

REDACTED

COMMONWEALTH OF MASSACHUSETTS
SUPREME JUDICIAL COURT

NO. SJC-12279

COMMONWEALTH

v.

JULIE ELDRED,
DEFENDANT-APPELLANT

BRIEF ON BEHALF OF
THE MASSACHUSETTS MEDICAL SOCIETY,
AMICUS CURIAE, JOINED BY:
THE AMERICAN ACADEMY OF ADDICTION PSYCHIATRY,
THE ASSOCIATION FOR BEHAVIORAL HEALTHCARE,
THE GRAYKEN CENTER FOR ADDICTION MEDICINE AT BOSTON
MEDICAL CENTER,
THE MASSACHUSETTS ORGANIZATION FOR ADDICTION RECOVERY
(MOAR),
THE MASSACHUSETTS SOCIETY FOR ADDICTION MEDICINE,
NORTHEASTERN UNIVERSITY SCHOOL OF LAW'S CENTER FOR HEALTH
POLICY AND LAW,
AND 28 ADDITIONAL AMICI CURIAE
AS DESCRIBED IN THE STATEMENT OF INTEREST

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INTRODUCTION

Amici are medical and public health policy professionals and organizations with expertise relevant to the interface of criminal justice and substance use disorder (SUD) who seek to educate the Court about the science within their area of expertise that bears upon the issue the Court must decide.

There is medical consensus that SUD is a chronic brain disease involving continued use of a substance despite negative consequences. Relapse is a symptom of this complex condition that requires a therapeutically informed response. Amici agree that a person suffering from SUD cannot simply be ordered into remission.

STATEMENT OF INTEREST OF AMICI CURIAE

The ***Massachusetts Medical Society***, with some 25,000 physicians and student members, is dedicated to educating and advocating for the patients and physicians of Massachusetts, with a strong emphasis on supporting evidence-based, patient-focused approaches toward battling the opioid crisis in the Commonwealth and across the country. The Society, under the auspices of NEJM Group, publishes the New England Journal of Medicine, a leading global medical journal

and web site, and Journal Watch alerts and newsletters covering 13 specialties. Founded in 1781, MMS is the oldest continuously operating medical society in the country.

The ***American Academy of Addiction Psychiatry*** (AAAP) is the professional membership organization for learning and sharing about the art and the science of Addiction Psychiatry research and clinical treatment. AAAP's mission is to promote evidence-based screening, assessment, and treatment for substance use disorders and co-occurring mental disorders and to translate and disseminate evidence-based research to clinical practice and public policy.

The ***Association for Behavioral Healthcare*** (ABH), located in Needham, Massachusetts, is the leading statewide association with four decades of experience advancing, promoting and preserving community-based mental health and addiction services for individuals and families. ABH creates strategies that positively change public policy through legislative, budgetary and regulatory advocacy. ABH identifies and impacts emerging issues relating to mental health and addiction treatment services.

The **Grayken Center for Addiction Medicine at Boston Medical Center** (BMC) strives to become the premier health institution transforming creative programs into groundbreaking clinical care innovations and prevention strategies, driving efforts to end the addiction crisis. The work builds on BMC's long history as one of the most comprehensive and influential treatment centers for addictions in the country, with tailored programs for the spectrum of types of patient and care settings. Addiction experts at BMC work regularly with government officials and other partners to advise on how government could best address the rapidly increasing crisis. They have developed curriculum for physicians on safe prescribing, have worked with the Massachusetts Department of Public Health to develop effective overdose prevention programs and been leaders in the work to expand access to naloxone to reverse opioid overdose.

The **Massachusetts Organization for Addiction Recovery** (MOAR) is a statewide nonprofit organization founded in 1991 that has grown to more than 3,000 people participating to spread a message of the power of recovery. Our mission is to organize recovering

individuals, families, and allies into a collective voice to educate the public about the value of recovery from addictions. We envision a society in which addiction is treated as a significant public health issue and the value of recovery is recognized in all of our communities.

The ***Massachusetts Society of Addiction Medicine*** (MASAM) is a statewide medical organization providing education, leadership, and support for physicians, trainees and allied health professionals in support of excellence in care of people with substance use disorders and of access to such care for all.

Northeastern University School of Law's Center for Health Policy and Law focuses on health law through a dynamic, interdisciplinary approach that integrates a wide variety of practical and research interests. Our Center for Health Policy and Law provides a rich context for students and researchers interested in public health law, health and human rights, health governance, health care financing, drug law, intellectual property, bioethics, health care delivery law and the regulation of our health care systems.

The mention of the Northeastern University School of Law's name is solely for purposes of identification of the Center's affiliation. The views expressed in this amicus brief should not be regarded as the position of Northeastern University School of Law.

The following amici are individual practitioners who are professionals and experts in the addiction and recovery fields. They agree with and support the argument forwarded by this amicus brief:

Anika A. H. Alvanzo, MD, MS, FASAM, FACP

Dr. Alvanzo is an Assistant Professor in the Division of General Internal Medicine at John Hopkins University School of Medicine and is the previous Medical Director of the John Hopkins Broadway Center for Addiction. She is the Director of the John Hopkins Hospital Substance Use Disorders Rotation for the John Hopkins Medicine-Pediatrics Urban Health and Urban Health Primary Care Internal Medicine Residency track programs.

Catharina Armstrong, MD, MPH

Dr. Armstrong is a board-certified infectious disease and internal medicine doctor who treats

patients with substance use disorders at the Lemuel Shattuck and Newton Wellesley hospitals. Dr. Armstrong also directs the HIV clinic at MCI-Framingham.

Antje M. Barreveld, MD

Dr. Barreveld is an Assistant Professor of Anesthesiology at Tufts University School of Medicine and co-principle investigator of HSDM-BWH NIH Pain Consortium Center of Excellence in Pain Education. Dr. Barreveld is the Medical Director of the Pain Management Center at Newton-Wellesley Hospital, as well as Director of Substance Use Services.

Leo Beletsky, JD, MPH

Professor Beletsky is an Associate Professor of Law and Health Science at Northeastern University School of Law. Professor Beletsky's expertise is on the use of law to improve health, with focus on drug policy, reducing the spread of HIV and other infectious diseases, and the role of the criminal justice system in shaping public health outcomes. Professor Beletsky designs and evaluates interventions such as laws intended to curb opioid overdose and police trainings to align enforcement practices with public health policies and goals.

