Session 4.
Implementing Preventive Interventions in Emergency Medicine: Strategic Considerations

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Individuals who may benefit from alcohol counseling are often unaware of their need for treatment. The provision of alcohol interventions in emergency departments (ED) may provide an opportunity to treat individuals who are currently not actively seeking such care. Due to their lack of awareness of their problem, these patients are unlikely to present for treatment on their own.

Treatment does not need to be sought actively to be effective.[1] However, motivation can facilitate treatment. Studies suggest that physicians can opportunistically capitalize on the motivating effects of acute injuries or medical conditions that require emergency care to convince patients of the need for behavior change.[2] This process may identify patients who have not yet developed severe dependence, thereby preventing the development of more intractable stages of alcoholism. Finally, such interventions may have the potential to decrease repeated use of emergency department resources.[3]

Randomized trials of inexpensive screening and intervention protocols that are feasible for use in the brief contact setting of the emergency department have been shown empirically to be effective when used in a variety of settings outside the ED.[2–6] A recent analysis of 12 randomized trials, each of which was limited to one session and consisted of less than one hour of motivational counseling, demonstrated that heavy drinkers were twice as likely to moderate their drinking when compared with those who did not receive an intervention.[7]

Brief interventions were specifically designed to target patients who are drinking at hazardous levels but have not become dependent. Some patients treated in emergency departments need more intensive treatment such as inpatient or outpatient therapy or participation in self-help groups. Brief interventions may be used to motivate such patients to seek or accept a referral to more intensive treatment.[8]

As proven alcohol interventions emerge, a systematic effort is needed to incorporate them into emergency department practice. The public policy objectives of *Healthy People 2010* include routine emergency department screening.[9]

The provision of such interventions is currently not routine. A variety of changes at the individual, system, and policy level will be needed to accomplish this goal. This paper describes the factors that have limited the provision of alcohol intervention and counseling in emergency departments and provides an agenda to foster their implementation.

Knowledge and attitudes of emergency department staff

Physician advocacy plays an important role in influencing screening practices by increasing awareness of the problem and by generating support for screening and intervention services. A survey of surgeons working in an emergency department found that the most significant predictor of screening was the attending physicians' perception that their responsibilities included screening.[10] However, 81% did not routinely screen, and 75% did not believe that screening was the responsibility of emergency department staff. Routine screening and intervention will require engendering a sense of role responsibility among emergency department clinicians towards addressing substance abuse.

This shift will require correcting misconceptions about the validity and generalizability of treatment research results and their relevance to the emergency department population.[11,12] The literature suggests that these misconceptions are the result of a relative lack of physician education and training in substance abuse.[10,13–18]

In the survey mentioned previously, 83% of respondents indicated that they had no prior training in screening or detection of alcohol problems, and more than 75% were not familiar with any of the commonly used alcohol screening questionnaires, such as the CAGE or MAST.[19,20] Another survey found that less than 25% of emergency medicine residency programs teach residents about the quantity/frequency of alcohol use questions needed to establish an early diagnosis of an alcohol-related disorder.[21] A more recent survey of program directors found that the average emergency medicine residency program devotes only three curricular hours to substance abuse training.[22]

The lack of education about screening is illustrated by the fact that the most commonly cited reason for failure to screen is lack of time.[10]

However, an effective battery of screening tools that require minimal time and disruption to implement is already available. A screening blood alcohol level can be obtained easily when blood is drawn for other purposes. A simple questionnaire such as the CAGE can easily be incorporated into a routine history and physical examination. Detecting hazardous drinking in the absence of dependence can be accomplished by asking several questions about quantity and frequency of use (e.g., using the first three questions of the AUDIT), which are easily memorized.[23,24] Lack of knowledge, rather than lack of time, is a more likely explanation for failure to screen.

Many physicians do not screen because they believe that asking patients about substance use is intrusive. Physicians who do not screen are three times more likely to have this belief than physicians who routinely screen.[10] Studies suggest that patients do not share this concern. Trials of alcohol screening in primary care, general medical clinics, trauma centers, and emergency departments demonstrate a high rate of patient acceptance.[2–4]

Some physicians are willing to detect alcohol use, but they believe that clinical judgment is reliable and formal screening is unnecessary.[25] However, numerous studies document that physicians generally fail to diagnose alcohol problems unless a formal screening protocol is used. In one study, researchers screened 2,002 patients for alcohol problems, but the results were not provided to staff. The clinical detection rate for screen-positive patients ranged between 25% and 50%, depending on the type of service provider.[15]

Similar results were found in a study of injured patients treated in the emergency department. The staff was asked to subjectively determine if patients were intoxicated (BAC > 0.10 g/dl) or had a chronic alcohol problem. Although 45% of patients were intoxicated, sensitivity was only 77%, and sensitivity decreased to 63% among patients who were severely injured, endotracheally intubated, or brain injured.[26] Specificity was also poor. More than 20% of patients who were thought to be intoxicated had no alcohol in their blood. Patient's age, income, and insurance status significantly influenced both sensitivity and specificity. Patients were also screened with the CAGE and SMAST. Staff identified fewer than 50% of screen-positive patients. Formal screening protocols are needed because clinical judgment is unreliable and subject to bias.[15,27]

A key reason that screening is not performed is the widely held perception that treatment is not effective. In the trauma center survey mentioned previously, only 27% of respondents believed that "brief interventions are at least moderately effective."[10] Nearly half believed that "there are not enough treatment resources to make screening worthwhile." An assessment of blood alcohol testing practices found that 91% of physicians who do not measure blood alcohol concentration believe the test is "not clinically important" because knowledge of the patient's blood alcohol level does not benefit the patient.[28]

Skepticism about treatment benefits is apparently widespread. One study of 2,500 randomly selected emergency department physicians found that only 55% believed that mental health professionals (psychologists and psychiatrists) can effectively address alcohol problems.[29] Their perception of treatment efficacy provided by other staff (physicians and surgeons) was even lower, 23%. This confirms the lack of knowledge regarding the progress in alcohol treatment that has led to expert consensus recommendations that all patients at risk for alcohol problems should be screened and counseled or referred for counseling.[30,31]

Changing belief systems, clinical practices, and cognitive barriers is a slow process and a formidable challenge. Implementation will require increasing emergency department physicians' knowledge in order to increase confidence in screening skills and to dispel myths about the futility of treatment. However, information alone may not change clinical practice. For example, only 21% of survivors of myocardial infarction are treated with beta-blockers by their primary care physician, despite the fact that expert consensus panels consider this omission a serious medical error.[32]

Studies of educational strategies to change physician behavior suggest that informational material and formal CME conferences have little impact, while outreach activities by professional organizations and opinion leaders conducting on-site educational programs produce positive change.[33] However, many people become leaders of organizations because they reflect the needs and attitudes of members, and therefore they are not likely to radically change the culture of the organization. The majority of opinion leaders in emergency medicine reflect the current belief that alcohol problems are outside their practice

domain. Unless emergency medicine staff with an interest in integrating alcohol treatment services into emergency care assume greater prominence and leadership in their field, effecting change within this specialty will be slow and uneven.

