SESSION I CRITICAL REVIEW OF THE CURRENT STATUS OF SMOKING CESSATION IN THE USA

Introduction

Saul Shiffman

Let me welcome you all here on behalf of the planning committee. It is nice to see a year's worth of planning realised in a day and a half.

It is an axiom that it helps you to get there if you know where you are going, and in the smoking control area, the federal government's Year 2000 goals have given us a sense of where we need to be headed. But if you have ever tried to find your way in a big shopping mall, it turns out it also helps you to get there if you know where you are.

So the next two talks will provide the "You are here" sign for us. Tracy Orleans and John Pinney will talk about where we currently are in smoking control efforts, and then we will move on to our panel discussion. Let me introduce our presenters and panelists.

Tracy Orleans is director of tobacco control research at the Fox Chase Cancer Center, and is also vice president of Research and Development for the Health Management Division of Johnson & Johnson Health Care Systems. In 1994, Dr Orleans was awarded the American Society of Preventive Oncology's Joseph W Cullen Award for her work in tobacco control, and she has also recently co-edited with John Slade a comprehensive textbook on the treatment of nicotine addiction.

John Pinney is chief executive officer of Corporate Health Policies Group, Inc (CHPG), a health care consulting firm specialising in issues of health promotion and disease prevention. CHPG, in fact, serves as the secretariat for the conference. John had a very important historical role. He was the first director of the Office on Smoking and Health

under Secretary Califano, whom we shall be hearing from shortly. He was also executive director of the Institute for the Study of Smoking Behavior and Policy at Harvard's Kennedy School of Government, and is known to many of us as a long time smoking policy wonk.

Next, our panelists. Diane Becker is currently director of the Center for Health Promotion at the Johns Hopkins University School of Medicine. There she directs research and programmes to define effective health promotion interventions especially targeted to African-American communities, and she has been active with the American Heart Association in formulating their position on smoking.

Joyce Essien is director of the Center for Public Health Practice, and a visiting associate professor of Health Policy and Management at the Rollins School of Public Health at Emory University.

She previously held several director positions at the Centers for Disease Control and Prevention (CDC). There, she worked on strategies to improve the effectiveness of public health organisations and to facilitate technology transfer of prevention technology into practice.

Finally, Corinne Husten is a medical officer with the Office on Smoking and Health of the CDC. She is a physician certified in both family practice and preventive medicine and was previously a Cancer Prevention Fellow at the National Cancer Institute following a career in private practice.

Review of the current status of smoking cessation in the USA: progress and opportunities

C Tracy Orleans

I shall begin with a brief overview of the epidemiology of smoking and quitting smoking in the United States, using the Year 2000 goals as a point of reference.¹ I shall also briefly review the public health strategies put in place in the 1980s to help us achieve the Year 2000 objectives. Last year, the US Centers for Disease Control and Prevention (CDC) issued

mid-course revisions for the objectives themselves.² With only five years remaining until the Year 2000, it is also time for some mid-course revisions in the strategies to achieve those objectives.

While we have made some significant gains in the policy arena, our gains in the treatment arena have been more limited. We must

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improve and intensify our strategies to promote smoking cessation if we are to come close to reaching the ambitious Year 2000 goals set a decade ago. To some extent, new treatment methods and goals are needed. But I submit that by far and away the greatest need is to do a much better job of disseminating and delivering the treatments that we have.

There is an urgency about the tobacco addiction treatment agenda that comes not just from the imminence of the Year 2000, but also from these simple and stunning facts. Tobacco addiction is the most common serious medical problem in the country and the nation's most deadly drug addiction, killing more than 420 000 Americans a year.³ One in five Americans who die each year, die from tobacco use. Yet over 25 % of Americans continue to smoke or use smokeless tobacco despite a strong desire to quit.⁴ Treatment programmes and policies must be responsive to these realities, and we must not forget them in the discussions and deliberations we have during this conference.

