
Responding to Clandestine Methamphetamine Manufacturing: A Case Study in Situational Crime Prevention

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Abstract

During the 1990s, Oklahoma experienced an increase in clandestine methamphetamine laboratories in operation in the state. Identifying and responding to this problem became a law enforcement priority. Clandestine laboratories were extremely dangerous and volatile, as they posed great risks to individuals and local communities. Initial efforts to control the problem proved difficult, given the availability of all the key ingredients and supplies. In response to this problem, the Oklahoma Bureau of Narcotics and Dangerous Drugs (OBND) worked to inform the Oklahoma legislature, which passed a number of laws aimed at affecting clandestine manufacturing. This case study explores Oklahoma's legislative responses to methamphetamine manufacturing and retroactively examines whether these laws fit within the situational crime prevention perspective.

Keywords

methamphetamine, clandestine labs, meth, manufacturing, legislation

Oklahoma's legislative responses to the increasing clandestine methamphetamine laboratory problem provide an opportunity to examine how legislative responses were used to address a specific crime problem. Over a period of several years, the Oklahoma legislature passed a number of laws aimed at decreasing the local manufacturing of methamphetamine. These legislative efforts culminated with the passage of Oklahoma House Bill 2176 in April 2004. House Bill 2176 put strict restrictions on access to

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pseudoephedrine, the key precursor chemical used to manufacture methamphetamine in the state (Oklahoma House Bill 2176, 2004a, 2004b, 2004c). Designed with considerable input from state-level law enforcement, this legislation was credited with making a significant impact on the reduction of methamphetamine manufacturing (Henry, 2005; Office of National Drug Control Policy [ONDCP], 2006; Shukla & Bartgis, 2008). However, as the present article will demonstrate, Oklahoma House Bill 2176 was one of several pieces of legislation directly aimed at affecting the manufacturing problem.

The present study describes Oklahoma's response to methamphetamine manufacturing. The goal of this case study is to retroactively explore whether Oklahoma's legislative responses to this problem fit into the situational crime prevention framework (Clarke, 2008). This article presents a unique opportunity for understanding the utility of legislation used to address specific crime problems and the value of situational crime prevention-oriented approaches to crime reduction.

Methamphetamine Manufacturing in Oklahoma

The local clandestine manufacturing problem emerged in Oklahoma during the mid-to-late 1990s, and was part of a larger trend of increased methamphetamine production in various parts of the United States (ONDCP, 2006). According to the Federal Drug Enforcement Agency (DEA), methamphetamine comprised a large part of the illicit drug problem in Oklahoma for many years (DEA, 2004, 2007, 2008). Methamphetamine is a highly addictive drug referred to by many street names, including crank, ice, and meth (McEwen et al., 2003; Methresources.gov., n.d.; Miller, 2005; ONDCP, 2005).

As with other illicit drug problems, the methamphetamine problem is multidimensional in nature consisting of the diverse but highly interrelated aspects of use, manufacturing, and trafficking. The methamphetamine problem that emerged was uncommon because it is one of the few illicit drugs that can be completely manufactured synthetically (Hunt, 2006) using products and chemicals readily accessible at retail stores (ONDCP, 2006). Individuals can manufacture methamphetamine themselves in local laboratories and recipes are available on the Internet (Scott & Dedel, 2006) and elsewhere (e.g., see Uncle Fester, 2008, 2009). These conditions fueled the growth in local, clandestine manufacturing.

Responding to the clandestine manufacturing of methamphetamine became a priority of law enforcement and legislators due to the serious dangers and risks associated with manufacturing. The manufacture of methamphetamine was dangerous, toxic, and posed certain risk to anyone who came in contact with a methamphetamine laboratory because of the chemical processes involved. Further problems were created for communities left to deal with the toxic waste and environmental contamination left behind. In addition, the clandestine methamphetamine manufacturing problem was related to other social problems including child endangerment and neglect (Office for Victims of Crime [OVC], 2003; Scott & Dedel, 2006).

Stopping the local clandestine manufacturing problem proved difficult in part due to the availability of the necessary supplies, essential ingredients, and precursor chemicals

needed to manufacture methamphetamine (*Emerging Threats*, 2001; Scott & Dedel, 2006). Methamphetamine could be manufactured in local, clandestine laboratories using a number of common household supplies and chemicals including lighter fluid, allergy and cold medicines, matches, drain cleaner, and paint thinner (Scott & Dedel, 2006). The precursor chemicals used to manufacture methamphetamine include red phosphorous, phenyl-2-propanone, ephedrine or pseudoephedrine, and/or the agricultural fertilizer anhydrous ammonia (Scott & Dedel, 2006). By the late 1990s, the majority of clandestine laboratories in Oklahoma were small labs that manufactured methamphetamine using pseudoephedrine as the key precursor chemical (Shukla & Bartgis, 2008).

The methamphetamine manufacturing problem was not limited to Oklahoma. As early as 2001, the United States House of Representatives held a Congressional hearing to specifically address the problems associated with methamphetamine (*Emerging Threats*, 2001). Individual states and the federal government looked for ways to deal with the clandestine manufacturing problem, which created mounting burdens and costs for law enforcement officials and local communities across the United States (*Emerging Threats*, 2001). Although Oklahoma was not unique in passing legislation to deal with the manufacturing of methamphetamine, it led the nation with its legislative response to the problem. Oklahoma was the first state in the nation to pass specific legislation (i.e., Oklahoma House Bill 2176) restricting access to over-the-counter cold medicines containing precursor chemicals used to manufacture methamphetamine (ONDCP, 2006; Shukla & Bartgis, 2008). Oklahoma House Bill 2176 was one of many laws passed in response to a growing methamphetamine manufacturing problem in the State. These laws, although not specifically guided by theoretical concerns nor implemented through action research methodology (Clarke, 1997), potentially align with opportunity-reducing techniques (Clarke & Eck, 2003; Cornish & Clarke, 2003) proposed within the situational crime prevention framework (Clarke, 1997, 2008). The present study describes the various legislative responses to methamphetamine manufacturing in Oklahoma and retroactively assesses whether these laws fit into the situational crime prevention framework.

