



Research paper

Safety first: A medical amnesty approach to alcohol poisoning at a U.S. university

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Abstract

Despite the minimum legal drinking age of 21 in the United States, alcohol consumption among underage college students is widespread. Patterns of consumption among students often include episodes of heavy drinking that contribute to a range of negative consequences, including alcohol poisoning. Although failure to seek medical assistance in cases of alcohol poisoning can lead to fatal outcomes, evidence suggests that the threat of judicial consequences resulting from enforcement of the minimum drinking age or other law or policy violations leads some students to refrain from calling for emergency medical services. Beginning in the fall of 2002, Cornell University attempted to address this dilemma by implementing a Medical Amnesty Protocol (MAP) designed to: (1) increase the likelihood that students will call for help in alcohol-related medical emergencies; and (2) increase the likelihood that students treated for alcohol-related medical emergencies will receive a brief psycho-educational intervention at the university health centre as a follow-up to their medical treatment. This article provides a case study of the MAP at Cornell University and reviews data from emergency room and health centre records, calls to emergency medical services, and student self-report survey data to evaluate the extent to which the protocol's goals were achieved during the first two years of implementation. Results include consecutive increases in alcohol-related calls for assistance to emergency medical services during the two-year period. Survey results suggest that, following initiation of the MAP, students were less likely to report fear of getting an intoxicated person in trouble as a barrier to calling for help. Furthermore, the percentage of students seen by health centre staff for a brief psycho-educational intervention after an alcohol-related emergency more than doubled (from 22% to 52%) by the end of the second year. In their discussion, the authors explore the inherent tension between the responsibility of colleges and universities to enforce the minimum legal drinking age of 21 as well as other laws and university policies versus the need to motivate underage students to call for assistance when alcohol-related medical emergencies occur. Recommendations to other colleges and universities considering a medical amnesty approach are provided.

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Introduction

Although the minimum legal drinking age in all 50 of the United States is 21 years of age, alcohol consumption among college students, most of whom are underage, is widespread. National surveys suggest that approximately seven out of ten college students have consumed alcohol in the past 30 days (O'Malley & Johnston, 2002). Of greater concern, many col-

lege students consume alcohol in ways that put them at high risk for experiencing significant harm. According to the College Alcohol Survey conducted by researchers at Harvard University's School of Public Health, 0.6% of students in a 1997 national sample reported being treated for alcohol overdose during the past year, which – if projected nationally – would equal over 30,000 students annually. Furthermore, one in eight students reported injuries resulting from alcohol use, and one in twenty reported injuries severe enough to require medical treatment (Wechsler, Nelson, & Weitzman, 2000). Apropos to the study reported in this article, the number of alcohol overdoses and drinking-related injuries actually

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treated by medical personnel may be only a small fraction of the incidences that actually occur. The gap between the morbidity and mortality risk to college students posed by these commonly occurring events and the number of such cases receiving medical assistance were the reason for the development of the policy initiative by Cornell University described below as well as the authors' encouragement to other schools to consider enacting a medical amnesty approach for their campuses.

While well-intended, policies and practices at institutions of higher education that are designed to enforce minimum legal drinking age laws and restrict other aspects of alcohol possession and consumption may have negative consequences. For example, such policies may actually deter some students from calling for emergency medical services in dangerous circumstances caused by heavy alcohol use (Colby, Raymond, & Colby, 2000). When alcohol is present, students may be reluctant to seek help in these emergencies because of potential judicial consequences for themselves, the person in need of assistance, or the hosting organisation (Meilman, 1992). Often the decision whether to call for help happens late at night and becomes the responsibility of student bystanders whose judgment may be impaired because of their own alcohol consumption.

In order to increase the likelihood that students will call for medical assistance in an alcohol-related emergency, some colleges and universities have instituted "Good Samaritan" or medical amnesty policies that eliminate or reduce judicial consequences for students involved in alcohol-related medical emergencies (Higher Education Center for Alcohol and Other Drug Prevention, 1996). Other schools may reject this type of strategy based on arguments such as the need to "avoid sending the wrong message" about the seriousness of underage drinking (Chapman, 2005). Furthermore, the lack of evaluation regarding a medical amnesty approach has made it difficult for administrators at institutions of higher education to make policy decisions based on the empirical evidence. Overall, the research literature on medical amnesty in the college environment is limited (Meilman, 1992; O'Malley, 2001). This article addresses this lack of data by presenting a case study evaluation of the Medical Amnesty Protocol developed and implemented at Cornell University.