From the time of the first Surgeon General's report on smoking and health in 1964 until 1987, the baseline year for the Healthy People 2000 objectives, we saw an impressive 30 % reduction in the prevalence of current smoking.⁴ The Year 2000 target of a 15 % smoking prevalence was seen as challenging, but attainable given the momentum of changing social norms about smoking and the dawning of a new public health era in tobacco control. To achieve the Year 2000 goals, the annual decline in smoking prevalence would have had to double from 0.6 percentage points per year to 1.2 percentage points per year. Let's look at how we are doing.⁴

The 1993 National Health Interview Survey (NHIS), a Year 2000 supplement, showed that smoking prevalence had declined from 1987, but only at the rate of 0.67 percentage points per year.⁵ To meet the Year 2000 prevalence objective, the rate of decline must double to 1.4 percentage points from now until the Year 2000.

Special Year 2000 targets were set to narrow the gap between the total population and population subgroups with above average prevalence of smoking and tobacco related morbidity and mortality.¹ Table 1 shows many of these special populations.

Smoking prevalence and smoking attributable morbidity remain highest for Americans with the poorest income and education, including African Americans and American Indians/Alaska Natives. NHIS data showed increases in prevalence from 1992 and 1993 for Hispanic adults and Asians/Pacific Islanders.⁵

Especially ambitious goals were set for the nation's youngest smokers, those of 20 to 24 years of age, and high school seniors (ages 17–18). Unfortunately, we have seen little change in their rate of smoking initiation since 1987, and no change in daily smoking among high school seniors overall.^{4,5} A dramatic decline has occurred for African-American teenagers, but initiation has increased slightly among white males. This places an increasing

burden on cessation objectives if we are to come close to reaching the Year 2000 objectives.

The 1993 NHIS survey also looked at interest in quitting, showing that most smokers still want to quit, with the highest quitting interest among women, middle aged smokers, and those with 12 to 15 years of education, and the lowest quitting interest among older adults, and those with the least education.⁵

But while most smokers want to quit, very few succeed. Only 34 %, or 16 million, current smokers make a serious quit attempt lasting 24 hours or more, and only 7.5 % of them (representing 2.5 % of *all* smokers) succeed in remaining abstinent for a year.⁵ These figures indicate that we should have two goals, not only the goal of increasing the number of smokers who try to stop for a day or more, but also the goal of increasing the number who succeed. In fact, the prevalence of long term smoking cessation (or "quit ratio") has doubled from 1965 to the present, to the point where now we have 46 million current smokers and 46 million former smokers (parity for the first time in our history).⁵ But still we have not seen, despite this doubling, much increase in the percentage of smokers who succeed when they try stop, and we are still showing the lowest quit ratios for the same special population target groups that have the highest smoking prevalence.^{5,6}

Poor long term quitting success is largely a result of nicotine dependence or addiction. Data in figure 1 from the 1992 California tobacco survey show not only that 90 % of attempters returned to smoking, but that most do so within seven days of stopping.⁷ Hughes and his colleagues reported similar 1992 results for smokers quitting on their own, with only 19 % of self quitters still abstinent at 30 days, and only 8 % still off at six months,⁸ close to our 7.5 % national long term quitting estimate.⁵ This makes sense since still most Americans who try to quit do so on their own. The last national survey of quitting methods in the USA was the 1986 adult use of tobacco survey (AUTS), which found that only 15 % of smokers who had tried to stop in the 10 years before that survey had ever used an assisted quitting method. The quitting methods used most often included: nicotine gum (8 %); hypnosis (4 %); and programmes offered free (3 %) or for a fee (3 %).⁶ At the time, nicotine gum was chiefly used in the absence of the provider advice so essential to its efficacy.⁹ Moreover, the AUTS showed that while treatment programmes appeared to serve a small but important population of the nation's heavier, harder core smokers, many high risk groups were underserved, including again African-American smokers, those with least education and income, and both older and younger populations.⁸ As John Pinney will discuss, there is a dire need to address and overcome barriers to wider use of effective quitting programmes.