Situational Crime Prevention

Situational crime prevention involves the manipulation of environmental conditions and situational circumstances to reduce opportunities to commit crime (Clarke, 2008). Developed for the purpose of identifying ways to reduce opportunities for specific forms of crime, the situational crime prevention perspective is comprised of four main components: a theoretical framework, an action-research-based standard methodology, opportunity-reducing techniques, and a growing literature of evaluated practice (Clarke, 1997). Based in part on the tenets of the rational choice (Clarke & Cornish, 1985; Cornish & Clarke, 1986) and routine activity (Cohen & Felson, 1979; Felson & Cohen, 1980) perspectives, the focus of situational crime prevention is on crime settings, rather than involvement in offending or offenders. Being crime specific and understanding opportunities from the perspective of the offender are central to this approach (Clarke, 1997, 2008).

Opportunity-reducing techniques (Clarke & Eck, 2003; Cornish & Clarke, 2003) lie at the heart of the situational crime prevention approach. These techniques were developed to identify ways opportunities for crime could be prevented. Because the situational crime prevention perspective (Clarke, 1997, 2008) is concerned primarily with application, the perspective and categories of techniques continue to evolve over time. A review of the literature on the situational crime prevention perspective outlines the development of the classification of opportunity-reducing techniques, which progressed from the original 12 (see Clarke, 1992), to 16 (Clarke & Homel, 1997) and most recently, 25 (Clarke & Eck, 2003; Cornish & Clarke, 2003). In the most recent version, these measures aim to address the following: increasing efforts, increasing risks, reducing rewards, reducing provocations, and removing excuses (Clarke & Eck, 2003; Cornish & Clarke, 2003). Each category of opportunity-reducing techniques will be briefly reviewed here. The first category of situational measures focuses on *increasing the efforts* of crime. These measures are designed to make criminal offending more difficult for offenders; techniques include target hardening, controlling access to facilities, screening exits, deflecting offenders, and controlling tools and weapons (Clarke & Eck, 2005). Examples of techniques that increase the efforts of crime include using physical barriers (e.g., through locks or reinforced materials), controlling access to places (e.g., using entry phones or electronic access cards), closing streets to deflect offenders, and placing photos on credit cards (Clarke & Eck, 2005).

The second category of situational measures is designed to *increase the risks of crime* or make it more likely that offenders will get caught. Each of these measures outlines techniques that increase the chances of apprehending offenders; subcategories include extending guardianship, assisting natural surveillance, reducing anonymity, using place managers, and strengthening formal surveillance (Clarke & Eck, 2005). Examples of techniques that increase the risks of crime include promoting routine precautions (e.g., going out at night in a group), improving street lighting or creating neighborhood watch groups, requiring cab drivers to post identification cards, training employees to assist with preventing crime, and using video surveillance (Clarke & Eck, 2005).

The third category of situational measures consists of strategies that aim to *reduce the rewards of crime*. These measures are geared toward removing or reducing the benefits that offenders are seeking to gain from criminal activity; specific measures include concealing targets, removing targets, identifying property, and disrupting markets. Examples of reward-reducing measures include unmarked armored trucks, removable car radios, cattle branding, and graffiti cleanup (Clarke & Eck, 2005).

The fourth category of situational measures, *reducing provocations*, draws on the work of Wortley (2001). Strategies that seek to reduce provocations are focused on reducing or minimizing situational features that induce or precipitate crime; techniques include reducing frustration and stress, avoiding disputes, reducing arousal and temptation, neutralizing peer pressure, and discouraging imitation (Clarke & Eck, 2005). Examples of provocation-reducing measures include the use of soothing music or muted lighting, fixing cab fares, prohibiting pedophiles from working with children, placing signs discouraging negative behavior or encouraging positive behavior in public settings (e.g., "Idiots drink and drive"), and rapidly repairing vandalism (Clarke & Eck, 2005).

The final category of situational measures seeks to *remove excuses for crime*. Techniques include setting rules, posting instructions, assisting compliance, and controlling drugs and alcohol (Clarke & Eck, 2005). Examples of such measures include rental agreements, posting signs (e.g., “No Parking”), the use of roadside speed displays, public restrooms, and alcohol-free events (Clarke & Eck, 2005).

The situational crime prevention categories are not completely distinct or absolute; a single offense may fit into multiple categories (Clarke, 1997). Within the literature, the categories of opportunity-reducing techniques are presented as theoretical categories, built and developed primarily with examples (see Clarke & Eck, 2003, 2005; Cornish & Clarke, 2003; Clarke, 1995, 1997). Each of the five categories of opportunity-reducing techniques focuses on preventing crime at the moment of commission.

Although the level of planning preceding the commission of offenses varies, efforts to prevent crimes through opportunity-reducing strategies are focused on the criminal act. It is in this sense that methamphetamine manufacturing is similar to other offenses that involve numerous steps or “scripts” (see Clarke & Eck, 2005; Cornish, 1994). Methamphetamine manufacturing is complex, involving a series of steps and actions that precede the actual manufacturing process. Preliminary activities include acquiring the necessary precursor chemicals, products, and supplies. These “premanufacturing” steps occur as a series of transactions that precede the actual act of “cooking” or manufacturing methamphetamine, and the term “offender” may be used to describe the individuals involved in acquiring needed supplies and chemicals and/or those who actually cook methamphetamine. As will be demonstrated in this case study, although many laws were passed to affect the clandestine manufacturing problem in Oklahoma, not all laws specifically prevented opportunities for offenders to manufacture methamphetamine.

Situational crime prevention places an emphasis on the environment in which crimes occur and on the prevention of crime (Clarke, 1997, 1998). Although the theoretical origins of situational crime prevention were a result of research conducted in Britain’s correctional system, the acceptance and development of research in crime prevention through environmental design (CPTED) by Jeffery in 1971 and again by Newman in 1972 and problem-oriented policing (POP) in 1979 have led to the current focus of prevention (Clarke, 1997). Situational crime prevention, however, presents a more comprehensive approach than previous theories. The crime prevention approach presented by Clarke includes opportunity-reducing measures customized to meet the following criteria:

1. Measures are directed at specific forms of crime;
2. Involve management design or manipulation of the immediate environment in a systematic and permanent way; and/or
3. Make crime more difficult and risky, or less rewarding and excusable as judged by a wide range of offenders (1997, p. 4).

If it is true that every criminal act must have means, motive, opportunity, and a suitable victim (Cohen & Felson, 1979), then it stands to reason that if one or more of

the ingredients are missing or removed, the chance that a crime will take place is reduced. An offender can have a motive and means but no opportunity. Taking away the means to commit crime may also reduce involvement and lessen opportunities to offend. One component of situational crime prevention involves the stakeholders working together to identify and analyze the problem, develop and implement a response, evaluate results, and repeat the cycle when necessary with a goal of reducing or preventing crime.