The context at Cornell University

Cornell University is a four-year Ivy League University in rural New York State with an enrolment of over 13,600 undergraduate students. In the 2000–2001 academic year, Cornell University Emergency Medical Services (EMS) responded to 63 calls in which students were evaluated for alcohol poisoning or alcohol-related injuries. The actual number of students who experienced alcohol poisoning is likely to be much higher than reported. For example, a random sample survey of Cornell undergraduates conducted in the spring of 2000 found that 19% of respondents reported thinking about calling for help because they were concerned about some-

one who was severely intoxicated, though only 4% actually called for help. The most frequently cited reason for not calling for help was that the respondent was not sure if the person was sick enough (9.3%). The next highest reason given was because the respondent did not want to get the distressed individual in trouble (3.8%).

The total number of alcohol poisoning cases reported for each year does not include those that occur on the last day of classes each spring. This day, known at Cornell as Slope Day, includes a traditional student celebration marked by high levels of alcohol consumption and concomitant alcohol poisoning cases. The number of alcohol poisoning cases on Slope Day varies considerably by year and would therefore skew the yearly totals if included.

Research suggests that when individuals who are treated for alcohol-related emergencies receive, as part of their follow-up care after the emergency, a brief psycho-educational intervention examining their alcohol use, the likelihood of recurrence is reduced (Longabaugh et al., 2001). At Cornell, students are unlikely to avail themselves of such services on a voluntary basis, even when they receive written requests to do so from the director of health services. In contrast, students who are required to participate in such education as a result of judicial action do so consistently. Since September 2001, the standard requirement for students with a first-time judicial violation has been participation in the Cornell BASICS (Brief Alcohol and Screening Intervention for College Students) program. The Cornell BASICS program was modelled on research that found a two session screening and feedback process, with elements of motivational interviewing and cognitive-behavioural skills training, to be effective in reducing drinking and the harm associated with high-risk alcohol consumption in the college environment (Baer, Kivlahan, Blume, McKnight, & Marlatt, 2001; Barnett et al., 2004; Borsari & Carey, 2000; Dimeff, Baer, Kivlahan, & Marlatt, 1999; Marlatt et al., 1998).

In cases of medical emergencies on campus property, the university police respond along with Emergency Medical Services. Prior to the implementation of the MAP at Cornell, the practice of campus police officers was to exercise discretion as to whether students evaluated for alcohol poisoning should be cited for violations such as underage consumption. The result was a varying pattern in which some students who were transported to the local medical centre received a judicial referral, whereas others did not.

In 2001–2002, Cornell health centre staff provided judicially mandated education to 22% of the students known to be treated for alcohol-related emergencies at the medical centre. These students represented a subset of individuals transported from the Cornell campus via ambulance. In cases where the responding Cornell University Police officer chose not to issue a judicial referral, the health centre staff did not have leverage to ensure that these students received follow-up education. Similarly, students transported to the medical centre by friends or by ambulance from an off-campus location (where campus police do not have

jurisdiction) were not required to undergo the educational intervention.

Methodology

Intervention

Research findings indicating that some students were not calling for help in alcohol-related medical emergencies led Cornell University staff, student leaders, and a concerned alumnus to call for the development of two specific strategies as part of a comprehensive approach to reducing the harm related to acute alcohol poisoning. Following a logic model, these strategies were specifically designed to address bystanders' barriers to calling for help in an alcohol-related emergency (see Fig. 1). These two strategies complement each other, reinforcing the importance of taking action in an alcohol-related emergency.

The first strategy was to increase education efforts for students about the signs of alcohol poisoning and the steps to take in an alcohol-related medical emergency. Educational strategies (such as posters in residence halls) on how to recognise alcohol poisoning and how to respond effectively had already been employed during recent years and were expanded in

light of the finding that many students failed to call for help because they were not sure if the person's condition was serious enough to warrant medical attention. Increased training on alcohol poisoning was also provided to residence hall staff.

A second strategy involved the creation of a Medical Amnesty Protocol. The MAP was developed by a committee of the President's Council on Alcohol and Other Drugs, comprising students, staff, and faculty. The MAP is not part of the university's alcohol and other drug policy, but rather is an agreement between several university departments to exercise their discretion in accordance with the protocol when dealing with alcohol-related emergencies. The departments that adhere to the protocol are the Cornell University police, judicial administrator, dean of students, fraternity and sorority affairs, residence life, and health services. The MAP functions in relation to the university Code of Conduct, which applies only to university-owned property. Alcohol-related emergencies that occur off-campus fall within the jurisdiction of local police authorities and are therefore not eligible for the MAP.

