Physician Leadership on National Drug Policy
Project Vital Sign

Project Description

Background

The Physician Leadership on National Drug Policy was formed in July 1997 when thirty-seven of the nation's leading medical and public health physicians came together to re-examine our nation's drug policy. This non-partisan group of physicians, including many former high-ranking health and drug policy advisors under the Reagan, Bush, and Clinton administrations is leading an effort to change the way America views and treats the problem of drug addiction. The group reached a unanimous consensus that to be effective, our national drug policy must place more emphasis on public health and medical approaches.

A primary goal in the PLNDP consensus is to enhance physician competence around substance abuse. Several issues related to this goal are important to note:

- An increase in primary care screening and intervention concerning substance abuse is needed,
- The key measure of our progress will be the sustainable implementation of established goals,
- Any systematic change in health care requires the involvement of all health care professionals and organizations, not just physicians, and
- Increased screening and intervention will focus on tobacco and alcohol use, as well as prescription, and illicit drugs.

In an effort to address these issues, PLNDP is undertaking *Project Vital Sign* to determine the basis for developing a national clinical demonstration. The goal of this demonstration is to provoke a major expansion in screening, diagnosis, intervention and referral of individuals with alcohol, tobacco and other drug (ATOD) problems within the clinical setting.

Overview

In order to achieve this national initiative, PLNDP proposes state involvement, and collaboration with health care organizations in the design and implementation of the proposed demonstration.

The planning effort for *Project Vital Sign* is directed out of the PLNDP National Office at Brown University in Providence, Rhode Island, and consists of three primary elements:

- A key informant study consisting of a structured questionnaire administered to 50-100 individuals with relevant experience and/or information. The survey addresses the need for (1) identifying primary applicant organizations to target, (2) defining a proper mechanism and extent of state involvement, (3) determining a range of clinical services to be covered, (4) identifying clinical behaviors to measure, and measurable outcomes, (5) addressing barriers to implementation, and (6) defining incentives/nature of the reward (recognition, financial or other) for successful outcomes.
- Annotated reviews of the existing literature and programs reports, in order to assess the groundwork and potential for implementing this national clinical demonstration.
- A planning meeting, held to facilitate discussion and to generate recommendations for implementing this initiative.

Physician Leadership on National Drug Policy
Project Vital Sign Planning Meeting
Providence Biltmore Hotel, Providence, RI
April 5, 2002

Summary of the Discussion

On April 5, 2002, nineteen individuals representing academic, clinical, policy and public health perspectives met to discuss the implementation of a National Clinical Demonstration designed to increase screening for alcohol, tobacco, and other drugs (ATOD) in clinical settings (see attached participants list). Prior to the meeting, the PLNDP National Office conducted a key informant survey, annotated literature reviews, and a review of finance and performance measures which were addressed at the beginning of the meeting. Participants then proceeded to discuss criteria for and implementation of the National Clinical Demonstration. Major points of consideration revolved around issues of stigma, incentives, criteria for the Request for Proposals (RFP), and the convening of an Advisory Committee for this project.

The group maintained that stigma against individuals with addiction, and resistance to medicalizing addiction are two major barriers to effecting greater rates of screening in clinical settings. These were reoccurring themes throughout the meeting that should considered in the design, implementation and expectations of the National Clinical Demonstration. A few participants identified an atmosphere of resistance to treating addiction as a chronic, relapsing disease. Within this context, the implementation of the Demonstration must be precise in the hope of being successful. It was also noted to emphasize the need for a public health campaign highlighting current data on the costs to society and related complications of addiction.

Some participants were concerned that this current initiative and meeting was "ahead of the game." This sentiment was based on factors which included a fundamental lack in training and education for screening in clinical settings and the lack of treatment referral options. Additionally, concern was raised about the need for creating a specific, tailored RFP in order that the results be perceived as reliable. With these overarching considerations, some recommendations were made, including:

> Define a target population to screen - the National Clinical Demonstration should not implement a "blanket screening" because this is proven ineffective. There is a need to consider the degree of the problem in the target population (i.e. potential for an addiction problem v. severe dependence)
>
> Define the personnel - the RFP should identify expectations for the roles of the administrative staff, nursing and support staff, and the physician
>
> Define the tool - the RFP should identify access to a tool that is replicable, flexible, feasible, and sustainable taking into account site-specific considerations
>
> Define an educational component - the RFP should include access to an educational component

A few individuals addressed issues concerning the implications of a positive screen for special populations. For instance, pregnant women who screen positive for a substance abuse problem may fear losing their child(ren) and other legal repercussions. Illegal immigrants represent another important population to consider, as they may fear a host of legal reprisals (including deportation) resulting from their identification. The group agreed that the RFP must be tailored to states in which such disincentives and/or repercussion for the individual do not exist.

In addition, the importance of a systems workflow or industrial analysis was highlighted insofar as the real world implementation of this National Clinical Demonstration in an actual clinical setting. There is a need for comprehension of site-specific influences (including staff, geographic, economic etc). Attention must be paid to the specific needs and constraints of individual clinical settings, underscoring the need for simplifying the screening tool and implementing a sustainable process.

Financial constraints were mentioned as a major concern for the success of a National Clinical Demonstration. While "paying for it" is the simple answer, one participant highlighted that most doctors, though pressed for time and overtaxed want to provide the best care for their patients without *losing* money. Numerous incentives were identified, including: "paying for it", providing feedback for each referral, including the physician in the treatment process after their initial referral, educating physicians in creative ways to access treatment for patients who screen positive, and new screening technology for each clinic. Insofar as the success of the Demonstration itself, based on experience one participant advocated for the establishment and maintenance of communication among participants in diverse project sites, in order to provide a support system and source of reinforcement.

It is important to note that a major factor in the current poor screening rates by doctors is the absence or perceived absence of treatment options. Simply, if treatment options do not exist the screening will be a pointless waste of time. Two individuals expressed opposing views when considering the factor of insurance. According to one researcher at the meeting, there is an average 26 day wait for treatment for uninsured individuals, compared to no wait for those who are insured. And as for Medicaid recipients, this figure is at least equally discouraging if not worse.

Finally, it was noted that a major barrier to implementing the National Clinical Demonstration was that everyone at the table was medical when the issue is in part social; emphasizing the need for multidisciplinary collaboration.

Throughout the meeting individual names, groups and projects were referred to for contact and support. The following are under consideration for the formation and an Advisory Committee: Health Maintenance Organizations (HMOs), consumer groups such as Consumers Union, national associations of medical directors of insurance companies, women's groups such as Office of Research on Women's Health (ORWH), state agencies, Health Insurance Association of America (HIAA), National Council of State Legislatures (NCSL), National Association of State Alcohol and Drug Abuse Directors (NASADAD), Washington Business Group on Health (WBGH), Leapfrog Group, National Governors Association (NGA), Veteran's Administration, Indian Health Service (IHS), Center for Health Care Strategies (CHCS), Mothers Against Drunk Driving (MADD), Alliance Group of Minnesota, and the Center for Substance Abuse Treatment's Recovery Community Projects.

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Agenda

8:00AM	Breakfast
9:00AM	Overview of PLNDP by June Osborn, MD, PLNDP Chairperson Project Vital Sign Background and Goals of the Meeting by David C. Lewis, MD, PLNDP Project Director
9:30AM	Review and Discussion • Key Informant Study • Annotated Reviews of the Literature and Program Reports
11:00AM	Elements of a National Clinical Demonstration • Criteria for Applicants • Financial Incentives • Rewards
12:00PM	Lunch
1:00PM	Elements of a National Clinical Demonstration, (continued) • Potential for Public/Private Partnerships with State and/or Federal Participation (HHS, SAMHSA, HRSA) • Criteria for Evaluation
2:30-3:30PM	General Discussion and Conclusion

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Key Informant Survey

Key Informant Questionnaire

1. Given that the primary goal of this project is to markedly increase screening and intervention rates for ATOD (alcohol, tobacco and other drugs) problems, should we focus only on ATOD or should we embed it into an array of risky behavior screening? Please share your thoughts on the inclusion of other clinical screenings (depression, cardiovascular disease, adult immunizations, etc.).

2. Given the time limitations in primary care practices, what suggestions do you have to significantly increase screening and interventions?

3. What institutions can influence the screening behavior of primary care physicians (in the private clinic, in the group practice, etc.)?

4. What institutions can influence primary care screening behavior in healthcare organizations (such as Preferred Provider Organizations or Health Maintenance Organizations)?

5. Is there a non-monetary reward that could help increase rates of screening and intervention?

6. What type of financial rewards could help increase rates of screening and intervention?

7. Assuming that state governments (governors' offices, legislature, the courts, public health agencies, welfare agencies, Medicaid) will participate in this national clinical demonstration, what role could they provide in increasing the level of routine screening and intervention in all primary care settings?

8. What are the three major barriers to implementing increased screening and intervention?

9. Besides an increase in screening rates, what other outcome evaluations should we conduct?

10. Have you ever been involved in any previous effort to increase screening rates? What worked and what did not? Is there anything else you feel we should know as we continue this process?

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Key-Informant Survey

Policy and Implementation Recommendations

Background

Development and distribution of the key informant survey

Question #1

Risk behaviors to include…

46% support embedding ATOD screening with other risk behavior screening

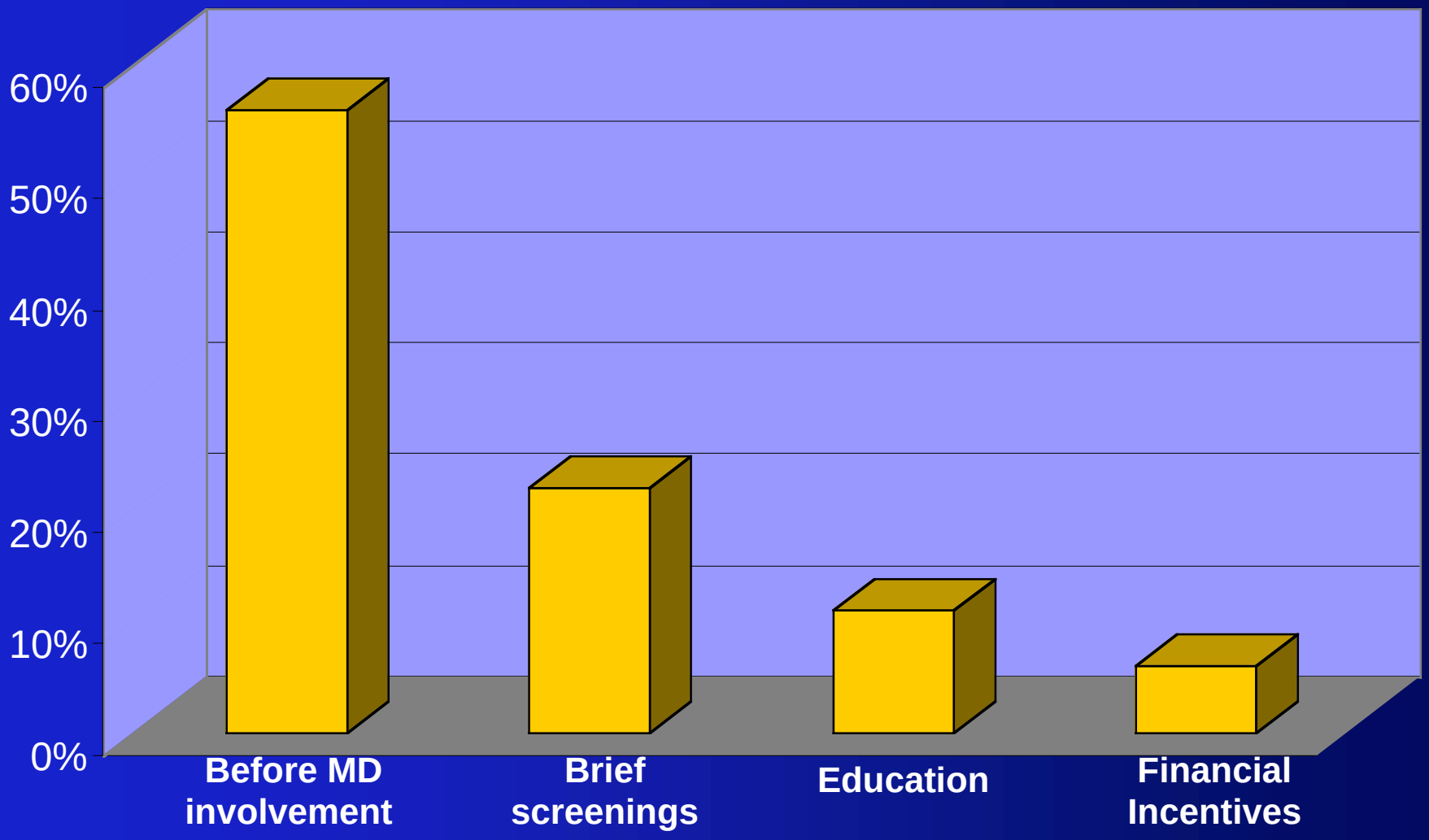
40% support a separate ATOD screening

**The chief objection to embedding ATOD screening was concern regarding "dilution of the PLNDP message".*

Question #2

Addressing time limitations…

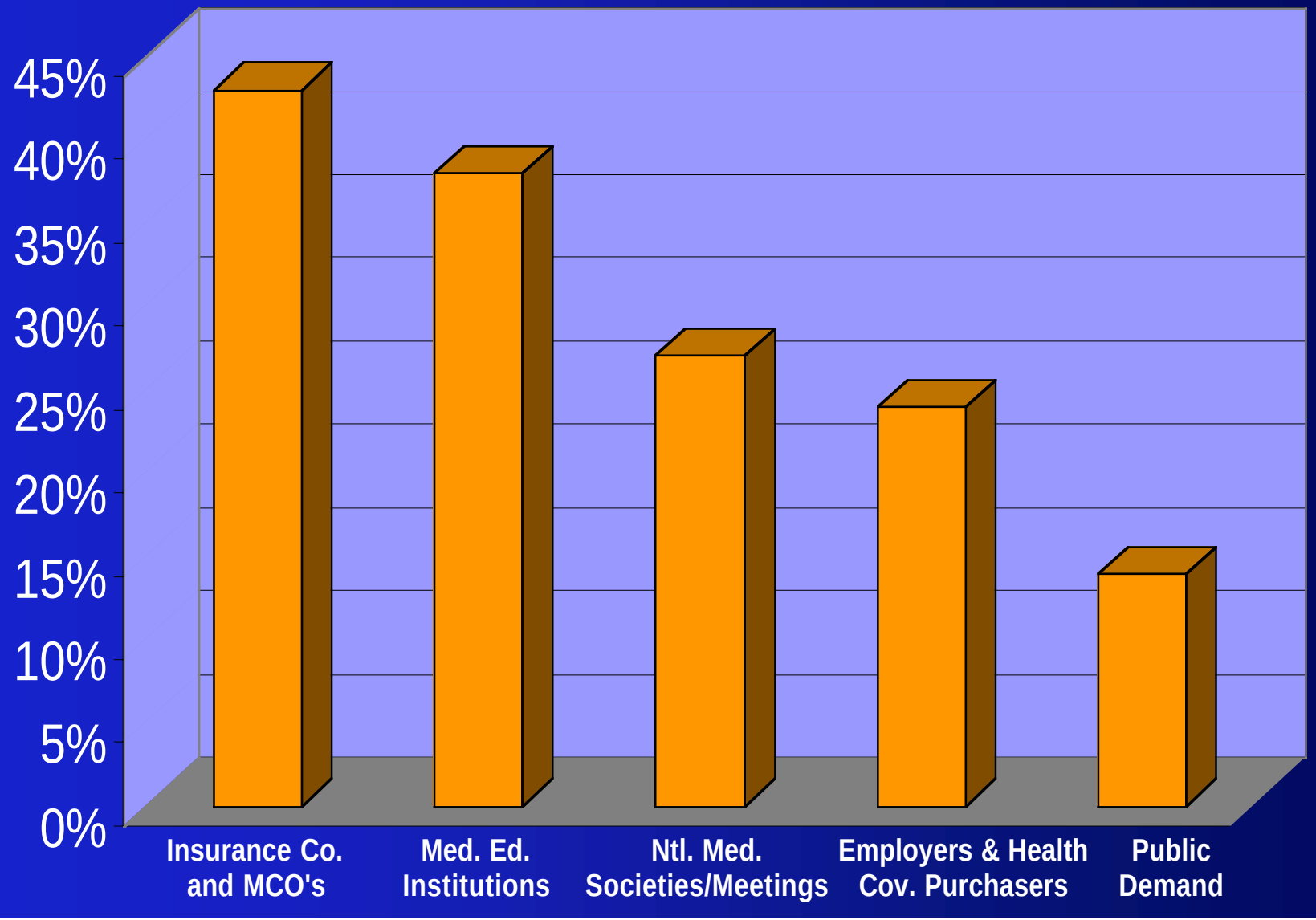
Addressing Time Limitations



Question #3

Indicate institutions that could influence physicians' behavior…

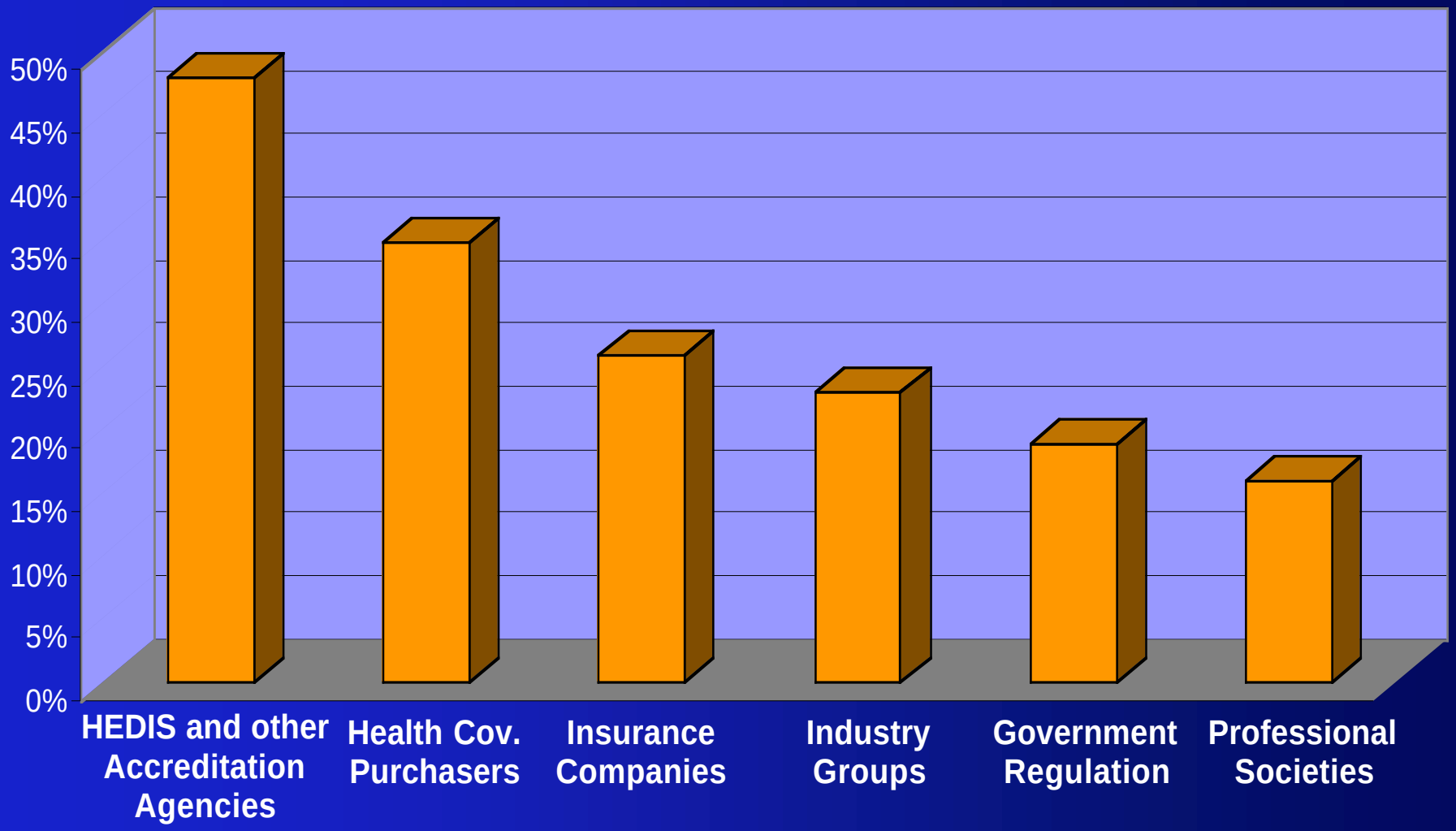
Influential Institutions



Question #4

Indicate institutions that could influence physicians' behavior in healthcare organizations?

Role of Healthcare Organizations



Question #5

Non-monetary rewards…

25% indicate measuring physicians' behaviors and publishing the information.

