

TRAUMA REGISTRIES AS A POTENTIAL SOURCE OF BORDER EPIDEMIOLOGY WORK GROUP INDICATOR DATA: TRENDS FROM 1996-2000

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ABSTRACT

Drug abuse problems in U.S.-Mexico border communities are largely defined as drug trafficking problems. Thus, the measured response remains one that is couched within criminal justice perspectives instead of social service or treatment initiatives. There is a clear need for data and data systems that attend to the major aspects of drug use, drug abuse vulnerability, and health & social consequences in borderland communities. In Texas, the Trauma Registries system (TR) has been established for nearly a decade and a half. Data for this presentation covers the last five years. As in other parts of the nation, Texas hospitals' emergency care systems have come to use TR: 1) to measure the quality of trauma care and to evaluate the effectiveness on health outcome; 2) to serve as a data source for injury surveillance; and 3) to measure costs of trauma care by hospitals and ERs. In terms of substance abuse surveillance and monitoring purposes, for the U.S.-Mexico Border region, all hospital TRs have important potential for measuring drug and alcohol health consequences. The data collected varies by TR, but they usually include patient demographics, injury severity, medical care procedures, health outcome, and medical costs. Most of the state's hospitals already report alcohol — few report drug abuse data. All ERs could collect and report drug abuse by patients entering Emergency Rooms, but most do not! Border communities' public health drug abuse concerns and issues need to be key components of U.S. national and international drug abuse monitoring and surveillance systems. Outside of symbolic and courtesy visits, systematic substantive sustained public health and community capacity building efforts on the U.S.-Mexico Border remain outside national, state and third sector policymakers planning and programming efforts. With occasional episodic and passing public health and community capacity building, one's community concerns and issues about border communities drug abuse problems remain largely missing from federal national drug abuse surveillance systems and unattended in state block grants or in discretionary programs. Collection, reporting and improving of these data would serve to assist policymakers and planners in addressing substance abuse as a more serious consequence of patients presenting to ERs. There exists bi-national potential to collect, report and assess the same health consequences in Mexico that need to be explored by those working on the U.S.-Mexico drug abuse policy control matters.

For the last fifty years, the U.S.-Mexico border region's communities have been seen largely as narco-trafficking centers and targeted for special federal and state initiatives seeking to curb and control drug trafficking from Mexico into the U.S. But, public health concerns about drug abuse in these communities are largely symbolic, often fragmented or simply passing demonstration efforts. In this paper, we will explore the TRs role, utility and limitations for drug abuse monitoring and surveillance at local, area, state, national and possibly international levels (Beachley, Snow, & Trimble 1988; Goldberg, Gelfand, Levy, & Mullner 1980; Champion & Teter 1988; Mendeloff & Cayten 1991). In an effort to enhance and improve knowledge and understanding about drug abuse and drug abuse services along the U.S.-Mexico Border, there is a need to understand drug use and abuse at local community levels throughout the bor-

der. While in the past decade, border gateway cities have again drawn national media and policymakers' attention and interest, it has been largely in narco-trafficking terms and largely within a Criminal Justice System (CJS) perspective. There is a clear need for data and data systems that attend to other *major aspects of drug use, drug abuse vulnerability and drug use consequences* — especially one within a public health perspective.

This paper will address the potential and limitations of Trauma Registries across the border and along the border. The use and improvement of Trauma Registries (TRs) by national and state health and mental agencies would serve to enhance, extend and present policymakers, researchers and practitioners with important drug abuse health consequences data and data systems (Pollack & McClain 1989; Vestrup, Phang, Vertesi,

Wing, & Hamilton 1994; West, Williams, Trunkey, & Wolferth 1988). With the exception of San Diego, U.S.-Mexico border gateway cities are outside national surveillance and monitoring systems: Arrestee Drug Abuse Monitoring Program (ADAM/DUF), Drug Abuse Early Warning System (DAWN), NDATUS, Substance Abuse and Mental Health Services Administration's National Drug Abuse Household Survey (SAMHSA-HHS), Center for Disease Control's Youth Risk Behavioral Assessment (YRBA) and even the National Institute on Drug Abuse's (NIDA) Monitoring the Future and the Department of Labor's Youth Longitudinal Survey. In short, what is the role and nature of hospital TRs for border surveillance and monitoring system? What does it promise? What are some limitations? What alternative perspective and implications do TR drug abuse monitoring systems pose? And, what possibility for international TR and drug abuse monitoring system exists?

