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Addressing Alcohol-Impaired Driving:

Training Physicians to Detect and Counsel Their Patients Who Drink Heavily

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16. Abstract

Alcohol is the most common chronic disease in trauma patients, and one of the most common in patients treated in primary care. Studies have shown that brief counseling intervention in trauma centers and primary care clinics are efficient in reducing drinking and its related illness and injury. Unfortunately, although trauma centers and primary care clinics are ideal settings for such brief alcohol interventions, routine screening and brief counseling for alcohol problems is not commonly practiced by physicians in these settings. The goal of this project was to address alcohol abuse at the individual patient level and at the community level. At the individual patient level, the project encouraged physicians to perform a protocol for brief alcohol interventions to address alcohol abuse. This protocol consists of screening for alcohol problems, brief counseling, and referral. This was primarily done by offering training in this protocol to physicians, residents and medical students. The project focused on the pacific northwestern United States (Washington, Alaska, Montana, and Idaho).

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Alcoholism is the most common chronic disease in trauma patients, affecting 25% to 40% of those treated in major trauma centers. Alcoholism results in repeated episodes of trauma, drunk driving and alcohol related crashes. A prior study by our group found that trauma patients with alcohol problems were more than twice as likely to be readmitted with injuries during the next two years than patients without problem drinking.

Interventions for problem drinking are effective. A summary of 32 randomized trials of brief interventions enrolling 5,718 patients indicate that such interventions are effective in decreasing problem drinking and lowering subsequent health care utilization. A randomized controlled trial of trauma patients indicated that interventions reduce drinking at 12 months after intervention by two-thirds and cut recidivism for new injuries by 50%.

Despite these findings, few trauma centers or primary care physicians routinely screen for alcohol problems. The goal of this project was to decrease the risk of driving while intoxicated and the risk of alcohol related crashes by encouraging health care providers to address alcohol abuse at the individual patient level and at the community level. Specifically, we did the following:

- Trained medical students in the northwestern states on the problems of impaired driving, methods to screen patients in the office and hospital settings, techniques of brief alcohol intervention, and indications for referral of patients for more in-depth alcohol treatment. All 160 students in each of the classes were exposed to the training through courses during the pre-clinical years, as well as through training during clerkships, particularly psychiatry and surgery.

- Trained University of Washington residents in the northwestern states on the problems of impaired driving, methods to screen patients in the office and hospital settings, techniques of brief alcohol intervention, and indications for referral of patients for more in-depth alcohol treatment. As a result of the intervention, residents reported increases in screening from 27% to 38%, and reported increased sense of self-efficacy to conduct screening and brief interventions.

- Worked to integrate training in substance abuse and brief counseling interventions into the University of Washington School of Medicine curriculum. Surveyed UW course and clerkship coordinators to determine the

substance abuse content of their courses. The survey indicated that alcohol abuse and problem drinking is integrated into the curriculum in multiple courses during the four years of medical school. Recommendations were made to the curriculum committee on how to best follow the National Institute of Alcoholism and Alcohol Abuse's (NIAAA) "An International Model for the Prevention and Treatment of Alcohol Use Disorders."

- Worked to integrate methods of alcohol screening, intervention and referral in continuing medical education programs (CME) for primary care and other specialty physicians in this region. CME was conducted with approximately 1,200 physicians in the region.

- A survey was conducted of 400 physicians and found that one-half did not use a standard screening questionnaire. Developed and disseminated user-friendly materials to promote and teach the brief intervention approach by physicians.

- Researched barriers in the U.S. to implementing alcohol screening in hospital emergency departments. We talked with all 50 state insurance commissioners and reviewed the legislation governing exclusion of insurance coverage for alcohol involved injuries in all 50 states. This revealed that 38 states and the District of Columbia allowed, by statute, exclusion of insurance coverage for alcohol related injuries.

- Worked to establish alcohol screening and brief intervention as part of national practice guidelines for medical care. We worked with the Washington Circle Group to include alcohol screening as a measure of quality of care to be used by the National Committee on Quality Assurance in judging the quality of health care systems.

- Disseminated the program nationally through professional organizations, national publications and national presentations.

BACKGROUND

The problem: Alcoholism is the most common chronic disease in trauma patients, and one of the most common in primary care practices. It affects 25% to 40% of trauma patients, compared to 2% to 5% for other co-morbidities (Morris et al, 1990). Screening questionnaires such as the Michigan Alcoholism Screening Test (MAST) are positive in as many as 75% of medical trauma patients with a positive blood alcohol test and are even positive in 26% of trauma patients with no detectable blood alcohol on admission (Rivara et al, 1993). In addition, the relationship between alcohol and trauma is not limited to adults. In a study of 319 injured patients aged 18 to 20 years, 22% were legally intoxicated (legal limit at that time was .1 grams/dL) and 49% had a positive MAST score (Rivara et al, 1992). In primary care patients, there is a strong link between alcohol abuse and morbidity/mortality.

Alcoholism results in repeated episodes of trauma, including Driving while Intoxicated (DWI) related crashes. Five-year follow-up of alcoholic trauma patients admitted to a level I trauma center in Detroit revealed an injury recurrence rate of 44% (Sims et al, 1989). A study by our group in Seattle found that patients who were intoxicated or who had a positive MAST score were 2.5 and 2.2 times as likely to be readmitted within the next 1-2 years as were patients without these markers (Rivara et al, 1993).

Unfortunately, routine screening and intervention for alcoholism is not common at trauma centers or in primary care settings. One survey of trauma centers found that 71% did not screen patients for alcohol abuse (Soderstrom, 1987). The most common reason for not including alcohol screening as a routine part of care was that such screening "had little clinical importance." A key reason for failure to refer patients for alcohol treatment is negative attitudes of medical staff regarding chemical dependency treatment effectiveness due to their frequent exposure in medical settings to patients who may have received such treatment but continue to drink. This attitude even carries over into textbooks. The most recent edition of *Cecil Textbook of Medicine* (Diamond, 1996) states that alcohol problems are rarely identified by primary care physicians before medical or socioeconomic problems arise, and the book does not recommend screening.

Despite pessimism on the part of medical staff about the effectiveness of specialized chemical dependency programs, intervention has been shown in studies to make a substantial difference. In a long term study of 3,729 persons with alcoholism, health care costs after treatment were reduced by 55% from pre-treatment levels, whereas health care costs for a matched control group of untreated drinkers increased by 202% (Holder et al, 1992).

Brief interventions are appropriate both for primary care and for specialty, including trauma center, settings. They may be used in the time frame of an office visit or hospitalization for trauma or other cause, and can be based on information obtained from a systematic screening procedure. To date, reports of 32 randomized trials of brief

interventions enrolling 5,718 patients indicate that such interventions are more effective than no counseling and often as effective as more extensive treatment (Bien et al, 1993). According to the U.S. Preventive Services Task Force, "All persons who use alcohol should be informed of the health and risks associated with consumption, and many patients may benefit from referrals to appropriate consultants and community programs specializing in the treatment of alcohol." (USPSTF, 1996).

One recent study of brief intervention by physicians was a randomized trial conducted in 17 community-based primary care centers in Wisconsin involving over 700 patients (Fleming et al, 1997). At 12 month follow-up, there was a significant reduction in 7-day alcohol use, episodes of binge drinking and of excessive drinking. Another randomized controlled study of 762 trauma patients admitted to a level I regional trauma center found that brief interventions resulted in a reduction of alcohol use at 12 months (reduction of 21.8 vs 6.7 standard drinks per week compared to baseline), a 47% reduction in re-injuries requiring trauma center or emergency department (ED) care, and a 23% reduction in DWI citations (Gentilello, 1999).