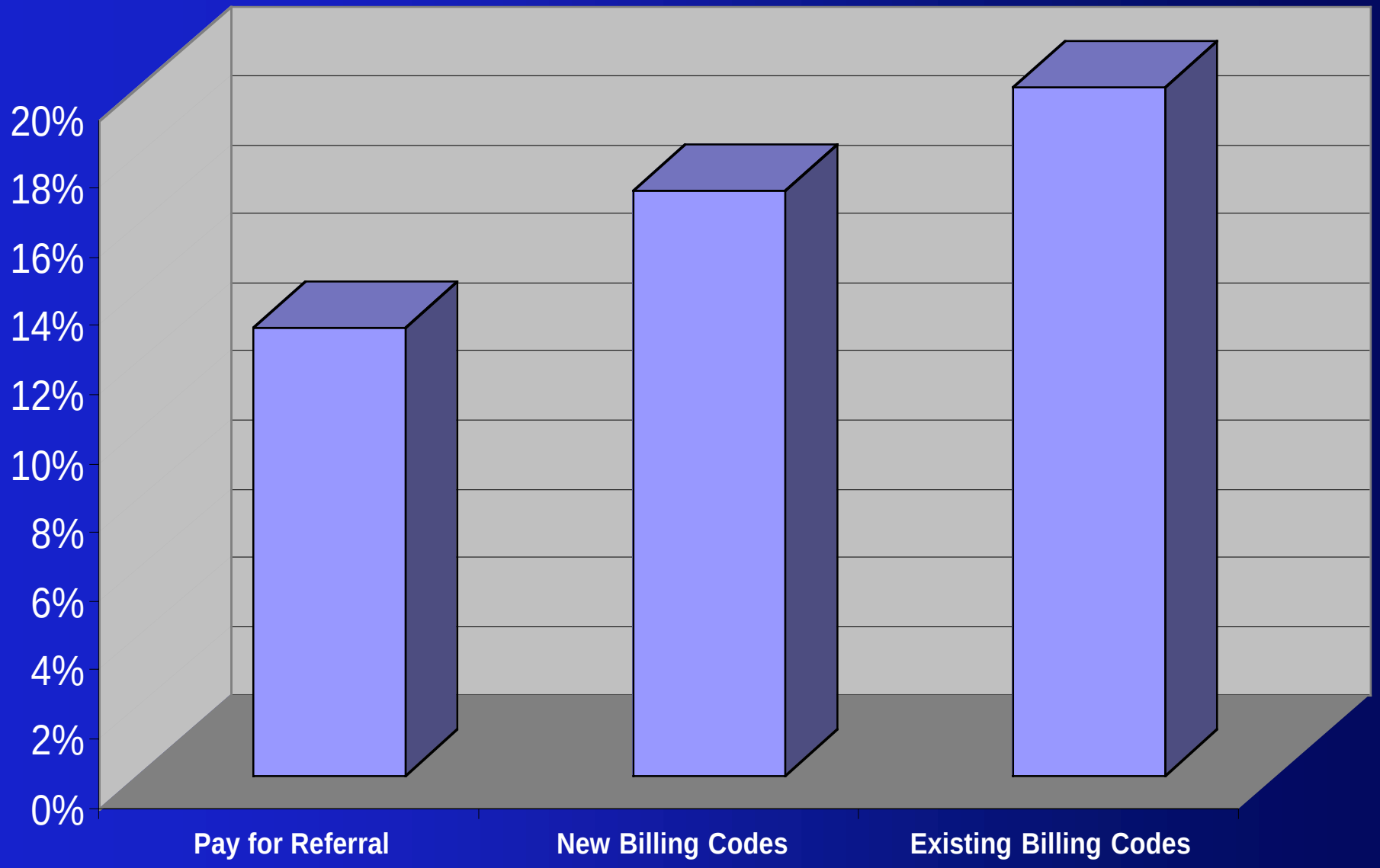
21% encouraged educating physicians in intervention techniques, referral systems and existing treatment.

18% indicated the need to provide physicians with feedback on their ATOD referrals.

Question #6

Financial incentives…

Financial Incentives



Question #7

The role of state governments…

The National Clinical Demonstration must produce results that:

clearly articulate incentives for broad implementation and

convince the medical community that its ability to provide compassionate health care is hindered without ATOD screening.

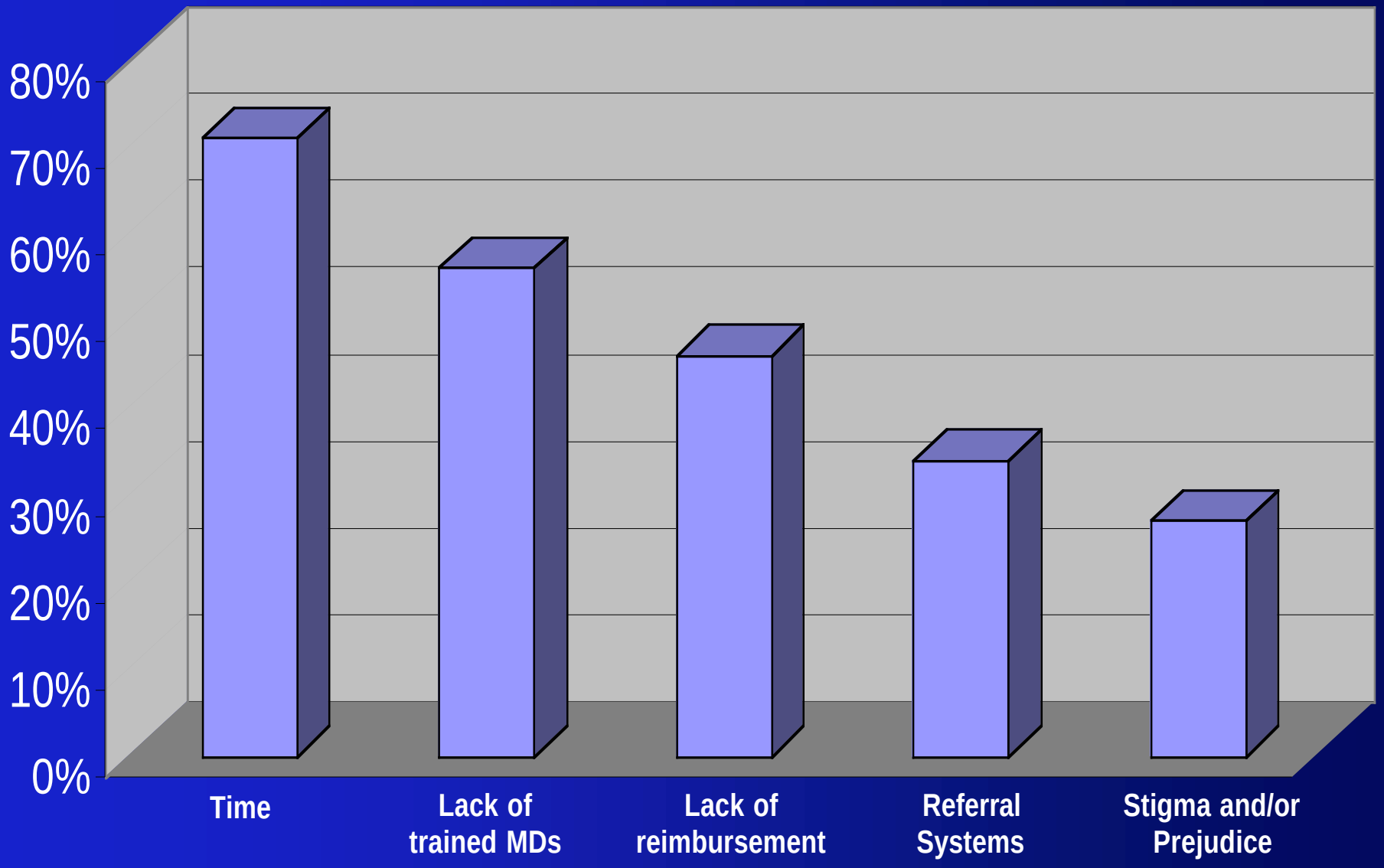
"Government participation in the demonstration should not interfere with the demonstration's potential to influence policy changes in other health care providers."

"Government involvement should not distract the demonstration away from its goal of demonstrating that ATOD screening is compassionate, feasible, and cost-effective."

Question #8

Major barriers to implementation…

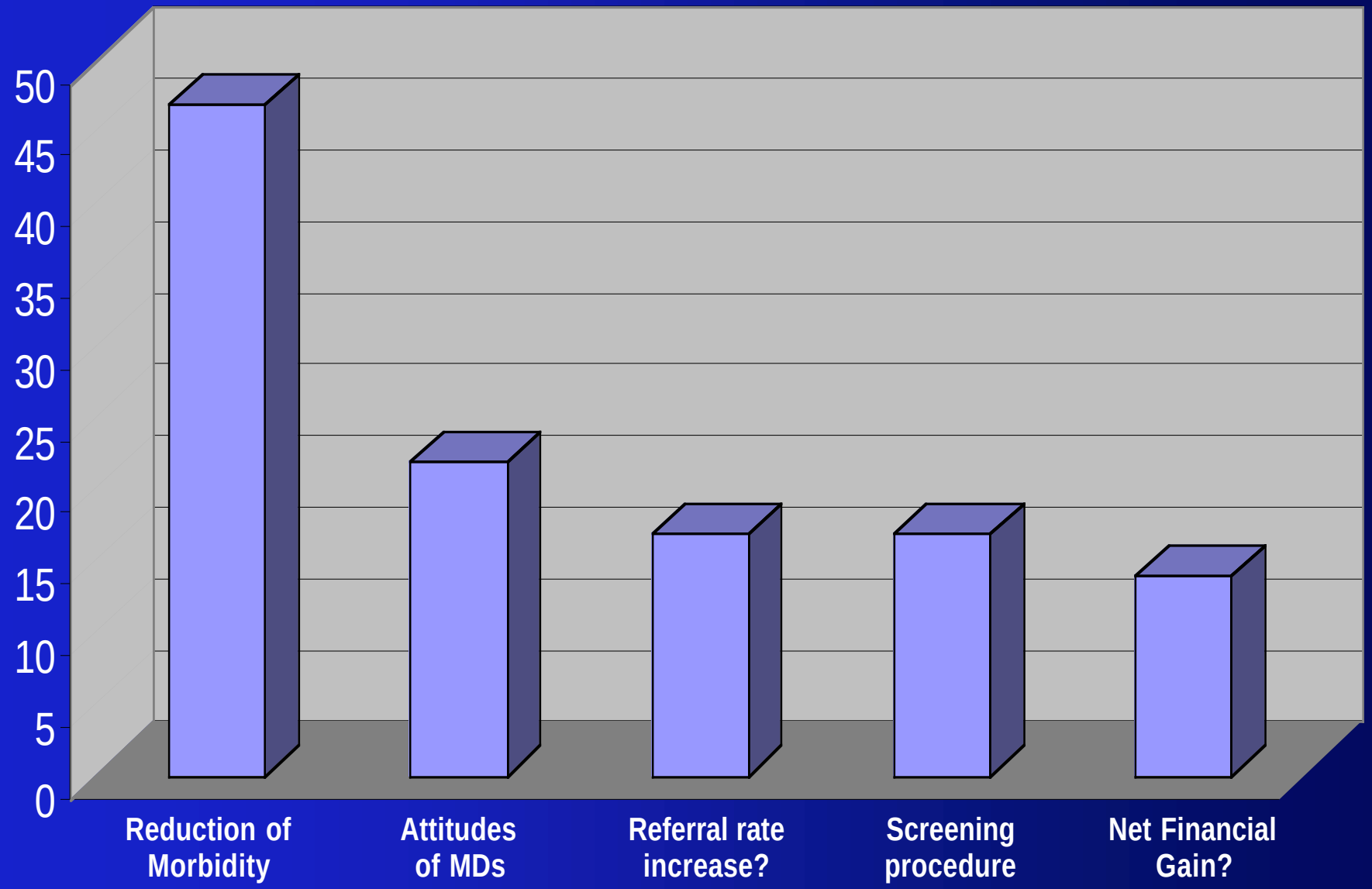
Barriers to Implementation



Question #9

Outcome evaluations…

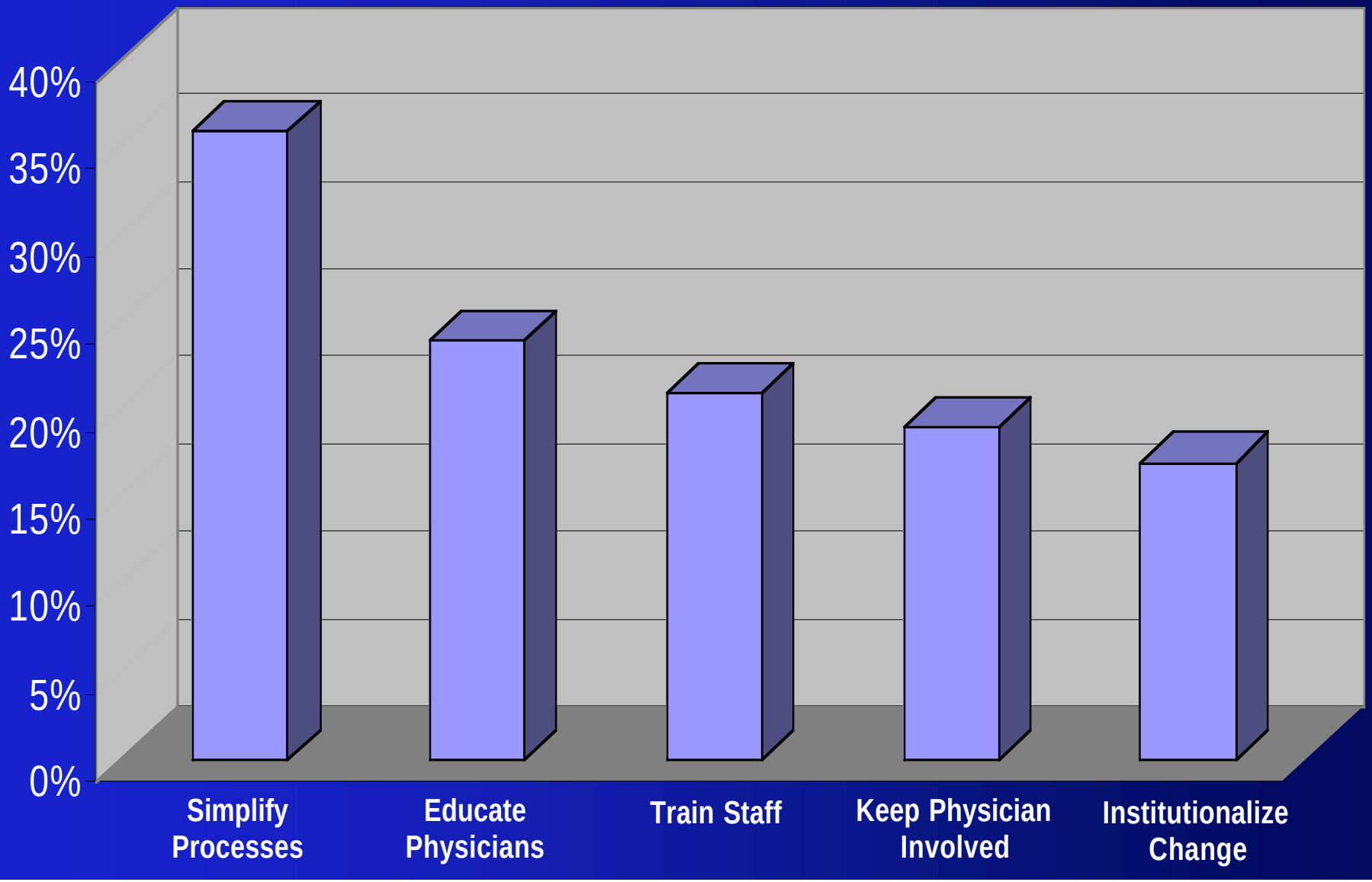
Outcome Evaluations



Question #10

Collective experiences…

Advice from Collective Experiences



Summary of Responses to the Key Informant Survey

Note: The following survey was sent to 83 individuals, a group determined by the PLNDP National Office staff as "key informants" who could offer insight regarding their relevant experience in either the clinical, research, or policy settings. This group is comprised of members of the medical, academic, research, public policy and government communities. Forty-two of the original 83 surveys were completed, upon which the following results have been formulated.

Question 1: Given that the primary goal of this project is to markedly increase screening and intervention for ATOD problems, should we focus only on ATOD or should we embed it into an array of risky behavior screening? Please share you thoughts on the inclusion of other clinical screenings (depression, CV disease, adult immunizations

The respondents were divided over whether to embed screening for alcohol, tobacco and other drugs (ATOD) with other screening with 48% supporting embedding ATOD screening, and 40% supporting a separate ATOD screening process. There were several common justifications for embedding ATOD screening (bundling with other screening measures would allow the doctor to tailor screening for the health needs of every patient). Several informants emphasize the need to determine how physicians collect information on their patients so that physicians would be more likely to perform the screenings. Bundling would allow the physician to perform various screenings without creating awkwardness on the part of the patient or physician, which may lead to more candid responses from the patient.

The majority (67%) of those who oppose embedding ATOD screening were concerned about diluting PLNDP's message. This attitude was typified by this response: "The goal <of increasing ATOD screening rates> should be to decrease the stigma associated with ATOD, therefore, it should stand alone." One-third of those who opposed embedding ATOD screening pointed out that other interest groups were already pushing for improved screening in other areas. Some respondents were concerned that embedding screening would take too much time and would detract from the efficacy of screening in general.

Question 2: Given the time limitations in primary care practices, what suggestions do you have to significantly increase screening and interventions?

37 individuals answered this question, and generated four separate recommendations: 1) the screening should be performed prior to physician involvement, 2) the screening process must be brief and ritualized, 3) one must teach physicians and patients that ATOD problems and addiction are treatable, and 4) performance of screening should be rewarded financially.

The largest percent of informants (56%) advocated for performing the screening prior to the patient coming into contact with the primary care physician. This would save the physicians time and permit the use of standardized screening procedures. Screenings administered by other staff, over the phone, on a computer or with paper and pencil are cheaper than using the physician's time. A report from this screening would be given to the physician prior to or during the visit. This would streamline the screening process and make best use of the physician's time.

Just over one-fifth (22%) of respondents to this question stressed the importance of keeping the screening brief but without making it seem mechanical. With a positive screen, the physician can then decide whether to perform a Brief Intervention or make a referral to an ATOD treatment facility. The informants mentioned using CAGE tests and other methods to streamline the screening process.

Eleven percent of respondents indicated that educating both primary care physicians and patients about the treatable nature of ATOD diseases would also result in increased screening rates. This is essential in overcoming stigmas about ATOD problems that construct the disease as hopelessly untreatable. The public needs to understand that screening and appropriate treatment can make a huge difference in a patient's life.

The need for financial incentives was stressed in 6% of responses. While this figure seems low, it could be a consequence of other questions asking about financial compensation for screening and intervention.

Question 3: What institutions can influence the screening behavior of primary care physicians (in the private clinic, in the group practice, etc.)?

There were 37 responses to this question, which named five main institutions: 1) insurance companies and other managed care organizations, 2) government and other accrediting organizations, 3) medical institutions and associations, 4) employers and groups that pay for medical care and 5) the public itself. These groups appear in order of decreasing frequency in the survey answers.

Many informants (43%) believe in the centrality of insurance companies and managed care organizations (MCOs) in increasing rates of ATOD screening. It would be enormously beneficial if these health care providers would provide screening as well as pay the physicians for the service. Affecting insurance companies would probably be best achieved through altering the competitive nature of the health coverage market through common demand for ATOD screening. One response notes how strange it would be for insurance companies to screen for ATOD problems, and then not provide coverage for its treatment.

38% of respondents believe that education institutions can impact screening behaviors of primary care physicians. These institutions include medical schools, house-staff and residency programs, specialty certification boards, continuing medical education (CMEs) and less formal continuing education. These institutions can increase the attention given to ATOD misuse and abuse with screening and prevention incorporated into their curricula. This training would give the physicians the tools to manage ATOD positive patients properly, and may provide physicians with the confidence to perform the screening and brief interventions.

More than one-quarter (27%) of these informants list national medical societies and meetings as potentially effective institutions. One respondent wrote, “Leadership in the field of primary care needs to embrace the concept that addressing ATOD is part of health care, not behavioral health care, or something separate. These would include major professional societies, as well as residency review committees.” Physician leaders’ support of ATOD screening will lend credence to the conception of alcoholism and drug addiction as a chronic and relapsing disease.

Approximately one-quarter or 24% of respondents mentioned that employers and other payers of care are important in influencing screening behavior of physicians. Large purchasers of care have lots of leverage in negotiating health plan packages for their employees. Employers can ensure that their employee’s plans cover ATOD screening and prevention, which will result in increased screening rates.

Fourteen percent of informants point out that the public could have a significant impact in changing screening behavior. If the public demanded ATOD screening as a part of routine health care (as it does for cholesterol levels etc for example) then medical establishments will use increased screening as a way to sell their practice, or be pressured into screening more so their patients do not move to a different practice.

Question 4: What institutions can influence primary care screening behavior in healthcare organizations (such as Preferred Provider Organizations or Health Maintenance Organizations)?

31 individuals answered this question, and named six major groups that could influence screening behaviors: 1) accreditation agencies such as the Health Plan Employer Data and Information Set (HEDIS), 2) purchasers of health coverage, 3) insurance companies, 4) industry groups such as research organizations, non-governmental organizations (NGOs) and media, 5) government regulation and 6) and professional societies.

These respondents cited government and other accrediting organizations as the most powerful group (48%) that could push for increased ATOD screening rates. If accreditation organizations such as the National Committee for Quality Assurance (NCQA) HEDIS were to adopt ATOD screening rates as a performance indicator, health providers would be forced to mandate ATOD screening to remain competitive.

Purchasers of health coverage were cited by 35% of these informants as being capable of changing screening behaviors. These purchasers have significant negotiating power in determining the benefits of health coverage. Since purchasers typically try to save costs in the short-term, if they were convinced that ATOD screening reduces short-term costs, they would demand ATOD screening for their patients.

Just over one-quarter (26%) of respondents said that insurance companies can influence the behavior of large health organizations. Health Management Organizations (HMOs) can institute standards that clinicians must follow. They would also be capable of developing and implementing office systems for implementation of reminders and patient screening.

23% of informants who answered this question listed various industry groups that could also effect change. Industry groups, trade groups, NGOs, research organizations and the media can put pressure on the large health organizations by their status as representatives of purchasers of care or of receivers of care. These organizations can both educate the public and demand higher standards of care.

