

# Dental Health in a Group of Migrant Children in Connecticut

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This is the first of three articles by Dr. Castaldi and his associates. The other two articles will be in succeeding issues of *The Journal*. The following comment by Dr. Castaldi summarizes the author's attitude and hopes for the future.

*[I must also tell you that I do not believe that dental care for migrant workers and their children in Connecticut has had the same approach two years in succession since I came to Connecticut in 1969. For two years running, I was asked for assistance which I gave freely. Then without any explanation, a different approach was used with apparently no resemblance to what went on previously and organized by lay people whose idea of how to handle the problem is to find a dentally equipped van and hire some dental students to chase after patients during and after work hours.]*

*[In my view, the situation calls for a careful investigation by the Connecticut State Association with the ultimate goal of establishing some guidelines for the dental services for migrants — guidelines which would be in the best interests of the patients and acceptable to our profession.]*

The plight of the migrant worker in the United States has been a problem for quite some time. In addition to the concern about housing conditions, health care and more specifically, dental health care, remains inadequate. Gangarosa<sup>1</sup> in a report on oral health care in migrant agricultural workers in Monroe County, New York, found that caries with extensive crown fracture was a common finding in migrant workers' children. Bachand et al.,<sup>2</sup> compared the caries treatment status of a group of migrant children with a group of urban children who were seen during regular recall visits at Eastman Dental Center Clinic. Ten percent of the erupted teeth in the urban group had been restored while only seven fillings were found in 1,530 erupted permanent teeth in the migrants.

Downs and Bonnet<sup>3</sup> examined 503 migrant children in Colorado and reported that 53 percent were in need of dental care. The combined d.e.f. and DMF per child was 1.57. A total of only 61 restorations had been placed by the extraction rate per child, .67 (combined deciduous and permanent teeth), was high. However, 47 percent were found to have no defects.

Most reports on the dental health of migrants describe the difficulties involved in obtaining urgently needed dental care and describe dental student out-reach programs, mobile dental units and cooperative efforts by local dental societies.<sup>5,6,7,8,9, and 10</sup>

Federal funds for migrant dental care have been available for more than a quarter of a century. Why then, has so little been accomplished? The reasons are many and varied but three major factors stand out: the movement of farm laborers as crops ripen for harvest, the lack of transportation to dental offices, and their lack of knowledge of dental health.

Migrants often have barely enough money to provide basic needs. And they are reliant on outside help, i.e., state aid for "luxuries" such as health care. Since migrants do not stay in one area very long, each community may feel it does not owe them any health services. Thus, the responsibility for migrant workers' dental care may be passed from area to area and from state to state as they move with their work. If they are treated, the care usually never gets beyond the early stages. No sooner may treatment be started than the migrant may have to move to the next working locale. Upon their arrival, the new dentist must repeat the earlier data collection because records were not sent. This leads to poor continuity of care. Even if a centralized system of records were instituted to prevent duplication of services, the most serious problem remains because no program can succeed if the recipients do not understand why they should participate.

The health education of migrants is poor. To many migrants, unsanitary living conditions and poor nutrition are a way of life. A massive health education program is needed before a treatment clinic for migrants can be expected to provide anything other than emergency care. It is futile to teach a child how to brush his teeth when there is no running water at home and only one tooth brush in the family.

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## Dental Health in Migrant Children . . .

Employers' policies providing time off with pay are necessary to effect a viable dental program. Farmers should be willing to provide some free time to their employees for dental treatment. If going to a dentist also means loss of a day's pay, this is too much to expect of a person already on a low income.

Another possibility, of course, is to provide dental care at night so that conflicts between work and dental services would be eliminated. Evening clinics have been tried with encouraging results. Jacobson<sup>8</sup> set up an evening clinic and found that initially between five and ten patients were seen. As the service became better known the numbers treated doubled and patients began returning for restorative and preventive services after receiving emergency treatment.