Since 70% of people in the United States visit their physician at least once every 2 years, brief advice from physicians can have enormous implications for the health care system and a major impact on alcohol use, impaired driving and DWI-related crashes and injuries. A recent editorial concluded: "Dissemination of [alcohol] screening and counseling skills will require efforts from medical schools, residency training programs, and continuing medical education centers (Parish, 1997). "

Therefore, the objectives of this study were:

- To train medical students and residents in appropriate methods to screen patients for problem drinking, to conduct brief interventions, and to refer patients for appropriate counseling.
- Educate practicing physicians on screening for alcohol problems, brief interventions, and referrals for more impaired patients with alcohol problems.
- Investigate barriers preventing screening and treatment of alcohol problems in trauma patients.
- Create incentives to screen and treat alcohol problems in trauma patients.

METHOD and OUTCOMES

The project was a multi-faceted program aimed at decreasing problem drinking and reducing alcohol related motor vehicle crashes. The components of the program and results of each are described below. First, however, it is important to define terms used in the report:

"Alcohol problems": includes the entire range of severity of problems from mild to severe. This continuum includes terms such as "hazardous drinking" (drinking so as to risk negative consequences such as injury or illness, alcohol abuse (drinking despite negative consequences), and alcohol dependence (being "addicted" or "hooked' on alcohol and showing symptoms such as tolerance, withdrawal, not quitting despite wanting to quit, and impaired social or professional functioning).

"Alcohol screening": asking patients special questions about their drinking or using lab values (breath, urine, or blood) to detect alcohol in the body.

"Brief intervention": same as "brief counseling", a short counseling session, sometimes as brief as 5-10 minutes, in which a physician or other health care provider discusses with the patient his/her alcohol consumption, consequences, and negotiates a behavior change with that patient. The patient often does not expect to get a brief intervention because he/she is visiting a physician or is in the hospital for some other medical reason. Brief interventions are appropriate and helpful for all patients with alcohol problems. For those with milder alcohol problems, a brief intervention may be all they need to motivate them to change their drinking by quitting or cutting down to within low-risk guidelines. For patients who are dependent on alcohol, a brief intervention can sometimes trigger their seeking specialized treatment for chemical dependency because the brief intervention included a referral for such treatment.

"Specialized treatment for alcohol problems": Specialized chemical dependency treatment provided by certified chemical dependency counselors. Always longer and more intensive than a brief intervention. Many patients needing specialized treatment fail to get it. Not all patients with alcohol problems recover using this specialized care. Many recover on their own.

Medical Student Training:

One method for training medical students is to use "standardized patients." A standardized patient is usually a paid actor who is told in advance what symptoms and medical problems to present in the training session. This cluster of symptoms is "standardized" in that the actor presents the same clinical picture to every student being trained and evaluated, so that their supervisors can assess the degree to which the students accurately detect the symptoms they are supposed to be learning to recognize. In this

way, the supervisor can evaluate how well the student asks questions to first identify the symptom in question, and then how well the student follows through with proper medical treatment. In 1991, the first standardized patients having to do with alcohol abuse were used to train senior medical students as a part of the University of Washington School of Medicine's Standardized Patient Assessment Program. Since that time, similar cases have periodically been included in assessments of second through fourth year students.

Following these training encounters between student and standardized patients, standardized patients complete clinical performance checklists. These checklists assess whether students asked them specific alcohol screening questions which the students had been instructed to ask when alcohol abuse is suspected. These questions typically include ones about frequency and quantity of alcohol use as well as the four CAGE screening questions (Have you ever **C**ut down on your drinking? Have you ever been **A**nnoyed by others complaining about your drinking? Have you ever felt **G**uilty about your drinking? Have you ever had an **E**ye-opener?). Other key questions students are trained to ask are whether the patient views alcohol use as a problem and, if so, whether the patient has any interest in working on the problem. Options for working on the problem that students are taught to discuss with patients include specialized treatment, attending Alcoholics Anonymous, and cutting down or abstaining on one's own.

Data obtained by the UW School of Medicine indicates that *although medical student performance as indicated by these checklist items has remained consistent over the years, attitudes change. In the time from early medical school to final years of residency, hopeful and respectful attitudes toward patients with alcohol problems diminish, and clinical efforts toward directly addressing these problems with patients decline.*

To improve students' attitudes toward problem drinkers, to increase their awareness of alcohol abuse among their patients, and to encourage them to actively screen and intervene with alcohol-abusing patients, we did the following as part of this project:

Delivered a 2-hour lecture for every Surgery Clerkship rotation on: the prevalence of alcohol problems among surgery patients with traumatic injuries, the outcomes of brief interventions for alcohol problems in trauma centers, how to screen for alcohol problems, and how to perform brief interventions. Dr. Chris Dunn, addiction psychologist, and Dr. Larry Gentilello, trauma surgeon, delivered these lectures. Students were encouraged to share and discuss their current attitudes and perceptions toward patients with drinking problems, as well as their past experiences in dealing with these patients. Brief interventions were demonstrated in role plays in which the trainer played the doctor and students played the patient. Then, students were given chances to practice these skills in role plays with supportive feedback by the trainer. All of these training activities were done within a single 2-hour time slot. This was done for each clerkship involving approximately 20 students per clerkship rotation.

We delivered a 2-hr. lecture for every Psychiatry Clerkship rotation. Dr. Richard Ries,

psychiatrist, and Dr. Chris Dunn delivered these lectures. The focus of this lecture was to introduce students to a workbook on how to do a brief intervention with a psychiatry patients abusing alcohol/drugs. This workbook (see Appendices) guides students through the screening, assessment, and counseling process, emphasizing the need for students to collaborate with their multi-disciplinary treatment teams. Since psychiatry is a required rotation, all 160 third-year medical students were trained each year. Informal follow-up with Psychiatry Clerkship students who performed a brief intervention using the workbook yielded a range of feedback. Some students felt that their patient was not fully engaged in the intervention. Other students perceived the brief intervention to be useful for the patient and valuable for their own training.

The overall reception of the medical student training—both for surgery and psychiatry students-- was very positive. This is a sample of positive comments received on the lecture evaluations: "A very interesting and useful lecture." "I didn't know I could make a difference in patients with drinking problems." "Excellent demonstration and role plays." "I can use technique with any kind of patient I see."

Dr. Dunn participated on an expert panel as part of a lecture given to all students in one of their first year courses, Introduction to Clinical Medicine. This panel included community providers who taught students about the kinds of treatment services they provide and answered questions from students about recovery from alcohol and drug abuse. The emphasis was on how brief interventions can help motivate patients to participate in such treatment services. Since Introduction to Clinical Medicine is required of all first year students, all 160 students were trained each year during the course of the grant.

Resident training:

The University of Washington has a large residency program in all specialties. In addition, there are numerous other residency programs in family medicine in Seattle and throughout the region. Residency training extends from three to 8 years, depending on the medical specialty. It is a time of intense learning experiences. Unfortunately, with rare exceptions, training in the screening for, and identification, of alcohol abusers has not been routine.

The behavior change methods we taught to residents for this project were distilled from motivational interviewing, a brief counseling style that avoids argument and applies behavior change strategies (Miller & Rollnick, 1991). These strategies are matched to patients' stages of change readiness in Prochaska's and DiClemente's model (Prochaska, 1986). Skilled clinicians intervene according to the patient's stage of change readiness rather than trying to get every patient they see to take immediate action. This principle also applies to trainers who must consider residents' varying stages of readiness to screen their patients and intervene. These motivational interviewing techniques have been

shown to be successful in decreasing problem drinking (e.g., Gentilello, 1999; Fleming, 1997).

Our training goals were to instill optimism in residents by using this readiness to change model, to teach them to ask standardized screening questions, and to apply behavior change techniques when necessary. During this training we showed residents outcome data from brief intervention studies and taught them screening and intervention skills using demonstration and role-play.

