

# A Study of Health Referral Patterns

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*A computerized network of Health Education and Referral Centers is being developed in Los Angeles County. To assist in evaluating this network, a method for assessing the effectiveness of referrals was needed. This four-part report focuses on the construction of a conceptual model for measuring referral outcomes, a system for classifying health problems and services, a system for tracking referrals, and factors related to outcomes.*

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## I. A Conceptual Model for Measuring Outcomes of Referrals

### *Introduction*

Both professional testimony and descriptive studies<sup>1-20</sup> about health referrals in the United States indicate that the present level of appropriate referral outcomes must be increased if more people are to receive the health care they need.\* SEARCH: A Link to Services<sup>21</sup> at the

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\* Health care includes medical and/or social services of a preventive, diagnostic, therapeutic, and rehabilitative nature.

University of Southern California, School of Medicine, is developing a computerized network of Health Education and Referral Centers designed to facilitate the referral process. Within these Centers, computer terminal devices which are connected to a central time-sharing computer facility via telephone lines will be provided as a new tool for health workers to use in linking consumers with providers of health care. At a central computer facility a data bank will be maintained which contains a comprehensive description of medical and social services within Los Angeles County.

A method for assessing the effectiveness of referrals was needed to assist in evaluating this computerized network as a new tool for referral workers. This particular report focuses on the actual construction and implementation of a conceptual model for measuring referral outcomes. Other reports in this series focus upon a system for classifying health problems and services, a system for tracking referrals, and factors related to referral outcomes (Parts II to IV).

There were several reasons for developing the conceptual model. First, there was a need for an operational definition of a referral. Second, there was a need for a standardized system for classifying and reporting referral outcome statuses in mutually exclusive and dichotomous categories which could be adapted to computer technology. Third, there was a need for a generalized method which would permit comparisons of referral outcomes within and among diversified agencies. The model which finally emerged met these needs.

## Method

### Construction of the Conceptual Model

Based upon earlier research by the principal investigator<sup>3-7</sup> and upon related referral pattern studies by other investigators,<sup>1, 2, 8, 9, 12-20</sup> a preliminary model for measuring referral outcomes was constructed and described. With the assistance of professionals in the health field, this model was then reviewed, refined, and finalized. These professionals included administrators, physicians, nurses, social workers, and health educators.

In the process of developing the model, it was necessary to explicitly define a referral and its possible outcomes. A single referral was used as the basic unit for determining outcome. Such a referral was defined as one consumer being referred to one source of care for a single health problem.\* The outcome of a referral was a function of the initial referring agency, the consumer, and the provider to whom the consumer was referred for care.†

One of three outcome statuses could result from a referral. These outcome statuses were defined as:

<i>Status I</i>	<i>Status II</i>	<i>Status III</i>
Show Care	Show No care	No show No care
Appropriate	Inappropriate	Undetermined

Status I would result when a consumer who was referred by an agency showed at the provider's office and received care for the problem for which he was referred. The outcome of this referral was defined as appropriate.

Status II would result when a consumer who was referred by an agency showed at the provider's office but did not receive care. This referral outcome was defined as inappropriate.

\* When a consumer was sent from one unit (for example, department or division) within an agency to another unit within the same agency, this was treated as a single referral. Each transaction involving a referral for a different problem or to a different provider was treated as a separate referral.

† Initial referring agencies are those organizations which refer consumers to health care. Consumers are patients, clients, or users of services, whereas providers are individuals or organizations which perform direct health care.

Status III would result when a consumer who was referred by an agency did not show at the provider's office and did not receive care from this provider on a given date. This referral outcome was defined as undetermined.

To illustrate the operation of the conceptual model, after a referring agency made a referral both the provider and the consumer were queried to determine the disposition of the referral.‡ If the consumer did not show at the source to which he was referred for care, an undetermined referral resulted. If the consumer showed for care, the provider was asked: "Was the consumer accepted for care?" If the consumer was not accepted for care the referral was classified as inappropriate. If the consumer was accepted for care, an additional question was asked: "Is his referral problem under care?" A "no" answer to this question indicated an inappropriate referral outcome. If the answer was "yes" the referral was considered appropriate (Figure 1).

To follow consumers through the referral process, it was necessary to develop a referral tracking system (Part III). This system utilized data gathering forms<sup>22,23</sup> which elicited information about the referral process and its outcome from the referring agency, the provider, and the consumer.

