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in a Kansas Day Care Program**

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IN THE more than 20 years between John Steinbeck's novel "The Grapes of Wrath," and Edward R. Murrow's revealing television report of 1960, "Harvest of Shame," relatively little popular attention was focused on the plight of migrant workers and their families. These titles alone suggest the deprived conditions under which most migrants live, residing in unsafe, unsanitary, overcrowded rural slums and earning an average annual family income of not more than \$2,000 (1). Although there are no accurate figures delineating the number of children less than 18 years of age in migrant families, it is estimated that they number from 320,000 to 500,000 (2).

Migrant workers are not a homogeneous population, but form three widely recognized subdivisions or so-called streams of seasonal movement. Along the Atlantic Coast, Negroes work their way north from Florida. Another migrant stream including many Spanish-speaking Americans moves through California. The largest of the three streams, composed of family groups of Mexican descent, originates in South Texas and follows the crops into the Mountain, Great Lakes, and Great Plains States, including Kansas.

In the summer of 1961 the Kansas State

Board of Health initiated a study of the health and sanitation problems of seasonal agricultural workers, focusing attention on a southwestern Kansas center of migrant activity. It was conservatively estimated that the eight-county area surveyed was host to 1,900 migrants, including workers and their families, who work the sugar beet, melon, and vegetable crops (3). The chief problems noted were overcrowded and unsafe housing, lack of medical care, and inadequate provision for the daytime supervision of young children.

There is no full-time health department in any of these counties. The only service provided especially for migrants was a play group organized in Garden City, Kans., under the leadership of the Migrant Ministry of the National Council of Churches.

The board of health survey stimulated community interest in the migrants, and by the summer of 1962 a well-developed program of services for migrant children was established in Finney County, a prime focus of migrant activity in the State. The Garden City-Finney County Community, under the guidance of the Kansas State University School of Home Economics, organized a full day care center for preschool children, and the Garden City Ministerial Alliance developed a day care program for older children. The State Board of Health followed up its initial survey with an investigation of the health status of the migrant

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*Dr. Gilbert, chief resident, department of pediatrics, University of California Medical Center, San Francisco, at the time of this study was assigned to the*

cumstances of migrant life, the investigators expected to find malnutrition, parasitic disease, and acute illness as outstanding problems.

The second objective was to provide solutions to the health problems that were discovered. The Finney County Medical Society and the local health department agreed to provide care for any conditions that could be handled locally. If definitive treatment could not be provided locally, the aim was to convey to parents a clear picture of the problem and to stimulate them to make arrangements for treatment upon return to their permanent homes.

Finally, it was planned to provide needed immunizations whenever possible.

#### Procedure

The children investigated attended the pre-school day care center and the day care program for older children in Finney County. A total of 65 children, ranging in age from 21 months to 12 years, were evaluated over the course of 3 days by a State health department physician. Careful dental examinations were performed on 38 children by members of the Finney County Dental Society. Multiple screening tests were carried out by the county public health nurse with the help of local volunteers.

Medical histories could not be obtained at the time of pediatric examination because the parents were at work in the fields or at home with other children. To overcome this difficulty, prior to the pediatric examination, history forms in Spanish and English were distributed to families by the local public health nurse, who visited parents in their homes and met with them during evening social gatherings organized by the Migrant Ministry. Additional information was obtained from personal interviews of 17 families by staff members of the Kansas State University School of Home Economics.

#### General Background

are past their prime and moving into new areas with maize and melons.

The Finney County migrants live in stucco houses, built about 1905, which are scattered over a 30-mile radius among the sugar beet fields. These houses usually consist of three rooms and lack running water. Drinking water is stored for long periods in unrefrigerated, open cans, and toilet facilities consist of poorly constructed pit privies.

The mean number of children per family was 6.2. In 7 families, the mother as well as the father worked in the fields, and in 11 families the older children worked. Parents had completed an average of 4 years of schooling (4).

#### Medical Histories

Of the 65 medical history forms distributed, 39 were returned. None revealed a medical problem that was not otherwise apparent from the physician's examination or the screening tests. To the catch-all question "Are you worried about your child?" there were three affirmative answers; the causes for concern were chronic hoarseness, obesity, and poor hearing. There was no indication that past acute illnesses among this group were unusually frequent or severe.