Implementation will, therefore, require the emergence of leaders who endorse the concept that alcohol screening and intervention is their responsibility. Funding for alcohol-related research needs to be provided to emergency department personnel on a priority basis because such funding will lead to their professional development, increase their national stature, lead to their advancement in professional societies, lead to association with policymakers, and enhance their opportunity to become opinion leaders. The development of credible opinion leaders who are emergency medicine clinicians, who will endorse and advance the concept of alcohol screening and intervention, is the best means of fostering attitudinal change within that specialty. Changes in a specialty practice are more likely to occur if they are supported by research conducted within that same discipline. Advances in one specialty do not necessarily affect the practice of another. Articles published in journals devoted to psychiatry or substance abuse will have little impact on the practice of emergency medicine. Traditionally, little interaction has occurred between emergency medicine physicians and substance abuse treatment providers. Each specialty operates within its own domain, with little integration of services across specialities, and they do not publish in common journals. This tendency for medical specialties to operate within their own discipline with little cross-dissemination of information suggests that ED staff must be involved in conducting intervention trials in order to popularize the concept within their own field.

A MEDLINE search of papers published using the MESH terms "alcoholism AND treatment AND intervention" yielded 47 publications during the calendar year 2000. None of these were published in journals devoted to emergency medicine. None of the trials of alcohol interventions in emergency departments were published in journals likely to be encountered by emergency care providers.[2,34] It is, therefore, not surprising that emergency physicians and staff lack knowledge about substance abuse and have failed to embrace research advances in screening and intervention.

Current funding sources are not structured to foster the development of leaders in emergency medicine who endorse the concept that addressing alcohol problems is their responsibility. Obtaining funds from study sections on emergency care is difficult because peer-reviewers do not view alcohol-related research as being vital. There are equally formidable obstacles when attempting to obtain funding from alcohol study sections. Reviewers may not be familiar with the characteristics of an emergency department as a unique clinical community. They also prefer the use of highly controlled diagnostic and demographic groups in order to obtain unambiguous answers to isolate the active ingredient of treatment efficacy. While this approach has led to great strides in understanding how treatment works, it may not be practical in the real-world setting of the emergency department and may generate studies with little external validity.

We, therefore, have a dilemma. Grant applications submitted by emergency medicine specialists that do not use the methodologic processes preferred by alcohol research study sections are usually going to lose when competing against grants submitted by recognized alcohol research specialists. On the other hand, studies conducted by alcohol research specialists may not provide clinically relevant intervention protocols, are not likely to be noticed or considered credible by emergency medicine physicians, and will have little impact on practice. There is little point in funding research on interventions that are unlikely to be implemented.

The design and peer-review of studies on alcohol interventions in the emergency care setting should be geared more towards embracing the perspectives of emergency medicine specialists. Such individuals are in the best position to understand what research questions are important and what type of interventions are feasible and generalizable. While their grant applications may not have the methodologic design that study sections composed of alcohol research specialists are accustomed to, funding such research will lead to the development of research methodologies appropriate to the emergency department setting.

Research conducted by emergency medicine physicians will help establish a sense of role responsibility within the field, and this attitude will be disseminated within the specialty by the work product that is published and presented at practice-specific professional meetings. This

will foster the development of a culture of acceptance of role responsibility to screen and intervene, and develop lobbying pressure to do so within the field of emergency medicine.

Emergency departments are frequently the only point of contact with the health care system for indigent patients.[35] Emergency department interventions are consistent with the "No Wrong Door to Treatment" theme of the National Treatment Plan.[36] Alcohol problems among emergency department patients consume an extraordinary amount of health care dollars. Studies on alcohol interventions in emergency departments should consume a proportionate amount of research dollars.

Inadequate access to treatment/ineffective treatment

Effective, low-cost interventions that require minimal additional staff to implement are already available. Due to emergency department time constraints, so-called "brief motivational interventions" are the intervention model most likely to be successfully implemented. No other existing model is likely to be useful in the real-world setting of the typical emergency department.

The empirical support for brief interventions is excellent and does not need further conceptual verification. As suggested by the Institute of Medicine, the standards for forming a reasonable consensus leading to a recommendation to provide brief interventions have already been met.[31] Experts already recommend moving beyond clinical trials to national dissemination.[30] There is no need to plow new ground and perform research to develop new interventions for emergency department use.

A 1995 meta-analysis of 32 alcohol treatment modalities found that brief motivational counseling ranks near the top in four categories: 1) total amount of research to investigate the modality, 2) methodological quality of research, 3) number of studies demonstrating improved outcomes, and 4) cost effectiveness.[37]

Therefore, research should not focus on foundational and efficacy trials, but on the practical matter of successfully adapting proven intervention techniques to the emergency department setting. It is acknowledged that treatment must have documented efficacy in particular populations of patients. However, the emergency department is the entry point for medical care for a broad spectrum of problem drinkers.

There is little reason to believe that intoxicated patients who present to the emergency department represent a special population to whom current research results do not apply. Patients with alcohol problems experience an average of 1.32 injury-related events requiring outpatient or inpatient care per year.[38] Visits to the emergency department are so common among substance-abusing patients that it is unlikely they represent a special treatment-resistant subgroup.

