

# A Review of Local Research Projects in California

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A STUDY of the natural history of research projects by local health departments in California has been completed by the California State Department of Public Health.

Nineteen projects conducted from 1957 through 1962 by nine health departments and four branches of the University of California were reviewed. Direct community actions followed or have been planned as a result of most of these projects, and nearly 60 percent of their objectives were substantially achieved. A significant number of unexpected benefits accrued, including increases in the use of other health department services and increased cooperation with other community groups and agencies.

Many projects would have profited from more detailed and technically informed planning; small planning grants and the use of consultants may be the means of supplying this ingredient. Generally, prospectuses were vague about how the project data were to be analyzed. Only three publications in the professional literature resulted from the research undertakings.

The local special project program, administered by the division of research, California State Department of Public Health, provides assistance to local health departments to conduct public health research, to demonstrate the application of new knowledge, or to evaluate public health programs (1). During the 1957-62 period, 93 projects were proposed and 38 were approved. At the time the first 19 considered in this review were conducted, the State

program was limited to research in chronic diseases and aging, maternal and child health, and occupational health. The group was composed of five 1-year projects, five 2-year projects, and nine 3-year projects.

## Objectives

A successful project requires one or more appropriate objectives, clearly stated, distinct in scope, relevant in nature, and capable of achievement by available methods. This requirement was seldom met to everyone's satisfaction, and changes of objectives were frequent. The 19 projects had a total of 73 stated objectives, ranging from 1 to 7 per project, with 3 or 4 the usual number. The objectives could be assigned to these categories:

Testing new approaches through demonstration and evaluation.....	30
Evaluating continuing activities.....	6
Search for new knowledge about the provision of health services.....	33
Employing new kinds of professional skills.....	4
Total .....	73

Nine of the 19 projects were almost exclusively limited to eliciting new knowledge by surveys or observation; the remaining 10 emphasized demonstration or evaluation.

In 10 projects, a total of 31 objectives remained unchanged, but in the other 9, objectives were deleted or reduced in scope, new objectives were added, or the statement of objectives was clarified or particularized. Generally this sharpening of objectives came after preliminary trials or after further planning with special consultants.

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Objectives were deleted or restricted in six projects because of an inability to recruit persons with a particular skill, an inadequate design in the original proposal, or because of unanticipated legal barriers. Objectives were added to five projects to improve the design or because a pilot study demonstrated that an additional kind of information was available.

Generally, when the projects got underway, the originally stated objectives were those actually pursued. But the fact that objectives were changed or modified in nearly half the projects supports the belief that more attention should be given to early planning.

### Methods and Project Designs

A variety of methods were used in the various projects. The orientation of many toward evaluation and investigation resulted in considerable attention being given to the selection of test and control groups and to the devising of instruments to measure status or change in status over periods of time. Almost as much attention was devoted to devising and applying teaching or training devices. Biological laboratory procedures were used infrequently, and hospital records were consulted as a primary source of data in only two projects. Most projects were broadly enough conceived to use several general categories of methods.

Following is a list of the general methods and the number of projects using each.

<i>General method</i>	<i>Number of projects</i>
Develop criteria for selecting observation group or sample.....	9
Develop criteria for selecting observation and control or contrast group.....	8
Devise special instruments for measuring status or progress.....	9
Conduct field interviews or population surveys...	8
Observe cases over time, including remeasurement.....	3
Observe cases and controls over a period of time, including remeasurement.....	6
Compare observations to existing standards...	3
Develop and use case-conference procedures...	4
Conduct physical examination or screening.....	4
Develop organization for referral and followup...	6
Devise educational program.....	3
Carry out group education in workshops, conferences.....	4

Carry out individual education by consultation, counseling.....	6
Train professional or other specialized personnel...	3
Develop and use advisory committee.....	5
Assemble, train, and use volunteer workers....	2
Provide a direct service to patients, agencies, or groups.....	4
Perform biological or physical laboratory procedures.....	4
Collect and analyze hospital records.....	2

During the initial stages of 13 projects substantial changes were made in the methods to be employed. The most common modification concerned the group selected for observation. In some projects, control or contrast groups were deleted, but adding further control or contrast groups was more frequent than deletion. Sizes of samples were generally enlarged whenever the original plans were changed.

