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Nikitha KosarajuHCMG 202Professor Molly Candon14 December 2017TheExternal Cost of Spreading HIV by Injection Drug Abusers            Inthe United States between 2005 and 2009, 16. 6% of people aged 12 or olderliving with HIV/AIDS had used an illicit drug intravenously (TheNSDUH Report, 2010). Not only do drug users share needles and other drug paraphernalia, but they are also more likely to have unsafe sex. By doing so, HIV infecteddrug addicts are potentially spreading the disease to their sexual partners. Toacquire drugs, many people are willing to trade sex. In August 2017, a formerPhiladelphia police narcotics officer, admitted to “ trading heroin and otherdrugs for sexual favors from women,” illustrating the link between drugs andsex (Roebuck, 2017).

Whether it is through sex, the sharing of drug paraphernalia, orpregnancy, the outcome is the same: injection drug abuse increases the spreadof HIV.             Inthe healthcare market, injection drug addiction is a demand side negativeexternality and one of its external costs is the spread of HIV, which causes amarket failure since it is not accounted for in the price. A market failureoccurs when the price does not incorporate all the relevant information andtherefore, the supply and demand curves are incorrect (Candon, 2017). Hence, the equilibrium price and quantity are suboptimal, creating an inefficientmarket (Candon, 2017). To fix this, private or public policies can be made toshift either the supply or demand curve to produce the optimal equilibrium(Candon, 2017). One common cause of healthcare market failures isexternalities, which are behaviors by individuals that impose costs or benefitsto others (Candon, 2017). These costs or benefits are not incorporated intoeither the supply or demand curve and thus, the price is too high or low(Candon, 2017).

Injection drug addiction is a demand side negative externalitythat carries an external cost not accounted for in the demand curve. Therefore, there is an overprovision of goods. Drug addictioncarries many external costs such as drug-related crime and the loss ofproductivity in society, but the spread of HIV caused by injection drugaddiction creates the biggest external cost in terms of healthcareexpenditures. Currently, with issues like the opioid epidemic in America, therelationship between injection drug addiction and the spread of HIV is criticaldue to the economic burden caused by both diseases. For both the private andpublic sectors of healthcare, it is to their benefit to implement policies thatwould shift the demand curve to the left and reduce the quantity demanded. Thisshift in the demand curve would mean that overall health expenditures woulddecrease.            Drugabuse in America has been around for centuries. Drug use started with AncientGreeks, Romans, and Egyptians using drugs such as peyote, opium, and cannabis (Crocq, 2007).

Thesedrugs were then brought to America through colonization. In the 1800s, morphine, heroin, and cocaine were used across the country for their curativeproperties, but by the 1950s, most illicit drug use was suppressed by the federalgovernment (Musto, 1991). However, in the 1960s, drugs such as hallucinogens, amphetamines, and cannabis were introduced, reinvigorating illicit drug use (Paparelli, 2011). Based on the 2013 National Survey on Drug Use and Health (NSUDH) report, 9. 4%of the American population used illicit drugs within the past month, which hadincreased from 8. 3% in 2002 (NIDA, Nationwide Trends, 2015).

While marijuana is used the most, common drugsused intravenously (IV) such as cocaine had 1. 5 million current users aged 12or older and methamphetamine had 595, 000 current users (NIDA, Nationwide Trends, 2015). Not only does drug abuse adversely affectindividuals as well as hurt the people surrounding them, but it also costssociety billions of dollars. Figure 1. Drug abuse andaddiction has imposed a high economic burden on American society. The 2013NSUDH report stated that the “ abuse of tobacco, alcohol, and illicit drugs iscostly to our Nation, exacting more than $740 billion annually in costs relatedto crime, lost work productivity, and health care,” illustrating the exorbitantcost of drug abuse (NIDA, Trends & Statistics, 2017).

