

ACTIVITIES OF THE U. S. PUBLIC HEALTH SERVICE RELATING TO THE INTERSTATE MILK SHIPPER CERTIFICATION PROGRAM - 1959-1960¹

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During the past two years, the Public Health Service has been able to discharge the responsibilities delegated to it by the National Conference on Interstate Milk Shipments in a manner more closely conforming to the procedures set forth in the basic Conference agreements. A number of elements of our program have been strengthened including performance of the check-rating function, and the initiation of several research projects and special studies designed to improve the methodology, sanitation standards and evaluation techniques adopted by the Conference. In 1960, special action, in concert with the Executive Board of the Conference, was taken to realistically approach and deal with the problem of antibiotic residues in milk shipped interstate from certified shippers. In addition, through an expanded program of seminars and training courses, efforts have been made to bring about a higher degree of uniformity in attitude and performance on the part of participating State agencies. Attention has been called to a number of other problems, which are recommended for Conference consideration.

In order to provide perspective for evaluation of this report, those functions which the National Conference on Interstate Milk Shipments has requested the Public Health Service to undertake will be reviewed briefly.

The representatives of those States who attended the First National Conference defined the role of the Public Health Service. They agreed that the primary role should be to bring about the highest degree of uniformity in attitude and performance on the part of State authorities so that any certification of an interstate milk shipper's supply could be accepted with confidence. To implement this role, the first and subsequent National Conferences recommended that the Service undertake the following specific functions:

1. Provide assistance in the training of State, local, and industry personnel engaged in milk sanitation activities, including laboratory activities.
2. Standardize the rating procedures of its own personnel, and those of State milk sanitation rating officials.
3. Publish the sanitation compliance and enforcement ratings of interstate milk shippers certified to the Surgeon General by responsible State milk sanitation rating agencies.
4. Perform a sufficient number of check-ratings to deter-

mine (a) whether the milk sanitation standards adopted by the Conference are correctly interpreted and enforced, and (b) whether the sanitation compliance status of listed shippers is maintained in the period between official rating surveys.

5. Review and evaluate the facilities, methods, and procedures of State laboratory agencies to determine (a) if laboratory examinations are performed in accordance with "Standard Methods for the Examination of Dairy Products," and (b) if procedures adopted by the National Conference for approval of local laboratories are being complied with.

6. Provide State agencies with interpretations of the *Milk Ordinance and Code* and the Public Health Service rating procedures as well as other information pertinent to the conduct of the voluntary certification program.

In reply to a request from the Conference for the Public Health Service to perform these functions, the Surgeon General responded that the Service would be willing to participate with the States in the conduct of a cooperative program for the certification of interstate milk shippers within the limits of available resources.

As reported at previous Conferences, the growth of the cooperative program was so rapid during the period, 1951-1959, that the Service, within available resources, could not adequately discharge all of the responsibilities delegated to it by the Conference. Since uniformity was basic to the success of the program, during the first five years of the program, the Service placed emphasis on (a) the training and standardization of State milk sanitation rating officers and on the training of State laboratory personnel; (b) assistance to States in the training of local supervisory and industry personnel; (c) assistance to States in the establishment of local laboratory certification systems, and in the development of acceptable split-sample programs; and (d) evaluation and approval of State laboratories. Inter-regional and intra-regional seminars were also conducted in order to promote the greatest possible degree of uniformity in the interpretation and application of the provisions of the *Milk Ordinance and Code* and the PHS recommended rating procedures. Also, in order to insure that all of the Conference criteria were considered by the States in the certification of interstate milk shippers, forms were developed for use by the States in reporting the ratings of shippers for listing.

The area of responsibility which initially we were

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not able to conduct in the manner called for by Conference agreements was the performance of a sufficient number of check-ratings to determine whether milk sanitation standards were being correctly interpreted and enforced, and whether the sanitation compliance status of listed shippers was being maintained between official rating surveys. At the Sixth and Seventh National Conferences, held in 1957 and 1959, we indicated that implementation of this function had presented problems in the development of a procedure which would provide the greatest amount of information in return for the time that could be devoted to this activity by our limited staff. We are very pleased to report to this Conference that late in 1959 some additional funds were made available which have permitted us to more adequately fulfill this responsibility.

PROGRESS REPORT—1959-1960

The following is a summary of our activities related to the certification program for the calendar years 1959 and 1960, and some of the problems encountered in the discharge of our responsibilities are indicated.

