

Whatever degree of success the Miami International Sanitation program has attained, can be attributed to the cooperation the Dade County Health Department has received from industry in general, the Dade County Port Authority, the Region IV Office of the U. S. Public Health Service, the Airline Transport Association, and to the excellent working relationship existing between the County and State Health Officers.

## REFERENCES

1. Ayer, H. and Cohen, A. Preliminary Noise Survey of Miami International Airport. Research and Technical Serv-

ices Branch, Division of Occupational Health, Public Health Service, U. S. Department of Health, Education, and Welfare. June, 1962.

2. Connell, H. C. Report on Oily Waste Pollution of Drainage Canals, Miami International Airport. A prepared study by Maurice H. Connell and Associates, Engineers. Miami, Florida. June, 1960.

3. Connell, H. C. Report on Alternate Methods of Disposal of Combined Waste from Miami International Airport. A prepared study by Connell and Greenleaf, Engineers, Miami, Florida. April, 1962.

4. Dade County, Florida, Port Authority Annual Report for 1961.

5. Foreign Quarantine Regulations, U. S. Department of Health, Education, and Welfare, Public Health Service. Sec. 71.89B. 1955.

## NATIONAL SURVEY OF SANITARIANS

### A PRELIMINARY REPORT<sup>1,2</sup>

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We are very grateful for this opportunity to share with you some initial data and critical observations from the first national survey of sanitarians. This project was undertaken by the U. S. Public Health Service with the initial cooperation of the three national sanitarian societies.

Please remember that at this time we are doing little more than opening the door and peeking into the pile of data and series of tables, all of which will be published within a reasonable time as a formal document by the Public Health Service. This will be issued with a maximum of explanation and a minimum of interpretation for the very good reason that the results and implications of the data will mean one thing to the sanitarian, may mean something else to the employer of sanitarians, and could mean still something else to the educator of sanitarians.

We wish to pay open and full respects to the presidents and executive secretaries of the three national sanitarian societies who were with us from the beginning and who rendered every possible assistance to the successful conduct of this project. We

personally and the Public Health Service professionally are indebted to them for their complete support. We feel ethically bound to report the names of the three key people—"Red" Thomasson of your own group, Nick Pohlit of the National Association of Sanitarians, and Hardy Watson of the National Association of Professional Sanitarians.

To begin with, you all know that no definition of a sanitarian was applied in this project. Anyone who claimed himself or herself to be one was welcome to be included, if the survey form was filled out and returned. Well, then, how did we locate you? Our office started off with national sanitarian society membership lists. Then we wrote to State, county, and local departments of health. Then we added State departments of agriculture. An original list of more than 20,000 names was shaken down to approximately 16,000. A number of you were not shaken down sufficiently, and so you received two or even three forms.

I will digress for a moment at this point long enough to give you one example of the headaches involved in a national survey. We began a random spot check of some of the first returned forms. Upon matching some salaries with society membership, we noted that many sanitarians with unfortunately low salaries were apparently watching every penny, yet wished to affiliate with their colleagues, and therefore joined their State group rather than a national group. So we scrambled madly to get

<sup>1</sup>A project undertaken by the Office of Resource Development, Public Health Service, to obtain information relative to the training, utilization, description of activities and compensation of sanitarians in the United States.

<sup>2</sup>Presented at the 49th Annual Meeting of the INTERNATIONAL ASSOCIATION OF MILK AND FOOD SANITARIANS, INC., in Philadelphia, Pa., October 24-27, 1962.

some State sanitarian society membership lists. Still, thousands of forms were already out, were coming back in, and a cut-off date for processing had been established. Frankly, we could not afford the time to unduplicate each new list of names received against the previously developed list.

We wish to emphasize again a basic observation and warning: the following data describe some outstanding characteristics of several thousand persons who *claim* that they are sanitarians. No definition was applied. No respondents were denied inclusion. To this extent we have an inconglomerate mass. If analysis and interpretation of the data result in some even vague but useful profile of the sanitarian, the survey will surely have served a major purpose. At the same time, should certain "head-scratchers" or frankly puzzling relationships arise—and we will introduce a few shortly—then you are to determine collectively if the particular state of affairs correctly identifies and describes bona fide sanitarians or just describes the condition of the group of people who elected to participate in *this* survey and the results must therefore be accepted with caution and reservation.

Now to the actual data. Approximately 16,000 forms were mailed, and about 9,700 were returned, or 60%. Of these, some 8,000 (50% of the total mailed) were usable. Of these 8,000, 7,300 represented sanitarians employed full-time, and so all our data were based on the analyses of returns from these 7,300. The following 10 States, in order named accounted for about one-half of the respondents: California, New York, Florida, Pennsylvania, Ohio, Texas, Wisconsin, Virginia, Washington, and Illinois. Either or both of two reasons account for this concentration. First, the more populous States employ more sanitarians. Second, individuals or groups in these States "beat the drums" more aggressively and thereby "got out the vote" for this survey.