Prescription opioids, which can be crushed andinjected by syringe, carry a cost of $78. 5 billion, of which approximately 33%($26 billion) is devoted to healthcare related costs (NIDA, Trends & Statistics, 2017). While treating drug addiction does lower costs, drug addiction treatment also lowers the prevalence of viral infections. Drugusers tend to participate in unsafe behaviors that promote infectious disease spreadand therefore, drug use increases healthcare expenditures by introducing moredisease into society. In particular, theexternal cost of HIV caused by injection drug addiction is important due to theamount of medical savings that could be generated by averting diagnoses. In2010 dollars, the treatment cost over a lifetime per HIV diagnosis wasestimated at $379, 668 (CDC, HIV Cost-effectiveness, 2017).

While certain states tend to have morefinancial burden due to higher numbers of HIV diagnoses, the “ total lifetimetreatment cost for HIV based on new diagnoses in 2009 was estimated to be $16. 6billion,” illustrating the great financial burden placed on both state andfederal governments (CDC, HIV Cost-effectiveness, 2017). While HIV diagnoses are only partiallyrelated to drug addiction, they are preventable. Thus, the rate of prevalencecan be decreased, resulting in significant medical savings. For example, from1991-2006, American prevention programs averted ~361, 878 HIV infections, whichwas estimated to produce $129. 9 billion in medical savings (Farmhan, 2010). Unlike the price of treating drug addiction, the cost of the spreadof HIV is not incorporated in the market, resulting in an incorrect price off whichthe demand and supply curves are generated.

To correct the price and create anoptimal equilibrium price and quantity, the costs per HIV diagnosis caused by injectiondrug addiction must be included. Whileinjection drug addiction is incorporated into the healthcare market, its roleas an externality is not since the external cost of spreading HIV has not beenfactored in. By not factoring in this cost, the demand curve is wrong and needsto be shifted to the left to achieve an optimal market. Currently, there is anoverprovision of goods, showing that the price needs to be higher to lower thequantity demanded. In 2016, 2, 224 HIV diagnoses were caused by injection druguse while another 1, 201 diagnoses were due to male-to-male sexual contact andinjection drug use (CDC, HIVStatistics Overview, 2017). There is a direct correlation between injectiondrug abuse and HIV diagnoses due to the sharing of drug paraphernalia, unsafesex, and mother-to-child transmission. Since HIV spread is not included in themarket price, the cost of the spread is reflected in the market in other ways, impacting patients, payers, and providers. With growing national crises such asthe opioid epidemic, the external cost of injection drug addiction will onlycontinue to grow and continue to affect these players unless the cost isinternalized.

Figure 1. Distribution of the number of diagnoses of HIV in2016 by transmission categorySource: “ Statistics Overview.” HIV/AIDS, Centers for Disease Control and Prevention, 30 Nov. 2017, www. cdc. gov/hiv/statistics/overview/index. html. Overall, theimplication of this market failure is that costs increase, particularly forpayers and patients, to compensate for the suboptimal price currently set inthe market.

Patients are faced with higher premiums to cross subsidize themedical costs of HIV infected drug addicts, who oftentimes do not have theirown health insurance plans. In a study by Cummings et al., the resultsindicated that “ one-third of those with an illicit drug use disorder wereuninsured” (Cummings, 2014). Due to the Emergency Medical Treatment and Labor Act (EMTALA), uninsureddrug addicted individuals will be treated, but are unable to pay. The insurancecompanies are charged higher rates by hospitals to cover the care of uninsuredindividuals, leading to insurers charging patients higher premiums. The netresult is higher costs to payers and patients. While providers are not impactedby costs, they are capable of influencing access to care.

Currently, there is asocial stigma to treating drug addicted individuals. Other patients may notreturn to see providers if they see drug addicted individuals in clinics, providing an incentive for providers to forgo treating drug addicts. Whileeducation about HIV could reduce its spread, the main solution would be todecrease the amount of injection drug addiction overall.

