
A Case Study of the 1976 Referendum in Utah on Fluoridation

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FLUORIDATION OF PUBLIC WATER SUPPLIES by the State board of health is prohibited in Utah. A majority of the voters in a State election held on November 2, 1976, supported initiative proposal A on the ballot, which grants the prerogative to decide about fluoridation to the voting majority in local water districts and prohibits fluoridation by the State board of health. The election outcome was contrary to the results of referendums on the same day in two other Western States and conflicted with scientific research findings. The fluoridation issue, however, is far from being closed in Utah, and the State's experience has several direct and indirect implications for fluoridationists and for the health field in general. In Utah, the issue will be brought up again and resolved in a future election.

As to the general implications of the Utah experience in 1976, success with fluoridation—as with similar public health programs (immunizations, environmental protection, family planning, and the like)—is contingent upon public acceptance. The Utah experience thus presents a case study of efforts to gain and keep public acceptance that should be of interest to health educators, dentists, public policy planners and executives, and social scientists. For each of these groups a thorough understanding of the factors influencing voter behavior is essential.

After examining the 1976 voting results in Utah and the processes leading to election day, I will discuss campaign strategies, the role of influential groups in the community in the campaign, Utah's past record on fluoridation, the results of public opinion polls on fluoridation, and media coverage

of the fluoridation issue. The purpose of this review is to attempt to determine why the voting majority decided to vote to prohibit fluoridation by the State board of health and what can be done to prevent a recurrence of that decision in a future election. Little space will be devoted to the scientific evidence for and against fluoridation. Instead, my presentation will focus on the arguments as perceived and advanced by the Utah electorate.

Election Results

Proposal A on the November ballot read as follows:

—Initiative Proposal A—
FREEDOM FROM COMPULSORY FLUORIDATION
AND MEDICATION ACT

Should a law be adopted, the purpose of which shall be:

1. To prohibit the State Board of Health from adding fluorides and medications to any public water supply, and
2. To prohibit fluoridation or other medication of any public water supply except when authorized to do pursuant to an initiative petition approved by a vote of the majority of the users of said water supply.

To vote for fluoridation, one had to vote against the proposal; to vote against fluoridation, one had to vote for the proposal.

The vote to prohibit fluoridation (and chlorination) of public water supplies, and hence pass pro-

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posal A, was close. Final results showed that 268,855 votes, or 51.6 percent of the votes cast, were for prohibition and that 252,295, or 48.4 percent, were against it. The 16,560 vote plurality represented 3.2 percent of the votes cast. The majority of the voters in 21 of Utah's 29 counties supported the prohibition of fluoridation (1).

Proponents and opponents of proposal A were encouraged to varying degrees by the election results. The proponents claimed a clear-cut victory for their position. The large voter turnout, 76.5 percent of the persons registered, reinforced the proponents' belief that the will of the people had been expressed accurately and openly (unpublished information provided by office of the Utah Lieutenant Governor). Despite their having little support from health care providers or public officials, the proponents had taken their low-budget campaign directly to the voters and won. The preference expressed by the majority was the same as in 12 previous State and local elections in Utah on the fluoridation issue; for some reason or some combination of reasons, fluoridation is not acceptable to the people (2).

The opponents of proposal A found solace in the margin of the defeat—the narrowest in years. Despite confusion over the proposal's negative orientation and inclusion of the issue of chlorination, opponents of the proposal came close to defeating it. Furthermore, in elections held the same day in two other Western States (Washington and Oregon), the electorate voted for fluoridation. The decision in these other two States followed a national trend, which has been apparent since 1945, of increasing percentages of the U.S. population drinking fluoridated water (3). The growing sophistication of the behavioral sciences in the health field and a strengthened health education program offer the possibility of a breakthrough for fluoridation when the issue is brought up again in Utah.