Let me turn now to a review of the broad public health tobacco control strategies that were adopted to meet the Healthy People

Table 1 Healthy people 2000 tobacco objectives and special population targets. Based on references 1 and 4.

Special population targets	1987 Baseline	1993 Update	2000 Target
● Adults with a high school education or less	34 %	—	20 %
● Blue collar workers	41 %	(36 %)	20 %
● Young adult smokers age 20–24 years	27 %	(26 %)	15 %
● High school seniors	19 %	(19 %)	—
● African Americans aged 18 and over	33 %	(26 %)	18 %
● Hispanics aged 18 and over	24 %	(20 %)	18 %
● Native Americans/Alaska natives	42–70 %	—	20 %
● Male smokeless tobacco users aged 18–24 years	9 %	(10 %)	4 %
● Pregnant women	25 %	—	10 %

Figure 1 Rapidly of smoking relapse after quitting. From reference 7, with permission.

Objectives for the Year 2000 and take a look at how well we have done.

Setting out to achieve the nation’s Year 2000 objectives required a massive shift from the clinical model of the 1970s to a public health model, translating advances in clinic based programmes to public health initiatives. As Lichtenstein and Glasgow have outlined,¹⁰ this involved a shift in focus from individuals to communities, from self referred smokers to entire populations in high risk groups (including those least interested in quitting), from clinics to natural environments, and from intensive multi-session formats to brief, low cost and self help clinic formats. In fact, the minimal contact approach became the cornerstone and mainstay of our efforts to reduce smoking among current smokers.¹¹

As such, it makes sense to use the National Cancer Institute’s self help program recommendations as a framework for reviewing how far we have come, what we have accomplished, and what remains to be done. These strategies were summarised in 1990 by Glynn *et al*¹¹ (table 2). The first two strategies have to do with increasing the proportion of Americans who *try* to quit smoking, one of our Year 2000 objectives; the last three have more to do with increasing the proportion who *succeed*.

The first objective, and the most basic strategy, was to broaden programme delivery modes so as to increase quit attempts among *all* smokers, rather than concentrating on the success rates of those already trying to quit. The assumption was that we would greatly increase our national quitting rate by making non-smoking cues and cessation information “persistent and inescapable” by implementing sweeping changes in public policy regarding smoking, and by launching self help program-

mes through a variety of channels to reach the maximum number of people in high risk groups.¹¹

In keeping with this first objective, the National Cancer Institute launched a programme of controlled intervention trials and defined population studies in the mid-1980s to develop and deploy interventions to help us achieve the Year 2000 goals. These interventions were diffused in the COMMIT and ASSIST trials. As most of you know, COMMIT, the Community Intervention Trial for Smoking Cessation, was conducted in 11 matched community pairs from 1989 to 1993, with the goal of increasing the quit rate among heavy smokers through broad community based public education, policy, and cessation initiatives.^{12, 13}

COMMIT was to serve as a laboratory for ASSIST (American Stop Smoking Intervention Study), which is now going on in 17 states, with goals of reducing smoking prevalence and smoking initiation through programmes launched in the mass media, schools, work sites, health care settings, and community organisations.¹³

One of the successes of those efforts is clear in the wide dissemination of smoking cessation treatments. There are now tobacco prevention and control programmes in all 50 states and the District of Columbia, when you count COMMIT, ASSIST, the CDC’s IMPACT programme, and the Robert Wood Johnson Foundation’s Smokeless States initiatives.¹⁴ These are broad policy, prevention, and cessation programmes which typically emphasise self help and minimal contact treatments as the main cessation activity. That is the success. But there are also some limitations.