The goals of the MAP are twofold: (1) to increase the likelihood that students will call for medical assistance when faced with an alcohol-related emergency; and (2) to increase the provision of follow-up psycho-educational interventions for individuals who received emergency medical attention

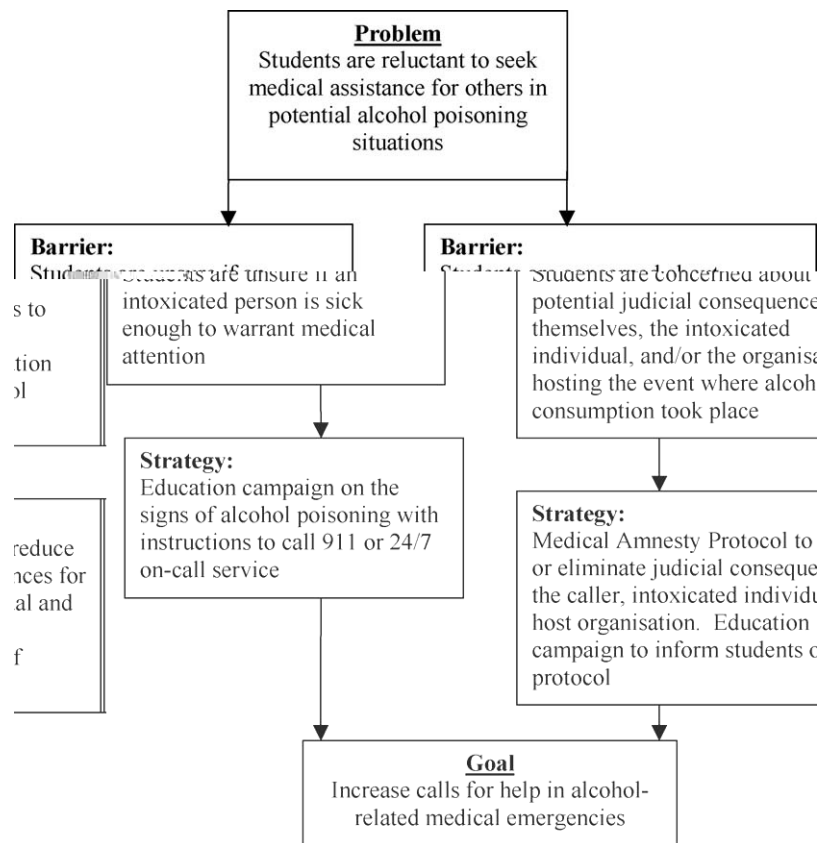


Fig. 1. Logic model for increasing calls for help in alcohol-related medical emergencies.

related to their own use of alcohol in order to reduce the likelihood of such occurrences in the future.

To achieve these goals, the MAP provides that discretion regarding how to respond to alcohol-related medical emergencies, as permitted under Cornell's Code of Conduct (the Code), be exercised as follows:

1. *Person in need of medical attention:* If an individual who receives emergency medical attention related to his or her consumption of alcohol completes a required follow-up at the health service, he or she will not be subject to judicial action should the following Code violations occur at the time of the emergency: (a) underage possession of alcohol; (b) disorderly conduct. The individual receiving amnesty will not be required to meet with the Judicial Administrator, will not be required to pay for the mandatory follow-up service, and will receive a warning rather than a written reprimand. A person in need of medical attention is eligible for medical amnesty on more than one occasion. (For a first-time MAP incident, the BASICS program is utilised. For subsequent MAP incidents, appropriate interventions are determined on a case-by-case basis.)
2. *Caller:* An individual who calls for emergency assistance on behalf of a person experiencing an alcohol-related emergency will not be subject to judicial action for the following Code violations in relation to the incident: (a) underage possession of alcohol; (b) provision of alcohol to an underage person; and (c) disorderly conduct.
3. *Organisation:* A representative of an organisation hosting an event is expected to promptly call for medical assistance in an alcohol-related emergency. This act of responsibility will mitigate the judicial consequences against the organisation resulting from Code violations that may have occurred at the time of the incident. Likewise, failure to call for medical assistance in an alcohol-related emergency will be considered an "aggravating circumstance" and may affect the judicial resolution against the organisation if Code violations may have occurred.

Starting in the Fall 2002 semester, the university undertook a marketing campaign to inform students of the new protocol. This campaign included posters in residence halls, academic buildings, and fraternities and sororities; advertisements in the student newspaper; table tents in dining halls; and slides on the media towers in the community centres. The messages featured a parody of the game Monopoly that included the phrase, "Get out of JA free." The "JA" is the term by which most Cornell students know the Office of the Judicial Administrator.

Evaluation measures

To assess the extent to which Cornell met the goals of the MAP during its first two years, data from three sources were examined: (1) emergency room (ER) and health centre records documenting alcohol-related ER visits and educational follow-up services; (2) reports from Cornell's EMS

(Emergency Medical Services) regarding calls for alcohol-related emergencies; and (3) student self-report surveys regarding barriers to calling for help in an alcohol-related emergency. The present study examines the application of the MAP to individuals and does not explore the effect of the protocol on organisations hosting events in which alcohol-related emergencies may have occurred.