Training Activities

A great deal of emphasis was placed in 1959 and 1960 on the conduct of regional seminars for both State milk sanitation rating officers and State laboratory directors. It is our belief that such seminars provide a unique opportunity to develop a high degree of uniformity among States in the application of supervisory, laboratory, rating, and administrative procedures. At such seminars, time is provided for each participant to bring up problems and to benefit from group discussion. The Service also utilizes seminars to discuss problems it is encountering, and to clarify interpretations of technical or administrative provisions on which the States have question. Since the 1959 Conference, our regional offices have held 13 such seminars, including 3 of which were held in 1961. These seminars were attended by a total of 305 State milk sanitation rating officers and State laboratory directors.

In 1960, for the first time, the Service conducted at its Sanitary Engineering Center, a course on "Methods and Practices for State Milk Laboratory Survey Officers." This course was designed to provide training for State personnel responsible for approval of local laboratories examining milk for interstate shipment as requested by this Conference at its 1957 and 1959 meetings. Personnel from 21 State health departments and 8 other State agencies attended this course.

Because of the importance of the antibiotic and

pesticide residue problem to the interstate milk shipper program, special attention was given in 1960 to training on this subject. Six courses were presented on detection of antibiotic and pesticide residues in milk, and one on the prevention of pesticide contamination. This latter course was a pilot course designed for utilization by State and local agencies and industry. These courses were attended by more than 200 individuals. Representatives of the PHS also participated in 12 specialized courses on methods for determination of antibiotic and pesticide residues in milk, which were conducted by the Food and Drug Administration in the spring of 1960. These courses were attended by approximately 130 persons.

In addition, in 1959 and 1960, two topical training courses on "Milk Sanitation Administration" and 33 courses on "Milk Pasteurization Controls and Tests" were conducted by the Communicable Disease Center of the Public Health Service. These courses were attended by 742 individuals.

Standardization of Rating Procedures

Since the last Conference, we have given increased attention to standardizing the rating procedures of PHS regional personnel to insure a uniform approach. Mr. Darold W. Taylor of our headquarters office has developed a protocol for this purpose, whereby he spends 4-5 days in the field with each man whose rating procedures are being standardized. The rating procedures and administrative techniques of each of our men are carefully evaluated, and emphasis is placed upon proper interpretation of the technical provisions of the *Milk Ordinance and Code*. No attempt is made to standardize the procedures of more than one man at a time. In 1959 and 1960, the rating procedures of 8 PHS regional representatives were evaluated. Since we have recently added a number of new men to our field staff, our standardization efforts will be stepped up in 1961. We are also in the process of developing a "Manual of Operations" to guide our regional personnel in the procedures to be followed by them in the conduct of our responsibilities in the cooperative interstate milk shipper certification program.

With regard to the standardization of the rating procedures of State milk sanitation rating officers, 110 such officials in 43 States have now been certified by PHS regional representatives. In 1959, the rating methods and interpretations of 49 State rating officers were standardized. Of this number, 14 were new State rating officers and 35 were men whose work had been previously standardized. In 1960, the rating procedures of 38 State personnel were standardized. Of this number, 9 were men whose work was being standardized for the first time. The

significance of these figures lies in the fact that, during the past two years, the Service has standardized the rating procedures of 79 percent of the total State men who are engaged in the rating of interstate milk shippers. A list of the names of the State milk sanitation rating officers whose work has been evaluated and certified was forwarded to all "State milk sanitation authorities" on June 10, 1960. We are in the process of developing, and will soon issue, official certificates to those milk sanitation rating officers and State laboratory survey officers whose work has been standardized by Service representatives.

Publication of Sanitation Compliance Ratings of Interstate Milk Shippers

The Conference originally requested publication of semiannual lists of the ratings of interstate milk shippers with supplements to be issued bimonthly. As pointed out to the Conference in 1959, it has proven more feasible for the Service to publish the list quarterly, and not to issue bimonthly supplements. It was suggested at the last Conference that this modification be noted in Conference agreements; however, the suggestion was not acted upon. Therefore, we again suggest that the Conference act on this matter in order that the basic agreements reflect actual practice.

For your information, the January 1, 1961 issue of "Sanitation Compliance Ratings of Interstate Milk Shippers" listed the names and ratings of 745 interstate milk shippers whose sanitation compliance status had been certified to the Public Health Service by 34 States. The average rating for all raw milk producers listed was 92.83 percent, and the average rating for pasteurization plants listed was 94.13 percent. The January 1, 1961 list included the ratings of 12 interstate shippers of Grade A dry milk products. Conference agreements do not specifically call for the listing of shippers of dry milk products intended for use in fluid milk products, even though it is believed that this was the Conference intent. Therefore, it is proposed that the 1961 Conference consider amending the agreements accordingly.