The median age of the respondents was just over 41 years. Remember that this is not an average age. This figure means that half are under 41 and half are 41 or over. But we must confess that about 20% did *not* answer this question. We don't know why. Only 67 of you were women! Perhaps if the other 1,500 respondents had given us their year of birth, the figures might be different. (We are suggesting here still another reason why, if you decide to cooperate with *any* survey, such cooperation should be wholehearted and complete, on the assumption that there is a good reason for every question.)

When it comes to years of experience, the single largest group reported 9 years, or about 20% of the total. But the second largest group—15%—reported 30 or more years of experience. Actually, the two extremes account for about a third of the respondents.

About 20% had less than five years of experience, but then you have the 15% with 30 or more years. It would seem that your field is not recruiting as rapidly as it should. With this kind of evidence, there is the possibility of sanitarians becoming fewer in number in proportion to their need and therefore being made up increasingly of old-timers. Now, age and wisdom should go together. But in terms of the changing physical environment, the infusion of new blood would seem absolutely essential for the best interests of the Nation, the public health movement, and the occupation of sanitarians.

Who do sanitarians work for? Some 80% work for government at some level—local, county, State, or Federal. Another 11% were in business or industry. What titles do sanitarians go by? About 60% have "Sanitarian" as their official title. Another 15% have the title "Inspector," but some 21% have a title other than the four listed in the survey form. In other words, thousands of very fine, hard-working people are lost to the occupation because they are operating under "assumed names." We say this facetiously, of course. But in terms of clear-cut identification with a specific occupation, the desire for professional affiliation, need to lobby for salary equity, and setting of standards for training curricula, something can be claimed for uniformity of identification. It ought to be of concern that 40% do *not* have a position designation clearly and immediately recognizable as being part of a particular occupation.

A next important element is that of primary activity or most important function performed. Though no criteria were set up, we can assume that the intent was to identify the activities which took up the largest part of the work week. A full 50% of all respondents indicated that their primary activity involved inspection-testing-quality control. Another fourth reported management or administration as their most important activity, and an additional 10% reported "general" duties.

When asked to indicate the areas of greatest professional competence, we found the following: milk claimed 33%, food was reported by another 30%, 7% marked "sewage and industrial wastes," and 6% selected "water." This accounts for three-fourths of all respondents. You people in the field will have to determine whether or not this is an accurate report of sanitarian specialization. Not being a sanitarian, our inclination is to attribute such emphasis in part to the fact that your own society membership responded and cooperated handsomely with us in the conduct of the survey.

The pronounced tendency to "stick to one's last" is demonstrated by the fact that, when asked to indicate first and second specialties of greatest pro-

fessional competence, most of the respondents identified related fields. This is perfectly natural. Thus, the largest number of milk specialists selected food as their second choice. The vector specialists identified food as their second category of greatest competence. An so on.

Of course, the other side of this coin suggests that the concentration of such related areas is a form of inbreeding. In view of the great variety of substantive areas in which sanitarians find themselves employed, perhaps something can be said for broader training in terms of the acquisition of modest background in two relatively *unrelated* fields.

We left the area of education and training to last because it raises the most questions, and we wish to leave you more with questions than with figures. Roughly two-thirds of the respondents reported having a college education. How much education is involved? Well, about 40% have only the bachelor's degree. Although the final returns have not all been processed yet, perhaps another 20% have a master's degree, and about 3% have a doctorate. Two-thirds of the bachelor degrees are B.S. About 20% are B.A. Considering the science orientation required for your field, it is our cautious observation that there are still too many B.A.'s who have been given the equivalent of the World War II second lieutenant treatment—90-day wonders, they were called. Half of these B.A.'s were awarded in the 1950's.

Let us face it—sanitarians will not raise their salary levels and achieve universally recognized professional status by giving quickie courses in parasitology and entomology to English and music majors and cranking out would-be sanitarians. I realize the difficult time many of you have in latching on to adequately trained people. We know you do the best you can, and we are really impressed by the intensity of some State training programs in this field. No doubt, this observation or warning comes as no surprise. We simply corroborate what many of you already know.

Incidentally, we also know which institutions are training sanitarians. For example, of the more than 700 schools awarding bachelor degrees to young people who went into sanitarian work, about 71 schools—10%—account for a full half of these graduates.

As expected, there is a corresponding relationship between age and degree. Recall that the median age of the entire group was 41.3 years. That of the bachelor's-degree-only group was 39. It was somewhat higher for holders of the master's degree and the doctorate. The median age of those with no degree was an understandably high 46 years.

