FOOD HANDLER TRAINING EVALUATION STUDIES IN CALIFORNIA
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The California Conference of Local Health Officers at a 1950 meeting requested the State Health Department to make a study of the effect of food handler training in a restaurant sanitation program. The Conference had previously gone on record as favoring education and inspection as desirable parts of a food sanitation program.

This request, coupled with the questions passed by several sanitation directors of local health departments, "Will food handler training schools substantially improve sanitation in our restaurants?" caused the State Department of Public Health to enter upon these studies.

Previous to the start of these studies, institutes on promoting and conducting food handler training programs had been held throughout the State, Guides which outlined the food handler courses had been distributed and widely accepted by local departments interested in food handler training.

Consultants from the A.P.H.A., U.S. P.H.S., University of California School of Public Health, and Department of Public Health planned the methods, forms, and technique to be used in making this study.

Field surveys of restaurants would be used as a base for measurements. State restaurant inspection personnel were used on the survey team.

Each restaurant is given a numerical grade based on 100: 37 points for physical plant and 63 points for operational items. A rating is given the community using the U.S.P.H.S. method of scoring.

Several types of communities were surveyed: (1) Those not having and not anticipating a food handler training program, (2) those not having, but developing a food handler training program, and (3) those having had a stable program for several years. This is developing a picture of the various types of communities.

It is impossible to draw positive conclusions as to the value of food handler training on the basis of our studies up to the present time. However, it does appear, from the information thus far accumulated, in a number of communities in the State of California, that food handler training does pay substantial dividends. These dividends appear to be in improved restaurant sanitation, better working relations between the restaurant industry and the local health department, and an increased public interest in and support for the program.

Much of the criticism thrown at Health Departments regarding Food Sanitation is the lack of uniformity in recommended practices and legal interpretations of laws.

These studies, we believe, in addition to measuring the value of food handler training courses, are also tending to standardize practices and legal interpretations and develop closer relationships between the State and local health departments.

The training of restaurant personnel by health departments in sanitary handling of food and equipment has been going on for something over ten years. This training has varied from one hour once a year, consisting principally of lecture, to eight or nine hours consisting of lecture or discussion coupled with a wide variety of visual aids.

Many of us who have worked with such training have seen and felt the benefits derived from this training. No one to our knowledge has ever attempted actually to measure the effects brought about by such a training program.

Directors of sanitation in every health department have, almost without exception, been confronted with the following questions:

(1) Will food handler training schools substantially improve food sanitation practices in restaurants and food establishments in the community?

(2) Will the improvement in sanitation brought about by food handler training be commensurate with the energies expended, and the cost of putting on this training program?
The lack of an answer to these questions has caused some health officers and directors of sanitation to delay establishment of food-handler training programs. The directors of sanitation who have gone ahead and put on food-handler training schools have, in most cases, felt the program was well worth the time and energy, and that the dividends paid in better restaurant sanitation were high. Some directors have felt that such programs would pay dividends, but were skeptical of the value as compared to the cost.

The California Conference of Local Health Officers, in 1949, went on record as favoring a revocable permit system in conjunction with food-handler education and supervision as the most desirable method of promoting restaurant sanitation. The California Conference of Local Health Officers is unique in that it was established by law for the purpose of consulting with, and advising the Director and State Department of Public Health on policies dealing with its relations to the local health departments. Needless to say, the Conference exercises a fairly strong influence on the policy of the State Health Department. As a result of this resolution by the Conference, five two-day institutes for promoting, developing, and conducting food-handler training classes were held throughout the State. Those invited to attend these institutes were one sanitarian and one health educator from each local health department. The sanitarians attending the institutes were those who would be in charge of the local program. During the course of these institutes, the question came up as to whether or not food-handler training would pay dividends.

At the 1950 meeting, the Conference of Local Health Officers requested the State Health Department to make a study to determine the effectiveness of food-handler training schools in actually improving restaurant sanitation conditions.

At this time, several local health departments in California were seriously considering comprehensive food-handler training programs. One community had passed a compulsory food-handler training law, and another had set up a Food Sanitation Advisory Committee. This committee was made up of representatives of Labor, Management, and Education, and was set up to advise the local health department in developing a training program.

Several local health departments were asked if they would cooperate by allowing the State Health Department to use their communities as study grounds. Four local departments immediately volunteered to cooperate in this study.

The big problem which then confronted us was the development of tools and procedures to measure the effect of food-handler training programs in a community. As you can undoubtedly visualize, there were many and varied problems, inconsistencies, and variables which had to be taken into consideration. The problem of food-handler training course uniformity was minimized in that personnel from local departments, whose area would be studied, had attended the above mentioned institutes, and all departments had planned courses patterned after the one outlined in a guide distributed by the State Health Department early in 1950. We were very fortunate at that time to have available for consultation in Berkeley, a field research representative of the American Public Health Association, active personnel in the School of Public Health at the University of California who were interested in this subject, and also a very active and capable Food Consultant of the U. S. Public Health Service from the District Office in San Francisco.

It was decided at a meeting with representatives of these several agencies that the best way to measure food handler training would be through an actual field survey of restaurant conditions prior to putting on food handler training schools and at yearly intervals thereafter. It was also felt by the group that State sanitarians working in the field of food sanitation were best fitted for making such a survey, and it would be advisable that the restaurants visited in the first survey be revisited in the succeeding years' surveys by the same sanitarian.