Transportation problems plague most public programs set up for the underprivileged. Very often no one capable of driving the children to the dental office can afford to miss work. Volunteers driving the children to and from the dentist and mobile dental clinics which go directly to the farms have been tried with varying degrees of success. In 1972, a mobile dental care program providing all dental services was set up in Massachusetts. The all-volunteer personnel included dentists, hygienists, dental students, and a translator. Portable dental clinics were set up in the day.<sup>6</sup> Forty-three percent of the services offered were preventive. The program was judged to be successful in terms of participation but no cost analysis was done. A follow-up service did not materialize due to lack of funds.

In an effort to assist migrants in taking up permanent residence, the United States government has broadened the definition of a migrant worker and established priorities for educational and health services. Those migrants who have crossed state lines or school districts within a period of 12 months plus one day to work in agriculture or as fishermen are deemed top priority. The second priority group are those who have worked in the same two occupations (agriculture or fishing) and crossed state lines or school districts within a 5-year period.

Intensive summer programs consisting of education, health care, and improved nutrition are conducted for the children of migrant workers in most major cities and many towns in Connecticut under the Connecticut Migratory Children's Program, Area Cooperative Educational Service (A.C.E.S.). Within days after public schools close in June, a new group of teachers, administrators, health workers, and ancillary personnel sponsored by A.C.E.S. move into area schools to provide special, high quality remedial programs for the eligible children of migrants.

Because of the broad definition of a migrant, many of the participating children are permanent residents of Connecticut and have been carefully selected during the regular school year for the summer remedial programs.

In the spring of 1975, the Connecticut Migratory Children's Program (A.C.E.S.) contacted the Department of Pediatric Dentistry of the University of Connecticut and requested assistance in providing preventive and treatment services for migrant children during the A.C.E.S.

summer program. It was explained that the summer program would start during the last week in June and end the second week in August. The fiscal year of the A.C.E.S. would end September 1, beyond which no payment to practitioners for dental services provided to migrant children could be made.

In A.C.E.S.'s view, the solution to the problem was for the School of Dental Medicine to provide a mobile dental van with a faculty member and students which would set up at each school, complete all the necessary dental services, then move on to the next school. The fact that the dental school does not have a mobile dental van precluded such an approach.

An alternate proposal was made in which two dental students would be employed for an eight week period to accomplish the following:

1. Evaluate the children's dental health.
2. Set up a preventive dentistry program.
3. Locate area dentists to provide the dental services.

The plan which had been tried in Colorado with some success<sup>3</sup> was aimed at achieving basic goals for migrant children's dental health as follows:

1. Screen to determine basic dental health needs and set priorities for care.
2. Establish a procedure for examining oral health which could be standardized for use in annual comparison.
3. Involve the children and the educational staff in an ongoing preventive dentistry program which would emphasize daily oral hygiene as a basic element of modern health practice.
4. Refer necessary care to local practitioners who would be far more efficient in providing needed services than dental students.\*
5. Have the children go to a local practitioner for care rather than to a transitory mobile dental unit which would be available only for a short period of time during the summer months. The referral to a local practitioner was intended to strengthen the migrant child's integration into the local community and thus facilitate permanent residence.

### Method

Before the dental program started, the authors attended an orientation program in which teachers, nurses, health aides and administrators participated. It was considered important to provide the dental personnel with an understanding of the entire summer migrant educational program and to integrate the new dental program into the program as a whole.

\*An analysis of dental student productivity carried out at the University of Manitoba, Canada, in 1966 showed that the productivity of twenty-five undergraduate students equalled the productivity of two practicing dentists.

## Dental Health in Migrant Children . . .

Portable examining equipment was obtained from the University of Connecticut School of Dental Medicine. A number of practice sessions were held to standardize the examination procedure. Area schools were contacted and oral examinations were set up which included the following:

- Caries (DMF and def).
- Gingival Index.
- Traumatically injured teeth.
- Stains (green, orange, black, brown).

The level of treatment was determined using a method widely used in school dental programs in Connecticut consisting of four categories:

- A. No defects.
- B. All treatment done.
- C. Partial treatment.
- D. Care needed but none done.