The Need to Redefine Drug Abuse Problems Along the U.S.-Mexico Border

Periodically, the U.S.-Mexico border communities' drug problems are "rediscovered." The problems remain largely defined as drug trafficking problems and are presented within criminal justice perspectives, policy and responses. With occasional episodic and passing public health and community capacity building, one's community concerns and issues about drug abuse remain missing and unattended. Drug abuse remains a key concern among communities along both sides of the U.S.-Mexico border. National, state and third sector efforts need to build, expand and enhance local communities capacities and infrastructure to plan, provide services and evaluate these efforts. While various federal and state-level data reports and data systems exist, border communities are missing from DAWN, YRBA, SAMHSA's *National Drug Abuse Household Survey*, NIDA's *Monitoring the Future* and the Department of Labor's *Youth Longitudinal Survey*. Even in the Department of Education's (DOE's) *Safe and Drug Free* funding for border communities, these programming efforts have yet to lead to any model programming that would help address border communities unique circumstances and needs relative to drug abuse and the U.S.-Mexican Border.

While subject to occasional studies,

these efforts are limited to community or school, and usually exploratory. Moreover, they fail to adequately ? to drug abuse and health consequences. With the exception of a major highway safety study, the more serious health consequences — unintended injury and mortality involving trauma care system (TCS) remain largely unattended. In our nation's major monitoring and surveillance systems, ADAM, PULSE, DAWN, NHHS and MTF, most border communities are missing. Even in Border Epidemiology Work Group (BEWG) reports, health consequence data reporting is uneven, not always comparable and/or missing for juveniles and young adults. There is a clear need for enhancing and expanding border communities' TR data, potential and limitations (Cales 1984; Eastman, Lewis, Champion, & Mattox 1987; Guss, Meyer, Neuman, Baxt, Dunford, Griffith & Guber 1989). There is a need for ADAM and PULSE to include health consequence data in their reporting efforts. In short, there is a clear need for data and data systems that attend to major aspects of drug use, drug abuse vulnerability and consequences in borderland communities.

Border communities' public health drug abuse concerns and issues need to be the key component of US national and international drug abuse monitoring and surveillance systems. The promotion and improvement of hospital TRs in the U.S. and recent advances in microcomputer technology, software and networks have rekindled interest in TRs for basic, administrative and applied research (Jurkovich, Rivera, Gurney, Seguin, Fligner, & Copass 1992; Richards, Clark, Holbrook, & Hoyt 1995). We first will address what TRs are and their potential for addressing drug abuse health consequences. Thus, this paper suggests the importance and limits of Texas-based TRs for monitoring, surveillance and policy research (Champion, Sacco, & Hunt 1983; MacKenzie, Siegel, Shapiro, Moody & Smith 1988; Ellis, Michie, Esufali, Pyper, & Dudley 1987). We then argue the need for enhancing and expanding public health and health consequence data in national and state planning and programming purposes (Flint 1988; Rutledge, Messick, Baker, Rhyne, Butts, Meyer, & Ricketts 1992). Second, we will discuss how utilizing TRs in border communities will help redefine the U.S.-Mexico Border drug abuse problem. Here we will present data that suggests

key trends and patterns for major border gateway cities — that need to be compared and contrasted to other border cities (Runge 1993; Kellermann 1993). Lastly, we discuss the potential of this data on both sides of the border and the implications for bi-national monitoring, reporting and service planning. Here we will suggest that these data are available across sister cities and would provide important health consequences data for basic, applied and administrative research.

