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Evidence-based approach FOR BETTER HEALTH.

SBIRT COLORADO LITERATURE REVIEW SUMMARY QUESTIONS ABOUT SBI:

This annotated bibliography is a partial listing of articles containing studies on SBIRT from 2003-2008, prepared by OMNI Institute for SBIRT Colorado. This is an edited selection that provides a wide overview as many of the same ideas found earlier than 2003 are included later with an updated perspective. The complete bibliography dating back to 1989 and containing 128 articles can be found on the SBIRT Colorado website, www.improvinghealthcolorado.com.

There are hundreds of articles about SBI over the last few decades and the majority favor the practice. What started as isolated studies examining the efficacy of the practice, has become a policy mandate now facing the challenge of widespread implementation. At issue today is not whether SBIRT is cost-effective, beneficial to patient health or a catalyst for better lifestyle choices. Issues of a more sustainable nature focus on

- Gaining wide support from healthcare providers
- Establishing billing procedures
- Turning systematic, targeted screening into universal screening
- Standardization of practice(s)
- Focus on specialty populations

Themes have been identified throughout the literature and have been organized into sections with a summarizing paragraph. Some content areas are extensive, with many articles to support the theme. Others are scant and perhaps demonstrate the need for further research or focus.

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This literature review is updated periodically as newer articles are published.



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Literature Review Summary P2

SELECT RECOMMENDATIONS AND IMPLICATIONS—

- The literature, overall, has moved from traditional “research” to the public policy realm and is far less precise in the findings.
- Many of the same issues/problems identified 15 years ago remain unresolved.
- A great need is identified to educate healthcare providers about SBI, particularly in primary care. There are many misconceptions about effectiveness, barriers and solutions. Many of the challenges of implementation stem from providers’ lack of familiarity and comfort, as well as insufficient training and preparation.
- While universal screening is a primary goal of SBIRT, it is not yet feasible and targeted; systematic screening is recommended by many studies.
- SBI, overall, needs to become more standardized in its screening methods, intervention models, screening personnel, time per screen, intervention, and billing. The literature indicates that a variety of models may be needed to serve diverse populations.
- Primary care is seen as the ideal setting to catch pre-dependent users but implementation appears to be more challenging than screening in an emergency or trauma department.
- Most discussion in primary care is around the initial screening and there is little consensus about what the intervention should look like and who should do it.
- Recent studies suggest that SBI should be integrated with regular, preventative patient care, addressing (at the very least) the four primary factors of morbidity: alcohol, tobacco, poor diet and sedentary lifestyle.
- Single-question alcohol screening seems to be as effective as longer screens. The uncertainty of how to handle the patient arises once a healthcare practitioner identifies the patient as “positive” for risky use.
- SBI with drug use is a fairly recent practice; traditional SBI has focused almost exclusively on alcohol. What little literature exists is not yet favorable but this may be due to the comparatively fewer studies dedicated to drug-use outcomes.
- Technology is employed more frequently as an alternative means to implement screening on a larger scale (including non-in-person models).
- The use of students to conduct screenings as a part of their internship is one alternative model to sustain the practice of SBI. Not only would it help to educate the upcoming generation of healthcare practitioners, it could help reduce burnout rates among screeners and solve the physician’s burden of who should be responsible for screening.
- Underage drinking is recognized as problematic but programs are struggling with how to effectively reach this population.
- There is very little literature regarding certain populations, especially those professions in direct contact with regular trauma (police, healthcare, etc.).

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Annotated Bibliography P3

Screening and Brief Intervention (SBI) refers to the preventative treatment of alcohol users and is closely related to Motivational Interviewing (MI). Treatment will be referred to as SBI throughout this summary.

This is an abbreviated bibliography that, for the most part, represents articles published after 2002. There remain a few older articles that may detail a unique perspective not found in more recent studies. The complete bibliography dating back to 1989 and containing 128 articles can be found on the SBIRT Colorado website, www.improvinghealthcolorado.com.

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SBIR AS A MODEL

Screening and Brief Intervention go back more than 20 years with hundreds of studies to review or test the model. Overall, findings recommend that SBI should be a systematic, preventative healthcare approach that focuses on identifying those who use at risky levels but have not yet formed dependence. Most studies find that SBI is effective and strongly recommend the practice. Emphasis has been primarily on risky drinkers, although the effects of SBI on other substance users are beginning to gain attention. SBI is based on patient self-report and reduction of use is not usually perceptible until at least six months from the initial screening. The quality of the brief intervention delivery has a marked impact on the patient's willingness and ability to sustain long-term substance reduction. Similarly, there is great variation in the level/depth of SBI that is implemented in various medical settings. No standardized screening tool or BI model/method has yet been identified, including who is best suited to conducting these activities with the patients. As SBI gains broader support, standardization of these areas is recommended. Traditional barriers to implementation include the perceived lack of time and lack of training and education on the part of healthcare providers.

Babor, T.F., McRee, B.G., Kassebaum, P.A., Grimaldi, P.L., Ahmed, K., Bray, J. (2007). Screening, Brief Intervention, and Referral to Treatment (SBIRT): Toward a public health approach to the management of substance abuse. Substance Abuse: Journal of The Association for Medical Education and Research in Substance Abuse. 28:3, 7-30. This is a summary of existing literature on the different aspects of SBIRT. It found that self-report screening tests are mostly reliable and valid and the response bias can be predicted, detected and minimized. SBI can reduce alcohol use for at least 12 months in heavy drinkers who are not dependent. SBIRT components are acceptable to both genders as well as adolescents and adults. SBI is also effective with risky drinkers, smokers and according to some evidence, marijuana users as well.

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Annotated Bibliography P4

Bradley, K. A., Williams, E. C., Achtmeyer, C. E., Hawkins, E. J., Harris, A. H. S., Frey, M. S., et al. (2007). **Measuring performance of Brief Alcohol Counseling in medical settings: A review of the options and lessons from the Veterans Affairs (VA) healthcare system. Substance Abuse, 28(4), 133-147.** This technically rich and lengthy article makes a number of points. First, that providers should not rely on identifying alcohol misuse patients without the assistance of systematic, routine screening. Second, the development of a performance measure is critical in standardizing Brief Alcohol Counseling (BAC) across medical settings. Currently, there is no accepted performance measure, nor a consensus of the single best alcohol screening test. The performance measure is necessary to (1) assess the proportion of patients with alcohol misuse who are offered BAC across healthcare organizations (2) to promote the implementation of high-quality, evidence-based BAC and (3) to evaluate whether targeted quality improvement efforts are effective. Furthermore, the performance measure needs to take the following aspects into account: the proportion of patients receiving BAC, the quality of the counseling, whether the provider gave explicit advice to drink within recommended limits/abstain, and whether they gave feedback linking alcohol use to health.

Canagasaby, A., Vinson, D.C. (2005). **Screening for hazardous drinking using one or two quantity-frequency questions. Alcohol and Alcoholism, 40(3), 208-213.** In an effort to streamline alcohol screening questions, this study looks at whether one or two quantity-frequency questions are effective in detecting hazardous drinking, compared to a single screening question. Results show that both approaches may be effective in detecting alcohol use disorders, as long as there are follow-up questions if the individual screens positive.

McRee, B., Granger, J., Babor, T., Feder, I., Horn, A., Jr., Steinberg, Von Eigen, K. (2005). **Reducing tobacco use and risky drinking in underserved populations: The need for better implementation models. Annals of Family Medicine, 3(2), 558-560.** This more recent study looks at how successful SBI implementation has been in Federally Qualified Healthcare centers when administered by (1) a clinician (2) a specialist and (3) a Health Educator. Of the 3,502 patients screened, 64% were screened by a clinician, 28% by a specialist and 8% by a health educator. Smaller clinics were able to saturate the client population more effectively and lack of time was the greatest barrier to implementation. Since screening detects usage patterns, it is important to conduct this step so that interventions can be offered as necessary. Finding a sustainable screening model was problematic in this study and one suggestion is that centers find a model that “carves out” key elements and gives them to dedicated Health Educators. The other is to potentially use students in professional healthcare programs that can provide consistent care without a high frequency of burnout.

Brief treatment for problem drinkers. (August, 2004). Harvard Mental Health Letter, 4-6. This was a meta-analytic review of SBI to determine the effectiveness of brief treatment in changing the lifestyles of and accelerating recovery of problem drinkers. The CAGE questionnaire has been found to be accurate, identifying 60-70% of alcohol abusers. Two-thirds of practitioners did not regularly screen patients for alcohol problems due to difficulty of subject matter and time constraints, and nearly 60% of general practitioners did not administer SBI because they believed patients wouldn't tell the truth. Further study is needed to learn more to determine the populations in which SBI will be most effective, including cost-effectiveness.