Results

Student awareness of the MAP

In order for the MAP to influence students' decision-making processes, it is necessary for the student population to be aware of its provisions. Therefore, in order to assess students' awareness of the MAP, a question regarding students' knowledge of it was added to a random sample survey that is routinely administered at the end of the spring semester. MAP questions were added to the 2003 and 2004 Slope Day Surveys. Both surveys had a response rate of 42% ($n = 627$ in 2003, $n = 1667$ in 2004). At the end of the first year of implementation, 63% of students reported being at least somewhat familiar with the MAP. After the second year of implementation in 2004, this figure increased to 80% (Table 1).

Help-seeking behaviour

We used two sources of data to measure the extent to which students called for help in alcohol-related medical emergencies. First, we compared responses to items from a random sample survey administered in the spring of 2000 (three years prior to the implementation of the MAP) with surveys conducted in the spring of 2003 and spring of 2004 (the first and second years of the MAP). Each year, students were asked, "In the past 12 months, have you thought about calling for help for someone who was severely intoxicated?" Students who indicated that they had thought about calling for help were then asked to indicate whether or not they actually called for assistance. Those students who reported that they did not call were then asked to select from a list of reasons why they did not seek help.

As shown in Table 2, the percentage of students who thought about calling for help for a severely intoxicated person increased slightly after the initiation of the MAP, though this change was not statistically significant.

Table 1

Responses to statement: "I am familiar with Cornell's new Medical Amnesty Protocol (the Get Out of JA Free Policy)"

	Spring 2003 (%)	Spring 2004 (%)
Strongly agree	33	50
Somewhat agree	30	30
Unsure	9	9
Somewhat disagree	5	4
Strongly disagree	23	7

Table 2
Calls for help

	Spring 2000, pre-MAP	Spring 2003, MAP year 1	Spring 2004, MAP year 2
Respondents (%) who, in the past 12 months, thought about calling for medical help due to concern for someone severely intoxicated	18.7	20.1	19.2
Respondents (%) who, in the past 12 months, called for help for someone who was severely intoxicated	4.5	6.8	5.4

Table 3
Percentage citing reasons for not calling for help in alcohol-related medical emergencies, among all respondents

	Spring 2000, pre-MAP	Spring 2003, MAP year 1	Spring 2004, MAP year 2
I didn't want to get the person in trouble	3.8	2.3	1.5
I didn't want to get myself in trouble	1.3	1.3	1.0
I didn't want to get my organisation in trouble	1.5	1.8	1.2
I didn't want police to break up party	0.9	1.0	0.9
I wasn't sure the person was sick enough	9.3	7.1	8.2
I figured it wasn't my problem	0.2	0.5	0.7

Also, as shown in Table 2, there was an increase in the percentage of respondents who reported actually calling for help, though the structure of the items on the survey precluded testing for significance. The survey did not explicitly define "call for help" to mean only calling 911. In 2004, 5% of students reported calling for help. Out of a student body of 13,400, 5% translates into 670 calls, which EMS data does not support. Students may be interpreting "calling for help" as talking with residence hall staff or a friend.

Table 3 examines the reasons respondents did not call for help in alcohol-related medical emergencies. In each year, the most common reason for not calling was lack of certainty that the person needed medical attention. Fear of various forms of trouble with the authorities was also cited. In 2000, 3.8% of respondents said that they did not call for help because they did not want to get the intoxicated person in trouble. In 2004, at the end of two years of the MAP, only 1.5% of respondents reported this barrier. Though the percentages are small, the change between 2000 and 2004 is a 61% decrease. The percentage of students citing other barriers to seeking medical attention either decreased slightly or remained relatively unchanged. These barriers include two, which the MAP seeks to address: fear of consequences for the caller or for the organisation hosting the event.

The second source of data on help-seeking behaviour in alcohol-related emergencies is the records from Cornell's Emergency Medical Services. EMS responds to all requests for medical assistance on university property, which is where the MAP applies. These records, however, provide only a subset of all cases in which Cornell students are treated at the local medical centre for alcohol-related emergencies because

Cornell's EMS does not respond to off-campus locations where more than half of the study body resides. As shown in Table 4, alcohol-related EMS calls increased by 22% over the first two years of the MAP (from 63 calls in 2001–2002 to 77 in 2003–2004).

Table 4 also shows the number of alcohol-related EMS calls that resulted in application of the MAP. During the first two years of the MAP, there was a discrepancy between the number of alcohol-related EMS cases and the number of cases in which the MAP was applied. The reason for this gap is likely twofold. First, there may be some alcohol-related emergencies in which the MAP did not apply. For example, a student may have been transported for injuries sustained in an act of vandalism or violence, or have been found to be in possession of false identification, which might have resulted in judicial charges not covered by the MAP. A second and more likely explanation is that the police did not issue applicable judicial referrals in each case, thereby precluding application of the MAP. Anecdotal reports suggest that, when the EMS calls did not result in the transport of the student to the medical centre (i.e., due to refusal of assistance or determination that transport was not warranted), officers sometimes did not cite the student for underage drinking.

