

The Changing Landscape for Substance Use Treatment in the U.S

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Abstract

After decades of consignment to the periphery of the health care system, substance use treatment will soon become part of mainstream medical care alongside other health specialties. The passage of the ACA (Affordable Care Act 2010) accelerated the trend toward greater integration of behavioral health (including substance use) with primary health care. Several trends in the past two decades contributed to the changing the view of substance use from one that was a purely 'moral' problem, rooted in the character deficiencies of substance users to a chronic, relapsing disease that could be treated and managed. Changes were precipitated by four trends: (a) rising cost of substance use, (b) the substance use burden on the criminal justice system, (c) the cost of substance use in the healthcare system, and (d) the growing evidence for the effectiveness of treatment. The paper examines how rising costs in the criminal justice and health care systems spurred changes toward substance use treatment and the role of evidence in legitimizing substance use treatment.

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Introduction

After decades of consignment to the periphery of the health care system, substance use treatment is poised to become part of mainstream medical care alongside other health specialties. The passage of the ACA (Affordable Care Act 2010) accelerated the trend toward greater integration of behavioral health (including substance use) with primary health care. Under ACA, substance use treatment was specified as one of 10 essential benefits that health plans were required to offer plan holders. Thus, ACA essentially 'mainstreamed' behavioral health and placed it squarely into the realm of comprehensive health care for patients. While ACA can be credited with raising the profile of behavioral health services as an integral part of holistic health care, it was scarcely the only factor responsible for the rising profile of substance use treatment within the U.S. health care system.

Several trends in the past two decades contributed to the changing the view of substance use as health problem from one that was a purely 'moral' problem, rooted in the character deficiencies of substance users. This is not to suggest that substance use is no longer viewed as stigmatizing condition by the American public, but that an important shift has occurred among policy makers, who have in turn crafted policies that reflect the changed 'official' view of substance using persons as citizens who need and deserve viable treatment options.

The policy shift was precipitated by a growing awareness of the cost of untreated substance use in the criminal justice and healthcare systems. Prison and jail surveys conducted in the past 20 years revealed that the majority of offenders had mental illness or substance use disorders. Yet, few jails or prisons offered treatment to inmates and many inmates cycled in and out of custody for offenses related to their mental illness or substance use. In the healthcare system, patients with behavioral disorders were often overrepresented in emergency rooms and the underlying causes for repeated use of emergency care were not systematically addressed. The rising profile of behavioral disorders in the criminal justice and healthcare systems led to a search for legislative and policy remedies to address the social and financial impact of these disorders. In this essay, I focus on four trends that have changed the policy landscape for substance use treatment: (a) rising cost of substance use, (b) the substance use burden on the criminal justice system, (c) the cost of substance use in the healthcare system and (d) the growing evidence for the effectiveness of treatment. These factors have driven legislative changes at the state and federal levels, and in the criminal justice and health care systems. Federal and state policies have increasingly come to view substance use as behavioral health issue, for which people can be successfully treated.

Cost of substance use in the United States

The direct and indirect costs of substance use cost the U.S. billions of dollars each year. A major study of substance use costs in the United States, undertaken by the Center for Addiction and Substance Abuse (CASA) [1] found that federal and state governments spent a combined total of \$357 billion in 2005. The CASA study included the cost of tobacco in addition to alcohol and illicit drug use and range of state and local government programs for substance use. The study tabulated expenses for programs for tobacco use prevention and health related expenditures of tobacco use, prevention and health consequences of under-age and excessive drinking, illegal and prescription drug abuse, drunk driving and highway safety programs and criminal justice costs to estimate gross annual expenditures on substance use. The majority of the state and federal expenditures occurred in just two categories: health care-related and criminal justice related expenditures. An estimated 71% of the combined federal and state expenditures were spent in the healthcare system, and an even higher percentage (74%) of federal expenditures were allocated to healthcare-related costs (estimated at \$170 billion). Other significant federal expenditures included Children and Family Assistance for child welfare, nutrition and housing (16% or \$35.6 billion), public safety expenditures mainly for adult corrections, juvenile justice and the judiciary (3%) and treatment, prevention, research, taxation and interdiction (5%).