Marlene Oscar Berman, Ph.D.

Dr. Berman is an award-winning researcher and Professor at Boston University's School of Medicine, Anatomy & Neurobiology. Dr. Berman's research studies neuropsychological deficits and intact skills in individuals with brain damage from a variety of etiologies. Her work is best known for characterizing the brain mechanisms underlying perceptual, emotional, and cognitive impairments associated with severe alcohol use disorder. Along with colleagues, Dr. Berman has published approximately 250 peer-reviewed manuscripts, invited reviews, and book chapters.

Chris Beyrer, MD, MPH

Dr. Beyrer is the Desmond M. Tutu Professor of Public Health and Human Rights at the John Hopkins Bloomberg School of Public Health. He is the Director of the Center for Public Health and Human Rights, and the Associate Director of the John Hopkins Center for AIDS Research. Dr. Beyrer is an infectious diseases epidemiologist with 25 years of experience investigating the relationship between substance use disorders and infectious diseases, including HIV, viral hepatitis, and tuberculosis, and the impact of substance use policy and practice on control of these infectious diseases.

Michael Botticelli, MEd

Mr. Botticelli is the Executive Director of the Grayken Center for Addiction Medicine at Boston Medical Center and is one of the nation's leading addiction experts. Mr. Botticelli served as the Director of National Drug Control Policy at the White House under President Obama. He also served as the Director of the Bureau of Substance Abuse Services at the Massachusetts Department of Public Health and was a member of the Advisory Committee for the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Prevention and the National Action Alliance for Suicide Prevention. Mr. Botticelli has co-authored many peer-reviewed articles that have significantly contributed to the addiction field.

Bradley W. Brockmann, JD, MDiv

Mr. Brockman is Executive Director of The Center for Prisoner Health and Human Rights at Miriam Hospital/The Alpert Medical School of Brown University, established in 2005 to act as a hub for the innovative correctional health research and programming occurring at The Miriam Hospital and other research hospitals in Rhode Island and around the country. The Center's mission is to improve health and

human rights of justice-involved populations through education, advocacy, and research.

Scott Burris, JD

Mr. Burris is a professor at Temple Law School where he directs the Center for Public Health Law Research, and a professor in Temple's School of Public Health. Mr. Burris is the author of over 200 books, book chapters, articles and reports on issues including urban health; discrimination against people with HIV and other disabilities; HIV policy; research ethics; and the health effects of criminal law and drug policy. He has served as a consultant to numerous U.S. and international organizations, including the United Nations Development Programme, the World Health Organization, the United Nations Office on Drugs and Crime, and the Institute of Medicine.

Daniel Ciccarone, MD, MPH

Dr. Ciccarone is a Professor of Family and Community Medicine at the University of California San Francisco. His recent Heroin Price Purity and Outcomes study explored medical consequences of distribution and use of the two main source-forms of heroin in the United States. Dr. Ciccarone is the Principal Investigator of the Heroin in Transition Study, which

aims to examine the recent rise in heroin use and the expanding diversity of heroin source-forms and illicitly-made synthetic opioids (e.g. fentanyl) and their relationship to sharp increases in illicit opioid-involved morbidity and mortality.

Hannah Luke Fenimore Cooper, ScD.

Dr. Cooper is Associate Professor and Vice Chair for the Department of Behavioral Sciences and Health Education at Emory University Rollins School of Public Health (RSPH). She is also Co-Director of the Prevention Sciences Core for Emory University's Center for AIDS Research, and Director of the RSPH Certificate Program in the Sociocontextual Determinants of Health. Dr. Cooper has two decades of experience working on public health responses to substance misuse and related harms in the United States.

Lori DiLorenzo, MD, FASAM

Dr. DiLorenzo is Medical Director of Inpatient Health Services at Spectrum Health Systems, Inc. She is the Medical Director of the Inpatient Campus in Westboro consisting of two separate acute detox

programs, one 30-bed CSS program, one 100-bed residential program, one 18-bed residential program, and one 18-bed Young Adult program. She manages all detox and medical services for the clients detoxing. Dr. DiLorenzo is also Medical Director of the Inpatient Campus in Weymouth consisting of 18 acute detox beds and 18 CSS beds.

Ruth Dreifuss, Former President of Switzerland

Ruth Dreifuss is Chair of the Global Commission on Drug Policy, an organization with commissioners from around the world, including ten former heads of State or Government, a former Secretary General of the United Nations, as well as other experienced and well-known leaders from political, economic, and cultural arenas. The Global Commission's reports explore the negative impact of the punitive approach to drugs and criminalization of people who use drugs. Ruth Dreiffus is the Former President and Minister of Home Affairs of Switzerland.

Ernest Drucker, PhD

Dr. Drucker is a Research Scientist and Professor of Public Health at New York University, College of Global Public Health. He is a licensed Clinical Psychologist who conducts research on AIDS, addiction,

and the effects of mass incarceration. He is active in AIDS, drug policy, and prison reform as human rights efforts in the United States and abroad. Dr. Drucker was founding Director (from 1970 to 1990) of a 1,000 patient drug treatment program in the Bronx, and has been an NIH funded researcher since 1991.

Robert Heimer, PhD

Dr. Heimer is Professor of Epidemiology (Microbial Diseases) and of Pharmacology at the Yale School of Public Health. He is also the Director of the Yale office of the Connecticut Emerging Infections Program. Dr. Heimer has nearly three decades of experience studying the consequences of untreated and relapsing opioid use disorder, most recently as a member of the Connecticut Opioid Overdose Response Plan convened by Governor Daniel Malloy to develop and oversee the implementation of strategies to reduce opioid overdose mortality.

Helen Jack, MD candidate (2018)

Ms. Jack is a fourth-year medical student at Harvard Medical School and a Visiting Researcher at the Institute of Psychiatry at King's College in London. Ms. Jack is on the leadership team of the

Student Coalition on Addiction, a statewide medical student advocacy group.

Michael Kazatchkine, MD

Professor Michel Kazatchkine is former Executive Director of the Global Fund to Fight AIDS, Tuberculosis and Malaria, and member of the Global Commission on Drug Policy. He has spent the past 30 years fighting AIDS and working to improve global health as a physician, researcher, advocate, policy-maker, diplomat and administrator. Professor Kazatchkine has produced more than 500 research papers and has served on numerous editorial boards, as well as served on several major international boards and committees, including as Chair of the World Health Organization's Strategic and Technical Advisory Committee on HIV/AIDS.

