

## **Methamphetamine Abuse: The Search for Solutions**

Staff Report to Mr. Gordon  
Ranking Democratic Member  
Committee on Science  
U.S. House of Representatives

On May 10, 2004, the Committee on Science sponsored a roundtable on the growing methamphetamine problem in Middle and Southeast Tennessee. This event was hosted by Representative Bart Gordon, the ranking Member of the Science Committee, on the campus of Volunteer State Community College in Gallatin, Tennessee. As the use of methamphetamines has spread, for reasons that will be elaborated upon below, so has awareness of the challenges associated with this drug. No other narcotic brings with it the wide-array of dangers - crime, social consequences, environmental degradation, property damage - that comes with the use of methamphetamine. As one of the experts who appeared at our roundtable, Dr. Sullivan Smith, put it: "This drug terrifies me; it threatens the fabric of our society." The Federal government has yet to develop a broad integrated strategy for how to respond to methamphetamine and states are dealing with this emerging epidemic in an uneven manner

Because the Science Committee's jurisdiction covers all civilian research and development programs of the Federal government, we were particularly interested in identifying new tools or techniques that local social services, health, law enforcement and environmental specialists believe they would benefit from having in their struggle against methamphetamine. The roundtable considered two broad aspects of this growing problem:

1. the consequences of methamphetamine production and abuse for children, the environment and the community broadly; and,
2. law enforcement investigation and prosecution challenges.

Mr. Gordon was joined on the dais by State Senator Jo Ann Graves, State Rep. Michael Ray McDonald, and County Mayor Hank Thompson. They were joined in a roundtable discussion by the following experts:

Ms. Betsy Dunn  
Tennessee Department of Child Services -SE Region

Dr. Sullivan Smith  
Medical Director,  
Emergency Room  
Cookeville Regional Medical Center  
Member, Governor's Task Force on Methamphetamine Abuse

Mr. Harry Sommers  
Assistant Special Agent in Charge  
Nashville District Office  
Drug Enforcement Administration

Mr. Bill Gibson  
District Attorney General  
13<sup>th</sup> Judicial District  
State of Tennessee

Jeff Boles, Ph.D.  
Director,  
Environmental Sciences Doctoral Program  
Tennessee Tech University

We also invited Mr. Ken Givens, Chairman of the Governor's Task Force on Methamphetamine Abuse, and Commissioner of Agriculture, State of Tennessee, and a representative of the Southeast Tennessee Regional (Methamphetamine) Task Force, but schedule conflicts prevented their participation. However, the Science Committee returned from this roundtable session with a clearer understanding of the day-to-day challenges faced by those on the front lines of the struggle against methamphetamine. Mr. Gordon developed legislation (H.R. 4636, the Methamphetamine Reduction Act of 2004) based on this event, and has introduced it with Mr. Calvert (R-CA) as the lead cosponsor.

### **Background: Summary of Tennessee's Methamphetamine Problem**

Methamphetamine or "meth" is an easily brewed drug derived from extracting the active ingredient in common over-the-counter cold, asthma and allergy medicines (the ingredient is pseudoephedrin). In the "old days" meth was known as "speed," a stimulant with significant addictive qualities.

The use and production of meth is a relatively recent trend in Tennessee, but the intensity of its spread has outpaced much of the rest of the country. In 1996, the Drug Enforcement Agency reported only two methamphetamine lab seizures in Tennessee. However, nearly 500 meth labs were seized in 2002 and that number more than doubled to 1,154 labs in 2003. Within DEA's Southeast region, approximately 75 percent of all methamphetamine lab seizures occur in Tennessee. Methamphetamine use among Tennessee's high school students is growing in popularity as well. In 2001, approximately 1 of 10 students had used meth and that rate is expected to rise as availability is expanding. Nationally, Tennessee currently ranks second in methamphetamine production and first in the number of meth labs "remediated" under DEA's clean-up program.

