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THE RELATIONSHIP BETWEEN STATE METHAMPHETAMINE PRECURSOR LAWS AND TRENDS IN SMALL TOXIC LAB (STL) SEIZURES

EXECUTIVE SUMMARY

Prepared for

The National Institute of Justice

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EXECUTIVE SUMMARY:
THE RELATIONSHIP BETWEEN STATE METHAMPHETAMINE PRECURSOR LAWS AND TRENDS IN SMALL TOXIC LAB (STL) SEIZURES

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INTRODUCTION

States and the Federal government have undertaken a variety of policy efforts to restrict access to products containing chemical precursors used in small toxic lab (STL) methamphetamine production (O'Connor et al., 2006). This variance provides the opportunity to examine relationships between state policies specifically directed toward reductions in domestic methamphetamine production and trends in STL seizures. This paper provides the first multi-state scientific analysis to examine such relationships. Precursor policies to be examined focus on ephedrine and pseudoephedrine because (1) they are the most common precursor chemicals available in over-the-counter health care products, (2) they are the primary precursor substances found at methamphetamine-related STL sites (Amera-Chem, Inc., 2004), and (3) there was a broad consistent focus on these two precursor chemicals in state policies. This report is the quantitative analysis companion to (1) a documentation of state methamphetamine precursor laws/regulations in effect as of October 1, 2005 by O'Connor et al, 2007; and (2) a paper reporting on qualitative analyses related to methamphetamine STL seizures also prepared for the National Institute of Justice by VanderWaal et al.(2008).

METHODS

Two data sources were used: (1) state policies related to methamphetamine precursor control laws and regulations in effect as of October 1, 2005 (obtained by The MayaTech Corporation); and (2) methamphetamine-related STL seizure data for 32 states from 2004-2006

obtained from the Clandestine Laboratory Seizure System (CLSS) housed at the El Paso Intelligence Center. Data were obtained at the seizure incident level then aggregated to bi-monthly counts of STL seizures per state. Indicator variables were created to identify if seizures occurred at any point following a policy effective date. Independent predictors included the following state policy variables:

1. Clerk intervention and quantity/packaging restrictions for both ephedrine and pseudoephedrine: 0=neither clerk intervention nor quantity/packaging restrictions; 1=no clerk intervention, but do have quantity/packaging restrictions; 2=have clerk intervention, but no quantity/packaging restrictions; 3=have both clerk intervention and quantity/packaging restrictions.

2. Buyer purchase offense severity for both ephedrine and pseudoephedrine: 0=non-crime, 1=crime (misdemeanor or felony).

3. Specification of sales regulatory/enforcement agency: 0=no such specification; 1=agency specified.

Models included two Federal policies that became effective during the 2004-2006 time period that could be expected to relate directly to STL seizure rates. Federal law did not preempt more restrictive state policies. The Federal policies included were:

1. Purchase quantity limits: 0=prior to policy; 1=restrictions for non-liquid pseudoephedrine sold to individuals.

2. Clerk intervention: 0=prior to policy; 1=requirements to place precursor products behind the counter or in locked cabinets at the point of sale, picture ID, retailer logbook of all sales, and staff training.

Two types of analyses were undertaken: (1) differences *within* states on changes in the number of STL seizures over time by specific precursor policies (including only those states that implemented such policy changes), and (2) differences *between* states associated with the various precursor policies (including all 32 states regardless of policy change status). All models controlled for year and state-specific effects.

RESULTS

From 2004-2006, 69% (22) of the 32 retained states implemented a change in clerk intervention or quantity/packaging restrictions. Nine states changed policy on the definition of precursor law violation as a crime; and 11 states made a change in specifying a regulatory agency to oversee policy enforcement. Almost all of the state policy changes noted above occurred prior to the two Federal policy changes examined. Interestingly, there were dramatic differences in the STL seizure rates between states that implemented precursor policy as compared with those without implementation. In states without any precursor policy laws, bi-monthly per-state methamphetamine STL seizures averaged only 8 (maximum of 47), with no significant time trends after controlling for Federal policy. In states that did implement some form of methamphetamine precursor policy change, by-monthly per-state STL seizures averaged 22, with a maximum of 213. Further, significant time trends existed among these states. In states that implemented precursor policy change, total seizures in 2004 equaled 15,366, dropping to 10,985 in 2005, and 6,322 in 2006.