Rochat, S., Wietlisbach, V., Burnand, B., Landry, U., Yersin, B. (2004). **Success of referral for alcohol dependent patients from a general hospital: Predictive value of patient and process characteristics. Substance Abuse, 25(1), 9-15.** This study looks at the predictive characteristics of patients and the processes used when evaluating and referring problem drinkers. Patient characteristics that predict success in treatment adherence and total abstinence were: over the age of 45, not living alone, employed and motivated to go to treatment. Process characteristics that predict success were: detoxification of patient at the time of referral and a full multidisciplinary referral meeting (involving healthcare, social workers and psychiatric staff).

Roche, A.M. Freeman, T. (2004). **Brief Interventions: good in theory but weak in practice. Drug and Alcohol Review, 23, 11-18.** Roche offers a counter study which examines why Brief Interventions, on an international level, have largely failed. Even though primary care has been identified as an appropriate setting, they have not been effective because of the low implementation rates, lack of time and capacity to conduct screens. Shorter screening tools and computerized administration could improve BI rates. Many general practitioners (GPs) also fear that they might lose patients and GPs themselves can have negative attitudes towards alcohol and other drug-related problems. There is also a lack of skill, ability and confidence that prevents GPs from conducting SBI. Nurse practitioners (NP) are good at preventative services, appear to be more likely to identify non-dependent users (UK) and are more cost-effective than GPs but more extensive training is needed to address poly-drug use and comorbidity issues. Nurses cite two main barriers: lack of training and role ambiguity—often times feeling that SBI is the domain of the GP. Roche recommends that GPs are still necessary to the process and should continue to be targeted to increase the occurrence of SBI and instead of focusing on implementation of SBI in primary care, more could be done to implement secondary prevention efforts. Future research to determine whether the NP model is transferable to the U.S. and Australia is needed but it appears that nurses offer a more promising way to increase implementation and are most cost-effective.

Annotated Bibliography P5

Vinson, D.C., Galliher, J.M., Reidinger, C., Kappus, J.A. (2004). **Comfortably engaging: Which approach to alcohol screening should we use?** *Annals of Family Medicine*, 2(5), 398-404. Primarily, this study looks at what screening tool would ease providers' comfort when attempting to engage the patient in a conversation about alcohol use (CAGE vs. single question). The screening tool can set the tone of the encounter and may have an impact on the patient's willingness to explore change. Previous research has focused on a tool's sensitivity; not necessarily a provider's comfort or willingness to use it. If the tool is uncomfortable, even if sensitive, it is less likely to be used. A tool's acceptability, therefore, plays a large role in implementation. Acceptability factors include ease of use, brevity and comfort for patient and clinician. Ultimately, the CAGE and single question were equally comfortable for patient and clinician, leaving the choice of the tool up to the clinician.

Burke, B.L., Arkowitz, H., Menchola, M. (2003). **The efficacy of Motivational Interviewing: A meta-analysis of controlled clinical trials.** *Journal of Consulting and Clinical Psychology*, 71:5, 843-861. In an examination of Motivational Interviewing (MI), this article finds that MI is efficacious, both by itself and as an enhancement to other treatments. No support for efficacy was found in the areas of smoking cessation and HIV risk behaviors. In the medium range of efficacy was found alcohol, drug, diet and exercise problems. MI had an effect, not only on the target measures, but also on the social impact measures.

Wutzke, S.E., Conigrave, K.M., Saunders, J.A.B., Hall, W.D. (2002). **The long-term effectiveness of Brief Interventions for unsafe alcohol consumption: a 10-year follow-up.** *Addiction*, 97, 665-675. This study was to examine the long-term impact of brief and early interventions on harmful alcohol consumption by using a treatment group that received three forms of intervention and a control group which was given no treatment. At the early stage of the study, nine months, the intensive intervention reduced the number of unsafe drinkers. However, at 10 years it was found that the extensive counseling had little effect besides the simple advice, feedback and generalized information. This study implies that there is evidence of short-term effectiveness of alcohol related brief interventions and simple advice seems to be as effective as costly and time consuming treatments.

Williams, R., Vinson, D.C. (2001). **Validation of a single screening question for problem drinkers.** *The Journal of Family Practice*, 50(4), 307-312. This study found that a single question alcohol screen was useful and sensitive in detecting problem alcohol use. The question was correlated with breath and blood alcohol tests and seems to be more effective at capturing hazardous drinkers rather than those with alcohol use disorders. Tobacco use was also measured and was found to correspond with problem drinking. The simplicity and brevity of a single question make it ideal for use as an effective screening tool, which could lead to greater prevalence in brief interventions and referrals to treatment. Unlike previous single-question tools, this question includes different thresholds for men and women and is therefore more effective.

Del Boca, F. K., Noll, J. A. (2000). **Truth or consequences: The validity of self-report data in health services research on addictions.** *Addiction*, 95:3, 347-360. This relates a cognitive social-psychological model of the data-gathering process and is presented with a similar model for the question-answering process to determine the factors influencing the accuracy of self-report data in health services research. Biomedical measures and other independent data sources may provide more accurate estimates of alcohol and drug use than self-report measures. Self-report data were not found to be either essentially valid or invalid, but dependent on the personal circumstances of the respondent and the sophistication of the data gatherer. Information tends to be more accurate when referencing to an exact time period. Questions regarding alcohol use are thought to be less threatening and produce more accurate responses when asked in the context of a general health interview.

Heather, N. (1995). **Interpreting the evidence on Brief Interventions for excessive drinkers: The need for caution.** *Alcohol and Alcoholism*, 30, 287-296. This article addresses the need for caution while developing intervention models for alcohol users. First, "intervention models" are often seen as a way to categorize care and do not necessarily recognize the different affects it might have on different types of patients. Second, there are contradictory findings in opportunistic studies and clinic-based studies which raise questions about efficacy for things like differences in gender and patient perception. Third, BI in hospital settings are particularly susceptible to variation because so much of a BI's success is tied to the delivery. Ultimately, the goal of research should be to target which groups of patients would benefit most from intervention. Heather suggests that they be reserved for patients with relatively less severe use patterns and that other cost-effective models could be developed and/or implemented to serve patient diversity.

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Annotated Bibliography P6

SUSTAINABILITY/ALTERNATIVE MODELS

Despite the lack of standardization, there is flexibility in how medical providers can choose to implement SBI. This may be particularly beneficial for certain patient populations or medical settings and, in fact, may promote the widespread exposure and sustainability of SBIRT. One area is to refine the universal approach through time management by identifying patient characteristics that may enhance the success of their substance use reduction while giving BI. Combining SBI with other health screening and education efforts can also capitalize further on what it means to give integrated care, particularly because alcohol is one of the top four factors in morbidity. Peer or clergy models leave the BI to non-medically trained professionals but may elicit a more sustained change effort from the patient. The use of medical students to conduct SBI could also lend itself to sustainability because burnout may be lower and the students will contribute to system change as they incorporate SBI attitudes and behaviors in their future practice. Other models are less philosophical and more technical, using the phone, web and other tools to engage “non-contact” encounters with patients who would otherwise not use or be resistant to in-person screening and feedback.

Daepfen, J.-P., Bertholet, N., Gmel, G., Gaume, J. (2007). Communication during brief intervention, intention to change, and outcome. Substance Abuse, 28:3, 43-51. This report examines the relationship between the patient’s intent to change and their actual consumption 12 months later. It also asks whether there is a relationship between the patient’s intent to change and the communication characteristics of the BI they received. Findings indicate that patients who have more time to explore their change talk during the intervention and who can set an objective by the end of the session are more likely to reduce use in 12 months. Daepfen recommends that BI might be modified in such a way to target patients who would benefit from the session more. These patients may be those with a higher baseline readiness to change, or those who have reached a certain threshold of hazardous drinking and are more amenable to seeking help. Future BI research should try to identify predictors of BI effectiveness as a means to increase the efficacy of the overall model.

Feldstein, S.W., Miller, W.R. (2007). Does subtle screening for substance abuse work? A review of the Substance Abuse Subtle Screening Inventory (SASSI). Addiction, 102, 41-50. Feldstein asks whether a more subtle, indirect approach to alcohol screening is valid compared to more direct measures. In contrast to the SASSI manual, independent studies found that internal consistency for this subtle approach was fair to poor, compared to a high internal consistency for direct scales. Furthermore, no independent study can claim that SASSI offers a unique advantage in detecting substance use disorders through indirect scales that circumvent denial and dishonesty and there is a significant rate of false positives. SASSI should not be used as a sole measure to detect substance use.

Funderburk, J. S., Maisto, S. A., Sugarman, D. E. (2007). Brief alcohol interventions and multiple risk factors in primary care. Substance Abuse, 28:4, 93-105. Funderburk asks what the prevalence and co-variation of multiple risk factors is with harmful/hazardous drinking. The article focuses on primary care because patients with risky drinking often demonstrate tendencies for other health risk factors that could be ideally addressed in this setting. Currently, most interventions and research are designed to target a specific health risk and do not address or integrate concurrent risks, even though the four main contributors to morbidity are alcohol, smoking, poor eating and a sedentary lifestyle. Ultimately, there is a high prevalence of multiple risk factors with risky drinkers and this supports the need for evidence-based interventions that address more than one risk factor. One successful alternative cited was a web-based intervention in New Zealand that gave personalized feedback through a student health center by addressing a number of areas (e.g. physical activity, fruit and vegetable intake, alcohol and smoking consumption etc.).