Miriam Suzanne Komaromy, MD

Dr. Komaromy is an Associate Professor of Medicine at the University of New Mexico School of Medicine and Associate Director of Project ECHO. She oversees ECHO's Integrated Addictions and Psychiatry programs, Complex Care program, and Community Health Worker programs. Until 2012, Dr. Komaromy served as the Medical Director for Turquoise Lodge Hospital, an

addiction treatment hospital funded by the State of New Mexico. She is President-elect of the NM Society of Addiction Medicine.

Colleen T. LaBelle, MSN, RN-BC, CARN

Ms. LaBelle is Director of Boston Medical Center's Office-Based Addiction Treatment program at Boston Medical Center, and has been influential in expanding access to substance use disorder treatment by overseeing the education of providers and implementation of programs at community health centers across MA. She is a member of Governor Baker's Opioid Working Group and was recently awarded the 2017 Advocate State Award for Excellence by the American Association of Nurse Practitioners.

Gabor Maté, MD

Dr. Maté is a renowned speaker and bestselling author of the award-winning book, *In the Realm of Hungry Ghosts: Close Encounters with Addiction*, as well as several other books. Dr. Maté is a highly sought-after speaker and teacher who regularly addresses health professionals, educators, and lay audiences throughout North America. For twelve years he worked in Vancouver's Downtown Eastside with patients challenged by severe drug addiction, mental

illness and HIV, including at Vancouver's Supervised Injection Site. Dr. Maté is also an Adjunct Professor in the Faculty of Criminology at Simon Fraser University.

Robert Newman, MD, MPH

Dr. Newman has helped implement and direct some of the largest addiction treatment programs in the world. He was previously President Emeritus of Continuum Health Partners, Inc. and President and Chief Executive Officer of the Beth Israel Health Care System. As Assistant Commissioner for Addiction Programs in the New York City Department of Public Health, Dr. Newman created the City's Methadone Maintenance and Ambulatory Detoxification Programs.

Charles O'Brien, MD, PhD

Dr. O'Brien is founder of the Charles O'Brien Center for Addiction Treatment, and is one of the most prominent addiction researchers in the world. Dr. O'Brien has made many important discoveries and contributions over the past 30 years that have become the standard of care in addiction treatment globally. Dr. O'Brien is the Kenneth E. Appel Professor of Psychiatry at the Perelman School of Medicine at the

University of Pennsylvania and is the recipient of numerous honors.

Danielle Ompad, PhD

Dr. Ompad is Associate Professor at New York University College of Global Public Health, and Deputy Director of the Center for Drug Use and HIV Research at NYU Rory Meyers College of Nursing. Dr. Ompad is an epidemiologist with extensive experience studying the relations between substance use and infectious disease (i.e., HIV, hepatitis B and C, and other sexually transmitted infections) as well as the natural history of illicit drug use. She is an Associate Editor for the Journal of Urban Health and BMC Public Health.

Ruth Potee, MD

Dr. Potee is a family physician and addiction specialist who provides full service primary care in Greenfield, MA. She is medical director for the Franklin County House of Corrections and medical director of the Franklin Recovery Center. Dr. Potee co-chaired the Healthcare Solutions of the Opioid Task Force of Franklin County and North Quabbin. She was previously an Assistant Professor of Family Medicine at Boston University School of Medicine where she received numerous awards.

Josiah "Jody" Rich, MD, MPH

Dr. Rich is Professor of Medicine and Epidemiology at The Warren Alpert Medical School of Brown University, and a practicing Infectious Disease Specialist since 1994 at The Miriam Hospital Immunology Center providing clinical care for over 22 years, and at the Rhode Island Department of Corrections caring for prisoners with HIV infection and working in the correctional setting doing research. He has published close to 190 peer-reviewed publications, predominantly in the overlap between infectious diseases, addictions and incarceration. He is the Director and Co-founder of The Center for Prisoner Health and Human Rights at The Miriam Hospital.

Joji Suzuki, MD

Dr. Suzuki is the Director of the Division of Addiction Psychiatry and Director of Addictions Education in the Department of Psychiatry at Brigham and Women's Hospital, and an Assistant Professor of Psychiatry at Harvard Medical School. Dr. Suzuki is an addiction psychiatrist, educator, and clinical researcher who focuses on integrating evidence-based addiction treatment into general medical settings such

as hospitals. Dr. Suzuki is a member of the Motivational Interviewing Network of Trainers.

Sten H. Vermund, MD, PhD

Dr. Vermund is Dean of the Yale School of Public Health, Anna M.R. Lauder Professor of Public Health, and Professor of Pediatrics at Yale School of Medicine. Dr. Vermund is an expert in substance use and infectious disease risks, including HIV, tuberculosis, and hepatitis. His work on HIV-HPV interactions among women in methadone programs motivated a change in the 1993 CDC AIDS case surveillance definition and inspired cervical cancer screening programs launched within HIV/AIDS programs around the world.

Alexander Y. Walley, M.D., M.Sc.

Dr. Walley is an Associate Professor of Medicine at Boston University School of Medicine and a general internist and addiction medicine specialist at Boston Medical Center. He is the director of the BU Addiction Medicine Fellowship program, and he founded the Inpatient Addiction Consult Service at Boston Medical Center. Dr. Walley does clinical and research-related work on the medical complications of substance use, specifically HIV and overdose. He is the medical

director for the Massachusetts Department of Public Health's Opioid Overdose Prevention Pilot Program.

STATEMENT OF THE ISSUE

Whether incarceration is an appropriate response for the criminal justice system to take to relapse by a person suffering from acute SUD, whose only infraction is failure to abstain from substance use.

STATEMENT OF THE CASE

Amici adopt the statement of the case as set forth in the appellant's brief.

STATEMENT OF FACTS

Amici adopt the statement of facts as set forth in the appellant's brief.