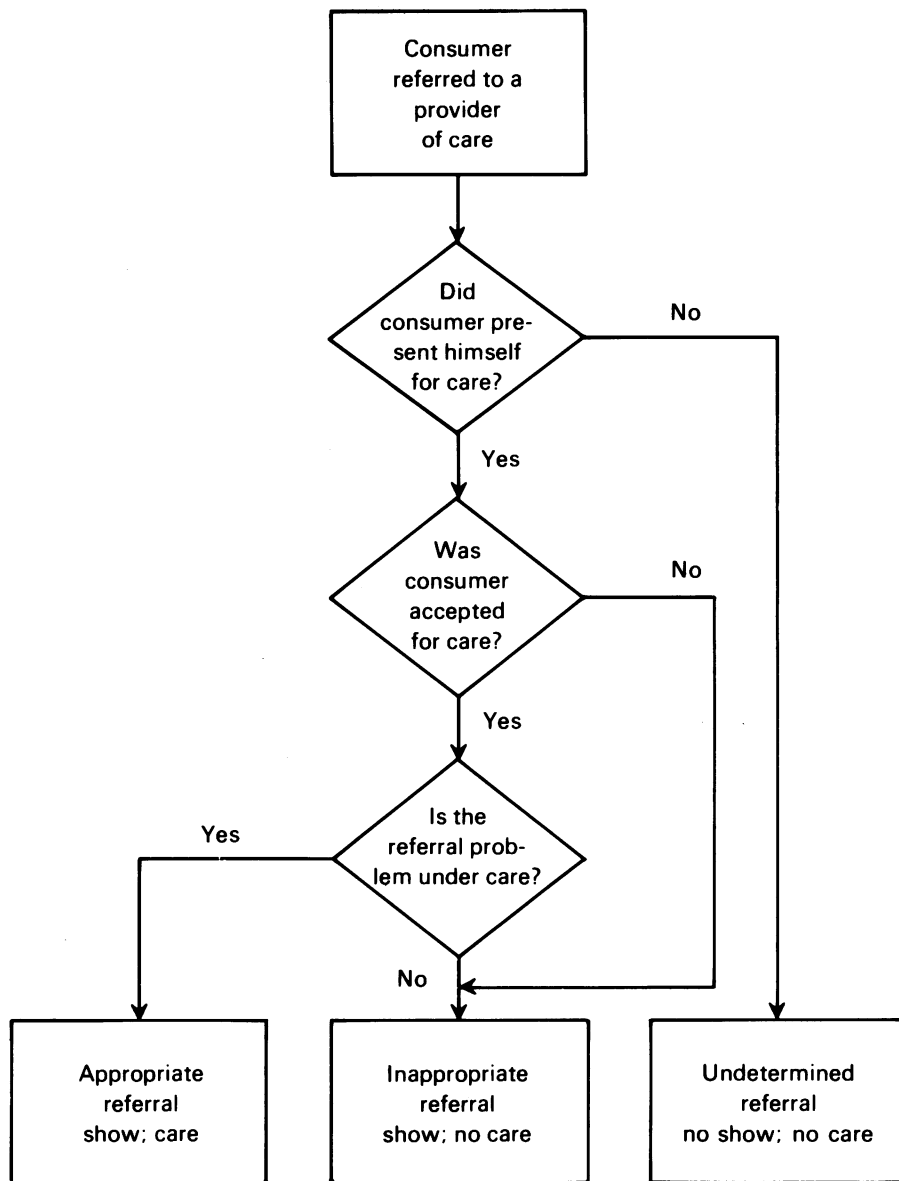
### Selecting Agencies for Testing Model

To test the feasibility of the model, 13 referral agencies located in a low-income, ethnic minority community were selected. These agencies all met three predetermined criteria:

- They had a health facility which was physically located within the East Los Angeles Health District;§
- They were interested and willing to participate in the study;
- They had at least one part-time, paid staff person who maintained a file of available health service resources within the community and who was formally designated to conduct information and referral services.

‡ For the purposes of this study, outcomes of referrals as defined by providers were used in testing the conceptual model. This decision was made because (1) provider data were obtained from patient records which were official documents, (2) a high correlation existed between provider-consumer reports of referral outcomes, and (3) more provider reports than consumer reports were available for analysis.

§ The East Los Angeles Health District is one of the 23 official health districts within the County of Los Angeles Health Department (now Department of Health Services, Community Health Services). It is comprised of areas of unincorporated County territory which include City Terrace, Belvedere, and East Los Angeles, as well as the incorporated cities of Montebello and the City of Commerce. In 1970, the District contained a population of 156,260 people<sup>24</sup> and covered an area of 22.7 square miles.<sup>25</sup> District boundaries included: Pomona Boulevard on the North; Slauson Avenue on the South; Indiana Avenue on the West; and Rio Hondo Channel on the East.



**FIGURE 1** Conceptual model for measuring "outcome of referral."

The cooperation of the 13 referral agencies was obtained in the following manner. SEARCH staff met with the District Health Officer and Department Directors from the East Los Angeles District Health Center and asked them to react to a tentative list of agencies from the area that had expressed an interest in the referral pattern study. Directors suggested that these and other agencies be invited to an exploratory meeting to be held at the Health Center and that preliminary criteria for selecting agencies to participate in the study be developed prior to the meeting.

Eighteen agencies were then invited to attend the first SEARCH East Los Angeles Committee meeting which was held at the Health Center.<sup>26</sup> This meeting was hosted by the District Health Officer and was attended by representatives from 17 of the 18 agencies.

This meeting had two important outcomes. The first was a consensus that the majority of the health care agencies, which offered information and referral services within the District, were represented at the Committee meeting. The second was the acceptance of the three criteria for selecting health care agencies to participate in this study. Thirteen of the 18 agencies actually met the criteria (see Appendix A, p. 356).

Of the five agencies not meeting established criteria, four did not have facilities located within the District and one did not have a part-time, paid staff person to conduct information and referral services. Collectively, the 13 agencies which met established criteria compared favorably with "typical" health information and referral services within Los Angeles County described elsewhere.<sup>27</sup>

## Pretesting of Model

A preliminary assessment of the utility of the model was performed by using 13 cases. These cases represented the first consumer referred (from each of the 13 agencies) on a designated pretest day. The utility of the model was to be judged on the basis of its inclusiveness and discrimination. Inclusiveness was defined as the ability to classify all referrals within the model, whereas discrimination was defined as the ability to distinguish between appropriate, inappropriate, and undetermined referral outcomes.

Providers to whom consumers were referred for care were contacted to determine referral outcomes. All outcomes were successfully classified within the mutually exclusive categories of the model.

## Selection of the Sample

A preliminary sampling plan was developed based upon descriptive data obtained from each of the 13 agencies.\* This plan was discussed at a second East Los Angeles Committee meeting<sup>29</sup> and subsequently a final sampling plan was described as follows: 6 days (1 day during each of 6 weeks) were defined as the data collection period. Each day of the week was represented and was randomly assigned to one of the 6 weeks.† On each of the 6 days, health workers in each of the 13 agencies obtained information on all individuals interviewed in a face-to-face situation (either in the agency or in the community) and referred elsewhere for care. Excluded from this sample were those individuals who (1) refused to give their name and address or were unwilling to participate in the study, (2) did not have a Los Angeles County address, or (3) were not of a legal age to assume responsibility for themselves and were not accompanied by a relative or legal guardian.

