intervention and Referral to Treatment) Project, which aims to screen patients to identify at risk individuals and provide them with brief interventions and treatments.[44]

The Opioid Research Consortium of Central Appalachia (ORCCA) is a collaboration between a number of community, educational, and research institutions in Central Appalachia to facilitate collaborative research in the area of opioid treatment and prevention. The founding organizational partners for ORCCA are Ballad Health, ETSU, the University of Tennessee at Knoxville, West Virginia University, Carillion Clinic, Marshall University, the Fralin Biomedical Research Institute at Virginia Tech, and the University of Kentucky.[45]

Discussion

There is a moderate need for a greater number of drug courts. The Pre-Arrest Diversion Infrastructure Program in Tennessee is considered a success. This program should be expanded to include substance abuse training for law enforcement officers, specifically for opioids and naloxone training.

The ROPS system is an effective one. Yet, the high population that the single specialist is expected to serve is very high, and that may be a limiting factor in the outreach and training they perform. The number of ROPS should be increased to better suit the level of attention required by specific counties and communities. Another state program that should be expanded is the Tennessee Recovery Navigators program. Due to its success, it was expanded further in 2019, and based off of figures from 2021, the program deserves to be more prominent and reach more individuals who may benefit from peer support.[31]

Additional syringe exchange services and supervised injection sites like STEP TN and Never Use Alone need to be expanded to serve a wider population and be more accessible to those who suffer from addiction.

There are a lot of initiatives that Ballad Health is involved with through partnerships with other regional organizations such as Frontier Health, Overmountain Recovery, the Addiction Science Center, and High Point Clinic, but there needs to be a system to connect them all so they can better serve the community by coordinating their resources and research.

For youth prevention, a significant issue faced by Northeast Tennessee is Neonatal Abstinence Syndrome (NAS). Ballad Health has a Neonatal Special Care Unit for the treatment of babies born with NAS.[46] Although the rate for babies born with NAS in Northeast Tennessee is gradually declining, in 2020, Hawkins county, Sullivan county, and Carter county all had NAS rates greater than 45 per 1000 births, and Washington county had a rate greater than 15 per 1000 births.[47] These rates indicate that additional interventions are needed in prevention and treatment of NAS. A significant portion of the funds being received from the Baby Doe settlements should be used in this area, as this was the main focus of the lawsuit.

A resource for youth treatment that is missing from our area is recovery high schools. Recovery high schools are high schools that are specifically for students who are recovering from addiction. Their curriculum meets diploma requirements set by the state, along with additional education in recovering from substance use. Students participate in a personalized recovery program.[48] East Tennessee does not have such an institution.

Conclusion

The three final recommendations I would give for the use of opioid litigation funds for the Northeast Tennessee region are first, investing in youth prevention and treatment, through further investing in neonatal abstinence syndrome education and prevention, and by establishing recovery high schools. Second, expanding harm reduction programs like STEP TN, to cover more areas and serve more people who are in need of harm reduction services. Finally, having organizations like ORCCA and the Addiction Science Center share their resources and research, to create a more united front in combatting the opioid epidemic. Directing incoming settlement funds to investing in prevention, expanding existing services, and sharing resources and research are the three ways in which the opioid epidemic can be mitigated in Northeast Tennessee.

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