Knight, J. R., Harris, S. K., Sherritt, L., Van Hook, S., Lawrence, N., Brooks, T., et al. (2007). Adolescents’ preferences for substance abuse screening in primary care practice. Substance Abuse, 28:4, 107-117. Knight looks at what method of screening adolescents prefer in a primary care setting and how different screening methods might influence their willingness to provide honest answers. This is a key patient-audience to target, particularly since 80% of high school students in the survey have begun to drink and 50% reported using an illicit drug. Findings indicate that paper or computer questionnaires are the best way to administer substance abuse screening tests and that adolescents were clearly more comfortable and honest with paper administrations (the larger part of the sample used paper; those who used the computer were a sub-sample and reported similar levels of comfort). Once screened, if a youth shows up positive, the provider may need to schedule an additional appointment to provide an adequate assessment.

Annotated Bibliography P7

Zisserson, R. N., Palfai, T. P., Saitz, R. (2007). **“No contact” interventions for unhealthy college drinking: Efficacy of alternatives to person-delivered intervention approaches.** *Substance Abuse*, **28**:4, 119-131. In an effort to study alternative models, this approach looks at whether SBI can be effectively delivered to college students without direct, real-time contact. Print and computer-based modalities were developed because other models of SBI were not reaching this population. Ten of eleven studies reviewed showed some efficacy for no-contact interventions and can decrease alcohol consumption for at least six weeks after the intervention was delivered. These findings are comparable to in-person intervention models. Some research found that discussing personal feedback with a counselor did not increase efficacy; some even found that the in-person model actually decreased effectiveness. No-contact interventions, while comparable to in-person models, may lose effectiveness in the longer term. Further research is needed to determine the duration of effectiveness, mechanisms of change and how to enhance the effectiveness of no-contact interventions, particularly targeting freshmen at orientation, university-wide emails and links on frequented websites.

Baker, A., Lee, N.K., Claire, M., Lewin, T.J., Pohlman, S., Saunders, J.B., Kay-Lambkin, F., Constable, P., Jenner, L., Carr, V.J. (2005). **Brief cognitive behavioural interventions for regular amphetamine users: a step in the right direction.** *Society for the Study of Addiction*, **100**, 367-378. Amphetamine users are often diagnosed with mental health disorders and this study asks whether they might benefit from Cognitive Behavior Therapy (CBT). A stepped-care approach is recommended for this population, where more intensive or different treatment is given only if a lesser form is insufficient. Findings claim that participants who had two or more sessions of CBT were more likely to abstain and depression decreased in the short term. It is important to note this study had significant attrition which may have inflated overall findings and there was little significant difference between treatment and control groups in a variety of areas (e.g. amphetamine use and dependence, reduction of poly-drug use, criminal activity etc.).

Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., Hingson, R. (2005). **Brief motivational intervention at a clinic visit reduces cocaine and heroin use.** *Drug and Alcohol Dependence*, **77**, 49-59. The article asks whether peer-MI can be effective for out-of-treatment cocaine and heroin users. Although BIs have shown to be effective with alcohol users, less is known about drug using patients. As a follow up to an initial pilot study, this study corroborates self-reported data with hair testing. For the most part, the two methods demonstrated accuracy in the substance-use reported by patients (88% for cocaine users and 90% for heroin users). Although there was not much difference between the treatment and control groups at three months, the intervention group was more likely to be abstinent at six months. Peer-based MI appears to be efficacious at least until six months from baseline and appears to reduce actual drug levels for cocaine users.

McRee, B., Granger, J., Babor, T., Feder, I., Horn, A., Jr., Steinberg, Von Eigen, K. (2005). **Reducing tobacco use and risky drinking in underserved populations: The need for better implementation models.** *Annals of Family Medicine*, **3**(2), 558-560. This more recent study looks at how successful SBI implementation has been in Federally Qualified Healthcare centers when administered by (1) a clinician (2) a specialist and (3) a Health Educator. Of the 3,502 patients screened, 64% were screened by a clinician, 28% by a specialist and 8% by a Health Educator. Smaller clinics were able to saturate the client population more effectively and lack of time was the greatest barrier to implementation. Since screening detects usage patterns, it is important to conduct this step so that interventions can be offered as necessary. Finding a sustainable screening model was problematic in this study and one suggestion is that centers find model that “carves out” key elements and gives them to dedicated health educators. The other is to potentially use students in professional healthcare programs that can provide consistent care without a high frequency of burnout.

Anderson, P.A., Grey, S. F., Nichols, C., Parran, T. V., Graham, A. V. (2004). **Is screening and brief advice for problem drinkers by clergy feasible? A survey of clergy.** *Journal of Drug Education*, **34**:1, 33-40. Anderson asks how it appropriate it is for clergy to conduct screening and brief interventions for alcohol and other substance abuse. Some people do not see a physician regularly, may not be screened due to the constraints around true universal screening, and clergy have traditionally been a source of advice. Of the 315 respondents (1000 churches were notified), many were both interested in and would be able to use the strategies of SBI. The specific religious training of various clergy would help reach more specific portions of the population that may not respond as favorably to medical advice. Overall, most clergy who responded possessed attitudes about drugs and alcohol that are compatible with the medical model, although more evidence is needed to support this as an effective alternative model.

Babor, T.F., Higgins-Biddle, J.C., Higgins, P.S., Gassman, R.A., Gould, B.E. (2004). **Training medical providers to conduct alcohol screening and brief interventions.** *Substance Abuse*, **25**(1), 17-26. Babor looks at the Cutting Back training program to see whether it helps facilitate the implementation of SBI among physicians, medical students, and non-physicians. All three groups significantly increased their knowledge after training, particularly in what constitutes moderate drinking. There was also a significant decrease to perceived obstacles to implementation as well as increased confidence, self-efficacy, and positive attitudes towards SBI.

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Annotated Bibliography P8

Wilk, A.I., Jensen, N.M. (2002). **Investigation of a brief teaching encounter using standardized patients.** *Journal of General Internal Medicine*, **17**, 356-360. Wilk asks whether using a “standardized patient” to teach SBI techniques has an impact in residents’ detection and advising of problem drinkers. As a result of their training (n = 19), significantly more residents asked the SP about alcohol use (52.6% before training; 94.6% after), as well as screened and advised patients using their post-educational intervention skills (26% before; 73.6% after). SPs provide effective teaching encounters and are useful for measuring resident behavior and skill in implementing SBI. Future studies should include a control group.

Blondell, R. D., Looney, S. W., Northington, A. P., Lasch, M. E., Rhodes, S. B., Mcdaniels, R. L. (2001). **Can recovering alcoholics help hospitalized patients with alcohol problems?** *The Journal of Family Practice*, **50:5**, 447. The non-randomized study compares usual care, brief intervention, and peer intervention on hospitalized patients with alcohol problems to determine whether recovering alcoholics may be an effective intervention tool for hospitalized patients with alcohol problems. Brief intervention followed by peer intervention appeared to be the most effective for trauma victims. Peer intervention was perceived as the most motivational factor for seeking help.

Dyches, H., Alemagno, S., Llorens, S.A., Butts, J.M. (1999). **Automated telephone-administered substance abuse screening for adults in primary care.** *Healthcare Management Science*, **2**, 199-204. This article looks at the efficacy of telephone-administered substance abuse screening, particularly in how patients and practitioners react to this method and whether patient responses are concordant with responses that would be given to a nurse practitioner. Potential benefits are: 100% reliable question delivery, less embarrassing context, higher levels of risk behavior disclosure, immediate scoring, and no data entry or coding costs. Both patients and practitioners had a generally positive response to this method (half of patients and 80% of physicians felt they had discussed substance abuse more with their patients). There was a 85% concordance rate for alcohol and 90% for drug screening. Telephone screening, ultimately, may be a useful, cost-effective way to screen patients in a standardized way and appears to be comparable to in-person screenings.

Walsh, R.A., Sanson-Fisher, R.W., Low, A., Roche, A.M. (1999). **Teaching medical students alcohol intervention skills: results of a controlled trial.** *Medical Education*, **33**, 559-565. As a follow up to the 1997 Roche study, this study again looks at whether there are differences between using a didactic or interactive teaching model for alcohol intervention, with medical students. Alcohol-related knowledge improved in both groups from pre- to post-test, going from unsatisfactory to satisfactory. Ultimately, no training method appeared to be superior, although traditional lecturing may be more cost-effective and less time-consuming. These findings are in contrast to education around smoking cessation. Training can improve medical students’ performance in alcohol intervention and is therefore recommended. Further research is needed to determine which training method is more effective.