Government regulation was a modestly popular response at 19%. Government mandates would rather simply effect change. The government was also cited because it provides health coverage and because of its ability to conduct research.

Professional societies were mentioned by 16% of respondents. These societies could advocate change through educating their membership, and by conducting public awareness campaigns.

Question 5: Is there a non-monetary reward that could help increase rates of screening and intervention?

Although 28 out of 43 individuals responded to this particular question, some of the replies indicate that the question may have been poorly phrased. Despite this problem, the respondents generated three main suggestions: 1) publishing the ATOD screening rates of individual physicians, 2) properly educating physicians how to handle a positive screen for ATOD problems, and 3) giving physicians feedback on what happened to patients after they receive treatment or counseling.

One-quarter of these informants felt that an effective non-monetary incentive would be to measure the screening behavior of doctors, and publish the information. Although implementation of the measuring process would be problematic, it would provide physicians with impetus to increase screening.

Just over one-fifth (21%) of the respondents indicated that doctors must be aware of referral systems and intervention techniques in case of a positive screen. Physicians will be unlikely to perform screening unless they feel confident that they could manage the results. Physicians must be trained to perform screening, to handle higher risk patients, and to use the available treatment options appropriately.

Additionally, 18% of respondents felt that physicians would be more likely to screen if they receive feedback on what happens to their patients once they enter treatment or counseling. This feedback will provide physicians with tangible health benefits of performing ATOD screening. Not only will this encourage the physician to discover an ATOD problem, it will also help improve the physician's opinion about the effectiveness of ATOD treatments.

Question 6: What kinds of financial incentives could help increase rates of screening and intervention?

In general, the informants indicated that screening rates would increase if established and reliable means of ensuring compensation for ATOD screening and brief interventions existed. Specific responses generated two main ways of compensating for ATOD screening that were proposed: 1) paying for screening/counseling provided in a primary care setting, and 2) rewarding the referral and subsequent treatment of patients at-risk for ATOD problems found in a primary care setting. Those who advocated direct payment for screening/counseling suggested either using existing billing codes and schedules, or recommended creating new ones. These codes must compensate physicians in amounts that accurately reflect the time and expertise demanded by the procedures.

Respondents highlight the need for standardizing ATOD screening protocol so that health care providers can see that a repeatable and validated service is being performed. One informant recommended that healthcare providers pay "for screening using a standardized tool (e.g. built on CAGE or AUDIT) and <for> brief intervention…" Uniform screening methods would make it easier to convince healthcare providers that reimbursements for ATOD screening are worthwhile.

One-fifth (20%) of responses mentioned implementing billing schedules that allowed physicians to be compensated for performing ATOD screening. This could be accomplished in one of two ways: 1) either by the existence of codes specific for ATOD screening and brief interventions, or 2) by allowing physicians to upcode a visit when they perform screening and interventions.

Seventeen percent of respondents suggested that existing billing schedules and policies could be used to provide compensation for ATOD screening. One wrote that "Primary care based alcohol and drug counseling should be reimbursable as medical counseling", noting that federal employees are able to receive alcohol and drug counseling through this policy and suggesting that this policy be extended to Medicare and possibly Medicaid.
13% of respondents emphasized compensating physicians who refer at-risk patients to specialty care. This form of compensation leaves a gap, however, insofar as outcomes of the screening process in those cases where a patient

presents with mild risk or problems that do not need referral to specialty treatment. Under these circumstances, while physicians would be investing the standard block of time to administer the screening, they would not be compensated because the result of the screen did not produce a referral to treatment.

A few informants wrote that financial compensation for ATOD screening was the wrong way to address the issue. One felt that the reward would be too small to make a difference. Another suggested that compensation oversimplified the management of a complex disease. The third indicated that if doctors were trained to screen for ATOD problems, they would perform the screening without compensation.
Most respondents endorsed compensating physicians who screen for ATOD problems in a primary care setting. According to these results, most felt that establishing billing codes and payer agreements for ATOD screening would be the most viable means of increasing screening rates.

Question 7: Assuming that state governments (governor's offices, legislature, the courts, public health agencies welfare agencies, Medicaid, etc.) will participate in this national clinical demonstration, what role could they provide in increasing the level of routine screening and intervention in all primary care settings?

The informants collectively support government development, testing and implementation of policies that mandate ATOD screening and prevention in government centers of health delivery. They stressed that the success of these screening programs would rely upon financial reimbursement for screening and intervention services. To this end, the national clinical demonstration must produce results that: 1) clearly articulate incentives for broad implementation, and 2) convince the medical community that its ability to provide compassionate health care is hindered without ATOD screening.

The respondents felt that any national clinical demonstration should prove that screening is both utilizable and transferable so that other health care providers will make use of any suggestions coming out of the demonstration. Government participation in the demonstration should not interfere in the demonstration's potential to influence policy changes in other health care providers. Simply put, government involvement should not distract the demonstration away from of its goal of showing that providing ATOD screening is compassionate, feasible, and cost-effective.

Additionally, there were two notable responses to this question. One informant advocated for the involvement of government in "Blue-ribbon awareness campaigns... and making treatment for <ATOD-related> disorders available through state Medicaid and other institutions". The informant contrasted these means to other "draconian measures" like passing "laws that <make> failure to identify persons with substance abuse disorders" a punishable offense. Another respondent was concerned about maintaining equality in implementing the screening and in disseminating information gained from the demonstration. In order to cross the "digital divide", the demonstration may need to use other community-based resources such as schools and "faith-based" groups (while being mindful of the implications of such a step).

Question 8: What are three major barriers to implementing increased screening and intervention?

41 of the 43 respondents answered this particular question, and produced five predominant barriers to increased screening and intervention: 1) lack of time, 2) lack of training, 3) lack of reimbursement, 4) lack of treatment options, and 5) prejudice/stigma.

Time was mentioned most frequently (68%) and was also the first response by 71% of the respondents. Adding another procedure to a physician's general history demands time, which is one thing most physicians have trouble finding.

56% of informants felt that physicians' lack of training, skills, and knowledge about ATOD screening and treatment was a barrier to increasing screening rates. Physician education must address the "how to's" of ATOD screening and also reduce the stigma of futility surrounding ATOD treatment options.

Lack of financial reimbursement was mentioned by 46% of respondents as a barrier to increased screening. In order to convince physicians to provide ATOD screening, one must convince them that performing the screening is more beneficial than not performing it. Financial benefits are an easily quantifiable means of justifying the benefit of ATOD screening.

Thirty-four percent of informants voiced concern about a lack of options for referrals of positive screening. Doctors must be made aware of where to refer patients and how to employ other resources in the treatment of their patients.

Stigma and prejudice were also an important barrier by 27% of respondents. Negative attitudes about drug and alcohol abuse or discomfort in treating such disorders will be stumbling blocks to increasing ATOD screening rates.

Question 9: Besides an increase in screening rates, what other outcome evaluations should we conduct?

The respondents named several additional outcome evaluations for the demonstration in addition to the desired increase in ATOD screening rates, recommending evaluations of: 1) overall effectiveness and betterment of quality, 2) changes in the attitudes of physicians, 3) changes in ATOD-related referral and treatment rates, 4) the screening process itself, and 5) economic factors.

According to almost half (47%) of respondents, there should be an evaluation of the overall effectiveness of screening, quality of life improvements, and reduction of morbidity. Data that could prove a reduction in ATOD co-morbidities would be enormously valuable in justifying the humanistic and economic value of ATOD screening.

Over one-fifth (22%) of informants recommended surveying the attitudes of the physicians. Outcome measures like improvement in attitudes about ATOD problems, "self competence," treatment efficacy and physician satisfaction would be useful in assessing physician responses to the screening program.

Seventeen percent of respondents suggested checking changes in referral rates and treatment rates. This would indicate whether the screening process results in sending patients to specialist treatment.

17% also advocated for evaluations of the screening process itself. This would generate valuable input in determining the finalized screening best-practice.

At 14%, the final common recommendation was that economic factors be evaluated to determine whether performing screening does result in a economic gain. This would need to be assessed along with many other measures including reduction in ATOD co-morbidities as well as improved quality of life measures.

Question 10: Have you ever been involved in any previous effort to increase screening rates? What worked and what did not? Is there anything else you feel we should know as we continue this process?

Respondents produced several guidelines that should be employed in designing the intended national clinical demonstration: 1) simplifying the screening process, 2) educating the physicians, 3) using well-trained support staff, 4) emphasizing the role of the physician, and 5) and institutionalizing change.

Thirty-six percent of informants recommended simplifying the screening process. They mentioned using technology such as user-friendly computers, other office systems, and mailed surveys. The respondents also noted the importance of giving physicians control in designing and managing screening experience.

Nearly one-quarter (24%) of all respondents emphasized properly educating physicians about screening. Respondents felt that this education would only be effective if it was more involved than a single session. One respondent noted the importance of setting minimum requirements for educating all medical disciplines involved in ATOD screening. Others recommended follow-up support for physicians after training.

Twenty-one percent of informants emphasize the importance of well-trained staff in successful implementation of ATOD screening. There were calls for screening-specific personnel that could operate a user-friendly system. In general it seems that screening will be best implemented as a team effort that all members of office staff contribute to.

19% of respondents emphasize the physician's role in the ATOD screening process. Some recommended pressuring or reminding the physician to perform screening, and to monitor their rate of ATOD screening. The physician's time must be used in the most efficient manner.

Another group of suggestions (17%) pointed to the necessity of incorporating change into the ongoing system of care. The use of mandates requiring screening and intervention would be useful, but only if it contained enforceable language. Guidelines and forms would substantiate mandates and provide the infrastructures to keep screening going.

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Financing and Performance Measures

Project Vital Sign
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Possibilities for Reimbursement Within Fee-for-Service Insurance Plans

Use existing CPT (Current Procedural Terminology) codes for “clinical preventive services”

Create new CPT codes for ATOD screening/ intervention

Utilize CPT code modifiers to bill for time spent coordinating intervention/treatment

Financing of Screening/Intervention in Capitated Plans

ATOD screening/intervention must be part of the benefit package for providers to screen

Capitation rate must be sufficient to cover ATOD screening/intervention (Garnick et al., 2002)

ATOD screening/intervention is **not** mandated on a state or national level.

Thus, the existence of a CPT code alone would **not** ensure its delivery.

Competition is **usually** the driving force behind the implementation of new benefits.

However, competition is not present because **health care purchasers do not negotiate for or demand ATOD screening/intervention benefits** from insurers.

Why Don’t Health Care Purchasers Demand Benefits for ATOD Screening/Intervention?

“Do not believe they have the leverage or ability to negotiate” for such benefits

Rarely receive feedback from beneficiaries indicating these services are desired
(Center for the Advancement of Health, 2000)

Cont'd

Assume preventive service benefits may already be incorporated in managed care plan and fear paying for them twice

Unfamiliar with scientific data on the effectiveness and cost-effectiveness of ATOD screening and intervention (Center for the Advancement of Health, 2000)

Why Don’t Insurance Companies Pay for ATOD Screening/Intervention?

- Unfamiliar with effectiveness and cost-effectiveness data supporting ATOD screening/ intervention
- Assume that the cost-benefit of ATOD screening/intervention would be reaped only years later, after beneficiaries have changed jobs and insurers. Thus, paying for ATOD screening/intervention would not be profitable (Center for the Advancement of Health, 2000)

However, research indicates….

Paying for ATOD clinical preventive services has a **cost impact** that is mostly **short term**

"Thus, reducing substance abuse today saves health care dollars today," making ATOD screening and intervention profitable to the insurer, as well as to individuals, families, and society
(Fox et al., 1995)

Health Plan Employer Data and Information Set (HEDIS)

There is a growing dependence on HEDIS measures by health care purchasers

HEDIS measures currently include screening for cervical cancer, breast cancer, cholesterol and chlamydia

Adding ATOD screening/intervention measures to HEDIS could encourage managed care organizations to include it as a benefit; not doing so could lower their competitive edge (Center for the Advancement of Health, 2000)

Incorporating screening rates in accreditation standards/performance measures is a direct way of increasing screening and diagnosis rates in general medicine

Why not do this for ATOD?

(Garnick et al., 2002)

Financing and Performance Measures

Within fee-for-service insurance plans, several possibilities exist for the future reimbursement of providers for substance abuse screening and intervention:

- Use existing CPT (Current Procedural Terminology) codes for "clinical preventive services" to bill/reimburse for ATOD screening and intervention.
- Create new CPT code(s) for ATOD screening and intervention. The ability to revise, update, and modify CPT codes is held by the CPT Editorial Panel of the American Medical Association (American Medical Association 2).
- Utilize CPT code modifiers, which provide a means by which a practitioner can indicate that a service or procedure was altered by specific circumstances, but not changed in its definition or code. Thus, modifiers could be used by providers to bill for time spent coordinating intervention and/or treatment, following the model that's been used in billing for the time a provider spends coordinating the transition of an elderly individual to nursing home care.

Within capitated payment structures (managed care organizations, HMOs), the issues are slightly different:

- Services are not reimbursed individually, as in fee-for-service; rather a capitated payment is provided on a per patient, per benefit period basis. Therefore, for providers to screen/intervene, it is necessary that ATOD screening/intervention be part of the insurer's benefit package, and that the capitation rate be sufficient (Garnick 19).

Coverage of ATOD screening/intervention is not mandated on a national or state level. Because individual insurance companies and managed care organizations determine their benefit packages and the services for which they will pay, the existence of a CPT code for ATOD screening/intervention would not ensure its delivery.

Rather, competition among insurers is generally the driving force behind the implementation of new benefits; however, competition is not present because purchasers of health care do not negotiate for or demand ATOD screening/intervention benefits from insurers:

- Health care purchasers "do not believe they have any leverage or ability to negotiate" for such benefits (Center for the Advancement of Health 17).
- Purchasers rarely receive feedback from beneficiaries indicating that these services are wanted.
- Believing that preventive service benefits may already be incorporated in managed care, purchasers are reluctant to negotiate for them because they fear paying for these services twice (Center for the Advancement of Health 17).
- Most purchasers are unfamiliar with scientific data on the effectiveness and cost-effectiveness of substance abuse screening/intervention (Center for the Advancement of Health 9).

Insurance companies are largely unfamiliar with effectiveness and cost-effectiveness data as well. In addition, the widespread view among insurers is that paying for ATOD screening/intervention would not be profitable to the insurance company – the cost benefits of substance abuse prevention are only reaped years later; people change jobs, and thus insurance plans, frequently so it would seem that the long-term health benefits resulting from screening/intervention would be not profitable to the screening insurer.

However, research by Kimberley Fox indicates that "about two thirds of the cost impact [of paying for substance abuse prevention] is short term" when trauma, AIDS, and birth complications, which "result from concurrent or very recent…. abuse of a substance," are accounted for in the analysis. "Thus, reducing substance abuse today saves health care dollars today" (Fox 52). This evidence demonstrates that paying for ATOD screening and intervention would be profitable to the insurer.

In general medicine, a direct means of increasing screening and diagnosis among managed care organizations is to include screening rates in accreditation standards/performance measures (Garnick 18). The National Committee on Quality Assurance (NCQA), the primary accrediting organization in the country, sponsors HEDIS (Health Plan Employer Data and Information Set), a "report card" by which purchasers and consumers can compare the performance of managed care plans. Currently included in the measures are screening for cervical cancer, breast cancer, cholesterol and chlamydia (Garnick 18). If ATOD screening/intervention were added, it seems that managed care organizations would be more likely to include ATOD screening/intervention as a benefit, because not doing so would lower their competitive edge. For the HEDIS 2001 List of Measures, see http://www.ncqa.org/Programs/HEDIS/01measures.htm. Although the use of NCQA accreditation and HEDIS measures by purchasers has traditionally been limited, there is a growing dependence of purchasers on these measures, indicating the need for substance abuse prevention-related items in HEDIS (Center for the Advancement of Health 17).

Several sources assisted in the preparation of this report:

American Medical Association. "CPT Process – How a Code Becomes a Code" June 7, 2001. Available at: http://www.ama-assn.org/ama/pub/category/3882.html.

Center for the Advancement of Health. "Purchasers' Report" *Health Behavior Change in Managed Care: A Status Report.* 2000.

Fox, K., J. Merrill, H. Chang, et al. "Estimating the Costs of Substance Abuse to the Medicaid Hospital Care Program" *American Journal of Public Health*. January 1995; 85(1).

Garnick, D., C. Horgan, E. Levy Merrick, et al. "Screening for Alcohol, Drug and Mental Health Problems in Primary Care" In progress, Schneider Institute for Health Policy, Heller Graduate School, Brandeis University.

National Committee on Quality Assurance. "HEDIS 2001 List of Measures" Available at: http://www.ncqa.org/Programs/HEDIS/01measures.htm.

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Annotated Literature Reviews

Literature Review: Screening/Intervention for Tobacco Use

Research indicates that implementing provider reminder systems markedly increases rates of screening and identification of tobacco use

Provider intervention, including simply advising a patient to quit smoking, significantly increases smoking cessation rates

Screening/Intervention for Tobacco Use Cont'd

Non-physician clinicians are equally important and effective in screening and intervention for tobacco use

Intensity of the intervention is associated with its long-term effectiveness

Training in effective strategies to assist patients (per guideline) is important, but changing practice systems is also necessary to effect patient behavior change

Screening/Intervention for Tobacco Use Cont'd

It is important to identify and address barriers to change in individual practices (e.g. awareness, agreement with guideline, self efficacy, infrastructure)

Multiple intervention strategies (tools + teamwork) will address more barriers

Literature Review: Screening/Intervention for Alcohol Abuse

- Intervention is effective at reducing alcohol use in patients with at-risk and problem drinking, but further research is needed to refine the methodology and its utility in patients with more severe alcohol problems
- Screening instruments, such as CAGE and AUDIT, are significantly more effective at identifying alcohol use problems than biological markers or clinical impressions

Literature Review: Screening/Intervention for Illicit Drug Abuse

- Screening tools for illicit drug abuse exist and have good specificity
- Some concern that self-report and urine toxicology have limited sensitivity

Screening/Intervention for Illicit Drug Abuse Cont'd

- Some concern that low prevalence of illicit drug abuse in some medical settings might limit efficiency of widescale screening
- Limited data as to the effectiveness of brief interventions for drug abuse
- Limited number of studies specifically related to illicit drugs--warrants further research

Annotated Literature Reviews

I. Alcohol *(David Fiellin, MD)*
- I.A Instruments and Efficacy
- I.B Special Populations[i]
- I.C Guideline Adherence and Role of Healthcare Provider
- I.D General

II. Tobacco *(Judith DePue, PhD)*
- II.A Instruments and Efficacy
- II.B Special Populations
- II.C Guideline Adherence and Role of Healthcare Provider

III. Illicit Drugs *(Peter Friedmann, MD and Patrick O'Connor, MD)*
- III.A Instruments and Efficacy
- III.B Special Populations
- III.C Guideline Adherence and Role of Healthcare Provider

IV. Comprehensive Substance Abuse Problems *(Drs. Fiellin, DePue, Friedmann, and O'Connor)*
- IV.A Instruments and Efficacy
- IV.B Special Populations
- IV.C Guideline Adherence and Role of Healthcare Provider

I. Alcohol

I.A Instruments and Efficacy

Aithal GP, Thornes H, Dwarakanath AD, Tanner AR. "Measurement of carbohydrate-deficient transferring (CDT) in a general medical clinic: Is this test useful in assessing alcohol consumption?" *Alcohol & Alcoholism* 1998. 33:304-309.

An evaluation of the operating characteristics of the CAGE, carbohydrate deficient transferring and MCV for the diagnosis of heavy drinking in patients from an outpatient medical clinic. The primary findings were a sensitivity of: CAGE 69%, CDT 69%, MCV 54% and a specificity of: CAGE 95%, CDT 81%, MCV 85%.

Anderson P, Scott E. "The effect of general practitioners' advice to heavy drinking men". *British J Addic* 1992. 87:891-900.

An evaluation of the effectiveness of an intervention including feedback, risk information, drinking norms, advice to reduce alcohol consumption, and a booklet for 154 patients with excessive alcohol consumption in community group practices. The primary results revealed that at 12 months the mean decrease from baseline in alcohol consumption during the prior 7 day period was 157 grams in intervention patients compared with 92 grams in the control patients.

Anonymous. "A cross-national trial of brief interventions with heavy drinkers. WHO Brief Intervention Study Group". *Am J Pub Health* 1996. 86:948-55.

An evaluation of the effectiveness of an intervention that included a control group, a simple advice group, or a group receiving brief counseling in 1559 at risk of alcohol-related problems. The primary results that male patients exposed to the interventions reported approximately 17% lower average daily alcohol consumption than those in the control group. For women, significant reductions were observed in both the control and the intervention groups. Five minutes of simple advice were as effective as 20 minutes of brief counseling.

Babor TF. "Brief intervention strategies for harmful drinkers: new directions for medical education". *Can Med Assoc J* 1990. 143:1070-76.

A review of the implications of brief intervention strategies for alcohol for medical education.

Babor TF, Grant M, (eds.). "Project on identification and management of alcohol-related problems". *Report on phase II: A randomized clinical trial of brief interventions in primary health care*. Geneva, Switzerland: World Health Organization, 1992.

Barry KL, Fleming MF. "Computerized administration of alcoholism screening tests in a primary care setting". *J Am Board Fam Pract* 1990. 3:93-8.

An evaluation of the operating characteristics of the SMAST for the diagnosis of alcohol abuse or dependence in patients from academically affiliated primary care clinics. The primary findings were a sensitivity of 45-80% and a specificity of 79-88%.

Bien TH, Miller WR, Tonigan JS. "Brief interventions for alcohol problems: a review". *Addiction* 1993. 88:315-336.