The curriculum of each residency program has regularly scheduled conferences. We asked residency coordinators for substance abuse training time with residents, and depending upon the amount of training time made available to us, we offered one of two training options:

> A brief (20-min.) introduction to the concepts of screening and brief intervention. Handouts summarizing the brief intervention approach were distributed (see Appendices). A laminated card was given to residents to carry in their pockets. This card contained alcohol screening questions, guidelines for low-risk alcohol consumption, and condensed brief counseling protocols for patients abusing and dependent on alcohol. These cards included local phone numbers for appropriate local resources for patients needing specialized chemical dependence treatment.
>
> Intensive (60-120 min.) skills training during which residents were presented with various case vignettes (or they were encouraged to present their own) which included alcohol abuse as a confounding factor of some medical condition. Residents discussed these cases, and these discussions were used as jumping-off points for demonstrating and practicing brief intervention skills. These residents were given the same handouts.

Immediately prior to receiving their training (Time 1), residents willing to comply with our request for data collection completed a questionnaire asking them to estimate the following:

- The prevalence of alcohol problems among patients in their current rotations
- The percentage of all their patients whom they had screened for alcohol problems in the past week
- The percentage of all their patients to whom they had provided brief interventions for alcohol problems in the past week
- Their confidence levels in their ability to screen for alcohol problems (on a scale from 1-10)

- Their confidence levels in their ability to provide brief counseling for patients with alcohol problems (on a scale from 1-10)

Results:

One month after the training (Time 2), residents were contacted by email or pager and asked the same questions. We had experimented with the use of written surveys but found that the response rate among these busy physicians was low. We therefore used the pager/email system to obtain higher response rates. Of 139 residents trained by the time data were analyzed, Time 1 and 2 data were available for 57 (41%) residents. Forty-four had Time 1 data only, 22 had Time 2 data only, and 16 had neither.

As seen in Table 1, before the Training (Time 1), residents reported screening for alcohol problems in an average of only 27.2% of all their patients. One month after the training (Time 2), this rose to an average of 38.1%. At Time 1, residents reported that they had provided brief alcohol interventions to 6.3% of all the patients they had seen in the previous week. At Time 2, this had increased to 9.9%.

Residents' confidence in their abilities to screen their patients for alcohol problems increased from an average of 5.8 to an average of 6.8. These scores refer to a scale from 1 to 10, where 1 is not at all confident and 10 is extremely confident. Their average confidence scores in their ability to provide brief counseling for alcohol problems increased from 4.9 to 6.0 on a 1-10 scale.

Table 1 also shows that there were no changes from time 1 to Time 2 in residents' estimates of the prevalence of patients in their practices with "no problems," "mild problems," and "severe problems."

Table 1: Comparison of resident's mean behavior and attitude scores before and after training

Variable	Time T1	Time T2
% of all patients residents saw in the past week whom they estimated to have no alcohol problems	55.5%	58.8%
% of all patients residents saw in the past week whom they estimated to have mild alcohol problems	28.1%	27.7%
% of all patients residents saw in the past week whom they estimated to have severe alcohol problems	14.0%	13.4%
% of all patients residents saw in the past week whom they screened for alcohol problems	27.2%	38.1%
% of all patients whom you saw last week to whom they gave brief counseling for alcohol problems	6.3%	9.9%
Confidence in screening ability (from 1-10, where 1 is not at all confident and 10 is extremely confident)	5.8	6.8
Confidence in brief counseling ability (from 1-10, where 1 is not at all confident and 10 is extremely confident)	4.9	6.0

We believe that the residents are reasonably knowledgeable about the prevalence of alcohol problems in their patient populations but do not have the sense of self-efficacy to screen for problem drinking and to manage alcohol problems. Resident training in screening for alcohol problems and in conducting brief interventions should be improved, as our intervention did for the residents exposed to the intervention. However, we believe that the intervention would be more successful if presented as a more generalizable tool with which to intervene on problem behavior, whether it be alcohol use, smoking, exercise or diet. Resident acceptance of the investment in adequately learning the means of motivational interviewing would thereby be enhanced.

University of Washington School of Medicine Curriculum Development:

The first two years of medical school at the University of Washington consist of formal course work. We believed that it is important for students to become exposed to

information concerning alcohol abuse and counseling during this period as well as during clinical clerkships. To increase the amount of substance abuse training in this curriculum, we surveyed all UW School of Medicine Human Biology Course Coordinators who teach our Human Biology curriculum courses, asking for descriptions of any substance abuse content offered by them or anybody lecturing as part of their courses. The results of this survey are shown below in Table 2.

Table 2: Current Substance Abuse (SA) Content in Human Biology Curriculum: Results of Survey of all Classroom Medical School Instructors

Title	Qtr	Substance Abuse (SA) Content
Micro Anatomy (Histology)	A1	no SA content
Anatomy & Embryology	A1	SA mentioned in context of living anatomy of the liver & portal circulation
Mechanisms in Cell Physiology	A1	discusses synaptic mechanism of cocaine
ICM I	A1	lecture on interviewing patients about use of alcohol and drugs
Biochemistry I-A	A1	no SA content
Human Behavior I-A	A1	lecture on fetal alcohol syndrome
Cell & Tissue/Injury	W1	Mechanism of alcohol-induced cell death & pathogenesis of liver disease
Nat History Infectious Diz I-A	W1	covers problems associated with AIDS, bacteremia, endocarditis, and hepatitis with alcohol/drugs
ICM I	W1	lecture on SA, patients in recovery describe experiences
Introduction to Immunology	W1	No SA content
Biochemistry I-B	W1	No SA content
Human Behavior I-B	W1	No SA content
Epidemiology	S1	Not specifically addressed, but research methods taught apply to SA research
Head, Neck, EN & T	S1	No SA content
Nervous System	S1	No SA content
Natural History Infec Diz I-B	S1	Discusses wound botulism associated w/ cocaine inhalation
ICM I	S1	Lecture/discussion on topic similar to A1 and W1 quarters
Cardiovascular System	A2	No SA content
Respiratory System	A2	20 minutes on smoking, no other substances covered

ICM II	A2	Making and giving SA diagnosis: interview and write HPI on a patient w/SA problem
Principles of Pharmacology I	A2	Pharmacology of alcohol, toxicity, dependence, tolerance, abuse potential
Endocrine System	A2	No SA content
Systemic Pathology	A2	Discusses liver disease: dose & cirrhosis
Genetics	A2	No SA content
Skin System	A2	No SA content
ICM II	W2	Visit AA mtg, interview an AA member, hand in write-up of HPI on their SA
Gastrointestinal System	W2	Seminar on liver disease w/case discussion on liver transplant
Hematology	W2	Discussed as part of sickle cell disease lecture:
Musculoskeletal System	W2	No SA content
Medicine, Health & Society	W2	No SA content
ICM II	S2	Interviewing styles demonstrated, panel discussion, attend AA meeting
Urinary System	S2	No SA content
Human Behavior II	S2	1 hr. alcohol abuse and 1 hr. substance abuse
Principles of Pharmacology II	S2	Stimulants: mech. of action, clinical use, side effects, psychotomimetics
Reproduction	S2	Nothing in syllabus, passing remarks on steroid abuse effects on males
Nutrition for Physicians	S2	Consequences of alcohol abuse covered in one of the lectures

Note: A= autumn, W= winter, S= spring. "1" and "2" refer to first and second years of medical school, when all course work is taken.

This survey demonstrated that teaching on alcohol abuse can be done in many courses throughout the curriculum. It is more effective to include discussions in many different courses rather than confining it to one short period during medical school.

We surveyed all Clinical Clerkship Coordinators who are responsible for developing curriculum for the clinical rotations constituting the second two years of medical school. These results are shown below in Table 3.