The survey form presented in figure 1 was developed and is at present being used. Along with the survey form, the field surveyors are given a guide to compliance as
an aid in marking these field survey forms. The sanitation items to be investigated in the restaurants were broken down into physical plant and operation, and it was decided that the weight given to the operational items should be much more than that given to physical plant items. Operational items are given a total of 63 points and physical plant 37 points for a total of 100 points. The weight of rating of items on this form does not differ greatly from those listed in the U. S. Public Health Service Community evaluation form. Slight differences were felt necessary in order to maintain compatibility with California law and practices. The Public Health Service method of figuring a community sanitary rating was used in order that we might compare the rating given to a community one year with that given to the same community the next year. A sample of this method is shown in figure 2.

The selection of the sample did not seem to present any particular problem at the time because of the fact that we planned to go into a series of restaurants in a City or County one year, and then to go back to the same ones next year; thus, any selected group of restaurants might be used. The sanitary rating of restaurants surveyed in a community is not intended to be used in comparing restaurants of one community with those in another, but is intended to compare the restaurants in one community with the same restaurants of that community in the succeeding years. To compare restaurants of one community with those of another, a representative sample would be necessary, and we made no attempt to pick such a sample. However, in all cases, the samples would be of large magnitude.

As the study progressed, more health departments became interested in our activities and requested that we survey their communities. Many of these were more interested in having an unbiased appraisal of the conditions in their restaurants than in the food handler training study. Among those departments requesting surveys were two in which food handler training schools were well established.

After studying one community with food handler training, it was felt that the study would be materially strengthened if communities having different types of programs could be surveyed. The following types were selected:

1. Those not having a food handler training program and not anticipating having such a program;
2. Those not having had a program in the past, but in the process of developing one;
3. Those having had a stable program for several years.

The thought was that the improvement due to inspection program alone could be compared with the improvement due to inspection plus food handler training. It was felt that the studies in communities having established food handler training programs would give an indication as to what might be expected in other communities after food handler training programs were established.

During 1950, four cities were surveyed. In Fresno, Long Beach, and Sacramento, approximately 30 percent of the restaurants in each city was surveyed. In Santa Barbara, a smaller city, approximately 85 percent of the restaurants were surveyed. To date, in 1951, surveys have been made in the cities of Modesto, Albany, and San Bernardino, and in the counties of Alameda, San Bernardino, and Riverside. Re-surveys have been made in the cities of Fresno, Long Beach, and Santa Barbara.

Table 2. Food Handler Training

<table>
<thead>
<tr>
<th>Individual Restaurant</th>
<th>Number Meals Served Daily (NSD)</th>
<th>Public Health Significance Figure (PHSF)</th>
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<tbody>
<tr>
<td>Sum of PHSF</td>
<td>x 100</td>
<td>Community Rating</td>
</tr>
<tr>
<td>Sum of NSD</td>
<td></td>
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Fig. 2 - Method of Computing Community Ratings
by the fact that both Modesto and San Bernardino cities have had food handler training for more than one year; in fact, both communities have had continuing programs for some three or four years. Perhaps curves based on future surveys in Fresno and Long Beach one or two years from now, may approximate those of the other two communities.

In order that improvement might be measured numerically, the U. S. Public Health Service method of figuring sanitary ratings for communities was used. This method involved the figure of number of meals served daily, and if you will recall in our slide showing the survey sheet, we tabulated that information. Fresno's sanitary rating for 1950 turned out to be 65 percent while in 1951, it was 76 percent, which represented an 11 percent increase in sanitary rating for the community. In Long Beach, the sanitary rating for 1950 was 73.5, while in 1951, it was 77.5, an increase of 4.0 percent. Two factors may possibly be reflected in this second Long Beach survey. One was the passing of the director of sanitation and the other a considerable decrease in the number of routine restaurant inspections made during the year.

Some interesting observations can be drawn from figures 5 and 6. These bar charts show major items of sanitation and how the defects varied between the first and second year's surveys. It will be noted from this chart (figure 5) that considerable improvement was made in such housekeeping items as floor cleanliness, wall and ceiling cleanliness, supplying of soap and single use towels, and outside garbage storage areas. Refrigeration practices, which we consider one of the more important items in restaurant sanitation, underwent a 15 percent reduction while food storage practices underwent a 20 percent reduction in defects. There was some items on both the physical plant and the operation which indicated more defects in 1951 than in 1950. This backward movement for these items might be accounted for in one of two ways: first, a deterioration actually occurred in the restaurants or, what I am more inclined to believe is, that the year of experience in survey techniques has caused a more critical analysis of the restaurants by the survey team. Side studies of the consistencies of the men on the survey team seem to bear out this thought and it is felt that both Fresno and Long Beach received a more thorough check on the second survey than on the first. This should put us on the safe side of any conclusions which might be drawn in the study.

An attempt was made to send the same men back to the same restaurants in the second year's
survey. This was done in Fresno, but in Long Beach we found it necessary to substitute two men in our six-man survey team.

We felt that effective food handler training courses would reduce the defects observed in operational items more than the defects under physical plant; however, as can be noted from these charts, the reduction in physical plant items was quite comparable to the reduction in operational items.

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Fig. 6 — Summary of Defects for Selected Items Observed in Two Surveys of Eating Establishments, Long Beach, California

Fig. 5 — Summary of Defects for Selected Items Observed in Two Surveys of Eating Establishments, Fresno, California

REFERENCES