A review of the effectiveness studies of brief interventions targeting drinking behavior, enrolling over 6000 problem drinkers in both health care and treatment settings. This review indicates that brief interventions are more effective than no counseling, and often as effective as more extensive treatment.

Bradley KA, Bush KR, McDonell MB, Malone T, Fihn SD. "Screening for problem drinking: comparison of CAGE and AUDIT. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test". *J Gen Intern Med* 1998. 13(6):379-88.

Direct comparison of the CAGE and AUDIT in detecting heavy drinking and alcohol abuse and dependence in three primary care clinics. The primary findings were sensitivities for Heavy drinking of: AUDIT: 57%, CAGE: 49%, Augmented CAGE: 65% and for Heavy drinking and/or abuse or dependence of: AUDIT: 55%, CAGE: 53%, Augmented CAGE: 72%. Specificities for Heavy drinking were: AUDIT: 96%, CAGE: 75%, Augmented CAGE: 74% and for Heavy drinking and/or abuse or dependence were: AUDIT: 96%, CAGE: 81%, and Augmented CAGE: 74%.

Buchsbaum DG, Buchanan RG, Centor RM, Schnoll SH, Lawton MJ. "Screening for alcohol abuse using CAGE scores and likelihood ratios". *Ann Intern Med* 1991. 115:774-7.

An evaluation of the operating characteristics of the CAGE for the diagnosis of alcohol abuse or dependence in patients from and academically affiliated clinic. The primary findings were a sensitivity of 74% and a specificity of 91%.

Buchsbaum DG, Buchanan RG, Poses RM, Schnoll SH, Lawton MJ. "Physician detection of drinking problems in patients attending a general medicine practice". *J Gen Intern Med* 1992. 7:517-21.

An evaluation of the operating characteristics of the SMAST for the diagnosis of alcohol abuse or dependence in patients from academically affiliated primary care clinics. The primary findings were a sensitivity of 45-80% and a specificity of 79-88%.

Buchsbaum DG, Welsh J, Buchanan RG, Elswick RK, Jr. "Screening for drinking problems by patient self-report. Even 'safe' levels may indicate a problem". *Arch Intern Med* 1995. 155:104-8.

An evaluation of the operating characteristics of quantity frequency questions for the diagnosis of alcohol abuse or dependence in patients from academically affiliated hospital-based clinics. The primary findings were a sensitivity of 21-100% and a specificity of 43-97%.

Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. "The AUDIT alcohol consumption questions (AUDIT-C). An effective brief screening test for problem drinking". *Arch Intern Med* 1998. 158:1789-95.

An evaluation of the operating characteristics of the AUDIT, AUDIT-C, AUDIT-3 for the diagnoses of heavy drinking and alcohol abuse or dependence in patients from Veteran's Affairs general medicine clinics. The primary findings were a sensitivity of: AUDIT 59%, AUDIT-C 98%, AUDIT-3 79% for heavy drinking and a specificity of AUDIT 91%, AUDIT-C 57%, AUDIT-3 79% for heavy drinking. For the diagnosis of current alcohol abuse or dependence the sensitivities were AUDIT 71%, AUDIT-C 90%, AUDIT-3 81% for heavy drinking and the specificities were AUDIT 85%, AUDIT-C 45%, AUDIT-3 69%.

Chan AW, Pristach EA, Welte JW. "Detection by the CAGE of alcoholism or heavy drinking in primary care outpatients and the general population". *J Subst Abuse* 1994. 6:123-35.

An evaluation of the operating characteristics of the CAGE for the diagnosis of heavy drinking or alcohol dependence in patients from Health Care centers of a county medical center. The primary findings were a sensitivity of 63% and a specificity of 90% for heavy drinking. Sensitivity and specificity for alcohol dependence were 94% and 97%.

Cherpitel CJ. "Performance of screening instruments for identifying alcohol dependence in the general population, compared with clinical populations". *Alc Clin Exp Res* 1998. 22:1399-1404.

An evaluation of the operating characteristics of the CAGE and TWEAK for the diagnosis alcohol dependence in patients from primary care clinics. The primary findings were a sensitivity of: CAGE 43% and TWEAK 75% with a specificity of CAGE 94% and TWEAK 90%.

Cleary PD, Miller M, Bush BT, Warburg MM, Delbanco TL, Aronson MD. "Prevalence and recognition of alcohol abuse in a primary care population". *Am J Med* 1988. 85:466-71.

An evaluation of the operating characteristics of the SMAST for the diagnosis of problem drinking, alcohol abuse or dependence in patients from and academically affiliated hospital-based clinic. The primary findings were a sensitivity of 68% and a specificity of 92% for problem drinking and a sensitivity of 100% and a specificity of 85%.

Cyr MG, Wartman SA. "The effectiveness of routine screening questions in the detection of alcoholism". *JAMA* 1988. 259:51-4.

An evaluation of the operating characteristics of a two question screen for the diagnosis of alcoholism in patients from an academically affiliated hospital-based clinic. The primary findings were a sensitivity of 91% and a specificity of 90%.

Drummond DC, Thom B, Brown C, Edwards G, Mullan MJ. "Specialist versus general practitioner treatment of problem drinkers". *Lancet* 1990. 336:915-8.

An evaluation of the effectiveness of an intervention that included a visit to a specialist, return to general practitioner care with specialist supervision, for 40 patients with problem drinking in general practice settings. This level of care was compared to care in an alcohol treatment clinic. The primary results revealed that at 6 months the mean number of weeks of heavy drinking was 11.2 in the intervention arm and 11.6 in the group treated in the alcohol treatment clinic.

Edwards AGK, Rollnick S. "Outcome studies of brief alcohol intervention in general practice: the problem of lost subjects". *Addiction* 1997. 92:1699-1704.

A review of studies of brief interventions in general practice. The primary findings were an attrition rate of eligible subjects ranged from 44.3 to 83.2% The authors conclude that study populations in general practice-based brief alcohol interventions may have been those most susceptible to intervention and suggest caution in generalizing from brief intervention study results to routine primary care.

Escobar F, Espi F, Canteras M. "Diagnostic tests for alcoholism in primary health care: compared efficacy of different instruments". *Drug & Alcohol Depend* 1995. 40(2):151-8.

Comparison of the operating characteristics of the CAGE questions and biochemical markers for the diagnosis of alcohol abuse or dependence in a selected group of primary care patients. The primary findings in a select group of subjects were sensitivities of: CAGE ≥1: 70%, CAGE ≥2: 24%, Alcohol Clinical Index: 28%, MCV: 63%, GGT: 28%, SGOT/SGPT: 12% and specificities of: CAGE ≥1: 80%, CAGE ≥2: 97%, Alcohol Clinical Index: 86%, MCV: 48%, GGT: 94%, SGOT/SGPT: 91%.

Fiellin DA, Reid MC, O'Connor, PG. "Screening for alcohol problems in primary care: A systematic review". *Arch Intern Med* 2000. 160:1977-1989.

A systematic review of screening methods for alcohol problems in primary care. Provides empiric evidence for advocating the use of formal instruments such as the CAGE and AUDIT over biologic markers and clinician judgment.

Fleming MF, Barry KL. "A three-sample test of a masked alcohol screening questionnaire". *Alcohol & Alcoholism* 1991. 26:81-91.

An evaluation of the operating characteristics of a Health Screening Survey (HSS) and CAGE for the diagnosis of alcohol abuse or alcohol dependence in patients from primary care clinics. The primary findings were a sensitivity of: HSS 38% and CAGE 43% with a specificity of HSS 71% and CAGE 70%.

Fleming MF, Barry KL, Manwell LB, et al. "Brief physician advice for problem alcohol drinkers. A randomized controlled trial in community-based primary care practices". *JAMA* 1997. 227: 1039-1045.

An evaluation of the effectiveness of an intervention that included an assessment of alcohol consumption and problems, a comparison to drinking norms, advice about harm, a booklet, a drinking limit, a drinking diary, a prescription, and follow up visits for 723 patients with problem drinking in community-based primary care practices. The primary results revealed that at 12 months there were significant reductions in 7-day alcohol use (mean number of drinks in previous 7 days decreased from 19.1 at baseline to 11.5 at 12 months for the experimental group vs 18.9 at baseline to 15.5 at 12 months for controls), episodes of binge drinking (mean number of binge drinking episodes during previous 30 days decreased from 5.7 at baseline to 3.1 at 12 months for the experimental group vs 5.3 at baseline to 4.2 at 12 months for controls), and frequency of excessive drinking (percentage drinking excessively in previous 7 days decreased from 47.5% at baseline to 17.8% at 12 months for the experimental group vs 48.1% at baseline to 32.5% at 12 months for controls).

Fleming MF, Barry KL. "The effectiveness of alcoholism screening in an ambulatory care setting". *J Stud Alc* 1991. 52:33-6.

An evaluation of the operating characteristics of the SMAST for the diagnosis of alcohol abuse or alcohol dependence in patients from academically affiliated primary care clinics. The primary findings were a sensitivity of 49% and a specificity of 88%.

Gabrynowicz JW, Watts DJ. "Early diagnosis of alcoholism: a quick and reliable technique". *Australian Fam Phys* 1981. 10:893-8.

An evaluation of the operating characteristics of a diagnostic grid for the diagnosis of alcoholism in patients from a community practice. The primary findings were a sensitivity of 99% and a specificity of 96%.

Gomel MK, Wutzke SE, Hardcastle DM, Lapsley H, Reznik RB. "Cost-effectiveness of strategies to market and train primary health care physicians in brief intervention techniques for hazardous alcohol use". *Soc Sci Med* 1998. 4:203-11.

An examination of the cost-effectiveness of strategies to market and train primary care physicians in brief intervention for hazardous alcohol consumption. The strategies were direct mail, tele-marketing, or academic detailing. The primary findings were that tele-marketing was more cost-effective than academic detailing and direct mail.

Grant BF, Hasin DS, Harford TC. "Screening for current drug use disorders in alcoholics: an application of receiver operating characteristic analysis". *Drug Alcohol Depend* 1988. 21:113-25.

Among 120 patients in an alcohol rehabilitation program, self-administered versions of the 40-item Language of Addiction Drug (LAD-D) and 31-item Reasons for Drug Use tests were compared to summary diagnosis of drug use disorders on the Research Diagnostic Criteria. Current drug use disorders were found in 32%, past drug use disorders in 21%. Although these instruments appeared internally consistent and valid to detect current drug use disorders, their length limits their routine use for screening in medical settings.

Heather N, Campion PD, Neville RG, Maccabe D. "Evaluation of a controlled drinking minimal intervention for problem drinkers in general practice (the DRAMS scheme)". *J Royal College Gen Pract* 1987. 37:358-63.

An evaluation of the effectiveness of an intervention including a practitioner leaflet, medical record card with details of drinking history, drinking diary card, self-help book and a 2-week follow up for 91 patients with heavy and problem drinking in urban teaching practices. The primary results revealed that at 12 months the mean decrease from baseline in alcohol consumption during the prior 7 day period was 157 grams in intervention patients compared with 92 grams in the control patients.

Heather N. "Interpreting the evidence on brief interventions for excessive drinkers: The need for caution". *Alcohol & Alcoholism* 1995. 30:287-296.

A discussion of brief interventions in the alcohol field critiquing recent reviews of the literature on three grounds: (1) they pay insufficient regard to important differences within the family of brief interventions; (2) they do not sufficiently emphasize the crucial distinction between brief interventions among treatment seekers and non-treatment seekers; and (3) they arrive at over-optimistic and uncritical conclusions. The author concludes that the evidence for the effectiveness of opportunistic brief interventions is much stronger than for brief interventions in specialist settings for those seeking help, where their application should be restricted to patients with alcohol problems of relatively low severity.

Hore BD, Alsafar J, Wilkins RH. "An attempt at criterion-oriented validation of an alcoholism questionnaire in general practice". *British J Addiction Alc Other Drug* 1977. 72:19-22.

An evaluation of the operating characteristics of the Spare Time Activity Questionnaire for the diagnosis of problem drinking and alcohol addiction in patients from academically affiliated general practices. The primary findings were a sensitivity of 100% and a specificity of 87% for problem drinking. Sensitivity was 100% with a specificity of 72% for alcohol addiction.

Israel Y, Hollander O, Sanchez-Craig M, et al. "Screening for problem drinking and counseling by the primary care physician-nurse team". *Alc Clin Exp Res* 1996. 20:1443-50.

An evaluation of the effectiveness of two levels of nurse practitioner-delivered interventions in 105 patients with problem drinking in primary care physician's offices. The primary results revealed that at 12 months the mean reduction in the number of drinks per week was 107 in the extended intervention arm and 64 in the comparison group.

King M. "At risk drinking among general practice attenders: validation of the CAGE questionnaire". *Psychological Med* 1986. 16:213-7.

An evaluation of the operating characteristics of the CAGE for the diagnosis of at risk drinking in patients from an academically affiliated health center. The primary findings were a sensitivity of 84% and a specificity of 95%.

Kitchens JM. "Does this patient have an alcohol problem"? *JAMA* 1994. 272:1782-1787.

A clinically oriented review of diagnostic criteria and screening practices for patients with alcohol problems.

McIntosh MC, Leigh G, Baldwin NJ, Marmulak J. "Reducing alcohol consumption. Comparing three brief methods in family practice". *Canadian Fam Phys* 1997. 43:1959-62, 1965-7.

An evaluation of the effectiveness of three levels of intervention: no intervention, a physician intervention, and a nurse practitioner intervention that included 2 consultations, advice regarding drinking, a handout, a drinking goal, a drinking diary, a booklet, and a drinking record sheet for 159 patients with hazardous drinking in a family practice center. The primary results revealed that at 12 months there were significant reductions in mean monthly quantity and frequency in the total sample but no significant differences by treatment group.

Persson J, Magnusson P. "Early intervention in patients with excessive consumption of alcohol: A controlled study". *Alcohol* 1989. 6:403-408.

An evaluation of the effectiveness of an intervention that enrolled patients with excessive drinking patterns or elevated GGT levels from 5 different out-patient clinics including emergency rooms, orthopedic, medical and surgical departments, and a district health center. The patients were seen by a nurse each month and a physician every third month. At12 months a 69% follow-up rate was obtained.

Piccinelli M, Tessari E, Bortolomasi M et al. "Efficacy of the alcohol use disorders identification test as a screening tool for hazardous alcohol intake and related disorders in primary care: a validity study". *BMJ* 1997. 314:420-4.

An evaluation of the AUDIT for hazardous drinking, alcohol abuse or alcohol dependence in community practices. The primary findings were a sensitivity of 84% and a specificity of 90%.

Richmond R, Heather N, Wodak A, Kehoe L, Webster I. "Controlled evaluation of a general practice-based brief intervention for excessive drinking". *Addiction* 1995. 90:119-32.

An evaluation of the effectiveness of three levels of intervention: no intervention, a minimal intervention including 5 minutes of advice, an intervention that included 5 short consultations, a manual, an alcohol diary, discussion of the harmful effects of alcohol, drinking targets, coping skills, comparison to drinking norms for 378 patients with excessive drinking in urban group practices. The primary results revealed that at 12 months the mean decrease from baseline in alcohol consumption was 5 Units, 4 Units, and 7 Units for the no intervention, minimal intervention and full intervention patients, respectively.

Rumpf HJ, Hapke U, Hill A, John U. "Development of a screening questionnaire for the general hospital and general practices". *Alc Clin Exp Res* 1997. 21:894-8.

An evaluation of the operating characteristics of the SMAST, LAST and CAGE for the diagnosis of harmful drinking, alcohol abuse and dependence in patients from community physician's offices. The primary findings were a sensitivity of: SMAST 48%, LAST 63%, CAGE 53% and a specificity of: SMAST 95%, LAST 93%, CAGE 93%.

Rydon P, Redman S, Sanson-Fisher RW, Reid AL. "Detection of alcohol-related problems in general practice". *J Stud Alc* 1992. 53:197-202.

An evaluation of the operating characteristics of clinician judgment for the diagnosis of alcohol-related problems in patients from community physician's offices. The primary findings were a sensitivity of 18-40% and a specificity of 96-7%.

Samet JH, O'Connor PG. "Alcohol abusers in primary care: readiness to change behavior". *Am J Med* 1998. 105:302-306.

This survey of primary care patients and their readiness to change drinking behavior indicates that primary care patients who give a positive response to the CAGE questionnaire are often in the "action" phase. Therefore, primary care physicians need to address treatment and relapse prevention in addition to motivation in their patients.

Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. "Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--II". *Addiction* 1993. 88:791-804.

An evaluation of the operating characteristics of the AUDIT for the diagnosis of hazardous and harmful drinking in patients from community physician's offices, hospital-based clinics and community health centers. The primary findings were a sensitivity of 97% and 95% for hazardous drinking and harmful drinking and a specificity of 78% and 85% for hazardous and harmful drinking.

Schmidt A, Barry KL, Fleming MF. "Detection of problem drinkers: the Alcohol Use Disorders Identification Test (AUDIT)". *Southern Med J* 1995. 88:52-9.

An evaluation of the operating characteristics of the AUDIT for the diagnosis of alcohol abuse or dependence in patients from an academically affiliated hospital-based clinic. The primary findings were a sensitivity of 38% and a specificity of 95%.

Schorling JB, Willems JP, Klas PT. "Identifying problem drinkers: lack of sensitivity of the two-question drinking test". *Am J Med* 1995. 98:232-6.

An evaluation of the operating characteristics of the MAST for the diagnosis of alcoholism in patients from academically affiliated outpatient clinics. The primary findings were a sensitivity of 53% and a specificity of 93%.

Senft RA, Polen MR, Freeborn DK, Hollis JF. "Brief intervention in a primary care setting for hazardous drinkers". *Am J Prev Med*. 1997. 13:464-70.

An evaluation of the effectiveness of an intervention including a clinician message and a health counselor intervention that included a discussion of drinking norms, alcohol's health effects, drinking goals, printed material for 516 patients with hazardous drinking in primary care facilities of group practices of a HMO. The primary results revealed that at 12 months the total standard drinks in the past 3 months was 157 in intervention patients compared with 179 in the control patients.

Seppa K. "Intervention in alcohol abuse among macrocytic patients in general practice". *Scandinavian J Prim Health Care* 1992. 10:217-22.

An evaluation of the effectiveness of an intervention that included physician visits every three months that covered MCV results and alcohol consumption in 177 women with alcohol abuse in a health center. The primary results revealed that at 12 months there were no significant differences by treatment group in MCV.

Sillanaukee P, Aalto M, Seppa K. "Carbohydrate-deficient transferring and conventional alcohol markers as indicators for brief intervention among heavy drinkers in primary health care". *Alc Clin Exp Res* 1998. 22:892-6.

An evaluation of the operating characteristics of the carbohydrate deficient transferring, MCV, AST, ALT and GGT for the diagnosis of heavy drinking in patients from an outpatient medical clinic. The primary findings were a sensitivity of: CDT 39%, MCV 28%, AST 12%, ALT 28%, GGT 33% and a specificity of: CDT 29%, MCV 40%, AST 20%, ALT 29%, GGT 34%.

Taj N, Devera-Sales A, Vinson DC. "Screening for problem drinking: does a single question work"? *J Fam Pract* 1998. 46:328-35.

An evaluation of the operating characteristics of a single question screen for the diagnosis of at risk drinking, alcohol abuse or dependence in patients from an outpatient medical clinic. The primary findings were a sensitivity of 62% and a specificity of 93%.

Volk RJ, Cantor SB, Steinbauer JR, Cass AR. "Item bias in the CAGE screening test for alcohol use disorders". *J Gen Intern Med* 1997. 12:763-9.

An evaluation of the operating characteristics of individual items of the CAGE for the diagnosis of alcohol abuse or dependence in patients from and academic hospital affiliated family practice center. The primary findings were a sensitivity of: Cut down 63%, Annoyed 24%, Guilty 37%, Eye-opener 21% and a specificity of Cut down 84%, Annoyed 93%, Guilty 90%, Eye-opener 95% .

Wallace P, Cutler S, Haines A. "Randomized controlled trial of general practitioner intervention in patients with excessive alcohol consumption". *BMJ* 1988. 297:663-8.

An evaluation of the effectiveness of an intervention that included an assessment of alcohol consumption and problems, a comparison to drinking norms, advice about harm, a booklet, a drinking limit, a drinking diary, a prescription, and follow up visits for 909 patients with excessive alcohol consumption in a community group practices. The primary results revealed that at 12 months the percentage of men drinking above recommended limits was 56% in the intervention group compared with 75% in the control group. At 12 months the percentage of women drinking above recommended limits was 52% in the intervention group compared with 71% in the control group.

Wilk AI, Jensen NM, Havighurst TC. "Meta-analysis of randomized control trials addressing brief interventions in heavy alcohol drinkers". *J Gen Intern Med* 1997. 12:274-283.

This meta-analysis of 12 randomized controlled trials reveals that heavy drinkers who received brief interventions were twice as likely to moderate drinking at 6 to 12 months compared to those who received no intervention.

I.B Special Populations

Adams WL, Barry KL, Fleming MF. "Screening for problem drinking in older primary care patients". *JAMA* 1996. 276:1964-7.

An evaluation of the CAGE for the diagnosis of excessive drinking in patients over the age of 60 from community practices. The primary findings were a sensitivity of 14% and a specificity of 97%.

Barry KL, Fleming MF. "The Alcohol Use Disorders Identification Test (AUDIT) and the SMAST-13: predictive validity in a rural primary care sample". *Alcohol & Alcoholism* 1993. 28:33-42.

An evaluation of the operating characteristics of the AUDIT and SMAST for the diagnosis of current alcohol abuse and dependence in patients from community clinics. The primary findings were a sensitivity of: AUDIT 61%, SMAST 57% and a specificity of: AUDIT 90%, SMAST 80%

Bradley KA, McDonell MB, Bush K, Kivlahan DR, Diehr P, Fihn SD. "The AUDIT alcohol consumption questions: Reliability, validity, and responsiveness to change in older male primary care patients". *Alc Clin Exp Res* 1998. 22:1842-9.