WITHIN-STATE MODELS

1. Federal Policy (7 states without any of the state methamphetamine precursor policies examined)

- Average bi-monthly STL seizures dropped from 9 to 6 ($p<.001$) following the effective date of Federal purchase quantity limit policy.

- No difference in STL seizures observed following the effective date for Federal clerk intervention policy.

2. State Policy

Table 1 provides a summary of the significant decreases in STL seizures following specified state policies. In general, significant decreases remained independently associated with Federal policies for both the ephedrine and pseudoephedrine models when controlling for state policies (Federal policy on clerk intervention did not remain significant in models examining specification of a regulatory/enforcement agency).

Table 1. Within-State Analyses of State Policy and STL Seizure Rates

State Policy (# of States)	Mean STL Seizure Rate		
	Pre-Policy	Post-Policy	p
State policy on clerk intervention and quantity/packaging restrictions			
1. Ephedrine: Moving from neither clerk intervention/quantity packaging restrictions to:			
• Quantity packaging restrictions only (3)	17	8	**
• Clerk intervention only (2)	33	10	***
• Both quantity packaging restrictions and clerk intervention (9)	40	28	***
2. Pseudoephedrine: Moving from neither clerk intervention/quantity packaging restrictions to:			
• Quantity packaging restrictions only (4)	15	7	**
• Clerk intervention only (2)	21	6	*
• Both quantity packaging restrictions and clerk intervention (13)	38	22	***
State policy on buyer penalty severity			
1. Ephedrine: Moving from non-crime severity to crime (8)	30	7	***
2. Pseudoephedrine: Moving from non-crime severity to crime (8)	29	18	**
State policy on regulatory/enforcement agency (11)	26	13	***

*p<.05; **p<.01; ***p<.001

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BETWEEN-STATE MODELS

The following policies were related to significantly decreased STL seizure rates between states:

Ephedrine Policy Model: (1) having state quantity/packaging restrictions (versus neither clerk intervention nor quantity/packaging restrictions; $p<.05$); (2) state specification of regulatory/enforcement agency ($p<.05$); and (3) both Federal policies of purchase quantity limits and clerk intervention ($p<.001$ for both policies).

Pseudoephedrine Policy Model: (1) having state quantity/packaging restrictions (versus neither clerk intervention nor quantity/packaging restrictions; $p<.01$); (2) having both state clerk intervention and quantity/packaging restrictions (versus neither clerk intervention nor quantity/packaging restrictions; $p<.01$); and (3) both Federal policies of purchase quantity limits and clerk intervention ($p<.001$ for both policies).

LIMITATIONS

Given the voluntary nature of the reporting system, CLSS data are not necessarily reported with equal accuracy across states or within states across time. However, the CLSS data remain the only extant source of data on illicit drug laboratory seizures in the US. The analyses reported focus only on how the examined policies relate to STL seizure reductions. Analyses examining how such policies relate to methamphetamine use, or to reductions in costs born by local, state, and Federal governments resulting from STL clean-up efforts and/or hospital and treatment costs, were not within the scope of this project.

CONCLUSIONS

- The analyses suggest that state and Federal policies are independently related to changes in state STL seizures.

- Within-state analyses found that states restricting the purchase quantity of products containing ephedrine or pseudoephedrine, or requiring some form of clerk intervention, reported fewer STL seizures following policy implementation.

- Between-state analyses indicated that quantity limits remained a significant predictor of lowered STL seizure rates for both ephedrine and pseudoephedrine. For pseudoephedrine products, combining quantity restrictions with the requirement for some type of clerk intervention (requiring personal identification or locating the product behind the counter) also significantly related to reduced STL seizures. Restricting precursor chemicals via quantity restrictions likely relates to less availability, which in turn relates to fewer attempts to manufacture methamphetamine in STLs. For pseudoephedrine—the substance with higher direct consumer access in the local retail environment—clerk intervention may play a key role in reducing access for STL manufacturers.