Oklahoma's response to manufacturing is not the only example of legislative efforts to respond to crime problems. Literature is replete with examples of crime prevention efforts. There is a growing body of evidence supporting the implementation of policies to prevent crime. The following summaries were selected as examples because legislative or police-community action was used to reduce particular crimes. These initiatives were specifically designed to use policies, laws, or ordinances and community strategies to increase the effort of would-be criminals to victimize citizens.

Like Oklahoma, where legislation was passed to deal with the increasing number of methamphetamine clandestine laboratories, the London metropolitan area faced the challenge of reducing automobile thefts. London followed Germany's example of offering to install steering column locks. Webb's review of data in 1994 found that Germany saw a dramatic reduction in vehicle thefts with the required addition of an antitheft device in the early 1960s. Although there was a reduction in automobile theft in Britain, it was not as dramatic an impact as that observed by German officials. Britain's lower automobile theft reduction may be attributed to the fact that their initiative focused on new passenger cars. There was no requirement to equip older vehicles with antitheft devices (Webb, 1994).

The United States, like Great Britain, inspired by automobile theft prevention efforts of others passed the Federal Motor Vehicle Safety Standard 114 in 1966 (Karmen, 1981). This legislation required automobile "manufacturers to equip new passenger cars with a key-locking system that prevented the car from being steered or driven forward without the ignition key," (Webb, 1994, p. 48). Most U.S. automobile manufacturers focused on steering column locks. A 1975 study conducted by the Federal Bureau of Investigation (FBI) suggested that vehicles protected by steering column locks were targets of theft less often than vehicles without that protection (as cited in Clarke, 1997). There was some caution in accepting this as evidence of positive preventive measures, however, because the reduction of vehicle thefts lasted for a period of only 2 years.

A second example of legislative or police-community action was Roger Matthews' (1990) case study of law enforcement efforts to curb street prostitution. Wilson and Kelling (1982) posited that the problems with this type of minor criminal behavior were associated with neighborhood decline. The cycle of neighborhood decline and increasing crime contributes to increases in citizens' fear of crime. Perpetual decline and citizen fear potentially leave areas vulnerable to more serious crimes. One police response to complaints of prostitution might be street sweeps designed to arrest offenders for solicitation. Without more intervention, however, fines for solicitation become part of "doing business" and deter undesired activities for only a short period of time and often create concern about displacement to contiguous neighborhoods (Clarke, 1983).

One metropolitan agency's effort to design out prostitution created questions about intensive police actions. A project was established with two objectives: increased law enforcement effort using a multiagency response and a road-closure scheme to reduce prostitution. Citizens, though, were concerned that the road-closing would make it an attractive home base for prostitutes and other undesirables (Matthews, 1990). The design changes, however, resulted in a decline in prostitution, without signs of displacement, and a return to a relatively peaceful residential area. As a growing number of positive results to police-community initiatives are reported, situational crime prevention and environmental design theories have become popular solutions to many types of crime problems.

A more recent example of a crime prevention project was conducted by the Home Office and the Association of Chief Police Officers (ACPO) in England, Wales, and Northern Ireland (PA Consulting Group, 2004). The initiative was designed to increase arrest with the use of Automatic Plate Recognition (APR) systems. The goal was to detect, disrupt, and deter criminal activity in the participating jurisdictions by increasing the number of warrants served and offenders arrested. The preliminary results of the initiative were much greater than the typical arrest rates using conventional methods. In addition, the effort contributed to the broader objectives of road safety and public satisfaction of increased police visibility. Home Secretary David Blunkett reported that the success of the project could lead to the introduction of enabling legislation that would allow for increases in the use of APR by the constabulary.

Although the focus and development of situational crime prevention has been guided in large part by practical crime prevention concerns (Cornish & Clarke, 2003), there is a growing body of literature supporting the utility of situational crime prevention efforts for affecting diverse types of specific crime problems (Clarke, 2008). A number of case studies illustrating the value of situational prevention measures are documented in the *Crime Prevention Studies* series as well as in the book *Situational Crime Prevention: Successful Case Studies* (Clarke, 1992, 1997). To facilitate the practical application of situational crime prevention and problem-oriented policing, much of the information about these perspectives and their local implementation is accessible to researchers and practitioners through the Center for Problem-Oriented Policing Web site (i.e., www.popcenter.org). Increasingly, the strategies proposed by the situational crime prevention perspective are being promoted and/or utilized as responses to more and more diverse crime problems including terrorism (Clarke & Newman, 2006), child sexual abuse (Wortley & Smallbone, 2006), and Internet fraud (Newman & Clarke, 2003).

The present case study describes Oklahoma's legislative responses to address the clandestine manufacturing of methamphetamine and seeks to assess whether any of these legislative responses fit within the framework of situational crime prevention. A detailed review of Oklahoma state legislation passed during the height of the methamphetamine problem and a preliminary analysis of the impact of these legislative efforts on methamphetamine laboratory seizures are presented.

Method

The present study is part of a larger multiyear study on the methamphetamine problem in Oklahoma being conducted by the authors of this article.¹ This case study focuses on gaining an in-depth understanding of legislative responses to the methamphetamine problem in Oklahoma using multiple sources of information. Both primary and secondary data sources were utilized. Data that were compiled and reviewed include legislative documents, interviews with key state law enforcement officials, state and federal data on methamphetamine laboratory seizures in Oklahoma, governmental reports on methamphetamine, and Internet sources. This research is primarily descriptive in nature.

Information on the laws targeting methamphetamine manufacturing passed by the Oklahoma state legislature and signed by the Governor between the years 1999 and 2005 was compiled and examined. Researchers solicited information on methamphetamine-related legislation from drug enforcement officials at the Oklahoma Bureau of Narcotics and Dangerous Drugs (OBNDD), from searches of the Oklahoma State Legislature Web site (i.e., www.lsb.state.ok.us), from the Oklahoma State Courts Network Web site (i.e. www.oscn.net), and from the Oklahoma Secretary of State Web site (i.e., www.sos.state.ok.us). Because of the complexity of the structure and wording of legislative statutes, the content of Oklahoma House and Senate bills was verified by cross-referencing information on legislation from multiple sources. Given that legal language is often subject to interpretation, direct quotes of essential segments of specific legislative acts are provided to enhance clarity and understanding.