An evaluation of the operating characteristics of the AUDIT for the diagnosis of heavy drinking in patients from Veteran's Affairs general medicine clinics. The primary findings were a sensitivity of 54% and a specificity of 93% for greater than 14 drinks per week.

Broadhead WE, Leon AC, Weissman MM et al. "Development and validation of the SDDS-PC screen for multiple mental disorders in primary care". *Arch Fam Med* 1995. 4:211-9.

An evaluation of the operating characteristics of the Symptom Driven Diagnostic System for Primary Care for the diagnosis of alcohol abuse or dependence in patients from community practices and academically affiliated practices. The primary findings were a sensitivity of 38% and a specificity of 99%.

Buchsbaum DG, Buchanan RG, Welsh J, Centor RM, Schnoll SH. "Screening for drinking disorders in the elderly using the CAGE questionnaire". *J Am Geriat Soc* 1992. 40:662-5.

An evaluation of the operating characteristics of the CAGE for the diagnosis of problem drinking, alcohol abuse or dependence in patients from and academically affiliated clinic. The primary findings were a sensitivity of 70% and a specificity of 91%.

Chang G, Behr H, Goetz MA, Hiley A, Bigby J. "Women and alcohol abuse in primary care. Identification and intervention". *Am J Addict*. 1997. 6:183-92.

An evaluation of the effectiveness of an intervention that included a visit with a psychiatrist and a discussion of drinking limits, booklet, and a pamphlet in 24 women with alcohol abuse or dependence identified in a hospital-based clinic. The primary results revealed that at 90 days the mean number of drinking days per week was 3.2 in the intervention arm and 2.6 in the control group.

Cordoba R, Delgado MT, Pico V, et al. "Effectiveness of brief intervention on non-dependent alcohol drinkers (EBIAL): a Spanish multi-centre study". *Fam Prac* 1998. 15:562-568.

An evaluation of the effectiveness of an intervention including alcohol-related questions, alcohol risk information, a booklet, a drinking diary, and a drinking agreement for 229 patients with at risk alcohol consumption in primary care practices. The primary results revealed that 67% of the intervention patients compared with 44% of the control patients had alcohol consumption below 35 U per week.

Isaacson JH, Butler R, Zacharek M, Tzelepis A. "Screening with the Alcohol use Disorders Identification Test (AUDIT) in an inner-city population". *J Gen Intern Med* 1994. 9:550-3.

An evaluation of the operating characteristics of the AUDIT for the diagnosis of alcohol dependence in patients from an academically affiliated clinic. The primary findings were a sensitivity of 96% and a specificity of 96%.

Knight JR, Shrier LA, Bravender TD, Farrell M, Vander Bilt J, Shaffer HJ. "A new brief screen for adolescent substance abuse". *Arch Pediat Adolesc Med* 1999. 153:591-6.

Among 99 teenagers known to have used alcohol or other drugs in an academic adolescent medicine practice, the 6-item CRAFFT at a cut-point of 2 or more positive responses was 92% sensitive and 82% specific for indicating a need for intensive addiction treatment defined by a score of 55 or higher on the validated PICS T. CRAFFT is a mnemonic for the following items: "Have you ever ridden in a Car driven by someone (including yourself) who was high or had been using alcohol or drugs?," "Do you ever use alcohol or drug to Relax, feel better about yourself or fit in?," "Do you ever use alcohol or drugs while you are by yourself (Alone)?," Do you ever Forget things you did while using alcohol or drugs?," "Do you Family or friends ever tell you that you should cut down on your drinking or drug use?,"" and "Have you ever gotten into Trouble while you were using alcohol or drugs?" Distribution of treatment needs according to the PICS T was 0% no treatment, 23% brief intervention, 50% outpatient/short-term, and 29% inpatient/long-term treatment. In this study the possibility of spectrum bias and the lack of a validation group means that the CRAFFT may perform less well as a screening test in other adolescent populations, especially those with less severe substance problems.

Leon AC, Olfson M, Weissman MM et al. "Brief screens for mental disorders in primary care". *J Gen Intern Med* 1996. 11:426-30.

An evaluation of the operating characteristics of the Symptom Driven Diagnostic System for Primary Care for the diagnosis of alcohol dependence in patients from HMO primary care clinics. The primary findings were a sensitivity of 75% and a specificity of 97%.

Monti PM, Colby SM, Barnett NP, Spirito A, Rohsenow DJ, Myers M, Woolard R, Lewander W. "Brief intervention for harm reduction with alcohol-positive older adolescents in a hospital emergency department". *J Consulting & Clin Psychology* December 1999. 67(6): 989-94.

An evaluation of the effectiveness of an intervention that included a 30-minute, brief motivational interview compared to standard care in reducing alcohol-related consequences and use among 18 and 19 year old adolescents presenting to an urban ED after an alcohol-related event. The primary results revealed that at 12 months the intervention group had a significantly lower incidence of alcohol-related injuries ($p<0.01$), drinking and driving, and social consequences such as traffic violations and alcohol-related problems ($p<0.05$) than in the standard care group. Both groups significantly reduced their drinking during the follow-up period.

Moran MB, Naughton BJ, Hughes SL. "Screening elderly veterans for alcoholism". *J Gen Intern Med* 1990. 5:361-4.

An evaluation of the operating characteristics of the MAST for the diagnosis of alcoholism in patients from Veteran's Affairs satellite clinics. The primary findings were a sensitivity of 48% and a specificity of 76%.

Morton JL, Jones TV, Manganaro MA. "Performance of alcoholism screening questionnaires in elderly veterans". *Am J Med* 1996. 101:152-9.

Another comparison of the CAGE and AUDIT for identifying alcohol abuse and dependence in a primary care setting. The primary findings were sensitivities of: MAST-G: 70%, CAGE: 63%, AUDIT: 33% and specificities of: MAST-G: 80%, CAGE: 82%, AUDIT: 91%.

Steinbauer JR, Cantor SB, Holzer CE, Volk RJ. "Ethnic and sex bias in primary care screening tests for alcohol use disorders". *Ann Intern Med* 1998. 129:353-362.

An evaluation of the operating characteristics of the AUDIT, CAGE and SAAST for the diagnosis of alcohol abuse or dependence in patients from an academic hospital affiliated family practice center. The primary findings were a sensitivity of: AUDIT 70-92%, CAGE 21-69% and SAAST 13-96% and a specificity of: AUDIT 73-94%, CAGE 77-96% and SAAST 67-95%.

Volk RJ, Steinbauer JR, Cantor SB, Holzer CE, 3rd. "The Alcohol Use Disorders Identification Test (AUDIT) as a screen for at-risk drinking in primary care patients of different racial/ethnic backgrounds". *Addiction* 1997. 92:197-206.

An evaluation of the AUDIT for at risk drinking, alcohol abuse or alcohol dependence in academically affiliated family practice centers. The primary findings were a sensitivity of 51% and a specificity of 96%.

I.C Guideline Adherence and Role of Healthcare Provider

Institute of Medicine. "Broadening the base of treatment for alcohol problems". Washington, DC: National Academy Press; 1990.

An exhaustive review of the current literature that advocates for an increased role of primary care and other physicians in the recognition and treatment of patients with alcohol problems.

National Institute on Alcohol Abuse and Alcoholism. "The physicians' guide to helping patients with alcohol problems". *NIH publication no. 95-3769*. Washington, DC: Government Printing Office; 1995

The NIAAA's brief and practical guide for the primary care physician that outlines the steps necessary to identify and manage patients with alcohol problems.

Reid MC, Tinetti ME, Brown CJ, Concato J. "Physician awareness of alcohol use disorders among older patients". *J Gen Intern Med* 1998. 13:729-34.

A cross-sectional telephone survey of 155 primary care physicians. The primary results were a median prevalence estimate of AUDs among older patients of 5%. Among physicians who regularly screened (n= 110), 100% asked quantity-frequency questions, 39% also used the CAGE questions, and 15% also cited use of biochemical markers. The authors conclude that primary care physicians underdetect AUDs among older patients.

I.D General

Reid MC, Fiellin DA, O'Connor PG. "Hazardous and harmful drinking in primary care". *Arch Intern Med* 1999. 159:1681-9.

A review of the literature focusing on the prevalence of hazardous and harmful drinking in primary care settings and the evidence to support the adverse health effects of this level of alcohol consumption.

US Department of Health and Human Services. "Eighth special report to the US Congress on Alcohol and Health from the Secretary of Health and Human Services, September 1993". Washington DC: US Department of Health and Human Services, Public Health Service National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism, 1993.

A comprehensive review of the epidemiology, neurobiology, and clinical treatment of alcohol use disorders.

II. Tobacco

II.A Instruments and Efficacy

Ahluwalia JS, Gibson CA, Kenney RE, Wallace DD, Resnixow K. "Smoking status as a vital sign". *J Gen Intern Med* 1999. 14:402-8. (CPG)

This study involved simply placing a smoking status stamp on clinic charts to see if rates of ask, advise, assist, and arrange follow-up were increased for 2,595 consecutively enrolled African American patients (1,229 interv, 1,366 control) in an adult walk-in clinic in an inner-city hospital. Design involved four one-month blocks, where 1st two weeks served as control and 2nd two weeks intervention. House staff (n=45) rotated through clinic in one-month blocks. Patient exit interviews were used to assess physician interventions. The stamp had a significant effect on asking about cigarette smoking status, compared with control period (78.4% vs. 45.6%, OR 4.28, CI 3.58-5.10), on patients' being told to quit (39.9% vs. 26.9, OR 1.81, CI 1.36-2.40), and on having a follow-up arranged (12.3% vs. 6.2%, OR 2.16, CI 1.30-3.38). The stamp did not improve the rate at which physicians provided assistance to quit.

Chang HC, Zimmerman LH, Beck JM. "Impact of chart reminders on smoking cessation practices of pulmonary physicians". *Am J Repir Crit Care* 1995. 152:984-7. [Included in Community Guide review]

Chart reviews at 1, 3, and 8 months were used to assess whether pulmonary physicians' smoking cessation counseling rates increased from before to after implementation of chart reminders. Documentation of smoking status increased from 33 to 83% (p=.0001); proportion of all patients counseled increased from 6 to 13.2% (p=.01).

Fiore MC, Jorenby DE, Schensky AE, Smith SS, Bauer RR, Baker TB. "Smoking status as the new vital sign: effect on assessment and intervention in patients who smoke". *Mayo Clin Proc* 1995. 70:303-4. [In Guideline screening studies meta-analysis]

Patient exit interviews were used to assess before (n=870) and after (n=994) implementation of adding a vital sign stamp that included smoking status (current, former, never), along with traditional vital signs, to the progress notepaper for a general internal medicine clinic. Patients who were asked smoking status increased from 58% to 81% (p<.0001), smokers advised to quit increased from 49% to 70% (p<.01), smokers advised on how to stop smoking increased from 24% to 43% (p<.01).

Jaen CR, Crabtree BF, Zyzabski SJ, Goodwin MA, Stange KC. "Making time for tobacco cessation counseling". *J Fam Pract* 1998. 46:425-8.

Research nurses directly observed 2 days of outpatient visits to 138 family physicians in Ohio. Smoking status was determined by patient questionnaire. Visits by smokers with and without smoking cessation advice were compared. The incidence of advice was highest during wellness visits (55% vs 22% for illness visits, p<.001). Advice was more common for patients seen for tobacco related chronic illness than for a chronic problem not related to tobacco (32% vs 17%, p=.05). Average duration of advice was 1 and a half minutes, with no differences across visit types.

McBride PE, Plane MB, Underbakke G, Brown RL, Solberg LI. "Smoking screening and management in primary care practices". *Arch Fam Med* 1997. 6:165-72.

This descriptive study examines practice factors associated with smoking services, drawing from physician and patient questionnaires and medical record retrospective reviews in 45 practices, across 4 Midwest states and 4879 patient assessments. 81% of all patients and 93% of smokers reported being asked if they smoked; 78% were advised to quit and 60% discussed a quit date; 20% received a nicotine prescription and 25% a referral to assist with quitting. Patients with CHD or CHD risk factors, who smoked more, visited a physician more, or wanted help, were more likely

to receive services. Few practices had developed systems to routinely provide services; lack of systems was associated with fewer interventions.

Montagna RA, Hupcey JE. "Increasing smoking cessation counseling by advanced practice nurses". *Clin Excell Nurse Pract* 2000. 4:224-30.

Review of literature to identify effective methods by which APN can identify and counsel smokers. Conclusion: office-wide reminders increase the identification and counseling of patients who smoke.

Ockene JK, Kristeller J, Pbert L, Herbert JR, Luippold R, Goldberg RJ, Landon J, Kalan K. "The physician-delivered smoking intervention project: can short-term interventions produce long-term effects for a general outpatient population"? *Health Psych* 1994. 13: 278-81.

This study is important because it directly assessed increased intensity of interventions across three conditions, where all physicians were trained and 1,261 primary care patients were randomized. Training of 145 residents consisted of a 2 _ hour program with role playing in: 1) advice only (individualized advice to stop smoking), 2) patient-centered counseling (use of open-ended questions about motivation, past and current concerns, resources available, self-help materials, a written plan for change and scheduling a follow-up call or visit), 3) counseling as described above plus free access to nicotine gum for those who set a quit date and were receptive to its use. There were no differences across conditions for 7 day point prevalence at 12 months. However, maintained cessation rates (abstinent at both 6 months and 12 months) increased with intervention intensity: AO 6.0%, Counseling 7.8%, Counseling + gum 10.0%, test of trend χ^2 = 5.05, p=.02.

Rice VH, Stead LF. "Nursing interventions for smoking cessation (Cochrane Review)". In the Cochrane Library, Issue 4, 2001. Oxford: Update Software. Available at www.updateusa.com. Accessed November 21, 2001. (last amendment, May 2001)

Sixteen studies comparing nursing intervention to control or usual care found significant increase in odds of quitting (OR 1.50, CI 1.29-1.73). There was no evidence of indirect comparison that interventions classified as intensive had a greater effect than less intensive ones. There was limited evidence that interventions were more effective for hospital inpatients with cardiovascular disease than for inpatients with other conditions. Interventions in non hospitalized patients also showed evidence of benefit.

Robinson MD, Laurent SL, Little JM Jr. "Including smoking status as a new vital sign: it works"! *J Fam Pract* 1995. 40:556-61. [In Guideline screening studies meta-analysis & in Community Guide review]

Consecutive patients completed exit surveys for 1 month before and 2 months after implementation of smoking status being added to the vital sign stamp on patient charts. Among 637 patients surveyed, 179 were current smokers; 95 in “prestamp” group and 84 in “poststamp” group. Discussion of smoking increased from 47 to 86% (p<.001) of patient encounters; advice to quit increased from 50 to 80% (p<.001). Discussion of smoking increased across all 5 stages of change, but most dramatically in “preparation” stage (53 to 95%), while “precontemplation” smokers were much less likely to receive counseling.

Silagy C, Stead LF. "Physician advice for smoking cessation (Cochrane Review)". *In the Cochrane Library, Issue 4, 2001.* Oxford: Update Software. Available at www.updateusa.com. Accessed November 21, 2001. (last amendment, August 2001)

Evidence reviews are based on a systematic process, with standardized inclusion criteria, and meta-analysis techniques. Evidence is not restricted to English language and reviews are updated as new evidence is identified. This review included 34 randomized trials of smoking cessation advice, conducted between 1972 and 1999, in which abstinence was assessed at least 6 months after advice was first provided. Studies involving more intensive interventions are summarized below. Studies which assess effects of training doctors are included in another review, see Lancaster below. Pooled data from 16 trials of brief advice (defined as a single consultation lasting < 20 min and up to 1 f-up) compared to no advice or usual care showed a small but significant increase in odds of quitting (OR 1.69, CI 1.45-1.98). This equates to an absolute difference in cessation rate of about 2.5%.

Any trial were the intervention involved a greater time commitment at initial contact, use additional materials other than a leaflet, or more than one follow-up contact, was defined as more intensive. Comparison of minimal advice vs. intensive interventions (15 trials) suggested a small but significant advantage of more intensive advice (OR 1.44, CI 1.23-1.68) but with significant heterogeneity (p=.04). However, there was insufficient evidence from indirect comparisons to show a difference in effectiveness according to intensity of intervention, amount of follow-up provided, or whether or not aids were used at time of contact, in addition to advice.

Spencer E, Swanson T, Hueston WJ, Edberg DL. "Tools to improve documentation of smoking status. Continuous quality improvement and electronic medical records". *Arch Fam Med* 1999. 8:18-22. [Included in Community Guide review]

> Using the continuous quality improvement plan-do-study-act cycle, a 7-member group worked with nursing staff to define roles, routines and responsibilities for medial assistants to screen and document smoking status in problem list of electronic medical record. Screening rate was electronically tracked and feedback was given monthly to staff. The screening rate rose from 18.4% to 80.3% within 2 weeks and was maintained for 19 months. Providers also increased documentation of smoking cessation counseling from baseline rate of 17.1% to 48.3%.

II.B Special Populations

Severson HH, Andrews JA, Lichtenstein E, Wall M, Akers L. "Reducing maternal smoking and relapse: long-term evaluation of a pediatric intervention". *Prev Med* 1997. 26: 120-130

> This is one of very few studies, which have addressed smoking cessation among parents in the pediatric setting. 2,901 mothers were enrolled during first 6-months post partum in 49 pediatric offices. The intervention reduced smoking (5.9% vs 2.7%) and relapse (55% vs 45%) at 6 month follow-up, but no significant effect at 12 months. But the intervention had positive effect on secondary outcomes: readiness to quit and knowledge of and attitude toward ETS. Husband/partner smoking was the strongest predictor of maternal quitting or relapse.

II.C Guideline Adherence and Role of Healthcare Provider

Andrews JO, Tingen MS, Waller JL, Harper RJ. "Provider feedback improves adherence with AHCPR smoking cessation guideline". *Prev Med* 2001. 33:415-21.

> A quasi-experimental study with one intervention and one control team in a VA Medical Center, utilized chart reviews to measure provider documentation of four A's (ask, advise, assist, arrange), at baseline, 4-8 weeks after a single educational intervention on AHCPR Guideline, and 4-8 weeks after individual and team feedback from the chart reviews and booster education. A vital sign stamp that included smoking status was implemented pre-study. Both teams had 100% compliance in asking about smoking status, but the educational intervention had no significant impact on advise, assist, and arrange follow-up. However, significant improvements occurred in the intervention team on advise (p=.05), assist (p=.001), and arranging follow-up (p=.001) after feedback was provided.

Cohen SJ, Christen AG, Katz BP, Drook CA, Davis BJ, Smith DM, Stookey GK. "Counseling medical and dental patients about cigarette smoking: the impact of nicotine gum and chart reminders". *Am J Pub Health* 1987. 77:313-6. [In Guideline screening studies meta-analysis]

> This report assigned 112 physicians and 50 dentists (from separate studies) to 4 conditions: 1) control or advice-only group who received 1-hour training and 4-step protocol booklet, 2) protocol reminder stickers on patients' charts, 3) nicotine gum made freely available to their patients, or 4) both chart reminders and gum. Exit interviews with 1091 medical and 647 dental patients showed that presence of chart reminders and/or nicotine gum availability increased time spent counseling and altered nature of counseling by both physicians and dentists.

Ellerbeck EF, Ahluwalia JS, Jolicoeur DG, Gladden J, Mosier MC. "Direct observation of smoking cessation activities in primary care practice". *J Fam Pract* 2001. 50:688-93.

> This observation study examined patient, physician, and office characteristics on frequency of smoking cessation efforts in routine office visits. Data included direct observation of 2963 physician-patient encounters, along with a survey of physicians and on-site examination of office systems in 38 practices. Tobacco was discussed in 21% of encounters (range among practices = 0%-90%). Discussion of tobacco was more common in the 58% of practices that had standard forms for recording smoking status (26% vs 16%, p=.01), more common with new patient visits, less common with older patients, and physicians in practice more than 10 years. Of 244 smokers identified, 38% received assistance (range of practices = 0-100%), 31% had discussion of bupropion, and 17% had discussion of nicotine replacement therapy. Although 68% of offices had smoking cessation materials for patients, few recorded tobacco use in the "vital signs" section of the patient history or assigned smoking-related tasks to non-physician personnel.

Fiore MC, Bailey WC, Cohen SJ, et al. "Treating Tobacco Use and Dependence: Clinical Practice Guideline". Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, June, 2000. Also available at www.surgeongeneral.gov/tobacco.

