Social Programs That Work Review

Evidence Summary for a Multicomponent Smoking Cessation Program for Surgical Patients

HIGHLIGHTS:

- **PROGRAM:** A multicomponent smoking cessation program for adult smokers with an upcoming elective, ambulatory, or inpatient surgery.
- **EVALUATION METHODS:** A well-conducted randomized controlled trial (RCT) in Toronto, Canada with a sample of 296 patients with surgery scheduled in the next 7-60 days .
- **KEY FINDINGS:** 12 months after program entry, the biochemically-confirmed smoking abstinence rate was 42% in the treatment group versus 26% in the control group. This difference was highly statistically significant.
- **OTHER:** The program was delivered by seven trained anesthesiologists or pharmacists in two Toronto-area hospitals. A replication RCT conducted in other sites would be desirable to hopefully confirm these findings and establish that they generalize to other settings.

I. Evidence rating: NEAR TOP TIER

The standard for Near Top Tier is:

Programs shown to meet almost all elements of the Top Tier standard, and which only need one additional step to qualify. This category primarily includes programs that meet all elements of the Top Tier standard in a single study site, but need a replication RCT to confirm the initial findings and establish that they generalize to other sites. This is best viewed as tentative evidence that the program would produce important effects if implemented faithfully in settings and populations similar to those in the original study.

II. Description of the Program:

This is a multicomponent program designed to encourage adults with an elective, ambulatory, or inpatient surgery in the next 7-60 days to quit smoking. It consists of four components: (i) a 10-15 minute structured counseling session during the patient's preoperative visit, conducted by an anesthesiologist or pharmacist with specialized training in smoking cessation, that includes advice to quit

smoking, information regarding smoking behavior, and selection of a target quit-date (up to 24 hours before the date of surgery); (ii) pharmacotherapy that includes a free three-month supply of varenicline (a prescription medication to treat nicotine addiction); (iii) an educational pamphlet; and (iv) a fax referral to Smokers' Helpline, which provides proactive telephone outreach and counseling within 48 hours of the patient's preoperative visit.[1] The program's cost has not been reported but is likely modest given its brevity.

III. Evidence of Effectiveness:

This program has been evaluated in a single RCT, carried out in Toronto, Canada.

Study Design:

The study sample comprised 296 patients 18 years of age or older with elective, ambulatory, or inpatient surgery scheduled in the next 7-60 days at two hospitals in Toronto. The patients had consented to participate in the study, were in generally good health, and in the prior year had smoked at least 10 cigarettes per day and did not have a period of abstinence longer than three months. The patients were randomly assigned to (i) a treatment group that received the multicomponent smoking cessation program or (ii) a control group that received a brief 3-5 minute advice session on smoking cessation and contact information for the Smokers' Helpline.

The researchers collected smoking abstinence data through phone interviews at 1, 3, 6, and 12 months after the start of treatment. All patients reporting abstinence (defined as not smoking over the past seven days) were then asked to self-administer a test for urinary cotinine (an alkaloid found in tobacco) and submit it to researchers using prepaid return envelopes. Patients who could not be reached after three attempts were counted as smokers. The study's primary outcome was the rate of biochemically-confirmed smoking abstinence at 12 months after the start of treatment.

Key Findings:

At the 12-month follow-up, the treatment group had a biochemically-confirmed abstinence rate of 42%, versus 26% for the control group. This difference was highly statistically significant ($p<0.01$). The study found similarly large effects on abstinence at the 1, 3, and 6-month follow-up points.

Discussion of Study Quality:

This was a well-conducted RCT. The treatment and control groups were similar in demographic characteristics and smoking behavior prior to the study. The study had low sample attrition: outcome data at the 12-month mark were collected for 87% of treatment group members and 90% of control group members, and those who could not be reached were appropriately counted as smokers. The study appropriately measured outcomes for all treatment group members regardless of whether or how long

[1] Smokers' Helpline is a free tobacco cessation, telephone-counseling service operated by the Canadian Cancer Society.

they participated in the program (i.e., the study used an "intention-to-treat" analysis). The study appropriately corroborated self-reported smoking abstinence with biochemical tests.

The main study limitation is that it was conducted in just two Toronto-area hospitals, with program delivery carried out by seven healthcare personnel. A replication RCT conducted in other sites, using other healthcare personnel with similar training, would be desirable to hopefully confirm these findings and establish that they generalize to other settings.

IV. References:

Wong, Jean, Amir Abrishami, Sheila Riazi, Naveed Siddiqui, Eric You-Ten, Jennifer Korman, Sazzadul Islam, Xin Chen, Maged Andrawes, Peter Selby, David T. Wong, and Frances Chung (2017). A Perioperative Smoking Cessation Intervention with Varenicline, Counseling, and Fax Referral to a Telephone Quitline versus a Brief Intervention: A Randomized Controlled Trial. *Anesthesia & Analgesia* 125 (2): 571-579.