One current solutionis that the federal government has been providing syringe services programs, which give access to sterile needles and syringes for drug addicts. The federalgovernment’s goal is to facilitate the safe disposal of used needles andsyringes as well as provide sterile needles and syringes. Oftentimes, individuals can access these items without a prescription (CDC, Syringe Services Programs, 2017). Additionally, these syringe services programs provide access todisease testing, referrals to drug treatment facilities, and educationsurrounding safe sex and injection procedures. Research surrounding syringeservices programs has shown that these programs “ reduce new HIV and viralhepatitis infections” and they “ save health care dollars by preventinginfections,” illustrating that these programs are essential for decreasing thecost of HIV spread by injection drug addiction (CDC, Syringe Services Program Info Sheet, 2017). These programs are funded basedon strict guidelines placed by the Centers for Disease Control and Prevention(CDC) and the Substance Abuse and Mental Health Services Administration (SAMHSA). While it costs the federal government money to run these programs, it is stillmore cost-effective to implement syringe services programs than pay the healthcarecosts of HIV-infected individuals. Figure 1.

The connections between injection drug use and thespread of HIV. Source: “ SyringeServices Programs.” HIV/AIDS, Centers for Disease Control andPrevention, 28 Sept. 2017, www. cdc. gov/hiv/risk/ssps. html.

While the federalgovernment has successfully reduced the spread of HIV by injection drug addictsthrough syringe services programs, they could reduce it further by encouraginginjection drug addiction treatment. One method to do so is to provide amonetary incentive for providers to treat drug addiction in their clinics. Currently, there is a stigma surrounding treating drug addicts, which may be due to thesocietal perception of drug addiction as a moral failing rather than a chronicdisease of the brain.

To combat the stigma and increase access to treatment, anincentive to physicians to provide treatment could be made by increasingMedicare and/or Medicaid reimbursement rates. By giving an incentive toproviders, the federal government would potentially decrease healthcare costs relatedto drug addiction and HIV overall for payers and patients. While providing amonetary incentive to providers should be effective, the federal governmentcould reduce the spread of HIV by injection drug use even further by removingthe physician waiver requirement to prescribe certain medications known toassist treatment.

For example, buprenorphine binds to the same receptors in thebrain as opioids and relieves craving for the opioid without providing the high(SAMHSA, Buprenorphine, 2016). However, physicians must complete eight hours of trainingand apply for a physician waiver before they can prescribe buprenorphine (SAMHSA, Buprenorphine Waiver Management, 2017). The preliminary waiver allows aphysician to treat up to thirty patients with buprenorphine (SAMHSA, Physician and Program Data, 2017). Physicians can apply for a patient limitincrease to first 100 patients and then after a year, to 275 patients (SAMHSA, Physician and Program Data, 2017).

These regulations present physicianswith a barrier to provide treatment and patients with a barrier to accesstreatments. A 2005 congressionally mandated evaluation study found that “ the30-patient limit on individual physician practices, as well as continuing costand reimbursement issues, have dampened the full potential of buprenorphine toimprove access” (SAMHSA, Physician and Program Data, 2017). There is currently no clear incentivefor providers to obtain this training and waiver. Consequently, an effectivesolution to reducing the spread of HIV by injection drug users may be for thefederal government to provide a monetary incentive for treating drug users andto remove the barriers to prescribing medications that alleviate craving. While there arepublic policies to fight this demand side negative externality, there are noclear private policies in place to fight either injection drug use or thespread of HIV caused by injection drug use. Although hospitals do charge privateinsurers more to compensate for the care given to uninsured drug addicts due toEMTALA, private insurers do not directly cover this cost.

Instead, they raisepremiums. Therefore, there is no clear incentive for private insurers to drivethe price higher to fix the current suboptimal price in the market. However, private insurers do have an incentive to treat the drug addictions of theiralready insured patients. Under the Affordable Care Act, drug addiction isconsidered a preexisting condition so private insurers cannot deny coverage todrug addicts or charge them a higher premium. Unfortunately, for privateinsurers, drug addicts tend to visit the hospital and stay longer than otherpatients, costing insurance companies thousands of dollars. Additionally, adiagnosis of HIV would also cost the insurer thousands. Hence, it would be toprivate insurers’ benefit to treat as many of their drug addicted consumers aspossible since insurers cannot increase these individuals’ premium costs ordeny them coverage.

