II. Smoking cessation in the hospital setting—a new opportunity for managed care

Introduction

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Managed care organisations provide a key channel for delivering smoking cessation interventions to populations. This effort has largely focused on outpatient settings, usually primary care practices. Far less attention has been paid to settings that deliver more acute medical care, despite the opportunities that these present for changing behaviour. Illness, especially a tobacco related illness, boosts a smoker's motivation to quit smoking, presumably by increasing a smoker's perceived vulnerability to the health hazards of tobacco use. Illness also brings smokers to the health care setting, where providers have an opportunity to encourage cessation. A hospital stay provides a special incentive for initiating cessation now that the Joint Commission on Accreditation of Healthcare Organizations requires US hospitals to have policies which prohibit smoking. A hospitalised smoker must abstain temporarily from tobacco use and is accessible to multiple caretakers who could provide smoking cessation assistance. Smoking interventions delivered in hospitals and other sites treating patients with chronic medical illness might be particularly effective.

The value of this idea has been demonstrated over the past decade. Observational studies have shown that a hospital stay can trigger smoking cessation even in the absence of intervention, especially in patients with cardiovascular and pulmonary disease or in patients having surgery.¹⁻⁵ Subsequent work has attempted to enhance this effect with smoking interventions that begin in the hospital and continue after discharge. The three papers in this section are examples of these efforts.⁶⁻⁸

Programs designed for patients recovering from myocardial infarction have produced the best results. These programs have doubled the smoking cessation rate of post-myocardial infarction patients. Cessation rates as high as 60–70% at one year have been reported in carefully controlled randomised clinical trials.⁹⁻¹⁰ The impressive findings from research studies can be maintained when the model program is implemented in new, "real world" clinical settings, such as a managed care organisation, as one paper in this section reports.⁶ The other two papers in this series focus on a broader target population—all hospitalised smokers, regardless of diagnosis.^{7,8} Counselling programs for this group have also boosted smoking cessation rates after hospital discharge when compared with usual care, but the rates achieved are substantially lower than

for cardiac populations.¹¹⁻¹⁵ Clearly, stronger interventions are needed.

Effective programs already share these common elements: systematic identification of smokers at (or shortly after) admission; a bedside counselling session by a nurse or specially trained counsellor, often supplemented by written or audiovisual material; physician advice to stop smoking; and continued contact, usually by telephone, for at least three months after discharge. Programs have not systematically incorporated drugs such as nicotine replacement or bupropion that boost smoking cessation rates in ambulatory settings. The high prevalence of nicotine withdrawal in hospitalised smokers provides a strong rationale for drug treatment,⁷ but adding drugs will raise further questions. Are drugs, such as nicotine replacement, safe for acutely ill patients, especially those with cardiac disease? Should the drugs be offered to all smokers for symptom relief, regardless of whether they plan to quit after discharge; or should they be limited to those attempting cessation? Will the drugs add to the effectiveness of counselling or will they replace it? Studies are already in progress to answer these questions.

In the meantime, managed care organisations need not wait to take action. Since 1996, the Agency for Health Care Policy and Research's evidence based smoking cessation clinical guidelines have clearly endorsed the concept of hospital based smoking intervention.¹⁶ Hospital based programs should be especially attractive to managed care because they are more cost effective than smoking programs for outpatients.^{17,18} Hospital based programs achieve higher cessation rates than outpatient programs, reducing the cost per quit. Furthermore, the cost incurred in treating smoking is offset more rapidly by reductions in the cost of medical care for patients with chronic medical disease than for ambulatory patients.

The challenge for managed care is to find ways to implement the elements of model intervention programs into existing health care delivery systems.⁸ Information systems may need to be adapted to permit routine identification of patients' smoking status on admission. Identifying staff with time and expertise for smoking intervention may be difficult, and supporting new staff to provide the smoking counselling, both in the hospital and after discharge, can be a challenge. As hospital stays shorten, a greater emphasis will be placed

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on the post-discharge component of the intervention. Future interventions might better be described as "hospital initiated" rather than "hospital based". If so, coordination of inpatient and post-discharge services will become critical. One approach might be to integrate a hospital based smoking intervention into the broader disease management programs that are now common in managed care. Additional models need to be developed. With an estimated 6.5 million smokers hospitalised annually,¹⁹ a smoking program for hospitalised smokers has the potential to reach many smokers and yield substantial clinical and public health benefits.