SUMMARY OF THE ARGUMENT

There is consensus within the medical community, locally, nationally and internationally, recognizing SUD as a disease of the brain. The 2016 Surgeon General's Report on Alcohol, Drugs and Health entitled *Facing Addiction in America* ("Surgeon General's Report"), includes the finding that "addiction is a

chronic neurological disorder and needs to be treated as other chronic neurological conditions are." *Id.* *Message from the Secretary, U.S. Department of Health and Human Services. See also American Psychiatric Association Diagnostic and statistical manual of mental disorders (5th ed.)* at 483 (2013) ("DSM-5") ("[a]n important characteristic of substance use disorders is an underlying change in brain circuits") and Volkow et al., *Neurobiological Advances from the Brain Disease Model of Addiction*, 374 *N. Eng. J. Med.* 363-71 (2016) ("Volkow").

Punishing relapse without considering the clinical course of SUD, which is characterized by repeated substance use despite destructive consequences, physical dependence, and difficulty abstaining notwithstanding the user's resolution to do so, will not effectively accomplish the intended goal of deterrence. Relapse is a feature of SUD, and the risk of relapse continues throughout the course of active treatment. Factors such as comorbid mental health disorders and stress may increase or aggravate the risk of relapse.

The District Court's decision to incarcerate Ms. Eldred for testing positive for fentanyl does not

reflect consideration of the substantial evidence regarding effective treatment of SUD or consideration of the scientific knowledge regarding her ongoing risk of relapse. The punitive approach employed in this case has been shown to decrease the likelihood that people with SUD will seek out care. It can also have a detrimental effect on the quality of care received. Thus, it is Amici's position that the approach taken by the District Court in this case undermines both individual and public health.

ARGUMENT

I. THERE IS A CONSENSUS WITHIN THE RELEVANT MEDICAL AND SCIENTIFIC COMMUNITIES RECOGNIZING SUBSTANCE USE DISORDER AS A NEUROLOGICALLY-BASED CHRONIC CONDITION THAT FREQUENTLY CO-OCCURS WITH IDENTIFIED RISK FACTORS.

Ms. Eldred's underlying medical condition is severe opioid¹ use disorder.² RA. 50.³ The District Court's requirement that Ms. Eldred "remain drug free" in order to avoid incarceration is clinically contraindicated because it does not take into account the medical consensus regarding the effects of SUD.

A. Addiction and the Brain.

Addiction is a primary, chronic disease of brain reward, motivation, memory and related

¹ In addition to those produced naturally in the body, opioids can be categorized into several broad classes. Natural opiates, such as morphine and codeine, derive from the alkaloids contained in the resin of the opium poppy. Esters of morphine, such as diacetylmorphine, better known as heroin, are opiates that have been slightly chemically altered. Semi-synthetic opioids are partially created from natural opiates and include pharmaceuticals such as hydrocodone, oxycodone, and buprenorphine. Finally, some opioids, such as methadone and fentanyl, are fully synthetic.

² Chronic opioid use can lead to opioid use disorder, a form of substance use disorders described in the DSM-5. The DSM-5 separates substance use disorders by type of drug, such as opioid use disorder, cocaine use disorder, and alcohol use disorder.

³ References to the record appendix of the appellant's brief are cited as "RA. [page #]".

circuitry. Addiction affects neurotransmission and interactions within reward structures of the brain, including the nucleus accumbens, anterior cingulate cortex, basal forebrain and amygdala, such that motivational hierarchies are altered and addictive behaviors . . . supplant healthy, self-care related behaviors. Addiction also affects neurotransmission and interactions between cortical and hippocampal circuits and brain reward structures, such that the memory of previous exposures to rewards . . . leads to a biological and behavioral response to external cues, in turn triggering craving and/or engagement in addictive behaviors.

American Society of Addiction Medicine, Definition of Addiction ("Definition of Addiction").

The three stages of addiction are:

Binge/Intoxication, the stage at which an individual consumes an intoxicating substance and experiences its rewarding or pleasurable effects;

Withdrawal/Negative Affect, the stage at which an individual experiences a negative emotional state in the absence of the substance; and

Preoccupation/Anticipation, the stage at which one seeks substances again after a period of abstinence.

Koob and Le Moal, Drug abuse: Hedonic homeostatic dysregulation, 278 Science 52-58 (1997); Volkow at 365-67.

This three-stage cycle "worsens over time and involves dramatic changes in the brain reward, stress,

and executive function systems." *Surgeon General's Report, Chapter 2* at 18.

Progression through this cycle involves three major regions of the brain: the basal ganglia, the extended amygdala, and the prefrontal cortex, as well as multiple neurotransmitter systems. The power of addictive substances to produce positive feelings and relieve negative feelings fuels the development of compulsive use of substances. The combination of increased incentive salience (binge/intoxication stage), decreased reward sensitivity and increased stress sensitivity (withdrawal/negative affect stage), and compromised executive function (preoccupation/ anticipation stage) provides an often overwhelming drive for substance seeking that can be unrelenting. *Id.*

Opioid addiction has its own unique effect on the brain.

Opioids attach to opioid receptors in the brain, which leads to a release of dopamine in the nucleus accumbens, causing euphoria (the high), drowsiness, and slowed breathing, as well as reduced pain signaling (which is why they are frequently prescribed as pain relievers). Opioid addiction typically involves a pattern of: (1) intense intoxication, (2) the development of tolerance, (3) escalation in use, and (4) withdrawal signs that include profound negative emotions and physical symptoms, such as bodily discomfort, pain, sweating, and intestinal distress and, in the most severe cases, seizures. As use progresses, the opioid must be taken to avoid the severe negative effects that occur during withdrawal. With repeated exposure to opioids, stimuli associated with the pleasant effects of the substances (e.g., places, persons, moods, and paraphernalia)

and with the negative mental and physical effects of withdrawal can trigger intense craving or preoccupation with use.

Surgeon General's Report, Chapter 2 at 19-20.

Suboxone, which Ms. Eldred was prescribed as part of her treatment and began just days before she was jailed for testing positive for fentanyl, is the pill form combination of buprenorphine and naloxone. Buprenorphine is a partial opioid agonist that blocks acute opioid effects, suppresses the signs and symptoms of opioid withdrawal, and has limited euphoric effect.⁴ Naloxone, by contrast, is an opioid antagonist, meaning that when it affixes to an opioid receptor, it blocks the effects of opioids such as heroin. First responders and emergency room personnel regularly use naloxone to revive persons experiencing opioid overdose.