Table 3: UW Substance Abuse Training Content in 6 Required Clerkships: Survey of Clinical Clerkship Coordinators.

Clerkship	Substance Abuse Training Experiences Provided
Psychiatry (Ries, Dunn)	Advanced assessment of substance use/abuse/dependence 2-hr. lecture and demonstration of a brief intervention Treatment models and recovery taught Structured intervention work-up with Psychiatry patient with SA problem Perform brief intervention with that patient Visit different Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous meetings other than those visited in ICM II course
Surgery (Dunn)	90-minute lecture on alcohol abuse, trauma, and brief interventions has been cancelled
Pediatrics (Robertson)	Students given syllabus of 36 case scenarios (at least one case addresses substance abuse). Most students have contacts with Fetal Alcohol Syndrome, cocaine babies, and teens abusing substances, but not guaranteed Occasional lecture on adolescent substance abuse Adolescent substance abuse lecture seldom given anymore
Family (Stern)	19 common problems in Family Practice are focused on; Substance abuse is subsumed under only one of these topics, "depression" Alcoholism not focused on as common problem ("too many others to do") One chapter to read on alcoholism and drug abuse May include SA among required web site references for students
Medicine (Paauw)	There is an alcohol abuse section in the student syllabus that is required reading Most students take care of alcohol and drug-abusing patients in clinic, but not specifically mandated

All the rotations above are required of all medical students. The results indicate that students are exposed to information about substance abuse at a number of times during their clinical training. This repeat exposure is very useful in changing behavior and instilling skills and a sense of self-efficacy.

- We presented the results of the two surveys to the UW Substance Abuse Theme Committee that included the Assistant Dean of the Medical School. This presentation included our recommendations for including many more substance abuse training topics. These recommendations were derived from the International Medical Education Model, and we believe are generalizable to other schools of medicine across the U.S. They represent a strategy for training future physicians in screening for and management of patients with problem drinking. These recommendations are summarized in Table 4 below.

Table 4: Recommended Substance Abuse (SA) Training Topics
(from International Medical Education Model, Fleming & Murray):

	Topic	Topic Description
1	Epidemiology & Phenomenology	Continuum of SA problems (low-risk, hazardous, abuse/dependence) Natural history of SA disorders Prevalence of SA disorders vs. other medical disorders Special populations w/special SA problems Stages of change readiness
2	Etiology & Prevention	Risk & buffer factors Clinically-based prevention opportunities
3	Special Populations	Adolescents, women, elderly Age & gender physiological differences Screening & assessment issues Patients with psychiatric disorders
4	All drugs of abuse	Trends in use, availability, preparations of, routes of administration of all drugs of abuse Behavioral effects of all drugs of abuse Biopsychosocial consequences of acute & chronic abuse of all drugs Clinical signs & symptoms of each
5	Clinical Research	Research methods used for epidemiological & clinical studies Outcomes of various SA treatment modalities SA treatment outcomes vs. outcomes for other chronic disorders
6	Screening & Assessment	Standardized screening & assessment techniques Interviewing skills

7	Brief intervention	Learn how non-specialists can treat SA Listening to patients and giving them feedback and advice How to do brief interventions across numerous medical specialties
8	Alcohol-related Medical Problems	Medical conditions caused or exacerbated by SA: perinatal & FAS, HTN, cardiac, stroke, GI, pancreatitis, malabsorption, liver, cancers, sexual dysfunction, HA, sleep problems, peripheral neuropathy, organic brain disorders, hematological problems
9	Specialized Treatment	Continuum of treatment modalities: what they are and what they do The art of referring patients for treatment
10	AA & Self-help Groups	Know basics of AA and other self-help groups Referring to and visiting meetings Meet successfully recovering people
11	Pharmaco-therapy	Neurobiology of drug actions and craving
12	Medical Detoxification	Neurobiology and clinical treatment of withdrawal for all drugs of abuse Withdrawal & co-morbid conditions
13	Management of Anxiety & Pain	Abuse potential of commonly prescribed drugs Breathalyzer/drug testing Assessment of pain & psychiatric symptoms Pharmacological & non-pharmacological treatment of pain Pain contracts, informed consent procedures
14	Tobacco Cessation	Screening & brief intervention procedures Pharmacotherapy Office-based systems
15	Harm Reduction Methods	Pregnancy IV drug users Sexually transmitted disease prevention
16	Psychiatric Comorbidity	Psychiatric problems caused, complicated, exacerbated by substance abuse
17	Legal & Ethical Issues	Patient autonomy Confidentiality and charting issues around SA Protection of records, liability, child abuse

- We provided to the UW Substance Abuse Theme committee copies of the National Institute of Alcoholism and Alcohol Abuse's (NIAAA) "An International Model for the Prevention and Treatment of Alcohol Use Disorders." This material contains a comprehensive substance abuse knowledge base that teaches evidence-based medical treatment for substance abuse. The intent is that information in this model would be incorporated into the curriculum.

- Recommendations were made to the School of Medicine on how the UW curriculum could further comply with NIAAA's training recommendations, such as including topics listed in table 4 in the Human Biology course curriculum.

- Key faculty members were identified in General Internal Medicine, Family Medicine, Pediatrics, and Obstetrics and Gynecology who would become future "substance abuse champions," thereby promoting the inclusion of more substance abuse training experiences into the clinical clerkships.

- We revised the UW Substance Abuse Theme Committee's "Substance Abuse Roadmap," a document summarizing the substance abuse training experiences our medical students receive from year 1 through year 4 of their education in the School of Medicine.

Continuing Medical Education for Practitioners:

The University of Washington Continuing Medical Education (CME) office is the primary source of continuing medical education programs for clinicians in the Pacific Northwest. The UW School of Medicine also operates an on-line newsletter for physicians in the region. CME programs were advertised through this route, and specific information about this project's activities was included on a regular basis. We accomplished the following:

Contacted the heads of CME programs for the WAMI states to offer them our training package which included physician workshops of various lengths of training time. We found that the heads of CMEs in the Washington, Alaska, Montana and Idaho region are very familiar with those topics that attract physicians to CME lectures and those topics that do not yield good turnouts. Unfortunately, they told us that our topic of brief alcohol interventions was a difficult one to promote. However, we were able to schedule and deliver numerous free physician CME training workshops. These workshops followed the same format as that described above for training resident physicians. These training sessions are summarized in Table 6 below.

Table 6: Summary of Brief Intervention Training

Length (hrs.)	Group	Participants
1.5	General internal medicine (GIM) residents	10
2.0	Rehabilitation unit nurses	55
1.5	GIM residents	6
2.0	Valley family medicine residents	8
1.5	Family medicine residents	8
0.75	1 x 1 detailing with MD *	1
0.25	1 x 1 detailing with MD *	1
2.0	Family medicine residents	5
0.5	GIM residents	4
0.5	GIM residents	5
1.5	Family Medicine residents	6
0.5	GIM residents	5
0.75	Family medicine residents, Tacoma, WA	20
0.5	GIM residents	5
1.0	Neurology residents	15
0.5	GIM residents	5
0.5	1 x 1 detailing with MD *	1
0.5	1 x 1 detailing with MD *	0
0.5	1 x 1 detailing with MD *	1
2.0	UW Medical students	9
2.0	Family medicine residents, Tacoma	6
1.25	Family medicine residents, Tacoma	1
1.25	Family medicine residents, Tacoma	6
0.5	1 x 1 detailing with MD*	1
1.5	GIM residents	9
1.0	Trauma residents and surgeons	9
1.5	Surgery Clerkship student lecture	20
.75	Family medicine residents, Tacoma	20
1.5	Surgery Clerkship student lecture	20
.5	1 x 1 detailing with MD*	1
1.0	Valley Hospital physicians *	30
2.0	Psychiatry clerkship students	20
2.5	Family medicine residents, Tacoma	20
1.5	Surgery Clerkship medical students	20
1.5	GIM residents	12