The opposite may be the case. Alcohol-related medical problems, especially injuries, occur in the entire population of alcohol users. Moderate, and even light drinkers, often require emergency care because many alcohol-related events are not related to total alcohol consumption, but rather to the activities the patient engages in while drinking and to where, when, and with whom alcohol is consumed. Patients with severe dependence have a disproportionate share of alcohol-related medical consequences, but it is estimated that such patients generate only a fraction of all alcohol-related problems.[39]

Alcohol-related problems occur at lower rates, but in much greater numbers, among patients with mild to moderate alcohol problems because such patients constitute the greatest proportion of the drinking population. Thus, if all patients with severe problems stopped drinking, a substantial number of patients with alcohol-related problems would still present to the emergency department. For example, driving while intoxicated overlaps with alcoholism, but it constitutes an important issue in its own right because surveys consistently show that a substantial number of individuals who do not meet diagnostic criteria for alcohol abuse or dependence admit to having driven an automobile while intoxicated. For many of these patients, brief interventions demonstrate significant effects on subsequent alcohol intake and emergency department resource utilization when used as stand-alone treatment.[40]

Other patients may require more extended treatment. Brief interventions may play an important role in motivating such patients to accept a treatment referral or can be used to establish motivation while waiting for access to publicly funded treatment.[41,42] One trial, Project Assert, provided brief interventions and used an active referral process to gain access to the marginal capacity of the substance abuse treatment system for those who needed additional care.[43] Its success led to its adoption by

Boston Medical Center as a value-added service in the emergency department. Patients without insurance may also be referred to community resources and self-help groups. Those with insurance have at least some access to treatment services to which they can be referred.

Emergency department physicians may obtain the training necessary to perform the intervention, but in most hospitals, staffing constraints will prevent them from being the primary providers of this service.[44] Furthermore, instilling this knowledge and sense of responsibility throughout the field will require too broad a change in service culture for this approach to be readily adopted. Time demands and current practice standards are likely to limit the role of emergency department physicians to "setting the stage" for an intervention.

Data suggest that few patients comply with a simple referral to seek treatment after emergency department discharge.[45] Therefore, emergency departments should have dedicated staff on-site who can provide interventions. This places the responsibility to perform the intervention in the hands of individuals who are already committed to providing the service and avoids dependence on physicians who are unlikely to acquire such commitment until significant attitudinal changes occur.

Two decades of mental health services research in primary care settings support the concept that the most effective method of delivering psychosocial services is through collaboration between mental health consultants and primary care providers.[46–48] A collaborative model using emergency department physicians to screen and mental health professionals to perform the intervention is the approach that is most likely to be widely adopted.[49]

Alcohol use among emergency department patients is not likely a problem that can be tackled by a single discipline. Interdisciplinary research is more likely to facilitate the development and implementation of emergency department interventions that work in the real world. Collaborative care has the potential to benefit both emergency department and mental health professionals. Data suggest that substance abuse counselors may find that a medical or surgical crisis increases patient motivation.[50] As a result, their services may be more effective when conducted in the emergency department environment. To date, all published studies on emergency department or trauma center interventions have used the collaborative care approach.[2,3,34,51]

Financial considerations

Despite the prevalence of alcohol use disorders, hospital administrators are likely to raise concerns about hiring additional staff to conduct interventions because they do not consider addressing alcohol problems as part of their mission. Social workers and similar individuals are available, but shifting the burden to these individuals will still require hiring additional employees. It will be necessary to provide evidence that hiring staff to perform interventions is in the best interests of stakeholders and is fiscally responsible. Therefore, studies are needed to assess the nominal costs of implementation and any cost offsets that occur. This has already occurred in family medicine, which is currently the medical service with the highest screening rate.

There is reason to believe that cost-effectiveness can be demonstrated. For insured patients, counseling services are billable under existing CPT (current procedural terminology) codes when delivered by qualified staff. Studies on brief interventions conducted in other settings demonstrate that a substantial portion of the reduction in costs is related to a reduction in use of emergency department and hospital resources.[2–4,40]

Studies of cost-effectiveness should include not only direct medical costs, but also societal costs. Federal, state, and county sources fund many emergency departments, particularly those in urban areas. It is estimated that direct medical costs constitute only 15% of total costs related to substance abuse, with the remainder being related to problems such as property damage, crime, absenteeism, and unemployment. Study outcomes should be multi-dimensional and assess a broad array of outcomes because the true stakeholders are society at large. Research that covers multiple outcomes in addition to medical ones addresses audiences with different needs and priorities and encourages their support for provision of intervention services and financial resources.

Studies should, therefore, use a variety of databases, including not only emergency department records, but also general medical record reviews and insurance and Medicare/Medicaid claims to detect outpatient visits. Although claims data provide the most accurate information about health care use, ensuring adequate follow-up for purposes of obtaining information from patient self-report is important because many people do not report alcohol-related events to insurance companies.[40] In order to interest other stakeholders, such as policymakers and health care providers, additional databases should be used to assess other

outcomes: for example, motor vehicle records to detect crashes; police records to assess criminal activities; and state vital statistics registries, the Social Security Death Index, and the Fatal Accident Reporting System (FARS) to detect mortality.

Health care policy

Physicians have voiced a common concern about alcohol screening: the potential denial of reimbursement for medical services provided to patients if they have a positive blood alcohol or drug screen. The Uniform Individual Accident and Sickness Policy Provision Law (UPPL), a model law drafted by the National Association of Insurance Commissioners (NAIC) in 1947, provides insurers with this right. The NAIC is an organization of insurance regulators from the 50 states, the District of Columbia, and the 4 U.S. territories. It provides a forum for the development of uniform policy and addresses the need to coordinate regulation of multi-state insurers.

The model law states, "The insurer shall not be liable for any loss sustained or contracted in consequence of the insured's being intoxicated or under the influence of any narcotic unless administered on the advice of a physician." Thirty-eight states adopted the law, and four others have adopted it with provisional restrictions that apply only to narcotics, or to injuries sustained while committing a felony. However, it is obvious that if screening is not performed, the provision cannot be applied. Physicians are unlikely to screen if it affects their legitimate expectation for financial remuneration for patient care. The main effect of this law has not been to decrease insurance claims, but to discourage physicians from screening for alcohol problems.[52]

In practice, the UPPL applies to only a fraction of patients treated in the emergency department. Many patients are uninsured or carry policies that do not enforce this provision. However, emergency physicians do not engage in analysis of insurance contracts before providing care and are therefore unaware of the type of coverage, if any, carried by the patient. As a result, fear of financial loss generally prompts physicians to treat all patients as if the UPPL applies to them.