- States that identified an agency to oversee the implementation of their methamphetamine precursor sales laws experienced significant reductions in STL seizures following the effective date of the policy in within-state models. In between-state analyses, this policy remained significantly related to decreased STL seizure rates in models containing ephedrine precursor policy, but not pseudoephedrine. The data may suggest that for substances with a longer history of policy implementation and a longer history of Federal control (like ephedrine; see O'Connor et al., 2006); it is not sufficient merely to pass laws and regulations that restrict access to dangerous chemicals; mechanisms for reporting violations and regulating compliance must also be in place. For substances which have only recently experienced significant restrictions, the relative impact of the regulatory/enforcement

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environment may not become apparent until after the initial implementation regulations and approaches are able to take effect.

- States which defined the violation of methamphetamine precursor purchase laws as a crime (misdemeanor or felony) experienced significant declines in STL seizures following policy implementation. However, between-state analyses that controlled for the relative impact of various policies did not indicate that states with criminal penalties for purchase experienced reduced STL seizure rates compared to states without such policy. This may suggest that, at least in regards to STL seizures, penalty policies for purchase do not appear to be as crucial as are laws restricting and enforcing access limitations.

POLICY IMPLICATIONS

This is an era when states are attempting to deal with a wide variety of different social problems that occur within their borders. One of the major social problems communities and states are attempting to address through the development of effective policies is substance abuse. Previously published testimony (Bundy, 2004; Colby, 2004; Rutledge, 2004; Wright, 2004) and data (Office of National Drug Control Policy, 2006) indicated that state implementation of precursor chemical policies may have related to direct and quick declines in STL seizures. The data presented in this report analyzed direct seizure cases across multiple states, with results providing independent verification of such prior testimony and official reports and providing new information on policy elements that may relate to STL seizure reductions.

The current findings strongly imply that both state and Federal policy matter. This may imply the need for a holistic policy approach that includes both national and state actions. While data document that most drug laws are enforced and cases will be tried at the state level (Ostrom and Kauder, 1999), national policy can set a baseline for and provide a framework within which

states can work. The baseline nature of Federal policy may also be crucial for the effectiveness of state policy. State key informants interviewed as a part of this overall research project addressing state methamphetamine precursor policy noted that one of the major barriers to effective state policy attempts to control STLs was the wide variance in methamphetamine precursor policies (VanderWaal et al., 2007). Specifically, if neighboring states had minimal controls on the purchase of products containing methamphetamine precursor chemicals, it was very easy to purchase needed supplies in those neighboring states for STL activity in the state with existing policy. The interviewed key informants clearly recognized the need for some type of national baseline policy to increase the effectiveness of state policy efforts (VanderWaal et al., 2007)

The data presented also suggested that a comprehensive policy approach is important. Focusing primarily on penalties within a deterrence framework may not be sufficient in regards to STL reduction efforts. Penalties are not self-enforcing; they require a systematic approach that not only identifies specific enforcement authorities at the state/local levels but also provide the necessary resources to enable such enforcement. In addition, the data clearly suggest that quantity controls combined with clerk intervention at the point-of-purchase consistently related to significant reduction in STL seizures more so than treating violations of precursor laws as a crime. Overall, the data suggest that a comprehensive Federal and state approach that includes designated regulatory agencies that can enforce precursor laws as well as focusing on quantity controls and clerk intervention are crucial policy elements in efforts to reduce the harms associated with STL manufacturing of methamphetamine. Finally, the data may imply that evaluations of other drug policies may benefit from a comprehensive approach that includes not

only an evaluation of the impact of criminal penalties but also other components that focus on

access and other key policy elements.

REFERENCES

Amera-Chem, Inc.