Reliable estimates of the number of methamphetamine laboratories are difficult to obtain. The most reliable indicator of the number of methamphetamine laboratories comes from state and federal estimates of reported clandestine laboratory seizures. Data on the number of clandestine methamphetamine laboratory seizures in Oklahoma were compiled from both the state drug enforcement agency, the Oklahoma Bureau of Narcotics and Dangerous Drugs (OBNDD), and from the federal DEA National Clandestine Laboratory Database (DEA, n.d.). It is important to note that these numbers vary from one to another and, in some instance, change over time (i.e., numbers presented on the DEA Web site are updated periodically and change). How and why these numbers differ from one another is not clear. It is evident that problems with this measure exist. Although data on the numbers of laboratory seizures are subject to the limitations of underreporting, they represent the most reliable and consistent indicators of known laboratories in the state. Information on the numbers of methamphetamine laboratory seizures from both sources is presented to provide a preliminary understanding and assessment of the impact of legislative responses to the methamphetamine manufacturing problem in Oklahoma.

OBNDD is the primary state level drug enforcement agency in Oklahoma. OBNDD is actively involved in the policing of drugs, public education about drugs, and in working with the Oklahoma legislature to pass laws aimed at reducing the drug problem in the state (M. Woodward, personal communication, July 17, 2009). As an independent state drug enforcement agency, OBNDD is directly involved in drug enforcement and state-level drug policy development in Oklahoma. As a key player in

Oklahoma drug enforcement, OBND exists as a valuable source of information about Oklahoma's drug problems. Thus additional information for this research study was gathered through numerous communications between the lead author and the public information officer (i.e., Mark Woodward) of OBND via phone, email, and in-person interviews, and from information posted on the OBND Web site (i.e., www.ok.gov/obnd/).

Information on specific legislative acts related to methamphetamine manufacturing passed by the Oklahoma legislature was compiled from the sources outlined above. Researchers reviewed information on each law and summarized the key aspects of the laws as they related to methamphetamine manufacturing. Information on each law was reviewed from multiple sources and compared against the specific wording of the legal statutes as listed in the most recent version of the Oklahoma Statutes, posted online on the Oklahoma Legislature Web site (i.e., www.lsb.state.ok.us/osstatutestitle.html). The researchers reviewed each law against the various categories of situational crime prevention opportunity-reducing techniques and inductively determined whether the law fit into one or more of the categories.

Findings

Oklahoma State Legislation Related to Methamphetamine Manufacturing

The legislative responses to the clandestine manufacturing problem in Oklahoma were varied in nature. The laws were aimed at multiple parties associated with the methamphetamine problem, including distributors, retailers, and offenders. In general, the laws that were passed increased controls on precursor chemicals, criminalized activities associated with manufacturing, increased penalties for offenders and other responsible parties (e.g., retailers), and created new reporting and tracking regulations. Although the Oklahoma legislature was responsible for passing these laws, it is important to note that some of these legislative efforts were crafted with a great deal of input from state law enforcement officials. OBND officials played an important role in identifying the loopholes and conditions that facilitated manufacturing in the state and lobbied for changes in the law (M. Woodward, personal communication, July 17, 2009). As demonstrated by the discussion that follows, the passage of state legislation aimed at affecting the local manufacturing problem occurred incrementally, over time. The following discussion of state legislation passed in response to the methamphetamine manufacturing problem aims to describe the tenets of each legislative act (see Table 1) and determine whether these efforts align with any of the opportunity-reducing techniques (Clarke & Eck, 2003; Cornish & Clarke, 2003) of the situational crime prevention perspective (Clarke, 1997, 2008).

Oklahoma House Bill 2521 (1998).

Oklahoma House Bill 2521 was directed at controlling red phosphorous, a chemical that was used to manufacture methamphetamine. This legislation classified red phosphorous

Table 1. Summary of Oklahoma Methamphetamine Legislation, 1999-2005

Legislation	Year	Purpose
House Bill 2521	1998	Classified red phosphorous as a precursor chemical in the manufacturing of methamphetamine; required permits and licensing to possess or distribute red phosphorous
House Bill 1723 & Senate Bill 660	1999	Required law enforcement agencies to report clandestine laboratory seizures to the Oklahoma State Bureau of Narcotics and Dangerous Drugs
Senate Bill 878	2000	Classified theft of anhydrous ammonia and tampering with storage devices a felony; increased penalties for illegal possession and possession in unauthorized container
House Bill 2316	2002	Made it illegal to possess pseudoephedrine with intent to manufacture and to sell pseudoephedrine with reckless disregard; increased penalties for illegal possession
House Bill 1326	2003	Required that distributors of pseudoephedrine be registered and maintain transaction records for 3 years
House Bill 2176	2004	Classified pseudoephedrine as a Schedule V controlled substance; required pharmacists or pharmacy technicians sell products containing pseudoephedrine; required purchasers to show photo identification and sign a log; restricted sales to nine grams over a 30-day period
House Bill 1507	2005	Authorized funding for an electronic tracking and monitoring system to enforce HB 2176

Note. Adapted from Oklahoma Statutes (Oklahoma House Bill 2521, 1998; Oklahoma House Bill 1723, 1999; Oklahoma Senate Bill 660, 1999; Oklahoma Senate Bill 878, 2000; Oklahoma House Bill 2316, 2002; Oklahoma House Bill 1326, 2003; Oklahoma House Bill 2176, 2004; Oklahoma House Bill 1507, 2005).

as a precursor chemical, placing restrictions on access to the substance by requiring a license or permit to “possess, sell, manufacture, transfer or otherwise furnish . . .” (Oklahoma House Bill 2521, 1998) this and other substances classified as precursor chemicals. Although this legislation does not directly fit within situational crime prevention, Oklahoma House Bill 2521 increased control of red phosphorous with the licensure requirement.

Oklahoma House Bill 1723 & Senate Bill 660 (1999).

Oklahoma House Bill 1723 and Senate Bill 660 established the Lab Tracker Law, requiring law enforcement agencies to report clandestine methamphetamine lab seizures to OBND (Oklahoma House Bill 1723, 1999; Oklahoma Senate Bill 660, 1990). These laws do not fit within the situational crime prevention framework. However, the laws improved OBND’s ability to monitor and track the growing clandestine manufacturing problem and gain a greater understanding of the characteristics and types of labs being seized in the state.