These alarming statistics help explain the added pressure on law enforcement and social service agencies in their effort to combat meth's social and economic

impacts on local communities. Meth production in Tennessee, like the rest of the country, is concentrated in more rural areas where county and local police, given their limited resources and manpower, struggle to keep pace with the growing problem. Some lessons can be learned from certain initiatives underway in Tennessee, such as the Southeast Tennessee Methamphetamine Task Force. This Task Force began as a mechanism to coordinate the efforts of neighboring law enforcement jurisdictions in combating meth's production and use. Utilizing a \$1 million Federal grant, the Task Force has tripled in size and disperses information, training, and financial resources for enforcement, education, and prevention efforts throughout most of eastern Tennessee. In addition the 13<sup>th</sup> Judicial District has also received a \$500,000 Federal grant to address the meth problem.

In addition to the burden on law enforcement, there is a great burden placed on Tennessee's social service agencies, especially children's services, which seek to mitigate the associated community impact caused by methamphetamine. In Tennessee, a parent who produces or uses methamphetamine while in the presence of children commits an act that is defined as child neglect or abuse, resulting in the child's automatic placement in the Department of Child Service's (DCS) custody. During an 18-month period between January 2002 and July 2003, 697 children statewide were placed in DCS custody due to meth-related neglect or abuse charges. DCS estimates that another 600 children will be taken into custody statewide over the next twelve months. As of March 2004, in total, DCS had custody of 1500 children due to methamphetamine arrests. Approximately half of the children live with relatives while the remaining children live in foster care. However, state law requires DCS to begin parental rights termination after a child is in custody for a period of 15 months. With the typical jail term and detoxification period for a Federal methamphetamine arrest exceeding this 15 month time period, we can anticipate that many of these children will never be reunited with their parents.

Methamphetamine requires a large amount of non-enforcement related resources in order to address its devastating impact on Tennesseans. One methamphetamine arrest results in at least \$61,000 of related public expenditures, which includes the cost of prison, child custody, and the initial cleanup of the meth lab. The sites used as meth labs, such as homes, cars and motel rooms, may never be fully decontaminated from the toxic chemicals used in meth's production. Not only are Tennessee's financial resources burned up as a result of methamphetamine, but also the Federal court system is experiencing a large volume of meth cases. During Fiscal Year 2001, 44.4 percent of Federally sentenced defendants in Tennessee had committed drug offenses, of which approximately 22.2 percent involved methamphetamine.

The growing problem of methamphetamine in Tennessee highlights the need to identify where better science and technology might be developed to support state and local efforts in investigation, prosecution, remediation, and treatment.

## **Specific Science Committee Issues**

The field event produced several issues that could be addressed with Federal assistance. The discussion below highlights those items that fall within the scope of the Science Committee's jurisdiction.

### ***Law Enforcement Needs and Health Effects Issues***

The Cumberland Valley region of Tennessee has been aggressive in detection and prosecution of meth users and labs; however, according to District Attorney Bill Givens (13<sup>th</sup> Judicial District of Tennessee) law enforcement relies primarily on complaints from neighbors, reports of spousal abuse, reports from a store regarding the excessive purchase of cold medications, and house fires related to meth lab accidents to detect meth users and meth labs. While there are methods to detect the chemicals used to make methamphetamine, these are common household items that can be purchased at any local store and are found in most households (basically, you can get everything you need at the local Wal-Mart). This situation makes it extremely difficult for law enforcement to take a more proactive stance towards the detection and closing down of meth labs.

One tool that would be useful to enhance law enforcement officers' ability to identify labs - as well as to notify those officers that they are entering an area that could be hazardous to their own health - would be a reliable, quick response field test kit for methamphetamines. Such an inexpensive kit should be developed. Because methamphetamine is a fine powder that is easily dispersed, in theory it could be detected outside a house if there were a reliable field test. Such a test would assist law enforcement to take a more pro-active stance against meth users and producers. Tennessee Tech has been working with local law enforcement to determine what is required for a reliable field test.

Professor Boles of Tennessee Tech also speculated that a system of detectors, perhaps mobile, might be devised that would identify meth as it is dispersed in the air. Then computer modeling and repeated sampling could track a "plume" back to its source. Note that there may be legal limits to the use of such sampling as the sole basis for a search warrant since all the chemicals used in meth may be found at a site due to perfectly innocent reasons.

