

Present Status of Controlled Fluoridation in the United States

CONTROLLED water fluoridation for the prevention of dental caries started in 1945 with study projects in three communities—Newburgh, N. Y., Grand Rapids, Mich., and Southbury Training School in Connecticut. The study projects were a natural outgrowth of earlier epidemiological research in cities where fluoride has been present naturally in the water supply, and which demonstrated the inverse relationship between fluoride-bearing water and dental caries experience.

Reports of lowered caries incidence in the study communities were published in 1950 (1-3). As a result of these and other studies, the fluoridation of water supplies was endorsed by national health organizations and the practice adopted by many communities.

Summarized is the present status of controlled water fluoridation in the United States. The summary data include the number of communities, water supply systems, and population served by fluoridated water; the date the procedure was instituted; ownership of the water plant, and authorization for fluoridation. These data are presented primarily as reference material.

From 1945, when controlled fluoridation was introduced, through May 2, 1956, 1,352 communities served by 727 water supply systems instituted fluoridation (table 1). Sixty-six com-

munities (5 percent of the total) served by 51 water supply systems discontinued fluoridation. Of these, 7 communities, each one its own water supplier, reinstated the procedure.

By May 2, 1956, a net total of 1,293 communities with 26 million people were served by 680 water supply systems to which fluoride had been added.

The annual increment in the number of communities and water supply systems in which fluoridation was initiated, discontinued, and reinstated and the population they serve is shown in table 2. The greatest increase in the initiation of fluoridation occurred during 1952. Subsequently, annual increments in number of communities, water supply systems, and population have been at a lower level.

Table 3 shows the number and percentage of communities in each of 11 population groups using fluoridated water at the end of 1955.

Of the 1,255 communities using controlled fluoridation at the end of 1955, nearly 30 percent are under 1,000 in population, or of size not specified. Most of the latter are quite small since no population figures were available from Bureau of the Census sources. A little more than 30 percent of communities using fluoridation range in size from 1,000 to 5,000 population. Another 30 percent are between 5,000 and 50,000 population. The remaining 6 percent are over 50,000 in size.

When these figures are compared with the total number of communities of given size, nearly 45 percent of the communities of 500,000 population or over are fluoridating their water supplies, and from 20 to 30 percent of the com-

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Table 1. Annual cumulative findings on the institution, discontinuance, and reinstatement of controlled fluoridation showing number of communities, water supply systems, and population served, January 1945–May 2, 1956

Year	Fluoridation status at end of each year			Fluoridation instituted whether or not discontinued ¹		
	Number of communities	Number of water supply systems	Population	Number of communities	Number of water supply systems	Population
1945.....	6	3	231, 920	6	3	231, 920
1946.....	12	8	328, 467	12	8	328, 467
1947.....	16	11	454, 748	16	11	454, 748
1948.....	24	13	577, 683	24	13	577, 683
1949.....	45	29	985, 357	45	29	985, 357
1950.....	94	62	1, 496, 887	95	63	1, 513, 437
1951.....	325	171	4, 851, 420	327	173	4, 880, 870
1952.....	711	354	13, 280, 096	717	360	13, 423, 736
1953.....	944	483	16, 708, 847	955	494	16, 804, 039
1954.....	1, 119	570	20, 918, 518	1, 150	599	22, 060, 118
1955.....	1, 255	663	24, 400, 842	1, 310	706	25, 871, 813
1956 ¹	1, 293	680	25, 911, 490	1, 352	727	27, 453, 633

Year	Fluoridation discontinued whether or not reinstated			Fluoridation reinstated after discontinuance		
	Number of communities	Number of water supply systems	Population	Number of communities	Number of water supply systems	Population
1945.....						
1946.....						
1947.....						
1948.....						
1949.....						
1950.....	1	1	16, 550			
1951.....	2	2	29, 450			
1952.....	6	6	143, 640			
1953.....	13	13	204, 945	2	2	109, 753
1954.....	35	33	1, 267, 811	4	4	126, 211
1955.....	61	49	1, 601, 651	6	6	130, 680
1956 ¹	66	54	1, 680, 455	7	7	138, 312

¹ Through May 2, 1956.

munities of 10,000 to 50,000 population. For communities of less than 10,000 population, the percentage of fluoridation ranges from 4 to 14 percent. The proportion of communities that have instituted controlled fluoridation increases almost directly with grouped community size.

Public or private ownership of water supply facilities and authorization by which fluoridation was instituted, by grouped size of community, are shown in table 4.