> Recommendations on intensity of interventions was supported by 3 separate analyses, one on session length, one on total contact time, and one on number of sessions. 43 studies met criteria for comparisons of session length, as defined by maximum time in a single contact, although interventions could involve multiple contacts at this length. There was a dose-response relation between session length and abstinence rates, with higher intensity counseling producing

significantly greater abstinence than minimum and low intensity. Compared to no contact (10.9% abs rate), odds for minimal counseling (< 3min) was 1.3 (CI 1.01-1.6) (13.4% abs rate), low intensity (3-10 min) OR 1.6 (CI 1.2-2.0)(16.0% abs rate), high intensity (> 10 min) OR 2.3 (CI 2.0-2.7)(22.1% abs rate). 35 studies were included in analysis for total contact time (number of sessions x contact length), showing dose response between contact time and abstinence rates, for increments from no minutes, 1-3 min (OR 1.4, CI 1.1-1.8), 4-30 min (OR 1.9, CI 1.5-2.3), 31-90 min (OR 3.0, CI 2.3-3.8). However, there was no evidence that more than 90 minutes increased rates further; 91-300 min (OR 3.3, CI 2.3-4.6), >300 min (OR 2.8, CI 2.0-3.9). 45 studies were involved in assessing impact of number of sessions. Again there was a dose-response relationship. Compared to 0-1 session, 2-3 sessions OR 1.4 (CI 1.1-1.7), 4-8 sessions OR 1.9 (CI 1.6-2.2), > 8 sessions OR 2.3 (CI 2.1-3.0). Recommendation: There is a strong dose-response relation between the session length of person-to-person contact and successful treatment outcomes. Intensive interventions are more effective than less intensive interventions and should be used whenever possible (strength of evidence = A). Recommendation: Person-to-person treatment delivered for four or more sessions appears especially effective in increasing abstinence rates. Therefore, if feasible, clinicians should strive to meet four or more times with individuals quitting tobacco use (strength of evidence = A). Additional meta-analyses were conducted comparing various clinician types (29 studies)(no clinician vs. self-help vs. nonphysician clinician vs physician clinician), and on number of clinician types (37 studies)(no clinician vs. 1 clinician type vs. 2 clinician types vs. 3 or more clinician types). Results were consistent across clinician types; there was no clear advantage to any single clinician type. There was a non-significant trend for multiple types of clinicians to be more efficacious than a single type. [see website for efficacy tables] Recommendation: Treatment delivered by a variety of clinician types increases abstinence rates. Therefore, all clinicians should provide smoking cessation interventions (strength of evidence = A). Recommendation: Treatments delivered by multiple types of clinicians are more effective than interventions delivered by a single type of clinician. Therefore, if feasible, the delivery of interventions by more than one type of clinician is encouraged (strength of evidence = C).

Goldstein MG, Niaura R, Willey C, Kazura A, Rakowski W, DePue J, Park E. "An academic detailing intervention to disseminate physician-delivered smoking cessation counseling: smoking cessation outcomes of the Physicians Counseling Smokers Project". 2001. (under review).

This community-based, quasi-experimental study involved population-based samples of 259 primary care physicians and 4195 adult smokers in separate geographic areas of Rhode Island. Smokers were recruited via random digit dial approach. An academic detailing intervention was delivered to physicians in intervention areas over a period of 15 months. Analyses were performed on the 2346 subjects who reported at least one physician visit over 24 months. There was a borderline significant effect on self reported quit rates for the smokers who resided in the intervention area and who reported a physician visit during the study period (OR 1.35, CI 0.99-1.83, p=.057). Among a subgroup of 819 smokers, who lived in the intervention area and who reported a visit with an enrolled physician, there was a significant effect (OR 1.80, CI 1.16-2.75, p=.008).

Jaen CR, McIlvain H, Pol L, Phillips Jr RL, Flocke S, Crabtree BF. "Tailoring tobacco counseling to the competing demands in the clinical encounter". *J Fam Pract* 2001. 50:859-63.

This study addresses a controversial issue in Clinical Practice Guideline, which recommends that smokers receive intervention at every visit. A cross-sectional study was performed, using direct observation of 91 outpatient visits by cigarette smokers, with 20 family physicians, in 7 community family practices. A hierarchy of 5 patterns was observed: 1) optimal smoking counseling curing visits when it was appropriate (21% of visits), 2) tobacco counseling appropriately overridden by higher-priority competing demands (24%), 3) failure to address during a non-smoking related illness visit when it was appropriate (27%), 4) failure to address during visits for smoking-related conditions when it was appropriate (25%), 5) failure to address during health maintenance examinations (2%). Authors conclude that since tobacco-specific discussions are appropriate only in approximately three fourths of primary care visits by smokers, clinical practice guidelines that recommend intervention at every visit are unrealistic. However, the finding that only one third of eligible visits addressed tobacco makes it imperative that tobacco counseling be integrated into visits that represent a teachable moment.

Kottke TE, Solberg LI, Brekke ML, Conn SA, Maxwell P. Brekke MJ. "A controlled trial to integrate smoking cessation advice into primary care practice: doctors helping smokers, round III". *J Fam Pract* 1992. 34: 701-8. [In Guideline screening studies meta-analysis]

A non-randomized trial comparing 10 primary care clinics in intervention area with 8 clinics in geographically separate control area. Intervention involved training, organizational assistance in incorporating practice system. Assessment involved pre and post mail surveys of cohort of smokers seen in clinics. Baseline rates for asking smoking status were 22.9% intervention cohort vs. 21.9% control cohort. Post-intervention results showed patients significantly more likely to be asked if they smoke in intervention than control cohorts (39.8% vs. 26.0%, p<.05), advised to quit

(40.5% vs. 26.4%, p<.05), and commended if they had recently quit smoking (19.8% vs. 11.3%, p<.05).

Lancaster T, Silagy C, Fowler. "Training health professional in smoking cessation. (Cochrane Review)". In *The Cochrane Library*, Issue 4, 2001. Oxford: Update Software. Available at www.updateusa.com. Accessed November 21, 2001. (last amendment, August 2000)

Restricted to randomized trials evaluating patient smoking outcomes at least 6 months after intervention. Ten studies met this criteria. This analysis included single and multiple component interventions. Healthcare professionals who had received training were 1.5 to 2.5 times more likely to counsel patients about smoking cessation and to initiate other interventions, such as wet a quit date, suggest a follow-up appointment, and offer self-help materials or nicotine gum, than untrained controls. The effect of training on process outcomes increased if prompts and reminders were used. However, of 8 studies that compared patient smoking behavior between trained physicians and controls, 6 found no effect of intervention on smoking cessation. Thus, there is not strong evidence that training health professionals results in more people quitting smoking.

McIlvain HE, Susman JL, Manners MA, Davis CM, Gilbert CS. "Improving smoking cessation counseling by family practice residents". *J Fam Pract* 1992. 34:745-9. [In Guideline screening studies meta-analysis]

This study involved a training program for residents (n=28) at 3 sites and chart prompt system at 2 sites, with patient exit interviews (n=517) at baseline, 3 mos., and 6 mos. Residents were blind to evaluation of their behavior. Results showed an increase in counseling at 3-months, but a regression toward baseline at 6 months. Counseling improved at clinics where chart prompting was initiated. The number of counseling behaviors decreased when number of patients seen increased.

Strecher VJ, O'Malley MS, Villagra VG, Campbell EE, Gonzalez JJ, Irons TG, Kenney RD, Turner RC, Rogers CS, Lyles MF, et al. "Can residents be trained to counsel patients about quitting smoking: Results from a randomized trial". *J Gen Intern Med* 1991. 6:9-17. [In Guideline screening studies meta-analysis & in Community Guide review]

Four groups were compared: 1) chart-based prompt to facilitate counseling, 2) a 2-hour tutorial on brief smoking cessation counseling, 3) prompt + tutorial, 4) no intervention control. Counseling practices were assessed by residents' (n=261) (intern med, fam med, pediatrics) self report and corroborated by 937 patient exit interviews in 4 university affiliated community hospitals. At 6-months after intervention, residents in all 3 intervention groups advised more patients to quit smoking (76-79%) than did control group residents (69%). The tutorial had more effect on counseling practices than did the prompt. Patient exit interviews corroborated physician self reports. Patient quit rates were higher in the 3 intervention groups (self-reported: 5.3- 8.2%; biochemically verified: 1.7%) than in control group (self-reported: 5.2%; biochemically verified: 3.4-5.7%), although this difference was not statistically significant.

Task Force on Community Preventive Services. "Recommendations regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke". *Am J Prev Med* 2001. 20(suppl 2):10-15. [see also, Hopkins DP, Briss PH, Ricard CJ, et al. "Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke". *Am J Prev Med* 2001. 20(suppl 2):16-66; Hopkins DP, Husten CG, Fielding JE, et al. "Evidence reviews and recommendations on interventions to reduce tobacco use and exposure to environmental tobacco smoke, a summary of selected guidelines". *Am J Prev Med 2001.* 20(suppl 2):67-87. Available at http://www.thecommunity guide.org]. Accessed 20 November, 2001.

The Community Guide provides systematic evidence reviews, which are translated into recommendations, based on established rules. The reviews address media, economic policy, and community-based interventions, and several health care systems interventions--which will be described here. The focus of the Community Guide review is on interventions for health care systems and it does not specifically review effectiveness of provider counseling or of specific clinical therapies, since these have been thoroughly reviewed by others. Their review on effectiveness of reminder systems, to prompt providers to interact with patients at every encounter, included seven qualifying studies. Techniques used in these studies were chart prompts, expanded vital signs, and flow sheets. Multiple measures of difference were utilized, including patient exit interviews or medical chart reviews on delivery of intervention (range of provider deliver +7% to +31% (median +13%), and only one study assessed smokers' quit rates (biochemically confirmed +4% at 6 mos). These studies were conducted in primary care clinics, family practice clinics, and pulmonary clinics. Three studies utilized reminders that included other preventive services. Recommendation: Sufficient scientific evidence documents that provider reminder systems when implemented alone are effective in increasing provider delivery of advice to quit to tobacco-using patients.

Two reviews were conducted on effects of provider training. The first was on provider education only (lectures, day-long seminars, written materials, videos, mock interviews with feedback) to improve providers' interactions with tobacco-using patients (16 qualifying studies). These studies

included outcomes of provider performance rates, such as identification of smoking status (5 studies), delivery of advice (10 studies), and/or patient quit rate (2 studies). Conclusion: Insufficient evidence to assess effectiveness of provider education, when implemented alone, because few studies evaluated effects on tobacco use cessation and studies on provider advice produced inconsistent advice.

The second review addressed multicomponent strategies (31 qualifying studies), such as provider education with provider reminder system (20 studies), and with added component of patient education materials (14 studies). Increases in patient tobacco use cessation was assessed in 14 studies, with median absolute percentage change of +4.7% (range: -1.0 to +25.9%). Increases in provider delivery of advice to quit was assessed in 15 studies with median of +20% (range: +5.2% to +60%). Conclusion: Strong scientific evidence demonstrates that multicomponent interventions that include a minimum of a provider reminder system and provider education are effective in both delivery of advice to quit and patient tobacco use cessation. Additional effectiveness was demonstrated by studies that also included patient education, such as self-help cessation materials.

A third review addressed feedback interventions in which retrospective of provider performance on identification of smoking status and/or delivery of advice was given to inform and motivate providers. Techniques include use of chart reviews or computerized records. This review of feedback interventions sometimes included provider education and provider reminders. Three studies met criteria Conclusion: Evidence was insufficient because the small number of studies did not include outcomes required for this review for evaluation of effectiveness, such as increasing provider advice or patient tobacco use cessation.

US Department of Health and Human Services. "Guide to Clinical Preventive Services". Second Edition. *Report of the US Preventive Services Task Force*. 1996. Available http://odphp.osophs.dhhs.gov/pubs/guidecps/.

The USPSTF provides evidence-based reviews on a variety of preventive interventions. It utilizes a standardized search process and inclusion criteria, provides a narrative review, with recommendations based on strength of evidence. Recommendation: A complete history of tobacco use, and an assessment of nicotine dependence among tobacco users should be obtained from all adult and adolescent patients. Recommendation: Tobacco cessation counseling on a regular basis is recommended for all persons who use tobacco products. Strength of Evidence = A. Pregnant women and parents with children living at home also should be counseled on the potentially harmful effects of smoking on fetal and child health (strength of evidence = A). Certain strategies can increase the effectiveness of counseling against tobacco use, including direct face-to-face advice and suggestions, reinforcement with follow-up visits or telephone calls, office reminder systems, community programs for additional help in quitting, and drug therapy.

US Department of Health and Human Services. "Reducing Tobacco Use: A Report of the Surgeon General". *Stock no.: 017-001-00544-4*. Atlanta, GA: US Department of Health and Human Services. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2000. [recommendation obtained from summary table in Hopkins, et al. *Am J Prev Med* 2001. 20(2S):67-87]

Recommendation: "..physicians advising their patients to quit smoking can produce cessation proportions of 5-10%." (p.6) "Substantial evidence suggests that minimal clinical interventions (e.g., a health care provider's repeated advice to quit) foster smoking cessation… Moreover, minimal clinical interventions have been found to be effective in increasing smokers' motivation to quit and are cost-effective." (p. 105)

Published in August 2000, The SGR provides a narrative review of evidence of effectiveness of interventions, including clinical strategies, and also including regulatory and economic policy approaches, and comprehensive approaches for community, state, and national programs. Recommendation: All patients seen in a primary care setting should be routinely asked about their smoking status.

III. Illicit Drugs

III.A Instruments and Efficacy

Brookoff D, Campbell EA, Shaw LM. "The underreporting of cocaine-related trauma: Drug Abuse Warning Network reports vs hospital toxicology tests". *Am J Pub Health* 1993. 83:369-71.

A study from a Level I trauma center in Philadelphia that found that of the 520 major trauma patients in the first 6 months of 1990, only 251 (48%) had toxicological screens for cocaine and other drugs, of whom 38% tested positive for cocaine. Its major conclusion is that studies that rely

on ED mentions of drugs (such as DAWN) capture overdoses but miss most of the cases of drug-related accidents.

Coambs RB, Jarry JL, Santhiapillai AC, Abrahamsohn RV, Atance CM. "The SISAP: a new screening instrument for identifying potential opioid abusers in the management of chronic nonmalignant patient within general medical practice". *Pain Res Manag* 1996. 1:155-162.

This article describes the development and split-half validation of the Screening Instrument for Substance Abuse Potential (SISAP) among 9915 people in the Canadian National Alcohol and Drug Use Survey. The 5 SISAP questions inquired about quantity of drinks per day and per week, use of marijuana or hashish in the last year, cigarette smoking, and age. The criterion standard "substance abuse potential" was based on hazardous consumption levels of alcohol and any illicit drug use in the previous 12 months, DSM-based criteria. In the validation sample, the SISAP was 91% sensitive and 78% specific to identify patients for "substance abuse potential." Although the idea that one can screen for illicit drug abuse using less stigmatized questions is reasonable, the lack of a clinically valid criterion standard for substance abuse or dependence or any clinical population of opioid users makes it difficult to draw valid conclusions based on this paper.

Fiellin DA, O'Connor PG, Chawarski M, Pakes JP, Pantalon MV, Schottenfeld RS. "Methadone maintenance in primary care vs a narcotic treatment program: a randomized trial". *JAMA* 2001. 286:1724-31.

Although the focus of this Annotated Bibliography is screening and brief counseling interventions, office-based pharmacological interventions for opioid dependence deserve mention. Long-acting partial agonists such as buprenorphine, and agonists such as methadone, may soon be options for the management of opioid dependence in the United States, as they are in parts of Europe and Australia. This article is a recent American clinical trial of 46 stable methadone clinic patients who were randomized to receive methadone in their current narcotic treatment program, or through a trained primary care physician. At 12-month follow-up, relapse rates were similar, but the primary care group was significantly more satisfied with care. Although equivalence is difficult to demonstrate, these findings suggest that there may be stable opioid-dependent patients who can be managed as well in the primary care setting (with as-needed consultation) as in a specialty methadone clinic, freeing scarce methadone clinic slots for less stable patients.

McNagny SE, Parker RM. "High prevalence of recent cocaine use and the unreliability of patient self-report in an inner city walk-in clinic". *JAMA* 1992. 267:1106-8.

Among 415 young adult men (92% black, 89% uninsured) who presented to the walk-in clinic of an inner-city public hospital, 39% tested positive for urinary cocaine metabolites. Among those who tested positive, 72% denied illicit drug use in the prior 3 days. When phrased different ways, patients were less likely to admit to "any illegal drug" use (86%) than to "any form of cocaine" use (61%) in the prior year. The authors conclude that self-report is inaccurate, but that less specific (and less stigmatizing) questioning performs better.

Stein MD, Wilkinson J, Berglas N, O'Sullivan P. "Prevalence and detection of illicit drug disorders among hospitalized patients". *Am J Drug Alcohol Abuse* 1996. 22:463-71.

This cross-sectional study of 235 randomly selected hospitalized patients with medical, neurological or surgical diagnoses found an 11.9% lifetime prevalence of abuse or dependence for at least one illicit drug. Last month prevalence was 7.6%. The Quick Diagnostic Interview Schedule (Q-DIS) was used as the gold standard for drug abuse or dependence. Only 18% of the charts of these patients documented that they had been asked about drug use, and rates of documentation did not vary significantly across services (Medicine 21%, Neurology 15%, Surgery 14%, P=.40). Smokers, unmarried persons, and patients without a regular physician were most likely to have such documentation.

Wolff K, Farrell M, Marsden J, Monteiro MG, Ali R, Welch S, Strang J. "A review of biological indicators of illicit drug use, practical considerations and clinical usefulness". *Addiction* 1999. 94:1279-98.

Although the focus of this Annotated Bibliography is screening through self-report, biological indicators remain important. This article is an excellent review of the range of toxicological markers of drug abuse. Urine testing is widely available, but suffers from a short assessment window. The dissemination of hair analysis promises a much longer time frame for assessment. However, the authors emphasize that biomarkers must be interpreted in the context of other clinical information.

III.B Special Populations

Cocco KM, Carey KB. "Psychometric properties of the Drug Abuse Screening Test in psychiatric outpatient". *Psychol Assess* 1998. 10:408-414.

Among outpatients at a state mental hospital, the 10-item DAST-10 (see Bohn 1992 above) showed high internal consistency, and correlated .97 with the 20-item version of the DAST. At a cut-point of 3 or greater the DAST-10 was >80% sensitive and specific for DSM-IIR drug use

criteria in the past year. Taken with Maisto et al. 2000 below, these results suggest that the brief DAST-10 might be a useful screening tool should these findings generalize to medical settings.

Lester BM, El Sohly M, Wright LL, et al. "The Maternal Lifestyle Study: drug use by meconium toxicology and maternal self-report". *Pediatrics* 2001. 107:309-17.

This 4-site study compared maternal self-report to meconium analysis (with GC/MS confirmation) in 8805 newborns. The overall 11% prevalence of opiate and/or cocaine by meconium analysis was higher among low birth weight (19%) and very low birth weight (21%) infants. Mothers denied use in 38% of cases with meconium positive for opiates/cocaine. Agreement between positive self-report and meconium was .66. The authors note that meconium can only record drug use in the second half of pregnancy, and recommend a structured interview. Only 2% of drug-using mothers denied use of another substance, suggesting a need to address polysubstance abuse whenever any substance use is identified in pregnancy.

Ostrea EM Jr., Knapp KD, Tannenbaum L, Ostrea AR, Romero A, Salari V, Ager J. "Estimates of illicit drug use during pregnancy by maternal interview, hair analysis, and meconium analysis". *J Pediatrics* 2001. 138:344-8.

Another report that demonstrates that maternal interview demonstrates poor sensitivity for maternal cocaine and opiate use, but better sensitivity for cannabis use. Structured interview, maternal hair, and meconium analyses were performed 58 women who had presented to a high-risk prenatal clinic. Despite use of the “bogus pipeline effect” (i.e. mothers knew beforehand that their reports would be objectively verified), maternal interview was only 65% sensitive (though 100% specific) for cocaine, 70% sensitive (but 97% specific) for opiates, and 58% sensitive and 77% specific for cannabis. Hair analysis was 100% sensitive and 87% specific for cocaine, 80% sensitive and 90% specific for opiates, but only 21% sensitive and 90% specific for cannabis. Meconium analysis was 87% sensitive and 100% specific for cocaine, 77% sensitive and 95% specific for opiates, but only 23% sensitive and 97% specific for cannabis. The authors conclude that maternal interview is “a time-consuming test of low sensitivity” and favor meconium because of its high sensitivity and ease of collection. What they do not address is the relatively low cost and high specificity of interview, and that once one can collect meconium, it is too late to intervene to prevent fetal exposure.

Polzin WJ, Kopelman JN, Brady K, Read JA. "Screening for illicit drug use in a military obstetric population". *Obstet Gynecol* 1991. 78:600-1.

Urine screening in one military hospital revealed illicit drug use in <1%, a much lower rate than the 7% to 21% rates elsewhere. Random screening in the military probably contributes to this low rate.

III.C Guideline Adherence and Role of Healthcare Provider

Friedmann PD, McCullough D, Saitz R. "Screening and intervention for illicit drug abuse". *Arch Intern Med* 2001. 161:248-51.

A postal survey to a nationally representative sample of 2000 physicians (57% response rate) in general internal medicine, family medicine, obstetrics/gynecology and psychiatry that suggests that 68% of physicians regularly ask new outpatients about drug use, but only 55% recommend formal treatment to patients with diagnosed illicit drug abuse and 15% fail to intervene at all. Analyses suggested that low confidence in drug abuse history-taking, pessimism about treatment effectiveness, greater perceived but not actual time constraints, and concerns about patients’ sensitivity regarding substance use were potentially remediable barriers to screening and intervention. Because this study relied on reported practices, it likely overestimated rates of screening and intervention.

IV. Comprehensive Substance Abuse Problems

IV.A Instruments and Efficacy

Babcock Irvin D, Wyer PC, Gerson LW. "Preventive care in the emergency department, Part II: Clinical preventive services—an emergency medicine evidence-based review". *Society for Academic Emergency Medicine Public Health and Education Task Force Preventive Services Work Group*. *Acad Emerg Med* 2000. 7:1042-54.

Systematic reviews were performed on 17 candidate preventive interventions with potential applicability in the ED. Reviews utilized a standardized process and inclusion criteria, and analysis of results’ bearing on ED cost-effectiveness. Six interventions received an alpha rating, indicating evidence is sufficient to support these services in ED, assuming sufficient resources are available: alcohol screening and intervention, smoking cessation counseling, HIV screening and referral (in high-risk, high prevalence populations), hypertension screening and referral, adult pneumococcal immunizations (>/=65 yrs), referral of children without primary care to continuing source of care.

Babor TF, Grant M, (eds.): "A randomized clinical trial of brief interventions in primary health care: summary of a WHO project". *Addiction* 1994; 89:657-659.