TR and Drug Abuse Monitoring: Promise and Limitations

In Texas, TR have been established for nearly twelve years. While data for this presentation was generated from Thomason Hospital's TR that was initiated in 1995, this paper only covers the last four years. As in other parts of the country, hospitals' Emergency Departments and Intensive Care Units (ED/ICU) used TR to measure the quality of trauma care and to evaluate the effectiveness on health outcome. A second major utility of the TR is as a data source for injury surveillance and patient health-care outcome. The data collected varies by TR, but state mandated reporting usually includes patient demographics, injury severity, medical care procedures, health outcome, and medical costs (Goldberg, Gelfand, & Levy 1980; Kane, Wheeler, Cook, Englehardt, Pavey, Green, Clark, & Cassou 1992; Rutledge, Fakhry, Baker, & Oller 1993). In terms of substance abuse surveillance and monitoring purposes, for the U.S.-Mexico Border region, TRs have important potential for measuring drug and alcohol consequences. Since the first 1950's Chicago Trauma Registry, the role of TRs has been to monitor and evaluate trauma patient care for health-care entities and the regional EMS systems that they belong to; to identify and report major trauma injuries and outcomes; and to provide a sense of how to prevent, treat and reduce trauma costs. TRs are databases that collect, archive and report information about patients that they receive through a trauma care services continuum. Patient inclusion into a TR system generally require that patient population meet certain criteria:

*ICD-(Codes (800.0—959.5)

*All trauma patients have Injury Severity Scores (ISS)

*Admission to ICU or hospital floor

It must be recognized that collecting standardized data is generally set by the state legislature and corresponding state agency(s). In 1989, the Texas state legislature, recognizing the need and challenge that collecting standard data from over 450 hospitals would present, allowed reporting entities to file electronically either on a quarterly basis or annual basis. As of August 31, 1996, Section of 157.129 of the state trauma registry rule established Texas hospital standard data set requirements, TR case inclusion, and what constituted major trauma.

The two major types of hospital TRs are paper and computerized. Trauma care is provided through a four tier system of providing care to acute and injured patients. Level one trauma centers are tertiary care facilities central to any Trauma Care System (TCS). Level two provides initial definitive care regardless of severity of injury. They can be academic, community, public or private facilities located in rural, suburban and urban settings.

Generally, level 3 and 4 trauma centers have monthly volumes of 0-15 patients a month and are manually abstracted monthly and then reported to their RAC or directly to the state oversight agency. Level 1 and 2s are generally utilizing mainframe and/or personal computer-based systems due to the volume and amounts of data processed.¹ The TRs are associated with trauma care and may reside as part of hospital Management Information System (MIS) or operate as a stand alone program usually in the ER and ICU. There is no single software package being promoted by the Texas Trauma Registry for use by Texas hospitals to fulfill their trauma reporting requirements. Hospitals may use any computer, modem and software as long as they are able to collect and electronically transmit the Texas Hospital Standard Data Set to the Texas Department of Health (TDH 2003).

The Centers for Disease Control (CDC) and Prevention have developed a hospital trauma registry software package. With its permission, the Texas Trauma Registry developed a software module that works with CDC software to collect and electronically transmit the Texas Hospital Standard Data Set. Both of these software packages are available free to interested hospitals by contacting the Texas Trauma Registry.

The actual collection of TR data is guided by hospital needs and state reporting guide-

Table 1: Number of Total Trauma Admissions by Year for Drugs and Alcohol Between 1996-2001

	Number of Trauma Admissions by Year											
	Thomason Hospital					Far West Texas & Southern New Mexico Regional Advisory Council on Trauma						
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Total Admissions	1031	1145	1496	1663	1595	1647	1046	1769	2031	2299	2789	2735
Drugs Only	155	201	264	219	248	205	155	271	333	265	249	205
Alcohol Only	439	330	420	413	382	338	439	504	629	510	484	441

Source: Thomason Hospital Trauma Registry

lines. This unfunded mandate has allowed hospitals to report essential elements and desired optional elements. In a sense, there are minimal and desired data elements. Minimal data sets are comprised of TR data that involve all ICU and hospital floor trauma data needing to be reported to the Texas Department of Health. Desired data elements are these in which state, professional, and some local agencies would like to see collected, but that are not mandatory.