Patterns of alcohol consumption during MAP implementation

The increase in alcohol-related calls to EMS during the first two years of the MAP suggests the possibility that students may have been more likely to call for help because the MAP provided some assurance that the judicial sanctions

Table 4
Application of the MAP in alcohol-related calls responded to by Cornell Emergency Medical Services (EMS)

	2001–2002, pre-MAP	2002–2003, MAP year 1	2003–2004, MAP year 2
Alcohol-related EMS calls	63	69	77
Number of EMS calls resulting in MAP	–	51	59
Percentage of EMS calls resulting in MAP	–	74	77

would not result. An alternative explanation could be that the increase in calls for help reflects an increase in heavy drinking among the student population resulting in a larger percentage of students in need of emergency assistance. In order to examine this possibility, data from Cornell's administration of the Core Alcohol and Drug Survey prior to (fall 2000) and during (fall 2003) the implementation of the MAP were examined (fall 2000, $n = 719$, response rate = 45%; fall 2003, $n = 1595$, response rate = 40%). The data from these random samples present a somewhat inconsistent description of drinking levels at these two points in time. On the one hand, mean drinks per week decreased slightly from 5.6 in 2000 to 5.4 in 2003. On the other hand, the percentage of students who reported consuming five or more drinks in a sitting at least once in the prior two weeks (a standard measure of high risk drinking) increased from 42% in 2000 to 48% in 2003. This increase in high risk drinking was due primarily to a substantial increase among women (34% in 2000, 43% in 2003) versus a small increase among men (49% in 2000, 52% in 2003). During the same period, the percentage of students who consumed five or more drinks in a sitting more than five times in two weeks decreased slightly (5.9% in 2000, 5.5% in 2003).

While these self-report data on student drinking yield an ambiguous picture of drinking levels during the period before and after the MAP's implementation, it does not seem likely changes in drinking patterns impacted overall calls for emergency assistance. If the increase in consumption affected calls to EMS, one would expect to find a corresponding increase in emergencies among women, since this population accounted for most of the increase in self-reported drinking. However, as indicated in Table 5, the proportion of female students treated at the emergency room actually declined following the implementation of MAP. It is worth noting that there is a limitation when using this emergency room report data. On April 14, 2003, a new federal privacy law went into effect, which limited the sharing of ER information with the University health services. Consequently, there may have been cases seen at the medical centre that may not be included in the present data. Despite this limitation, the finding suggests a clear trend toward a decreasing proportion of female

Table 5
Number of alcohol intoxication cases treated at the ER^a

	2001–2002, pre-MAP	2002–2003, MAP year 1	2003–2004, MAP year 2
Reported alcohol-related ER cases	67	63	62
Percentage of cases that were female	62	41	48

^a The number of alcohol-related ER cases in this table should not be compared with the number of alcohol-related EMS calls (Table 4). First, EMS data reports on only on-campus incidents generating a phone call for help, whereas ER records might capture an incident from off-campus or an on-campus incident where the student was brought to the hospital in a friend's car. Second, EMS data reports on all phone calls for help. Not all of those cases result in a transport to the ER. In some cases, the student may not be sick enough to require transport or a student may refuse transport.

Table 6

Percentage of students participating in judicially mandated educational intervention following treatment for an alcohol-related medical emergency at the local medical centre

2001–2002, pre-MAP	22
2002–2003, MAP year 1	49
2003–2004, MAP year 2	52

cases. This finding, combined with the survey data indicating a slight decrease in students' barriers to calling for help, suggests that the increase in calls for help in an alcohol-related emergency was a function of the MAP and related educational efforts rather than changes in drinking practices.

Rate of educational follow-up

Table 6 shows the extent to which the health service staff was able to provide a judicially mandated intervention with students following their treatment for alcohol-related emergencies at the local medical centre. These brief psycho-educational interventions were mandated from either the application of the MAP or an alcohol-related Code of Conduct violation where the MAP did not apply (e.g., possession of a false identification). During the first two years of the MAP, the percentage of students seen by health centre staff for educational follow-up more than doubled (from 22% to 52%). The remaining students who were treated for alcohol-related emergencies but were not required to participate in an educational follow-up likely fall into one of three categories: (1) those transported by friends to the medical centre; (2) those transported by ambulance from an off-campus location; and (3) those transported from campus who were either not eligible for the MAP or who did not receive the applicable judicial referral from the university police. The medical centre does not record the location from which a student is transported.