DEA is experimenting in a handful of states - Kentucky is one of them - with the police having environmental protection equipment in their vehicles. They are then the ones who take over the initial lab clean-up and put the materials on site into environmental disposal barrels, transporting them to a DEA approved storage facility. The advantage of this experimental approach, from a law enforcement perspective, is that it greatly reduces the cost to local law enforcement agencies of cleaning up a lab. A hidden cost of such clean-ups resides in the necessity to assign officers to guard a site, round-the-clock, until a

contractor can arrive to do the clean-up. For small jurisdictions with limited police personnel, such assignments can be onerous and expensive. Agent Sommer was unable to provide details on how this program is working in practice because Kentucky lies outside of his area of operations, but both he and DA Gibson addressed the pressures on local law enforcement that operate under the current contractor system. However, questions about the quality of such disposal clean-ups, versus the DEA current practice of contracting with professional chemical disposal companies, are worthy of further investigation.

Tennessee Tech has also been working closely with a local task force to develop a precise laboratory measurement for methamphetamine. A law enforcement officer could take a sample from inside or outside of a home and the sample could be analyzed for methamphetamine as well as other side products produced during its synthesis. This test could be done in minutes and be done locally. The development of such a test along with local testing capabilities would greatly speed apprehension of meth users and producers. According to D.A. Bill Gibson, as it currently stands, in the entire State of Tennessee, only the Nashville crime lab is certified and capable of reliably testing for ephedrine, pseudoephedrine, and methamphetamines. It has no ability to test for other elements involved in the production of methamphetamines and so without meth itself, it is impossible to make a conspiracy to produce methamphetamines case in court simply by busting a lab in the making prior to the successful production of the drug.

It is possible that the National Institute of Standards and Technology (NIST) could support the work of developing various detection test capabilities through its Office of Law Enforcement. NIST would be required to certify the accuracy and validity of such testing, so that the results would be upheld in a court of law.

### ***Health Effects of Exposure to Methamphetamine***

The process to make methamphetamine uses cold medications which contain ephedrine or pseudo-ephedrine (such as Sudafed) as well as some type of acid, iodine, a strong base (such as Red Seal Lye), phosphorus (from matches or road flares) and ammonia (generally liquid agricultural ammonia). These components are themselves toxic. In addition, methamphetamine is a fine powder which is easily dispersed in the air. Wherever methamphetamine is made, the area becomes contaminated with methamphetamine. It permeates wallboard, carpets, drapes, clothes and ventilation systems. The toxicity of the chemical production process is so great that brass fixtures in kitchens or lights begin to corrode. The production of methamphetamine is truly the work of a chemical production facility, but it is happening in a context - usually a residence, though sometimes in a garage or car trunk or even on a boat - that lacks any of the protections that would normally keep the "workers," or others present during production, safe from the consequences of this chemical process.

Given the highly addictive nature of methamphetamine, and the dangerous nature of some of the chemicals used in production, this contamination poses serious health threats to anyone living where it is made. Because of the toxicity of the environment at a lab, police making a search and arrest at a meth lab must wear respirators and appropriate protective clothing. However, because the precipitating event that brings responders to a lab often have nothing obvious to do with meth (fire, domestic dispute, medical emergency, child protective custody work), those responders rarely enter in the protective gear that they really need. First responders walk into an operating lab with the intentions of providing some assistance to residents only to find that they are breathing meth particulate and a witch's brew of chemicals from production. The short-term consequences of that exposure may be a burning sensation in the lungs and shortness of breath. The longer-term consequences are not understood.

Dr. Sullivan Smith, a DEA certified lab technician as well as emergency room director, noted that we do not fully understand the health consequences of such exposures. The chemicals involved in meth production are extraordinarily toxic, the combinations the chemicals form during the "cook" enhance this toxicity and then the final product, methamphetamine, is a fine powder that is difficult to contain.