Expenditures at the state level were weighted more heavily toward the criminal justice system, which generally tends to be funded by local dollars rather than federal dollars. Of the estimated \$127 billion in expenditures for substance use related programs, nearly a third (32.5%) were spent on the justice system, followed by healthcare (29%) and education (22.4%). State expenditures were devoted to incarceration-related costs such as building and operating prisons, parole and probation costs. Although a large proportion of healthcare costs of substance use were paid by federal programs (Medicaid), states were required to finance costs for those who were not eligible for federal health insurance. For instance, in California, single, childless adults were not eligible for Drug Medi-Cal until Affordable Care Act eliminated the prohibition in January 2014.

A study conducted by the National Drug Intelligence Center (NDIC) for 2007 estimated the costs to be somewhat lower than the CASA study because of different accounting methods [2]. NDIC estimated that the substance use cost \$193 billion in 2007, mainly due to costs incurred for criminal justice programs (including interdiction), health care costs in emergency departments and other substance related treatment and lost productivity. Although a national level cost study has not been updated for several years, it is undeniable that the cost of substance use, particularly untreated substance use, will continue to increase in the absence of significant policy changes.

Behavioral health issues in the criminal justice system

The criminal justice system (mainly law enforcement, judiciary and corrections) accounts for a large proportion of the federal and

state expenditures for substance use. A significant percentage of the incarcerated population in the United States suffers from mental illness or substance use disorders or behavioral health disorders. Incarceration is an expensive method for dealing with addicted and mentally ill persons, many of whom are placed in local custody in jails. The annual cost of jails alone was estimated at over \$22 billion in 2011 [3]. As jails are funded with local dollars, the effect of these expenditures is to reduce funds available for other local government functions such as health care, substance use and mental health treatment. Incarceration is expensive and costs several thousand dollars annually to house inmates in prisons and jails. But there is no evidence that imprisonment by itself prevents recidivism among substance users. Offenders with behavioral health problems cycle in and out of the criminal justice system for years.

The magnitude and level of behavioral health problems among state and federal prisoners is amply documented in Department of Justice surveys. About 50% of state prisoners reported using drugs in the month preceding incarceration and 32%, at the time they committed the offense for which they were incarcerated [4]. The comparable numbers for federal prisoners were 50% and 25% respectively. The most widely used substances among prisoners were marijuana, cocaine, heroin/opiate, depressants, stimulants (mainly methamphetamines), hallucinogens and inhalants. Furthermore, 53% of state and 45% of federal prisoner met the DSM IV criteria for drug dependence or drug abuse and 35% of state prisoners and 28% of federal prisoners met the DSM IV criteria for both substance dependence and abuse (Bureau of Justice Statistics, 2006). These figures indicate a high level of substance use severity among state and federal prisoners. The DSM-IV criteria for *substance abuse* indicate the presence of significant personal problems such as the failure to fulfill social and economic obligations such as maintaining employment, staying in school, caring for children; continued use in hazardous situations; drug related problems with law enforcement; and recurrent conflicts with family members, friends and others. *Substance dependence* is indicated by tolerance of drug of choice, withdrawal symptoms, impaired control; amount of time spent seeking and using a substance, neglect of employment, family or hobbies, and continued use in spite of problems associated with drug use. abusing inmates are also more likely to come from personally troubled backgrounds characterized by incarceration and substance use among parents, sexual or physical abuse, homelessness and unemployment.

As the prevalence of substance use disorders among inmates of local, state and federal prisons and the high cost of untreated substance use became apparent to the public and policy makers, pressure mounted on the criminal justice system to develop alternatives to straight incarceration for this population. Several different intervention models emerged to address the problem of substance abusing criminal offenders and these included diversion programs, custody-based programs in jails and prisons, and Drug Courts [5].

