

RESEARCH PAPER

Merchandising of cigarettes in San Francisco pharmacies: 27 years later

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Objective: To estimate changes since 1976 in the proportion of San Francisco pharmacies that sell cigarettes and to characterise the advertising of cigarettes and the merchandising of non-prescription nicotine replacement therapy (NRT) products in these retail establishments.

Methods and setting: 100 randomly selected San Francisco pharmacies were visited in 2003. Pharmacies were characterised based on the sale of cigarettes, advertising for cigarettes, and the merchandising of non-prescription NRT products.

Results: In 2003, 61% of pharmacies sold cigarettes, a significant decrease compared to 89% of pharmacies selling cigarettes in 1976 ($p < 0.001$); 84% of pharmacies selling cigarettes also displayed cigarette advertising. Non-prescription NRT products were stocked by 78% of pharmacies, and in 55% of pharmacies selling cigarettes, the NRT products were stocked immediately adjacent to the cigarettes.

Conclusions: Since 1976, there has been a decline in the overall proportion of pharmacies in San Francisco that sell cigarettes yet most pharmacies, particularly traditional chain pharmacies, continue to merchandise the primary known risk factor for death in the USA.

It is well documented that smoking is the leading known preventable cause of death in the USA, responsible for an estimated 440 000 deaths each year,¹ and that clinicians can significantly impact smokers' likelihood of quitting.^{2,3} While most health care institutions have adopted "tobacco-free" policies such as the termination of tobacco sales in hospitals and the promotion of smoke-free environments on medical premises, community pharmacies in the USA continue to sell tobacco products despite numerous resolutions and recommendations against these practices, set forth by state and national pharmacy organisations over the past three decades.^{4,5}

In 1976, we conducted a study to assess the proportion of San Francisco community pharmacies that merchandise cigarettes.⁶ Of a random sample of 100 pharmacies, 89 sold cigarettes; in 52 of these establishments (58.4%), the cigarettes were located at the pharmacy counter where prescription drugs were dispensed. To estimate changes in the proportion of pharmacies that merchandise cigarettes, we replicated this study in the same metropolitan area in 2003 and compared our new data to those which we collected 27 years ago. Also in 2003, we examined the display of tobacco advertising and the merchandising location of non-prescription nicotine replacement therapy (NRT) products in these retail establishments.

METHODS

Similar to our 1976 study methods, a random sample of 100 pharmacies within San Francisco County was selected; however, the 2003 sample was selected from the California Department of Consumer Affairs' complete listing of licensed retail pharmacies ($n = 133$ total), compared to the 1976 study, for which the sample was selected from the San Francisco yellow pages. Clinics that listed more than one active pharmacy licence for the same street address were represented only once in the pharmacy population from which the random sample was drawn. Each of the selected pharmacies was visited by a research assistant in July/August 2003. Pharmacies determined to be permanently closed upon visit ($n = 2$) were replaced by random selection.

Each pharmacy was categorised as one or more of the following: traditional chain, independently owned, clinically affiliated, part of a grocery store, and part of a mass merchant store. Congruent with our 1976 study, a "traditional chain pharmacy" was defined as one clearly identified with other stores or pharmacies of the same name, an "independently owned pharmacy" was defined as one not identified with any other pharmacies or clinics, and a "clinically affiliated pharmacy" was defined as one that was located on the grounds of a medical building, office, or clinic. "Part of a grocery store" indicated that the pharmacy was located within a market that primarily was a venue for the sale of groceries, and "part of a mass merchant" indicated that the pharmacy was located within a much larger retail establishment that primarily was a venue for the sale of wholesale merchandise. As with our previous study, these identifications were based on appearance and did not represent legal ownership or whether the establishment was owned or operated by a pharmacist.