The TDH agency sets reporting deadlines, quality measures, and means by which data is to be sent. This data can be collected, accessed, and reported by public domain and commercial personal computer software packages. The American Society of Trauma offers courses about management and training of personnel.

CDC and state TR guidelines set the data that gets reported by the hospital. On August 31, 1996, the State of Texas required the department of health and hospital trauma units to gather data about trauma in Texas. One objective was to identify severely injured trauma patients within each health care agency. Others were to monitor patient care within each health care unit and regional emergency medical services network and to identify the total amount of uncompensated trauma care delivered each fiscal year. All medical facilities need to report to the TDH Injury and Control Division the state required elements or minimal data. Due to the need for confidentiality, public reports of the data are reported in the aggregate; security measures and guidelines need to limit access to registry data. Four regions ranging from El Paso to Brownsville cover the Texas border (TDH 2001). In 1990, the state legislature mandated the reporting of certain trauma cases. Generally, they include 800 and 959 ICD cases.

El Paso's Thomason Hospital (EPTH) is a level 1-trauma facility and the lead agency for trauma care in the area. EPTH initiated

the TR in 1994 and has provided TDH state-mandated minimal trauma level data. It serves as the lead hospital for this area. EPTH belongs to the Far West Texas and Southern New Mexico Regional Advisory Council. The existing RAC has eight hospitals within the region that participate on an ongoing basis.² The RAC is unique in that it covers 4 Texas counties and 7 New Mexico counties.³ The state of Texas is divided into 11 RACs.

DRUG USE AMONG TRAUMA ADMISSIONS: Thomason Hospital and RAC Hospitals

The trauma registry data of Thomason Hospital reported here covers the years 1996-2000. Thomason is the only teaching hospital in El Paso, Texas. Many of the patients come from southern New Mexico where medical resources are limited. The TR data comes from one of eight hospitals that handle trauma cases in the region.

DRUG USE AMONG TRAUMA ADMISSIONS-THOMASON HOSPITAL:

A Profile of the 1997-2000 Admission

During the 2000 calendar year, there were 1,595 trauma admission cases as compared to 1,031 in 1996 (Table 1). Since 1996, there has been a 35 percent increase in total trauma admissions. While drug abuse trauma admissions have increased from 155 cases in 1996 to 253 cases in 2000, the percent increase from the base year of 1996 was 39 percent for drug cases. In terms of alcohol-related admissions, the number has decreased significantly each year from 1996 to 2000. In 1996, there were 439 alcohol-related admissions, which decreased to 382 cases in 2000. The percent of change for drug-related cases was a 3 percent increase, yet for alcohol cases there was a decrease of 6 percent.

In 2000, there were 248 drug-related trauma admissions at Thomason Hospital (Table 2). Forty percent of these admissions

Table 2: Thomason Hospital Trauma Patient Profile for Drugs and Alcohol Between 1997-2000

Characteristic	Alcohol				Drugs			
	1997 (N=330)	1998 (N=420)	1999 (N=413)	2000 (N=382)	1997 (N=201)	1998 (N=264)	1999 (N=219)	2000 (N=248)
Gender								
Male	85%	83%	91%	93%	77%	75%	91%	93%
Female	15%	17%	9%	7%	23%	25%	9%	7%
Age								
0-12	0%	0%	1%	1%	2%	1%	1%	1%
13-17	6%	4%	8%	5%	14%	6%	8%	5%
18-25	26%	26%	28%	29%	26%	27%	28%	29%
26-35	29%	29%	35%	28%	24%	28%	26%	28%
36-46	23%	25%	21%	30%	22%	25%	21%	30%
47+	16%	15%	7%	7%	11%	12%	6%	7%
Race/Ethnicity								
Hispanic	83%	77%	83%	80%	74%	72%	83%	80%
White-non-Hispanic	15%	21%	13%	17%	20%	25%	13%	17%
African-American	2%	1%	1%	2%	4%	2%	1%	2%
Other	1%	1%	3%	1%	2%	1%	3%	1%