The six data collection days yielded a total of 528 referrals from the 13 agencies. Of the 528 referrals, 21 were excluded because consumers did not qualify; 16 refused to participate in the study; one did not have a Los Angeles County address; and four needed to be accompanied by a relative or legal guardian but were not. In addition, 36 referrals were excluded because consumers received more than one referral. A single referral was randomly selected from each of 34 double referrals and from one triple referral. Thus, 471 consumers remained as the sample population. Each case represented a different consumer who had been referred for care of a single health problem.

\* Descriptive data included the agency's legal name, address, and telephone number; administrator's name, degree, and title; name, degree, and title of the person assigned to coordinate activities with SEARCH; agency's function, sources of funding, geographic service area, kinds of health problems most frequently presented at that agency, referral sources most often used by the agency, staffing patterns, and volume of agency referrals.<sup>2,8</sup>

† The collection days were Wednesday, October 14; Wednesday, October 21; Thursday, October 29; Friday, November 6; Tuesday, November 10; and Monday, November 16, 1970.

## Testing the Model

Since the conceptual model appeared to be feasible during the pretest, that is, it met the two criteria of inclusiveness and discrimination, it was applied to the larger sample. Of the 471 cases in the sample, data for 97 per cent ( $N = 458$ ) of the consumers were obtained from providers to whom consumers had been referred for care. These cases were then sorted using the conceptual model to classify the referral outcomes.

As was true in the pretest, all cases were successfully classified within the model. In addition, the model permitted discrimination among the three types of referral outcomes.

## Results

Over half of the cases (266) received care for the same problem for which they had been referred and were thus considered appropriate referrals. The remaining cases (192) did not receive care. Only a small portion (8 per cent) of all referrals were classified as inappropriate whereas a much larger portion (34 per cent) were undetermined referrals (Table 1). When consumers showed at providers' places of service ( $N = 302$ ), they were likely to receive care ( $N = 266$ ). In contrast, when consumers did not show for care, they did not receive care, at least not at the facility to which they were referred for care. A high correlation was found between whether consumers reported that they showed for care and whether providers reported that consumers came for care ( $p < 0.01$ ).

## Discussion

Results pertaining to outcomes of referrals are assumed to be representative of the East Los Angeles community since at the time this study was conducted the majority of community agencies which provided health information and referral services participated in this study. Over 40 per cent of the consumers who were referred for care did not receive care. Most of these consumers did not receive care because they did not show for care. This suggests that if the level of appropriate referrals is to be increased, agencies providing health information and referral services should consider including health education as an integral part of

TABLE 1—Outcomes of Referrals

Status	Per Cent	Number
I Appropriate referrals (show; care)	58.1	266
II Inappropriate referrals (show; no care)	7.8	36
III Undetermined referrals (no show; no care)	34.1	156
Total	100.0	458

this service.\* Other factors related to referral outcomes, particularly Status III outcomes, are discussed in another report in this series (Part IV).

The conceptual model constructed and implemented in this study will be applied in evaluating the outcomes of referrals made within the SEARCH network of health education and referral centers for Los Angeles County. This decision was made since the model proved feasible for classifying all referral outcomes based on a sample of 471 cases from 13 diversified referral agencies which were representative of "typical" health information and referral services within Los Angeles County. The same model also should prove useful in similar studies throughout the country since it could provide a standardized system for comparing results and for replicating studies over time.

The conceptual model that was utilized in this study successfully classified outcomes of referrals. The conceptual model further pointed out the need to develop a corollary model for the SEARCH network of health education and referral centers which would assess the qualitative outcome of referrals. This ancillary model will be devoted exclusively to measuring the degree of appropriateness of the referral and will answer such questions as:

- Was the referral needed?
- What was the quality of the service rendered by the provider?
- Was the service preventive or therapeutic in nature?
- Did the service help the consumer to maintain or improve his health status?
- Did the service help the consumer to solve or to accept his health problem?
- Was the consumer satisfied or dissatisfied with the service received and why?

### Summary

The objective of this study was to construct and implement a conceptual model for measuring outcomes of health referrals. Such a model was needed to assist SEARCH: A Link to Services at the University of Southern California, School of Medicine, in the future evaluation of an on-line computer system utilizing a comprehensive health service data bank. In this system, health workers will use computer terminal devices to link consumers with providers of health care. It is expected that this new tool will facilitate the referral process.

Based upon earlier research and with the assistance of professional practitioners in the health field, a conceptual model for measuring the outcomes of referrals was constructed and terminology associated with the model was defined. Judged on the basis of its inclusiveness and discrimination, the feasibility of the model was then pretested with one referral from each of 13 agencies in a

\* In this context, health information is concerned with the communication of facts about medical and social services to consumers; whereas health education is concerned with motivating consumers to effectively utilize these services.

low-income, ethnic minority community. These agencies, located within the East Los Angeles Health District, were selected because they met predetermined criteria and because they compared favorably with "typical" health information and referral agencies within Los Angeles County.

Preliminary assessment of the utility of the conceptual model indicated that it was feasible for use with a larger sample. Subsequently, collection of data from the 13 agencies over a 6-week period (1 day selected at random during each week) yielded 528 referrals. Of these referrals, 471 met established criteria and were included in the sample. Data regarding outcomes of referrals were obtained from providers of health care for 458 of these referrals or 97 per cent of the sample. The model then was applied to these 458 cases.

Results showed that the model met the criteria of inclusiveness and discrimination; that is, all 458 cases were classified within the model and the classification permitted discrimination among the three categories of referral outcomes. Of the 458 cases which were referred for care, 58 per cent were categorized as appropriate, 8 per cent as inappropriate, and 34 per cent as undetermined.

The model for measuring referral outcomes will be applied in evaluating the outcomes of referrals which will be made from the SEARCH computerized network of health education and referral centers in Los Angeles County. The model also has implications for similar referral pattern studies which may be conducted elsewhere in the United States. Finally, the model has pointed out the need for a corollary model which exclusively measures the degree of referral appropriateness.