Oklahoma Senate Bill 878 (2000).

Oklahoma Senate Bill 878 focused on increasing penalties for stealing and/or illegally transporting anhydrous ammonia fertilizer, another chemical often used in the manufacturing of methamphetamine. Anhydrous ammonia is an agricultural fertilizer that may be used during the manufacturing process to synthesize ephedrine or pseudoephedrine (Scott & Dedel, 2006). In Oklahoma, methamphetamine manufacturers often stole anhydrous ammonia from local farms. In response, Senate Bill 878 classified tampering with anhydrous ammonia storage devices or containers or stealing any amount of the substance as felony offenses, increasing the penalties for theft and illegal possession. In accordance with Senate Bill 878, offenders convicted of theft now faced 2 to 10 years imprisonment and could be fined up to US\$10,000 (House, Senate Bills, 2001; Oklahoma Senate Bill 878, 2000). The legislation originally increased penalties for illegally possessing anhydrous ammonia, making this offense punishable by a term of 20 years to life, with a fine of at least US\$50,000 (House, Senate Bills, 2001; Oklahoma Session Laws, 2000).² The legislation also made involvement with activities associated with acquiring anhydrous ammonia potentially riskier by legislating that “the possession of any amount of anhydrous ammonia in an unauthorized container shall be prima facie evidence of intent to use such substance to manufacture a controlled dangerous substance.” (Oklahoma Senate Bill 878, 2000). This legislation does not reduce opportunities for crime directly; however, it criminalized certain manufacturing related activities and increased penalties for offenders.

Oklahoma House Bill 2316 (2002).

Oklahoma House Bill 2316 was unique in that it was directed at both offenders and those distributing precursor chemicals. House Bill 2316 made it illegal for individuals to “knowingly and unlawfully possess a drug product containing ephedrine, pseudoephedrine or phenylpropanolamine, or their salts, isomers or salts of isomers with intent to use the product as a precursor to manufacture methamphetamine or another controlled substance” (Oklahoma House Bill 2316, 2002). The law also originally increased the penalties associated of illegally possessing large amounts of these substances by stating that the illicit possession of a drug product that contains more than 24 grams (Miller, Nance, Shurden & Kerr, 2002)³ “shall constitute a rebuttal presumption of the intent to use the product as a precursor to methamphetamine or another controlled substance” (Oklahoma House Bill 2316, 2002). Finally, House Bill 2316 made it “unlawful for any person to knowingly sell, transfer, distribute, or dispense” (Oklahoma House Bill 2316, 2002) any of the above-mentioned products if it is known that the purchaser will be using the product(s) to manufacture methamphetamine or other illegal substances, or if such products are sold, transferred, distributed or dispensed “with reckless disregard as to how the product will be used” (Oklahoma House Bill 2316, 2002). The legislation also added serious penalties for violation holding parties potentially liable for all direct and indirect damages, including the costs of investigation, prosecution, and cleanup

(Oklahoma House Bill 2316, 2002). Although this legislation cannot be directly categorized into the situational crime prevention framework, it also criminalized manufacturing related activities and increased penalties for unlawful possession. What makes this legislation unique is that it significantly broadened responsibilities for those who may facilitate manufacturing by allowing for them to be held liable for damages.

Oklahoma House Bill 1326 (2003).

Oklahoma House Bill 1326 required that manufacturers, distributors, and wholesalers of drug products containing pseudoephedrine or phenylpropanolamine must register with the state law enforcement agency, OBNDD (Oklahoma House Bill 1326, 2003). This legislation was designed to track the distribution of pseudoephedrine, requiring all parties who make or sell these substances to register with the state-level drug enforcement agency. The legislation further required that registered parties “keep complete records of all transactions involving such drug products including the names of all parties involved in the transaction and amount of the drug products involved” (Oklahoma House Bill 2316, 2003), and that such records be maintained in a retrievable manner for a minimum of 3 years (Nance & Smith, 2003; Oklahoma House Bill 2316, 2003). By requiring registration and record keeping, this legislation improved law enforcement’s ability to track purchases of pseudoephedrine; however, it did not directly affect opportunities for offending.

Oklahoma House Bill 2176 (2004).

Oklahoma House Bill 2176 was one of the most important pieces of legislation aimed at controlling access to pseudoephedrine, a key precursor chemical used to manufacture methamphetamine in the state. House Bill 2176 added pseudoephedrine to the list of Schedule V controlled substances, regulating sales and decreasing the amount of the drug that could be purchased by an individual. This legislation placed tight controls on the sales of products containing pseudoephedrine, requiring that such products be “dispensed, sold, or distributed only by, or under the supervision of, a licensed pharmacist or a registered pharmacy technician” (Oklahoma House Bill 2176, 2004a, 2004b, 2004c). Pseudoephedrine products that were originally available over-the-counter had to be taken off store shelves and placed behind the pharmacy counter. The legislation also put more controls on monitoring the sales of pseudoephedrine by requiring that anyone who purchased any product containing a detectable quantity of pseudoephedrine be required to produce identification and sign a written log maintained by a licensed pharmacy technician. House Bill 2176 further limited the amount of pseudoephedrine individuals could purchase to nine grams over a 30-day period. Effectively, this bill added substance to other legislative bills passed by the state as preventative measures to stem the growing methamphetamine manufacturing crisis.

Oklahoma House Bill 2176 was credited with significantly affecting the clandestine manufacturing of methamphetamine in the state (ONDCP, 2006; Shukla & Bartgis, 2008). Although it was only one of several pieces of legislation passed to address the local manufacturing problem, this legislation was unique in that it most closely aligned with the techniques of situational crime prevention. By reclassifying pseudoephedrine, this legislation increased controls on products containing this substance. It increased the effort needed to obtain pseudoephedrine through target hardening. The placement of pseudoephedrine products behind the counter and sales restrictions made obtaining large quantities more difficult, thus controlling access to it. The legislation essentially made pharmacists and pharmacy technicians capable guardians. It further increased the risks of being identified as a possible offender by reducing anonymity. Purchasers were now required to show photo identification and sign a log at the time of purchase. During the same time period, OBNDD made an effort to increase awareness by providing signs to retailers and pharmacies to encourage employees and the general public to report suspicions of possible manufacturing.

Oklahoma House Bill 2176 extended the responsibility for monitoring pseudoephedrine sales, setting clear rules for tracking sales and mandating compliance with the guidelines set forth by this legislation. Although this extension of responsibility was not directed at offenders, it had the potential of removing excuses for those selling products containing pseudoephedrine.