At the same time as we were moving to wide ranging implementation of low cost, minimal contact approaches, we were also learning from our NCI trials that the smokers who took part in self help programmes were similar to those who enrolled in formal treatments. Not only did they tend to be better educated and white, but they were also heavier, longer term smokers with more past use of formal treatments – the very same smokers least likely to benefit from minimal contact approaches.^{15, 16} Moreover, we were reaching the same 4 % to 5 % of the smoker population.¹⁶

These early self help trial results pointed to the need for more innovative outreach to low income, low education, and minority groups, for a navigational system or triage that would steer appropriate candidates to self help programmes, and for methods of delivering self

Table 2 Self guided program strategies recommended by the National Cancer Institute. From Glynn TJ *et al*, reference 11.

1	Broaden programme delivery to motivate more smokers to stop
2	Target programmes to all stages of smoking cessation
3	Include critical cessation information and strategies in self guided programmes
4	Target programmes to specific populations
5	Consider add-on activities to boost success rates

Figure 2 Smoking stage in 1986 of 50 million Americans smoking in 1985. Based on Prochaska *JO* (reference 7).

help treatments to *all* smokers, regardless of their motivation to quit.

That brings me to the second NCI objective involving targeting programmes to smokers in all stages of change. The greatest single theoretical advance stemming from the early NCI self help research was the Prochaska and DiClemente Stages of Change model.^{10,17,18} This now familiar model, articulated first in the 1980s, outlines a series of motivational and behaviour change stages through which smokers progress in route to abstinence. These stages are shown here with estimates of how the 1985 US smoker population was distributed in 1986. As figure 2 shows, the majority of smokers, some 70%, were not ready for "action" (quitting) but were in the early precontemplation and contemplation stages of cessation.

This estimate has now been validated or confirmed in multiple samples of current smokers. Random digit dial surveys conducted in Rhode Island, in California, and in over 100 worksites of the Working Well project, reveal that 80% of current smokers at present are in the precontemplation and contemplation stages of change, while only 20% are in preparation, ready for the "action" programmes we have been delivering.¹⁹

These statistics underscore the need for new approaches that would motivate smokers to use the self help and minimal contact programmes that we have made available for them. Motivating early stage quitters involves enhancing quitting self efficacy and boosting the intrinsic quitting motivations associated with success in the long term.²⁰ There is also a challenge here around maximising the beneficial effect of policy interventions by helping smokers recognise and cope effectively with growing extrinsic pressures in ways that enhance their intrinsic quitting motivation. Very important work by Curry and her colleagues, replicated by Prochaska *et al*, indicates that smokers who stop primarily in response to extrinsic pressure are the *least* likely to succeed.^{21,22}

Table 3 lists across the top stage-specific cognitive and behavioural self change processes, and across the bottom a number of different types of policy intervention that might support these processes. It makes two

simple points: (1) that we have taken too simplistic an approach to our policy interventions, expecting them to do much of the work of motivational and cessation treatments other than to support these treatments; and (2) we have not done a good enough job of harnessing key policy initiatives to move the entire population of Americans systematically through the stages of change.

If tobacco control policy was seen principally as motivating smokers to stop or try to stop, then self help treatment programmes were seen as diffusing the critical and essential ingredients for quitting and helping quitters attain long term abstinence. These ingredients were defined by the NCI and the field to include information about the health and social consequences of smoking, and specific behavioural strategies for achieving initial abstinence and preventing relapse.¹¹ They were distilled down from formal clinic models, which, let us remember, had typical quit rates of 20–30%.²³

Unfortunately, when the time came to diffuse these self help treatments through COMMIT and ASSIST, the essential elements of effective self help programmes and the essential strategies of successful self quitters were only just beginning to be understood. And, in fact, in many studies the use of the same critical strategies recommended by NCI did not predict success.²⁴

Moreover, the rapid translation of formal treatment methods meant that both types of programme, the formal treatments that were widely offered (principally by voluntary health organizations) and our new self help programmes, ended up offering the same "multi-component mix" as Shiffman calls it, with patient-treatment matching remaining an important but unrealised goal. In fact, in Shiffman's prescient 1993 critique of the field, I think we see a harbinger of the results of COMMIT – results which I believe show that there are serious limits to broad, low intensity, homogeneous cessation programmes.²⁵