An additional category urgent was used to identify those children in which there was an immediate need to be seen by a dentist. Children categorized as "urgent" fell into at least one of the following categories:

1. Cases in which there was an abscessed tooth (or teeth) in which there was a fistulous tract draining into the mouth;
2. Gross caries in a number of teeth, which if not attended to soon, would in all likelihood, result in toothache or dental abscess;
3. Fractured permanent incisor teeth in which the fracture approached very close to the dental pulp or already involved the pulp and in either case, the child was not under treatment for the injury;
4. Dislodged permanent teeth.

One day was required to examine the children in each of eight schools serving a total of 400 children. After the examinations were held, area dentists who had previously accepted migrants for care were contacted and appointments were made for urgent cases and later for all of the children in need of care. When the appointment date arrived, the children were excused from school and driven to the dental offices by social workers or health aides.

The parents were then sent a form letter in English or Spanish explaining when the appointment was, what treatment was needed and who the dentist would be. It was stressed that if appointments could not be kept, parents should contact the dentist. A form was used to indicate the care that had been completed and was used to determine the amount to be paid by A.C.E.S. for the treatment of patients not covered by Title XIX. To confirm completion of care, the parents countersigned the form and returned it to the school.

The second day the dental students spent at each school center was used to teach the children oral hygiene and home care. Oral hygiene instruction was given using a modeling technique. The dental students used disclosing tablets and tooth brushes along with the children as the oral hygiene instruction was given. Groups of up to 20 children were taught at a time providing as much individual attention as possible. Dental charts and posters were given to each class to reinforce what was learned.

Routine toothbrushing in school each day was instituted in the hope that a daily cleansing routine would be incorporated into the child's every day activities, even after the program ended. To reinforce the oral hygiene instruction, a puppet show and film\* were used to provide meaningful experience to the school age children.

At the end of the study, the participating dentists were contacted by phone to determine the progress of treatment, to discuss problems such as broken appointments and obtain suggestions to improve the program in the future.

## Findings

A total of 400 children, ranging in age from 3 to 16 years, were involved in the study (Table 1). In 1975, the total number of migrant children registered with A.C.E.S. was about 2,500. Data was collected on the "Connecticut Child Dental Health Survey" form which was developed by the Council on Dental Health of the Connecticut State Dental Association to standardize dental examinations in Connecticut school dental programs.

Table 1

1975 Study Group of Connecticut Migrant Children

Age	Male	Female	Total
3	1	2	3
4	10	5	15
5	21	23	44
6	22	22	44
7	18	21	39
8	20	29	49
9	14	30	44
10	24	29	53
11	13	14	27
12	17	17	34
13	15	11	26
14	4	9	13
15	2	3	5
16	0	4	4
<b>Totals</b>	<b>181</b>	<b>219</b>	<b>400</b>

\*"The Double Day of Danny Dillon." Audio Visual Productions, Chicago.

## Dental Health in Migrant Children . . .

### Treatment Level

Our findings, as seen in Table 2, reveal that 252 (63%) of the 400 children were in need of treatment. On the other hand, 99 (24%) had no defects while 49 (12%) had all needed treatment done. While this level of treatment was not as high as that reported by Donns and Bonnet,<sup>3</sup> it was considerably better than what was found in most previous studies.<sup>1,2, and 10</sup>

### D.M.F., d.e.f.

Tables 3, 4, 5, and 6 summarize the caries status of the study group and permits comparisons with previously published reports of dental health in other groups of Connecticut school children.<sup>11,12,13, and 14</sup>

**Table 2**

Treatment Level of Connecticut Migrant Children in 1975

Age	No Defect	All Treatment Done	Partial Treatment	Care Needed but None Done	Urgent	Number
3	2	0	0	1	1	3
4	7	0	2	6	1	15
5	23	1	5	15	6	44
6	15	1	9	19	6	44
7	9	5	8	17	6	39
8	14	4	8	23	10	49
9	11	4	11	18	12	44
10	8	5	26	14	10	53
11	3	4	13	7	4	27
12	7	6	8	13	4	34
13	0	12	8	6	2	26
14	0	5	6	2	1	13
15	0	2	1	2	1	5
16	0	0	2	2	1	4
	99	49	107	145	65	400