Source: Thomason Hospital Trauma Registry

had used drugs or alcohol, whereas 16 percent of the admissions had used "drugs only" (Table 1). Eighty-five percent were male. Over three-fourths (81%) were Hispanic, 2 percent were African-American, and 1 percent were members of other racial/ethnic groups. White, Non-Hispanics comprised 15 percent. A majority (27%) of trauma patients in 2000 were between the ages of 18-25 and male. Between 1997-2000, there was a 21 percent increase in the total number of drug-related cases seen at Thomason Hospital. Also, there was an 8 percent increase in the number of males being admitted to Thomason Hospital for drug-related issues. There was a 3 percent increase in males being admitted for alcohol-related cases between 1997-2000, and an 8 percent increase in males being admitted for drugs. However, for females there was a 2 percent decrease for alcohol-related trauma and an 8 percent increase for drug-related cases. There was no significant age increase when examining the data by individuals being admitted as per the 1997 data. There was a decrease between 1-7 percent pertaining to ages from 0-17 and an increase between 3-5 percent for drug-related cases. Regarding ethnicity, there was no significant decrease for alcohol cases involving Hispanics. However, there was a 5 percent increase for Hispanics who were admitted for using illegal drugs, all other ethnic groups stayed the same or decreased by 1 percent.

We next will report on drugs identified by TR drug abuse admissions toxicology ex-

ams (Table 3). One should keep in mind that patients may report using more than one substance. For cocaine between 1995-1998 there was a 50 percent increase. Between 1999-2001 there was a decrease in number of individuals under the influence of cocaine. Individuals under the influence of marijuana increased between 1995-2000, with a percent change of 62 percent. However, in 2001 marijuana cases started to decrease. Individuals under the influence of opiates continued to increase between 1995-2001 with an increase percent change of 94 percent. However, in 2002 individuals admitted under the influence of opiates started to decrease. Individuals under the influence of amphetamines increased between 1995-2001, with a percent change of 70 percent. However, in 2002 cases have decreased significantly. Benzodiazepine cases increased between 1995-1998, but decreased from 1999-2002. However, when looking at the percent change there is still an increase of 40 percent. Barbituates continue the fluctuating pattern on a yearly basis. The only category in which we see a continued and consistent decrease is for "other" drugs.

The majority of 2000 admissions who had used substances were injured on the "street or highway" (67% for alcohol and 64% for drugs). Slightly more than 10 percent were injured at "home" or in a "residential institution," 12 percent involving drugs, 3 percent involving alcohol in a "public building," 4 percent involving alcohol, or 22 percent involving drugs in "other" places (e.g. "farm,"

Table 3: Type of Drug Abused by a Sample of Trauma Admissions at Thomason Hospital in El Paso, Texas Between 1995-2002

Drugs*	1995	1996	1997	1998	1999	2000	2001	2002**
Cocaine	47	75	97	138	109	112	94	38
Marijuana	37	67	92	81	93	98	63	33
Benzodiazepines	15	23	29	46	23	45	25	18
Opiates	8	24	26	57	55	97	126	42
Barbituates	4	15	28	16	4	6	5	3
Amphetamines	3	3	5	7	4	5	10	3
Other	6	12	2	1	0	0	1	0

*Number of drugs will not match total because some patients will be listed for multiple drugs.

**2002 comprises until June

Source: Thomason Hospital Trauma Registry

Table 4: Type of Injury for Thomason Hospital Patients Between 1997-2000

	1997		1998		1999		2000	
	Alcohol (N=330)	Drugs (N=199)	Alcohol (N=420)	Drugs (N=264)	Alcohol (N=413)	Drugs (N=219)	Alcohol (N=382)	Drugs (N=248)
Motor Vehicle Crash	46%	46%	42%	45%	44%	44%	41%	43%
Motorcycle Crash	3%	3%	5%	5%	5%	7%	3%	4%
Pedestrian Crash	5%	5%	6%	6%	6%	3%	7%	5%
Gunshot Wound	5%	7%	4%	6%	3%	5%	5%	5%
Stabbing	17%	17%	10%	11%	10%	9%	11%	11%
Fall	10%	9%	13%	8%	13%	11%	14%	12%
Other	15%	14%	20%	19%	2%	21%	20%	21%

Source: Thomason Hospital Trauma Registry

"places of sports," "industrial sites").