Annotated Bibliography P9

PUBLIC POLICY

The public policy discussion centers primarily on the cost-effectiveness of SBI. In over 20 years of research, most studies support SBI in primary care and trauma/emergency department settings. Many studies say it even exceeds the usefulness of other preventative services. However, it is difficult to define the “worth” of the service because collecting greater socio-economic outcome data over long periods of time, in “real world” settings, is often unrealistic. Furthermore, standard measurements of service are not yet identified. Early studies had smaller implementation and were able to establish control groups to compare cost-benefit analysis but because SBI has become a much larger policy initiative, these more intensive studies are not always practical or feasible. As economics vary per region and with time, it may be beneficial to update the estimated cost savings, particularly as SBI is implemented in an increasingly broader context. Cost-benefit studies can also aid the hospital or clinic administrator when program planning, as a way to identify programs that are competing for the same resources; this may be most noteworthy as current publicly funded SBI programs lose funding and must locate additional dollars to continue service.

Kraemer, K. L., (2007). The cost-effectiveness and cost-benefit of screening and brief intervention for unhealthy alcohol use in medical settings. Substance Abuse. 28:3, 67-77. This recent article provides a recent meta-analytic perspective to a question that has been frequently asked in decades of published literature: is alcohol SBI a wise use of healthcare resources? Nearly all identified studies supported alcohol screening and intervention in primary care settings. While cost-benefit studies cannot indicate the “worth” of the service, it is useful for program planning, particularly if there are other programs competing for the same resources. It is important to note that costs-per-clinical-outcome are best compared with other alcohol-directed programs but should not be compared to general resource allocation. The highest quality studies show that SBI even exceeds other preventative services such as tobacco screening, colorectal cancer screening, flu shots and hypertension screening. Future research needs to look towards improving the methods for measuring costs and effects of alcohol screening as well as estimating costs over a longer period of time. This includes having improved data in “real world” settings, better estimates of short- or long-term effects of alcohol use on clinical outcomes, more accurate utility estimates, a better understanding on how alcohol affects the quality of life for spouses and significant others and more sophisticated computer simulation models that track the natural history of healthy and unhealthy alcohol use.

Babor, T., F., Higgins-Biddle, J. C., Dauser, D., Burtleson, J. A., Zarkin, G.A., Bray, J. (2006). Brief interventions for at-risk drinking: Patient outcomes and cost-effectiveness in managed care organizations. Alcohol and Alcoholism, 34-36. As a later study to build on his preliminary one, Babor tries out the P & S model of SBI implementation in real-world conditions by including a third category as a control group and testing for cost-effectiveness. Findings indicate that SBIs of three-five minutes in primary care settings can reduce alcohol consumption and associated risks after three months, though reductions are somewhat less than what had previously been reported in meta-analysis of the literature. Overall, the cost of SBI is quite low when implemented in busy primary care environments. Additional strategies may be required for high-risk drinkers who fail to decrease their alcohol use after one session.

Screening and Brief Intervention for Alcohol Abuse and Dependence. (2006). Alcoholism & Drug Abuse Weekly, 10, 1002. This study estimated number of visits due to injury, alcohol-related illness, or alcohol diagnosis for patients 18 and older. Total excess cost as a result of alcohol misuse by payer source for each state was estimated to determine the extent of savings if SBI are placed in hospitals throughout the U.S. Nationwide saving to Medicare, Medicaid and private payers was estimated at \$12 billion, with Colorado savings estimated at \$180 million. Conducting SBI is recommended, without fear of burdensome cost of care resultant from insurance denial of payment for injuries related to alcoholism.

Mundt, M. P. (2006). Analyzing the costs and benefits of Brief Intervention. Alcohol Research and Health, 29:1, 34-36. Mundt asks whether SBI can be analyzed in terms of cost-effectiveness by looking at the Project TrEAT model, implemented in primary care clinics (also examined in one of the Fleming articles in this bibliography). TrEAT looks at cost as it pertains to medical and societal impacts. Total cost per intervention was estimated at \$205 and screening/assessment account for more than 50% of total costs. An essential inclusion was patient costs because patient willingness to participate often depends on time and travel costs as well as perceived benefit. Overall, the project showed reductions of alcohol consumption among high-risk drinkers, lower healthcare and motor vehicle costs, but no significant legal cost reductions. Findings indicate that the benefits of this program outweigh the costs.

SBIRTCOLORADO

Annotated Bibliography P10

Gentilello, L. M., Ebel, B. E., Wickizer, T. M., Salkever, D. S., Rivara, F. P. (2005). Alcohol interventions for trauma patients treated in emergency departments and hospitals: A cost-benefit analysis. Annals of Surgery, 241:4, 541-550. This cost-benefit study takes into account several factors: screening costs, costs of SBI, emergency department visits and hospitalization rates for problem drinkers, intervention effectiveness, costs of emergency visits, and the estimation of cost savings from reduced trauma recidivism. Findings indicate that over a quarter of adult patients are candidates for SBI and simulations found that SBI could result in saving health-care costs by 91.5%. If implemented on a national level, SBI could save \$1.82 billion annually. The way healthcare is funded, however, will need to be reexamined because most insurance companies still have the right to refuse a claim if there is alcohol involved.

Kunz, F.M., French, M.T., Bazargan-Hejazi, S. (2004). Cost-effectiveness analysis of a Brief Intervention delivered to problem drinkers presenting at an inner-city hospital emergency department. Journal of Studies on Alcohol, 65, 363-370. This article finds that using health advocate professionals instead of medical authorities at an urban ED reduced the cost of intervention but may have adversely impacted the patient's likelihood of following recommendations. The net effect on cost-effectiveness is therefore uncertain. Costs associated with treatment include staff salaries, equipment, patient incentives and overhead. Of total program costs, 60% was spent on personnel salary and benefits, 35% on overhead and patient incentives and 5% on supplies and equipment. Ultimately, results indicate that SBI is relatively low-cost in this setting and can be generalized to disadvantaged, urban populations but not to the U.S. as a whole.

Zarkin, G. A., Bray, J. W., Davis, K. L., Babor, T. F., Higgins-Biddle, J. C. (2003). The cost of Screening and Brief Intervention for risky alcohol use. J Stud Alcohol, 64:6, 849-857. This study attempts to estimate the provider-incurred costs of SBI for risky drinkers in MCOs (large medical consortiums), using the S (specialist) & P (practitioner) models. The estimated total cost for a 100,000-member MCO under the S model is \$44,045/year, or roughly \$0.40 per member. In the P model, the total estimate was \$46,337, or roughly \$0.46. Zarkin recommends that MCOs should consider implemented SBI to treat risky drinkers, as the cost is relatively modest.

Annotated Bibliography P11

SETTINGS—PRIMARY CARE GENERAL PRACTICE

While research has long agreed that SBI is a good preventative initiative in primary care, success depends on adherence to regular screening, the sensitivity of screening tools, sensitivity of counseling around behavior change and the efficacy of that behavior change by the patient. When there is strong fidelity to the SBI model, it is one of the highest ranking preventative services. Primary care, unlike some other medical settings, offers an ideal place to connect with patients on a variety of health concerns and the SBI model here may be more integrated with discussion about other health areas, including diet and exercise. There is still uncertainty around which type/level of practitioner should administer the SBI as well as the usefulness of universal vs. targeted screening, particularly when making the distinction between treatment-seeking and non-treatment-seeking patients. Provider education around SBI is important to reduce misconceptions about the model and encourage comfort with using the screening tools and giving feedback. The biggest challenge may be determining how best to fit the SBI model in this medical setting that has quick patient turn-around.

Solberg, L.I., Maciosek, M.V., Edwards, N.M. (2008). Primary care intervention to reduce alcohol misuse: Ranking its health impact and cost effectiveness. American Journal of Preventive Medicine, 34(2),143-152.e3. This article gives a recent perspective on the effectiveness of primary care intervention to reduce alcohol misuse. Solberg finds that the effectiveness of screening depends on four factors: adherence with screening, sensitivity of screening tools, sensitivity of counseling in producing behavior change, and the efficacy of behavior change in reducing health consequences. The composite mean rate of effectiveness for reducing heavy/hazardous drinking was 17.4%. It was assumed that acute alcohol-attributed injuries would be reduced 90% when patient adhered to clinical advice, whereas chronic conditions would be reduced only 25%. Findings indicate that alcohol SBI is one of the highest-ranking preventative services; it is shown to be cost-effective from a health system perspective and cost-saving from a societal perspective; implementation of SBI should be prioritized, especially since current rates of providing service are so low.