The NAIC recently adopted an amendment to the UPPL which states (1) "This provision may not be used with respect to a medical expense policy" and (2) "For purposes of this provision, 'medical expense policy' means an accident and sickness insurance policy that provides hospital,

medical and surgical expense coverage." The National Conference of Insurance Legislators (NCOIL), an organization of state legislators whose main area of public policy concern is insurance legislation and regulation, recently passed a resolution asking states to repeal the UPPL.

The primary instruments of public policy for NCOIL and the NAIC are model laws and guidelines. Model legislation forms a uniform basis from which all states can deal with regulatory issues. The basic legislative structure of insurance regulation requires some degree of uniformity throughout the states. However, states are free to maintain their own insurance codes. They may either adopt the models intact, modify them to meet their specific needs, or ignore them. Emergency physicians should provide their legislative representatives and insurance regulators with information about how the UPPL adversely affects their ability to implement alcohol intervention programs and encourage them to implement the changes recommended by the NAIC and NCOIL.

A serious concern expressed by physicians is that documenting alcohol use in the medical record has the potential to abridge patient confidentiality about sensitive issues.[53] Patients with substance abuse disorders may face stigmatization and other potentially serious consequences if screening results are not protected. Fear of stigmatization gave rise to federal regulations and laws protecting information related to substance abuse. The intent of these regulations is to encourage individuals to seek treatment for substance abuse by reducing the risk that they will be stigmatized. The laws are contained in the Code of Federal Regulations (42 C.F.R. Part 2), Confidentiality of Alcohol and Drug Abuse Patient Records.

The regulations apply to hospitals that have either an identified unit that provides substance abuse treatment or medical personnel whose primary function is the provision of alcohol and other drug abuse diagnosis, treatment, or referral for treatment (C.F.R. Part 2 2.11). The law specifically states that records generated by emergency and trauma physicians are not covered because their primary function is not to provide substance abuse counseling. Presumably, this would not harm the congressional intent of attracting people to treatment because patients do not come to the emergency department with the intention of receiving substance abuse treatment.

If an emergency department hires staff whose primary function is screening and intervention, the application of this law will need to be

reconsidered by emergency physicians and hospitals. If a blood alcohol level is obtained to facilitate treatment of an illness or injury, it is not under special protection. However, if it is obtained in order to engage the patient in treatment, the information is protected under the above federal regulations that require the express, written permission of the patient before it can be shared with others.[54] A special "Consent for the Release of Confidential Information" form must be signed in order for this information to be released.[55] Under federal regulations, a general medical consent form is not sufficient.

Recommendations

1. Emergency medicine physicians should increase their knowledge, skills, and confidence in alcohol screening and intervention. To accomplish this and change current practice patterns, studies on alcohol interventions should be framed, focused, and performed by emergency medicine physicians.

2. Given the magnitude of alcohol problems and the ability of emergency departments to identify patients who might not otherwise seek treatment, funding agencies should give high priority to research on alcohol problems in EDs.

3. Research support should be primarily for services research, not the development of new intervention models or prototypes. Translational studies that develop methods of adapting already validated interventions into emergency department practice are needed. Data obtained from practically oriented translational studies will help to develop guidelines for optimal resource allocation by determining the sub-population of patients for whom brief interventions are most effective. They will also provide a framework for future investigations that target non-responsive patients in need of more extensive services. Studies should be conducted using a collaborative process that involves mental health specialists and other appropriate professionals.

4. Research is needed on referral strategies for more severely impaired, non-responsive patients, to assist them in gaining access to resources already available in their communities. This research should include studies on the use of no-cost services such as self-help or 12-step

programs using, for example, abbreviated forms of the "Twelve Step Facilitation Therapy Manual" developed for use in Project MATCH.[56] The 12-step arm of Project Match had the best outcomes in the study, regardless of "matching" considerations.

5. Research studies of cost-effectiveness are needed to convince physicians and administrators that having staff available to address alcohol problems is an integral component of the practice of medicine and part of their mission. Since cost-benefit analysis is critical to overcoming resistance to implementation, research groups should include health care economists or health services researchers.

6. Emergency and trauma physicians, their respective professional organizations, and alcohol advocacy groups should contact their state insurance regulator, state department of health and human services, and legislators involved in insurance issues to urge amending state insurance codes that financially penalize hospitals and physicians who screen for alcohol.

7. Emergency departments should designate specific individuals to assume the role of obtaining and interpreting screening results and to provide interventions. This is the most immediately available policy to protect patients with federal confidentiality regulations and alleviate legitimate concerns about the right to privacy.

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Response to Dr. Larry Gentilello's Presentation

Stephen M. Hargarten, MD, MPH

I am honored to have the opportunity to participate in this timely conference. It is my belief that our deliberations and discussion should greatly assist the articulation of a focused, thoughtful research agenda for addressing alcohol-related problems in the emergency department (ED) setting.

My comments are intended to link this research agenda with the unique, strategic position of the emergency department and to reflect on the new partnership of the federal agencies and care providers represented here today. I think this effort reflects the philosophy of emergency medicine, which seeks out collaborators, partners, and advisors for all of the problems that may arise in the ED.

I feel strongly that the ED-based research agenda should address the spectrum of problems that present daily to the ED. Screening and interventions for alcohol-related problems must be integrated into the practice of emergency medicine and all of the emergency department's clinical activities. The research agenda's translation to practice should reflect the spectrum of alcohol use and related problems as well, given that the ED is inundated with patients who have alcohol-related problems. A series of carefully structured, single questions needs to be developed that can identify at-risk users, alcohol abusers, and alcoholics. When I first began practicing, the extent of screening consisted of the question, "Are you a drinking man?"

Exciting research now is pinpointing which intervention (really brief, brief, short-term, long-term) is most effective as well as where it is most effectively delivered (emergency department, hospital, and/or treatment center). While all of the answers are not yet known, the progress is encouraging.

It is evident that additional research is needed to 1) refine the set of single questions that improve efficacy and efficiency; 2) identify high-risk groups, essential to focused, effective screening; and 3) match the alcohol-related problem to the intervention.