Campaign Strategies

Antifluoridationists. Having organized a group called the Utah Coalition Against Fluoridation, the antifluoridationists used two general strategies: citations of quasi-scientific research studies and of the opinions of selected professionals and lay people and the stimulation of grassroots support. Unlike the fluoridationists, the opponents of fluoridation lacked widespread supportive evidence on the effects of fluoridation and did not enjoy the endorsement of professional societies. Nevertheless, their quasi-scientific campaign was spearheaded by a popular local osteopathic physician, who used several ques-

tionable research studies in attacking the efficiency and safety of fluoridation. One of these studies, by D. Buck and J. Yiamouyiannis, which was first refuted in 1975 by the National Cancer Institute, showed a simple correlation over a 10-year period between U.S. cities having fluoridated water and increasing cancer rates (unpublished table by D. Buck and J. Yiamouyiannis captioned "Effect of Fluoridation on Cancer Death Rates"). A causal relationship between fluoride and cancer was incorrectly assumed by the authors on the basis of this statistical correlation (4).

Fears that the costs for the installation and operation of fluoridation equipment would accelerate when the government assumed responsibility for them generated additional support for the antifluoridation proposal. The Salt Lake City water superintendent estimated that Salt Lake City would incur initial capital expenditures of \$1,400,000 and a continuing annual cost of \$112,000 (5). This fear of an ongoing governmental cost overrun blended with a third major concern: the extension of bureaucratic jurisdiction to a decision heretofore considered private. This infringement upon free choice seemed particularly offensive in the light of the votes to reject fluoridation in numerous previous referendums. The antifluoridationists' emphasis on scientific-philosophical concerns is well summarized in a Salt Lake City dentist's statement that "It is an act of pompous arrogance for the Board of Health to limit argument at the proposed public hearings to only scientific data. The Board of Health ought to consider some of the other valid concerns that the public has regarding this controversial issue" (6).

The antifluoridation campaigners claimed to have no official leader and to be led just by a coalition of concerned citizens (personal conversations with several members of Utah Coalition Against Fluoridation). The campaign's grassroots strength was evidenced in its ability to obtain the more than 47,000 signatures necessary to get proposal A on the ballot (7). Canvassing of signatures by well-dressed, well-mannered, middle class people was common at shopping centers, supermarkets, and neighborhoods. Their request to sign the petition frequently was confusing to the public because of the negative wording of the proposition. Thus, canvassers often asked, "Would you like to sign the petition for fluoridation?" and "Would you like to get fluoridation on the ballot?" (unpublished letter from executive director of Provo (Utah) Chamber of Commerce to director of dental health, Utah Division of Health, dated July 8, 1976).

The antifuoridation campaign had many resources that extended beyond its seemingly low budget of \$2,000 (7). Its three apparent leaders were dedicated veterans of previous antifuoridation campaigns. The one who was a doctor of osteopathic medicine was an articulate and well-liked local practitioner who challenged opponents' scientific arguments and presented counter arguments. An attorney with an old Utah name directed the legal and procedural work. A long-time affiliate of the National Health Federation (NHF), another member of an old Utah family, also assumed a leadership role. Much of the campaign information and literature was provided by the NHF, thus giving the antifuoridation group an inexpensive resource.

The media accorded much free coverage to the campaign because of the controversial nature of the fluoridation issue and its significance. Newspapers and radio and television stations devoted time and space to campaign events in straight news coverage, included consumer and voter information, published letters to the editor and editorials about the issue, and incorporated the subject into talk shows with various personalities. Aside from vehement antifuoridation sentiments expressed by one radio personality, coverage of both sides of the issue was provided by the media. When one side came out with a point, coverage was accorded both to that point and to the opposition's reaction. The media exposure probably was more advantageous to the antifuoridation group because it offered them direct access to the public and an opportunity to present their position while casting doubt on the opposition's. In editorials, however, a profluoridation stance was taken by the State's largest newspaper, the Salt Lake Tribune, and by the largest television station, KSL. The State's second largest newspaper, the Deseret News, took no stand on fluoridation. It did urge that voters, rather than appointed administrators, make the decision (8).