Other changes in methods were abandonment or severe limitation of group educational procedures in favor of methods directed at the individual, adding observations about the structure or nature of the institution as well as its clients, and substituting categories of personnel, such as public health nurses for hospital nurses or paid, trained interviewers for lay volunteer workers.

The problems encountered in design (sampling techniques, selection of test and control groups, and devising suitable instruments for measuring status or progress) emphasize the need for careful and technically informed planning. Capable assistance in design or the development of such capabilities in local health departments appears a necessary adjunct to the operation of research projects.

A variety of skills are required to follow the many methods used in the projects. Those needed to handle statistical problems of sampling, the aspects of design concerned with sociological and demographic variables, and the devising and applying of educational procedures are available to some extent in the present-day health department, but their availability on a consultant basis may be of equal importance in planning special projects.

The methods used in the projects, reflecting the objectives, demonstrate the broad interest of local health departments in the social and demographic aspects of health rather than the traditional, strictly biological orientation.

### Analysis of data

Among the 19 projects there was a general lack of specificity as to how the data were to be analyzed. Techniques received only casual mention in the prospectuses. For example, cross tabulations were eventually used in 14 projects, but this method of analysis was stated specifically in only 6 instances. However, in

many projects, the methods of analysis and display seemed appropriate to the nature of the data, and two or three employed sophisticated analytic procedures.

The net impression is that, initially, little attention was paid to analytic methods and that information was lost by inadequate analytic

**Table 1. Personnel<sup>1</sup> proposed and actually used**

Category of personnel	Proposed use			Actual use		
	Full time	Part time	Con-sultant	Full time	Part time	Con-sultant
Total.....	31	60	6	28	63	5
Physician:						
Study director.....	1	0	0	1	0	0
Staff <sup>2</sup> .....	1	11	1	0	9	1
Public Health nurse:						
Study director.....	2	0	0	2	0	0
Staff.....	0	5	1	1	5	0
Registered nurse:						
Study director.....	1	0	0	1	0	0
Staff.....	1	4	0	1	4	0
Obstetrical assistant.....	2	0	0	2	0	0
Nutritionist: study director.....	2	0	0	2	0	0
Sociologist:						
Study director.....	0	1	0	0	1	0
Staff.....	1	1	0	1	1	0
Health educator:						
Study director.....	1	1	0	1	1	0
Staff.....	1	1	0	1	1	0
Psychologist:						
Study director.....	0	1	0	0	1	0
Staff.....	0	3	1	0	2	1
Medical social worker.....	2	1	0	2	1	0
Social worker.....	0	1	0	0	0	0
Statistician.....	0	2	3	0	1	3
Engineer:						
Industrial hygiene.....	0	2	0	0	2	0
Safety.....	0	0	0	0	1	0
Sanitarian.....	0	0	0	0	2	0
Pharmacist.....	0	1	0	0	1	0
Physical therapist.....	1	2	0	1	2	0
Occupational therapist.....	1	2	0	1	2	0
Speech therapist.....	0	1	0	0	1	0
Vocational counselor.....	0	1	0	0	1	0
Psychometric technician.....	0	1	0	0	1	0
Microbiologist.....	1	1	0	1	1	0
Cytological technician.....	2	0	0	0	0	0
Laboratory assistant.....	0	0	0	0	1	0
Group worker.....	0	1	0	0	1	0
Homemaker.....	0	1	0	0	1	0
Machine operator, coder.....	0	2	0	0	2	0
Statistical clerk.....	0	2	0	0	2	0
Secretary, stenographer, clerk.....	11	9	0	10	9	0
Interviewer.....	0	<sup>3</sup> 2	0	0	<sup>3</sup> 6	0
Volunteer worker.....	0	( <sup>4</sup> )	0	0	( <sup>4</sup> )	0

<sup>1</sup> Does not include regular, full-time staff of the agency conducting the project, members of advisory groups, informal consultants, or consultants serving without pay.

<sup>2</sup> Includes internists, pediatricians, psychiatrists, physiatrist, and pathologist.

<sup>3</sup> Approximate equivalents representing a number of individuals.

<sup>4</sup> Represents a large number for which equivalent time is not estimated.

approaches. More attention should be given to plans for analysis of data. Statistical skills exist in many health departments and are becoming more widely available from universities and the State health department.