The effects of chronic substance use can vary considerably across individuals, and several factors have been identified that increase the risk of developing a SUD.

B. The Role of Genetics in Substance Use Disorder.

⁴ See generally *Tompkins and Strain, Buprenorphine in the Treatment of Opioid Dependence, in Ruiz and Strain., eds., Substance Abuse, A Comprehensive Textbook* at p. 437 (5th ed. 2011).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] A number of studies have found that genetics play a significant role in an individual's risk of developing a severe SUD and have a moderate to high influence on addiction. See generally *Agrawal and Lynskey, Are There Genetic Influences on Addiction: Evidence from Family, Adoption, and Twin Studies*, 103 *Addiction* 1069 (2008); *Definition of Addiction* at p. 2 (genetic factors increase likelihood an individual will develop addiction).

Although multiple genes are likely involved in the development of addiction, only a few specific gene variants have been identified that either predispose to or protect against addiction. Some of these variants have been associated with the metabolism of alcohol and nicotine, while others involve receptors and other proteins associated with key neurotransmitters and molecules involved in all parts of the addiction cycle. Genes involved in strengthening the connections between neurons and in forming drug memories have also been associated with addiction risk. Like other chronic health conditions, substance use disorders are influenced by the complex interplay between a person's genes and environment. Additional research on the mechanisms underlying gene by environment interactions is expected to provide insight into how substance use

e.g., Molina and Pelham Jr., Childhood predictors of adolescent substance use in a longitudinal study of children with ADHD, 112 J. Abnorm. Psychol. 497 (2003) ("Molina").

Researchers have found that the presence of ADHD during childhood, the severity of the symptoms, and the persistence of the disorder may be risk factors for early substance use and the emergence of SUD during the teen years. See Aoun. In one study, children with severe ADHD symptoms were found to be more than five times more likely to use controlled substances at an early age. See Molina. Evidence also suggests that individuals with ADHD are more prone to develop a chronic pattern of SUD. King et al., *Attention deficit hyperactivity disorder and treatment outcome in opioid abusers entering treatment, 187 J. Nervous & Mental Disease 487 (1999).*

The reasons why substance use disorders and mental disorders often occur together are not clear, and establishing the relationships between these conditions is difficult. Still, three possible explanations deserve attention. One reason for the overlap may be that having a mental disorder increases vulnerability to substance use disorders because certain substances may, at least temporarily, be able to reduce mental disorder symptoms and thus are particularly negatively reinforcing in these individuals. Second, substance use

disorders may increase vulnerability for mental disorders, meaning that the use of certain substances might trigger a mental disorder that otherwise would have not occurred. . . . Third, it is also possible that both substance use disorders and mental disorders are caused by shared, overlapping factors, such as particular genes, neurobiological deficits, and exposure to traumatic or stressful life experiences. As these possibilities are not mutually exclusive, the relationship between substance use disorders and mental disorders may result from a combination of these processes.

*Surgeon General Report, Chapter 2 at 23.*⁵

D. Age of Onset of Substance Use as a Risk Factor.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

A growing body of research indicates substance use during adolescence can increase the risk of

⁵ Citing Jacobsen, et al; *Substance use disorders in patients with posttraumatic stress disorder: A review of the literature.* 158 *American Journal of Psychiatry*, 1184-1190 (2001); Leeies, et al., *The use of alcohol and drugs to self-medicate symptoms of post-traumatic stress disorder.* 27 *Depression and Anxiety* 731-736 (2010); and Kumari and Postma, *Nicotine use in schizophrenia: The self medication hypotheses,* 29 *Neuroscience and Biobehavioral Reviews* 1021-1034 (2005).

developing a SUD.⁶ Individuals who begin using substances during adolescence often experience more chronic and intensive use compared with those who begin use at an older age.⁷ *Early Onset* at p. 2. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

⁶ See White et al., *Early onset of substance abuse: Implications for student assistance programs* ("Early Onset"), *Student Assistance Journal*, 16(1), p.2 (2003); NIDA, *Preventing Drug Use among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders*, 2nd Ed. (2003) ("Preventing Drug Use") at p. 8. (NIH Publication No. 04-4212(A)).

⁷ "Information from the National Longitudinal Alcohol Epidemiological Survey revealed that the risk of adult alcohol dependence was directly related to age of onset: before age 15 (40%), age 17 (24.5%), ages 18-19 (16.5%), age 20-22 (10%). The risk of adult alcohol dependence increased an average of 9% for each decreasing year of age of onset (Grant & Dawson, 1997). In another study comparing symptoms of dependence in the past year to age of first use, it was discovered that those who started using a given substance before age 15 (when compared with those who began use after age 18) were 1.49 times as likely to have problems with tobacco (39% vs. 30%), 2.74 times as likely to have problems with alcohol (45% vs. 23%), 2.45 times as likely to have problems with marijuana (63% vs. 41%) and 2.65 times more likely to have problems with other drugs (71% vs. 53%)." *Early Onset* at p. 2 citing Dennis et al. *Changing the focus: The case for recognizing and treating marijuana use disorders. Addiction*, 97 (Suppl. 1), S4-S15 (2002).

SUD is a chronic neurological condition that coincides with certain identifiable risk factors present in this case. Addiction specialists treat this chronic neurological condition through the clinical course described below.

II. THE CLINICAL COURSE OF SUBSTANCE USE DISORDER.

Recovery from SUD characteristically involves periods of recurrence and remission, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The fact that relapse is an almost inevitable feature of SUD leads to the straightforward conclusion that relapse is "not a weakness of character or will." *World Health Organization & United Nations Office on Drugs & Crime et al., Substitution Maintenance Therapy in the Management of Opioid Dependence and HIV/AIDS Prevention* 7 (2004).⁸

⁸ See also *NIH Public Access Author Manuscript: Saitz, et al., The Case for Chronic Disease Management for Addiction, J Addict Med.* (2008) ("Like other chronic diseases (e.g, diabetes, congestive heart failure), substance dependence has no cure and is characterized by relapses requiring longitudinal care.").