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## II. A System for Classifying Health Problems and Services

### Introduction

SEARCH: A Link to Services is a research and development project at the University of Southern California, School of Medicine. SEARCH will introduce a new tool into a network of Referral Centers within Los Angeles County. This new tool is an on-line telecommunications system which will assist referral workers to link consumers who have health problems with community resources providing services for these problems.\* It is anticipated that

\* An on-line telecommunications system consists of a computer terminal device which is connected to a central time-sharing computer system via telephone lines. Referral workers are individuals who provide information and referral services and who may or may not have professional training in the health field. Consumers are patients or clients who require health care. Health problems are medical, social, and psychological situations for which consumers seek care. Health services are preventive, diagnostic, therapeutic, and rehabilitative measures rendered to consumers for their health problems.

with the support of the telecommunications system referral workers will help more consumers reach appropriate sources of health care.

Before implementing the system, it was necessary to develop several methodologies for effectively evaluating the impact of the on-line system. These included the construction and testing of a conceptual model for measuring outcomes of referrals, the development and implementation of a tracking system for following up referrals, the assessment of factors influencing referral outcomes, and the design and utilization of a system for classifying health problems and services. The first three of these methodologies have been reported elsewhere (Parts I, III, and IV).

This report describes the development of a single integrated system for classifying health problems and services. Numerous systems for classifying health problems and services do exist,<sup>1-12</sup> but none of these systems seems to meet the needs of agencies providing comprehensive health information and referral services. This is apparent because existing systems are not always tailored for

information and referral purposes. Often these systems are too general or too specific to be practical, and frequently they are unsuitable for use by nonprofessional referral workers. Furthermore, existing systems are not conceptualized to serve the total health needs of all people. That is, they may not include one or more of the following components: (1) social problems, (2) social services, (3) medical problems, or (4) medical services.

The Comprehensive Health Problem and Service System that was developed for SEARCH needed to meet the following criteria: (1) would permit entry into the system by problem and/or service categories and by levels of specificity, (2) would allow "all" health problems for which provisional diagnoses were made by referral workers and for which diagnoses were verified by providers to be classified, (3) would allow "all" health services for which care was rendered by providers\* to be classified, (4) would provide linkages between problems and services, and (5) would provide a basis for making comparisons between tasks performed by referral workers and by providers who were involved in the referral process. The system which was ultimately developed met each of these criteria.

### Method

Several steps were involved in designing the Comprehensive Health Problem and Service System. These included: (1) compiling health problem subsystems, (2) cataloging health service components, (3) pretesting health problem and service subsystems, and (4) constructing problem-by-service matrices. This system was then tested using cases from 13 diversified agencies in a low-income ethnic minority community to determine if it met the predetermined criteria (described in Introduction). Each of these steps is discussed in detail in the following paragraphs.

### Compiling Health Problem Subsystems

#### MEDICAL PROBLEMS

SEARCH staff, including medical students on summer fellowships, surveyed the literature and identified a number of existing medical problem classificatory systems.<sup>1-5</sup> Specific problem entries from these systems, which reflected current morbidity and mortality statistics for Los Angeles County, were compiled into a master list. Related medical problems within this list were organized into subsystems and arranged by levels of specificity.

SEARCH staff and medical students met with medical consultants to determine inclusiveness and appropriateness of problems within each subsystem. As a result of these consultations, 17 subsystems emerged from the medical field with an average of 22 related medical problems per

\*Providers are individuals or organizations which render health services to consumers.

subsystem.† For example, the Dermatological Subsystem contained the following medical problems:

#### DERMATOLOGICAL SUBSYSTEM

##### *Medical Problems*

Abrasions	Impetigo, contagiosa
Acne, vulgaris	Insect bites
Burns, second degree	Lacerations
Burns, third degree	Psoriasis
Cellulitis	Skin, carcinoma, epidermous
Corns and calluses	Superficial injuries
Dermatitis, contact	Urticaria, allergic (hives)
Eczema, vaccinatum	Warts

There are, of course, many more problems in dermatology than appear in this subsystem. The consultants felt, however, that these were the principal skin problems for which people contact information and referral agencies.

#### SOCIAL PROBLEMS

SEARCH staff, including graduate students in social work, surveyed relevant literature. As for medical problems, several classificatory systems were identified for social problems.<sup>6-8</sup> In contrast, however, there were fewer social problem classificatory systems, and these systems usually were less sophisticated.

Because of this factor and because of the nature of social problems, it was necessary to involve consultants from many diversified fields (e.g., social work, law enforcement, education, consumer protection, housing, and government). These consultants assisted in selecting social problem entries that reflected the prevailing social problems within Los Angeles County.

The format for arranging social problems into a master list paralleled the format for arranging medical problems. Related social problems were grouped into subsystems by SEARCH staff. These subsystems were then reviewed by consultants to determine inclusiveness and appropriateness and then finalized by SEARCH staff. In all, 19 social problem subsystems‡ were enumerated containing an average of 14 related social problems per subsystem. For example, the Employment Subsystem contained the follow-

†Medical subsystems included Bacterial, Cardiovascular, Dental, Dermatological, Endocrine, Life and Death Emergencies, Gastrointestinal, Genitourinary, Hematological, Musculoskeletal, Neurological, Other Generalized Infections, Psychiatric, Respiratory, Special Senses, Viral, and Well Person.