Oklahoma House Bill 1507 (2005).

Oklahoma's ability to implement and monitor the rules and requirements associated with House Bill 2176 were enhanced with the passage of Oklahoma House Bill 1507 in 2005. House Bill 1507 authorized OBNDD to use any funds available to the agency "to implement a real-time electronic logbook to monitor the sales of Schedule V products" (Oklahoma House Bill 1507, 2005). This legislation provided the state drug enforcement agency with the ability to purchase and implement a computer system to track and approve or deny pseudoephedrine sales in real time. According to the public information officer for OBNDD, the electronic logbook was purchased with approximately US\$500,000 of federal funds received by the agency (M. Woodward, personal communication, January 22, 2009). The legislation was passed in 2005, and OBNDD began working with an external provider to build and begin testing the electronic monitoring system in early 2006; the electronic system went online on October 1, 2006 (OBNDD, 2006). This example provides evidence of the collaboration that was occurring in Oklahoma between OBNDD and the state legislature. It is important to note that Oklahoma is one of the few states in the nation to have this type of electronic monitoring system in place.

The impact of this legislation on the ability of law enforcement to track, monitor, and enforce limits on the sales of pseudoephedrine and related controlled products cannot be underestimated. Essentially, House Bill 1507 increased the ability to enforce House Bill 2176. Identifying information was now entered into computerized system

Table 2. Oklahoma Methamphetamine Laboratory Seizures, 1999-2008

Year	OBNDD	DEA
1994	10	—
1995	34	—
1996	125	—
1997	241	—
1998	287	—
1999	781 ^a	404 ^b
2000	946	399
2001	1193	806
2002	1254	883
2003	1233	1068
2004	812	659
2005	334	222
2006	194	179
2007	148	92
2008	213	102

Note: Values represent number of laboratory seizures as reported by each agency. The data in column 2 are from the Oklahoma Bureau of Narcotics and Dangerous Drugs, personal communication, July 17, 2009. The data in column 3 were adapted from Drug Enforcement Agency (n.d.).

a. Oklahoma law requiring reporting of laboratory seizures was passed.

b. DEA Clandestine Laboratory Database established.

at the time of purchase. Individuals who attempted to purchase pseudoephedrine products were immediately approved or denied purchase based on the electronic log book. The electronic log enhanced the ability to monitor purchases by tying all pharmacies to a centralized server maintained and operated by OBNDD. House Bill 1507 strengthened law enforcement's ability to enforce the restrictions put in place by House Bill 2176.

Evaluating Effectiveness: Oklahoma Methamphetamine Laboratory Seizures

Despite the passage of early pieces of legislation aimed at affecting the local manufacturing of methamphetamine in Oklahoma, the numbers of reported laboratory seizures increased from 1999 to 2003 (M. Woodward, personal communication, July 16, 2009; DEA, n.d.). By 2003, the number of laboratory seizures exceeded 1,000. As shown in Table 2, the first decrease in reported laboratory seizures as documented by both state (i.e., OBNDD) and federal (i.e., DEA) drug enforcement agencies occurred in 2004, the year that Oklahoma House Bill 2176 went into effect. According to both sources (i.e., OBNDD and DEA), the decrease in laboratory seizures in Oklahoma continued in the following years, with a minimal increase occurring only very recently.

Although these data indicate that some clandestine manufacturing laboratories are still being identified in the state, the decrease from more than 1,000 labs per year to fewer than 200 per year is a considerable reduction. This reduction in local laboratories,

however, has not completely eliminated the availability of methamphetamine in the state. There is evidence that methamphetamine is increasingly being trafficked into Oklahoma from Mexico, leaving the supply of methamphetamine intact (National Drug Intelligence Center [NDIC], 2006; NDIC, 2007).

Legislation and Situational Crime Prevention

Although the Oklahoma legislature passed several laws aimed at affecting the methamphetamine manufacturing problem from 1999 to 2005, only House Bill 2176 specifically aligns with the tenets of situational crime prevention. House Bill 2176 worked to increase the effort to obtain pseudoephedrine not only by making it more difficult for offenders to obtain large quantities of products containing pseudoephedrine, but also by reducing opportunities to steal such products. In line with the situational crime prevention approach, this legislation increased the efforts and risks of manufacturing by controlling access to pseudoephedrine-containing products. Offenders who were involved in obtaining pseudoephedrine for the purposes of making methamphetamine now had to purchase the drugs from behind the pharmacy counter. When House Bill 2176 went into effect in Oklahoma, small information cards advertising products that contained regulated forms of pseudoephedrine were placed on store shelves, requiring individuals to take the cards to the pharmacy to complete the purchase. The new law further placed limitations on the amount of pseudoephedrine product that could be purchased in a 30-day time period. Individuals were now required to show identification and sign a logbook used to track sales. Although the logbook was implemented to serve the purpose of tracking and limiting sales of pseudoephedrine products, the manual, paper-based tracking process made enforcing the limits established in House Bill 2176 difficult, if not impossible. Individuals evaded the restrictions by purchasing the drugs from multiple retail stores. In response to this new loophole, the legislature passed House Bill 1507. This new legislation directly increased law enforcement's abilities to track and limit access to pseudoephedrine products through the creation and implementation of the electronic logbook. The electronic logbook increased the ability of law enforcers to track pseudoephedrine sales and allowed for purchases to be approved or denied in real-time to enforce product limits.

Although the other laws passed by the Oklahoma legislature prior to House Bill 2176 do not directly fit into the situational crime prevention framework, they set the stage for Oklahoma House Bill 2176. In particular, the laws passed between 1999 and 2003 were aimed at regulating precursor chemicals, establishing rules for distributors and retailers, and criminalizing and increasing penalties for manufacturing-related activities. These laws attempted to stop the manufacturing of methamphetamine through various methods that were not specifically aimed at reducing opportunities for manufacturing. It is possible that the failure of these early laws to affect the local manufacturing problem is what led law enforcement officials and legislators to begin thinking about how to more directly reduce opportunities for offenders to manufacture methamphetamine. It is interesting that the legislation most closely aligned with situational crime

prevention was only passed after numerous efforts to reduce manufacturing by various other means had been attempted.