1.0	Obstetrics and Gynecology physicians & residents *	25
1.0	Obstetrics and Gynecology residents	8
3.0	GIM residents, Spokane, WA	30
3.0	Nursing students	20
1.0	Family medicine residents, Tacoma	6
1.5	1 x 1 detailing with MD	23
1.0	Family medicine residents	25
1.5	Surgery Clerkship students	20
1.0	Emergency Medicine physicians *	30
2.0	Public Health nurses	12
1.0	Boise, ID physicians *	22
1.0	Boise, ID physicians *	56
2.0	Family medicine residents	15
.5	Family Medicine residents	20
1.5	Surgery Clerkship student lecture	20
?	WA St. Obstetrics conference *	60
.75	GIM residents	20
1.25	Public Health nurses	85
2.0	Medicine residents, Yakima, Seattle	20
2.0	American College of Physicians annual conference, Seattle *	50
2.0	Family medicine residents, Boise, ID	50
1.5	Surgery Clerkship student lecture	20
2.0	Family medicine residents	25
5.0	WA State conference of School nurses	75
0.5	WA State conference of Trauma nurses	100
2.0	UW Psychiatry clerkship students	20
2.0	UW Psychiatry clerkship students	20
2.0	UW Psychiatry clerkship students	20
2.0	UW Psychiatry clerkship students	20
1.0	Family Medicine residents, Tacoma, WA	20
1.0	Family Medicine residents, Tacoma, WA	20
2.5	Family medicine residents	8
2.0	Family medicine residents	12

Note: * indicates CME training for practicing physicians
All training in Seattle unless indicated otherwise

- We mailed out information to all primary care physicians in King County, Washington, to offer them free training 1 x 1 academic in their own offices in

alcohol screening and brief intervention. This unfortunately produced only a few requests for training. We believe this reflects the busy practices of physicians in the county and the results of the health care financing crisis.

- Because of this low response rate, we surveyed a random sample of 400 King County primary care physicians, investigating their current screening and brief intervention practices. We have come to believe that screening for alcohol abuse must occur more automatically, without requiring as much action on the part of physicians. The literature would also suggest that accurate assessment of alcohol abuse requires a more formal method of screening than just asking about quantity and frequency of alcohol use. One way to accomplish this is to use a written questionnaire. This can most easily be accomplished by adding questions on alcohol use to a periodic health history questionnaire.

  The results of our survey of King County physicians are shown in Table 7 and are as follows:

  - There was a 67% return rate to the questionnaire, yielding 280 usable questionnaires from physicians.

  - Of 280 respondents answering question #1, 148 (53%) indicated that they used a self-administered questionnaire that included questions about drinking.

  - Of these 148 physicians, 110 (74%) used only questions about quantity and/or frequency, 23 (16%) used some combination of quantity/frequency and CAGE questions, and 11 (7%) used CAGE only.

  - Of 125 physicians who reported in question #1 that they did not use a self-administered questionnaire to screen for alcohol problems, 104 (83%) reported that they would be willing to add standardized screening questions to their screening protocols.

  - Nearly all physicians (n=264, 95%) reported that when concerned about patients' drinking, they took action including various combinations of charting in the medical record, discussing concerns with patients, and referring patients for specialty care.

  - However, only 123 (44%) physicians charted their concerns in the medical record. Thus, the medical record may serve as an inaccurate measure of the screening and counseling practices of primary care physicians.

Table 7: Survey Results of Internal and Family Medicine Physicians

Survey Questions:	Internists n (%)	Family Physicians n (%)	Total Responses n (%)
1. Do you give new patients in your practice a self-administered questionnaire about health habits and risks such as smoking, drinking, exercise, or diet?			
Yes	63 (44)	85 (62)	148 (53)
No	77 (54)	48 (35)	125 (45)
Other	3 (2)	4 (93)	7 (2)
Total	105 (100)	165 (100)	280 (100)
2. Which alcohol related questions, if any, are on your questionnaire?			
Quantity and/or Frequency questions	46 (73)	64 (75)	110 (74)
CAGE + (Quantity and/or Frequency)	9 (14)	14 (16)	23 (16)
CAGE questions only	5 (8)	6 (7)	11 (7)
None or left blank	3 (5)	1 (1)	4 (3)
Total	63 (100)	85 (99)	148 (100)
3. When patients answer alcohol questions (either written or verbal) in a way that concerns you, how do you usually handle it?			
Note in chart (Discuss and/or Refer)	64 (45)	59 (44)	123 (44)
Discuss only	56 (39)	57 (43)	113 (41)
Discuss and Refer only	12 (8)	16 (12)	28 (10)
No formal policy or Refer only	11 (8)	2 (1)	13 (4)
Total	143 (100)	134 (100)	277 (99)
4. If you are not routinely screening for heavy drinking and alcohol related problems, would you be open to adding a few standardized questions to your current screening practices?			
Yes, but would add verbally	34 (52)	24 (63)	58 (56)
Yes	14 (21)	9 (24)	23 (22)
Do not think is useful	6 (9)	1 (3)	7 (7)
Other	12 (18)	4 (11)	16 (15)
Total	66 (100)	38 (101)	104 (100)

Training Materials

The brief intervention approach was laid out on a pocket card which was provided to all clinicians receiving our training, approximately 966 physicians, residents, and medical students. This card included information on how to screen patients, guidelines for low-risk drinking, condensed counseling protocols for alcohol-abusing versus alcohol-dependent patients, and local referral resources for further assessment and specialty substance abuse treatment (see Appendices).

These materials were not totally original. For example, we drew from existing material provided by NIAAA and NHTSA. Our goal was to distill existing materials down to a manageable size that served our brief training purposes and did not overload trainees with paper.

Barriers in the United States to implementing alcohol screening in hospital emergency departments:

There are a number of reasons for the relative lack of screening for alcohol problems. These include the incorrect belief that treatment is ineffective, as well as the perennial complaints of lack of time and resources. However, an additional reason sometimes voiced is that screening may have an adverse effect on patients. Many physicians rightly believe that insurance companies can deny coverage for an injury if alcohol is involved, similar to the denial of coverage for self-inflicted trauma. There is also concern that information about alcohol use at the time of the injury can be used against the patient in civil and criminal legal actions. The unfortunate result is that patients with a serious chronic illness are not receiving proper comprehensive care, that is, screening, identification, and treatment.

We therefore sought to determine the legal ability of insurance carriers to deny coverage for the trauma care of a patient who was intoxicated at the time of injury. We first sought to obtain data from the insurance commissioners in all 50 states. Of the 31 states that complied with data, 26 stated that an exclusion of coverage would be allowed if the insured person was intoxicated at the time of injury. The majority of the respondents claimed that if the insurance contract, agreed to by the patient, contained a specific exclusion for injuries due to intoxication, the insurer can legally deny coverage for the care.

Prompted by the similar wording of the exclusions referenced in the survey of insurance commissioners, we examined the relevant statutes governing insurance in all 50 states, as well as contacted the National Association of Insurance Commissioners. This revealed that the exclusion of coverage for injuries involving alcohol was based on a model law, the Uniform Accident and Sickness Policy Provision Law, promulgated by the National Association some four decades ago. An optional provision allowing the denial of

coverage for alcohol related injuries states that: "Intoxicants and Narcotics: 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." Similar provisions allow for the exclusion of coverage for acute medical care of suicide attempts.

Thirty-eight states and the District of Columbia have adopted this provision in their insurance codes, allowing companies to write policies which deny coverage for injuries due to intoxication (Table 8). Two states, Minnesota and Oklahoma, allow insurers to deny coverage only if the insured is under the influence of narcotics, not alcohol, at the time of injury. New York and South Dakota only allow the insurer to deny the claim if the injury is sustained while the insured is in the act of committing a felony. Statutes concerning insurance policies in the remaining eight states are silent on the issue of denial of coverage.