The COMMIT research group concluded that the COMMIT intervention did not significantly affect the primary outcome measure, quit rates among heavy smokers.¹² Reaching them, they concluded, "may require new clinical programmes and policy changes".¹² There *was* a modest 3% difference in the quit rate between intervention and control communities for light to moderate smokers, but this rate did not approach the hoped for difference of 10 percentage points for heavy smokers.¹²

Smokers in the intervention communities did have greater perceived exposure to smoking control activities than their counterparts in comparison communities, with the largest difference occurring for stop-smoking contests and events. However, for the heavy smokers, unlike the light to moderate smokers, this exposure was not reflected in higher quit rates. As a result, this community based intervention did not have a significant impact on smoking prevalence beyond favourable secular trends.^{12,26}

Table 3 Potential impact of policy interventions on stages and process of change in smoking behaviour. Based on Prochaska JO and DiClemente CC (reference 17).

Precontemplation	Stages of change in which particular processes of change are emphasised			Maintenance/recycling
	Contemplation	Preparation	Action	
Consciousness raising Dramatic relief Environmental re-evaluation Decisional balance = increased "pros" Self efficacy (barriers-related)	Self re-evaluation Decision balance = Decreased "cons"	Self liberation	Reinforcement management Helping relationships Counter conditioning Stimulus control	
Policy interventions Ad bans/FDA regulations Community coalitions Public education New warning labels EPA ETS classification	Counteradvertising Mandated and reimbursed nicotine addiction treatment	Excise income tax increase Clean indoor air laws Supporter focused campaigns Incentives for worksite health promotion CSAP/MNA/Synar amendment		Blocking tobacco industry countermanoeuvres – ● cigar promotion ● cigarette price lowering ● pre-emptive legislation on clean indoor air laws

To be sure, the policy interventions in COMMIT could have been stronger. Moreover, we could have used somewhat different community organisation processes. But the need for more effective treatment options comes through, not just from the COMMIT trial, but from three other trials reported in the same February 1995 issue of the *American Journal of Public Health* in which the COMMIT results were published. For the Minnesota Heart Health Program, the conclusions were that “the findings for smoking intervention were mixed, but primarily negative”.²⁷ The same held true for the Take Heart worksite project, based at the Oregon Research Institute. The investigators concluded that “more intensive or longer term interventions may be necessary”. Likewise, the authors of the CDC’s Smoking Cessation in Pregnancy Trial concluded, “to expect major behavior change among low income pregnant women in response to a minimum, low intensity intervention may have been unrealistic”.²⁹

What I submit we have been missing is a stepped care treatment model that provides for patient-treatment matching. One such model is the one presented two years ago at this conference by Dr David Abrams and his colleagues (figure 3).³⁰ It incorporates motivational and cessation interventions, but it triages smokers to the most appropriate interventions for them, reserving self help and self change treatments for the least dependent smokers with least medical or psychiatric morbidity or co-morbidity, moving up to more intensive programmes including nicotine replacement for the more dependent patients with greater difficulties in stopping, and still no co-morbidity, and moving all the way up to the most intensive programmes, including inpatient treatment programmes like the pioneering one at the Mayo Clinic, for patients with psychiatric and medical co-morbidity and high nicotine dependence.³¹

This model also includes population tailoring. Since the 1980s we have made a great deal of progress in developing tailored materials for specific populations, and we have shown that for many populations (that is, pregnant smokers, older adults, African

Americans, Latinos, and smokers in different stages of change), tailored materials can improve recruitment or quit rates. We have learned that linguistically and culturally sensitive materials are critical, and that targeted recruitment efforts and treatment delivery channels are probably more important than tailored materials.^{20,32} But aside from a handful of successes in tailoring treatments, there are mostly challenges remaining.

