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Summary

The ability to *monitor* rates of serious alcohol-related harms in the population, both across time and place, is an essential cornerstone of any comprehensive policy to address these harms. Emergency Rooms (ERs) are ideal settings to identify and monitor new emerging trends in risky patterns of alcohol and other substance use that increase the risk of injury, overdose or poisoning and many of the acute harms caused by excessive drinking. The establishment of ongoing population based *surveillance* ER systems to detect such trends can be an invaluable approach for early detection and intervention for a variety of health problems. One challenge to overcome in relation to alcohol-related trauma is the reliable identification of cases which are at least partially caused by alcohol. Five main opportunities for monitoring and surveillance are discussed: (i) surveys of attendees, (ii) objective tests of breath or blood alcohol level, (iii) brief additional questions, signs or codes in routine records, (iv) application of etiologic fractions to diagnostic data, and (v) the development of surrogate measures indicative of high alcohol involvement. While some of these measures have been validated and applied in the evaluation of local harm reduction interventions, they are rarely employed in surveillance and monitoring systems. We argue in this chapter that multi-method approaches can be created in sentinel ER sites as a component of comprehensive monitoring and surveillance systems. Such an approach is perhaps best located within a broad injury and/or poisoning surveillance system.

Introduction

National and international statistics on alcohol-related harms tend to emphasise estimates of total numbers of deaths (e.g. Rehm et al, 2006) or total economic costs (e.g. Collins and Lapsley, 2003) but rarely report trends or variations across place and time. Monitoring such trends can be valuable as a means of guiding the development and evaluation of interventions, whether these are at the national, regional or local level (WHO, in press). While a single estimate of lives lost and economic impacts can raise awareness and build momentum towards new policy initiatives, the monitoring of trends using repeated measures provides a sharper focus on whether prevention and treatment policies are being well directed and effective. When such monitoring achieves a continuous coverage or includes very frequent assessments, this is often termed “surveillance” (Hirshon, 2000). Continuous monitoring of alcohol and other substance use in the ER has the potential to identify new and emerging patterns of risk for serious injury, overdose and poisoning events in a timely way that may reduce or prevent future occurrences.

over two-thirds of these episodes were from acute causes, mostly some form of injury (Chikritzhs et al, 2003). Another advantage of an ER setting for monitoring purposes is the high volume of people presenting with conditions related to their alcohol and other substance use. In Canada it was reported that as many as 13% of Canadians visited an ER in 2003, most of whom were not admitted and not therefore otherwise entered into the hospital record system (Carriere, 2004).

One significant advantage of ER data is that people often seek medical attention for acute injuries and illnesses provided they can physically reach treatment sites. For example several studies have found that many people that present violence related injuries to the ER do not report these incidents to the police (Brinkman et al, 2000). This is not to say that there are no biases in these data sets (see below), however, in the main, the existing biases limit the direct comparability *between sites* rather than within *one site* over time.

Challenges of the ER for surveillance and monitoring

There is a challenge to identify reliable subsets of presentations with a high probability of alcohol involvement in order to form the basis for an indicator of alcohol-related harm. These ER presentations are highly variable among hospitals and reflect the unique geographic composition of the catchment area, density, hours of opening, availability of transportation and waiting times for treatment – as well as changes in these in one location over time. ER staff are generally too busy to do more than respond to the immediate presenting problem and will often be selective of whom they will ask about alcohol use (Brinkman et al, 2000). An additional challenge is that even standard medical diagnostic information is often not readily accessible in an electronic format from ER departments. This at least has been the experience of the first author in both the Australian and Canadian context. While it is possible to hire interviewers to collect alcohol and other drug use information by self-report and breathalyser from persons presenting, this is usually too costly a procedure for routine surveillance and monitoring but may be possible with recurrent sampling.

Available Strategies for ER Monitoring

Following the lead of Cherpitel and colleagues work over two decades examining alcohol-related injuries in the ER and reviewed extensively in this volume, over 30 countries have developed and implemented consistent protocols to assess asentingmat 60230033a

The DAWN surveillance tool, used in US ERs, introduced some limited coverage of alcohol-related presentations in 2003: visits involving the misuse of alcohol for minors are recorded and also for





breathalysers and compiling the data. Applying etiologic fraction weights to all admissions depending on age, sex and presenting problem would also be a useful, reasonably cost-effective though less specific approach. Its value would be increased greatly if local data collection was used to estimate alcohol etiologic fractions for injuries presenting to a particular ER (e.g. Treno and Holder, 1997). In the latter case, it would be ideal to base etiologic fraction estimates on BAC levels obtained no more than two hours after the injury event and also after determining no alcohol consumption had occurred since the injury event. As discussed by Room (Chapter 9 in this volume), further work is needed to simplify the use of the new Y-codes in ICD-10 where they are related to categories of blood alcohol level and/or ratings of degree of intoxication so as to increase the likelihood that they are used reliably.