Table 8: State statues governing exclusion of coverage for alcohol or drug related injuries

Exclusion Allowed by Law:

Alabama
Alaska
Arizona
Arkansas
California
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Mississippi
Missouri
Montana
Nebraska
Nevada
New Jersey
North Carolina
North Dakota
Ohio
Oregon
Pennsylvania
Rhode Island
South Carolina
Tennessee
Texas
Vermont
Virginia
Washington
West Virginia
Wyoming

Exclusions Allowed With Certain Additional Restrictions:
Minnesota (narcotics only)
New York (in act of committing a felony)
Oklahoma (narcotics only)
South Dakota (in act of committing a felony)

States with no statute re: exclusion of coverage
Utah
Colorado
Connecticut
Massachusetts
Michigan
New Hampshire
New Mexico
Wisconsin

When responding to our requests, many state insurance commissioners expressed the sentiment that policies will not cover injuries sustained while intoxicated because these injuries are viewed as self-inflicted or self-induced. That is, by drinking alcohol, people knowingly put themselves in harm's way. In their view, denying a claim based on the provision that the carrier is not liable for coverage of injuries sustained under the influence of alcohol is similar to denying coverage for self-inflicted injuries in a suicide attempt.

In most states, then, the insurance companies do have the legal right to deny coverage for an injury due to alcohol use. While this option appears to be enforced rarely by most companies, at least one insurer reported to us that they "strongly enforced" the exclusion policy if alcohol was involved. Unfortunately, physicians' concerns about the implications of screening for alcohol use and abuse appear to be based on firm reality as codified in the statutes in most states. Such policies clearly have a dampening effect on the recommendations of physicians to screen all trauma patients for alcohol problems. Given that intervention for alcohol abuse and dependency is effective at reducing alcohol related injury recurrence, failure to screen and intervene is a clear disservice to these patients. We realize that insurance rates are set based on expenses incurred by companies and that coverage of care for injuries involving alcohol will potentially affect the premiums of others. However, alcohol abuse and dependency is a disease and insurance premiums should be based on risk sharing for all diseases.

Alternative strategies for caring for trauma patients with alcohol abuse or dependency include:

Change insurance statutes: At least 12 states have specifically chosen not to adopt the model law giving insurers statutory authority to write policies excluding coverage for injuries due to alcohol use. While most insurance

companies will not enforce this provision frequently, some will. Coverage for care is ever changing and extremely confusing for patients and physicians alike. The existence of even one company which routinely excludes coverage affects how physicians treat all patients. A change in the regulatory statutes would be the clearest method to guarantee that coverage is not denied. This has been done nationally to end the practice of excluding coverage for "pre-existing" conditions.

Require alcohol screening: Connecticut recently passed legislation requiring acute care hospitals to include in the record of each trauma patient a "notation indicating the extent and outcome of screening for alcohol and substance abuse." It requires hospitals to establish protocols for screening patients for alcohol and substance abuse.

Segregate information about alcohol use in the medical record: Information about alcohol screening, intervention and referral can be kept in a separate part of the medical record, access to which is restricted. A "gatekeeper" familiar with confidentiality and substance abuse issues could be assigned to make decisions over release of this information. This would give greater control over access to this information, but may make it so inconvenient that the providers caring for the patient never use it.

Change hospital policy: The current "consent to care" forms could be changed to not give blanket permission to release information to outside agencies such as insurance companies. While far reaching and not simple, it would be a change back to the view of confidentiality currently held by most patients and their physicians.

Worked to establish alcohol screening and brief intervention as part of national practice guidelines for medical care:

At the national policy level, we worked to have a screening and brief intervention indicator added to the National Committee on Quality Assurance's (NCQA) Health plan Employer Data and Information Set (HEDIS). HEDIS is nationally the most widely adopted set of performance measures that enables health care purchasers (employers and states) to compare and select their health plans. Currently in its fourth generation, HEDIS is under constant revision but contains little information about the quality of substance abuse screening, treatment, and intervention services provided by health plans. We believe that provider groups will be more motivated to require their physicians to screen and intervene if they know that they will be ranked higher by NCQA as a result.

A project is currently under way, funded by SAMHSA (Substance Abuse and Mental Health Services Administration), which convened a panel of experts called the Washington Circle who have been working on this project since June, 1998. The purpose of this panel is to develop substance abuse quality measures and present them to NCQA. Via a conference call that included our colleague Kathy Bradley, M.D., (authority on

alcohol screening) we consulted with them to ensure that their proposed performance measures be chosen according to prior research on the sensitivity and specificity of these instruments. The Washington Circle was receptive to our suggestions to use the AUDIT (Alcohol Use Disorders Test) to replace the more common CAGE, because the AUDIT performs better with most populations. Dr. Rivara was invited to join the Washington Circle Group and continues to work on this issue.

CONCLUSIONS

Medical student training:

Medical students are eager to learn alcohol screening and brief intervention skills, but training time is scarce, and change in medical school curriculum is needed in order to "institutionalize" this training. Our experience was that this curriculum change is slow, given other "competition" for curriculum space from a multitude of other medical issues.

Training residents:

Training of residents in brief alcohol screening and intervention is feasible and well-received, although training time is difficult to obtain. Although data from this project show that residents will slightly increase their screening and brief intervention activity as a result of training, these increases are probably not enough to significantly affect the alcohol and drunk driving problems. Because residents do not systematically screen all of their patients, they become overly focused on "end-stage," obvious alcoholics, to the exclusion of alcohol abusers who might respond best to their brief interventions. Ultimately, system-level changes are needed so that providers will be reimbursed for performing behavior change interventions. When reimbursement patterns change, medical training priorities will follow.

Medical School Curriculum:

Given its magnitude of impact on the morbidity and mortality of patients, substance abuse is underrepresented within the University of Washington's School of Medicine curriculum.

In order to "institutionalize" substance abuse training, "champions" (permanent faculty members who are committed to addressing and teaching substance abuse) are needed.

We believe that our approach of assessing the University of Washington curriculum's substance abuse content and presenting the results in comparison to the NIAAA's curriculum standards may be one effective approach, as long as this information reaches the Dean's attention. In our case, the resulting changes have been incremental, not quantum in nature.

Substance abuse medical training demands continuity across both years of training and across clinical settings in which medical training happens. For this reason, we believe that a "theme approach" holds the most promise. Under a "theme approach," substance abuse is seen not as a curriculum topic but as a common theme appearing throughout

medical school, in all courses taken and in all clinical settings. The theme is that substance abuse affects a large proportion of patients in all medical populations and that it can and should be addressed in all medical settings. If substance abuse is taught across all medical settings, future physicians in all medical specialties are most likely to address it during their careers.

Continuing Medical Education:

Brief alcohol interventions is a difficult topic to "sell" to the directors of continuing medical education, and physicians in practice show little interest in learning more about it. If reimbursement patterns change, physicians are more apt to address alcohol problems among their patients.

Barriers to implementing screening and intervention in trauma centers:

Physicians' concerns that screening for alcohol abuse may result in denial of coverage of care by the insurance companies appear to be based on firm reality as codified in the statutes of most states.

12 states have not adopted the model law giving insurers statutory authority to exclude coverage for injuries due to alcohol use.

Connecticut now requires acute care hospitals to include in the record of each trauma patient a notation about the extent and outcome of alcohol screening. This must be spread into other states.

Information about alcohol screening should be kept in separate parts of the medical record, to which access is restricted.

Current hospital "consent to care" forms could be changed to not give blanket permission to release information to outside agencies such as insurance companies.