It is interesting to note that of the 1,255 places with fluoridation as of December 31, 1955, more than a thousand owned their own water plants, and in 160 places the plants were under private ownership. Of the privately

owned plants, 68 percent were in places of under 10,000 population. Distributed on the basis of size of towns, however, 17 percent of the places under 10,000 population and 9 percent of the towns over 10,000 had privately operated water plants.

Table 4 also shows that in almost all communities the problem of whether or not to fluoridate is decided by the governing body. In only 6 percent of the communities was the question of fluoridation decided by referendums.

This census shows that in May 1956, after more than 10 years of water fluoridation, approximately 26 million people in about 1,300 communities, or roughly 1 out of every 4 people

using central water supplies, were drinking water with an adjusted fluoride content.

During the last few years, the number of people drinking fluoridated water has increased by about 4 million persons a year.

There is every reason to believe that this rate of increase will not decline and may very well become greater. However, as of May 1956 only 6 percent of the towns and villages of under 10,000 population had fluoridation, even though

Table 2. Annual incremental findings on the institution, discontinuance, and reinstatement of controlled fluoridation showing number of communities, water supply systems, and population served, January 1945–May 2, 1956

Year	Fluoridation instituted whether or not discontinued			Fluoridation discontinued whether or not reinstated			Fluoridation reinstated after discontinuance		
	Number of communities	Number of water supply systems	Population	Number of communities	Number of water supply systems	Population	Number of communities	Number of water supply systems	Population
Total.....	1, 352	727	27, 453, 633	66	54	1, 680, 455	7	7	138, 312
1945.....	6	3	231, 920						
1946.....	6	5	96, 547						
1947.....	4	3	126, 281						
1948.....	8	2	122, 935						
1949.....	21	16	407, 674						
1950.....	50	34	528, 080	1	1	16, 550			
1951.....	232	110	3, 367, 433	1	1	12, 900			
1952.....	390	187	8, 542, 866	4	4	114, 190			
1953.....	238	134	3, 380, 303	7	7	61, 305	2	2	109, 753
1954.....	195	105	5, 256, 079	22	20	1, 062, 866	2	2	16, 458
1955.....	160	107	3, 811, 695	26	16	333, 840	2	2	4, 469
1956 ¹	42	21	1, 581, 820	5	5	78, 804	1	1	7, 632

¹ Through May 2, 1956.

Table 3. Total communities in the United States, by size group, compared with the proportion of each using controlled fluoridation, December 31, 1955

Population size of community	Number of communities in urban and rural area ¹	Communities using controlled fluoridation	
		Number	Percent of all communities of same size
Total.....	18, 548	1, 255	6. 8
1,000,000 and over.....	5	1	20. 0
500,000–999,999.....	13	7	53. 8
250,000–499,999.....	23	6	26. 1
100,000–249,999.....	65	19	29. 2
50,000–99,999.....	126	37	29. 4
25,000–49,999.....	252	70	27. 8
10,000–24,999.....	778	162	20. 8
5,000–9,999.....	1, 176	163	13. 9
2,500–4,999.....	1, 846	200	10. 8
1,000–2,499.....	4, 296	226	5. 3
Under 1,000 and not specified.....	9, 968	364	3. 7

¹ SOURCE: Number of places in urban and rural territory, by size of place: 1950. Statistical Abstract of the United States, United States Bureau of the Census, 1955, table 15, p. 23.

Table 4. Ownership and authorization for fluoridation in places fluoridating as of December 31, 1955, by size of community

Population size of community	Number of communities	Ownership			Authorization				
		Public	Private	Not specified	Governing body alone	Referendum	Utilities commission	Other	Not specified
Total.....	1, 255	1, 093	160	2	1, 061	62	56	53	23
1,000,000 and over.....	1	1			1				
500,000-999,999.....	7	7			6	1			
250,000-499,999.....	6	5	1		6				
100,000-249,999.....	19	18	1		16			2	1
50,000-99,999.....	37	31	6		33	1		2	1
25,000-49,999.....	70	63	6	1	60	2	2	3	3
10,000-24,999.....	162	151	11		138	12	5	5	2
5,000-9,999.....	163	141	22		146	4	1	8	4
2,500-4,999.....	200	177	23		168	5	6	14	7
1,000-2,499.....	226	197	28	1	197	3	10	12	4
Under 1,000.....	154	118	36		139	7	4	3	1
Not specified ¹	210	184	26		151	27	28	4	

¹ Presumably under 1,000. The names of the towns are known, but their populations are not reported.

some 45 percent of the cities of more than 500,000 population were using fluoridated water. In numerical terms, this means 10 cities of over 500,000 persons do not have fluoridation and some 16,000 communities of under 10,000 population are not using fluoridated water.

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