Unfortunately, little still is known about the factors that influence cigarette smoking among our most important minority groups. Few youth oriented cessation programmes have been developed or evaluated despite that fact that most high school seniors have tried to stop and been unable to do so.³³ Innovative patient and family centred approaches are greatly needed to improve the efficacy of smoking related interventions in pregnancy. Smoking in pregnancy is still the nation’s leading cause of low birthweight deliveries.³⁴ Stepping in to fill the funding breach here, the Robert Wood Johnson Foundation launches this year its first round of funding for its Smoke-Free Families programme.

Finally, we have just begun to scratch the surface in tailoring interventions for medically high risk populations who are at greatest risk for tobacco morbidity and mortality, and who include the nation’s hardest core and most addicted smokers.^{34,35} What is needed here is not new theory, but more careful work to better define the key motivation and cognitive-behavioural quitting determinants and quitting methods for these groups.

This brings me to the last point. Maybe our greatest progress has been in figuring out how to amplify self help programmes with minimal contact adjuncts. Two types of adjunct have emerged as most effective – pharmacological aids and personalised communications.

Nicotine replacement treatment, through nicotine gum and transdermal nicotine, has increased typical self help and minimal contact treatment quit rates from 50 % to 200 %.^{9,36} Other pharmacological aids have come to the fore, but none with the track record of nicotine replacement.³⁷

Other effective adjuncts include persona-

Figure 3 Triage and stepped care treatment models are needed for effective tobacco addiction treatment delivery systems. Based on Abrams D et al, reference 30.

lised motivational feedback,³⁸ brief telephone quit smoking counselling,^{39,40} computer tailored programmes,^{41,42} biofeedback of personal smoking health risks,⁴³ and physician advice and counselling.⁴⁴ These personalised communications have increased quit rates by 50–100%.^{11,20} Each of them introduces elements of patient-treatment matching. Each also adds or substitutes for some level of contact with a counsellor or provider.

Think of what we can do with the combination of self help programmes, pharmacological aids, and personalised communications. We have just begun to see the potential. For instance, findings from our Fox Chase Cancer Center research with older adults using transdermal nicotine found that patients who received not only transdermal nicotine but also just two instances of provider advice were far more likely to stop smoking and not to smoke while using the patch.⁴⁵ A follow up study with this same population suggests that sending tailored, personalised mailings practically doubled quit rates.

One conclusion that I noted at the start of my remarks was that perhaps our greatest need now is not for new treatments but for better dissemination and delivery of the effective treatments that we have. There is no better way to illustrate this than with the example of physician advice.

In 1991, it still was true that 70 % of smokers

visited their physicians at least once that year. This means that physicians have an opportunity to reach 32 million of the 46 million US adult smokers, boosting their quitting rate two to six times over usual care.²⁰ Yet only 13 million smokers received quitting advice in 1991, representing only 37 % of all smokers.⁴⁶

How will we achieve change in treatment delivery? Before we give up on existing tobacco addiction treatments and consider moving to harm reduction strategies, we must consider policy changes to mobilise systems to diffuse and institutionalise these treatments. For instance, a number of us worked on the CDC's mid-course Year 2000 revisions this year to add the following new Year 2000 goal: to increase the proportion of health plans that offer treatment of nicotine addiction from the 11 % baseline of 1987 to 100 % in 2000.²

Two related policy changes could have a major impact. One involves making tobacco use a vital sign as recommended by Fiore five years ago.⁴⁷ The second involves mandating or reimbursing tobacco addiction treatment as a key component of preventive benefits packages.⁴⁸ If both these requirements were incorporated into Health Plan Employer Data and Information Set (HEDIS) requirements for managed care organisations, we could see a dramatic change in primary care based smoking cessation treatment. We must press for treatment related policies such as these if we are to

come close to achieving the nation's ambitious cessation goals.

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