While first responders have to worry about health effects, so do others who live in an active lab. The typical ancillary victims of meth production are children. Those children may live for many months, potentially even years, breathing dangerous fumes and dust day in and day out. As Dr. Smith described the "cook", toxins from the process first rise up into the air and disperse. Then, because the molecules for these chemicals are heavier than air, they sink to the ground where small children are exposed to them. These exposures, because they are on-going, are potentially more damaging than that experienced by first responders. There is also a question about the impact of the chemicals involved in meth production on the developing physiology of a child; Dr. Smith indicated that he has observed developmental delays in these young victims. As mentioned above, Tennessee defines exposing children to meth production as an act of child abuse. Betsy Dunn of Tennessee Child Services indicated that in the Upper Cumberland region 123 children were taken into protective custody in 2002 and 179 children were taken in 2003. All were found living in an active meth lab on the property. Because children who have lived in a meth production facility (their home) often become wards of the state or are placed in foster care with state support, the ongoing and unfolding health and psychological consequences of their exposure will become a public policy challenge that costs society both in terms of direct health treatment costs but also in the hidden costs entailed in potentially reducing the child's capacity to learn and succeed later in life.

To the social costs from exposure to meth, one has to add the health costs of tending to the producers of methamphetamine. Usually addicts themselves, the

“cookers” face at least a year of treatment for the addiction alone. Dr. Smith notes that PET (brain) scans show that it takes a year for brain activity to return to normal in an addict. The costs of treating addiction, whether borne in the context of prison or social services, are likely to fall in the lap of society. On top of this, the long-term health consequences for addicts are likely to be higher than for any other class of “victim” and these are likely to be partly borne by society.

Finally, we don’t know what health consequences may attend those who later come to inhabit a lab site. While law enforcement, or a contractor, removes all the obvious detritus of meth production from the crime scene, there is no requirement in most jurisdictions that a property be fully remediated. The consequence is that the next inhabitants of the house, apartment, trailer or motel room will be exposed to the lingering markers of chemical production as well as to trace amounts of meth itself. As DEA Agent Harry Sommer put it, “The perils for the innocent are significant,” on these former meth lab sites. There is no understanding of the potential health consequences of such exposure and, especially if the residents don’t know that the property has been contaminated, the people involved may not even know what to watch for in terms of health concerns.

The Federal government could play a useful role in sponsoring focused research regarding the health consequences of meth exposure for first responders, children and subsequent inhabitants of a property.

### ***Environmental Remediation***

As the discussion above makes clear, methamphetamines leaves the property where this drug is produced scarred by the production process itself. Not only does the production process leave dangerous chemical residues and meth in the area where production occurred, but the side-waste resulting from production also poses an environmental challenge. It is often the case that most of the production waste chemicals are disposed of in the septic/sewage system or simply dumped in the back yard where they pose serious lingering environmental problems.

Clean-up of these (usually) amateur lab facilities poses a serious cost to the Federal and local governments as well as, potentially, to the owner of a property. Currently the Drug Enforcement Agency (DEA) pays for the initial clean-up and disposal of chemicals in a meth lab - the DEA clean up program has been operating at roughly \$25 million a year for each of the last four fiscal years. Note that those costs do not include clean-ups in the many states, including California, that fund these clean-ups from other sources.

According to figures from the DEA, the average cost to clean up a lab is \$1900, but costs can exceed \$200,000 - depending on the size of the lab. The DEA, working through contractors, limits its activities to the initial clean-up of a meth

lab. This primarily involves collection and disposal of packages of methamphetamine, lab equipment and precursor chemicals. The DEA contractor for the region including Tennessee is Ferguson Harbor. The DEA then informs the owners and local health and environmental authorities that the house/property was used as a meth lab. DEA is responsible for this stage of clean-up because the products on the premises are considered a part of the crime scene that must be removed. However, DEA's responsibility ends when the obvious implements of meth production are removed. DEA's contractors do not make any effort to remediate the site nor to thoroughly document chemical pollution on the site.