‡ Social subsystems included Clothing, Consumer Protection, Disaster, Education, Employment, Environmental Health, Family, Financial, Food, Government, Household Essentials, Housing, Insurance, Law Enforcement, Legal, Recreation, Transportation, Veterinary, and Volunteerism.

ing social problems:

### EMPLOYMENT SUBSYSTEM

#### *Social Problems*

Employment	Unemployment
Discrimination	Conviction record
Employer-employee conflict	Forced retirement
Multi-employment	Goals, unable to set
Underemployment	Language limitations
Conviction record	Mental/emotional conditions
Discrimination	New to job market
Goals, unable to set	No market for skills
Language limitations	Physical restrictions
No market for skills	Residential restrictions
Residential restrictions	Tests, unable to pass
Unfair labor practices	Tools, unable to purchase
Vocational obsolescence	Unfair labor practices
	Unskilled
	Vocational obsolescence

### Cataloging of Health Service Components

#### MEDICAL SERVICES

For each of the problems that had been included earlier in the 17 medical subsystems, SEARCH staff and medical students developed a preliminary list of services. Basic medical textbooks and procedure taxonomies<sup>9,10</sup> were used for this purpose. Services were grouped under categories of preventive, diagnostic, therapeutic, and rehabilitative measures. This meant that in some instances a single type of service (e.g., physical therapy) might be listed under more than one category.

After preliminary service lists had been developed for each medical problem, they were reviewed by panels of physicians and allied health personnel. These panel members were recommended by the SEARCH Advisory Board for Los Angeles County.\* They all had outstanding competencies in one or more of the medical specialties, and several had expertise in systems development. Based upon panel advice, service lists for each problem in each subsystem were revised and subsequently finalized by SEARCH staff. An example of the service list for superficial injuries within the Dermatological Subsystem follows:

#### SUPERFICIAL INJURIES

##### *Services*

Preventive measures	Diagnostic measures
Crisis intervention	Clinical examination
Day care	Financial assistance
Financial assistance	Medical supplies
Health education	Therapeutic measures
Health information	Antitoxins

\* The Board represents a broad spectrum of major health care providers and consumers from each health district with Los Angeles County and advises on policy for the development of SEARCH.

### Therapeutic measures (cont.)    Rehabilitation measures

Chemotherapy	Crisis intervention
Crisis intervention	Day care
Day care	Health education
Financial assistance	Health information
First aid	Financial assistance
Health education	Medical supplies
Health information	Physical therapy
Inhalation therapy	
Medical supplies	
Physical therapy	

#### SOCIAL SERVICES

A preliminary service list was developed for each of the problems that had earlier been included within the 19 social problem subsystems. Existing social service directories and other pertinent documents were reviewed<sup>11-14</sup> by SEARCH staff and from these sources a tentative list of social services was compiled. Each service was then related to all applicable social problems.

Independent of the review of the literature, a Social Work Committee of the California Regional Medical Programs, Area V, prepared a list of outstanding social work practitioners within Los Angeles County who had competencies in one or more of the social work specialty areas. These practitioners were interviewed by four predoctoral students of social work and were asked to identify services for all problems listed in selected social problem subsystems (e.g., Family, Financial, and Employment). In addition, SEARCH staff identified and interviewed consultants (e.g., lawyers, environmentalists, nutritionists, and recreators) in social problem subsystems not generally considered social work specialty areas (e.g., Legal, Environmental Health, Food, and Recreation).

Data from all these interviews were utilized by SEARCH staff to verify and extend basic information obtained from the review of social service documents. All service listings then were finalized by SEARCH staff. An example of the service list for the unemployment, unskilled problem, within the Employment Subsystem follows:

#### UNEMPLOYMENT, UNSKILLED PROBLEM

##### *Services†*

Apprenticeship	Community college
Counseling	Continuing education
Educational	Placement, employment
Employment	Testing, vocational aptitude
Education	
College (university)	

#### Pretesting Health Problem and Service Subsystems

Members of the SEARCH Advisory Board for Los Angeles County (1) critically analyzed the structure and

† These social services did not lend themselves to categorization as preventive, diagnostic, therapeutic, or rehabilitative.



content of subsystems, (2) contributed dynamic health problem and service data against which the subsystems could be compared, (3) identified and defined selected words and phrases within the subsystems, and (4) provided actual settings for pretesting subsystems.

Three medical students visited 14 agencies within Los Angeles County to pretest the subsystems.\* Within these agencies, students observed problems presented and services sought on a given day and attempted to classify these items within appropriate categories. In those instances where problems and services could not be classified within the subsystems, exceptions were reviewed by SEARCH staff and it was determined whether the subsystems should be modified to accommodate new entries.

### Constructing Problem-by-Service Matrices

The lists of services for each problem within a given subsystem were merged into a single service list for the subsystem. While earlier development of individual service lists for each problem ensured completeness and appropriateness, the collapsing of these lists reduced duplication of service data and presented the data in a more manageable form. For example, the service data for the Dermatological Subsystem were summarized as follows:

#### DERMATOLOGICAL SUBSYSTEM

<i>Services</i>	
Antitoxins	Health information
Cancer screening	Hyposensitization
Care	Laboratory tests
Day	Hypersensitivity
Residential	Biopsy
Clinical examination	Medical supplies
Counseling	Residential treatment
Dietary	Therapy
Crisis intervention	Physical
Electrodesiccation	Chemo
Financial assistance	Cryo
First aid	Inhalation
Health education	Vocational rehabilitation

Also, the service data for the Employment Subsystem were summarized as follows:

#### EMPLOYMENT SUBSYSTEM

<i>Services</i>	
Apprenticeship	Corrective lenses
Bonding	Counseling
Civil rights services	Educational

\* These 14 agencies were selected from members of the SEARCH Advisory Board for Los Angeles County.

Employment	Mediation, employer and employee
Education	Placement, employment
College (university)	Psychological help
Continuing education	Record, sealed
High school education	Sheltered workshop
Special	Testing, vocational aptitude
Vocational education	Therapy, speech
Financial assistance	Union-management relations
Information, employment	Weight reduction
Legal assistance	

Consolidation of the service data made it possible to cross-classify problem and service data within all subsystems. Cross-classification produced matrices which integrated problem-service data and provided a format which was compatible with data processing techniques. The service data for each problem were reviewed and intersections within matrices were darkened when a service-problem intersection was not applicable.