Discussion

The concept of enacting even a partial amnesty policy for those calling emergency medical services to assist a student who is experiencing acute alcohol poisoning is controversial in higher education. There is an inherent tension between, on the one hand, the responsibility of colleges and universities to enforce the minimum legal drinking age of 21 as well as other applicable laws and university polices regarding the possession and consumption of alcohol and, on the other hand, the need to remove barriers so underage students will be motivated to call for assistance in alcohol-related medical emergencies. Despite the potentially fatal consequences of failing to seek medical assistance in cases of alcohol poisoning, evidence suggests that both confusion about the need for medical assistance and the threat of judicial consequences lead some students to refrain from calling for help. Beginning in the fall of 2002, Cornell University attempted to address this dilemma by: increasing educational efforts to teach stu-

dents and university staff how to recognise alcohol poisoning and how to respond effectively; and implementing a Medical Amnesty Protocol limiting the judicial consequences to the drinker, bystanders who call for medical assistance, and any organisation hosting or sponsoring an event where the drinking occurred that led to the alcohol poisoning. The present study examines the impact of the MAP during its first two years of implementation.

The MAP was designed to achieve two aims: (1) increase the likelihood that students will call for help in alcohol-related medical emergencies; and (2) increase the likelihood that students treated for alcohol-related medical emergencies will receive follow-up education at the university health centre. To what extent were these aims achieved?

Survey results suggest that, following the initiation of the MAP, there was an increase in the percentage of students who reported calling for help on behalf of an intoxicated person. In a baseline survey conducted in 2000, 4.5% of students reported calling for help in the previous year. At the end of the first academic year of the MAP (2002–2003), 6.8% reported calling for help, and 5.4% reported doing so during the following year. Correspondingly, the number of alcohol-related calls to Cornell's EMS increased each year after the implementation of MAP.

It is not possible to disaggregate the degree to which an increase in calls for help may be due to education regarding the signs of alcohol poisoning versus the implementation of MAP. While we assume there to be an interaction between the two, we also believe MAP alone had an impact because the percentage of students who reported that they did not call for help in an alcohol-related medical emergency because they "didn't want to get the person in trouble" decreased from 3.8% in the baseline survey to 1.5% at the end of the second year of implementation.

A possible explanation for the increases in calls for emergency medical services is that they resulted from an increased number of episodes of severe intoxication among the student population. Data from self-report surveys of student alcohol consumption are inconclusive regarding trends in student drinking during the period of this study. While some measures of drinking increased, others remained stable. Moreover, the most significant increases in high-risk drinking occurred among women. If the increase in calls to EMS was due to an increase in high-risk drinking, one might expect to see an increase in the proportion of females treated for alcohol poisoning. An examination of medical centre records indicate that the proportion of female students treated for alcohol poisoning during the years in which the survey data were collected actually declined from 62% the year prior to MAP to 41% and 48% during the first and second years of MAP implementation.

Although it is reasonable to consider an increase in alcohol-related emergencies to be an indication of a worsening campus drinking problem, given the drinking patterns over this period and the survey data indicating a slight decrease in students' barriers to calling for help, Cornell offi-

cially interpret the increase in calls as evidence that the MAP was achieving its purpose: motivating students to call for help by reducing fear of judicial consequences.

While increases in high-risk drinking could potentially have contributed to the rise in emergencies, any increase in heavy drinking episodes must be understood in light of the large "pool" of untreated cases of serious intoxication that appear to be common in the population: in the 2000 baseline survey, 68% of students said that at least once during the past year they "had to take care of a drunken friend." In the same sample, 18.7% of students reported thinking about calling for help and, as noted above, 4.5% reported seeking assistance. Therefore, although the levels of intoxication are unknown, it is reasonable to assume that some portion of the cases in which help was not sought did indeed warrant medical attention.

One criticism of medical amnesty approaches is that the claim by students that their peers will not call for help because of fear of judicial action is exaggerated. Indeed, the present study found that the percentage of students who do not call for help because of concerns about judicial actions is relatively low: prior to the MAP, 3.8% did not want to get the intoxicated person in trouble; 1.3% did not want to get themselves in trouble; and 0.9% did not want police to break up the party. Although these are small percentages, they are still cause for concern. Each episode in which someone does not call for help is a potentially fatal situation. Therefore, it is desirable to reduce as many barriers to calling for help as possible, regardless of the prevalence of such behaviour. Furthermore, the proportion of students for whom fear of judicial consequences is a barrier could potentially be higher on campuses where the police routinely issue violations (without amnesty) to students treated for alcohol poisoning.

Although the percentage of students who do not call for help out of fear of judicial consequences is small, numerous anecdotes reported by students and law enforcement officials suggest that fear of police involvement remains a serious barrier even after the implementation of the MAP. In one case, police who responded to an emergency call at a fraternity were led by members away from the room where the intoxicated person was located in order to avoid legal action against the chapter for serving an underage person. In another case, fraternity members attempted to prevent a sorority member from calling for medical services on behalf of a person who was unconscious due to alcohol poisoning at a fraternity house. These examples suggest that resistance to calling because of judicial concerns may be more prevalent within campus subpopulations (such as fraternities) than among the general student population. At the same time, it is important to acknowledge that fraternity leaders have initiated efforts to educate their members about the importance of calling for help in emergency situations. In general, further research is needed to examine the impact of the MAP on behaviour within campus organisations.