Fluoridationists. The profluoridation campaign was based upon scientific evidence and was conducted largely through the media. The formal campaign for fluoridation was initiated by the State board of health and carried out through the State division of health, with some citizen participation through the Citizens for Good Health Committee. Use was made of the large body of research evidence that supports fluoridation as a safe, inexpensive, and efficacious method of reducing dental caries and providing essential nutrients. Proponents of fluoridation could cite endorsements by most major nationwide health

professional organizations and their Utah State affiliates in medicine, dentistry, public health, and pediatrics. One of the most telling endorsements was related to the fluoridation experience of Brigham City, Utah. In 8 years of fluoridation, it had experienced significant improvement in six measures of dental health, namely, baby teeth filled; permanent teeth filled; baby decayed teeth; permanent decayed teeth; baby decayed, missing, and filled teeth; and permanent decayed, missing, and filled teeth (9). According to a Brigham City orthodontist, who was also a city councilman, community acceptance of fluoridation was extremely high, and there was little opposition to it (10).

Nevertheless, backing for fluoridation in many cases was not enthusiastic. In a 1974 survey conducted by the Utah State Office of Comprehensive Health Planning (CHP), voluntary, professional, and public agencies were asked to list what they perceived to be the major health problems in Utah that were amenable to legislative resolution. Of the 56 agencies responding, only 3 (the State Dental Association, the State Dental Hygienists Association, and the State Division of Health) listed lack of fluoridated water supplies as a major health problem (11). In 1975, CHP included fluoridation as an unranked priority for the State health plan, calling it a modality for decreasing the incidence of tooth decay, especially among children. However, acknowledging the potential difficulty of attempting to implement fluoridation, CHP advocated that dental health be advanced through alternate measures such as health education and flossing (12).

A scientific theme was emphasized throughout the profluoridation campaign; the opposition's concerns about freedom of choice were dealt with sparingly. Nor were community organizations used to deal with citizen anxiety at the local level (13). Professional and voluntary organizations throughout the State were not mobilized into a coordinated effort for dealing with public concerns, and these organizations did not appear to have a discernible influence on voter preference. Although the professional approach used was commendable, a personal, neighborly touch, like door-to-door canvassing, probably would have helped the profluoridationists.

Role of Other Influential Groups

The most influential group in the State is probably the Church of Jesus Christ of Latter-Day Saints (Mormon), whose membership includes approximately 70 percent of Utah residents. The church is highly organized geographically and adheres to a

centralized philosophical guideline. Through its teachings and its control of the Deseret News and television station KSL, the church has a great potential for influencing opinion. However, the church takes a stand only on moral issues and had declared in 1972 that fluoridation was not a moral issue and that voters were responsible for informing themselves on this issue and voting accordingly (14).

Many individual church members, however, were anti-fluoridationists, interpreting the Book of Mormon (the church's gospel) to be against fluoridation. One letter to the editor of the Deseret News raised the following argument against fluoridation (15):

Almost from the date of its restoration nearly a century and a half ago, the [LDS] church has urged its members to refrain from introducing into the body any unique or harmful substances which might be detrimental to our health. . . . Subsequent scientific and clinical findings have been correct all along.

Political forces in the State appeared to exercise little influence on the fluoridation issue. The Republican, Democratic, and American Parties had no official stand on fluoridation. The major gubernatorial candidates, a Republican and a Democrat, only suggested that the issue be resolved by local option. The mayor of Salt Lake City personally preferred defeat of the fluoridation proposal, but formally urged that the issue be settled at the local level (16). The political arm of the State AFL-CIO, its Committee on Political Education, officially opposed proposal A (17).

Since the major political figures in the State were sidestepping the fluoridation issue, either out of political expedience or personal preference, the issue was not identified with anyone; nor was anyone identified with the issue. Thus, there was no correlation between a candidate's election success and his or her position on proposal A, or vice versa. That the November election was not oriented strictly on a liberal versus conservative basis is seen by the gubernatorial victory of a liberal Democrat over a conservative Republican and the senatorial defeat of a liberal Democrat by a conservative Republican.