This is the essence of the traditional biomedical research model. I look forward to the day when the next Joint Commission hospital visit includes the requirement to demonstrate our ED and hospital-based

screening and intervention "toolbox" that addresses this patient population with alcohol problems.

Health care settings should be considered safe, effective, patient-centered, timely, efficient places of equitable care. These descriptors of health care quality from the recent Institute of Medicine report[1] should be applied to all patients with alcohol-related problems.

I think Dr. Gentilello's presentation nicely outlined the elements of the biomedical model and approach. Dr. Gentilello has made a significant contribution to the insurance industry's policies toward alcohol-related problems. Many trauma surgeons and emergency physicians oppose alcohol screening in the current environment because of concerns about non-payment for services. I appreciate the advances being made to integrate screening into emergency departments, and I agree with Dr. Gentilello's assessment of the barriers to making screening a reality. Physicians' and other providers' knowledge, skills, and attitudes can all create barriers.

At this point, I want to depart from the biomedical research model to discuss the importance of an epidemiologic shift towards population health. I feel that the research agenda should also integrate the public health model. The ED is in a strategic position to inform the public and policymakers about the scope and nature of alcohol-related problems in the ED. An epidemiologic shift from screening to surveillance, from individual patients inside the ED to populations of patients outside the ED, will serve to understand at-risk behaviors of groups of patients, the agent/vehicle of morbidity and mortality, alcohol, and the environment in which these groups interface with alcohol.

Policy-relevant studies are needed to address the marketing, distribution, and sale of alcohol to high-risk groups and environments. Research that examines pricing schemes and marketing strategies that are associated with college-based binge drinking is needed. A set of single policy-relevant questions should be routinely asked such as, "Where did you buy the alcohol?" and "Where were you drinking before you were injured?" Linking the abuse/individual behavior questions to when and where the alcohol was consumed has important implications. Research that evaluates policy interventions linked with reliable, accurate surveillance information can influence policy changes such as lowering the legal limit of a driver's BAC or extending DWI laws to cover snowmobile driving.

Research on changing social norms for alcohol use and abuse is needed for practitioners and patients, given that alcohol-related problems are still largely viewed as a social issue, not a medical problem. Addressing emergency medicine training will be very challenging since emergency medicine professionals might have their own social norms of at risk alcohol usage that will influence their effectiveness and interest.

The emergency department-based research agenda need not be limited to the biomedical model. It should be extended to include health services research and access to matched, therapeutic interventions. It should also use the public health model (addressing behavior, the agent/vehicle, and the environment), and the injury control model (prevention, acute care, and rehabilitation). By using different models, the research agenda can address *treatment* and *policy* issues and develop and evaluate prevention strategies at the primary, secondary, and tertiary levels. Ultimately, this multiple approach will help us to reach our shared goal of fewer alcohol-related deaths and injuries.

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Comments on Implementing Preventive Interventions in Emergency Medicine: Strategic Considerations

Linda C. Degutis, DrPH

Dr. Gentilello has raised many important issues in his paper. Many of them point to the lack of knowledge of the evidence that screening and intervention for and treatment of alcohol problems can be effective in decreasing morbidity and mortality. This is certainly an area where we can be proactive in highlighting the evidence that these strategies work, and for those who are practitioners, in modeling behaviors that include screening, intervention, and referral for patients who have alcohol-related problems.

Other areas also need to be addressed, and some definitions need to be clarified. For example, Dr. Gentilello performed a MEDLINE review using the term "alcoholism." While this term may refer to the patients who are dependent on alcohol, it does not necessarily capture at-risk drinking or hazardous drinking patterns. It will not capture the patient who drinks six or eight drinks a few times a month, drives a motor vehicle, and is injured in a crash. Using the term "alcohol" and searching the indexes of two of the primary emergency medicine journals, *Annals of Emergency Medicine* and *Academic Emergency Medicine*, 121 citations were selected for the years 1990–2000. Of these, 61 were original articles that either had "alcohol" in the title or were clearly examining alcohol-related problems. There was also a trend toward an increasing number of articles published in the later years. Only one article appeared in 1990, while nine were published in 2000. Several other articles published in 2000 discussed alcohol as a risk factor for particular injuries or disease. In 1998, *Academic Emergency Medicine*, which is published by the Society for Academic Emergency Medicine, published two papers that included recommendations for screening and intervention for alcohol problems in the emergency department.[1,2] So, it does not seem that editorial boards are not accepting articles about alcohol problems. Perhaps the issue is that the number of researchers in this area is small, and therefore few papers are submitted.

Dr. Gentilello makes several recommendations in his paper. He states that the studies need to be framed, focused, and performed by emergency medicine physicians using a collaborative process. It is necessary that emergency physicians perform research in this area, but the contribution of other researchers should not be negated, nor should other researchers be discouraged from working in this area. What is important is that a team approach be taken to build upon the strengths of alcohol research methodologists, epidemiologists, economists, social workers, nurses, and others who have specific contributions to make.

Focusing research support on health services researchers is important, but the opportunities to develop new methods of intervention should not be eliminated. Translational studies will help in the adaptation of interventions in emergency medicine practice, but interventions evolve over time, and new methods are developed and tested. Emergency medicine should participate in this research. Researching strategies for engaging emergency department patients in treatment, especially those with high recidivism rates, would be of tremendous benefit to the field of emergency medicine. Examining cost-effectiveness is also important, as practitioners are constantly asked to do more with less, and patients face the threat of cuts in essential services in order to trim budgets.

With respect to policy, Dr. Gentilello deserves a great deal of credit for the work that he has done with the National Association of Insurance Commissioners (NAIC) and the National Conference of Insurance Legislators (NCOIL). He has been very effective in convincing them that it is necessary to change their policies so that practitioners would not fear that screening for alcohol problems could place their patients in jeopardy of losing insurance coverage. Other policy questions need to be answered as well. Would reimbursement for screening and brief intervention increase screening and intervention, and subsequently, decrease morbidity and mortality? To what extent do emergency department patients have coverage for alcohol and other drug problems, and how does this affect their ability to enter treatment when they are referred? Have state substance abuse parity laws decreased the number of people who need to seek treatment through the ED rather than other facilities? What degree of confidentiality can be assured with respect to records of alcohol screening and intervention in the ED, and how does this affect screening and intervention rates?