Studies have demonstrated that medication alone, without psycho-social counseling or any other intervention, can effectively reduce risk of relapse with some patients. In fact, research has not shown convincingly that the addition of psychosocial treatment further improves outcomes over and above medication alone, which is why the World Health Organization recommends all people with opioid use disorder be offered opioid agonist treatment and psychosocial services, but advises that medication should not be withheld just because someone does not want counseling, or where counseling, for whatever reason, is not available.⁹

While interim medication treatment has been shown to reduce the risk of relapse in some people, the clinical course for treatment of SUD is a process that

⁹ See, e.g., Sigmon, et al., *Interim Buprenorphine vs. Waiting List for Opioid Dependence*, *N. Engl. Journal of Medicine* (2016); World Health Organization *Guidelines for the Psychosocially Assisted Pharmacological Treatment of Opioid Dependence*, (2009); Weiss et al., *Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: a 2-phase randomized controlled trial*, *Arch Gen Psychiatry* (2011); Ling, et al., *Addiction, Comparison of behavioral treatment conditions in buprenorphine maintenance* (2013).

takes into account many factors that have been shown to co-occur with the disorder.

A. Relapse Is a Feature of Substance Use Disorder.

Studies have increasingly found that relapses are a commonly occurring part of recovery from SUD and should be considered "a dynamic, ongoing process rather than a discrete or terminal event." *Hendershot et al., Relapse prevention for addictive behaviors, 6 Subst. Abuse Treat. Prev. Policy 2 (2011)*. Only a minority of patients who successfully complete opioid detoxification (i.e. medically supervised withdrawal), or long-term treatment of any kind, can abstain in a prolonged fashion from opioid use. *Davison et al., Outpatient Treatment Engagement and Abstinence Rates Following Inpatient Opioid Detoxification, 25 J. Addict. Dis. 27, 33 (2008)*.

Indeed, most patients experience several recurrences before achieving complete abstinence. Adverse consequences should not invariably result from a positive drug screen alone, because most people need at least three months in treatment to achieve abstinence. *Bureau of Substance Abuse Services (BSAS) Practice Guidance: Drug Screening as a Treatment Tool*

(May 2013) (citing the National Institute on Drug Abuse: *Drugs, Brain Behavior and the Science of Addiction & Seeking Drug Abuse Treatment: Know What to Ask*.¹⁰ "More than 60 percent of people treated for a substance use disorder experience relapse within the first year after they are discharged from treatment,"¹¹ and a person can remain at increased risk of relapse for many years.¹²

¹⁰ The Bureau of Substance Abuse Services (BSAS) funds the Massachusetts Substance Use Helpline. BSAS oversees the substance abuse prevention and treatment services in the Commonwealth. Responsibilities include: licensing programs and counselors; funding and monitoring prevention and treatment services; providing access to treatment for the indigent and uninsured; developing and implementing policies and programs; and, tracking substance abuse trends in the state.

¹¹ McLellan, et al., *Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation*, 284 *JAMA* 1689-1695 (2000), and Hubbard, et al., *Overview of 5-year followup outcomes in the drug abuse treatment outcome studies (DATOS)* 25 *Journal of Substance Abuse Treatment*, 125-134 (2003).

¹² Hser, et al., *A 33-year follow-up of narcotics addicts*, 58 *Archives of General Psychiatry*, 503-508 (2001); Vaillant, *The natural history of alcoholism revisited*. Cambridge, MA: Harvard University Press (1995).

Given that relapse is symptomatic of SUD and is not simply "a weakness of character or will,"¹³ the requirement that Ms. Eldred "remain drug free" and face incarceration for a failure to do so, seems to ignore the well-established the clinical course of SUD.

B. The Risk of Relapse Persists Over the Course of Treatment and Beyond.

While different treatments have different rates of success in reducing the risk of relapse, recurrences can be expected during and following active treatment of all kinds. *Koston et al., The Neurobiology of Opioid Dependence: Implications for Treatment, 1 Sci. Pract. Perspect. 13, 19-20 (2002)*. Medication-assisted therapy (MAT), such as the Suboxone that Ms. Eldred was prescribed, reduces withdrawal symptoms and tempers opioid cravings, which can help patients abstain from opioid use. *See Molina*. However, although MAT addresses some of the physiological obstacles to achieving and maintaining opioid abstinence, treating SUD in any given

¹³ *World Health Organization & United Nations Office on Drugs & Crime et al, Substitution Maintenance Therapy in the Management of Opioid Dependence and HIV/AIDS Prevention 7.*

individual can be much more complex than simply quelling cravings. The cognitive and behavioral aspects of SUD can present additional barriers to abstinence that, for optimal therapeutic outcome, must also be addressed in many patients.

In addition, a number of studies have demonstrated that comorbid ADHD and SUD results in significant and unique treatment challenges. *Zaso, Treatments for Adolescents with Comorbid Attention-Deficit/ Hyperactivity Disorder and Substance Use Disorder: A Systematic Review, J. Atten. Disord., Feb. 2015 at 2.* Ms. Eldred faced these additional challenges. Individuals such as Ms. Eldred presenting with both ADHD and SUD are less likely to complete treatment successfully, have a significantly slower remission rate, and tend to be quicker to relapse after abstinence is achieved. Penalizing her with incarceration for testing positive for fentanyl, just days after she was sentenced in this case, where she presented with ADHD as a co-occurring mental health disorder, was not likely to realize any intended deterrent effect.

C. Stress Caused by a Requirement to Remain Asymptomatic Compounds the Risk of Relapse.

Addiction experts have identified a high correlation between stress, increased likelihood of substance use, and the risk of relapse.¹⁴ In fact, stress is considered one of the three key stimuli that precipitate recurrences of substance use.¹⁵ *Shalev et al., Neurobiology of relapse to heroin and cocaine seeking: a review, 54 Pharmacol Rev. 1 (2002).*

[E]motional stressors . . . trigger heightened activity in brain stress circuits. The anatomy (the brain circuitry involved) and the physiology (the neurotransmitters involved) have been delineated through neuroscience research. Relapse triggered by exposure to stressful experiences involves brain stress circuits beyond the hypothalamic-pituitary-adrenal axis that is well known as the core of the endocrine stress system. There are two of these relapse-triggering brain stress circuits- one originates . . . in the brain stem . . . the other originates in the central nucleus of the amygdala.

Definition of Addiction at p. 3 and Note 4.

¹⁴ See e.g., Breese, *Chronic alcohol neuroadaptation and stress contribute to susceptibility for alcohol craving and relapse*, 129 *Pharmacol Ther.* 149 (2011); Sinha, *How does stress increase risk of drug abuse and relapse?*, 158 *Psychopharmacology* 343 (2001).