Conclusions

Preliminary evidence suggests that the controls enacted to reduce clandestine laboratories in Oklahoma and nationally are working. Recent reports on precursor controls indicate that local clandestine laboratories, also known as small toxic labs, (STLs) are decreasing (McBride, Terry-McElrath, Chriqui, O'Connor, & VanderWaal, 2008; ONDCP, 2006; VanderWaal et al., 2008) around the country. These reductions demonstrate the national impact of state and federal precursor laws. National data on treatment admissions lend further support to the positive impact of legislative precursor controls. According to the Treatment Episode Data (TEDs) for Oklahoma, from 2003 until 2007, treatment admissions for amphetamine abuse (i.e., including methamphetamine) out-ranked all other categories of drugs in the State (Office of Applied Studies, 2009). By 2008, treatment admissions for amphetamines declined, falling behind treatment admissions for marijuana and alcohol (Office of Applied Studies, 2009).

Oklahoma House Bill 2176 is given much of the credit for the observed laboratory reduction (Henry, 2005; ONDCP, 2006; Shukla & Bartgis, 2008). However, as this article demonstrates (Figure 1), the process of attempting to affect the manufacturing of methamphetamine through legislation occurred over time. The ability to accurately assess the impact of these legislative efforts is complicated by the fact that the primary sources of data on the number of clandestine methamphetamine laboratory seizures are based on numbers as reported by the state agency OBNDD and the federal agency DEA. As demonstrated by the differences between these two sets of indicators, accurately measuring the number of methamphetamine laboratory seizures is a difficult task. Although Oklahoma's Lab Tracker Law (i.e., Oklahoma House Bill 1723 and Oklahoma Senate Bill 660) requires law enforcement agencies to report all data on clandestine laboratory seizures to the state drug enforcement agency (i.e., OBNDD), these data are subject to underreporting and only provide information on laboratories that come to the attention of law enforcement agencies.

It appears that the greatest impact on the local manufacturing problem occurred in 2004, after the passage of Oklahoma House Bill 2176. This may be in part due to the characteristics of Oklahoma's manufacturing problem. In the majority of reported laboratory seizures, pseudoephedrine was used as the key precursor chemical in the manufacturing process (Shukla & Bartgis, 2008). Thus, restricting access to and placing limits on pseudoephedrine purchases made it more difficult to obtain one of the key precursor chemicals needed to manufacture methamphetamine.

Discussion

This article demonstrates the utility of situational crime prevention-oriented approaches to specific crime problems. Although it is impossible to differentially assess the individual impact of each of the laws passed by the Oklahoma legislature in response to

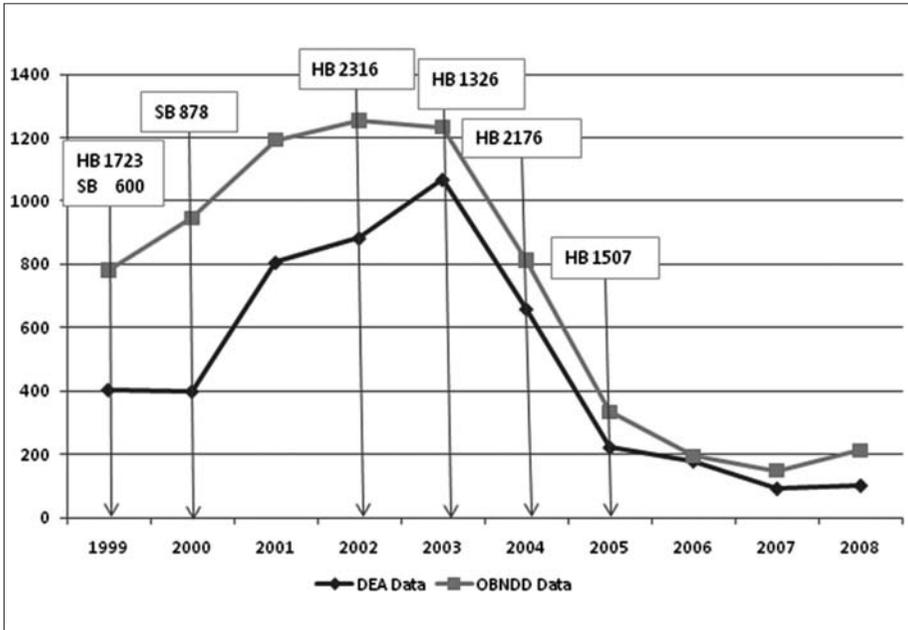


Figure 1. Oklahoma methamphetamine legislation and methamphetamine laboratory seizures, 1999-2005

Note: Legislation passed prior to 1999 are not included.

the methamphetamine manufacturing problem, it is evident that, cumulatively, legislation attempted to make clandestine manufacturing riskier and more difficult over time. It is important to note, however, that other explanations for the observed reduction in laboratory seizures exist. The passage of legislation aimed at stopping manufacturing occurred within a broader context of increased awareness both in the community and among law enforcement. Thus, the increased attention and awareness may have contributed to making manufacturing more risky or difficult. It is not possible to separate out the effects of the legislation, either individually or cumulatively. Nor is it possible to separate the impact of the laws from the broader context of increased attention and information during the time that the laws were being passed. The increased attention may have enhanced law enforcement's ability to detect and seize labs, because citizens were more aware of suspicious activities and more willing to report such activities to law enforcement. Law enforcement officers might have also become more alert to the indicators of methamphetamine laboratories and/or more motivated to seize them. Finally, it is also possible that clandestine laboratories have simply gone even further underground and that manufacturers are becoming more sophisticated at evading detection.

Although the number of clandestine methamphetamine laboratories seized by law enforcement has declined, methamphetamine continues to be referred to as a "principal drug of concern" (DEA, 2006, p. 1) and as one of the primary illegal drugs of choice (in

addition to marijuana) in Oklahoma (DEA, 2007, 2008). Manufacture and use of methamphetamine continue to be problems in the state (DEA, 2006; NDIC, 2002, 2006, 2007). Interestingly, there is little evidence that the passage of precursor controls has made methamphetamine more difficult to obtain. Instead, reductions in the local manufacturing of methamphetamine seem to have been offset by increases in supply through trafficking, as methamphetamine is increasingly being imported into local drug markets from Mexico (NDIC, 2006; NDIC, 2007). The benefit of the reduction in local laboratories, however, cannot be underestimated. Although the problem of methamphetamine continues, the observed reduction in clandestine laboratories is important as a small win. Clandestine laboratories posed great dangers; handling these laboratories required an extensive allocation of resources in the form of time and money. Thus the successful reduction of laboratories in Oklahoma is undoubtedly beneficial for the state, local law enforcement and the broader community.