Matrices were developed for all 37 subsystems comprising the Comprehensive Health Problem and Service System.<sup>15-17</sup> In three subsystems (Recreation, Volunteerism, and Well Person), the problem list involved only one or two problems. In contrast, the service lists for these subsystems were very extensive.

### Testing the Comprehensive Health Problem and Service System

The Comprehensive Health Problem and Service System was implemented in 13 diversified referral agencies (see Appendix A, p. 356) which met predetermined criteria:

- They were physically located within the East Los Angeles Health District;†
- They were interested and willing to participate in the study;
- They had at least one part-time paid staff person who maintained a file of available health service resources within the community and who was formally designated to conduct information and referral services.

During the Fall of 1970, on 6 days selected at random, referral workers filled out Referral Agency Report Forms (RARF) developed by SEARCH staff and consultants to determine the nature and disposition of referrals. A complete description of the RARF is presented elsewhere (Part III and Reference 20). In the process of completing RARFs workers, including professionals (e.g., social workers and nurses) and nonprofessionals (e.g.,

† The East Los Angeles Health District is one of the 23 official health districts within the County of Los Angeles Health Department (now Department of Health Services, Community Health Services). It is comprised of areas of unincorporated County territory which include City Terrace, Belvedere, and East Los Angeles, as well as the incorporated cities of Montebello and City of Commerce. In 1970, the district contained a population of 156,260 people<sup>18</sup> and covered an area of 22.7 square miles.<sup>19</sup> District boundaries included: Pomona Boulevard on the North; Slauson Avenue on the South; Indiana Avenue on the West; and Rio Hondo Channel on the East.

secretary-clerks and community and eligibility workers), were asked to identify a health problem for each referral made.\* For example, the problem might be superficial injury or unemployment. In addition, workers were asked to identify the kind of service being sought for the problem, such as first aid measures for the superficial injury or employment counseling for unemployment. Referral workers sent copies of completed RARFs to SEARCH staff and gave copies to consumers to take with them when they visited providers for care. One part of each RARF was a Provider Report Form (PRF)<sup>20</sup> which was to be completed by providers. Like the RARF, a detailed description of the PRF is presented elsewhere (Part III).

Prior to gathering the data from the 13 referral agencies, SEARCH staff had established criteria for sample exclusions.† These criteria were applied to 528 referrals which were made through personal face-to-face interviews on the 6 days during which data were collected. Of the 528 referrals, 57 were excluded. Thus, the sample consisted of 471 consumers who had been referred for care. (For a more detailed description of the sample selection, see Reference 1.)

In 158 cases, providers returned completed PRFs to SEARCH by mail, whereas, in 300 cases, it was necessary for SEARCH to contact providers to obtain completed PRFs (or facsimiles). Of the 471 cases in the sample, completed PRFs were obtained for 458 or 97 per cent of the cases.

SEARCH staff then categorized the problems that were identified by referral agents within the subsystems of the Comprehensive Health Problem and Service System. Further, SEARCH staff categorized services rendered to consumers: if their problems as identified by referral agents were diagnosed as being the same by providers and if they received the same services that they sought. In the latter instance, it was necessary for SEARCH staff to determine if services sought were the same as services rendered.

A 10 per cent random sample of services classified by SEARCH staff were checked by a panel of three health professionals to determine the reliability of SEARCH classifications. This was done by having three health professionals classify the same services independently. When two or three of the panel members agreed that a service sought was the same as the service rendered, the service sought was classified as being the same as the service rendered. In contrast, when two or three panel members

\* A referral was defined as one consumer being sent to one source of care for a single health problem. When a consumer was sent from one unit (for example, department or division) within an agency to another unit within the same agency, this was treated as a single referral. Each transaction involving a referral for a different problem or to a different provider was treated as a separate referral.

† Consumers who (1) refused to give their name and address or were unwilling to participate in the study, (2) did not have a Los Angeles County address, or (3) were not of a legal age to assume responsibility for themselves or were not accompanied by a relative or legal guardian were excluded. When consumers received more than one referral, a single referral was randomly selected.

agreed that a service sought was different from the service rendered, the service sought was classified as being different from the service rendered. The correspondence between classifications by SEARCH and by panel was statistically significant ( $p < 0.01$ ).

Frequency distributions of all identified health problems were calculated by subsystems. Also, frequency distributions of all diagnosed problems and all services rendered were classified by problem-service intersections within subsystem matrices. Comparisons were made between problems identified by professional and nonprofessional referral workers and by referral workers and providers. Comparisons also were made between services sought as identified by referral workers and services rendered by providers.

## Results

### Health Problems

Of the 471 cases in the sample, data from both RARFs and PRFs were analyzed for 97 per cent ( $N = 458$ ) of the cases. When the 458 consumers presented themselves at the initial health agencies, referral workers categorized 271 of these consumers as having medical problems and 187 as having social problems.

Referral workers made provisional diagnoses for 251 of the 271 medical problems presented by consumers. These cases, representing 71 different types of medical problems, were grouped within 15 of the 17 medical subsystems. The remaining medical problems ( $N = 20$ ) were undiagnosed. The frequency of medical problems by subsystem is shown in Table 1. The Dermatology Subsystem contained over one-fifth of the problems referred for medical care.

TABLE 1—Frequency of Medical Problems within Medical Subsystems

Subsystem *	Per Cent	Number
Dermatology	22.8	57
Musculoskeletal	17.1	43
Special senses	8.8	22
Gastrointestinal	7.6	19
Respiratory	7.1	18
Endocrine	6.3	16
Dental	5.6	14
Genitourinary	4.8	12
Neurological	4.0	10
Well Person	4.0	10
Psychiatric	3.6	9
Cardiovascular	3.1	8
Hematological	2.0	5
Other Generalized Infections	2.0	5
Bacterial	1.2	3
Total cases	100.0	251

\* The two Medical Subsystems not represented were the Life and Death Emergencies Subsystem and the Viral Subsystem.