For each pharmacy, we determined whether cigarettes were sold and, if so, the location of the cigarettes (behind the front cash register counter, behind the pharmacy counter, and/or at a separate counter in the store), whether the products were stocked in the same half of the store as the pharmacy dispensing area, and whether the cigarettes were visible to customers. If cigarettes were not visible, store personnel were queried regarding cigarette availability. Pharmacies were classified as having cigarette advertising (for example, signage such as display stands, aisle ticklers, shopping cart signs) or not, and the location of the advertisements was described as one or more of the following: immediately adjacent to the cigarettes (for example, as part of a cigarette display), elsewhere within the store, or visible from outside of the store. Because we believe that pharmacies selling both tobacco and nicotine replacement therapy (NRT) products send a mixed message to consumers, we also determined the proportion of pharmacies selling NRT products, the location of these products in relation to both the dispensing pharmacist (within sight of the pharmacist and/or not within sight of

the pharmacist) and the cigarettes (immediately adjacent to the cigarettes or not), and whether assistance from an employee was necessary to gain access to the non-prescription NRT products. Because NRT products often are stocked in more than one location within a pharmacy, the research assistants queried pharmacy personnel about their placement.

Simple summary statistics were used to characterise the measured variables. χ^2 tests of independence and Fisher's exact tests were used to compare the merchandising of cigarettes by pharmacy type and to compare our 2003 results with those of our 1976 study.

RESULTS

Cigarette merchandising and tobacco advertising

In 2003, 61 of 100 pharmacies in San Francisco sold cigarettes (table 1); of these, cigarettes were visible to the public in 60 (98.4%). Generally, cigarettes were stocked behind the front cash register counter ($n = 48$; 78.7% of 61 pharmacies that sold cigarettes), but they also were stocked behind the pharmacy counter ($n = 1$; 1.6%) or at a separate counter ($n = 12$; 19.7%). In 10 of the 61 pharmacies selling cigarettes (16.4%), the products were located in the same half of the establishment as the prescription dispensing area.

Fifty one (83.6%) of the 61 pharmacies that sold cigarettes also displayed advertising for these products. Tobacco advertisements were positioned as part of a cigarette display in all 51 stores; three (5.9%) positioned advertisements elsewhere inside of the pharmacy, and two (3.9%) displayed advertisements that were visible from outside of the pharmacy.

Nicotine replacement therapy merchandising

Seventy eight pharmacies (78%; 95.1% of those selling cigarettes) stocked non-prescription NRT products (table 2). In 64.1% of these 78 pharmacies, the NRT products were stocked in a location that was within sight of the pharmacist, and in 47.4% of these pharmacies, the products were stocked in a location that was not within sight of the pharmacist (categories not mutually exclusive). In 66 pharmacies (84.6% of those selling NRT), it was necessary for customers to receive assistance in gaining access to some or all of the non-prescription NRT products, because the products were either stored in locked cases ($n = 9$; 11.5%), in unlocked cases behind a counter ($n = 53$; 67.9%), or in locked cases behind a counter ($n = 4$; 5.1%). Of 58 pharmacies that sold both non-prescription NRT and cigarettes, 32 (55.2%) stocked the NRT products immediately adjacent to the cigarettes. Traditional chain pharmacies were more likely to sell non-prescription NRT products than were independently owned pharmacies ($p < 0.001$).

Comparison with 1976 data

Since 1976 (table 1), there has been a significant decrease in the overall proportion of pharmacies selling cigarettes (89% in 1976 ν 61% in 2003; $p < 0.001$). There was no appreciable change ($p = 0.55$) in the proportion of traditional chain pharmacies that sell cigarettes (100% in 1976 ν 93.8% in 2003), yet substantial decreases ($p < 0.001$) were observed among independently owned and clinically affiliated pharmacies: in 1976, 90.6% of 64 independently owned and 58.3% of 12 clinically affiliated pharmacies sold cigarettes, whereas in 2003, 24% of the independently owned and none of the clinically affiliated pharmacies sold cigarettes. Grocery store and mass merchant pharmacies were not represented in the 1976 sample; thus comparison data are not applicable. We also observed a reduction in the proportion of pharmacies in which the cigarettes were located at the medication dispensing counter (58.4% of 89 pharmacies selling cigarettes in 1976 ν 1.6% of 61 pharmacies in 2003; $p < 0.001$). Comparison data for non-prescription NRT products are not available, because these products did not become available over the counter until 1996.