One matter concerning the listing of ratings of certified interstate milk shippers, on which the Conference acted in 1959, and which the Service has not complied with, relates to dividing the list into two parts based on whether or not the sanitation compliance rating of the shipper was 90 percent or above. The 1959 Conference recommended that when a shipper's sanitation compliance ratings were 90 percent or above, the shipper should be listed as 90 percent or above with no reference to the exact numerical rating, and when the shipper's ratings

were below 90 percent, the exact numerical figure should be listed. However, guidance as to how this recommendation was to be accomplished, and the deadline for its implementation, was not provided in the Conference recommendation.

The Service gave considerable thought as to how this recommendation could be implemented, and came to the conclusion that it was administratively cumbersome, and possibly, an inconsistent and unsound procedure. Our views on inconsistency and unsoundness were based on the fact that the Conference has adopted no minimum rating as a prerequisite for listing, and to divide the list into two parts would be misunderstood and would reflect on shippers whose ratings were below 90 percent. Furthermore, since certified shippers must sign a release authorizing publication of their exact ratings, it would be necessary to obtain from each shipper, whose ratings were 90 percent or more, permission to list his name and products in the new "90 percent or above" category. We believed the obtaining of such permission would be difficult because shippers with high ratings would object for competitive reasons. In our judgment, a better procedure would be to limit eligibility for listing to those shippers whose raw and/or pasteurized products have achieved ratings of 90 percent or above, and then to omit the listing of exact numerical ratings. We recommend that the Conference consider such a course of action.

Check-Ratings of the Sanitation Compliance Status of Listed Interstate Milk Shippers

As mentioned earlier, because of limitations in staff and travel funds, we were not able during the first nine years of the program to make a sufficient number of check-ratings to validate the maintenance of the sanitation compliance status of listed shippers. Because the results of the intensive check-rating work of one regional office indicated that approximately 13 percent of the listed shippers' ratings did not accurately reflect the sanitation compliance status of their supplies, we were convinced that this aspect of our work must be strengthened. Therefore, when additional funds were obtained late in 1959, we directed our regional offices to place increased emphasis on check-rating activities in order (a) to cover shippers whose supplies had not been check-rated by the PHS in years, and (b) to establish an "index of reliability" for each participating State on the maintenance by its shippers, and supervisory agencies, of listed sanitation compliance ratings.

This increase in check-rating activity has been misunderstood and criticized by a few States. They have considered the check-ratings as an additional

check on the adequacy of their State milk sanitation rating officers and their State's rating program. This is not the case. The check-rating function relates to supervision, not to standardization of the procedures used by rating officers. It is a determination of how well the sanitation compliance status of a shipper's supply is maintained between official ratings, which as you know, can be as long as two years. We believe you will agree that the results of our check-ratings clearly show the need for surveillance of this type.

In the years 1959 and 1960, the Service conducted 351 check-ratings of the sanitation status of listed shippers. Of this total, 229 were conducted in 1960 as part of a special study to determine an "index of reliability" for each State on the ability of supervisory agencies within that State to maintain the compliance status of its shippers' supplies. As a result of check-rating these 229 shippers, our regional personnel found it necessary to request that 30, or 13 percent, be resurveyed because the sanitation compliance status of the farms and plants check-rated was significantly below the published ratings. The average deviation from the published ratings, on those shippers' supplies for which new ratings were requested, was 11 percent; the median deviation was 9.3 percent; and the greatest deviation from a published rating was 27.6 percent.

If one applies the 13 percent resurvey figure, which our personnel found to be necessary, to the 745 shippers listed in the January 1961 issue of "Sanitation Compliance Ratings of Interstate Milk Shippers," and statistically this would be sound, then the ratings of 97 shippers currently listed are significantly below the published figures. This is a matter which merits careful consideration by this Conference. Unless the sanitation status of interstate shipper supplies can be maintained between ratings, the integrity of the voluntary program is placed in jeopardy.

With regard to the establishment of an "index of reliability," which has been mentioned, considerable variation was found among the States in the maintenance of the sanitation status of listed shippers between official ratings. In one State, our regional personnel found it necessary to request new ratings on 50 percent of the shippers check-rated, and one shipper was removed from the list. In one of the PHS regions, new ratings were requested on 24 percent of the shippers check-rated in two States. In still another region, new ratings were requested on 18 percent of all the shippers check-rated.