Other influential groups in the community refrained from joining the controversy. Unlike many State issues, proposal A was not supported by any public advertisements paid for and signed by leaders in business, labor, religion, the professions, or government. No organization or coalition of organizations, except the AFL-CIO, advertised their position in the media. Presumably the public was largely unaware of which factions and members of the power structure supported or opposed proposal A.

Analysis of Voters' Characteristics

As election day drew near, the profluoridationists saw reason for optimism in the results of two different voter opinion surveys reported in the Deseret News of September 28 and the Salt Lake Tribune of October 28. By varying margins, both surveys showed voter opposition to proposal A. This opposition was spread across most socioeconomic categories. However, in each poll there was a substantial percentage of undecideds, 7.4 percent in the first and 20.3 percent in the second, percentages which could swing the election either way (18, 19).

The defeat of fluoridation in Utah in 1976 demands analysis since both sides claimed they would not accept defeat, nor let the issue rest. Presented here are results of a preliminary investigation, which was undertaken to assess the relationships, on a county-by-county basis, between the percentage of voters opposing proposal A and the following five indicators of socioeconomic status:

1. Education. Expressed as the percentage of 1970 high school graduates (20a). This variable was used because of the assumption that educated people understand the facts of fluoridation and will vote for its implementation.

2. Income. Expressed as the 1973 per capita income (20b). This variable was used because it correlates positively with dental health; as income increases, the average number of teeth filled also increases while the number of decayed or missing teeth decreases. Also, as per capita income increases, so does dental service utilization.

3. Family orientation. Expressed as the percentage of families with dependent children under age 6 in 1970 (20c). This variable was used under the assumption that families with children under age 6 would be more aware of, and more inclined to vote for, a program that provides substantial benefits for children.

4. Dental health resources. Expressed as the 1974 dentist to 1976 voter ratio (21). This variable was used because of the potential that dentists and their assistants have for raising patients' consciousness and information levels in respect to good dental health and fluoridation.

5. Religious preference. Expressed as the percentage of the population that in 1975 belonged to the Church of Latter Day Saints versus the percentage that did not (unpublished data from Intermountain Health Care, Inc., Salt Lake City, 1976). This variable was used under the assumption that the church's high degree of organization might informally or formally influence its members' voting.

A Spearman RHO rank-order correlation was computed between the percentage of each county's voters opposing proposal A (the dependent variable) and each of the five aforementioned socioeconomic status indicators (the independent variables). A high, or significant, correlation would indicate a close relationship between the two variables; a low, or non-significant, correlation would indicate little relationship. The null hypothesis with each of the five pairings stated that there was no significant difference at the 0.05 level between the percentage of voters favoring proposal A and each of the five socioeconomic variables. The following correlations were computed for the five hypotheses:

1. Education. 0.07, nonsignificant, hypothesis accepted.
2. Income. 0.16, nonsignificant, hypothesis accepted.
3. Family orientation. 0.31, nonsignificant, hypothesis accepted.
4. Dental health resources. 0.55, significant at the 0.05 level, hypothesis rejected.
5. Religious preference. -0.22, nonsignificant, hypothesis accepted.

Thus, the county-by-county percentage of voters against proposal A showed no significant correlations with educational status, per capita income, the percentage of families with dependent children under age 6, or religious preference. Rejection of the hypothesis related to dental health resources deserves further investigation. A significant correlation between voter preference and the dentist-to-voter ratio may be explained with varying degrees of logic. In a study of preventive dental health information, Hellman found that patients received varying amounts of dental health education from dentists (22). The amount received correlated positively with the characteristics of the dentist and his practice, such as (a) type of treatment given to the patient during any particular visit, (b) length of the treatment, (c) how busy the dentist is, (d) kind of presentation of preventive dental health information, and (e) dentist's year of graduation, years in practice, and age. Whether or not Hellman's results are applicable to Utah is unknown, but this question, along with a number of others, needs to be answered by social-behavioral scientists and campaign leaders.