One of the most notable findings in this study is that, by far, the most common reason reported by students for not

seeking help is that they were not sure that the person was sick enough to need emergency medical attention. Whether or not a campus chooses to provide medical amnesty, this finding suggests that attempts to increase the rate at which students call for help should include educating students about the signs of alcohol poisoning and what actions to take if they are concerned. At Cornell, the signs of alcohol poisoning and the phone numbers for emergency medical services, as well as the 24-hour medical phone consultation service provided by the university's health service, are listed on posters in the residence halls and on table tents in the dining facilities. During the two years of the MAP, there has been a slight decrease in the percentage of students who report not calling for help because of uncertainty about the severity of the person's condition.

In addition to the increase in calls for medical help associated with the implementation of the MAP, the protocol has ensured that a higher percentage of students treated for alcohol-related emergencies receive a brief psycho-educational intervention as a follow-up to their emergency services, from 22% in the year before MAP was implemented to 52% in the second year of MAP. This increased rate of follow-up is important because the literature suggests that educational contacts after an alcohol-related emergency can reduce the likelihood of recurrence. In addition, such contacts increase the potential for identifying and engaging students who are alcohol-dependent.

Prior to the MAP, Cornell University police officers exercised individual discretion as to whether to issue judicial referrals to underage students who received medical evaluations for alcohol poisoning. Consequently, health centre staff did not consistently have judicial leverage to motivate students to participate in follow-up education. The protocol, developed in conjunction with the police, established standardised procedures for officers to follow in alcohol-related emergencies. Although there have been challenges to ensuring that all officers understand and consistently apply the MAP, overall support from the police has been high. In every case in which police have issued a judicial referral involving the MAP, students have chosen to complete the educational follow-up rather than waive the protocol and meet with the Judicial Administrator as they would do normally.

One might ask why medical amnesty is necessary for leveraging participation in follow-up care since such leverage could be achieved simply by issuing judicial violations to all students who are treated for alcohol-related emergencies. Depending on the structure of the campus judicial code, the students could be charged with underage drinking, disorderly conduct, or public intoxication and consequently required to participate in an educational follow-up. While it is true that judicially charging all students treated for emergencies could achieve a high rate of compliance, it is also possible that doing so without an amnesty provision might contribute to fewer students calling for medical assistance.

As a case study, the present findings are limited in their ability to generalise. The survey results and the response rates

that were achieved must be interpreted within the limitations common to self-report measures of socially controversial behaviours. Instrument design also prevented significance testing of changes of some results. The collection of baseline survey data in 2000, before the initiation of the MAP in 2002, raises the possibility that differences in measures during the first year of the intervention reflect changes that actually occurred prior to the implementation of the protocol. It is also unclear whether self-reported behaviours related to calling for help occurred on campus (where the MAP applies) or off campus. Limitations in recordkeeping within university departments and restrictions on communication of protected health records precluded more extensive analysis.

Future directions for medical amnesty at Cornell include working with local officials to explore expansion of the protocol to off-campus locations where the Campus Code of Conduct does not apply. In-depth examination of how the MAP is applied within Cornell's large fraternity and sorority system is also required. With each new cohort of students and ongoing staff turnover, continuing education and training will be necessary.

Finally, it is worth noting an unanticipated benefit of Cornell's MAP: creation of the protocol served as a common-ground initiative on which students, faculty, and administrators collaborated effectively. In particular, student leaders have remarked that the establishment of the MAP demonstrated that the university genuinely is concerned about the health and safety of its students. The presence of the MAP is a source of good will in the ongoing and vital dialogue between students and university officials in the search for ways to reduce alcohol-related harm and, ultimately, save lives.

Recommendations

An institutional decision whether or not to develop some form of medical amnesty is likely to involve philosophical disagreements among key stakeholders. At Cornell, there was general consensus among students, staff, and faculty that medical amnesty was an appropriate approach for the university. There were some individuals who felt that amnesty should be broader (e.g., cover any violations by individuals or organisations) or complete (i.e., not include any follow-up educational requirement). By contrast, some colleagues who have attempted to institute medical amnesty at other institutions have reported that objections from student services or public safety staff prevented establishment of such policies. Some object that it is unfair to "reward" some underage students with amnesty while others are held accountable. Others argue that medical amnesty would undermine attempts to send a clear message that underage drinking is unacceptable and might even lead to increased reckless drinking by individuals who would believe that they no longer have to worry about judicial consequences. The prevailing view at Cornell is that the university can be both firm about enforcement of

underage drinking and flexible in exercising reasonable discretion when balancing competing needs in relation to the law and emergency medical care.