As we already know, this is a complex problem that probably does not have simple solutions. I think that some clarifications are necessary to ensure we are using common language and common definitions. In the field of injury epidemiology and injury control, we try to avoid the use of the term "accidents" and instead use terms such as "injury events." When describing patients who have manifested problems with alcohol, we should use definitions such as "at-risk drinking," "abuse," and "dependence" to define the continuum of alcohol problems that we see. We also need to be clear about the disease processes that we are interested in studying. To many health care practitioners, the term "trauma" means something very different than the term "injury." "Trauma" often connotes injuries of significant severity to require treatment by specialized care providers, whereas "injury" often is perceived as meaning relatively minor physical injury. The term "injury" is more inclusive and should be used, as "trauma" is a subset of injury. If we cannot converse with and understand one another, there is little hope that we can effectively deliver our message outside of our field.

There are additional complexities to doing research in the emergency department setting, created by the physical environment, the practice environment, the ever-increasing demand for emergency care as evidenced by increases in ED visits, and the financial constraints that affect the type of real-world interventions that can be implemented and evaluated. In addition, we often have difficulties with Institutional Review Board (IRB) approvals, as alcohol problems are still viewed as sensitive issues, and some IRBs are uncomfortable approving this type of research.

The field of emergency medicine is young and evolving and developing its evidence base for clinical practice. This is leading to much debate among emergency physicians about their role in providing preventive services. The Society for Academic Emergency Medicine is addressing these issues through its Public Health Task Force, as well as through sessions at its annual meeting and articles in *Academic Emergency Medicine*. Research in this area is in its very early stages.

Because the field of emergency medicine is young, large numbers of established researchers do not exist. To increase research capacity, we need to teach people how to do the research through fellowships, faculty development programs and grants, mentored research awards, and other programs that foster the development of new researchers.

Translational research, as well as the communication of findings to the community and evaluation of implementation, is another challenge. Funding for translational research has been inadequate, as has a focus on sustainability of interventions that are implemented, once an evaluation has ended. Along with encouraging the implementation of effective interventions in the ED setting, it is also necessary to develop strategies to ensure sustainability of those interventions.

One area of research that has not received much attention in our discussions over the past two days is that of policy research. This type of research tends to focus on population impact, rather than on impact on the individual patient or practitioner. Often, policies are created and implemented with no study of their effectiveness or the unintended consequences that arise from their implementation. Dr. Gentilello has highlighted one specific policy area, but there are many other policy directions that must be evaluated. These policies may be public or private and may be implemented on the institutional, local, state, or national level. For example, in Connecticut, we recently lost funding for transporting patients to substance abuse treatment services. It is not hard to imagine the impact of this, but it was only in examining the cost to referring institutions that a movement to reinstate the funding began. Now our task is to identify more cost-effective ways of providing the needed services before funding is cut yet again.

We are currently involved in the evaluating Connecticut Public Act 98-201, which has several provisions.[3] The primary goal of this legislation is to implement universal screening for alcohol and other drug problems among injured patients admitted to acute care hospitals. Other provisions include development of model continuing education standards for health professionals and plans for including training about alcohol and other drug problems in the standard curricula for health professionals attending institutions of higher learning. The original law signed by the governor required screening of all injured patients admitted to an acute care hospital as well as injured patients who required the activation of a trauma team response or who were transferred to or from an acute care institution. Many emergency physicians in the state interpreted the law to mean that they would have to perform screening of injured patients presenting to the emergency department. They vehemently objected to this policy and were able to have the legislature include a technical correction that clarified that screening is required

among injured patients who are admitted to acute care hospitals as inpatients, rather than implying that all injured patients presenting to the ED be screened. Given this reaction by physicians, are we ready to ask for broader implementation of these policies?

The lack of acceptance of screening as a routine part of practice is only one of the barriers that we face. Policies have been developed on the basis of evidence that treatment for addiction is effective. Several states have passed substance abuse treatment parity legislation that requires insurers to cover treatment for alcohol and other drug (AOD) problems to the same extent that they cover treatment for other diseases. There is no federal legislation to this effect so the result is that in states that have parity laws, many people are still not guaranteed comparable coverage for AOD treatment because their insurance plans are governed by federal law under the Employee's Retirement Income Security Act (ERISA). In addition, some insurance plans do not offer any coverage for AOD problems so the parity statutes do not apply to them. Of course, people who lack health insurance have even more limited access to treatment.

Many people who are under the jurisdiction of the criminal justice system have AOD problems. In addition, evidence exists that treatment of these problems leads to a decrease in crime. But, little has been done to ensure that people involved in this system receive necessary treatment for their disease. Instead, there is often a tendency to criminalize addiction and to "treat" the problem through arrests and prison terms. Some states, such as Connecticut, require that anyone who is incapacitated by alcohol be transported to an acute care facility rather than jail. The intent of this law was to bring people into the treatment system and to avoid the consequences of unrecognized severe problems with alcohol. Currently, emergency departments in Connecticut see many patients with acute alcohol intoxication on a daily basis, but funds for treatment are limited.

The education of practitioners in the process of screening and brief intervention is another area that needs study. To promulgate a standardized approach to patients with cardiac problems, the Advanced Cardiac Life Support course was developed. Similarly, the Advanced Trauma Life Support course provides a standardized approach to the initial care of the injured patient. Both of these courses, as well as others such as Advanced Pediatric Life Support and Prehospital Trauma Life Support

combine didactic sessions with skill-building sessions to improve practitioner knowledge and skills in these areas. Perhaps we need to develop a similar approach for screening and intervention—an Advanced Alcohol Problem Identification and Intervention course.

Despite the evidence of the relationship between alcohol and injury, we still do not have strong support for screening and intervention from our colleagues who deliver trauma care. In the most recent version of the American College of Surgeons monograph *Optimal Care of the Injured Patient*, which describes standards of care for verification of trauma centers, the requirement that trauma centers be able to perform blood alcohol testing was eliminated.[4] The message this sends may be interpreted in several ways: a) there is not a sufficient relationship between alcohol and injury to justify testing for alcohol use in injured patients; b) issues of alcohol use among injured patients are not in the purview of the trauma team; c) nothing can be done to address the issue of alcohol problems among injured patients so testing does not help; or d) not testing protects the patient and the practitioner from various legal issues.