**Table 3**

D.M.F. Per 100 Permanent Teeth in Connecticut Migrant Children in 1975

Age	D.M.F.	Erupted Teeth	% D.M.F.
3	0	0	0
4	0	0	0
5	1	21	4.8
6	25	171	5.6
7	47	308	6.3
8	56	523	8.9
9	73	566	14.5
10	151	885	11.8
11	73	526	13.8
12	121	791	14.9
13	111	661	16.8
14	86	342	25.1
15	37	137	27.0
16	41	112	36.6

d.e.f.\* in Connecticut Migrant Children in 1975

Age	Number Children	d.e.f.	Erupted Teeth	Total d.e.f.	% d.e.f.
6	44	2.86	524	126	24.04
7	39	2.92	457	114	24.89

\*Only erupted canines and first and second deciduous molars in six and seven year old children are included in accordance with previous reports of d.e.f. in Connecticut school children.

**Table 4**

Caries Free Deciduous Teeth

6 and 7 Year Old Connecticut Migrant Children in 1975

Age	Number Children	Caries Free	% Caries Free
6	44	20	45.4
7	39	19	48.7

**Table 5**

Caries Free Deciduous Teeth

6 and 7 Year Old New Britain Children in 1973

Age	Number Children	Caries Free	% Caries Free
6	95	29	30.5
7	60	13	21.6

**Table 7**

Clinical Status of First Permanent Molars in Connecticut Migrant Children in 1975

Age	Number of Children	Number of Teeth*	Caries Free	PERCENT								
				D	M	F	DMF	Caries Free	D	M	F	DMF
6-9	175	617	419	141	1	56	198	67.9	22.9	0.1	9.1	32.0
10-12	114	456	214	139	20	83	242	46.9	30.5	4.4	18.2	53.1

**Table 8**

Clinical Status of First Permanent Molars in New Britain Children in 1973

Age	Number of Children	Number of Teeth*	Caries Free	PERCENT								
				D	M	F	DMF	Caries Free	D	M	F	DMF
6-9	403	1,387	961	292	1	133	426	69.3	22.9	.07	9.6	30.7
10-12	345	1,380	628	340	13	399	752	45.5	24.6	1.0	28.9	54.5

\*Includes erupted and extracted teeth.

**Gingival Health**

Gingival health was determined by evaluating the degree of inflammation of six designated teeth using the gingival index of Loe:<sup>15</sup>

- 0 = Normal gingiva
- 1 = Mild inflammation — slight change in color, slight edema. No bleeding on probing.
- 2 = Moderate inflammation — redness, edema and glazing. Bleeding on probing.
- 3 = Severe inflammation — marked redness and edema. Ulceration. Tendency to spontaneous bleeding.

**Table 9**

Gingival Health in Two Groups of Connecticut Children

Age	GINGIVAL INDEX	
	Migrants in 1975	New Britain
3	3	—
4	3.6	—
5	3.6	3.4
6	4.11	3.5
7	4.85	4.0
8	4.41	4.0
9	4.41	5.0
10	4.26	4.1
11	3.96	3.7
12	4.59	3.6
13	3.85	—
14	5.1	—
15	5.22	—
16	6.78	—

**Traumatically Injured Teeth**

The number of deciduous and permanent teeth which showed signs of traumatic injury is summarized in Table 10.