Diversion programs and Drug Court programs operate at the court level with judicial oversight and their emergence marked

a change from a punitive to therapeutic orientation within the justice system. Drug courts are a type of therapeutic that emerged as a solution to the social and behavioral problems presented by mentally ill and substance using clients. By 2014, there were an estimated 3000 Drug Courts operating in the United States, specializing in issues of chronic substance use, mental illness, homelessness, juvenile justice, domestic abuse and dependency problems. Drug courts have proved to be effective in reducing recidivism among participants in drug court programs. In diversion programs, offenders are diverted to treatment programs prior to sentencing, in which case charges are dismissed for offenders who complete treatment successfully, or after sentencing, in which case offenders are offered the option of treatment in lieu of incarceration. The best known state-wide diversion program for substance abusing offenders was California's Substance Abuse Crime Prevention Act (2001), also known as Proposition 36, which was based on a voter-approved referendum to divert offenders to community treatment under supervision. Under SACPA, non-violent drug offenders were offered treatment as part of their court program instead of straight incarceration. Other well-known diversion models include Treatment Accountability for Safer Communities (TASC) and Drug Treatment Alternatives to Prison (DTAP) programs. TASC models generally provide assessment, referral to treatment, case management and monitoring of offenders who are diverted to treatment. DTAP programs are based on diversion to community residential treatment programs that offer a Therapeutic Community model. Studies show that each type of diversion program is moderately successful with respect to recidivism [5].

Jail and prison-based substance use interventions have also become available, although they are not widely used [6]. Prison-based treatments are more common than jail-based ones. In prisons, the most widely used model for substance use treatment is some version of Therapeutic Communities, which have shown some promise in terms of recidivism among released prisoners. Interventions in jail are difficult to sustain as the length of custody is seldom long enough to allow rigorous treatment programming. Short duration interventions such as Motivational Interviewing or Screening, Brief Intervention and Referral to Treatment (SBIRT) programs are more suited to short-term custody situations.

The proliferation of drug courts, diversion programs and interventions in custody testify to the changes in judicial thinking about the effectiveness of incarceration as a deterrent to criminal behavior motivated by or committed under the influence of substances. The success of therapeutic instead of punitive approaches favors a shift in thinking within the criminal justice system, but it must be acknowledged that there is widespread skepticism about the effectiveness of treatment for criminal offenders.

Substance use and health care system

The Drug Abuse Warning Network (DAWN) program from the Substance Abuse Mental Health Services Administration gathers data on Emergency Department visits from a nationally representative sample of hospitals with 24 hour emergency services and reports on drug-related admissions. In 2011, there were approximately 125 million visits to emergency departments

annually, of which 2.5 million visits were attributable to substance use or misuse [7]. Illicit and prescription drugs accounted for about half of the visits for substance use and misuse and 4 drugs - cocaine, marijuana, heroin and methamphetamine (includes amphetamines) - accounted for the vast majority of emergency room visits for substances. Cocaine alone was involved in 40% of visits. Emergency department visits were also related to ecstasy (MDMA), GHB (gaba-hydroxy-butyrate), Rohypnol, ketamines, LSD, PCP, hallucinogens and inhalants. About 44% of emergency room visits were for a single drug, 56% were for multiple drugs and 28% of visits also involved alcohol. (Alcohol was tabulated as an illicit drug only if the patient was a minor).

Multiple admissions to emergency departments and inpatient facilities, also known as the 'high user' pattern of healthcare utilization, have been associated with unmet needs for substance use treatment and lack of health insurance. A Tennessee study found that patients with unmet substance use treatment were 81% more likely to be admitted to the hospital and 46% more likely to have an emergency room visit in the past year than those without unmet treatment needs [8]. In addition, patients with substance use disorders were more likely to use emergency department services than patients with other chronic medical conditions. Patients with psychiatric history combined with alcohol abuse and hepatitis C with alcohol abuse were among the most frequent users of emergency room services [9]. Large scale studies such as the Healthcare Cost & Utilization Project (HCUP) have generally confirmed the results from smaller studies. A major HCUP study reported that persons with behavioral disorders utilized emergency room services at a higher rate than those with other chronic conditions, specifically diabetes and respiratory disorders such as COPD and asthma. Uninsured substance use patients visited emergency services twice and three times the rate of patients with other chronic conditions such as mental health, diabetes, and respiratory disorders [10].