DISCUSSION

Concurrent with an increasing awareness of the health consequences of tobacco use over the past three decades, we observed a significant, 28 percentage point decline in the proportion of San Francisco pharmacies that merchandise cigarettes, compared to our 1976 study. The majority of this change is attributable to independently owned and clinically affiliated pharmacies. While the proportion of non-clinically affiliated chain pharmacies that sell tobacco also decreased, this change was minor in comparison.

There are several possible explanations for the observed chain versus independent differential. Chain pharmacy establishments tend to be larger in size and therefore are stocking a wider variety of items. An additional possibility is that, unlike independently owned pharmacies, merchandising decisions for traditional chain pharmacies typically are made at a higher level, often by non-pharmacists, and these decisions are subject to the influence of corporate shareholders. Cigarettes are frequently purchased products and likely attract customers who also purchase other items, thereby increasing overall sales and revenue. Notably, only 1.6% of respondents in a survey of 1168 licensed pharmacists in four Northern California counties (conducted in 1999) and 2.0% of respondents in a survey of 1518 students enrolled in California schools of pharmacy (conducted between 2000 and 2003) are in favour of tobacco sales in pharmacies.⁷ However, these California data might not be representative of the USA—for example, in a survey of 476 pharmacists in Indiana (conducted in 2001), 11.3% of pharmacists were in favour of tobacco sales in pharmacies, a reduction from 18.5% in 1996.⁸

While traditional chain pharmacies represented only 24% of the random sample in 1976, they now account for 48%.

Table 1 Merchandising of cigarettes, by year (1976 or 2003) and pharmacy type

Pharmacy type	1976			2003			p Value†
	Number of stores	Cigarettes sold	%	Number of stores	Cigarettes sold	%	
Traditional chain	24	24	100.0	48	45	93.8	0.55
Independently owned	64	58	90.6	29	7	24.1	<0.001
Clinically affiliated*	12	7	58.3	14	0	0	<0.005
Grocery store	–	–	–	8	8	100.0	–
Mass merchant	–	–	–	1	1	100.0	–
Total	100	89	89.0	100	61	61.0	<0.001

*The 2003 data include $n = 2$ traditional chain pharmacies that also are clinically affiliated.

† χ^2 tests of independence or Fisher's exact tests.

Table 2 Merchandising of non-prescription nicotine replacement therapy (NRT) products in 2003, by pharmacy type

Pharmacy type	NRT availability			NRT product placement		
	Yes	No	% available	Within sight of the pharmacist†	Not within sight of the pharmacist†	Immediately adjacent to the cigarettes‡
Traditional chain	47	1	97.9	20 (42.6%)	36 (76.6%)	31 (68.9%)
Independently owned	13	16	44.8	13 (100.0%)	0 (0%)	0 (0%)
Clinically affiliated*	9	5	64.3	9 (100.0%)	0 (0%)	–
Grocery store	8	0	100.0	7 (87.5%)	1 (12.5%)	1 (12.5%)
Mass merchant	1	0	100.0	1 (100.0%)	0 (0%)	0 (0%)
Total	78	22	78.0	50 (64.1%)	37 (47.4%)	32 (55.2%)

*Data include n=2 traditional chain pharmacies that also are clinically affiliated.

†Of 78 stores that sell NRT; categories not mutually exclusive.

‡Of 58 stores that sell both NRT and cigarettes.

Since 1991, independent pharmacies have decreased from 53% to 36% of the nation's community retail pharmacy outlets,⁹ while the proportion of chains, supermarkets, and mass merchants have all increased. This trend is particularly significant because as chain pharmacies continue to capture the market, we would expect to see increases in the overall proportion of pharmacies that sell tobacco.

Consistent across all types of pharmacies visited in 2003 was the removal of cigarettes from the prescription dispensing area. In addition, in 84% of pharmacies selling cigarettes, these products were not located on the same half of the store as the prescription dispensing area. This shows movement towards a separation between the practicing pharmacist and the actual vending of the cigarettes.