Dr. Gentilello recommends the development of an ED alcohol research center. While his idea of highlighting this area of research holds great merit, operationalization is problematic. If there is an ED alcohol research center, will there also be a primary care alcohol research center, a trauma alcohol research center, and a critical care alcohol research center? His proposal, rather than bringing the field together, can lead to fragmentation within the small group of researchers who are doing work in this area.

The importance of developing partnerships with public health researchers and practitioners, alcohol researchers, community-based organizations, and others has been discussed. It is important that we look at the impact of interventions not only in the academic environment that is populated by students, residents, and faculty, but also in community practice and rural settings. We need to explore the impact of interventions in settings such as the Indian Health Service that serve distinct populations.

Finally, I would like to address the issue of funding. Much of the research that is being done in this area is not supported by the National Institutes of Health, but by other federal agencies such as the Centers for Disease Control and Prevention, the National Highway Traffic Safety

Administration, the Substance Abuse and Mental Health Services Administration, and the Health Resources and Services Administration. We need to consider the impact of the funding policies of these agencies both in promoting research and in growing the field of alcohol research in emergency medicine. The smaller agencies often include indirect costs as well as direct costs within the budget cap for a particular project. While this may not be problematic in an institution with an indirect rate of 25%, it is very difficult for a researcher at an institution with an indirect rate of 60% or higher to compete, as much of the budget is taken up by indirect costs. In addition, this type of funding policy discourages the research community from collaborating with academic centers because the researchers perceive that the bulk of the budget is going to some administrative group with whom they have no interaction and who has no interest in what the researchers are doing.

In summary, alcohol problems are a significant issue for emergency department patients. A growing body of evidence demonstrates that interventions in the emergency department are effective and that treatment referral can work. The opportunities for research in this area are great, and we need to work to develop research capacity. There is a need for interdisciplinary teams of researchers who can draw on one another's knowledge and strengths. Although funding strategies can be improved, funding is available for this work. We have already come a long way, and much is left to do.

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General Discussion

Jeffrey Runge agreed with Larry Gentilello that health economists should be part of the research team. He noted that we must demonstrate the value of interventions to hospital administrators if we want extra staff for interventions. He also echoed Gentilello's comment about the need to individualize interventions. In his multi-center study, interventionists felt restricted by a standard intervention, sensing that variation was needed to meet different clients' needs.

Gentilello said that research methodologists want interventions to be standardized so that they know why a treatment is working. However, if they cannot use those interventions in their clinical setting, the interventions are of no use.

Elinor Walker commented that something about an intervention must be standardized in order to assess its cost-effectiveness.

Gentilello suggested that the salaries of full-time employees could provide cost data and blood alcohol tests and admission rates could provide effectiveness data.

Linda Degutis added that interventions have to be monitored. If a standardized intervention is not used, audio tapes can at least give an idea of how it works.

Carl Soderstrom agreed with Gentilello that alcohol-related research must be published not in substance abuse journals, but in publications read by emergency and trauma surgery staff. For example, he noted that the American College of Surgeons' *Resources for Optimal Care of the Injured Patient: 1999*, which contains guidelines for the certification of trauma centers, omitted the requirement to test patients' blood alcohol content for the first time in 20 years. He admitted that many times a positive blood alcohol test in patients with head injuries can be troublesome. However, when he explored the reasons for the omission, he found that the group that wrote the latest version of the American College of Surgeons resource guide did not have access to data that proved that treatment had any value. Regarding the issue of non-payment for services provided to alcohol-impaired patients, he observed

that insurance companies rarely take advantage of their current legal right to deny payment due to alcohol use.

Stephen Hargarten said that screening for alcohol applies not only to the potential for interventions, but also to the patient's overall quality of care, including safety from injury due to alcohol impairment or from alcohol withdrawal during the acute phase of treatment for medical or surgical conditions.

Gentilello observed that his publications in trauma journals have earned him a great deal of attention and have raised awareness. He said that changes in emergency medicine practice will require publication of studies in journals that reach emergency medicine practitioners.

Phillip Brewer noted that at annual meetings of the Society for Academic Emergency Medicine (SAEM), papers dealing with substance abuse were spread over other categories such as geriatrics and injury. One of the goals of the Substance Abuse Interest Group of SAEM was to authorize a substance abuse category for abstracts and sessions at the annual meeting. To date, SAEM has not agreed to a separate category. The idea of prevention in emergency medicine has taken root for injury and domestic violence, he said, but not yet for substance abuse.

Peter Rostenberg agreed that forsaking the BAC prevents good management and good medicine. At his hospital, attending physicians are responsible for dealing with the results of alcohol screens and they receive a letter when they fail to do so. He observed that this system had been effective largely because physicians had seen patients recover.

Richard Longabaugh urged that collaborative studies include health services researchers. He noted that there is an R-01 interactive project that allows for great collaboration across disciplines. He also encouraged researchers to continue publishing in journals about their own areas of expertise. Although he, too, had concerns about standardized manuals, he noted that studies show that such manuals do not result in poorer treatments. He suggested the use of decision trees in the manuals, which can lend more flexibility to clinical applications of research. Depending on the patient and the setting, paths can be traveled very quickly and adapted quickly as well.

Gentilello agreed that we should all keep publishing in our various disciplines. However, he reiterated that if we do not publish in trauma and emergency medicine journals, practices will not change. He said it is easier to change a field from within than from the outside. He also emphasized the importance of funding emergency medicine specialists, not just alcohol researchers, to conduct this research.

Richard Brown observed that although the grant review process at NIH can be difficult, the experience of re-submitting grants has strengthened his work. The process can be a learning opportunity and result in more sound research. He speculated that if many dependent patients can have spontaneous remissions, then research on whether brief interventions could help them seems warranted. However, he thought that guidelines to require screening in emergency departments were premature, particularly without funding to support required changes. Instead, he advocated implementing demonstration projects that use different models. Consistent evaluation across the models would determine if they actually make a difference. He thought that without this type of research, requirements would cause a rebellion against practice changes.