Referral workers made provisional diagnoses for all social problems ( $N = 187$ ) presented by consumers. These cases, representing 56 different types of social problems, were grouped within 14 of the 19 social subsystems. The frequency of social problems within subsystems is shown in Table 2. Clearly, the greatest number of social problems occurred in the Employment Subsystem, with the most common social problem being unemployment.

Of the 458 consumers who came to the initial referral agencies, 302 showed at providers' offices to which they had been referred for care. Of those who showed for care, problems identified by referral workers were compared with diagnoses made by providers. Eighty-eight per cent of the problems identified by referral workers ( $N = 266$ ) were validated by providers as being the same. The fact that consumers with these problems (58 per cent of the 458 cases) received care on their first visits also was validated by providers as being the same. Regardless of whether referral workers in initial referral agencies were professionals or nonprofessionals, their identifications of problems were equally accurate when compared with providers' diagnoses of the problems.

### Health Services

Although referral workers made provisional diagnoses for 438 problems presented by consumers (92 per cent), they identified only 245 services sought by consumers (54 per cent). Although referrals could be made for problems and/or services, referral workers were far less likely to name services than problems.

As mentioned previously, of the 302 consumers who showed for care, providers made the same diagnoses for 266 of these cases, as did referral workers. Of the 266 cases, referral workers also identified services for 134 of the cases. Of the 134 cases, 121 were rendered the same services which they sought.

Regardless of whether referral workers in initial referral agencies were professionals or nonprofessionals, services sought were almost always the same services which were rendered by providers. When services rendered were the same as those sought, 61 different types of medical services and 41 different types of social services were represented. All services which consumers sought were for therapeutic measures with the exception of the services sought for problems categorized within the Well Person Subsystem. These 10 problems required preventive services.

### Distribution of Problems and Services

Since the greatest number of medical problems were categorized in the Dermatological Subsystem and the greatest number of social problems were categorized within the Employment Subsystem, it follows that the greatest number of services rendered were placed into problem-service intersections within the matrices for these two subsystems.

Table 3 shows the distribution of problems and services within the matrix for the Dermatology Subsystem. The

**TABLE 2—Frequency of Social Problems within Social Subsystems**

Subsystem*	Per Cent	Number
Employment	55.6	104
Financial	11.2	21
Food	9.1	17
Family	7.0	13
Government	4.8	9
Housing	3.7	7
Legal	2.7	5
Law Enforcement	1.6	3
Clothing	1.1	2
Consumer Protection	1.1	2
Recreation	0.5	1
Household Essentials	0.5	1
Transportation	0.5	1
Insurance	0.5	1
Total	100.0	187

\* The five Social Subsystems not represented were Disasters, Education, Environmental Health, Veterinary, and Volunteerism.

numbers in each problem-service intersection represent the frequency with which a given service was rendered for a given problem. The same service could be rendered for several different types of problems. Although 57 consumers were referred for dermatology problems only 32 received care (most of the individuals who did not receive care did not present themselves at provider's facilities for care). The largest number of consumers had superficial injuries and were rendered first aid treatment.

The distribution of problems and services within the matrix for the Employment Subsystem is shown in Table 4. As was true in Table 3, the numbers in each problem-service intersection represent the frequency with which a given service was rendered for a given problem. The same service could be rendered for several different types of problems. One hundred four consumers were referred for employment problems and 55 received care. (Again, most of the individuals who did not receive service did not show for service.) Consumers that had unemployment problems and that showed for care were most often rendered employment counseling services. This is not surprising since the study was conducted at a time when the rate of unemployment was unusually high both in East Los Angeles and across the nation.

### Discussion

#### Problems Encountered in the Development of the Comprehensive Health Problem and Service System

Throughout the developmental phases of the Comprehensive Health Problem and Service System, it was necessary to rely continuously upon the expert opinion of consultants. Often it was difficult to obtain a consensus among consultants from the same field, not to mention those from diversified fields.

**TABLE 3—Distribution of Problems and Services within the Matrix for the Dermatology Subsystem**

PROBLEM	SERVICE	ANTI-TOXINS	CANCER CARE	SCREENING	ANTIVENOM	DAY	RESIDENTIAL	CLINICAL EXAMINATION	COUNSELLING	DIETARY	CRISIS INTERVENTION	ELECTRODESICCATION	FINANCIAL ASSISTANCE	FIRST AID	HEALTH EDUCATION	HYPOSENSITIZATION	LABORATORY	HYPERSENSITIVITY	BIOPSY	MEDICAL SUPPLIES	RESIDENTIAL TREATMENT	THERAPY	PHYSICAL	CHEMO	CRYO	INHALATION	VOCATIONAL REHABILITATION	TOTAL SERVICES
DERMATOLOGICAL																												
ABRASIONS																												
ACNE, VULGARIS							3																					3
BURNS, SECOND DEGREE																												
BURNS, THIRD DEGREE																												
CELLULITIS																												
CORNS and CALLOUSES																												
DERMATITIS, CONTACT													1															2
ECZEMA, VACCINATUM																												
IMPETIGO, CONTAGIOSA																												
INSECT BITES														1														1
LACERATIONS																												
PSORIASIS																												
SKIN, CARCINOMA, EPIDERMAL																												
SUPERFICIAL INJURIES							10					14																24
URTICARIA, ALLERGIC (HIVES)														2														2
WARTS																												
TOTAL PROBLEMS																												32

Some of the major issues around which a lack of consensus often existed were as follows: (1) the scope and meaning of health problems and services; (2) establishing levels of specificity for problems and for services; (3) making distinctions between symptoms and problems and between problems and services; (4) classifying types of problems as medical or social (e.g., psychological problems); (5) achieving parallelism among subsystems (e.g., services for medical problems were readily classified as preventive, diagnostic, therapeutic, and rehabilitative whereas services for social problems did not consistently lend themselves to this scheme); and (6) who (providers and/or consumers; professionals and/or nonprofessionals) would utilize the system once it was developed.