Funderburk, J. S., Maisto, S. A., Sugarman, D. E. (2007). Brief alcohol interventions and multiple risk factors in primary care. Substance Abuse, 28:4, 93-105. Funderburk asks what the prevalence and co-variation of multiple risk factors is with harmful/hazardous drinking. The article focuses on primary care because patients with risky drinking often demonstrate tendencies for other health risk factors that could be ideally addressed in this setting. Currently, most interventions and research are designed to target a specific health risk and do not address or integrate concurrent risks, even though the four main contributors to morbidity are alcohol, smoking, poor eating, and a sedentary lifestyle. Ultimately, there is a high prevalence of multiple risk factors with risky drinkers and this supports the need for evidence-based interventions that address more than one risk factor. One successful alternative cited was a web-based intervention in New Zealand that gave personalized feedback through a student health center by addressing a number of areas (e.g. physical activity, fruit and vegetable intake, alcohol and smoking consumption etc.).

Hutchings D., Cassidy P., Dallolio E., Pearson, P., Heather, N., Kaner, E. (2006). Implementing Screening and Brief Alcohol Interventions in primary care: Views from both sides of the consultation. Primary Healthcare Research and Development, 7, 221-229. This random sample of six focus groups used quota sampling to simultaneously explore and compare health professionals' and patients' views on the acceptability and feasibility of screening and brief alcohol intervention in primary care. Both health professionals and patients believe that a brief intervention could be useful for patients who were not aware of how much they were drinking or what the recommended levels were, and that screening was most appropriate in circumstances where alcohol-related issues were already brought up and not the only topic discussed. Additionally, healthcare professionals assumed that patients were more likely to feel comfortable discussing alcohol issues with a practice nurse, while patients felt they would approach their general practitioner concerning a problem. A targeted approach to alcohol screening and intervention, rather than universal screening, was deemed more acceptable by patients and practitioners.

Babor, T. F., Higgins-Biddle, J., Dauser, D., Higgins, P., Burtleson, J. A. (2005). Alcohol screening and brief intervention in primary care settings: implementation models and predictors. Journal of Studies on Alcohol, 66, 361-368. As a preliminary study for the P&S (practitioners & specialists) model, Babor tests the success of SBI implementation in Managed Care Organizations (MCOs: large medical consortiums) when high-level professionals deliver the service compared to mid-level professions who are trained as alcohol-service specialists. Findings conclude that success is largely dependent upon the operational style of each particular clinic.

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Annotated Bibliography P12

Ballesteros, J., Duffy, J.C., Querejeta, I., Arino, J., Gonzalez-Pinto, A. (2004). Efficacy of Brief Interventions for hazardous drinkers in primary care: Systematic review and meta-analyses. Alcoholism: Clinical and Experimental Research, 28(4), 608-618.

This systematic meta-analysis purports to be more rigorous than previous studies and looks at the evidence around the efficacy of doing SBI in primary care settings. Findings indicate that there is no clear evidence linking the intensity of SBI with patient outcome and results suggest better outcomes for non-treatment-seeking patients as opposed to treatment-seeking ones. Even though results indicate a lower level of "success" than previous studies, there remains evidence that SBI is efficacious in primary care. Ultimately, SBI seem to be most effective when applied to heavy drinkers.

Heather, N., Dallolio, E., Hutchings, D., Kaner, E., White, M. (2004). Implementing routine Screening and Brief Alcohol Intervention in primary healthcare: A delphi survey of expert opinion. Journal of Substance Use, 9:2, 68-85. This article looks at how best to implement SBI in primary healthcare settings in a routine and enduring fashion. Heather suggests that all patients receive an audit passed out by the receptionist. General practitioners can then proceed with SBI for patients who score positive for hazardous or harmful drinking. Because some studies demonstrate that blanket-use of SBI can be problematic, findings indicate that routine SBI should be given to new patients, at general health check-ups, and at special clinics where heavy drinking is likely to be found. Experts agree that facilities should have an alcohol specialist to carry the main load of the SBI work.

Saitz, R., Larson, M.J., Horton, N.J., Winter, M., Samet, J.H. (2004). Linkage with primary medical care in a prospective cohort of adults with addictions in inpatient detoxification: Room for improvement. Health Services Research, 39(3), 587-606. Previous studies have shown that linking patients with addictions to primary care is beneficial because: (1) patients do not use more expensive episodic treatment (e.g. the ED) (2) patients are less likely to be hospitalized for more severe issues and (3) primary care has been shown to improve addiction severity. There are, however, several barriers in getting addicted patients to primary care providers. In this study (470 residential detox patients), 28% had transportation problems, 21% did not feel they needed regular primary care, and 11% were fearful that others would find out about their health problems. 55%, however, believed that medical treatment was important and this could be related to the fact that 47% reported chronic illness, 26% had been prescribed medication for a psychiatric disorder, and 22% reported prior suicide attempts. Linkage to primary care was shorter and correlated with the following patient conditions: female, no recent incarcerations, those with abstinence support among family or friends, and those who had visited primary care in the six months prior to baseline. Health insurance only predicted linkage to primary care if it occurred during the early period after detoxification. Ethnicity, recent addiction or mental health treatment, addiction severity, health status, substance abuse problem recognition, and perceived need for medical care were not factors that predicted linkage, although they were hypothesized to do so. Interventions to improve linkage could target men. Further research is necessary to improve motivation for detox patients to link with primary care.

Whitlock, E. P., Polen, M. R., Green, C. A., Orleans, T., Klein, J. (2004). Behavioral counseling interventions in primary care to reduce risky/harmful alcohol use by adults: A summary of the evidence for the U.S. preventive services task force. Annals of Internal Medicine, 140, 557-568. In looking at risky or harmful drinkers, this study looks to see what methods of implementation were employed during SBI sessions. It also looks to see if there are adverse effects associated with SBI. Findings indicate that good quality, brief sessions could reduce risky drinking behavior, while very brief or single-contact sessions were less effective or ineffective. Interventions generally included advice, feedback, goal setting, and giving additional contacts for support. A real-world clinic practice of SBI would likely need to include a commitment to planning, the allocation of staff to identify high-risk patients, and the delivery of resources such as clinician training etc.

Annotated Bibliography P13

Vinson, D.C., Galliher, J.M., Reidinger, C., & Kappus, J.A. (2004). **Comfortably engaging: Which approach to alcohol screening should we use?** *Annals of Family Medicine*, 2(5), 398-404. Primarily, this study looks at what screening tool would ease providers' comfort when attempting to engage the patient in a conversation about alcohol use (CAGE vs. single question). The screening tool can set the tone of the encounter and may have an impact on the patient's willingness to explore change. Previous research has focused on a tool's sensitivity; not necessarily a provider's comfort or willingness to use it. If the tool is uncomfortable, even if sensitive, it is less likely to be used. A tool's acceptability, therefore, plays a large role in implementation. Acceptability factors include ease of use, brevity, and comfort for patient and clinician. Ultimately, the CAGE and single question were equally comfortable for patient and clinician, leaving the choice of the tool up to the clinician.

Beich, A., Thorsen T., Rollnick S. (2003). **Screening in Brief Intervention trials targeting excessive drinkers in general practice: Systematic review and meta-analysis.** *BMJ*, 327, 1-7. This systematic review and meta-analysis of randomized controlled trials that used SBI found that many studies contained several sources of bias that might lead to overestimates of the effects of intervention. Not only were the screenings extremely time consuming for the practitioners, but not more than three people of 90 who tested for excessive alcohol use reduced their drinking. The findings call universal screening into question.

Saitz, R., Horton, N.J., Sullivan, L.M., Moskowitz, M.A., Samet, J.H. (2003). **Addressing alcohol problems in primary care: A cluster randomized, controlled trial of a systems intervention.** *Annals of Internal Medicine*, 138, 372-382. Saitz asks whether providing physicians with patients' alcohol screening results will affect the physician's decision to have a discussion with the patient about their alcohol use. At the time of this article, no evidence was available to prove effectiveness in providing screening results if the physician did not already possess training in SBI. Results of this study suggest that screening and prompting the physicians produces modest effects: (1) increasing SBIs by physicians and (2) reduction in drinking in patients, six months later. While only moderately effective, this approach may be more feasible and less resource intensive than more intense training programs.

Yarnall, K. S.H., Pollak, K. I., Ostbye, T., Krause, K. M., Michener, J. L. (2003). **Primary care: Is there enough time for prevention?** *American Journal of Public Health*, 93:4, 635-641. Four factors of preventative care were compared to the clinical time available to primary care physicians: (1) A list of recommended services (2) the frequency of performing each service (3) the number of people requiring each service and (4) the time required to administer each service. Findings indicate that it is not feasible for physicians to deliver all of the services recommended by the USPSTF to a representative panel of patients. Preventive services offered in visits to a primary care physician's office for chronic and acute illness increased the length of the visits by 2.7 minutes. The current system of preventative care delivery, provided by physicians, no longer meets national needs.