What "majors" were taken in college? For the bachelor's degree, the agricultural sciences barely nosed out the biological sciences for priority. But,

again, we must warn that the great concentration of undergraduate major in the dairy field could well reflect the great response from you people in this Society. So far, the sanitary science major has yet to establish itself, because only three percent had a bachelor's degree in this field. It was even exceeded by those who majored in the social sciences and who then found their way into the sanitarian field. However, a considerably larger number have the master's degree in sanitary science. This is obviously a graduate program area.

While the possession or lack of at least a bachelor's degree appeared to have little effect on who the sanitarian worked for (with the exception of colleges and universities, of course), it did make a difference in terms of what the sanitarian did. The State, county, and local governments, in descending order, were the largest employers of both those with as well as without a degree. But three times as many were employed in management or administrative positions (the so-called "higher" positions) if they possessed the degree.

We wish to conclude this brief analysis with a few puzzling observations and some direct questions.

If you will recall, the survey form asked the respondent to indicate any areas of *additional* training he would like to have and would prefer to have, if the opportunity for such presented itself. The replies were divided into two groups, those without a degree and those with a degree of some kind.

The analysis of the no-degree group revealed two outstanding observations. First, the great majority voted in approximately equal numbers for more training in the field of administration-supervision-management and in the area of technical knowledge. The field of program planning and evaluation was a poor also-ran. In view of the fact that 50-55% of respondents indicated themselves as being in the field of inspection-testing-quality control, it is surprising that so few registered a preference for additional training in program planning and evaluation. Or is it surprising? Some combination of the following three reasons surely must account for this aversion: first, there are relatively few such programs of planning, and perhaps even fewer of evaluation; second, methodological tools or techniques of evaluation are still too crude to be effective; and third, most program planning and evaluation are performed at supervisory levels, and most of the respondents are not in this category. However, none of these reasons should remain an excuse much longer. More sanitarians should be participating in programs designed to evaluate levels of achievement in their own field.

As a second major observation, we asked those who preferred additional training in a substantively technical field to specify their particular interest.

Without exception, everyone in the 15 major categories of greatest professional competence which were listed, chose more of same! Thus, those specializing in milk selected milk in greatest number for their area of additional training. Those who specialize in vector control selected vector control in greatest number for their area of additional training. And so on.

Now, the amazing observation we must report is that the pattern of response was identical, whether you had a degree or not! Both groups responded in exactly the same manner. This same response was noted in Question 4 of the survey form, where respondents were asked to identify the short-term, specialized courses they may have taken. Again, the specialist listed more of his own specialty.

This raises some disturbing questions. What has happened to the notion of broad and comprehensive exposure to and training in the field of sanitary science or environmental health science? How can we account for what looks like an unmistakable professional inferiority complex that appears to force you to stay within your own narrow specialty? Why are you reluctant, as a milk or food specialist, for example, to pick up some background in housing or air pollution? Is the sanitarians' formal academic training literally subminimal and inadequate for effective on-the-job performance? Remember, the overwhelming number of degree holders held the B.S. and not the B.A? Are the actual jobs so specialized?

Perhaps the answer to this last question is: "Yes, these separate jobs are specialized, and with newer technological developments more and more time must be devoted to their mastery." Yet this answer does not match my question of what a generalist is and who needs him. We can understand the need for something approaching a Jack-of-all-trades for an overseas assignment, but we are puzzled to account for the domestic picture. If, from the employer's point of view, there is need for a sanitarian generalist, what is the source of this need? Is it the result of his feeling that the occupation's substantive areas

are not too deep and that therefore he can afford to ask for someone comprehensively trained? Or is it the employer's recognition of an actual manpower shortage and therefore sanitarians are being forced into a generalist role and have become Jacks-of-all-trades and master of none, perhaps? Or is this generalist category the result of pressures exerted by sanitarians themselves in their search for professional status by aggressively claiming more and more as being within their bailiwick of job duties? Of course, there is always the possibility that the sanitarian sees little vertical mobility upward in the public health field as a generalist sanitarian and therefore prefers to count on his specialization to take him as far as is possible. We raise these questions without having any preconceived notions, we can assure you. Obviously, as in any occupation, a certain number of generalists are desirable and necessary. The question is how many—enough to be needed or enough to be characteristic of the occupation?

As we stated in our opening comments, our office is pounding down the home stretch in organizing the considerable statistical data which all of you assisted in furnishing us. Most conceivable major relationships you can think of have been anticipated. In looking ahead to what your national and State sanitarian societies might want to know and act upon, we have worked up some special and detailed relationships.

The salary data are representative of what the final U. S. Public Health Service publication will contain. We have matched salary with age, with extent of education, with type of employer, with your most important duties, with your area of special competence, and then we linked up some of these factors with the State in which you work, all to provide a variety of comparisons.

We have already overburdened you with data. Only a few points and questions have been raised. The full report will bring to the surface even more questions and problems. This is good, because only good can come from this first nation-wide survey of sanitarians.