Our 2003 study also documented the merchandising of non-prescription NRT, with 78% of pharmacies stocking these products. In many pharmacies, however, these products are available without assistance. While ease of access removes a potential barrier to product use (that is, seeking assistance to obtain the product), the opportunity for clinician intervention to ensure appropriate product selection, dosing, and counselling for use of medication, is diminished. Poor compliance with the medical regimens or incorrect use of NRT can lead to failed quit attempts; indeed, in a recent study of 103 non-prescription NRT users, 29% had read none of package insert materials, 19% skimmed the materials, 14% read most of the materials, and only 38% read all of the materials.¹⁰ Given that non-prescription NRT products commonly are located in areas of the pharmacy that are not readily visible to the dispensing pharmacist, it is not surprising that pharmacists report the primary barrier to counselling patients for use of non-prescription NRT is that they are unaware of when the products are being purchased.¹¹ While placement of NRT near the cigarette displays likely serves as a visual cue to action for quitting for some smokers, relocating the non-prescription NRT products to the pharmacy dispensing area, or in very close proximity, would be more conducive to interactions between pharmacists and potential quitters. Furthermore, stocking the products in locked cases, or behind counters, could serve as a point of intervention whereby the store personnel could then advise the patient to receive guidance from the pharmacist. This is particularly important because the pharmacist might be the only clinician with the opportunity to counsel patients who opt to use non-prescription NRT products as an aid for cessation. It is paradoxical that the proportion of pharmacies selling NRT is not much greater than the proportion of pharmacies selling tobacco.

Our study is subject to limitations, including the difference in sampling methods between the 1976 study, which sampled from pharmacies listed in the San Francisco yellow pages directory, and the 2003 study, which sampled from pharmacies from a list that was provided by the Department of

Consumer Affairs. While we do not anticipate that pharmacies listed in the yellow pages would differ on tobacco sales status compared to pharmacies that were not listed, we are unable to address this potential source of bias. It is unlikely, however, that this potential bias would attenuate the significant change that was observed.

It also is worth noting that while a significant difference was observed in the overall proportion of pharmacies that sell tobacco, there remains significant public exposure to tobacco sales in pharmacies, because traditional chain pharmacies are much larger in number and provide service to a larger number of patients than do independently owned pharmacies. For example, in a survey study of licensed pharmacists conducted in 1999 in Northern California, pharmacists (n = 279) working in traditional chain pharmacies filled a median of 210 prescriptions per day, compared to 135 per day for pharmacists (n = 106) working in independently owned pharmacies (Hudmon, unpublished data). While pharmacists are in an ideal position within the community to assist all patients with quitting—including patients from underserved populations that might otherwise have limited access to clinician facilitated tobacco interventions—the sale of tobacco in pharmacies sends a “mixed message” to consumers, particularly when many of the same pharmacies also sell NRT products, and these often are placed adjacent to the cigarettes.

In the past year, nearly two thirds of the US schools of pharmacy have expanded the tobacco cessation component of their curricula through the adoption of the “Rx for Change: Clinician-Assisted Tobacco Cessation” training programme.^{12 13} As part of this programme, which is funded by the National Cancer Institute (“Disseminating a Tobacco Curriculum for Pharmacy Schools,” grant R25 CA 90720), pharmacy students are challenged to consider the ethics of providing pharmaceutical care in an environment that sells tobacco. By raising awareness within the health community and thereby reducing tolerance for tobacco sales in pharmacies, we are hopeful that owners and employees of pharmacies that are active purveyors of tobacco products will revisit the ethics of perpetuating the use of the primary known risk factor for death via an environment that has a primary goal of promoting health.