Lock, C., Kaner, E., Lamont, S., Bond, S. (2002). **A qualitative study of nurses' attitudes and practices regarding Brief Alcohol Intervention in primary healthcare.** *Journal of Advanced Nursing*, 39:4, 333-342. Nurses seem to be an underutilized tool in the battle to reduce alcohol use and this article looks at their attitudes about SBI in primary care settings. While nurses appear to have many opportunities to offer intervention, they have received little training education to go about administering SBI. Nurses cited patient reactions such as aggression, embarrassment, or guilt as reasons to avoid discussing alcohol use. Additionally, they didn't feel patients were honest about their alcohol use. Findings indicate that better preparation and support is necessary to decrease the uneasiness that nurses feel about discussing alcohol-related problems with patients, particularly because their role could be an important one.

Aalto, M., Seppa, K., Mattila, P., Mustonen, H., Ruuth, K., Hyvarinen, H., Pulkkinen, H., Alho, H., Sillanaukee, P. (2001). **Brief Intervention for male heavy drinkers in routine general practice: A three year randomized controlled study.** *Alcohol and Alcoholism*, 36:3, 224-330. A randomized clinical trial of 296 male patients from five primary care outpatient clinics, administering intervention sessions at 2, 6, 12, 18, 24, and 30 months for one group, 12 and 24 months for a second group, and an advisement to stop drinking for the control group to determine the efficacy of long-term brief intervention in routine general practice. Both groups, A and B, saw a reduction in drinking, but not at statistically significant levels. 25-53% of all early phase heavy drinkers (in all three groups) reduced their drinking over three years.

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Annotated Bibliography P14

TRAUMA CENTERS EMERGENCY DEPARTMENTS

Trauma centers and emergency departments receive a high number of patients whose care is necessitated by the use of substances (theirs or someone else's) and so particular attention has been focused on how SBI can be useful for patients who regularly are in a "teachable moment"—serious injury can offer powerful motivation to change. However, while these settings may offer a "captive" audience for the SBI, there is some question about the efficacy. Long-term effectiveness may depend on the overall coherency or capability of the patient to remember the conversation, given other environmental stressors. Perceived barriers among these providers is traditionally high and so the literature has a particular focus on provider buy-in, such that it may be more challenging to convince them that SBI is a beneficial use of resources. Similar to primary care, universal vs. targeted screening remains a topic of discussion. Economic analysis, however, indicates that SBI is cost-effective in these settings and that standardized practice, along with quality training efforts, will not only increase provider understanding and buy-in of the SBI model but will increase efficacy. System change will be necessary to reduce the stigma around use so that patients are not denied payment through their medical coverage and providers are more clear about what role SBI can have in their practice.

The Academic ED SBIRT Research Collaborative, (2007). An evidence-based Alcohol Screening, Brief Intervention and Referral to Treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. Substance Abuse, 28:4, 79-92. This article asks whether emergency department providers will change their beliefs and practices around SBIRT once they have had exposure to the curriculum. While ED practitioners seemed to readily accept alcohol screening, universal screening seemed a daunting task. The study concludes that it is necessary to provide interactive trainings to providers and that they have the time to deliver effective interventions. The most ideal model is when the patient comes up with their own course of action (facilitated by the provider). While training does increase provider efficacy, booster sessions may be needed and more practical solutions still need to be found in order to affect more dramatic change in this medical setting. Standardization of how "brief" a Brief Intervention should be needs to be established and in order to save time, a single NIAA question is recommended to screen for alcohol use.

Daepfen, J., Gaume, J., Bady, P., Yersin, B., Calmes, J., Givel, J., Gmel, G. (2007). Brief Alcohol Intervention and alcohol assessment do not influence alcohol use in injured patients treated in the emergency department: a randomized controlled clinical trial. Addiction, 102, 1224-1233. Daepfen's article runs counter to much of the available literature by stating that brief alcohol intervention does not influence patients treated in an emergency department setting. Three groups were tested: those who received BAI (Brief Alcohol Intervention), those who received screening and assessment, and a screening-only group. The following points are important when considering the conclusions of this study. First, the intervention group received a single 10-15 minute session. Second, the primary outcome benchmark was whether patients changed their drinking habits to the low-risk range. The lack of difference between groups could be a function of the fact that the outcome expectations were rather stringent compared to the population, or that the intervention itself, the interventionist or the patient may influence the patient's outcome. Daepfen suggests that if very minimal intervention is sufficient, then perhaps EDs may be best served by implementing brief screenings and referral without interventions.

Gentilello, L. M., Ebel, B. E., Wickizer, T. M., Salkever, D. S., Rivara, F. P. (April, 2005). Alcohol interventions for trauma patients treated in emergency departments and hospitals: a cost-benefit analysis. Annals of Surgery, 241:4, 541-550. This cost-benefit study takes into account several factors: screening costs, costs of SBI, emergency department visits and hospitalization rates for problem drinkers, intervention effectiveness, costs of emergency visits, and the estimation of cost savings from reduced trauma recidivism. Findings indicate that over a quarter of adult patients are candidates for SBI and simulations found that SBI could result in saving healthcare costs by 91.5%. If implemented on a national level, SBI could save \$1.82 billion annually. The way healthcare is funded, however, will need to be reexamined because most insurance companies still have the right to refuse a claim if there is alcohol involved.

Malangoni, M. A. (2005). Alcohol interventions for trauma patients treated in emergency departments: Can we afford not to intervene? Annals of Surgery, 241:4, 551-552. This review of previous research concerns the cost of intervention. Less than 20% of trauma surgeons reported routine screening of patients for alcoholism. Screening was not seen as an effective identifier of problem drinkers by surgeons. While one-third of trauma surgeons regularly checked the BAC in trauma victims, only 25% used a screening questionnaire. Lack of use of a screening questionnaire was attributable to a lack of interest and feeling that the responsibility wasn't attributable to a surgeon.

Annotated Bibliography P15

Schermer, C. R. (Supplement 2005). **Feasibility of alcohol Screening and Brief Intervention.** *The Journal of TRAUMA Injury, Infection, and Critical Care*, 59, S119-S123. This article asks if there is support for SBI among trauma surgeons and wonders how SBI might be best implemented. Although a majority of surgeons support SBI, implementation proved to have some barriers. Nearly 17% of patients weren't screened because of language barriers; nearly half weren't screened because of the severity of their injuries; and because there weren't interviewers on the weekends, nearly 20% of patients were missed. Findings in the preliminary data show that one half-time research assistant could be responsible for most of the screening needs, but there may need to be another person for weekends and multilingual interviews.

Kunz, F.M., French, M.T., Bazargan-Hejazi, S. (2004). **Cost-effectiveness analysis of a Brief Intervention delivered to problem drinkers presenting at an inner-city hospital emergency department.** *Journal of Studies on Alcohol*, 65, 363-370. This article finds that using health advocate professionals instead of medical authorities at an urban ED reduced the cost of intervention but may have adversely impacted the patient's likelihood of following recommendations. The net effect on cost-effectiveness is therefore uncertain. Costs associated with treatment include staff salaries, equipment, patient incentives and overhead. Of total program costs, 60% was spent on personnel salary and benefits, 35% on overhead and patient incentives and 5% on supplies and equipment. Ultimately, results indicate that SBI is relatively low-cost in this setting and can be generalized to disadvantaged, urban populations but not to the U.S. as a whole.

Schermer, C. R., Gentilello, L. M., Hoyt, D. B., Moore, E. E., Moore, J. B., Rozycki, G. S., Feliciano, D. V. (2003). **National survey of trauma surgeons' use of alcohol Screening and Brief Intervention.** *The Journal of Trauma, Injury, Infection, and Critical Care*, 55:5, 849-856. Schermer's paper tries to determine the current status of SBI in trauma centers and to evaluate specific barriers to the implementation of SBI. While many surgeons agreed that trauma centers were an appropriate setting for SBI, there are noteworthy barriers that prevent thorough implementation: SBI is too time consuming; it might compromise patient confidentiality; it could be a threat to insurance reimbursement; lack of understanding the concept of SBI. Findings conclude, however, that physicians are conducting SBI screenings more regularly than five years ago and success is largely due to the attitudes and education of surgeons and other hospital staff.

Schermer, C.R., Bloomfield, L.A., Lu, S.W., Demarest, G.B. (2003). **Trauma patient willingness to participate in alcohol screening and intervention.** *The Journal of Trauma, Injury, Infection, and Critical Care*, 54(4), 701-706. Schermer tracks whether trauma center patients are feasibly screened; if they have access to primary care providers; and what types of interventions they would find acceptable. At the time this article was written, SBI was not typical in trauma centers. Over an eight-week period, 114 of 163 admitted patients were screened (70%). 45% of those patients screened positive for problem drinking. The mean response to whether the patient would be offended if their doctor or nurse asked them questions about their alcohol use (1 = offended; 7 = totally ok) was 5.86 (doctor) and 5.72 (nurse). Native Americans rated significantly lower at 5.1. The mean response varied greatly among ethnicities when asked, "how concerned are you about your alcohol use" (1 = not at all; 7 = very much) was 4.4 for Native Americans, 1.0 for African Americans, 2.9 for Hispanic-Latino, and 1.8 for whites. 50 of the 114 patients were also asked whether someone else should talk to them about their use and 94% said, "yes." Ethnicity and gender were not predictors to this question. Overall, trauma centers should not rely on PCPs to perform SBI, since it appears that most patients are unlikely to discuss use with their PCP, if they have one. This patient sample indicates that substance use discussion may be acceptable, regardless of who is offering the discussion. Ethnicity attitudinal differences should be further studied.