¹⁵ Stress is one of the three external cues that serve as relapse triggers, the other two being exposure to addictive or rewarding drugs and exposure to conditioned cues. *Definition of Addiction* at p. 3 and Note 4.

Before requiring that an individual like Ms. Eldred "remain drug free", courts should take into account the evidence regarding the ongoing risk of relapse, a risk that is inherent in this medical condition, and how such a requirement can aggravate that risk. [REDACTED]

[REDACTED] and thereby created an environmental stressor that studies show may have increased her relapse risk. See *Camí, Drug Addiction*, 349 N Engl J Med 975, 983 (2003) (noting that "exposure to environmental stressors" is a "factor[] involved in relapse and craving"); See also *Koob and Le Moal, Drug Addiction, Dysregulation of Reward, and Allostasis*, 24 *Neuropsychopharmacology* 97, 118 (2001) (reporting that relapse often "occur[s] during states of stress . . ."). Individuals suffering from severe opioid use disorder often remain "remarkably unencumbered by the memory of negative consequences of drug-taking." *Id.* at 98. Requiring such individuals to cease manifesting a cardinal identifying characteristic of the disorder does not take into account the scientific findings demonstrating that such compliance may not be achievable through an exercise of free will. Further,

the stress associated with attempted compliance with such a requirement, with an accompanying threat of punishment for failure, may be counter-productive because such an approach has been shown to make abstention harder.

III. IMPOSING PUNITIVE SANCTIONS FOR RELAPSE IN CASES LIKE THIS ONE MAY UNDERMINE PUBLIC HEALTH AND PROLIFERATE THE CRISIS.

A. Punitive Sanctions Based Upon Relapse Alone Have Not Been Shown to Deter or Rehabilitate Individuals with Substance Use Disorder.

A large and growing body of research demonstrates that incarceration of those with SUDs who relapse does not have the intended deterrent effect, and can undermine the rehabilitative purpose of punishment. *Volkow et al., Drug Use Disorders: impact of a public health rather than a criminal justice approach, 16 World Psychiatry 213-14 (2017).*

Incarcerating individuals suffering from a health condition "tends to worsen the preexisting condition, especially in the case of addiction," *Drucker, A Plague of Prisons: The Epidemiology of Mass Incarceration in America* 116 (2011) (also noting that "drug use often continues throughout prison stays").

Only between 11-17% of persons with SUDs receive treatment while incarcerated, and most of the "treatments" available in prisons and jails are not evidence-based. *Nat'l Ctr. on Addiction and Substance Abuse at Columbia University, Behind Bars II: Substance Abuse and America's Prison Population*, 39, 42 (2010); *Mumola and Karberg, U.S. Dept. of Justice, Office of Justice Programs, Drug Use and Dependence, State and Federal Prisoners*, 9 (Oct 2006, rev. 2007).

Here in Massachusetts, "[f]ew inmates with opioid use disorder receive addiction treatment during incarceration, and rates of relapse and opioid overdose-related deaths (15% of all deaths among former inmates) are tragically high following release." *Mass. Dep't of Public Health, An Assessment of Fatal and Nonfatal Opioid Overdoses in Massachusetts (2011-2015) August 2017 at 49* ("Mass. Dep't of Public Health").

Additionally, because punitive sanctions or the threat thereof subject individuals like Ms. Eldred to additional stressors that have been shown to increase the risk of relapse, such individuals are at a greater risk of relapse if released back into society having received no or inadequate treatment. *Gordon et al., A*

Randomized Clinical Trial of Methadone Maintenance for Prisoners: Findings at 6 Months Post-Release, 103 *Addiction* 1333 (2008). The process of reentry presents significant challenges to persons with SUDs. A 2016 longitudinal study found persons with SUDs released from incarceration are at high risk for relapse due to barriers for engaging treatment services such as financial hardship, loss of insurance during incarceration, and eligibility problems. *Begun et al., Mental Health and Substance Abuse Service Engagement by Men and Women During Community Reentry Following Incarceration*, 43 *Adm Policy Ment Health* 207-218 (2016) (barriers found to be greater for those released from jails than from prisons or community-based correctional facilities). The relative risk of death from any cause during the first two weeks post-release from prison was 12.7 times the risk that of the general community population; the leading cause of death was drug overdose. *Id.* at 207.

“Indeed, formerly incarcerated individuals have cited overdose as a result of self-medication to escape the multiple stressors created by the struggle to reintegrate into society.” *Beletsky, et al., Fatal Re-Entry: Legal and Programmatic Opportunities to Curb*

Opioid Overdose Among Individuals Newly Released from Incarceration, 7 Northeastern Univ. L. J. 155-215 (Spring 2015) at 164 ("Beletsky").

Formerly incarcerated individuals in Massachusetts have a risk of death from opioid overdose that is 50 times greater than the risk for residents with no incarceration history, and the opioid overdose death rate for those recently released from incarceration is 120 times higher than that of the rest of the adult population. In 2015, nearly 50% of all deaths among those released from incarceration in Massachusetts were opioid-related. *Mass. Dep't of Public Health at 50-51. "Overdose often results when newly-released individuals resume drug use after a period of abstinence basing their intake on pre-incarceration doses, when they use drugs from unfamiliar sources and of unknown strength, or as a result of mixing multiple substances." Beletsky at 159, 164*

B. Punitive Sanctions for Substance Use Relapse Can Undermine Public Health by Reinforcing Stigma Associated with Substance Use Disorder.

Opinion polls indicate that a majority of the U.S. public believes that people with SUDs deserve low

priority in health care. Olsen et al., *The moral relevance of personal characteristics in setting health care priorities*, 57 *Soc. Sci. Med.* 1163 (2003). Further, education gaps exist about people with SUDs among a portion of health care professionals responsible for providing them with care.¹⁶

Several factors drive these attitudes and norms, including: the generalized perception that people who use substances are to blame for their disorder, and "structural stigma,"¹⁷ i.e., ways in which public institutions, including the criminal justice system,

¹⁶ See Henderson et al., *Social stigma and the dilemmas of providing care to substance users in a safety-net emergency department*, 19 *J. Health Care Poor Underserved* 1336 (2008); McCreaddie et al., *Routines and rituals: a grounded theory of the pain management of drug users in acute care settings*, 19 *J. Clin. Nurs.* 2730 (2010). See also Kelly, *Does it matter how we refer to individuals with substance-related conditions? a randomized study of two commonly used terms*, 21 *Int. J. Drug Policy.* 202 (2010) (finding that mental health care providers were less likely to believe that individuals deserved treatment when they were described as "substance abusers" rather than as a "person with a substance use disorder").