The immunization histories of 42 children were recorded and are of interest as an indication of previous health care. Half of the children had never been immunized against poliomyelitis or received DTP injections, and less than one-third had been vaccinated against smallpox. Comparison with figures for Kansas children, based on a 1959-60 survey, is striking:

	<i>Percent vaccinated</i>	
	<i>Kansans</i>	<i>Migrants</i>
DTP.....	88	50
Poliomyelitis.....	93.5	50
Smallpox.....	70.2	29

#### Physical Examination

The children examined were an overtly healthy and happy group. The resistance of

sonal hygiene was surprisingly good, at least in comparison with the poor environmental hygiene seen in the overcrowded living quarters. There was no obvious malnutrition nor specific deficiency disease.

Evaluation of physical growth characteristics revealed that more than 20 percent of the group of 65 children were below the 10th percentile for both height and weight, when plotted on Harvard growth charts. Sixty-two percent of the migrant children were below the median value for height, and 63 percent for weight.

Skin conditions were not a problem. Two cases of pediculosis were noted in one family.

Thirty-eight dental examinations revealed 29 children in need of care, including many with extensive caries involving not only the deciduous but the permanent teeth. Two cases of severe malocclusion were also noted.

Several significant and some serious medical conditions were discovered:

1. A 12-year-old girl was found to have a heart murmur and evidence of cardiac enlargement, suggestive of congenital heart disease (atrial septal defect).

2. A gaping cleft palate, with associated speech difficulties and cosmetic problems, was discovered in an 11-year-old boy.

3. Chronic draining otitis was noted in a 6-year-old girl.

4. An 11-year-old girl had severe chronic hoarseness.

5. A 9-year-old boy, with a coloboma of the iris and slight squint, had almost total loss of vision in one eye. Fundiscopic examination was normal.

6. An 11-year-old boy, with a history of recovery from poliomyelitis, had mild flat feet and slight scoliosis.

7. A chronic, unsightly chalazion was noted in a 12-year-old girl.

8. One case of extreme obesity was noted in a 9-year-old boy, who weighed 150 pounds but otherwise seemed well.

#### Screening Tests

hemoglobin determinations, and examination of stools for ova and parasites.

Sahli hemoglobin tests were performed on 15 children. The results ranged from a low of 7.5 grams in a 21-month-old to 12 grams in a 12-year-old. All the hemoglobin values were from 1.2 to 4.2 grams below the average hemoglobin levels for comparable ages, as determined by Guest, and were from 1.5 to 3 grams below the relevant normal hemoglobin values listed by Smith in his survey of pediatric hematology (5, 6).

Of 48 tuberculin skin tests of children, 2 were interpreted initially as positive, and 1 as equivocal. Subsequent skin testing of the three children by a physician revealed only a single questionably positive test. Family followup of the child whose test was never clearly negative revealed that his mother had a positive tuberculin test and an abnormal chest X-ray but no evidence of active pulmonary tuberculosis. His own chest X-ray was normal.

Audiograms were performed on 29 children. A 10-year-old boy was referred to a physician for serious hearing loss.

Vision examinations were performed on 38 children. Parents were informed that three children required additional testing (20/30) and that two children probably needed glasses (20/40).

Of 15 stool specimens sent to the State laboratory for examination, all were negative for parasitic disease.

#### Followup

A note explaining the conditions found was sent home with all the children who needed further care. In addition, the county public health nurse tried to meet with parents for a discussion of each child who needed attention.

The results of the followup procedure were:

1. Two children with pediculosis were treated at the examination center, and the child with otitis responded to treatment by a local physician.

4. The parents of the children with possible need for glasses expressed no interest in the problem.

5. Two children never saw the local physician to whom they were referred, despite expressions of interest.

6. One child left prior to the nurse's visit.

No followup was attempted for the cases of malocclusion, anemia, and obesity.

Because of incomplete medical histories and lack of parental consent, it was not possible to immunize all the children who needed protection. Twenty-three children received a total of 31 immunizations, and two children were vaccinated.

#### Discussion

Contrary to expectations and other experience (7), acute infectious disease did not seem to be a major problem for this group of migrant children. In addition, final results revealed only a single, equivocally positive tuberculin test and no evidence of the presence of parasitic infestation.