Longabaugh, R., Woolard, R.F., Nirenberg, T. D., Minugh, A. P., Becker, B., Clifford, P. R., Carty, K., Sparadeo, F., Gogineni, A. (2001). **Evaluating the effects of a brief motivational intervention for injured drinkers in the emergency department.** *Journal of Studies on Alcohol*, 62:6, 806-816. By looking at two different models of SBI in emergency room settings, Longabaugh tries to determine if one is more effective than the other. The first model involves a standard MI. The second model involves a follow-up booster session, in addition to the MI. Only patients who received the booster session demonstrated a reduction in alcohol-related negative consequences. Findings indicate, however, that there isn't enough data to support generalized conclusions.

Danielsson, E., Rivara, F. P., Gentilello, L. M., Maier, R. V. (1999). **Reasons why trauma surgeons fail to screen for alcohol problems.** *Achieves of Surgery*, 134, 564-568. This article examines the relationships and attitudes that trauma surgeons have towards SBI and how those attitudes might affect screening behavior. The most commonly cited reason to forego SBI was that they were "too busy," and the perceived success of SBI among screeners and non-screeners as low. Non-screeners felt that SBI was intrusive and offends patients. Findings indicate that trauma surgeons' knowledge and confidence towards SBI is rather poor and there exists a need to educate them about the benefits of interventions. These attitudes are significant predictors for screening behavior.

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Annotated Bibliography P16

SCREENING DRUG USE

Literature regarding SBI and other substances besides alcohol appear to have a shorter history: there is less available information and most articles seem to be more recent. Traditionally, SBI has focused primarily around alcohol use. For this reason, it is somewhat inconclusive as to whether SBI is effective with other substance users. At this time, research does not largely support SBI for these types of users but several of the studies involve more seriously-addicting substances (e.g. amphetamines, cocaine, heroin). There is support for a “brief therapy” model for marijuana users, which is less intensive and can be targeted specifically for this population. Cognitive behavioral therapy (CBT) also shows promise with amphetamine users and peer-based Motivational Interviewing (a method of Brief Intervention) may have positive impact as well. Ultimately, more work is needed in this area to determine how SBI might fit or be adapted for other substances users.

*Marsden, J., Stillwell, G., Barlow, H., Boys, A., Taylor, C., Hunt, N., Farrell, M. (2006). An evaluation of a brief motivational intervention among young ecstasy and cocaine users: No effect on substance and alcohol use outcomes. *Addiction*, 101, 1014-1026.* This study asks whether brief MI is more effective than an information-only model that addresses alcohol, cocaine and ecstasy users. Ultimately, there was no significant patient change towards abstinence in ecstasy or cocaine (or cocaine-derivatives). In the patients who attempted to stop their use, however, 87% felt that completing a baseline assessment had motivated them to change their behavior and 13% felt the health information provided had motivated them. Both intervention and control patients continued drinking alcohol at high levels during the week and on the weekends. SBI was shown to be no more effective than the provision of information alone and so it may be that recruiting drug users and having them self-assess their use before a Brief Intervention is sufficient to motivate change in behavior.

*Baker, A., Lee, N.K., Claire, M., Lewin, T.J., Pohlman, S., Saunders, J.B., Kay-Lambkin, F., Constable, P., Jenner, L., Carr, V.J. (2005). Brief cognitive behavioural interventions for regular amphetamine users: a step in the right direction. *Society for the Study of Addiction*, 100, 367-378.* Amphetamine users are often diagnosed with mental health disorders and this study asks whether they might benefit from Cognitive Behavior Therapy (CBT). A stepped-care approach is recommended for this population, where more intensive or different treatment is given only if a lesser form is insufficient. Findings claim that participants who had two or more sessions of CBT were more likely to abstain and depression decreased in the short term. It is important to note that this study had significant attrition which may have inflated overall findings and there was little significant difference between treatment and control groups in a variety of areas (e.g. amphetamine use and dependence, reduction of poly-drug use, criminal activity etc.).

*Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., Hingson, R. (2005). Brief motivational intervention at a clinic visit reduces cocaine and heroin use. *Drug and Alcohol Dependence*, 77, 49-59.* The article asks whether peer-based MI can be effective for out-of-treatment cocaine and heroin users and although SBI has shown to be effective with alcohol users, less is known about drug using patients. As a follow-up to an initial pilot study, this study corroborates self-reported data with hair testing. For the most part, the two methods demonstrated accuracy in the substance-use reported by patients (88% for cocaine users and 90% for heroin users). Although there was not much difference between the treatment and control groups at three months, the intervention group was more likely to be abstinent at six months. Peer-based MI appears to be efficacious at least until six months from baseline and appears to reduce actual drug levels for cocaine users.

*The Marijuana Treatment Project Research Group. (2004). Brief treatments for cannabis dependence: Findings from a randomized multisite trial. *Journal of Consulting and Clinical Psychology*, 72(3), 455-466.* In looking at which treatment model might work best for marijuana users, Motivational Enhancement Therapy seemed most effective. Nine-session intervention was superior to two-session intervention and behavioral health providers should consider making marijuana-specific treatment more available.

*Stephens, R.S., Roffman, R.A., Curtin, L. (2000). Comparison of extended versus brief treatments for marijuana use. *Journal of Consulting and Clinical Psychology*, 68(5), 898-908.* At the time of this study, no SBI had been studied in illicit substance use, although marijuana users are more likely to seek treatment for dependence when the treatment program is tailored specifically to them. Ultimately, brief individual treatment appears to be as effective as more extended group therapy in reducing marijuana use in adult users. Although cost-benefit analyses were not performed, it appears that Brief Treatment may be more cost-effective than extended group therapy.

Annotated Bibliography P17

SPECIAL POPULATIONS— WOMEN AND PRENATAL/PREGNANCY

Women have special considerations when it comes to substance use, particularly alcohol. Physiological differences make alcohol consumption more challenging and put them at higher risk for health complications than with men. For this reason, it is recommended that women of child-bearing age be specifically targeted for screening. This literature review does not include a comprehensive review for this population. Anyone interested in how SBI affects women would be encouraged to look for other studies.

Chang, G., McNamara, TK., Orav, EJ. Wilkins-Haug, L. (2006).

Brief Intervention for prenatal alcohol use: The role of drinking goal selection. *Journal of Substance Abuse Treatment, 31:4, 419-424.* This was a randomized clinical trial of 304 pregnant women who tested positive on the T-ACE. Women who weren't abstinent at enrollment named celebrations as potential risk for alcohol use at nearly three times the rate of those abstinent at enrollment. Non-abstinent women at enrollment listed more alternatives to drinking, more ways to avoid risk-situations, and more alternatives for relaxation. Perception of risk associated with drinking may be one explanation for the failure of some women to cut down. Women who chose abstinence, regardless of their drinking level at enrollment, were more likely to achieve their goal.

Chang, G. (2005). **Screening and Brief Intervention in prenatal care settings.** *Alcohol Research & Health, 28:2, 80-84.* Chang looks at the prevalence of alcohol use among pregnant women, particularly because Fetal Alcohol Syndrome Disorder is the leading preventable birth defect. Data suggests that many women drink despite public health advisories. Findings show that if preconception levels of drinking can be determined, it can indicate the likelihood that a woman will continue to consume during pregnancy. SBI has shown to be highly effective in reducing or eliminating prenatal drinking.

Stotts, A. L., DeLaune, K. A., Schmitz, J. M., Grabowski, J. (2004).

Impact of a Motivational Intervention on mechanisms of change in low-income pregnant smokers. *Addictive Behaviors, 29, 1649-1657.* An eight-week randomized study of pregnant women who reported smoking in the past seven days was used to determine why Motivational Intervention (MI) hadn't produced previous positive results. 28.9% of the treatment group had regressed and 50% had remained the same at follow-up. The brief MI intervention failed to motivate women to utilize strategies associated with forward progression in the process of change. More intensive and comprehensive interventions are necessary to improve pregnancy smoking cessation rates.

Aalto, M., Saksanen, R., Laine, P., Forsstrom, R., Raikaa, M., Kiviluoto, M., Seppa, K., Silanaukee, P. (2000). **Brief Intervention for female heavy drinkers in routine general practice: A three-year randomized controlled study.** *Alcoholism, Clinical and Experimental Research, 24:11, 1680-1686.* A three-year evaluation of BI counseling administered to 118 self-reporting female early-phase heavy drinkers in five primary care outpatient clinics in Finland. Indicators suggest that drinking was reduced in both the control group receiving minimal advice, and the treatment group which received brief intervention. Meaningful reduction of drinking was found in 27-75% of the heavy drinkers, depending on the outcome measure and the study group.