The emergency department is point of entry into inpatient services for persons with substance use disorders. There were an estimated 1.45 million admissions to substance use patients in 2012, with an average length of stay of 4.5 days at a cost of about \$7600.00 per patient and a total annual estimated cost of \$2 billion [10]. Almost 14% of patients with substance use disorders admitted for inpatient services were uninsured, and most who were insured, were receiving Medicaid. The primary reasons for admission for these patients were: alcohol-related disorders, drug induced disorders, opioid related disorders, cocaine and hallucinogen related disorders. However, patients with substance use disorders who were admitted to the hospital tended to have poorer outcomes than other patients and they were re-hospitalized within 30 days more frequently than patients without a substance use disorder [11]. Substance use patients also exhibited a higher risk of re-hospitalization for conditions other than substance use [12].

The recurrent cycles of treatment and discharge suggests that healthcare services are not tailored to meet the needs of patients with substance use disorders. Treatment of medical conditions without addressing underlying behavioral health issues has

proven to be expensive, as the management of medical problems is compromised when the underlying condition is not treated. Short term interventions have been created for use by physicians and other medical staff for patients with problematic alcohol use. Screening, Brief Intervention and Referral to Treatment (SBIRT) was created for use in medical settings as it became apparent that patients with substance use disorders required additional services such as brief intervention or counseling, motivational interviewing or referral to treatment in a specialty behavioral health program that directly addressed the underlying substance use issues. SBIRT has been used in emergency rooms and physician offices although its long term effectiveness is still being studied. At the federal level, two agencies – HRSA and SAMHSA – created the Center for Integrated Health Solutions with the goal of facilitating integration of medical and behavioral health services. New models of integrated care such the patient centered medical home (PCMH) and services provided in Federally Qualified Health Centers emerged from the need to bridge the gap between health services and the behavioral health needs of patients.

Scientific developments in addiction and treatment

Substance use treatment and the understanding of addiction have been revolutionized in the past two decades by systematic research and these developments have played no small role in the acceptance of substance use as a treatable condition by the larger medical and criminal justice communities. Brain imaging studies shed light on addiction pathways and changes in the structure and functioning of the brain due to substance use [13]. Studies showed that repeated exposure to drugs created neural connections to the substances of abuse and associated stimuli, which explained why drug-related stimuli served as triggers for relapse. Studies of addiction pathways and brain changes led to the re-characterization of substance use as a chronic, relapsing condition in need of management much like other chronic conditions such as diabetes chronic obstructive pulmonary disease (COPD).

Imaging studies revealed that repeated exposure to drugs changed critical regions of the brain and disrupted different brain systems such as the reward and motivation systems, learning and memory, cognitive control, mood, interoception and executive functioning. These studies explained the reasons for the psychological and behavioral profile that characterized addicted persons and their apparent incapacity to stop substance use without intervention. The overall understanding of addiction pathways and the effects of specific substances on psychological and behavioral functioning have advanced significantly in recent years. Frequent users of cocaine, methamphetamines, ecstasy, opiates, alcohol and cannabis exhibit deficits that are both generic to all substances as well as those that are specific to a particular drug [14]. For instance, cocaine is associated with verbal memory deficits and diminished cognitive flexibility; methamphetamines use with verbal memory deficits, poor cognitive planning; ecstasy with verbal memory deficits and reduction in inhibition; opiates with lower verbal fluency and alcohol, with reductions in visuospatial and working memory [15]. Impairments in verbal

memories appear to be a common impairment that cuts across several substances, while disinhibition is associated with specific substances.

Particular focus has been devoted to studying impairment of executive cognitive functioning, which forms the basis for judgment and decision making. Cognitive functioning comprises of abstract reasoning, motor programming and cognitive flexibility. Substance dependent persons, specifically cocaine, alcohol and cannabis users, were found to exhibit impairment in several domains of cognitive functioning [16]. Functional imaging studies show that effects of duration of use of cocaine, heroin, alcohol, MDMA and cannabis are not similar and affect different brain regions [17] and some substance such as MDMA and methamphetamines actually change the structure of the brain. MDMA was found to reduce grey matter areas in the brain [18] and methamphetamines damaged brain structures much like mechanically induced traumatic brain injury [19].