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What this paper adds

While most health care institutions have adopted "tobacco-free" policies such as the termination of tobacco sales in hospitals and the promotion of smoke-free environments on medical premises, community pharmacies in the USA continue to sell tobacco products despite numerous resolutions and recommendations against these practices, set forth by state and national pharmacy organisations over the past three decades. Several organisations have instituted grass roots efforts to apply pressure on pharmacies, particularly chain pharmacies, to remove tobacco from their stores. Although a few studies have been published on this topic over the years, no studies have examined the trends of tobacco sales in pharmacies (using parallel methodology, at two time points) over a period of nearly three decades.

In 1976, we determined that 89% of San Francisco community pharmacies sold cigarettes. We repeated this study in 2003 and report a significant, 28 percentage point decline (to 61%) in the proportion that sell cigarettes. In addition, we characterise the advertising of tobacco products and the merchandising of non-prescription nicotine replacement therapy in these retail establishments. Currently, schools of pharmacy across the country are enhancing the tobacco cessation component of their curricula by adopting a standardised tobacco education programme "Rx for Change: Pharmacist-Assisted Tobacco Cessation". As part of this programme, pharmacy students are being challenged to consider the ethics of providing pharmaceutical care in an environment that sells tobacco. By raising awareness within the health community and thereby reducing tolerance for tobacco sales in pharmacies, we anticipate that owners and employees of pharmacies that are active purveyors of tobacco products will revisit the ethics of perpetuating the use of the primary known risk factor for death via an environment that has a primary goal of promoting health.

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REFERENCES

- 1 **Centers for Disease Control and Prevention**. Annual Smoking-attributable mortality, years of potential life lost, and economic costs—United States, 1995–1999. *MMWR Morb Mortal Wkly Rep* 2002;**51**:300–3.
- 2 **Fiore MC**, Bailey WC, Cohen SJ, *et al*. *Treating tobacco use and dependence: clinical practice guideline*. Rockville, Maryland: Public Health Service, 2000.
- 3 **Silagy C**, Stead LF. Physician advice for smoking cessation. *Cochrane Database Systematic Review* 2001;**2**:CD000165.
- 4 **Committee reports**. *J Am Pharm Assoc* 1971;**NS11**:270.
- 5 **Davis RM**. Tobacco sales in pharmacies: mixing good drugs and bad drugs. *Tobacco Control* 1992;**1**:84–96.
- 6 **Schroeder SA**, Showstack JA. Merchandising cigarettes in pharmacies: a San Francisco survey. *Am J Public Health* 1978;**68**:494–5.
- 7 **Hudmon KS**, Fenlon C, Corelli RL, *et al*. Tobacco sales in community pharmacies: time for a change? Presented at: American Association of Colleges of Pharmacy Annual Meeting, July 2003, Minneapolis, Minnesota, USA).
- 8 **Kotecki JE**, Hillery DL. A survey of pharmacists' opinions and practices related to the sale of cigarettes in pharmacies-revisited. *J Community Health* 2002;**27**:321–33.
- 9 **National Association of Chain Drug Stores**. Community Retail Pharmacy Outlets by Type of Store, 1991–2002. http://www.nacds.org/user-assets/PDF_files/Retail_Outlets.pdf[Accessed 15 June 2004].
- 10 **Hudmon KS**, Hemberger KK, Corelli RL, *et al*. The pharmacist's role in smoking cessation counseling: perceptions of users of nonprescription nicotine replacement therapy. *J Am Pharm Assoc (Wash DC)* 2003;**43**:573–82.
- 11 **Hudmon KS**, Prokhorov AV, Corelli RL, *et al*. Helping tobacco users to quit: Pharmacists' counseling role. Presented at: American Society for Preventive Oncology 24th Annual Meeting, Bethesda, Maryland, March, 2000.
- 12 **Hudmon KS**, Corelli RL, Chung E, *et al*. Development and statewide implementation of a tobacco cessation training program for California's pharmacy schools. *J Cancer Educ* 2003;**18**:142–9.
- 13 **Hudmon KS**, Kroon LA, Corelli RL, *et al*. Training future pharmacists at a minority educational institution: evaluation of the Rx for Change tobacco cessation training program. *Cancer Epidemiology Biomarkers & Prevention* 2004;**13**:477–81.