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APPENDICES

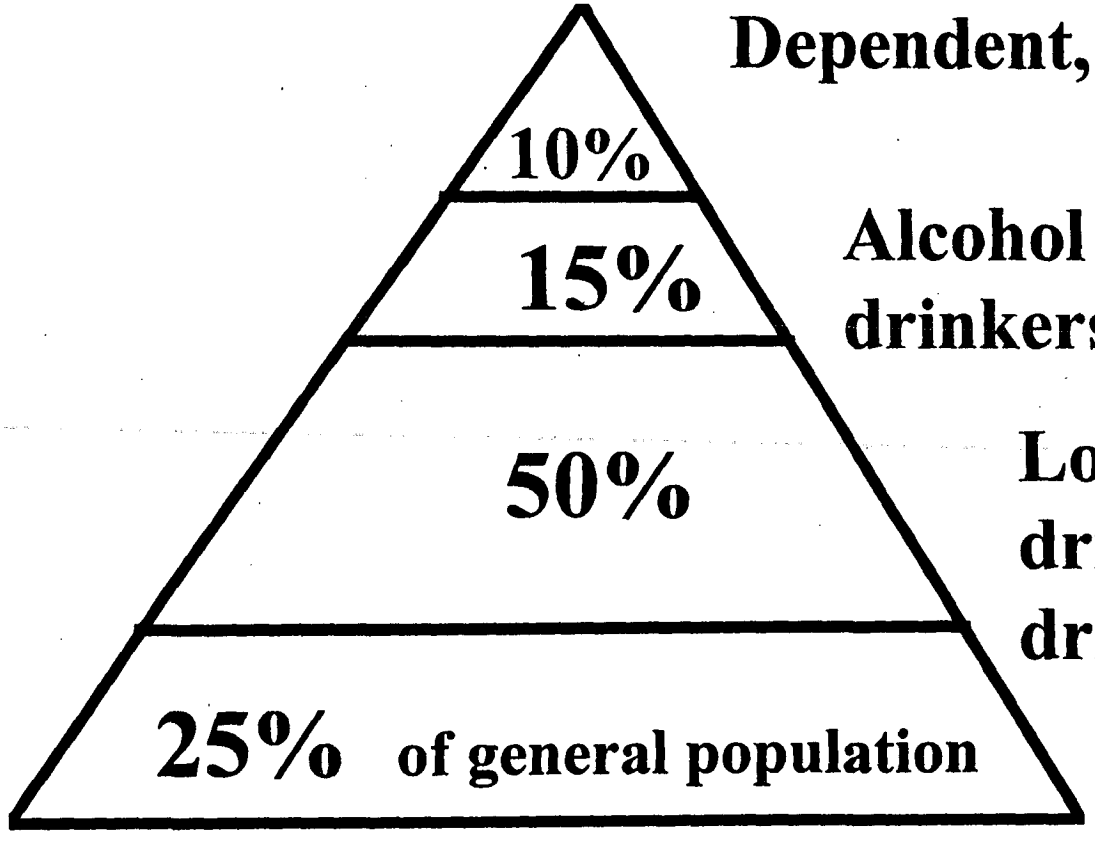
OBJECTIVES:

- **Know the prevalence of alcohol problems and how you could become involved**
- **Know the outcome literature on Brief Interventions**
- **Learn screening, assessment, and brief intervention skills for your setting**

What is a "BRIEF INTERVENTION"?

- A carefully crafted effort
- sometimes only a few sentences by a provider
- designed to raise the chances that a patient/client will make a change

Terms, Terms, Terms:



Dependent, alcoholic, addicted

Alcohol abuse, at-risk drinkers, hazardous drinkers

Low-risk, social drinkers, controlled drinkers

Abstainers

Low-Risk Drinker:

Men: 3-4/day max & 15/wk. max

Women: 2-3/day max & 10/wk. max

"1 drink" = 12-oz beer

= 5-oz wine

= single mixed drink

Alcohol Abuse:
(meets $\geq$ 1 in past year)

1. Recurrent use causes failed role obligations
2. Recurrent use in hazardous situations (e.g. driving)
3. Recurrent legal problems related to use
4. Continues use despite having problems caused/exacerbated by use

ALCOHOL DEPENDENCE

(meets ≥ 3 of 7 within past year:)

- **W ithdrawal symptoms**
- **I nvolved, too much time spent**
- **T olerance to drug's effects**
- **H ampered activities, responsibilities**
- **D esires to quit but has not done so**
- **R epeats use despite knowing of problem**
- **L arger amounts than intended**

RED FLAGS for Problem Drinking:

- Hypertension
- Sleep disorders
- Depression
- Trauma
- Chronic abdominal pain
- Illicit drug use
- Liver dysfunction
- Sexual dysfunction
- Blackouts
- Prescription drug use
- Tobacco use

STAGES of CHANGE

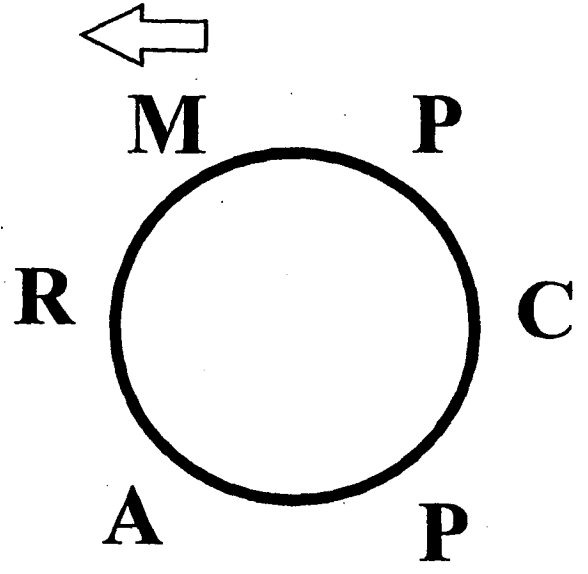
Precontemplation

Contemplation

Preparation

Action

Maintenance



Prochaska & DiClemente

(Algorithm Card Fronts)

BRIEF ALCOHOL INTERVENTION

SCREEN

Cut down? Angry? Guilty? Eye-opener?
How often in the past 6 months have you had ≥6(4) drinks on one occasion?

DISCUSS AND NEGOTIATE

With a Hazardous drinker:
Clearly express Concern
Advise safer limits:
Negotiate a change.
♂ 3 max and15/wk max
♀ 2 max and 10/wk max
With a Dependent drinker:
Clearly express Concern
Advise abstinence and refer
Negotiate a change:

CLOSE ON GOOD TERMS

BRIEF ALCOHOL INTERVENTION

SCREEN

Cut down? Angry? Guilty? Eye-opener?
How often in the past 6 months have you had ≥6(4) drinks on one occasion?