Bernstein E, Bernstein J, Levenson S. "Project ASSERT: an ED-based intervention to increase access to primary care, preventive services, and the substance abuse treatment system". *Ann Emerg Med* 1997; 30(2):181-9.

Project ASSERT was a demonstration project that placed multicultural Health Promotion Advocates (HPAs) in a city hospital emergency department (ED) to screen for substance abuse using the AUDIT and DAST-10, perform a Brief Negotiated Interview (BNI), and refer patients to addiction treatment and other needed services. The BNI is a type of brief intervention that involves (1) developing rapport with the patient, (2) asking permission to discuss pros and cons of drug use, and (3) negotiating options for entry into treatment based on patient readiness. 7118 patients were screened, of whom 2931 (41%) had an alcohol or drug problem, and 1,096 (37%) agreed to participate in the study. HPAs made 2406 referrals, an average of 2.2 per patient. Of the 245 (22%) who kept follow-up appointments, 15 (55%) of 210 arrived at their addiction care referrals. Though the follow-up data suggest self-reported 45% reductions in drug use severity, low enrollment rate, lack of controls, and high rate of attrition make it difficult to draw valid conclusions. The low level of participation for what is essentially assessment and referral suggests that many patients in this setting may be difficult to motivate for care. Nonetheless the authors assert that inner-city ED patients have a high level of unmet addiction-related needs and that screening and brief interventions are feasible in that setting.

Bohn MJ, Babor TF, Kranzler HR. "Validity of the Drug Abuse Screening Test (DAST-10) in inpatient substance abusers: Problems of Drug Dependence, 1991". *Proceedings of the 53rd Annual Scientific Meeting*. The Committee on Problems of Drug Dependence, Inc. DHHS Publication No. (ADM) 92-1888. *NIDA Research Monograph 119*. Rockville, MD: Department of Health and Human Services 1992:233.

Among 90 patients in an addiction treatment center, of whom 84% had drug abuse or dependence, the DAST-10 (10-item version of the DAST, see Skinner 1982 below) at a threshold >3 correctly classified >93% of patients compared with SCID diagnosis or research clinician. Using ROC analysis, the DAST-10 discriminated well between drug and alcohol users (area under the curve .97). Although the authors mention the potential for DAST-10 screening in medical settings, the possibility of spectrum bias means that its test characteristics need evaluation among the less-severe drug-using population in those settings.

Brown RL, Leonard T, Saunders LA, Papasouliotis O. "A two-item screening test for alcohol and other drug problems". *J Fam Pract* 1997. 44(2):151-60.

In 434 patients in a university-based family medicine practice, two questions were 81% sensitive and specific for substance abuse or dependence versus the CIDI-Substance Abuse Module, a gold-standard interview. The two questions were: “In the last year, have you ever drank or used drugs more than you meant to?” and “Have you felt you wanted or needed to cut down on your drinking or drug use in the last year?” This instrument (the Two-Item Conjoint Screen, or TICS) appeared more sensitive for substance dependence than abuse alone. Current alcohol and/or drug abuse or dependence was found in 26% of patients. Presumably because only 9% of patients had a current drug problem alone or with an alcohol problem, the test characteristics of this instrument for drug abuse are not presented.

Brown RL, Rounds LA. "Conjoint screening questionnaires for alcohol and other drug abuse: criterion validity in a primary care practice". *Wisconsin Med J* 1995. 94(3):135-40.

In 124 patients in an academic family medicine practice, the CAGE-AID (AID=adapted to include drugs) at a cut-point of 1 or more positive responses was 79% sensitive and 77% specific compared to a gold standard DIS-R interview for alcohol or drug abuse / dependence. Prevalence of current drug abuse or dependence, with or without alcohol, was 24%. CAGE-AID was 86-96% sensitive among patients with drug abuse or dependence, and appeared more sensitive for substance dependence than abuse alone. Confidence intervals around these estimates are not presented but are presumably wide given the small sample size. In addition, limited detail is presented about this Wisconsin sample – an important limitation given published concerns about the sensitivity of the CAGE questionnaire in female and minority populations.

Craig RJ. "Sensitivity of the MCMI-III scales *T* (drugs) and *B* (alcohol) in detecting substance abuse". *Subst Use Misuse* 1997. 32:1385-93.

Among 164 male, African-American patients in a drug rehabilitation program, the Millon Clinical Multiaxial Inventory Scale *T* (16 items for drug dependence) was 82% sensitive for clinician diagnosis of heroin or cocaine dependence. Specificity could not be evaluated because all patients were substance users. The likelihood of spectrum bias limits this study’s applicability to medical settings.

Dickey LL, Gemson DH, Carney P. "Office system interventions supporting primary care-based health behavior change counseling". *Am J Prev Med* 1999. 17:299-308.

This narrative review addresses principle components of office system interventions: tools and teamwork. Tools are used for health risk appraisal, for prompting and reminding, and for patient education. Teamwork entails coordination of tasks between providers and staff. Authors conclude that a number of clinical trials, particularly in area of smoking cessation, have demonstrated effectiveness of tools and teamwork, although no one type of tool or method of teamwork is consistently more effective than another. However, the use of different tools and teamwork leads to additive improvements in counseling and patient behavior-change rates.

Gavin DR, Ross HE, Skinner HA. "Diagnostic validity of the Drug Abuse Screening Test in the assessment of DSM-III drug disorders". *Br J Addict* 1989. 84:301-7.

Among 501 addiction treatment patients, the 28-item DAST (see Skinner 1982 below) showed very good concurrent and discriminant validity; it correctly classified 85% of patients for DSM-III drug abuse/dependence as diagnosed with the Diagnostic Interview Schedule. Receiver Operating Characteristic analysis indicated that 6 or greater was the optimum cut-point (see Staley & El-Guebaly 1990 below). The authors admit that these findings may not generalize well to other settings where subjects may be less ready to admit drug use.

Gerbert B, Bronstone A, Pantilat S, McPhee S, Allerton M, Moe J. "When asked, patients tell: disclosure of sensitive health-risk behaviors". *Med Care* 1999. 1:104-11.

From the waiting rooms of 2 HMO clinics and two academic primary care clinics, 1952 adults were recruited to complete a health risk questionnaire. A randomized 2x5 factorial design found that telling subjects that their doctors would receive the information or not did not affect patients' disclosure of drug use and other sensitive information, and that computer and video assessment methods increased disclosure by 4-8%. Of note, the study used the DAST-10, a 10-item version of the DAST (see Bohn, 1992, above), to assess drug use, and, at a threshold of 1 or greater positive responses, found that 16 to 26% of patients were at-risk for drug problems.

Kilpatrick B, Howlett M, Sedgwick P, Ghodse AH. "Drug use, self report and urinalysis". *Drug Alcohol Depend* 2000. 58:111-6.

This clinically useful study of 467 patients at a specialty outpatient addiction treatment program divided patients according to the stability of their treatment, and compared self-report with urinalysis. They found that self-report was less sensitive for drug use in "chaotic" drug users, and suggest that urinalysis would play a more important role in this group, as opposed to patients who are more stable in recovery. However, the requirement to produce urine samples in itself might have induced truthfulness among the more stable patients (i.e. the bogus pipeline effect).

Lazowski LE, Miller FG, Boye MW, Miller GA. "Efficacy of the Substance Abuse Subtle Screening Inventory-3 (SASSI-3) in identifying substance dependence disorders in clinical settings". *J Personality Assess* 1998. 71:114-28.

This article presents the psychometric properties of a recent revision of the SASSI, a proprietary screening instrument. The authors report 95-97% agreement with a variety of standards including detailed substance abuse history and substance-related arrests. As in previous versions, the SASSI's lack of brevity and proprietary nature have limited its dissemination as a screening tool.

Mahl MA, Hirsch M, Sugg U. "Verification of the drug history given by potential blood donors: results of drug screening that combines hair and urine analysis". *Transfusion* 2000. 40:637-41.

Among 186 German potential blood donors who denied drug use, hair and urine toxicologies revealed drug use in 5%. The authors advocate validation of self-report about drug consumption by random toxicological analyses to exclude drug users from the donor pool.

McPherson MD, Hersch RK. "Brief substance use screening instruments for primary care settings". *J Subst Abuse Treat* 2000. 18:193-202.

A review of instruments to screen for alcohol and other drug use in primary care. The section on drug abuse screening instruments reviews lengthy assessment tools such as the MMPI, the ASI and the CIDI-SAM, with the thought that "items from these assessment instruments may be appropriate in the development of a brief screening instrument." The authors conclude that "a substance use screening instrument for use in primary care settings is clearly needed."

Moore RD. "Screening and assessment of alcohol and other drug abuse". *Maryland Med J* 1994. 43:35-39.

A general review of the issues in medical settings. Of note, mentions the "Use-Concern" questionnaire, an instrument with face validity, for which no other citation exists: "Do you use any mood-altering drugs?" "Have you become concerned about your use of (the drug used)?" "Has anyone else ever expressed their concern over your use of (the drug used)?" "What is your definition of an addict?" The author acknowledges the need for validation studies of this tool.

Samet JH. Rollnick S. Barnes H. Beyond CAGE. "A brief clinical approach after detection of substance abuse". *Arch Intern Med* 1996. 156:2287-93.

This article outlines an approach to brief intervention for patients whose history suggests substance abuse. It recommends clarification of consequences, inquiry about loss of control, determination of the patients perception of the substance use, and an assessment of the patient's readiness to change. It reviews the brief intervention approach using the mnemonic FRAMES (Feedback, Responsibility, Menu of options, Empathy, Self-efficacy), and provides a nice table of approaches to the patient individualized for their readiness for behavioral change. This type of approach is well-established for patients with alcohol use disorders, but not well studied among patients with illicit drug abuse.

Skinner HA. "The Drug Abuse Screening Test". *Addict Behav* 1982. 7:363-71.

Report of the development and psychometric testing of the DAST, a 28-item quantitative index of problems related to drug abuse whose items paralleled the Michigan Alcoholism Screening Test. In a sample of 223 persons who sought help for substance problems (59% alcohol, 25% drugs and 16% both), 28- and 20-item versions of the DAST were highly correlated with frequency of drug use in the past 12 months and had excellent internal consistency. For case finding, a cut-point of 6 or greater the DAST-28 was 96% sensitive and 74% specific. The authors acknowledge the need for further validation work with objective criteria for drug use and using populations other than addiction treatment clients. The length of the original DAST limits its utility; a 10-item version has been developed that might be more acceptable in medical settings (see Bohn et al. 1992 above).

Tennant FS, Day CM, Ungerleider JT. "Screening for drug and alcohol abuse in a general medical population". *JAMA* 1979. 242:533-35.

Among 150 outpatients presenting for their initial visit, a self-administered "check-off" screening form, personal inquiry and physical examination found that 6.7% used a drug on an occasional or intermittent basis and 4.7% abuse one or more drugs on most days during the preceding 90 days, but only 2% used illegal drugs. Of drug users, 82% either checked drug abuse as a problem or listed the substances they used, and 2 of 17 through questioning about physical findings. Of the drug and alcohol abusers, 70% voluntarily entered treatment following referral. This small early study is one of the few to look at what skilled clinicians and their offices might accomplish through screening and referral of drug-abusing patients.

US Preventive Services Task Force. "Screening for drug abuse." *Guide to Clinical Preventive Services, 2nd Edition*. Alexandria, VA: International Medical Publishing, 1998.

The USPSTF found insufficient evidence to recommend for or against routine screening for drug abuse with standardized questionnaires or biologic assays, largely because few data support whether these tests can increase detection over and above the clinical history. However, questioning about drug use and drug-related problems may be recommended when taking a clinical history from all adolescent and adult patients because of the high prevalence of drug use and the serious consequences of drug abuse and dependence. Clinicians should be alert to signs and symptoms of drug use and, after establishing a trusting relationship, they should ask about the use of illicit and legal drugs of abuse. Whenever drug use is reported, the clinician should assess quantity, frequency and pattern of consumption, related health and social consequences, and symptoms of dependence. All pregnant women should be advised of the potential adverse effect of drug use on fetal development.

Weisner C, Schmidt LA. "Expanding the frame of health services in the drug abuse field". *Health Serv Res* 1995. 30(5):707-26.

This study examined the prevalence of drug abuse across health and social service agencies in a community. Of 314 new patients in an HMO 3% admitted weekly or more unprescribed drug use, compared with 13% of 394 in a public primary care clinic, 27% of 621 in a welfare agency, 44% of 1147 in a jail, and 53% of 381 in an alcohol treatment program. Furthermore, the authors note that drug users in medical settings are more likely to report use of "softer" drugs such as marijuana and minor tranquilizers. Users of cocaine, methamphetamine and heroin are more prevalent in the criminal justice, welfare, and substance abuse treatment systems. One implication of this finding is that screening for problem drug users in medical settings would be less efficient than in criminal justice, welfare, and substance abuse treatment settings because of the relatively low prevalence of use and the lower severity of associated drug use disorders.

IV.B Special Populations

American College of Obstetrics & Gynecology. "Substance abuse in pregnancy". *ACOG technical bulletin no. 195. International J Gynecol Obstet* 1994. 47:73-80.

This bulletin recommends that clinicians be alert to the possibility of substance abuse in pregnancy. It states that all pregnant women should be questioned thoroughly about past and present drug use

at the time of the first prenatal visit. Though recognizing the utility of laboratory screening in some circumstances, universal screening is not recommended. Substance-abusing patients should be counseled about the risks posed by continued substance use, and treatment should be offered to those who have not quit at each prenatal and postpartum visit.

Bastiaens L, Francis G, Lewis K. "The RAFFT as a screening tool for adolescent substance use disorders". *Am J Addict* 2000. 9:10-6.

Among 226 patients aged 13-18 in an emergency department or ambulatory clinic, the 5-item RAFFT at a cut-point of 2 or more positive responses was 89% sensitive and 69% specific for DSM-IV substance abuse or dependence (from a comprehensive psychiatric interview). The RAFFT was developed for Project ADEPT (see Riggs SG, Alario AJ. "Adolescent Substance Use" in the Project ADEPT Curriculum for Primary Care Physician Training; Providence, RI: Brown University;1989:27).), and is a mnemonic for the following questions: "Do you drink or use drugs to Relax, feel better about yourself or to fit in?"; "Do you ever drink alcohol or use drugs while you are by yourself, Alone?"; "Do you or any of your closest Friends drink or use drugs?"; "Does a close Family member have a problem with alcohol or drug use?"; "Have you ever gotten into Trouble from drinking or drug use?" Developed initially based on clinical experience, this study suggests that the RAFFT is a useful, brief, valid screening tool for adolescent populations.

Buchfuhrer LA. Radecki SE. "Alcohol and drug abuse in an urban trauma center: predictors of screening and detection". *J Addict Disease* 1996. 15:65-74.

This study at a Level I trauma center found that toxicology screens were performed in 58.5% of 2,246 trauma patients. The lowest rates of drug screening occurred among female patients injured in falls or similar accidents; the highest rate of screening was among patients over 40 who were confused or incomprehensible. The toxicology positive rate was 41%, with cocaine in 16%, THC 16%, amphetamines 12%, opioids 6.4%. They note that any trauma patient who is positive for alcohol has a 49% probability of positivity for other drugs.

Center for Substance Abuse Treatment. "Screening and Assessment of Alcohol-and Other Drug-Abusing Adolescents". *Treatment Improvement Protocol (TIP) Series 3*. DHHS Publication No. (SMA) 93-2009. Rockville, MD: U.S. Department of Health and Human Services, 1993.

This TIP is practice guideline developed through expert panel deliberations. Its goals were to emphasize practical clinical procedures that could improve care, and to review available instruments, procedures and measures for assessing adolescent AOD abuse in various settings. For drug screening it recommends using the 139-item Problem-Oriented Screening Instrument for Teenagers (POSIT) (for which a brief version is now available -- see Latimer, Winters, & Stinchfield, 1997, below). Corroborative information should be obtained from family, medical and case histories, and other sources. Toxicological drug screening is not recommended, except to supplement the self-report and corroborative information. The TIP also notes indicators for youth who require case finding, including juvenile justice involvement; changes in psychological state, family or school functioning, and behavior; dysfunctional peer relationships (e.g. gang activity); presence of drug paraphernalia and parental incarceration. The TIP also recommends procedures for assessment and intervention. The appendices provide a listing of screening and assessment instruments.

Chasnoff IJ, Neuman K, Thornton C, Callaghan MA. "Screening for substance use in pregnancy: a practical approach for the primary care physician". *Am J Obstet Gynecol* 2001. 184:752-8.

In 2066 Medicaid-covered pregnant women in 9 prenatal clinics in South Carolina and Washington State (95% response rate), the prevalence of drug use was 4.6% on a self-administered questionnaire. From logistic regression and CART analysis, the authors suggest that 3 questions can risk stratify women for alcohol or drug use during pregnancy: (1) low risk (<2% reporting use during pregnancy) – women who never used alcohol, (2) average risk (6% reporting use) – past alcohol use but not in the month before pregnancy, and did not smoke >=3 cigarettes in the month before pregnancy, and (3) high risk – past alcohol use and either smoked >=3 cigarettes or drank alcohol in the month before pregnancy. Confidence intervals around these estimates are presumably wide given the small number of drug-using patients – a related weakness of this clinical prediction rule is the lack of a separate validation set to generate robust standard errors around the estimates.

Dietrich AJ, O'Connor BT, Keller A, Carney PA, Levy D, Whaley F. "Cancer: improving early detection and prevention: a community practice randomized trial". *BMJ* 1992. 304:687-91. [In Guideline screening studies meta-analysis & in Community Guide review]

A randomized trial of two interventions alone and in combination on early detection advice on multiple cancer prevention and detection services in 98 ambulatory care practices. The education intervention consisted of a day long training program, and office system intervention consisted of facilitator assistance in establishing routines, including division of responsibilities across physicians

and staff, and use of medical record flow sheets. Based on cross-sectional patient surveys, the office system intervention was associated with increase in advice to quit smoking (along with 4 other targets), while the educational intervention resulted only in increase in mammography.

Dyson V, Appleby L, Altman E, Doot M, Luchins DJ, Delehant M. "Efficiency and validity of commonly used substance abuse screening instruments in public psychiatric patients". *J Addict Dis* 1998. 17(2):57-76.

Although this study examined psychiatric inpatients (N=100), it is one of few studies to examine several screening instruments against DSM-III-R drug abuse diagnoses from gold-standard SCID-P interviews. The CAGE-AID (see Brown & Rounds, 1995 above) at a cut-point of 1 or greater was 86% sensitive and 87% specific for an lifetime illicit drug use disorder, and at the standard threshold of 2 or greater, 75% sensitive and 91% specific. The full DAST (see Skinner 1982 below) at the standard cut-point of 5 or more, was 87% sensitive and 88% specific. The CUAD-DRUG (see McGovern & Morrison, 1992 below) was 76% sensitive and 96% specific for the lifetime disorder and 87% sensitive and 73% specific for current use. The authors comment that none of these instruments is clearly superior to the others.

Harrison PA, Beebe TJ, Park E. "The adolescent health review: a brief multidimensional screening instrument". *J Adolesc Health* 2001. 29:131-9.

This article describes the empirical derivation of a 33-item psychosocial health screener from a sample of over 77,000 adolescents in Minnesota. Items were selected based on their ability to discriminate a large school-based sample from clinical samples in juvenile correctional, chemical dependency treatment, and residential behavioral treatment programs. The substance use items addressed cigarettes (1 item), alcohol use (2 items), marijuana (1 item) and substance abuse/dependence (7 items). Although this procedure suggests correlative validity, it says nothing of how the instrument might perform relative to specific diagnoses (such as substance abuse/dependence) in clinical settings.

Hawthorne JL, Maier RC. "Drug Abuse in an Obstetric Population of a Midsized City". *Southern Med J* 1993. 86(12):1334-8.

From June 1988 to April 1990 indigent pregnant patients in Augusta, GA were screened at the time of delivery using urine drug tests. During 2 months of random screening, 16% had positive screens, a figure similar to other cities at that time. During most of the study, clinical criteria ('bizarre' behavior, 'unusual' clinical conditions such as placental abruption, unexplained elevation of blood pressure, preterm labor, history of drug use, lack of prenatal care or suspected intrauterine growth retardation) were used to initiate urine screening: 31% of patients meeting these criteria had a positive test; cocaine was the most common agent. Though the criteria are somewhat vague and the findings need replication, this study suggests a clinical subgroup of pregnant patients with a higher pre-test probability of drug abuse, a subgroup in whom case-finding might be more aggressively pursued.

Hogan MJ. "Diagnosis and treatment of teen drug use". *Med Clin North Am* 2000. 84:927-66.

A well-written recent review of epidemiology, environmental and personal risk factors, diagnosis, treatment and prevention in the adolescent primary care setting.

Horrigan TJ, Piazza N. "The substance abuse subtle screening inventory minimizes the need for toxicology screening of prenatal patients". *J Subst Abuse Treat* 1999. 17:243-7.

These reports examined combinations of self-report, the 78-item Substance Abuse Subtle Screening Inventory (SASSI), and urine toxicology in one prenatal clinic. In the latter study, self-report did not detect 61% of patients with positive urine testing, and SASSI missed 41% of those with positive self-reports and 45% with positive urine testing. The combination of self-report and SASSI identified 91% of drug users, missed many cannabis users, but identified all of the patients with cocaine or alcohol problems. The authors propose a protocol in which all patients with negative self-report are screened with the SASSI, with urine testing reserved for those who decline, fail to complete, or test negative on the SASSI. However, the complexity of this screening protocol, the lack of a separate validation set, the low number of opiate users, the proprietary nature of the SASSI, and the uncertain effect of "confronting" unmotivated patients with a positive SASSI will make this screening protocol's widespread adoption unlikely.

Horrigan TJ, Piazza N, Weinstein L. "The substance abuse subtle screening inventory is more cost effective and has better selectivity than urine toxicology for the detection of substance abuse in pregnancy". *J Perinatol* 1996. 16:326-30.