Because these small labs are found in single-family homes (49%), vehicles, apartment complexes, motels and hotels and duplexes in that order, the results of contamination for families and owners can be catastrophic. Perpetrators often are using a rented property and any additional clean-up to make the property safe is the responsibility of the property owner. There are neither State (some states have established funds to help with these costs) nor Federal funds available to pay for such remediation. Additional clean-up costs may range from a few thousand dollars to \$20,000 depending on the level of contamination. In rural areas, inspection and clean-up should include not only the house, but the septic and water systems as well.

Further, while local authorities are notified that a particular property has been used as a meth lab by the DEA, there may be no mechanism for local authorities to actually record that information. Nor are there authorities in most areas to enforce remediation of a site after the initial clean-up. Tennessee has no legal mechanism for forcing deeds to show information regarding a property's history as a meth production facility. This past summer, Tennessee did adopt a law requiring property owners to remediate a property before it can be occupied again, however the State did not adopt a remediation standard to guide owners in this effort.

Without state laws requiring remediation, and some mechanism to enforce that step, it remains up to the good will, intelligence and deep pockets of property owners to remediate their own property. While most property owners are certainly responsible, some, facing a huge bill for a crime they are directly victimized by, might simply sell or rent the property again without any notice of the property's prior history or hidden dangers. As detailed above, health consequences to the community may be profound if no clean-up occurs.

Even if a clean-up is undertaken, it is not clear "how clean is clean." While EPA regulations cover contamination of precursor chemicals for some situations (say an ammonia spill into an aquifer), there are no health-based standards for what constitutes "clean" from contamination of methamphetamine itself or for the combinations of "brewing" chemicals that are specific to meth production. Without such a standard it is impossible to determine what is clean and safe after



a property has been used as a meth production facility. Some states have adopted their own clean-up standards (Minnesota, Colorado and Washington are all repeatedly mentioned in this regard).

There is a need to study the remediation needs of the community, the environmental impacts of the chemicals used and produced and to identify the best cleaning methods for home contamination sites for the different synthesis techniques used in these illegal labs. EPA is the proper agency for conducting most of this research and, along with NIST, it is capable of establishing guidelines on best practices for clean-up.

Paying for remediation is another challenge entirely. In a few cases of super-size meth labs, EPA has paid for clean-up with their brown-fields funds - however, this has been a rarity. EPA clean-up standards, absent some public funds to cover the costs of that clean-up, will probably only encourage owners to do less diligent work to clean-up their properties than they do currently. While these are private properties that have been polluted, the consequences of that pollution are carried by the whole community in terms of risks to environment and health. It seems reasonable to expect the community to help bear the costs of clean-up save, of course, in those cases where the owners are also involved as perpetrators.

<b>2003 DATA</b>		
<b>STATE</b>	<b>METH SEIZURES</b>	<b>METH ARRESTS</b>
Alabama	330	488
Alaska	36	3
Arizona	133	142
Arkansas	779	1033
California	1289	100
Colorado	350	382
Connecticut	1	0
Delaware	2	2
Florida	245	296
Georgia	247	407
Hawaii	2	0
Idaho	89	86
Illinois	718	677
Indiana	967	921
Iowa	1254	868
Kansas	624	459
Kentucky	492	419
Louisiana	90	120
Maine	0	0
Maryland	2	1
Massachusetts	1	1
Michigan	265	134
Minnesota	309	325
Mississippi	333	451
Missouri	2861	2510
Montana	73	71
Nebraska	250	150
Nevada	125	122
New Hampshire	1	2
New Jersey	0	0
New Mexico	197	198
New York	18	21
North Carolina	167	206
North Dakota	251	122
Ohio	123	142
Oklahoma	1023	1171
Oregon	399	8
Pennsylvania	61	47
Rhode Island	1	0

South Carolina	58	64
South Dakota	39	30
Tennessee	862	1003
Texas	669	823
Utah	84	74
Vermont	0	0
Virginia	27	30
Washington	1000	34
West Virginia	67	46
Wisconsin	102	115
Wyoming	26	37
<b>TOTAL:</b>	<b>17042</b>	<b>14341</b>

- Meth Seizures includes equipment, dumpsites and labs.
- Info from the National Clandestine Laboratory Seizure System and the Drug Enforcement Agency.