The largest number of drug and alcohol-related injury cases involve Motor-Vehicle-Crashes (MVC) — when combined with Motor-cycle Crashes (MCC), they involve 44 to 47 percent of all trauma substance abuse-related cases in 2000 (Table 4). While the number of cases increases for both alcohol and drug admissions cases, drug abuse-related cases increased more from 1997 to 2000 than did alcohol-related cases in 1997-2000.

In terms of penetrating wounds involving firearms and stabbings, TR data decreased for alcohol, but not for firearms. While the actual number of cases increased for both, the percent change is smaller for alcohol-related cases than for drug abuse-related cases. During this period, falls and pedestrian accidents increase only slightly. The category of Other increased by 5 percent when one compares 1997 to 2000. In 1997, MVC, stabbings and other injuries were involved nearly 4 in 5 substance abuse-related cases. Yet in 2000, MVC is followed by falls, then stabbings.

In terms of MVC alcohol-related admission cases, nearly twice the number are alcohol-related cases than are drug related. Male rates are greater than females for all types of injuries, but especially in terms of MVC, stabbings, and firearm injuries. While

the rates decreased for females from 1997 to 2000, there was an increase among males. Stabbings and gunshots also decreased, but the rate of decrease is greater for stabbings than for firearm injuries. Where stabbing decreased by almost half for males from 1997 to 2000, firearm mentions decreased only slightly, from 14 to 10 cases. Again, only as it concerns falls and Others mentions does one find an increase, but the increase is only a slight one.

SUMMARY: THE NEED FOR BI-NATIONAL SUBSTANCE ABUSE TR PROJECT

There is a clear need for data and data systems that attend to major aspects of drug use, drug abuse vulnerability and consequences. And there is a clear need to develop, cultivate, and evaluate drug abuse monitoring systems and data along the U.S.-Mexico border. On the U.S. side of the border, community leaders are concerned that national and state policymakers view border cities as largely narco-trafficking centers and rely largely on a CJS approach to the drug problem. Moreover, many are troubled by the lack of a more comprehensive and balanced public health and community approach to drug abuse within border communities. While this administration like past administrations' has rekindled an interest in border drug abuse issues, public health issues are left

wanting. The need for border drug abuse surveillance and monitoring systems can be partially met by taking advantage of the information in U.S.-TRs' — especially those existing along the U.S. side of the border. The EPTH TR provides an important drug consequence data system and attends to issues closely found in DAWN. Moreover, the EPTH TRs like other hospitals' ED/ER/ICUs, participates in state reporting systems. Unlike some hospitals, EPTH TR reports all drug and alcohol-related cases. It should be kept in mind that hospital MIS department maintain complete patient databases, while trauma registry data can collect two types of data — TR essential and additional desired data for their own hospital use. The need for access to the desired data should serve as an impetus to develop a collaborative monitoring and surveillance effort of the area's RAC and major border TR hospitals.

TRs represent one of the better mechanisms for U.S.-Mexico surveillance systems and for collaborative research. There is clearly a need for developing a TR Substance Abuse Monitoring & Surveillance effort workgroup of border TRs. This workgroup could also explore the need and utility of making bi-national TR surveillance monitoring operational. They would begin by taking stock of current operating and potential reporting networks on both sides of the border; explore points of similarity, differences and gaps; develop a mutually agreeable protocol that could serve as long-term goals and objectives; on a pilot basis look a ICUs' and TR drug abuse report networks; convene a group to further explore how to enhance and improve existing data. TR surveillance monitoring project could also serve as a basis for specialized sub-studies — reliability studies, comparative studies, drug-related violence, rapid assessment study site, Motor-Vehicle Crash (MVC) and Motor-cycle Crash (MCC) study, cost/benefit analysis, etc. A TR surveillance-monitoring project could also serve as a basis for applied studies and specialized sub-studies — intervention, reliability studies, comparative studies, and drug-related violence. The EPTH TR pilot effort with Juarez suggests that its Mexican counterparts have demonstrated implementing a similar system in Mexican border cities. The EPTH TR must be kept within guidelines suggested by Pollack and yet still meet basic state and national TR needs. There is a need to further

explore and pilot a collaborative TR project based on a drug abuse surveillance system designed particularly for Mexican border cities that complements, if not parallels existing ones in the U.S.

