Impact on the Department of Public Health of the San Diego Mass Chest X-Ray Survey

The metropolitan San Diego mass chest X-ray survey was completed in early 1950, but its effects on the department of public health are still being felt. New policies were evolved. Old ones were given new life. Associated gains in cancer and cardiac follow-up, as well as direct gains in tuberculosis control, were made.

San Diego's survey was the tenth in a series of case-finding projects conducted since 1946 in many parts of the country with United States Public Health Service help (*1*). The survey was more than a year in planning and involved, before it was over, the participation of thousands of citizen volunteers and almost all organized groups in the area. In the most intensive health project of its type ever conducted in California, 245,061 70-mm. X-rays were made during an 8-week community-wide tuberculosis case-finding survey.

Many of the benefits of San Diego's X-ray experience are obvious. The survey discovered cases of tuberculosis. It gave an opportunity to bring the "Get an X-ray" message to every part of the community. It gave the entire community a massive exposure to health information, some of which must have been assimilated. It gave all an opportunity to pitch in and work together on one single project of unquestioned importance.

But there were other less obvious results of importance to the total public health program. What was the effect of the survey on case-finding policies and practices of the local health department? How did it affect health department relations with medical groups and other professional agencies? Did it have any effects on other department programs? These are questions of particular interest to the professional public health worker.

The tuberculosis case-finding program of the department had by no means been dormant before the mass survey. An active program had been developed through the use of a permanent diagnostic center in downtown San Diego and a mobile unit which visited other city and county areas regularly. These efforts had developed a considerable volume of work in the follow-up of suspected cases by the time the mass survey began.

This report was submitted by the staff of the Department of Public Health of San Diego, Calif. J. B. Askew, M. D., M. P. H., is director of the department.

New Policies

As a result of the community-wide survey, 5,791 cases were classified "suspected for tuberculosis" following confirmatory film readings. Of these, approximately 800 were followed by the health department, the remainder by private physicians and other agencies. During the planning it was apparent that the health department clinic would experience considerable difficulty in adjusting to the new load of survey cases. Two important changes were made in medical policies regarding follow-up.

It became necessary to be more discriminating in the choice of cases for continuing follow-up studies. Although no rigid criteria were established, many cases which would have been followed longer in presurvey days have been discharged from the recheck clinic. In their review of suspected cases, the clinic physicians have requested that patients with no progressive pulmonary process and no special problems return for recheck at 6-month or

yearly intervals instead of each 3 months for 2 years. At present, a staff committee is developing policies and procedures for our total tuberculosis control program. As soon as time and staff are available, we will probably lengthen the period of observation of suspected cases and increase slightly the number of visits to the clinic for rechecks so that we may eliminate the possibility of overlooking a few active, progressive cases among the suspects.

Laboratory studies on first examinations have been intensified. This was done by adding one more technician to the laboratory staff and by clinic physicians requesting more complete laboratory work on initial visits. This change in laboratory procedures requested on first visits has resulted in more frequent discharge of patients on the basis of negative laboratory findings and, therefore, in a diminished burden upon X-ray facilities. We hope that the more complete laboratory work at the time of the initial visit will mean active cases can be found earlier and more of the inactive cases dismissed.

Impact on Clinic Services

Medical services were improved in two important ways by the mass survey. First, additional clerical staff was assigned and maintained at the clinic throughout the year, making it possible for the professional staff to handle a greater volume of work.

The second important aid to clinic services made possible by the survey was the classification and filing of all X-ray films taken by survey teams. Funds to do this filing job were provided by the California State Department of Public Health. Specific films are now available to physicians on request and are proving a valuable asset to the clinician. For example, 26 cases of tuberculosis have developed in persons who had negative films at the time of the survey. Having the survey film available for study is of obvious value to the physician in estimating the time and stage of infections discovered following the survey. At the same time, this has emphasized to physicians in the community what they already knew, namely, that a single negative chest X-ray does not guarantee that future films will not show active tuberculosis or other significant pathology.

Case Register and Reporting

A central tuberculosis case register has been operated by the department since 1948. However, it had not been developed to its optimum effectiveness before the mass survey. To assist with the registry for the mass survey, the United States Public Health Service assigned to the department a special case registry consultant. This consultant was, during her assignment to San Diego, not only able to improve and maintain the register but also to train a case registry clerk to take over when she left. Thus, because of the survey, this department has been able to have the continued use of an active case register.

Contact investigation was another activity in which improved services could be traced to the survey. In this instance, it was a matter of the increased case load justifying the assignment of clerical help to improve an existing contact registry. This meant better follow-up service given to known contacts as well as to the large additional number of contacts discovered by the mass X-ray survey.