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A smoking cessation program for hospital patients

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A hospital admission provides an opportunity for smoking intervention, but little is currently done to promote smoking cessation in inpatient settings. To address this gap, we developed a bedside smoking cessation counselling program for smokers admitted to the Massachusetts General Hospital, an 850 bed teaching hospital in Boston, Massachusetts, that is affiliated with Harvard Medical School. The program, based on a public health model, aimed to provide a brief intervention to a broad population of smokers, regardless of their diagnosis or interest in stopping smoking. It had four components: a bedside smoking counselling session (median duration 15 minutes) provided by a specially trained smoking counsellor; written self help material (Johns Hopkins' Hospital's "Quit smoking for good while you're in the hospital" and the American Cancer Society's "Smart move! A stop smoking guide"); a hospital chart prompt that reminded physicians to advise smoking cessation in the hospital; and up to three weekly telephone calls after hospital discharge, each lasting 5-10 minutes, done by the counsellor who had provided the in-hospital counselling.

Previous hospital based programs had used nurses or masters level counselling professionals to provide the counselling.¹⁻³ Our limited budget and the experience of public health models of smoking counsellors inspired us to explore the feasibility of lower cost staff. Our counsellor was a college graduate who was carefully trained and supervised by an experienced nurse counsellor. The intervention continued beyond hospital discharge because our prior work indicated that a single counselling contact in the hospital was not sufficient to change smoking behaviour once a smoker left the smoke free hospital environment and returned to a home filled with temptations to smoke.⁴

The efficacy of this counselling program was tested in a randomised controlled trial that has previously been described.⁵ Over one year, 650 smokers admitted to the hospital's medical or surgical units were randomly assigned to receive either the counselling program or usual hospital care. Patients' smoking status was assessed via the telephone one and six months after hospital discharge. Self reported tobacco abstinence at six months was verified by measurement of saliva cotinine, a

nicotine metabolite. The program produced a 50% increase in smoking cessation over the first month after hospital discharge (seven day abstinence rates: 29% in counselled patients *v* 19% in controls, $p = 0.003$). By six months, however, the effect had disappeared (intervention *v* control: self report, 17% *v* 14%, $p = \text{NS}$; biochemical validation, 8% *v* 9%, $p = \text{NS}$).⁵

The study showed that it is possible to use the opportunity presented by hospital admission to produce short term smoking cessation and to do so with a simple, low cost program. The effect of the program did not differ according to a patient's diagnosis or interest in quitting. The next challenge is to adapt the program to produce long term smoking cessation after hospital discharge. The intervention might be strengthened in two ways: by extending the period of post-discharge telephone counselling; and by adding pharmacotherapy. The value of the first approach has been demonstrated in another trial, in which long term smoking cessation was produced by a hospital based program that included three months of telephone counselling after hospital discharge, but not by a similar program with only one post-discharge contact.³

Our own study provides a strong rationale for adding pharmacotherapy. We found that nicotine withdrawal symptoms and cigarette cravings were common among hospitalised smokers but were rarely treated with nicotine replacement.⁶ Smokers with these symptoms were more likely to smoke while hospitalised in violation of hospital no-smoking policies, and less likely to quit after discharge.⁵ Overall, 25% of smokers smoked during their hospital stay.⁷ Pharmacologic treatment of nicotine withdrawal and cigarette cravings in hospitalised smokers might be a way to simultaneously improve patients' comfort, improve compliance with hospital no-smoking policies, and promote smoking cessation after hospital

discharge. Both nicotine replacement or non-nicotine therapy deserve testing. We are currently testing a hospital based intervention for cardiac patients that begins in the hospital, includes both counselling and drug (bupropion) treatment, and continues for three months after hospital discharge.

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Questions and answers

Q: Were there any parallel efforts to provide policy changes in the workplace where supportive services to staff who smoked would perhaps catalyse some enthusiasm for participation with patients?

A: At Massachusetts General Hospital, we have an employee smoking cessation program that is similar to the program Dr MacKenzie described. The program was free for a period of time after our smoking policy changed. Now there is a discount, it is no longer free.

Q: What is sufficient from an inpatient perspective in terms of treatment? Is intervention enough? How do we know what is enough? At what point can we tell the patient that he/she doesn't have to go to the outpatient clinic?

A: The evidence tells us that inpatient intervention doesn't work on its own, period.