Although it was found, in many States, that the listed ratings accurately reflected the sanitation status of the listed shipper's supply, the situation which exists in a few States poses a problem which this

Conference should consider. For example, when the Public Health Service finds, through check-ratings, that the listed ratings of 50 percent of the supplies checked are not currently valid—or even 25 percent—what action should the Public Health Service take in addition to requesting new ratings, which is the only procedure prescribed by current agreements? The Public Health Service, when it publishes compliance ratings certified to it by the States, in effect, endorses and stands behind such ratings. Certainly, our agency cannot be expected to continue to publish such ratings when we have knowledge that the current status of a given shipper's supply is significantly below the certified rating. Thus, the question arises, in the case of significant deviations—for example, a drop in sanitation status of 10 percent or more below the published certified rating—shall the shippers in question be removed from the list, pending the results of the new rating surveys?

We would also like to ask the Conference, should the Public Health Service continue to accept certified ratings from a State, when our check-ratings show that an unusually high percentage of resurveys of the shippers checked are necessary? If not, what should this percentage be? Perhaps an alternate procedure could be developed as criteria for refusal to accept further State certifications. It has been suggested that the Conference require that each shipping State, which wishes to participate in the voluntary program, submit a request for endorsement of its work in which it agrees to conform to all Conference agreements and procedures, and that it has the staff and resources to do so. We are not sure of the advisability of such a procedure, but the Conference may wish to consider it along with other methods for maintaining a high level of program integrity.

Review and Evaluation of State Milk Laboratory Programs

During the past three years, representatives of our Sanitary Engineering Center have visited the central laboratories of 48 States and the District of Columbia. In 1959 and 1960, surveys were made of the laboratory practices of 25 States, including 15 of the 34 States whose shippers are currently listed. Without exception, the central laboratories were found in substantial compliance with "Standard Methods for the Examination of Dairy Products."

State compliance with Conference agreements pertaining to approval of local laboratories was found to be excellent. All of the States from which shippers are listed, and the District of Columbia, have programs for the approval of local milk laboratories. Ten other States also have such programs.

All of the States currently certifying interstate milk

shipper ratings have forwarded surveys of local laboratories to the Service during the past two years; and as of January 1, 1961, split-sample results had been received from all these States.

As a component of Service approval of State milk laboratories, series of split samples were sent to 47 States and the District of Columbia in 1959, and to 48 States in 1960. Phosphatase test results of pasteurized products showed a decided improvement over those obtained in 1958. A statistical analysis of the 1958 plate count results has been completed, and a paper describing such statistical analysis was recently published (1). Standard plate counts of most samples showed fairly good agreement between laboratories in 1959 and 1960.

Split samples shipped by the Service in 1960 contained samples to be tested for antibiotics, and such tests were reported by all but one State. Generally, the results reported were in good agreement. Most laboratories reported penicillin in samples which had been prepared to contain 0.05 and 0.25 units per ml., respectively; however, occasionally, a laboratory failed to detect the antibiotics.

The PHS annually issues a list of State milk laboratory survey officers whose work has been approved and certified by the Service. The current list, October 13, 1960, includes the names of 58 individuals.

Since the 11th Edition of "Standard Methods" was issued, PHS "Survey Form for Milk Laboratories," form 1500, has been revised. Copies of this form may be obtained from our regional offices. Two new additions to the form have been included, one on simplified viable counts for raw milk and one on detection of residual penicillin; otherwise, the format is essentially the same as the previous form.

While on the subject of forms, we would like to call to the attention of the Conference that the first two pages of the form, "Sampling," are frequently

not completed by State officials. In order for us to approve the State laboratory program, it is necessary that this part of the form be completed by a qualified State official—either the milk laboratory survey officer or the milk sanitation rating officer.

Special Studies

Two special studies have been undertaken by the Service of interest to this Conference. At the 1957 Conference, concern was expressed about false-positive phosphatase reactions and the occasional anomalous results reported, particularly for cream pasteurized at 161° F or higher. Research on this problem was undertaken by the Service which has resulted in the development of a method for differentiation of reactivated from residual phosphatase in high-temperature, short-time pasteurized milk and cream (2). This method was recently subjected to a collaborative study and has been adopted by the AOAC as an official procedure. The current survey forms for milk laboratories include this procedure.

We also initiated a study in 1960 which is designed to determine the impact of modern-day methods of handling and transporting milk, including bulk cooling, agitation, pumping and storage on the bacterial counts of market milk. A progress report on the results of the first phase of this study will be presented this afternoon by Dr. Richard Brazis of our staff.

REFERENCES

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