Private physicians diagnosed and reported as active tuberculosis cases 73 of the survey suspects referred to them—approximately one-third of all the active tuberculosis cases found by the survey. In addition, in 1950 private physicians reported 52 active tuberculosis cases found in the course of their normal practice, or approximately as many as they had reported in the preceding year.

As a result, there were, in 1950, 640 active tuberculosis cases new to the health department, or approximately 7 cases per annual death. This high ratio was not due to the inclusion of any appreciable number of inactive and activity-undetermined cases. In fact, 68 percent of the new pulmonary cases had activity demonstrated by the presence of tubercle bacilli.

Tuberculosis case finding was successful in the older age groups, ages 40 and over, as measured by the ratio of newly reported active cases to deaths. In this group there were 5.5 new cases per death. Usually the ratio of new cases per death is very low among the older adults.

In 1950, 88 tuberculosis deaths were reported. Of these, 31 percent had not been known to the health department as active cases before the death certificate was filed. Although this per-

centage was only slightly lower than in 1949, it was substantially lower than in the years preceding 1949.

Nursing Program

The impact of the survey on the nursing program was great. Several months before the survey, staff nurses were offered an intensive in-service education program in which all phases of tuberculosis control were reviewed. At the same time, plans were made to allot as much nursing time as possible to the survey effort. This meant that some nursing services had to be eliminated and others reduced. Among the changes made were:

Routine home calls to all patients with minor communicable diseases have been eliminated. Instead, instructions for the care of patients are sent to the home. At the time that a minor communicable disease is reported by a parent, the clerk inquires if the patient is under the care of a private physician. If a private physician is in attendance, instructions are mailed, but no home call is made. If the patient is not under the care of a private physician and there are siblings under 2 years of age in the family, or there is any other known health problem, a home visit is made.

Changes were made in the city-wide school smallpox vaccination program. Instead of allowing the usual full school term in which to perform this service, the work was condensed into 12 weeks previous to and at the conclusion of the survey.

Districts of all nurses on duty at the mass survey retake center were covered by other members of the nursing staff.

The number of nurses used in prenatal and well-child conferences was reduced.

An expected result of the survey was the involvement of more staff nurses and their time in tuberculosis follow-up activities throughout 1950. From this increased interest in, and knowledge of, the problem of tuberculosis has developed the appointment of a staff committee which is now reviewing all department tuberculosis policies and procedures.

Medical Social Work

The mass X-ray survey provided an opportunity to add the services of a medical social worker to the established medical and nursing program. The medical social worker was assigned by the United States Public Health Service. Public health medical and nursing staffs have recognized for many years that emotional and socioeconomic factors have been paramount causes in developing "uncooperative patients," that is, patients who fail to place themselves under medical care or who fail to complete a treatment plan. No person with specialized training in managing the emotional impact of illness and in the use of social agencies was available before the survey to assist the local staff in meeting these problems. A staff, untrained in these functions and occupied with other professional responsibilities, met the needs as best it could.

The medical social work demonstration has now been in operation more than a year. Medical social services have been offered to all newly diagnosed patients as well as to regular clinic patients referred for special handling of personal problems.

The demonstration has given convincing evidence of the need for qualified case-work service to handle patient problems at the point of clinic contact so that the patient may obtain maximum benefit from medical services. Since the addition of this service the relationship of patients to the clinic and of the clinic to community agencies has improved. With few exceptions, the survey patients newly diagnosed in the clinic have worked out satisfactory plans of medical care. In this same group hospital discharges against medical advice have been reduced to approximately 15 percent, or one-half of the rate in groups whose initial diagnosis was not handled with case-work help. Tuberculosis control is best served by meeting the patient's problems at the time of diagnosis so that he may begin, and continue, a plan of treatment with the assurance that his family's welfare will not be jeopardized.

Although the survey clinic load per month dropped gradually during 1950, the number of cases referred for case-work service remained constant at between 30 to 35 a month. In-

creasingly, referrals are received for services other than medical care, for help in such areas as marital problems affecting the course of illness, planning for children, emotional reactions to illness which have interfered with treatment, and planning for vocational guidance and training.

The evidence accumulated from the medical social work demonstration has indicated a need for additional consideration of the social resources available in the community. Serious gaps in service still exist which deter patients from obtaining needed medical care. The survey has shown a need for research into patients' needs and for the development of community resources so that patients may procure medical care.