Summary and Recommendations

With the information gained from the 1976 election initiative, proponents of fluoridation of public water supplies in Utah can urge changes in future campaign strategy so that the following steps will be taken.

1. Fluoridation should be identified as a complex, multifaceted public health issue rather than a narrow scientific one. Profluoridationists must identify, analyze, and respond to the concerns of the overall electorate, that is, to proponents of fluoridation, opponents of fluoridation, and the people who are undecided. Campaign leaders would be well advised to consider any and all questions about the issue, be they scientific, political, legal, religious, financial, or philosophical. Substantial assistance in determining the basis for people's opposition to fluoridation proposals can be obtained from public opinion surveys. Results of one such survey undertaken during the 1976 campaign substantiated the belief that opposition to fluoridation centered around these three major concerns: (a) health concerns—fear that fluoridation would cause harm because it is not safe; (b) the cost of fluoridation—a belief that the public should not have to pay for an expensive program that would be difficult to contain costwise; and (c) the right of free agency—the belief that each person should have the right to make a personal decision about fluoridation. On the other hand, planners need to be cognizant of the main reason that proponents of fluoridation cite in support of the measure—that fluoridation is an effective way of improving dental health (23). These major concerns about fluoridation are similar to those reported by Kirscht 15 years ago (24).

2. A substantial role in campaign activities should be assigned to the Utah Health Division's Office of Community Health Education. Since this office has full-time staff in the capital city and in outlying multicounty district locations, it could assume responsibility for numerous educational and organizational functions on a day-to-day basis.

3. There should be sufficient lead time to plan, develop, and implement successful campaign strategies. If one considers the desired endpoint of the campaign—the fluoridation of public water supplies—what are the necessary intermediate steps? How much long-term health education, media advertising, doorbell ringing, and other campaign modalities are needed? Although evidence from successful and unsuccessful fluoridation campaigns is available, planners must adapt strategies used elsewhere to the unique features of Utah. Seattle's successful 1973 campaign to implement fluoridation did not encounter strong opposition from conservative political forces, but did get much support from the dental school of the University of Washington—two advantages not present in the Utah campaign (25).

4. The campaign should mobilize the active sup-

port of influential groups and influential people from all geographic and socioeconomic areas so that they can inform and win over the public. People in the health professions, organized labor, civic groups, business and church leaders could influence their peers and the general public.

5. The campaign should mobilize groups of student health professionals and graduate students in social-behavioral science from the universities. The enthusiasm and expertise of these students could be used in all aspects of the campaign. Like the community leaders, students represent free human resources.

More supportive evidence and endorsements need to be obtained from health professionals and lay persons of Brigham City, which has had a favorable experience with fluoridation. Since Brigham City is an integral part of Utah culture, capitalizing on that experience could help dispel the doubts of many Utah voters.

7. Utah fluoridationists should begin to build on the electoral preference of the eight counties in the State favoring fluoridation. Initial attention should be directed at influencing these counties to implement fluoridation locally; then further efforts could be made to persuade the remaining counties in the State to follow suit. Patience has to be a key strategy in the light of Utah's early opposition to and slow acceptance of smallpox vaccinations, poliomyelitis vaccinations, and water chlorination.

Although statewide fluoridation by the Utah State Board of Health was defeated in the 1976 election, there is still reason for optimism. The trend in the United States has been toward the implementation of fluoridation, and several Utah counties and a sizable number of voters in the State support this trend. Proponents, however, must recognize the complexity of the issue and the comprehensive nature of the health education that will be required to obtain a favorable vote. Although the desired endpoint is known, the intermediate steps remain elusive. As Hanlon wrote, "It has long since been demonstrated that one can obtain sufficient signatures to get about any referendum before the people and by adroit choice of words to confuse the voters so that either they do not vote or vote contrary to their wishes" (26).

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