IMPLICATIONS FOR A BI-NATIONAL MONITORING AND REPORTING SYSTEM FOR THE U.S.-MEXICO BORDER: RECOMMENDATIONS

The Thomason TR data show that trauma data can be a useful indicator of drug abuse patterns and trends. There is a need to establish collaborative projects on both sides of the border to collect and analyze trauma data related to drug abuse. These data can be useful in:

- Developing area and regional surveillance systems.
- Establishing the need and range of services necessary for border communities.
- Demonstrating the ways drug problems impact border communities.
- Serving as a baseline for prevention and allowing for specialized studies of border communities.
- Showing the costs related to the drug problem.
- Demonstrating border twin city collaborative and cooperative efforts in using trauma data.

FINDINGS

The current findings are broad but suggest sustainability for the implementation of TR in Mexico. Currently, there is support to establish a Juarez, Mexico TR with the same capabilities as TR in Texas. There is a significant push in comparing data between Mexico and the U.S. pertaining to trauma data. The TR system is ideal in assessing drug and alcohol use along the border and the impact imposed upon hospitals in dealing with the substance abuse issue. There is a large need for social science researchers to use this data in assessing the substance abuse problem at another level, instead of just the criminal justice perspective.

The main findings of this paper are:

- TR data is measurable both quantitatively and qualitatively.
- TR data can state a cost based on substance abuse to the local

hospitals.

- TRs can track individuals yearly by region to see if they are a reoccurring cost for local hospitals.
- TRs can be instrumental in supporting public policy change.
- TRs can measure the impact on the local healthcare system due to substance use.
- A TR will be implemented in Juarez, Mexico in about one year.
- There is tremendous potential in using a TRs for substance abuse research.
- There are limitations to the TR, but they appear minor.
- The trauma registry is relatively new as compared to other systems.
- Many youths who use illegal substances are captured in TRs, which might not be caught otherwise.
- Specifically for Texas, TRs can be linked statewide to assess substance use/abuse if data is collected on a continuous basis.
- Some RAC regions collect substance abuse data, others do not.

The data and approach presented herein needs to be compared to data from other El Paso hospitals, then to other border cities. Sister city research has suggested which strategy is more likely to bear fruit and meet changing and future demands. Some effort needs to be spent on assessing and improving the quality of the TR data. The authors recognize the need not to oversell or overextend trauma center programs, staff and capabilities. Nonetheless, the Border Epidemiology Workgroup would benefit by involving trauma registry programs and staffs in their efforts. Border-wide monitoring and surveillance projects have long been touted and called for and trauma centers represent a viable vehicle for such an effort.