Based on the experience at Cornell, campuses seeking to develop a medical amnesty approach should consider the following recommendations:

Establish a formal protocol or policy: At Cornell, a formal written statement serves as an agreed-upon protocol between several departments. As a public document, a protocol or policy serves to educate the community and foster accountability among those responsible for implementation. We chose to institute a protocol, as opposed to modifying the Cornell Code of Conduct or Cornell's alcohol policy, because it allowed us to expedite implementation and modify as needed. The process for institutionalizing medical amnesty to be a part of the Code or the policy required steps not necessary to achieve the function of the protocol. The MAP is referred to in the Code and the policy, but it remains separate from both documents. An institution in the early stages of developing a medical amnesty approach may choose to experiment with strategies described within a protocol and refine the model before formulating an official statement. On campuses where the process for changing institutional policy is relatively uncomplicated, integrating medical amnesty into existing policy may ensure its continuity and consistent application over time.

Determine to whom amnesty will apply: Institutions must decide how broadly to extend amnesty in relation to: (1) the ill student; (2) the student(s) assisting the ill student; and (3) an organisation hosting an event at which the incident occurs. This decision will be shaped by the campus culture. A campus may choose, for example, to extend amnesty to those students seeking help but not to the ill student. In the Cornell model, both the student receiving treatment and the student who calls for assistance for the ill student receive amnesty. The protocol is more complicated for organisations hosting parties (e.g., fraternities). Promptly calling for assistance for an ill student mitigates but does not necessarily eliminate all judicial consequences for the organisation. Failure to call for medical assistance in an alcohol-related emergency is considered an "aggravating circumstance" and may affect the judicial resolution against the organisation.

Determine which violations will be covered: Colleges and universities often have a variety of codes, policies, or rules related to alcohol and drug use, including underage drinking, possession of a false identification, provision of alcohol to a minor, drug possession, and disorderly conduct. Cornell's MAP does not apply, for example, to possession of false identification or possession of illegal drugs. A broad amnesty may gain wide acceptance by students but be more difficult for administrators or law enforcement officials to accept.

Determine jurisdiction: The extent to which amnesty can be applied off-campus will be a function of (1) whether the institution's judicial code applies off-campus, and (2)

whether local law enforcement officials agree to apply it within their jurisdictions.

Institutions engaged in the early stages of amnesty policy development may want to have a year or two of implementation on campus before attempting to extend the policy off-campus. While local law enforcement and district attorneys may be reluctant to issue a broad amnesty and may have somewhat different statutes to enforce as compared to campus authorities, they may be willing to agree to the principles of medical amnesty and follow its practices. We recommend applying amnesty as widely as possible so that it extends to both on- and off-campus. Application of amnesty by local law enforcement may have the added benefit of impacting the help-seeking behaviour of younger teens in the community.

Develop psycho-educational interventions for use in amnesty cases: A brief (e.g., two sessions) follow-up intervention can reduce the risk of future alcohol-related harm among high-risk drinkers (excluding those who are dependent on alcohol). The Brief Alcohol Screening and Intervention for College Students has been shown to reduce heavy episodic drinking and related negative consequences (Baer et al., 2001; Barnett et al., 2004; Borsari & Carey, 2000; Dimeff et al., 1999; Marlatt et al., 1998). A medical evaluation or counselling assessment may be appropriate, particularly in cases of repeated episodes of alcohol-related emergencies. For first-time cases, however, an extensive, mandatory intervention may be experienced as punitive and therefore may undermine the premise of the amnesty.

Decide whether the protocol or policy will have exceptions for repeat episodes and severe cases: Campuses must decide whether or not a student may be eligible repeatedly for amnesty and if exceptions will be made in extremely serious cases. It is recommended that students be eligible for amnesty on more than one occasion, assuming that the mandated follow-up becomes proportionately intensive (e.g., a full alcohol evaluation and participation in a more extensive intervention process) with repeated episodes. In rare cases (e.g., where there is imminent risk of serious harm), an institution may be faced with weighing its commitment to preserve the integrity of the policy against a potential clinical imperative to take additional actions to protect the safety of the student. It is recommended that the threshold for such an exception be extremely high.

Market the protocol or policy: Public relations is an important component of any medical amnesty program and should be tied to a media campaign designed to have students and residence hall staff recognise the signs and symptoms of alcohol poisoning and understand what to do in an emergency. Options include placing posters around campus as well as advertisements in the campus newspaper and on websites. At Cornell, all posters and advertisements about the MAP link back to the medical amnesty website (www.medical-amnesty.cornell.edu).

Measure the impact: To determine the effectiveness and foster ongoing institutional support for a medical amnesty

protocol or policy, it is important to assess the outcome of the effort. Careful planning of the evaluation process from the beginning, including gathering of baseline data, will significantly enhance the quality of the evaluation. The present study offers an example of the multiple sources of data (i.e., medical and health centre records, emergency medical services records, and self-report surveys), which together can enable an institution to evaluate its approach to medical amnesty.

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