### Personnel

Nearly 100 persons worked on the 19 projects, about one-third of them full time. Table 1 shows the 29 types of personnel employed. This is an understatement, since some types represent more than one specialty and the table includes only persons specifically employed to work on the projects.

There was little difference between the personnel proposed for the projects and those actually used. This suggests that the resources needed for the projects were appraised realistically. Recruitment for a large proportion of positions was difficult, usually because of the time needed to find a properly qualified person rather than failure to fill positions.

The employment of sociologists, psychologists, and members of the paramedical professions not common in local health departments shows a strong interest in exploiting the par-

ticular skills of new groups of employees. The small number of statisticians listed may have been offset somewhat by the use of others such as psychologists and sociologists who usually have statistical skills, or it may reflect a realistic appraisal of the likelihood of recruiting statisticians.

### Achievement of Objectives

The crucial measure of an undertaking is how nearly its stated objectives are achieved. Quantitative measurement of achievement is often the most difficult task in any project, requiring the development of special tools, indexes, and criteria. Generally, in these 19 projects the criteria of achievement were poorly stated, stated in terms that were not measurable, or were not in fact measured in the project.

Consequently, no elaborate assessment of the attainment of objectives was attempted. Instead objectives as stated were accepted at face value and as being of equal value. The degree to which each stated objective had been achieved was subjectively estimated.

The results of this appraisal are given in table 2. Of the total of 73 objectives stated for the 19 projects, 43, or nearly 60 percent, were judged to have been substantially achieved. An additional one-fourth were considered to have been 50 percent attained. Examination of the 11 judged not achieved showed that most of them were not major objectives.

**Table 2. Achievement of objectives**

Project No.	Number of stated objectives	Achievement of objectives			
		100 per cent	50 per cent	25 per cent	0 per cent
All projects-----	73	43	19	5	6
1-----	6	4	2	0	0
2-----	7	1	4	1	1
3-----	3	1	1	1	0
4-----	2	1	1	0	0
5-----	4	1	1	1	1
6-----	4	2	2	0	0
7-----	3	3	0	0	0
8-----	3	3	0	0	0
9-----	5	2	3	0	0
10-----	3	3	0	0	0
11-----	4	1	1	1	1
12-----	5	3	1	0	1
13-----	4	3	1	0	0
14-----	3	1	1	0	1
15-----	5	3	1	1	0
16-----	3	3	0	0	0
17-----	1	1	0	0	0
18-----	4	3	0	0	1
19-----	4	4	0	0	0

### Actions Resulting From Projects

A measure of the value of a project is the actions that result from it. Of the 19 projects, only 7 brought no direct actions; however, actions may yet come from those more recently concluded.

The most frequent consequence was the continued or expanded use of services demonstrated or tested in the project. Some examples—a program of home care was made part of the regular services to certain hospital beneficiaries, health department consultative services to nursing homes were organized on a regular basis, and a home care service in a rural area has been continued with local tax support.

Other results have been the effects on agency

organization or intramural operations. These include revising methods for evaluating the health needs and potentials of clients, introducing periodic reviews of the status of patients in long-term care facilities, and coordinating various facets of a home care program to provide more efficient service.

In three instances projects led to subsequent related studies or projects, and two projects produced information and program settings useful for professional training, one for student nurses and the other for medical students. One disease detection project resulted in the formation of a new community volunteer agency.

Actions planned, but not yet undertaken, are the extension of home care programs to other categories of clients, assignment of professional persons in categories uncommon to health departments to programs of nursing home consultation, extension of radiation monitoring services to other professional groups, extension of cancer detection services to other groups and for other sites, and making service in a home care program a part of medical residency training. The catalog of actions taken or planned reflects the orientation of most projects toward a practical end and suggests that the project mechanism has provided an opportunity to gain knowledge or experience which is directly applicable to the daily activities of health agencies.

Some unanticipated benefits also arose. Following are some examples of these. In six projects, the approach to new professional groups or to the public led to an easily recognizable increase in the use of other health department services not directly related to the project. The projects help to recruit and retain a high caliber staff in the entire health department. The introduction of special records for the project resulted in a general upgrading of all records. In two projects, large-scale use of volunteers opened up unexpected opportunities for their use in other programs, and two other projects led voluntary agencies to undertake continuing similar services. Resident physicians in hospitals proved to be an excellent source of referrals to a home care program. Following an evaluation project, the entire staff became more critical of instituting new services without provision for evaluation.