REFERENCES

- Beachley M., S. Snow, & Trimble. 1988. Developing trauma care systems: the trauma nurse coordinator. *JONA* 18 34-42.
- Cales R.H. 1984. Trauma mortality in Orange County: the effect of implementation of a regional trauma system. *Annals Emerg Medicine* 13 15-24.
- Champion H.R., W.J. Sacco, & T.K. Hunt. 1983. Trauma severity to predict mortality. *World J Surgery* 7 4-11.
- Champion H.R. & H. Teter. 1988. Trauma care systems: the federal role. *J Trauma* 28 877-879.
- Eastman A.B., F.R. Lewis Jr, H.R. Champion, & K.L. Mattox. 1987. Regional trauma system design: critical concepts. *Amer J Surgery* 154 79-87.
- Ellis B.W., H.R. Michie, S.T. Esufali, R.J. Pyper, & H.A. Dudley. 1987. Development of a micro-computer-based system for surgical audit and patient administration: a review. *J Royal Society Medicine* 80 157-161.
- Flint C.B. 1988. The role of the trauma coordinator: a position paper. *J Trauma* 28 1673-1675.
- Goldberg J., H.M. Gelfand, & P.S. Levy. 1980. Registry evaluation methods: a review and case study. *Epidemiologic Rev* 2 210-220.
- Goldberg J., H.M. Gelfand, P.S. Levy & R Mullner. 1980. An evaluation of the Illinois trauma registry: the completeness of case reporting. *Medical Care* 18 520-531.
- Guss D.A., F.T. Meyer, T.S. Neuman, W.G. Baxt, J.V. Dunford Jr, L.D. Griffith, & S.L. Guber. 1989. The impact of a regionalized trauma system on trauma care in San Diego County. *Annals Emerg Medicine* 18 1141-1145.
- Jurkovich G.J., F.P. Rivera, J.G. Gurney, D. Seguin, C.L. Fligner, & M. Copass. 1992. Effects of alcohol intoxication on the initial assessment of trauma patients. *Annals Emerg Medicine* 21 704-708.
- Kane G., N.C. Wheeler, S. Cook, R. Englehardt, B. Pavey, K. Green, O.N. Clark, & J. Cassou. 1992. Impact of the Los Angeles County Trauma System on the survival of seriously injured patients. *J Trauma* 32 576-583.
- Kellermann A.L. 1993. Obstacles to firearm and violence research. *Health Affairs* XX 142-153.
- MacKenzie E.J., J.H. Siegel, S. Shapiro, M. Moody, & R.T. Smith. 1988. Functional recovery and medical costs of trauma: an analysis by type and severity of injury. *J Trauma* 28 281-297.
- Mendeloff J.M. & C.G. Cayten. 1991. Trauma systems and public policy. *Annu Rev Public Health* 12 401-424.
- Pollack D.A. & P.W. McClain. 1989. Report from the 1988 Trauma Registry Workshop, including recommendations for hospital-based trauma registries. *J Trauma* 29 827-834.
- Richards C.F., R.F. Clark, T. Holbrook, & D.B. Hoyt. 1995. The effect of cocaine and amphetamines on vital signs in trauma patients. *J Emerg Medicine* 13 59-63.
- Runge J.W. 1993. The cost of injury. *Advance in Trauma* 11 241-253.
- Rutledge R., S. Fakhry, C. Baker, & D. Oller. 1993. Injury severity grading in trauma patients: a simplified technique based upon ICD-9 coding. *J Trauma* 35 497-506.
- Rutledge R., J. Messick, & C.C. Baker, S. Rhyne, J. Butts, A. Meyer, & T. Ricketts. 1992. Multivariate population-based analysis of the association of county trauma centers with per capita county trauma death rates. *J Trauma* 33 29-37.
- Texas Department of Health. 2001. Texas Depart-

ment of State Health Services Injury Prevention Website - <http://www.dshs.state.tx.us/injury/data/>

_____. 2003. Texas Department of State Health Services Injury Prevention Website - <http://www.dshs.state.tx.us/injury/data/>

Vestrup J.A., P.T. Phang, L. Vertesi, P.C. Wing, & N.E. Hamilton. 1994. The utility of a multicultural regional trauma registry. *J Trauma* 37 375-378.

West J.G., M.J. Williams, D.D. Trunkey, & CC Wolferth Jr. 1988. Trauma systems: current status-future challenges. *JAMA* 259 24 3597-3600.

ENDNOTES

¹ There are several excellent commercial trauma registry software packages on the market. However, commercial software is not necessarily required, since there are also free software packages available. Some hospitals have even developed their own software or are plan-

ning to use existing software. Any of these packages (commercial, free or existing) can potentially satisfy the data reporting requirements of the Texas Trauma Registry. The technical specifications for these requirements are in the document entitled Texas Hospital Standard Data Set. As long as the computer software package enables the collection and electronic transmission of the Texas Hospital Standard Data Set it can be used to satisfy the Texas trauma reporting requirements.

² These hospitals are William Beaumont Army Medical Center (WBAMC), Sierra, Las Palmas, Culberson, Del Sol Medical Center, Southwestern General and Thomason Hospital.

³ The Texas counties are Hudspeth, Culberson, Presidio, El Paso. The New Mexico Counties are Hidalgo, Luna, Grant, Dona Ana, Sierra and Otero.

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