A striking positive finding, however, was the discovery of 15 migrant children with previously unknown or inadequately cared for health problems, including many of a serious and chronic nature. At least five of the health problems found were of clear-cut major importance: cleft palate, unilateral deafness, unilateral blindness, probable congenital heart disease, and severe chronic hoarseness.

The nature of the disorders found suggests the existence of a profound migrant medical care problem, in addition to the more obvious difficulty of obtaining early and adequate treatment for acute illness. One aspect of this problem is a consequence of the migrants' lack of opportunity for, or appreciation of, the need for thorough pediatric evaluation of children in the absence of obvious illness. Such a pattern of inadequate child health supervision makes the discovery of silent disease, ranging from mild myopia to heart disease, a virtual

quacy of the migrant family's health expectations and understanding, and their failure to seek care for known health problems. A cautious interpretation of the ability of the group to use medical advice seems warranted. The failure of some parents to use recommended locally available care supports such a view. Our inability to provide immunizations for more than one-third of the children also suggests a cautionary note concerning the attitude of migrants toward health care.

An interesting aspect of the health evaluation was the determination of hemoglobin levels. Of importance to the interpretation of the low levels found was an evaluation of the children's diets, made by asking 10 of the older children to recall and write down the food they had eaten at home (4). The diets of many children consisted mainly of beans, eggs, potatoes, and tortillas. The diets were low in milk, fruit, vegetables, and meat. Also pertinent to the interpretation of the low hemoglobin levels in the migrants is a study of New Mexican school children of Mexican-American and North European backgrounds, which revealed no significant difference in hemoglobin concentration among boys and a slight difference among the girls of each group (8). The close approximation of hemoglobin levels in this comparison of North European and Mexican-American children, for whom iron intake usually was adequate, is in contrast to our finding of low hemoglobin levels among Mexican-American migrants with a history of poor nutrition. The probable role of iron deficiency is implicated but could not be substantiated under the circumstances of this evaluation.

Our finding of 29 of 38 children (76 percent) with gross dental decay compares closely with a Florida report in which 75 percent of migrant children had such a problem (9).

The status of migrant growth and development is difficult to evaluate. Only limited data are available for comparing the migrant group with other Mexican-Americans. A comparison of the mean heights and weights of 40 school-

## Conclusions

Of 65 migrant children evaluated in the absence of a presenting complaint, 15 were found to have untreated or unrecognized health problems. Care could be provided for only three children in the community where the evaluation was carried out.

We would like to stress the prominence of inapparent and untreated chronic illness among our findings. The apparent inadequacy of contact with physicians for basic health supervision, which is reflected in the extremely poor immunization status of the group, was striking.

The establishment of a health program in association with a day care project provided unusual opportunity for the thorough medical evaluation of a group of migrant children who were not suffering from acute illness at the time they were seen. For the discovery of serious medical conditions that have previously been overlooked or accepted, the advantages of an organizational structure that permits the examination of "well" children cannot easily be duplicated.

For handling the complex health needs of migrant children, we feel that health departments should direct their efforts toward the creation of medical programs that do not focus primarily on acute pediatric problems. Our findings suggest that anything less than a thorough evaluation of each migrant child will clearly fail to identify many of the needs of this economically and culturally deprived group of children.

Because of the chronic nature of many of the health problems and the resultant complexity of the health services that are required for treatment, it is obvious that, in many instances, adequate care cannot be provided during the time that the migrants are following crops. A simple step that may improve follow-through on referrals and chances of handling any complex problem locally would be to hold clinics soon after the children arrive in Kansas, preferably in the spring.

Any solution to the problems posed by the

pect of the cultural inheritance of the group, the motivation of these people for improved health care cannot be taken for granted (10). A program of thorough medical evaluation, without an intensive program of family health education, is likely to be frustrated by inability to provide care for more than acute medical problems.

Increased understanding will facilitate followup regardless of the difficulties created by movement across governmental boundaries. Our preliminary experience with evening and weekend meetings of migrant parents, who were motivated by their common interest in the day care provided for their children, suggests that a child-oriented health education program offers much promise.

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