As one component of a national surveillance and monitoring system, it would be feasible to establish sentinel sites in major cities where the above indicators of acute alcohol-related harm could be collected routinely. Their added value to more traditional alcohol harm indicators based on alcohol-related mortality and morbidity data lies in the much higher frequency of ER presentations than of either hospital admissions or deaths. When combined with sample interviews at high risk times (i.e. late weekend nights), it would also be possible to gather information about the combined use of alcohol with other psychoactive substances, both licit and illicit (Sturge et al, 2006). Combined use of alcohol with other substances such as opioids or other central nervous system depressants is known to present special risks for drug overdose or injury indicating potential value in monitoring trends in patterns of combined substance used in a comprehensive alcohol and other drug surveillance system (Sturge et al, 2006).

References

- Adlaf EM, Begin P, Sawka E, eds (2005). *Canadian Addiction Survey (CAS): A national survey of Canadians' use of alcohol and other drugs: Prevalence of use and related harms: Detailed Report*. Ottawa: Canadian Centre on Substance Abuse.
- Ashcroft J, Daniels DJ, Hart SV (2003). *2000 Arrestee Drug Abuse Monitoring: Annual Report*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.
- Ball JK, Ducharme L, Green J (2005). The DAWN Report – New DAWN: Why It Cannot Be Compared with Old DAWN.
(Available at: http://dawninfo.samhsa.gov/files/DAWN_TDR_new_old.pdf)
- Brinkman S et al. (2000). "An indicator approach to the measurement of alcohol-related violence." In: Williams P, ed. *Alcohol young people and Violence, Australian*. Australian Institute of Criminology, Research and Public Policy, Canberra.
- Burns L et al. (1995). Policing pubs: what happens to crime? *Drug and Alcohol Review* (14):369-376.
- Buxton J (2005). Vancouver Drug Epidemiology, Vancouver Site Report for the Canadian Community Epidemiology Network on Drug Use.
(Available at: http://www.vancouver.ca/fourpillars/pdf/report_vancouver_2005.pdf)
- Carriere G. Use of Hospital Emergency Rooms. *Health Reports* 16, 1 (October 2004), Statistics Canada, catalogue no. 82-003.
- Cherpitel CJ (1993). Alcohol and injuries: A review of international emergency room studies. *Addiction* 88: 923-937.

Cummings GE et al. Health Promotion and Disease Prevention in the Emergency Department: A feasibility study. *Can J Emerg Med* 2006;8:100-5.

English D et al. (1995). *The Quantification of Drug Caused Mortality in Australia 1992*, Commonwealth Department of Human Services and Health, Canberra.

Guang-chou T, Bhushan K, Isreal Y (1992). Characteristics of a New Urine, Serum, and Saliva Alcohol Reagent Strip. *Alcoholism: Clinical and Experimental Research*, **16**, 222.

Hirshon JM. The rationale for developing public health surveillance systems based on emergency department data. *Acad Emerg Med* 2000;7:1428-32.

Kraman P (2004). *Drug Abuse in America: Rural Meth*. Lexington: The Council of State Governments.

McLeod R et al. (2000). *The influence of alcohol and drug use, setting and activity on the risk of injury – a case-control study*. National Drug Research Institute, Curtin University of Technology 0151

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Stockwell T, Sturge J, Macdonald S (2005). *Patterns of risky alcohol consumption in British Columbia: Analysis of the 2004 Canadian Addiction Survey*. Statistical Bulletin number 1: Centre for Addictions Research of BC, University of Victoria, British Columbia.

Sturge J, Stockwell T, Macdonald S (2006). A comprehensive alcohol and other drug epidemiological monitoring system for Canada: A pilot project in British Columbia and Ontario, Canada. Paper presented at the 32nd annual symposium of the Kettil Bruun Society for Social and Epidemiological Research on Alcohol, Maastricht, the Netherlands, May 28-June 2, 2006.

Topp L et al. (2004). Adapting the Illicit Drug Reporting System (IDRS) to examine the feasibility of monitoring trends in the markets for 'party drugs'. *Drug and Alcohol Dependence* 73(2):189-197.

Treno AJ, Holder HD (1997). Measurement of alcohol-involved injury in community prevention; the search for a surrogate. *Alcoholism: clinical and experimental research* 21(9), 1695-1703.

World Health Organization (2000). *International guide for monitoring alcohol-related problems, consumption and harm*, World Health Organization: Geneva.

World Health Organization (in press). *International guide for monitoring alcohol-related problems, consumption and harm, 2nd Edition*. World Health Organization: Geneva.

Young D et al. (2004). Emergency room injury presentations as an indicator of alcohol-related problems in the community: A multilevel analysis of an international study. *Journal of Studies on Alcohol* 65(5), 605-612.