One simple privatesolution to encourage drug addiction treatment is for private insurers to provideeducation to patients regarding their benefits. In her paper, Cummings and hercolleagues found that private insurance holders with alcohol dependence hadincreased access to specialty treatment than the uninsured only if theyunderstood their benefits (Cummings, 2014). However, this same relationship was not found for those with drug dependence, which is most likely due to the illegality of the drugs being used (Cummings, 2014). Since most private insurance is provided through an employer, privately insureddrug addicts may be scared to access treatment even if they are aware that thistreatment is covered by their benefits. To decrease injection drug addiction intheir consumer population, private insurers should first provide theirconsumers with the knowledge that addiction treatment is covered by their insuranceplan, but also with assurance that there would be no backlash if this treatmentwere to be sought out. This provision of education and assurance may lead to areduction in injection drug addiction and consequently, the spread of HIV. Private insurers would benefit from this since their consumers’ overall healthcare expenditures would decrease, giving the potential for a greater profitmargin. Privately insured patients would experience greater access, andproviders would most likely experience greater demand.

Overall, the healthcareexpenditures directed to drug addiction and HIV would decrease because moreindividuals would be receiving treatment quicker. Typically, demandside negative externalities can be corrected by implementing a tax on the good, but in the case of injection drug addiction, this solution is not feasiblesince injection drug use is already illicit. For example, cigarettes are taxedat both the federal and state level to internalize the external cost of smoking.

However, unlike cigarettes, high abuse injection drugs are illegal andtherefore, a tax cannot be set on them. Since a tax is not an option in thissituation, other incentives must be put in place to either decrease injectiondrug addiction or decrease the spread of HIV caused by injection drugaddiction. The most effectiveplayer in decreasing injection drug use and the spread of HIV is the federalgovernment. While private insurers do have an incentive to limit injection drugaddiction in their consumers, if premiums are already set high enough to makean adequate profit, private insurers will not feel pressured to incentivizetreatment.

Conversely, the federal government has already proven that it canreduce the spread of HIV through syringe services programs, but it also has thepotential to reduce injection drug abuse by improving access to treatment. Byproviding a monetary incentive to providers and removing regulation aroundmedication-assisted treatments, the federal government could increase access toaddiction treatment. A policy that would increase Medicare reimbursement ratesfor physicians that treat drug addiction would succeed because the cost of thisprogram is still less than the cost of drug addiction and a potential HIVdiagnosis. It is in society’s best interest to treat drug addiction because itwould mean lower healthcare expenditures overall, less HIV diagnoses, lessdrug-related crime, etc. While a criticalview has been presented regarding injection drug addiction as a demand sidenegative externality with a focus on the spread of HIV as the external cost, there is still a lack of information regarding private addiction treatmentfacilities and their impact on the issue.

The purpose of addiction treatmentfacilities is to end drug users’ dependence. However, there is a monetaryincentive for these facilities to not fulfill their goal. These facilities wantto maintain a high demand for their services so that they can charge a higherprice for their services. It would be highly interesting to have statisticsregarding the rates of success of private addiction treatment facilities andthe rate of HIV diagnoses of injection drug users who have gone to thesefacilities. Another limitation of the research regarding this issue is that HIVcan be spread in a few different ways. Between sharing drug paraphernalia andsexual transmission, it is often difficult to pinpoint exactly which one causedthe spread since many drug users share needles and engage in unsafe sexconcurrently. While all researchcomes with its own set of limitations, overall, it is clear that society can helpcontain healthcare expenditures in America by reducing rates of injection drugaddiction, which prevents the spread of HIV, a costly disease. To reduce costs, there must be a shift in the healthcare system to promote access to drugaddiction treatment.

The federal and state governments are the ideal players toimplement incentives for physicians and other healthcare professionals to treatinjection drug users. Since the health care expenditure savings are so high, itis especially worth the federal and state governments’ efforts, time, and moneyto internalize the external cost through either the suggested policies above orthrough other policies that correct the market price.   Cut out parts: SAMHSA should remove regulation on prescribingmedications to reduce drug cravings, because if a physician can prescribe theopioid for pain, that physician should be able to prescribe the medicationnecessary to reduce craving for the opioid.