Bradley, K. A., Boyd-Wickizer, J., Powell, S.H., Burman, M.L. (1998).

Alcohol screening questionnaire in women: A critical review. *The Journal of the American Medical Association, 280: 2, 166-171.* This meta-analytic review of 13 articles covered eight brief screening questionnaires for heavy drinking, alcohol abuse or dependence in the general clinical population of women in the U.S. The AUDIT provided specific information regarding alcohol consumption and symptoms of dependence while the CAGE was able to identify past year or lifetime alcohol dependence, mostly in black female populations, but not heavy drinking. CAGE, TWEAK and AUDIT were considered the optimal tests for identifying alcohol dependence in women.

SBIRTCOLORADO

Annotated Bibliography P18

SPECIAL POPULATIONS— COLLEGE/UNDERAGE

Screening underage substance users has its unique set of challenges, particularly because alcohol use is high among college students but many of them are still under the legal drinking age. Literature in this area focuses primarily on alcohol. There is concern about patients' willingness to be honest during the initial screening and this may indicate, in part, that this population might be better served through variations on the SBI model. In particular, "non-contact" or anonymous interventions may allow for a safer context for the patient to disclose actual usage patterns. This could involve computer or web-based questionnaires and/or feedback, health resource outreach programs, or could even be a part of freshman orientation. No-contact interventions, however, need further exploration to determine duration and level of effectiveness. Overall, the research recognizes this population as being particularly sensitive to questioning but if done appropriately and thoughtfully, SBI can have a positive impact.

Knight, J. R., Harris, S. K., Sherritt, L., Van Hook, S., Lawrence, N., Brooks, T., et al. (2007). Adolescents' preferences for substance abuse screening in primary care practice. Substance Abuse, 28:4, 107-117. Knight looks at what method of screening adolescents prefer in a primary care setting and how different screening methods might influence their willingness to provide honest answers. This is a key patient-audience to target, particularly since 80% of high school students in the survey have begun to drink and 50% reported using an illicit drug. Findings indicate that paper or computer questionnaires are the best way to administer substance abuse screening tests and that adolescents were clearly more comfortable and honest with paper administrations (the bigger part of the sample used paper; those who used the computer were a subsample and reported similar levels of comfort). Once screened, if a youth shows up positive, the provider may need to schedule an additional appointment to provide an adequate assessment.

Zisseron, R. N., Palfai, T. P., Saitz, R. (2007). "No contact" interventions for unhealthy college drinking: Efficacy of alternatives to person-delivered intervention approaches. Substance Abuse, 28:4, 119-131. In an effort to study alternative models, this approach looks at whether SBI can be effectively delivered to college students without direct, real-time contact. Print and computer-based modalities were developed because other models of SBI were not reaching this population. Ten of eleven studies reviewed showed some efficacy for no-contact interventions and can decrease alcohol consumption for at least six weeks after the intervention was delivered. These findings are comparable to in-person intervention models. Some research found that discussing personal feedback with a counselor did not increase efficacy; some even found that the in-person model actual decreased effectiveness. No-contact interventions, while comparable to in-person models, may lose effectiveness in the longer term. Further research is needed to determine the duration of effectiveness, mechanisms of change, and how to enhance the effectiveness of no-contact interventions, particularly targeting freshmen at orientation, university-wide emails, and links on frequented websites.

LaBrie, J. W., Lamb, T. F., Pedersen, E. R., Quinlan, T. (2006). A campus-based motivational enhancement reduces problematic drinking in freshmen male college students. Addictive Behaviors, 1-13. LaBrie asks whether Motivational Interviewing (MI) can be used to reduce problematic drinking among college freshman males, particularly because heavy drinking is often initiated in the first weeks of school and these patterns may continue throughout. MI could be used to counter freshman misconceptions of their peers' drinking behaviors (which are often less frequent and severe). Ultimately, participants may have overestimated their pre-intervention drinking behaviors and therefore their post-intervention averages—reported more conscientiously and accurately—may reflect a bigger reduction in their drinking than reality.

Colby, S. M., Monti, P. M., Tevyaw, O'Leary T., Barnett, N. P., Spirito, A., Rohsenow, D. J., Riggs, S., Lewander, W. (2005). Brief motivational intervention for adolescent smokers in medical settings. Addictive Behaviors, 30, 865-874. In addressing adolescent smoking, Motivational Interviewing (MI) resulted in lower self-reported averages on cigarettes per day at one, three and six month follow-ups. While MI could result in lower smoking, the overall changes in smoking habits are small.

Monti, P., Spirito, A., Myers M., Colby, S., Barnett, N., Rohsenow, D., Woolard R., Lewander, W. (1999). Brief Intervention for harm reduction with alcohol-positive older adolescents in a hospital emergency department. Journal of Consulting and Clinical Psychology, 67:6, 989-994. Monti examines the effectiveness of SBI among adolescents (18-24) in emergency room settings. While many of the patients who received SBI reported fewer incidences of drinking and driving, there was also a high refusal rate to participate in SBI among eligible patients. Results do not strongly indicate whether SBI would be as effective among heavier alcohol users, let alone if they would be receptive to treatment.

Marlatt, G. A., Baez, J. S., Kivlahan, D. R., Dimeff, L. A., Larimer, M. E., Quigley, L. A., Somers, J. M., Williams, E. (1998). Screen and brief intervention for high-risk college student drinkers: Results from a two-year follow-up assessment. Journal of Consulting and Clinical Psychology, 66:4, 604-615. Baseline questionnaires were administered to students who intended to enroll at the University of Washington. The randomized study included assessment at six months, one year and two years. Results support the hypothesis that high-risk college students who receive a brief intervention in their freshman year will show a significant reduction in both drinking rates and harmful consequences, consistent with earlier findings. Consistent with the idea that adolescent drinking predicts that most young heavy drinkers mature out of their risky behavior as they gain life responsibilities, students in both groups showed a significant drop in drinking rates and problems over time.

Annotated Bibliography P19

SPECIAL POPULATIONS—OTHER

The remaining population categories are not meant to give definitive review of the effectiveness of SBI. They are sparsely populated and this indicates that the research focus on SBI may not have fully tapped into these sub-categories. It is possible that there is even higher stigma around these groups which may or may not affect medical providers' interaction with them. Specialized training or considerations may need to be accounted for when implementing SBI with these and other underrepresented groups.

ELDERLY

Burton L.C., Paglia, M.J., German Pearl S. Shapiro, S., Damiano, A.M., the Medicare Preventive Services Research Team. (1995). The effect among older persons of a general preventive visit on three health behaviors: Smoking, excessive alcohol drinking, and sedentary lifestyle. Preventive Medicine, 24, 492-497. A randomized trial which addressed the effect of general preventive and optional counseling visits, screening, immunizations and health behavior counseling, on change in three lifestyle risks; smoking, problem alcohol use and sedentary lifestyle. The results implied that resources for modifying health behavior needs to be focused in a general preventive visit with the primary care physician. Logistic regression showed no significant effect of the intervention on any of the three behaviors.

MENTAL HEALTH

Ritsher, J.B., Moos, R.H., Finney, J.W. (2002). Relationship of treatment orientation and continuing care to remission among substance abuse patients. Psychiatric Services, 53(5), 595-601. Ritsher addresses the link between substance abuse and mental health by asking whether continued outpatient care improves the remission status of patients, two years after discharge, and in relation to the type of treatment they received (12-step programs vs. cognitive behavioral or eclectic). Collected over a five-year period (3,698 VA substance abuse patients), approximately 28% were in remission two years after discharge; 14% were in remission at both the 12- or 24-month follow up time points; 24% were in remission at one of the two time points; 61% were not in remission at either time point. Remission rates at one year were similar for those with co-occurring psychiatric diagnoses vs. those without; however, those with co-occurring diagnoses were more likely to be in non-remission at two years. Contributing factors to non-remission are patient involvement in outpatient mental health and participation in self-help groups in the last three months of the first year. Ultimately, the type of treatment resulted in similar remission rates and those with polysubstance and/or comorbid psychiatric diagnoses have more difficulty achieving long-term remission. Having fewer sessions over a longer period of time may improve outcomes without requiring much staff time.

POLICE

Richmond, R. L., Kehoe, L., Hailstone, S., Wodak, A., Uebel-Yan, M. (1999). Quantitative and qualitative evaluations of brief interventions to change excessive drinking, smoking and stress in the police force. Addiction, 94:10, 1509-1521. A random controlled intervention trial with pre- and post- assessments occurred eight months apart in New South Wales to determine the effectiveness of brief interventions in the workplace to reduce excessive drinking, smoking, and stress among at-risk police. There was no evidence of reduced alcohol consumption, smoking, or symptoms of stress as a result of implementation. Deeply entrenched police attitudes and culture within the workplace reduced the effectiveness of the interventions. Police service culture reinforces alcohol consumption and longer, more intensive interventions involving repeated contacts with police are needed.

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