While imaging and physiological studies provided support for the view that substance use should be treated as chronic relapsing condition, treatments for substance use were increasingly required to demonstrate their evidence basis. NIDA's seminal treatment guidance 'Principles of Drug Addiction Treatment: A Research Based Guide,' was published in 1999 [20] and showed that the field of addiction treatment had come a long way from its traditional peer-recovery origins to one in which treatment was provided by licensed clinicians, schooled in evidence-based models. The NIDA publication delineated the principles of effective treatment, including the need to treat the whole person for a sustained period of time with an evidence-based treatment model tailored to the needs of individual clients. The list of evidence-based behavioral treatment models included cognitive behavioral therapy, contingency management, motivational enhancement therapy, matrix model (for stimulants) and community reinforcement approach with vouchers. Cognitive behavioral therapy has become the most commonly used model in substance use treatment, although a modernized version of the 12 step model continues to be in wide use [21]. The NIDA principles of substance use treatment also validated the use of pharmacotherapies such as methadone for opiates, and naltrexone, disulfiram and acamprosate for alcohol abuse. Since the publication of the NIDA guidelines, LAAM (levo-alpha acetylmethadol) and buprenorphine and buprenorphine-naloxone have also become available for treatment of opioid addiction.

Federal agencies such as SAMHSA and national bodies such as the National Quality Forum have also promoted the dissemination and promotion of evidence-based practices in substance use treatment. SAMHSA maintains the NREPP (National Registry of Evidence-based Programs and Practices), which contains intervention models that have been assessed as meeting a minimum level of evidence for effectiveness. The National Quality Forum's (NQF) Evidence-Based Treatment Practices for Substance Use Disorders [22] published recommendations for using evidence-based practices to provide screening, brief intervention, assessment, therapeutic intervention,

pharmacotherapy, engagement and retention management and recovery management, delivered by clinically trained staff. The efforts by federal agencies such as SAMHSA, NIH (NIDA), and national quality organizations such as the NQF have been instrumental in driving changes in therapeutic practices in substance use treatment and placing substance use treatment on a more solid, evidence-based footing.

Impact on substance use treatment policy

The need to directly address substance use issues in the healthcare and criminal justice systems to reduce costs and meet the needs of substance use clients in these systems underlay the drive to bring substance use treatment into the mainstream. In order for this to occur, it was necessary to examine how substance use treatment services were funded, services that were included in health plans and who was eligible for these services. The Mental Health Parity and Addiction Equity of 2008 marked the first step in this direction. The parity act required benefits for behavioral health disorders to be placed on par with medical benefits and treated similarly with respect to financing and health plan benefits for individual and group plans. Thus, the central idea for parity was that copayments and limits on the number of visits for substance use services (and mental health services) would be comparable to medical and surgical services within the plan and so, if the plan did not limit the number of ambulatory care visits, it could not limit the number of outpatient behavioral health visits. The Patient Protection and Affordable Care Act of 2010 and the Health Care and Education Reconciliation Act of 2010, collectively referred to as the Affordable Care Act (ACA), addressed the central issue of eligibility for health insurance, but

also included provisions that built upon the parity framework, which was specifically referenced in the ACA. Behavioral health services for mental health and substance use were included as one of the ten essential benefits that a health plan had to include to meet the requirements of ACA. Under this provision, states were required to amend existing Medicaid benefit plans to include all ten essential benefits, a requirement that mandated states to pay for behavioral health services with public (Medicaid) dollars. A second provision of ACA that also had a major impact on substance use treatment was the expansion of eligibility to childless adults between 19 and 64 years, a group that had long been excluded from receiving many Medicaid benefits in the past. A large percentage of substance using persons, particularly in the criminal justice system, fell into these ages and the expansion of eligibility to adults in essence lifted the restriction against the use of public dollars to provide healthcare to low-income adults.

While it remains to be seen how far policy remedies aimed at providing access to healthcare can go to alter the cycle of repeated incarcerations and use of emergency services, the increased availability of behavioral health services, particularly substance use services, will fill a longstanding gap in services. The parity act and ACA provided a broad framework within which a previously overlooked population was provided with access to substance use services. However, access by itself is not sufficient to produce the intended outcomes, which will require implementation of appropriate treatment regimens that target the specific needs of different sub-populations within the substance using population such as criminal justice involved persons, chronically homeless, veterans and youth.

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