2004   Drug Identification Bible 2004/2005. Grand Junction, CO: Amera-Chem, Inc.

Bundy, Steve

2004   Prepared statement of Sheriff Steve Bundy, Rice County, Kansas, Sheriff's

            Department. In Law Enforcement and the Fight Against Methamphetamine.

            Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human

            Resources of the Committee on Government Reform, House of Representatives,

            108th Congress, Second Session, November 18 (Serial No. 108-287) (pp. 68-78).

            Retrieved October 9, 2007, from http://frwebgate.access.gpo.gov/cgi-

            bin/getdoc.cgi?dbname=108_house_hearings&docid=f:20084.wais.

Colby, George E.

2004   Prepared statement of Lieutenant George E. Colby, Division Commander/Project

            Director, Allen County Drug Task Force, Allen County, Indiana, Sheriff's

            Department. In Law Enforcement and the Fight Against Methamphetamine.

            Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human

            Resources of the Committee on Government Reform, House of Representatives,

            108th Congress, Second Session, November 18 (Serial No. 108-287) (pp. 87-111).

            Retrieved October 9, 2007, from http://frwebgate.access.gpo.gov/cgi-

            bin/getdoc.cgi?dbname=108_house_hearings&docid=f:20084.wais.

O'Connor, Jean C., Jamie F. Chriqui, and Duane C. McBride

2006   Developing lasting legal solutions to the dual epidemics of methamphetamine production and use. North Dakota Law Review 82(165):1165-1194.

O'Connor Jean, Jamie Chriqui, Duane McBride, Shelby Smith Edison, Carissa Baker, Yvonne Terry-McElrath, and Curt VanderWaal.

2007   From Policy to Practice: State Methamphetamine Precursor Control Policies. Report presented to the National Institute of Justice. Berrien Springs, MI: Andrews University. Available at http://www.andrews.edu/ipa/2007/index.htm

Office of National Drug Control Policy.

2006   Pushing Back Against Meth: A Progress Report on the Fight Against Methamphetamine in the United States. Washington, DC: Office of National Drug Control Policy, November 30. Retrieved December 15, 2006, from http://www.whitehousedrugpolicy.gov/publications/pdf/pushingback_against_meth.pdf.

Ostrom, Brian and Neal Kauder

1999   Drug crime: The impact on state courts. Caseload Highlights 5(1):1-8. Williamsburg, VA: National Center for State Courts, March. Retrieved October 9, 2007, from http://www.ncsconline.org/D_Research/csp/Highlights/DrugsV5%20No1.pdf.

Rutledge, Keith

2004   Prepared statement of Keith Rutledge, State drug director, Office of the Governor of Arkansas. In Ice in the Ozarks: The Methamphetamine Epidemic in Arkansas. Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human Resources of the Committee on Government Reform, House of Representatives,

108th Congress, Second Session, June 28 (Serial No. 108-245) (pp.49-55).

Retrieved October 9, 2007, from

http://a257.g.akamaitech.net/7/257/2422/04feb20051230/www.access.gpo.gov/co

ngress/house/pdf/108hrg/97398.pdf\

VanderWaal, Curtis J., Rachel M. Bishop, Duane C. McBride, Kimberly Rosales, Jamie F.

Chriqui, Jean C. O'Connor, Yvonne M. Terry-McElrath

2008   Controlling methamphetamine precursors: The view from the trenches. Report

           presented to the National Institute of Justice. Berrien Springs, MI: Andrews

           University.

Wright, Lonnie

2004   Prepared statement of Lonnie Wright, Director, Oklahoma Bureau of Narcotics

           and Dangerous Drugs. In Law Enforcement and the Fight Against

           Methamphetamine. Hearing before the Subcommittee on Criminal Justice, Drug

           Policy and Human Resources of the Committee on Government Reform, House of

           Representatives, 108th Congress, Second Session, November 18 (Serial No. 108-

           287) (pp.79-86). Retrieved October 9, 2007, from

           http://frwebgate.access.gpo.gov/cgi-

           bin/getdoc.cgi?dbname=108_house_hearings&docid=f:20084.wais.