As with any drug problem, the methamphetamine problem illustrates the complexity of illicit drug problems and society's responses to them. Drug problems are fueled by a demand for drugs, and efforts to reduce supply without affecting the existing demand are doomed to be inadequate. This is becoming increasingly apparent. On January 13, 2009, the Oklahoma's First Lady, Kim Henry, and former Oklahoma County District Attorney, Wes Lane, cochaired the Oklahoma Crystal Darkness campaign ("Oklahoma leaders announce," 2008). The campaign was launched as a part of a larger national campaign focused on raising awareness about the dangers of methamphetamine and offering assistance to those seeking help with methamphetamine addiction (Lane, Previch, Bacharach & Thompson, 2009). Numerous public watch parties were set up around the state for people to gather and view a documentary program about the devastation of methamphetamine; the documentary aired simultaneously on multiple local television stations, the radio, and the Internet (<http://www.crystaldarkness.com>, n.d.). According to the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS), the hotline number associated with the Oklahoma Crystal Darkness program received more than 750 calls for support and services after the program aired (ODMHSAS, n.d.). It is clear that there is a great need for continued efforts to provide information and assistance to those seeking help with their addiction to methamphetamine.

The Oklahoma case study demonstrates how collaborative efforts between the state drug enforcement agency and the state legislature were used to address the clandestine manufacturing of methamphetamine. It is likely that the Oklahoma State Legislature would not have been as successful in passing legislative responses to the conditions creating opportunities for the local methamphetamine manufacturing problem had they not been informed by OBND. In this case, OBND's ability to communicate with legislators and lobby for additional laws was crucial.

In line with many other examples of situational crime prevention, neither the officials at OBND nor the Oklahoma State Legislators specifically set out to implement any situational crime prevention oriented strategies. Rather, the legislative responses to the methamphetamine manufacturing problem were driven by practical needs and an

evolving understanding of the conditions that were facilitating the local manufacturing problem. As this case study demonstrates, the legislative response with the greatest impact on clandestine manufacturing in the state (i.e., Oklahoma House Bill 2176) is the one that most closely fits within the framework of techniques proposed by situational crime prevention.

Oklahoma's legislative responses to manufacturing illustrate the utility of broadening responsibility for crime problems. Rather than relying primarily on traditional law enforcement to respond to methamphetamine manufacturing, Oklahoma legislators increased responsibility and liability for third parties who, intentionally or not, facilitated the clandestine manufacturing problem. In line with the tenets of "third-party policing" (Buerger, 1998), the Oklahoma legislature directly made both distributors and retailers of precursor chemicals responsible for assisting with efforts to track and restrict sales of products used to manufacture methamphetamine. As noted by Laycock and Tilley (1995), these legislative mandates were crucial for the successful implementation of situational crime prevention measures. Rather than relying solely on the efforts of law enforcement officials to respond to the problem, the various laws set the stage for shared responsibility among various parties directly and indirectly responsible for the conditions that facilitated the manufacturing problem (Scott & Goldstein, 2005). Future studies should examine how prevention-oriented responses can be extended beyond offenders, to third parties that may share responsibility for crime problems.

The significance of Oklahoma's legislative responses to methamphetamine manufacturing cannot be underestimated. In recent hearings before Congress, both Oklahoma's efforts to control methamphetamine manufacturing and the need for an evaluation of these efforts were discussed (*Fighting Meth*, 2005; *International Methamphetamine*, 2006). Oklahoma was the first state in the nation to put strict restrictions on over-the-counter access to pseudoephedrine (i.e., through Oklahoma House Bill 2176). This specific piece of legislation served as a model for other states and the federal government (ONDCP, 2006; Weisheit & White, 2009). On March 9, 2006, President Bush signed the U.S.A. Patriot Improvement and Reauthorization Act of 2005 (U.S.A. Patriot Improvement & Reauthorization Act of 2005, 2006). This legislation was designed to strengthen law enforcement efforts to combat methamphetamine, including a provision that modeled Oklahoma House Bill 2176 at the federal level. Furthermore, Oklahoma is one of the only states in the nation to currently have an electronic monitoring and tracking system in place for enforcing precursor (i.e., pseudoephedrine) controls (OBND, 2006).

Oklahoma's success at affecting the clandestine manufacturing of methamphetamine was due at least in part to the legislative controls on precursor chemicals. The legislative efforts attempted to make methamphetamine manufacturing more difficult and risky. The success of the policy changes that occurred through the various pieces of legislation described in this article were also partially dependent on the dual-faceted approach of legislative controls on activities associated with manufacturing. The Oklahoma legislature passed laws aimed at increasing controls on the activities of offenders and on the behaviors of those involved in the distribution

of precursor chemicals at all levels. This approach to reducing the opportunities for manufacturing methamphetamine was crucial because both sides of the problem were addressed through the legislative changes.

Oklahoma's legislative efforts sought to remove excuses for both buyers and sellers of precursor chemicals and other products used to manufacture methamphetamine by setting new rules related to the possession and sales of red phosphorous, anhydrous ammonia and pseudoephedrine. The new laws placed clear regulations on who could access these products, increasing the consequences for noncompliance. Legislative requirements that restrict and track the sales of pseudoephedrine have the potential to remove excuses for noncompliance by retailers and distributors. It appears that the legislative efforts most successful in reducing the numbers of clandestine laboratory seizures (i.e., Oklahoma House Bill 2176 and Oklahoma House Bill 1507) were those that implemented (i.e., Oklahoma House Bill 2176) and increased the ability to enforce (i.e., Oklahoma House Bill 1507) opportunity-reducing techniques that most closely align with situational crime prevention. Legislators and policy-makers would be well-advised to link other crime reduction efforts to the techniques proposed within the situational crime prevention perspective.

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Notes

1. An earlier version of this article was presented at the 14th Environmental Criminology and Crime Analysis conference in Chilliwack, Canada in 2006.
2. The Oklahoma statutes currently show that the fine is now "not less than seven (7) years nor more than life and by a fine of not less than Fifty Thousand Dollars" (Oklahoma Senate Bill 878, 2000), indicating this statute has since been revised.
3. The Oklahoma statutes currently show that the possession threshold has been reduced from 24 to 9 grams (Oklahoma House Bill 2316, 2002), indicating this statute has since been revised.

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