## Communication of Findings

Communication of findings is of special importance because experience gained from demonstrations or evaluations may be immediately applicable in other settings. Only three publications in the professional literature resulted from the 19 projects. Six additional manuscripts from three other projects have been submitted for publication, and four others are in preparation. The findings of one project may be prepared as a monograph, and special reports with limited distribution resulted from four projects not represented by formal publication. This appears to be an extremely modest output; the lack of information may penalize others wishing to undertake similar or related activities.

The phenomenon of reluctance to summarize and analyze after the active work stops seems extensive. Part of the reluctance may stem from an undervaluation of descriptive information or of findings which are considered negative. Also, after completing the project, the staff frequently lacks time for writing before the project resources end.

## Pros and Cons

In the opinion of local health department staff members, the projects had these positive values: projects stimulate staff and community groups to look critically at problems of providing health services, to try out new ideas, and frequently to incorporate findings into regular department operations; they increase community awareness of other services of the department; they improve staff knowledge, sometimes altering concepts of what can be done, and sharpen critical faculties in considering new undertakings; staffs acquire new knowledge which could only be found by study of the community; coordination in departmental programs is improved; and projects are an opportunity to increase the leadership role of the health department in the community.

One of the difficulties regular staff members encountered was finding time to plan the project. At a time when special disciplines are needed for planning they may not exist in the department and resources for employing them

are not available. Underestimation of the demands which the project will place on the regular staff was another common problem. The regular staff, fully engaged, may feel imposed upon by the demands of the project. Delays in recruitment of personnel for the project, coupled with the fixed duration of the support, often led to compressing 3 years' work into 2, with concomitant dissatisfactions arising from work pressure, insufficient time for definitive planning, and lack of the time to experiment with unfamiliar techniques and approaches.

The governing bodies were somewhat concerned that projects might lead to requests for larger personnel budgets at termination of project support.

### Time and Money

For the 19 projects, \$857,338 was requested, and \$765,767 was expended. Two projects originally scheduled for 1 year of support received funds for 3 years each; one requesting funds for 2 years received funds for 3 years, and one 3-year project scheduled to operate in 4 fiscal years actually did so in 5.

During the first year of project operation, expenditures were only 59 percent of the amounts requested. By the second year, operations were nearly at expected levels, and in later years, the amounts spent exceeded the original estimates by about 10 percent.

Table 3 shows the distribution of the individual projects by year of operation and by

**Table 3. Amount requested and spent on selected local projects by year of operation**

Year of operation	Number of projects	Amount		Percent spent of amount requested
		Requested	Spent	
1-----	19	\$239,506	\$141,278	59.0
2-----	16	286,528	249,052	86.9
3-----	13	247,141	274,983	111.3
4-----	4	84,163	92,186	109.5
5-----	1	-----	8,268	-----

ratio of expenditures to requested amounts. The median of the group of projects spent about 85 percent of the total requested. Total expenditures ranged from 40 to 220 percent of the original estimates. In the first year of operation, however, the proportion used by the median project was 65 to 70 percent; the utilization of requested funds during the first year ranged from zero to 120 percent of the original estimates.

A more precise and extensive analysis of this sort, based on continuing experience, would permit a more flexible use of funds for the program. Furthermore, careful attention paid to probable first-year expenditures before the project begins would result in fuller use of the limited monies available.

### The Review

An evaluation of the local special projects program was the purpose of a review conducted by the division of research of the State health department. Prospectuses, records, and reports of the first 19 projects in the program were examined, tabulated, and analyzed. The projects were also discussed with their directors and with local health officers. Many judgments were necessarily subjective since it is difficult to measure such factors as how completely objectives were achieved.

The review necessarily included only the early projects. Proposals for subsequent projects were markedly improved in planning and design, reflecting increased experience with such activities. Although special advisors and committees have maintained high standards in reviewing applications, an increasing proportion of the projects submitted have been accepted for funding. The amount of available funds is now the limit to the number of projects.

### REFERENCE

- (1) Dyar, R., and McKray, G.: The California State program to promote local health department research. *Am. J. Pub. Health* 50: 316-320, March 1960.