**Table 10**

Tooth	EXTENT OF INJURY		
	Enamel only	Enamel & dentin	Pulp exposed
2	0	0	0
1	5	2	0
1	11	1	0
2	0	0	0
2	1	0	0
1	1	0	0
1	1	0	0
2	1	0	0
<b>Total</b>		20	3
<b>Total</b>		23	0

  

Tooth	EXTENT OF INJURY		
	Enamel only	Enamel & dentin	Pul exposed
B	0	0	0
A	1	1	1
A	0	0	1
B	1	0	0
B	0	0	0
A	0	0	0
A	0	0	0
B	0	0	0
<b>Total</b>		2	1
<b>Total</b>		4	1

**Stains on Teeth**

The types of stains found on the teeth are summarized in Table 11.

**Table 11**  
Frequency of Stains on the Teeth of  
400 Connecticut Migrant Children in 1975  
STAINS

Age	Number of Children	Green	Orange	Black	Brown	Total
3	3	1	0	0	0	1
4	15	1	0	1	3	5
5	44	6	0	1	2	9
6	44	5	1	1	4	11
7	39	5	1	0	2	8
8	49	5	3	1	3	12
9	44	5	3	1	4	13
10	53	4	3	1	7	15
11	27	4	0	1	2	7
12	34	3	2	3	3	11
13	26	1	0	1	4	6
14	13	1	0	2	1	4
15	5	1	0	1	0	2
16	4	0	0	2	0	2
<b>Total</b>	<b>400</b>	<b>42</b> (10.50%)	<b>13</b> (3.25%)	<b>16</b> (4.00%)	<b>35</b> (8.75%)	<b>106</b> (26.5%)

**DISCUSSION**

**Caries and Treatment Level**

Our findings indicate that the dental health of the migrant children seen in this study do not represent a grossly neglected population. Using the caries status of the first permanent molars as an indicator, a comparison with a group of New Britain elementary school children examined by Castaldi in 1973<sup>14</sup> shows virtually no differences in the 6 - 9 year age group (Tables 7 & 8). In the 10 - 12 year age group the percent DMF is almost the same, but the New Britain children have a higher percentage of filled teeth. This may indicate a worsening of dental health in comparison to other children as migrant children get older.

As far as those children who were judged to be urgently in need of dental care (Table 2), the difference between 920 New Britain children of mixed social status seen in 1973<sup>14</sup> was negligible (14% and 15% respectively). Included in the New Britain population 920 children was a low income group comparable in social status to the migrant children. Twenty-one percent of the low income New Britain children were found to be in urgent need of care.

The similarity in DMF rates of the migrant children to New Britain children, the majority of whom were raised on fluoridated water, is probably related to the fact that many of the "migrants" have been residents of the fluori-

dated Connecticut communities for longer than seasonal periods.

Although the treatment level still leaves much to be desired, it does not represent the severe degree of dental neglect described by other.<sup>1,2, and 3</sup> Again, the fact that most of the migrant children seen in this study were eligible for Title XIX dental services may account for the amount of treatment done. The staff of local social services and A.C.E.S. are to be given credit for seeing that the children received dental care and for trying to raise the awareness of the childrens' parents.

**Gingival Health**

Gingival indices tended to increase with age and were slightly higher in migrant children than in New Britain children examined in 1973 (Table 9).

**Injured Teeth**

The frequency of injured teeth in the study group was 5.7 percent as compared to 8.6 percent in New Britain children examined in 1973.<sup>14</sup>

**Tooth Stains**

26.5 percent of the study group revealed the presence of either green, orange, black or brown stains compared to 32.3 percent for New Britain children.<sup>14</sup>

### Summary and Conclusions

The oral health of 400 migrant children in Connecticut as reported in this study compares favorably with the most recent survey of a population of resident children of New Britain, Connecticut, where the water has been fluoridated since 1950. Although the migrant children are still in need of a considerable amount of dental treatment, their overall caries status and level of treatment are considerably better than most previous reports of migrant children have indicated. The principal reasons for improvement are twofold. First, earlier referral of migrants for dental care by social agencies and second, the revised definition of migrant now includes not only seasonal migrant agricultural workers but also workers who have lived for a longer period of time in Connecticut towns which have fluoridated water supplies.

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## The Ninth District Dental Society

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