Hargarten noted that it has not been long since the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) mandated policies and procedures to enhance domestic violence screening and intervention in every ED in the country. He thinks screening for alcohol problems in EDs is on the horizon. In order to get reasonable requirements and uniform adherence in the 5,000 EDs in the country, it will be necessary for an external body like JCAHO to be thinking about this now. In the meantime, we need to be doing research that will make sure that appropriate requirements are adopted. With respect to the methodological issues, we must balance rigorous follow-through and long-term studies with studies that are germane to emergency departments. Collaboration with rigorous methodologists is important, but those collaborations have to focus on what can be accomplished specifically in the ED setting.

Gentilello clarified that he had not criticized the peer-review process, but that panels reviewing alcohol interventions in EDs should include representatives of emergency medicine. Grant review panels should consider proposals from the perspective of the emergency physician, not the perspective of the psychiatrist, who probably has not been in

an ED for many years. Since alcohol interventions in the ED cut across different disciplines, the peer-review group should embrace multiple perspectives. Methodologies that work in the emergency department come from deciding what is feasible in that environment and adapting interventions that have been shown effective in other clinical settings. Results from such studies will be used.

David Fiellin recommended using current mechanisms like the Robert Wood Johnson Clinical Scholars program to train physicians in methodology, clinical epidemiology, and health services research so that review committees will include members who are knowledgeable about the ED setting and clinical research.

Hargarten endorsed that idea, but added that there was little funding for training in clinical research in emergency medicine.

Gentilello agreed that lack of funding was a problem. Many young surgeons become interested in alcohol interventions and write grants, but when their studies are not funded, they lose interest and move on to other subjects.

Ronald Maio cautioned that we should not abandon the randomized, controlled trial (RCT). Gentilello's results had a powerful impact on trauma surgeons because his study was an RCT. When we adapt proven interventions to new settings, we change many factors so we need to have an RCT. He recalled the 1970s, when many ED procedures were adapted for use in the field by EMS without appropriate evaluation. Now, it is difficult to justify many of those changes. Regarding collaboration, he mentioned that partnering with specialists in substance abuse gave him a greater understanding of that specialty and increased the quality and credibility of subsequent proposals. He said an NIAAA fellowship is one way of getting further training.

Daniel Pollock wondered how we could use research as a force for positive change in the clinical setting. He recounted that Gentilello's goal for research was to modify interventions that work in other settings for use in EDs rather than creating new ones. He asked what types of outcomes would indicate successful adaptation. Would they be patient outcomes or process measures?

Gentilello replied that the outcome depends on the audience. For addiction specialists or psychiatrists, an outcome of reduced drinking would probably be appropriate. Surgeons would probably be influenced more by an outcome of reduced readmissions to the trauma service. He surmised, therefore, that reduction in recidivism might be a suitable outcome for emergency physicians.

Pollock asked how to differentiate that type of study from doing a clinical trial.

Gentilello suggested that clinical trials are important because they change practice. He thought a successful multi-center trial could lead to the creation of a standard of care.

Edward Bernstein observed that one site cannot address all the questions raised at this conference. He suggested that National Alcohol Screening Day, an NIAAA-sponsored event, is an opportunity for EDs in many institutions to collaborate in evaluating the AUDIT screening instrument in the ED. It could be the first step toward multi-center studies. He also believed that research should have policy implications and that funding sources should require this applicability. He suggested that NIAAA reclaim indirect grant costs from institutions that did not implement positive findings from their research.

Richard Ries responded to Bernstein's indirect cost proposal by endorsing a doubling of indirect costs for institutions that adopted positive findings as standard operating procedures after the grant period was over. This would reward institutions for putting clinical preventive services into practice. He reasoned we should prefer motivational strategies. He observed concern during the conference that control groups in intervention studies get much alcohol-related assessment, which can act as an intervention. He also agreed with Gentilello that decreased alcohol intake might not be as important an outcome to ED staff as decreased re-visits to the ED. Since brief interventions only lead to modest changes in alcohol intake, perhaps studies should focus on re-injury or health care use as the primary outcome. Then follow-up interviews would have to do less alcohol intake assessment, and that would mean less intervention effect on the control group.

Gentilello concurred, commenting that insurance claims data can be a useful source of follow-up data, as can a simple phone call to inquire whether a patient has returned to the doctor recently.

Cheryl Cherpitel related difficulties as a non-MD publishing in medical journals. She wondered if articles by non-MDs would be taken seriously by physicians who work in clinical areas. If they would, medical journals might need to be educated to accept articles from non-MDs. If non-MD, alcohol methodologists could publish more easily in these journals, they could have a bigger impact on practices in the ED.

Gentilello remarked that the attitudes of reviewers for surgical journals vary considerably. He once submitted an article with 95% confidence intervals and it was rejected because it had no p values. He related that his alcohol studies used to be returned without being reviewed. Reviewers have become more accepting. They no longer require him to strike any references that show alcohol treatment is effective. He believes that trauma research requires multi-disciplinary input and that research by non-MDs is taken seriously. However, getting that work published requires persistence. Submitting this work helps educate editors and reviewers.

Hargarten observed that the impediments to publishing seem to be lessening, and that the work of Cherpitel and others is vital.

Soderstrom noted that large grants provide a great deal of data. Papers that are clinically applicable to functioning practice in the emergency department and the trauma center belong in those journals. He asserted that papers on methodology or more complex areas need to be included in other appropriate journals.

Brewer commented that having a paper published is different from having an impact on clinical practice. Most patients in emergency departments are seen in non-academic centers. Physicians in these environments may doubt the applicability of research done in academic centers. He suggested we need research on how to get physicians to screen in the emergency department. One of the ways we get physicians to do this is to get JCAHO to require it.

Daniel Hungerford observed that the Richmond-Kotelchuck model suggests that changes in practice result from effort applied to all three elements of the model—political will, social strategy, and knowledge base. It might seem that research activities apply only to the knowledge base aspect of the model. However, important research activities need to be carried out in all three elements of the model.

Robert Woolard favored continuing intervention research in EDs. He believed that the realities of our practice settings help drive the development of new ways of delivering counseling, for example, computer-based methods. While emergency physicians may not have the time or interest, the patients do. He suggested that research in trauma centers and EDs can help alcohol researchers learn more about the interventions they have already developed and can even lead to novel interventions.