Hser YI, Maglione M, Boyle K. "Validity of self-report of drug use among STD patients, ER patients, and arrestees". *Am J Drug Alc Abuse* 1999. 25:81-91.

A well-done study that included 1536 patients in sexually transmitted disease (STD) clinics, 1564 patients in hospital emergency departments (ED) and 2034 recent arrestees in jails. The paper examines the validity of self-reports of drug use in comparison to urinalysis results in these high-risk samples. Using urinalysis as the criterion standard, 40% to 50% of drug users (particularly cocaine and opiate users) in STDs clinics and EDs falsely reported no drug use in the past 3 days. Underreporting was higher for users of "hard" drugs. For example, 78.8% of opiate users in the ED denied use. The results also showed that a lower degree of underreporting was associated with subjects at jail sites (compared to STD subjects) and those who self-reported lifetime drug dependence. Although these striking findings suggest the need to adjust population-based estimates, they raise serious concerns about the accuracy of self-report in clinical settings, especially brief encounters with unknown providers as in EDs.. Whether trust developed in longer-term patient-physician encounters can overcome barriers to accurate self-report remains uncertain.

Knight JR, Goodman E, Pulerwitz T, DuRant RH. "Reliabilities of short substance abuse screening tests among adolescent medical patients". *Pediatrics* 2000. 105(4 supplement): 948-53.

During a routine visit to an academic adolescent medicine practice and 1 week later, 173 teenagers completed 3 screening questionnaires: the Simple Screening Instrument for Alcohol and Other Drug Use (SSI-AOD, 16 items), the CAGE-AA (CAGE questions adapted for adolescents, 4 items), and the DAP-4 (4-items from the Drug and Alcohol Problem QuickScreen). All of these screening tests had excellent test-retest reliability, but validity was not evaluated. Of the study sample, 40% reported a substance problem in their family, and 36% reported using alcohol or other drugs themselves in the prior 6 months. Overall, 6% had experienced a serious problem (blackout, injury, ED visit, protective custody, seizure, liver problem, etc.) as a result of alcohol or drug use, but only 2% had sought help.

Knight JR, Goodman E, Pulerwitz T, DuRant RH. "Reliabilities of the problem oriented screening instrument for teenagers (POSIT)". *J Adolesc Med* 2001. 29:125-30.

Among a convenience sample of 15- to 18-year old patients in an academic adolescent medicine, 93 teenagers completed the 139-item POSIT at a clinic visit and 1 week later. All 10 subscales demonstrated good to excellent reproducibility and most had high internal consistency. The POSIT appears reliable, but its 20 to 30 minute administration time limits usefulness in primary care.

Latimer WW, Winters KC, Stinchfield RD. "Screening for drug abuse among adolescents in clinical and correctional settings using the problem-oriented screening instrument for teenagers". *Am J Drug Alcohol Abuse* 1997. 23:79-98.

The standard 17-item Problem-Oriented Screening Instrument for Teenagers (POSIT) at a cut-point of 2 was 95% sensitive and 79% specific for DSM-III-R substance use disorders using the Adolescent Diagnostic Inventory among 342 patients aged 12-19 years in correctional, psychiatric or inpatient drug abuse treatment facilities. At the cut point of 1 it was 100% sensitive and 62% specific. An 11-item version at a cut-point of 2 was 91% sensitive and 82% specific. The authors suggest the original cut-point of 1 for adolescent populations at lower risk, though further studies in lower risk clinical populations are needed, especially of the shorter version. Even so, at 11-items the POSIT is unlikely to be adopted as a provider-administered screen, though it might have utility in self-administered, paper-and –pencil or computerized battery.

Maisto SA, Carey MP, Carey KB, Gordon CM, Gleason JR. "Use of the AUDIT and the DAST-10 to identify alcohol and drug use disorders among adults with a severe and persistent mental illness". *Psychol Assess* 2000. 12:186-92.

Among 162 seriously mentally ill outpatients in state psychiatric hospital, the 10-item version of the DAST (see Bohn, 1991 above) at a score of 3 or greater positive responses was 85% sensitive and 78% specific for DSM-IV drug use criteria in the past 30 days. This study cannot determine whether these test characteristics are stable in medical settings.

Markovic N, Ness RB, Cefilli D, Grisso JA, Stahmer S, Shaw LM. "Substance use measures among women in early pregnancy". *Am J Obstet Gynecol* 2000. 183:627-32.

One of the latest of many reports which document that self-report and urine assays underestimate the prevalence of illicit drug abuse in pregnancy. In this study of 789 patients <22 weeks gestation (91% African-American) at an inner city emergency department, 14% of patients who reported never using cocaine had positive hair analysis. Among those who admitted past cocaine use (but not in the last month) 23% had positive urinary assays indicating use in the previous 2-3 days and 32% had positive hair analysis. Interestingly, of those who admitted past month use, only 52% had positive hair analysis.

Martino S, Carroll KM, O'Malley SS, Rounsaville BJ. "Motivational interviewing with psychiatrically ill substance abusing patients". *Am J Addict* 2000. 9:88-91.

The literature on brief interventions in drug users is greatly underdeveloped, so the potential effectiveness of brief interventions for drug users in medical settings must be extrapolated from studies like this one, and Swanson et al. below. This pilot study of 23 dual diagnosis patients at a partial hospital program reported that a one-session, pre-admission motivational interview significantly decreased patients' tardiness and early departures from treatment compared with historical controls. Substance abuse or dependence was 56% cocaine, 39% opioids, 35% cannabis and 82% alcohol. Although this was not a medical setting, this study does suggest that brief counseling interventions might be effective among challenging drug-abusing patients.

Martino S, Grilo CM, Fehon DC. "Development of the drug abuse screening test for adolescents (DAST-A)". *Addict Behav* 2000. 25:57-70.

Among 194 "nearly consecutive" adolescents admitted to an urban inpatient evaluation and crisis intervention unit, the 27-item DAST-A, a modification of the original DAST (see Skinner, 1982 below), at a cut-point greater than 6 was 79% sensitive and 85% specific for lifetime DSM-drug-related disorders. It also demonstrated good internal consistency, 1-week test-retest reliability and a unidimensional factor structure. The authors acknowledge that the utility of using the DAST-A with other adolescent population with other populations (e.g. outpatient clinics) needs to be established.

McGovern MP, Morrison DH. "The Chemical Use, Abuse, and Dependence scale (CUAD): rationale, reliability and validity". *J Subst Abuse Treat* 1992. 9:27-38.

The CUAD first asks "What are your drinking habits like?" and "What drugs do you use?" as entry questions to evaluate frequency, amount, mode and duration of use in 10 drug categories (up to 80 items). This study evaluated the CUAD against the DAST and psychiatrists' chart diagnoses (concurrent validity) and assignment to level of care (predictive validity) among 129 serious state mental hospital patients. The CUAD was reasonably well correlated with the DAST. Against the chart diagnoses, it was 80% sensitive and 79% specific, and demonstrated fair to good discrimination between patients assigned to inpatient versus outpatient care. The study's lack of gold standard interview criteria and blinding, and the mental hospital setting raise questions about its validity and generalizability. The CUAD's complexity and length will also limit its acceptability in primary care.

Midanik LT, Zahnd EG, Klein D. "Alcohol and drug CAGE screeners for pregnant, low-income women: the California Perinatal Needs Assessment". *Alcohol Clin Exp Res* 1998. 22:121-5.

Among 1147 low-income pregnant women and adolescents, an anonymous questionnaire included a 4-item version of the CAGE questionnaire adapted to screen for drugs, which was compared to a criterion standard of self-reported "high risk" drug use 12 months before knowledge of pregnancy. The timeframe and wording of the first three CAGE questions were identical to the alcohol version, substituting "drug use" for "alcohol." For a positive response to the "eye-opener" question, a subject had to respond "yes" to two questions: "Sometimes people feel bad when a drug wears off. Did that ever happen to you during the past year?" and "Did you ever take another drug when that happened?" The test characteristics varied by age group and drug category; for example, the Drug CAGE was more sensitive among older patients and for "heavier" drugs. At a cut-point of 1 or greater, the Drug CAGE was 84% sensitive and 98% specific for "heavier" drugs in women older than 20 years. Though the results appear promising in the search for a brief, valid drug screening instrument, the anonymity of the data collection probably augmented its sensitivity relative to regular clinical practice.

National Institute on Drug Abuse. "National Pregnancy & Health Survey. Drug Use Among Women Delivering Livebirths: 1992". *NIH Publication No. 96-3819*. Rockville, MD: U.S. Department of Health and Human Services, 1996.

Prevalence of drug abuse among women who delivered livebirths in hospitals in the contiguous 48 states was estimated from a national probability sample of 2,613 women who delivered at 52 hospitals from November 1992 to August 1993. Key findings included: an estimated 5.5% of women used an illicit drug at least once during pregnancy; although the number of white women using illicit drugs was higher than other groups, black women had higher rates of illicit drug use than white or Hispanic women, although the authors note that these findings may be confounded by age and socioeconomic status; comparisons with urine drug testing found significant underreporting of recent cocaine use among black women and underreporting of opiate use among all groups.

Perrone J, DeRoos F, Jayaraman S, Hallander JE. "Drug screening versus history in detection of substance use in ED psychiatric patients". *Am J Emerg Med* 2001. 19:49-51.

In a convenience sample of 124 psychiatric patients who presented to an urban medical/psychiatric emergency departments (ED), history alone detected drug use in 57% of patients, and drug screening alone in 62% of patients, but the combination of history and urine screening detected a significantly greater number of drug users than either alone, 73%. History was better for alcohol and cannabis use, and urine testing was not better for any substance. The authors note that urine screening alone rarely changes management, and conclude that optimal identification of drug use in ED psychiatric patients requires both history and drug screening.

Peters RH, Greenbaum PE, Steinberg ML, Carter CR, Ortiz MM, Fry BC, Valle SK. "Effectiveness of screening instruments in detecting substance use disorders among prisoners". *J Subst Abuse Treat* 2000. 18:349-58.

This study of 400 male inmates evaluated several screeners against a gold standard SCID interview for drug dependence. The 20-item version of DAST (see Skinner, 1982 below) at cut-point $\geq$ 6 was 88% sensitive and 81% specific. The 19-item Texas Christian University Drug Screen (TCUDS) at cut-point $\geq$ 3 was 81% sensitive and 83% specific. Although the prison differs from a clinical setting, this study suggests these self-report instruments may have utility for case-finding among high risk populations.

Rebelsky MS, Sox CH, Dietrich AH, Schwab BR, Labaree CE, Brown-McKinney N. "Physician preventive care philosophy and the five year durability of a preventive services office system". *Soc Sci Med* 1996. 7:1073-81.

This study is a follow-up to Dietrich et al, 1992 study listed above under screening studies. The study then involved physician training and an office system intervention with multiple cancer prevention targets. The objective of the follow-up study was to assess long-term impact of the intervention. Of the original 50 intervention offices, 35 were still in practice and eligible for interview; 30 agreed. Qualitative analysis revealed 3 distinct physician philosophies about the provision of preventive care: 1) Request only focus, responding to requests but taking no initiative to recommend services, 2) Health maintenance visit focus, providing indicated services only during visits scheduled for preventive care, 3) Opportunistic preventive focus, providing indicated services at every chance. The long term impact of the office system was most apparent in the opportunistic group. Interestingly, one lasting effect of the office system was use of a flow sheet. Before the original intervention study, 47% of the 30 offices had used a flow sheet; at one-year post intervention 100% were using a flow sheet, and 5 years later, 83% were still using flow sheets.

Saltstone R, Halliwell S, Hayslip MA. "A multivariate evaluation of the Michigan Alcoholism Screening Test and the Drug Abuse Screening Test in a female offender population". *Addict Behav* 1994. 19:455-62.

Among 615 female offenders in Ontario, Canada, the 20-item version of the DAST (see Skinner 1982 below) had high internal consistency (alpha coefficient -.88) and principal component analysis suggested a moderately strong unidimensional factor. The authors conclude that the 20-item version of the DAST is useful to measure drug misuse, although they cannot comment on its validity.

Staley D, El-Guebaly N. "Psychometric properties of the Drug Abuse Screening Test in a psychiatric patient population". *Ad Behav* 1990. 15:257-64.

In a sample of 250 psychiatric patients, the 28-item DAST (see Skinner 1982 above) at a cut-point of 6 or greater was 94% sensitive and 85% specific for the DSM-III substance abuse of the admitting psychiatrist. The study also documented high internal consistency reliability and a predominantly unidimensional factor structure. Again, the length of the original DAST limits its utility; a 10-item version has been developed (see Bohn et al. 1992 above).

Strano-Rossi S. "Methods used to detect drug abuse in pregnancy: a brief review". *Drug Alcohol Depend* 1999. 53:257-71.

This recent qualitative review focuses primarily on the voluminous literature regarding laboratory analysis of urine, meconium, serum and hair to detect fetal drug exposure. It dismisses self-report in pregnancy as useful only to establish psychosocial risk factors for drug abuse. “Drug consumption,” it contends, “is most of the times not admitted…” It concludes that maternal hair analysis is the most effective method of screening, but sidesteps the practical issues regarding hair analysis, and the necessity of self-report to assess the timing and severity of drug use disorders.

Swanson AJ, Pantalon MV, Cohen KR. "Motivational interviewing and treatment adherence among psychiatric and dually diagnosed patients". *J Nerv Ment Dis* 1990. 187:630-5.

A single 1 hour, 15 minute motivational intervention, administered to 121 inpatient psychiatric patients (77% with comorbid substance use disorders) doubled the rate of attendance at the first outpatient appointment compared with standard treatment (47% vs. 21%, respectively; P<.01). Among the substance-abusing patients, the rate of attendance increased from 16% to 42% with the motivational intervention. Although this was not a primary care population and the substances

used were not specified, this study does suggest that brief interventions might be effective among drug-abusing patients.

Vega WA, Kolody B, Hwang J, Noble A. "Prevalence and magnitude of perinatal substance exposures in California". *N Engl J Med* 1993. 329:850-4.

A probability sample of 29,494 deliveries at 202 hospitals received urine screens; the prevalence of perinatal drug exposure was 5.2%. Though most drug exposures occurred among white non-Hispanic and Hispanic women, Black women had the highest prevalence of total drug use (14%). Women who did not receive prenatal care had a 24% prevalence of drug use. Women who reported they smoked cigarettes during pregnancy had 8 times higher rates of drug use (P<.001) – 10 times higher for cannabis, 22 times higher for cocaine, 21 times higher for amphetamine and 2 times higher for opiates. Regarding drug use, the findings imply that clinical and educational interventions might target women from high risk sociodemographic groups, those who delay or miss prenatal care, and women who smoke cigarettes, though the authors acknowledge the need for balanced public health approaches to the problem of substance use in pregnancy.

Werner MJ. "Principles of brief interventions for adolescent alcohol, tobacco, and other drug use". *Pediatr Clin North Am* 1995. 42:335-49.

An excellent review of effective patient-provider communication and behavior-changing strategies as applied to the substance-using adolescent population.

Willner P. "Further validation and development of a screening instrument for the assessment of substance misuse in adolescents". *Addiction* 2000. 95:1691-8.

Among 4544 11 to 16 year olds attending 8 secondary schools in England, the Assessment of Substance Misuse in Adolescence (ASMA) instrument, a modified version of the 149-item Substance Misuse in Adolescence Questionnaire (SMAQ), at a cut-point of > 8 was 85% sensitive and 95% specific for weekly or daily drug use. A score > 12, considered to indicate problematic drug use, was >99% specific for daily drug use. ASMA also demonstrated good reliability and high internal consistency. Each of the 8 items on the ASMA is scored as 1 for “No” and 2 for “Yes.” ASMA includes the following items: “If you use drugs, do yo have a favorite drug you use?”; “If you use drugs, do you ever do so alone?”; “Do you use drugs because you’re bored, lonely or anxious?”; “If you use drugs, do you think a lot about drugs and drug use?”; “Do you plan your day to make sure you can use drugs?”; “Do you need to use more and more drugs to get high?”; “Do you feel irritable or anxious if you don’t use drugs?”; and “Do you miss your favorite drug if you don’t use it for a while?”; The study cannot answer whether the ASMA is a better screen than questions about quantity/frequency of consumption or routine clinical history.

Yarnall KS, Rimer BK, Hynes D, Watson G, Lyna PR, Woods-Powell CT, Terremoire J. Barber LT. "Computerized prompts to cancer screening in a community health center". *J Am Board Fam Pract* 1998. 11:96-104.

This study describes the maintenance of a computerized encounter form, which indicated needed screening tests, counseling, and immunizations for randomly selected study patients in large urban community health center, with low-income African American patients. Clinicians were involved in design and implementation of the computer system. Initial compliance rates with filling out the form were 55% for smoking [also 95% for mammography, 77% clinical breast exam, and 82% pap test]. Cumulative compliance leveled off at 21 months to 38% smoking [also 65% mamm, 53% CBE, 57% pap], despite multiple reminder systems. When surveyed, most clinicians thought it was a good reminder system, but said they did not always complete the form due to time demands.

IV.C Guideline Adherence and Role of Healthcare Provider

Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PC, Rubin HR. "Why don’t physicians follow clinical practice guidelines"? *JAMA* 1999. 282:1458-65.

Despite wide promulgation, clinical practice guidelines have had little effect on physician behavior. This was a comprehensive review of studies describing barriers to guideline adherence (regardless of the guideline topic). The implications discovered are important to implementation of any effort to change physician practices. From Medline review 1966-1998, 76 articles were identified that described at least one barrier to adherence to clinical practice guidelines, practice parameters, clinical policies, or national consensus statements. The majority (58%) examined only type of barrier. Few studies considered the variety of barriers that must be overcome to achieve adherence, including lack of awareness, lack of familiarity, lack of agreement, lack of self-efficacy, lack of outcome expectancy, the inertia of previous practice, and external barriers. By not entertaining the variety of barriers, interventions are less likely to be successful.

Center for Substance Abuse Treatment. "A Guide to Substance Abuse Services for Primary Care Clinicians". Concise Desk Reference Guide. T*reatment Improvement Protocol (TIP) Series No. 24*. DHHS Publication No. (SMA) 98-3257. Rockville, MD: U.S. Department of Health and Human Services, 1998.

A detailed guide to screening, assessment, and intervention for primary care physicians designed to assist in the recognition and management of patients with abuse of alcohol and other drugs.

Center for Substance Abuse Treatment. "A Guide to Substance Abuse Services for Primary Care Clinicians". *Treatment Improvement Protocol (TIP) Series No. 24*. DHHS Publication No. (SMA) 97-3139. Rockville, MD: U.S. Department of Health and Human Services, 1997.

This TIP is screen patients for substance use disorders, conduct brief interventions for patients in the early stages, and appropriately refer more severely affected patients. For drug screening it recommends periodic, routine screening of adults using the CAGE-AID (see Brown, 1995 above). To find drug-using patients who have not yet experienced negative consequences, the TIP recommends the question “Have you used street drugs more than 5 times in your life” with a recommendation of further screening and assessment for positive responses. Pregnant women should be asked “Do you use street drugs” and if yes, abstinence should be recommended. All adolescents should be screened at every visit. The TIP does not recommend routine use of laboratory tests for screening. The TIP acknowledges that few studies of brief intervention have included illicit drug users, but expressed a belief that it has potential to stop or curb drug use also. It recommends brief interventions for low-severity patients using feedback about screening results and risks of use, information about safe consumption limits, advice to change, assessment of readiness to change, negotiated goals and strategies for change, and arrangements for follow-up. Providers should become familiar with available assessment and treatment resources, and refer high severity patients. The TIP also emphasizes the importance of maintaining confidentiality. This TIP also includes a Concise Desk Reference Guide (DHHS Publication No. 98-3257).

Friedmann PD, Saitz R, Samet JH. "Management of adults recovering from alcohol or other drug problems". *JAMA* 1998. 279:1227-1231.

A detailed review of strategies for relapse prevention in primary care.

Hahn DL, Berger MG. "Implementation of a systematic health maintenance protocol in a private practice". *J Fam Pract* 1990. 31:492-502. [In Guideline screening studies meta-analysis & in Community Guide review]

Report of implementation of a systematic health maintenance protocol in single private practice after 18 months and 1400 patients. Report states that physician compliance was excellent and patient acceptance was good to excellent with minimal refusal.

Solberg LI, Brekke ML, Fazio CJ, Fowles J, Jacobsen DN, Ktooke TE, Mosser G, O’Connor PJ, Ohnsorg KA, Rolnick SJ. "Lessons from experienced guideline implementers: attend to many factors and use multiple strategies". *Jt Comm J Qual Improv* 2000. 26:171-88.

Studies of clinical guideline implementation have focused almost entirely on changing individual clinician behavior, without much attention to situational context. The goal of this project was to learn from seasoned guideline implementers what contextual factors they viewed as important and whether implementation success could be expected if only a single strategy was used. Qualitative analysis from interviews with 12 people resulted in 87 variables and 25 strategies, clustering in 6 categories (ranked in order by panel): organizational capabilities for change, infrastructure for implementation, implementation strategies, medical group characteristics, guideline characteristics, and external environment. All 6 were considered important and essential, although variables within a medical group that directly affect its ability to undertake planned change were rated as much more important than either guideline characteristics or the external environment. These opinions are valuable for hypothesis generation. However, this panel believed that single strategies were unlikely to be successful. Rather, multiple strategies are needed that take into account multiple characteristics of the guideline, practice organization, and external environment.

[i] Note: The Special Populations category includes samples of adolescents/youth; women, obstetrics and obstetrics in a military setting; veteran populations; psychiatric samples; inner-city, urban and rural settings; geriatric populations; individuals with cancer; arrestees, delinquents and prison populations; individuals with STDs; and racial, ethnic, and/or cultural factors.