¹⁷ Merrill and Monti, *Influencers of the Stigma Complex toward Substance Use and Substance Use Disorders*, Center for Alcohol and Addiction Studies, Brown University (Aug. 2015), <https://www.niaaa.nih.gov/news-events/news-releases/severe-childhood-adhd-may-predict-alcohol-substance-use-problems-teen>.

restrict treatment opportunities for individuals with SUDs.¹⁸ From this perspective, the criminalization of relapse promotes the perception of “drug users as people who are not wanted in society,”¹⁹ who are criminals and inherently dangerous, and fuels the view – even among health care professionals – that those who relapse have chosen to do so, are bad, and therefore undeserving of treatment. *See generally Kelly, Does Our Choice of Substance-Related Terms Influence Perceptions of Treatment Need? An Empirical Investigation with Two Commonly Used Terms, 40 J. Drug Issues 805 (2010).* Discrimination is often the unfortunate product of stigma.

To avoid stigmatization, both from the public and from health care providers, people who use substances may hide their use, which prevents them from seeking treatment, social services, and social support. *See e.g., Luoma et al., Self-Stigma in Substance Abuse: Development of a New Measure, 35 J. Psychopathol. Behav. Assess. 223 (2013); Luoma et al., An*

¹⁸ *Rivera et al., Internalized stigma and sterile syringe use among people who inject drugs in New York City, 24 Drug Alcohol Depend 143 (2014).*

¹⁹ *Id.*

investigation of stigma in individuals receiving treatment for substance abuse, 32 Addict. Behav. 1331 (2007). In fact, people who experience stigma regarding their substance use often identify that as a substantial barrier to treatment and recovery.²⁰ And, among those who do seek treatment and services, the negative attitudes of some health care providers may have an adverse impact on the quality of care that people with SUD receive.²¹

Scientific breakthroughs have revolutionized the understanding of substance use disorders. For example, severe substance use disorders, commonly called *addictions*, were once viewed largely as a moral failing or character flaw, but are now understood to be chronic illnesses characterized by clinically significant impairments in health, social function, and voluntary control over substance use. Although the mechanisms may be different, addiction has many features in common with disorders such

²⁰ See e.g., Lloyd, *The stigmatization of problem drug users: A narrative literature review*, 20 *Drugs: Education, Prevention and Policy* 85 (2012); Conner and Rosen, "You're Nothing But a Junkie": Multiple Experiences of Stigma in an Aging Methadone Maintenance Population, 8 *J. Soc. Work Pract. Addict.* 244 (2008).

²¹ van Boekel et al., *Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: Systematic review*, 131 *Drug Alcohol Depend.* 23 (2013); Brener, *The role of physician and nurse attitudes in the health care of injecting drug users*, 45 *Subst. Use Misuse* 1007 (2010).

as diabetes, asthma, and hypertension. All of these disorders are chronic, subject to relapse, and influenced by genetic, developmental, behavioral, social, and environmental factors. In all of these disorders, affected individuals may have difficulty in complying with the prescribed treatment.

Surgeon General's Report, Chapter 2 at 1 citing DSM-5 and McLellan, et al. Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation, 284 JAMA 1689-1695 (2000). "It has been a great struggle, unfolding for over several decades, to change the public's perception of addiction from one of moral failure to the disease model now accepted by physicians." NIDA Update: From Reward to Relief: The Complex Neuroadaptations Underlying Addiction (AAAP Vol. 31, No. 3 Summer 2015 Newsletter) at p. 5. The medical community recognizes that treatment does not work miracles overnight and that relapse is a normal part of SUD. Patience as opposed to punishment may better achieve the rehabilitative goals of those afflicted with the disorder. Amici therefore encourage this Court to consider the medical consensus identifying SUD as chronic disease of the brain as it approaches the task of formulating a rational, humane, and

evidence-based response by the criminal justice system to the opioid crisis.

CONCLUSION

For the foregoing reasons, The Massachusetts Medical Society, joined by the listed *amici curiae*, urges this Court, in deciding Ms. Eldred's case, to take into account the scientific consensus that substance use disorder is a chronic disease of the brain, and that relapse is a symptom of the disorder that is not being effectively addressed by incarceration or the threat thereof.

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REQUIRED CERTIFICATION OF COUNSEL

I, Amy M. Belger, Counsel for Amici, hereby certify that this Amicus Brief in this action complies with the Rules of Court pertaining to the filing of Briefs including but not limited to Mass. R. App. P. 16(a)(6); Mass. R. App. P. 16(e); Mass. R. App. P. 16(f); Mass. R. App. P. 16(h)1 Mass. R. App. P. 18, Mass. R. App. P. 20.

Amy M. Belger

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COMMONWEALTH OF MASSACHUSETTS
SUPREME JUDICIAL COURT

NO. 12279

COMMONWEALTH
Appellee

v.
JULIE ELDRED
Appellant

ON APPEAL FROM A JUDGMENT OF
THE MIDDLESEX SUPERIOR COURT

BRIEF ON BEHALF OF
THE MASSACHUSETTS MEDICAL SOCIETY,
AMICUS CURIAE, JOINED BY:
THE AMERICAN ACADEMY OF ADDICTION PSYCHIATRY,
THE ASSOCIATION FOR BEHAVIORAL HEALTHCARE,
THE GRAYKEN CENTER FOR ADDICTION MEDICINE AT BOSTON MEDICAL CENTER,
THE MASSACHUSETTS ORGANIZATION FOR ADDICTION RECOVERY (MOAR),
THE MASSACHUSETTS SOCIETY FOR ADDICTION MEDICINE,
NORTHEASTERN UNIVERSITY SCHOOL OF LAW'S CENTER FOR HEALTH POLICY AND LAW,
AND 28 ADDITIONAL AMICI CURIAE
AS DESCRIBED IN THE STATEMENT OF INTEREST

MIDDLESEX, SS.