DISCUSS AND NEGOTIATE

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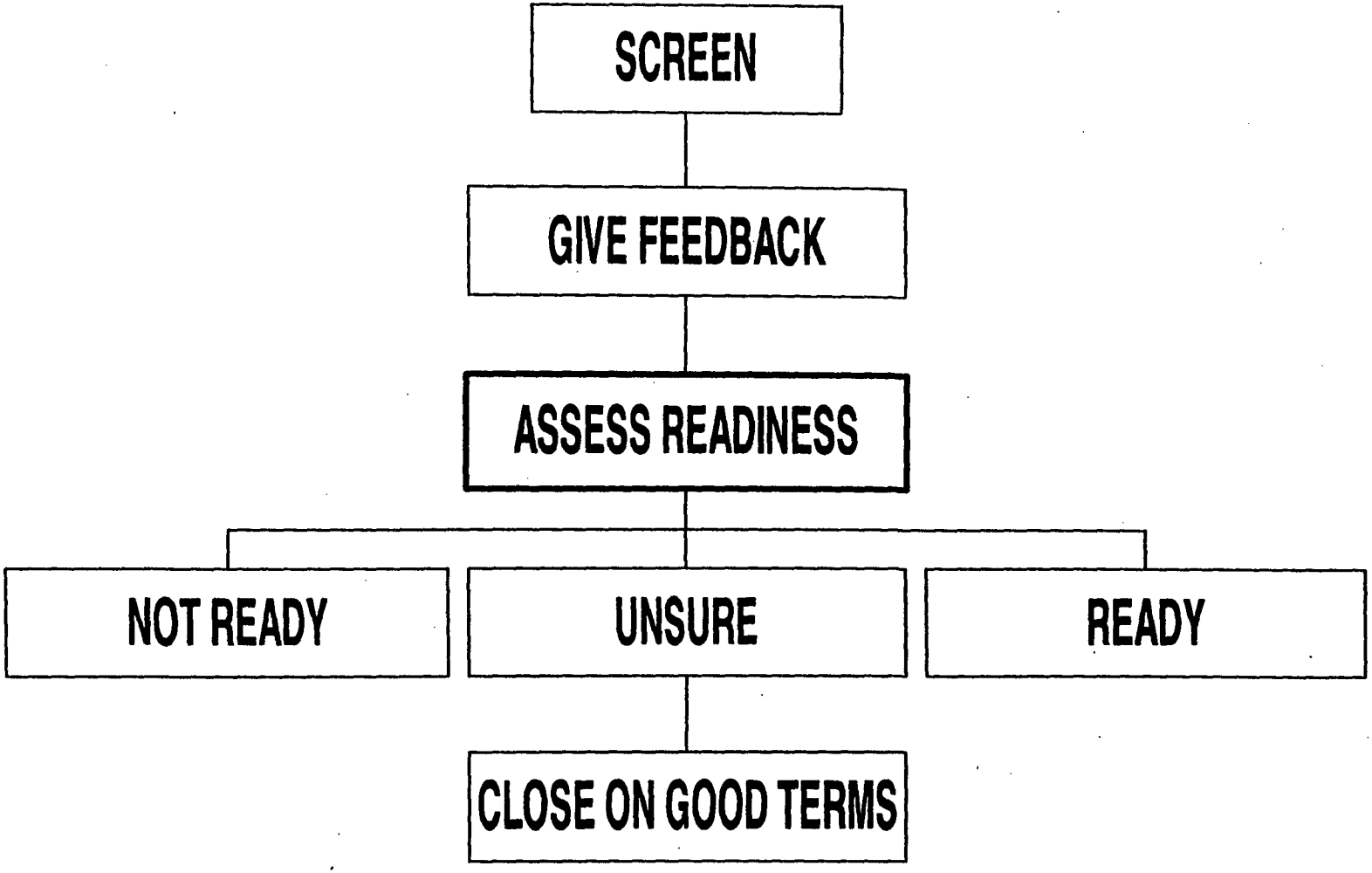
Advise abstinence and refer
Negotiate a change:

CLOSE ON GOOD TERMS

BRIEF INTERVENTION



SIX COMMON ELEMENTS of BRIEF INTERVENTIONS:

- Feedback
- Responsibility
- Advice
- Menu of Options
- Empathy
- Self-confidence

POSITIVE Screen:

Men: **> 3-4 drinks per occasion**
> 15 drinks per week

Women: **> 2-3 drinks per occasion**
> 10 drinks per week

or

≥ *2 Yes on* CAGE questions

Information to teach patients on ETOH:

- Abnormal labs (GGT, MCV)may be from etoh
- Tolerance bad, means "alarm not going off"
- Link between presenting problems & etoh
- How much alcohol is in one standard drink
- BAC charts for male/female X body weight

ADVISE a Plan of Action for At-Risk Drinkers:

- Recommend a consumption limit based on health risks
- Ask the patient to set a low-risk drinking goal
- Provide patient education materials

KNOW YOUR PERSONAL LIMIT:

ONE DRINK = One bottle of beer (12 oz.)
= One glass of wine (5 oz.)
= One "single" drink (1 ¼ oz. of liquor)

NUMBER of DRINKS PER HOUR	100 lbs	120 lbs	140 lbs	160 lbs	180 lbs	200 lbs	220 lbs	240 lbs
	M / F	M / F	M / F	M / F	M / F	M / F	M / F	M / F
1 drink in 1 hour	.02/.03	.02/.02	.01/.02	.01/.01	.00/.01	.00/.01	.00/.00	.00/.00
1 drink in 2 hours	.01/.02	.00/.01	.00/.00	.00/.00	.00/.00	.00/.00	.00/.00	.00/.00
1 drink in 3 hours	.00/.01	.00/.00	.00/.00	.00/.00	.00/.00	.00/.00	.00/.00	.00/.00
2 drinks in 2 hours	.03/.04	.03/.04	.02/.03	.01/.02	.01/.02	.00/.01	.00/.00	.00/.00
2 drinks in 3 hours	.02/.03	.01/.03	.00/.01	.00/.01	.00/.00	.00/.00	.00/.00	.00/.00
2 drinks in 1 hour	.06/.07	.05/.06	.04/.05	.03/.04	.03/.03	.02/.03	.02/.02	.02/.02
3 drinks in 3 hours	.06/.09	.05/.06	.03/.05	.02/.03	.01/.03	.01/.02	.00/.01	.00/.01
3 drinks in 2 hours	.08/.10	.07/.09	.05/.06	.04/.05	.03/.04	.02/.03	.02/.03	.01/.02
4 drinks in 4 hours	.09/.11	.06/.08	.04/.06	.03/.05	.02/.03	.01/.02	.00/.02	.00/.01
4 drinks in 3 hours	.10/.13	.08/.10	.06/.08	.05/.06	.03/.05	.03/.04	.02/.03	.01/.03
5 drinks in 5 hours	.11/.14	.08/.11	.05/.08	.04/.06	.02/.04	.01/.03	.00/.02	.00/.00
3 drinks in 1 hour	.10/.12	.08/.10	.07/.08	.06/.07	.05/.06	.04/.05	.04/.05	.03/.04
5 drinks in 4 hours	.13/.16	.09/.12	.09/.10	.05/.07	.04/.06	.03/.05	.02/.04	.01/.03
4 drinks in 2 hours	.12/.15	.09/.12	.08/.10	.06/.08	.05/.07	.04/.06	.04/.05	.03/.04
5 drinks in 3 hours	.14/.18	.11/.14	.09/.11	.07/.09	.06/.08	.05/.06	.04/.05	.03/.04
5 drinks in 2 hours	.16/.19	.13/.16	.10/.13	.09/.11	.07/.09	.06/.08	.05/.07	.05/.06

LOW-RISK DRINKING GUIDELINES:

Men: 3 drinks per day, *max,* and 14 drinks per week, *max.*
Women: 2 drinks per day, *max,* and 9 drinks per week, *max.*

NO AMOUNT OF ALCOHOL IS SAFE IF YOU ARE DRIVING.
YOUR RISK OF CRASHING GOES UP, *EVEN WITH VERY SMALL AMOUNTS.*

NO AMOUNT IS SAFE IF YOU ARE PREGNANT OR TRYING TO GET PREGNANT

RECOMMENDING LIMITS for At Risk Drinkers*

Men: **3-4 drinks/day and**
14 drinks/week

Women: **2-3 drinks/day and**
10 drinks/week

*** Sanchez-Craig, Wilkinson, Phil, Davila (1995): AJPH, 85 (6) 823-828**

RECOMMENDING ABSTINENCE:

Advise to abstain if:

- **Pregnant or trying to get pregnant**
- **Taking meds that interact with alcohol**
- **Contraindicated by medical conditions**
- **Alcohol dependent**
- **Want to find out if dependent**

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July 2000

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