Relations With Other Agencies

One of the major after effects of the San Diego mass survey has been the strengthening of the health department's relationships with the city's official and voluntary agencies concerned with the community's health. From the beginning, the survey was a cooperative project of many groups and involved joint planning and joint responsibility for its success or failure. This very fact—that many health agencies worked together on a common problem—increased the understanding of each for the other as nothing else could have. Especially significant were the effects on the health department of relations with medical, nursing, and community citizen groups.

Additional Gains

It was the opinion of the health department staff participating in the survey that private physicians who took part gained an increased understanding of the over-all functions of the department. Physicians recognized that tuberculosis control and follow-up is a job for the department of public health, and the health department staff realized more clearly than ever the role of the private physician in disease control activities. The local medical profession gave its wholehearted support to every phase of the project. Many physicians spent long hours at the conclusion of their own working days serving on medical policy planning committees and X-ray review boards.

The increased case load brought about close cooperation among all nursing services in the community—public health nurses, school nurses, visiting nurses, and private duty nurses. Many nursing groups, not specifically connected with public health activities, assigned members of their own staffs to duty at the X-ray retake center.

The experience of one community group which helped with survey organization was typical of many. In this community, so pleased were the citizens with the survey effort that shortly afterward they asked the department for further assistance in developing other community health programs. It now has an active health committee which has undertaken many activities in the past year and is a staunch friend of the health department. Throughout the entire San Diego area citizens have become more aware of the many ways in which they can participate in programs to improve the health of their communities.

Cancer and Cardiac Follow-up

One of the unique contributions of San Diego to the mass survey concept was the incorporation of provisions for the follow-up of suspect neoplasm and cardiac cases found on the X-ray. Funds for the follow-up program were provided by a special grant from the California State Department of Public Health.

The San Diego tuberculosis control service had always maintained a high index of suspicion regarding neoplasm and was aware of the opportunity presented for early neoplasm case finding through the photofluorogram. But with clerical and nursing staffs already overtaxed by the tuberculosis load, it had never been possible to trace each suspected neoplasm to a definitive diagnosis. The public health nurses working on the newly inaugurated follow-up were available to take rather detailed histories on suspected neoplasm and cardiac cases, and then, with medical supervision, were available to guide the patient to a private physician or other facility for further diagnostic study.

Four hundred and forty-seven suspected neoplasm patients were followed, and 29 have undergone major surgical procedures as a direct result of the survey. These were:

Pneumonectomy	7	Pneumonotomy	1
Lobectomy	11	Thoracotomy for removal of mediastinal tumors	3
Thoracotomy for removal of pericardial cyst	1	Mastectomy	1
Thyroidectomy	5		

Because of the focus of attention upon neoplasm case finding and the experience gained by health department personnel in the survey, a file of all pulmonary neoplasm deaths was set up for 1950, and has continued. It is now possible to check these deaths among those who had survey films. Interesting observations will be possible in the next 12 to 18 months.

Summary and Conclusion

An attempt has been made to review briefly some of the major effects of the community-wide chest X-ray survey in the months following the conclusion of actual X-raying:

1. The health department was able to serve the entire community rather than just specified groups of "indigents" or "contacts." The health department in this new role gained stature, we believe, and began to mean more to everybody in and around San Diego.

2. The health department and cooperating agencies worked out techniques for concentrating their time and energies on tuberculosis for a short period. This kind of increased attention to a specific health problem seems to be extremely productive.

3. Tuberculosis clinic services available to the public were increased and improved.

4. The usefulness of both the tuberculosis case register and the contact register was greatly enhanced.

5. The impact of the survey on the public health nursing staff brought many temporary, and some permanent, changes in nursing procedures.

6. Health department relations with medical, nursing, and community groups were strengthened.

7. Medical social work had an opportunity to prove its place in the health department program.

8. Gains in chronic disease control—cancer, heart disease—were made.

A portion of the health officer's statement which appeared as the final page of the survey report (*2*) may perhaps serve as the conclusion of this article:

"The story of metropolitan San Diego's mass chest X-ray survey which has unfolded on these pages is the story of the greatest concerted attack against disease ever undertaken by our community . . . .

"Just as the X-ray allows us to look inside an individual, the mass survey gave San Diego an opportunity to get a good look at itself attacking a public health problem. It has brought to many homes and to many individuals the realization that the public health is *everybody's* business. Through participation in the tuberculosis program, San Diegans are already beginning to think of other ways in which they can work together."

REFERENCES

(*1*) Anderson, Robert J.: Survey pattern. An editorial. Pub. Health Rep. 65: 1275–1276 (1950).

(*2*) How it was done. Official report of the San Diego metropolitan chest X-ray survey. San Diego, Calif., Department of Public Health, 1950.