**Implications for Further Utilization of the Comprehensive Health Problem and Service System by SEARCH and Others**

The results of this study demonstrated that the Comprehensive Health Problem and Service System met all predetermined criteria. Therefore, it appeared feasible to utilize the system in making an inventory of "all" health service resources within Los Angeles County; that is, to determine for what health problems given organizations provided health services. The inventory of health service

was initiated in the fall of 1971 and results from the inventory are being used to construct a Comprehensive Health Problem and Service Data Bank for Los Angeles County. This data bank is being continuously updated and will support a network of Health Education and Referral Centers throughout the county. It will provide health workers within the Centers with a standardized tool for linking consumers who have health problems with appropriate health service resources. Also, the system will provide health agencies with relevant information for planning, research, education, and evaluation purposes.

A second application of the SEARCH Comprehensive Health Problem and Service System is currently under way in the state of Wisconsin. The Division of Aging, Department of Health and Social Services, is undertaking a study to develop a network of coordinated Information and Referral Systems. The SEARCH System is being utilized for resource file development in over 12 Centers located throughout the state of Wisconsin.<sup>2,1,2,2\*</sup> These Centers will utilize the non-automated adaptation of the SEARCH System.<sup>2,3</sup>

\* This demonstration study is a component of the Information and Referral Center Study being conducted by the Institute of Interdisciplinary Studies in Minneapolis, Minnesota.

**Implications for Personnel Selection and Training in SEARCH Centers**

The results of this study have suggested that whether referral workers are professionals or nonprofessionals is not a critical factor in the providing of health information and referral services. This is based on the fact that the occupational status of referral workers was unrelated to their ability to successfully identify health problems and services sought by consumers. Therefore, criteria for selecting personnel to perform information and referral services within SEARCH Centers will not specify that referral workers must be professionals.

Findings from this study will greatly affect the nature

of preservice and continuing education programs for personnel in SEARCH Centers. All education programs will include instruction in the effective utilization of the Comprehensive Health Problem and Service Data Bank including how to enter and obtain data from the system by problem and/or service categories and by levels of specificity.

**Implications for Future Research by SEARCH and Others**

Questions for investigation include:

- What role did consumers play in helping referral workers to identify their problems? Further research should be conducted to determine the nature of

**TABLE 4—Distribution of Problems and Services within the Matrix for the Employment Subsystem**

EMPLOYMENT	SERVICES																														
	APPRENTICESHIP	BONDING	CIVIL RIGHTS SERVICES	EDUCATION	COLLEGE (UNIVERSITY)	COMMUNITY COLLEGE	CONTINUING COLLEGE	HIGH SCHOOL EDUCATION	SPECIAL	VOCATIONAL EDUCATION (ADULT)	CORRECTIVE LENSES	COUNSELING	EDUCATIONAL	EMPLOYMENT	FINANCIAL ASSISTANCE	INFORMATION ASSISTANCE	LEGAL ASSISTANCE	MEDIATION	EMPLOYMENT	PLACEMENT	PSYCHOLOGICAL EMPLOYER & EMPLOYEE	RECORD SEARLED HELP	SHELTERED WORKSHOP	TESTING	VOCATIONAL APTITUDE	THERAPY	UNION/MANAGEMENT RELATIONS	WEIGHT REDUCTION	TOTAL SERVICES		
EMPLOYMENT . . . . .																															
DISCRIMINATION . . . . .																															
EMPLOYER-EMPLOYEE CONFLICT . . . . .																															
MULTI-EMPLOYMENT . . . . .																															
UNDEREMPLOYMENT . . . . .																															
CONVICTION RECORD . . . . .																															
DISCRIMINATION . . . . .																															
GOALS, UNABLE TO SET . . . . .																															
LANGUAGE LIMITATIONS . . . . .																															
NO MARKET FOR SKILLS . . . . .																															
RESIDENTIAL RESTRICTIONS . . . . .																															
UNFAIR LABOR PRACTICES . . . . .																															
VOCATIONAL OBSOLESCENCE . . . . .																															
UNEMPLOYMENT . . . . .								8				12		5			5						2							32	
CONVICTION RECORD . . . . .																															
FORCED RETIREMENT . . . . .																															
GOALS, UNABLE TO SET . . . . .																															
LANGUAGE LIMITATIONS . . . . .												2																			2
MENTAL-EMOTIONAL CONDITIONS . . . . .																															
NEW TO JOB MARKET . . . . .																															
NO MARKET FOR SKILLS . . . . .																															
PHYSICAL RESTRICTIONS . . . . .																															
RESIDENTIAL RESTRICTIONS . . . . .																															
TESTS, UNABLE TO PASS . . . . .																															
TOOLS, UNABLE TO PURCHASE . . . . .																															
UNFAIR LABOR PRACTICES . . . . .																															
UNSKILLED . . . . .								6				5		1									9							21	
VOCATIONAL OBSOLESCENCE . . . . .																															
TOTAL PROBLEMS . . . . .								14				19		6			5						11							55	

interactions between consumers and referral workers in arriving at provisional diagnoses.

- How can consumers be motivated to utilize preventive services to a greater extent? As stated earlier, only 10 consumers (2 per cent) in this study were referred for preventive services. Other research supports this finding, in that persons from lower socioeconomic areas are unlikely to seek preventive care.<sup>2,4</sup> The value of health education should be tested as a major intervening variable in motivating consumers to seek preventive services. Greater utilization of preventive services should extend and enhance the quality of life, should lower costs associated with health care, and should reduce the burden on the health care delivery system. SEARCH Centers will provide not only health information but health education services as well.\*
- How can the relationship between health services that are demanded and those that are needed be minimized? It was not clear from this study whether the services defined by consumers were the services most needed. Research should be designed to compare demands and needs, and when significant differences exist, techniques should be developed to minimize these differences.

## Summary

The purpose of this study was to develop and test a Comprehensive Health Problem and Service System. The system was based upon predetermined criteria and was designed specifically for a network of Health Education and Referral Centers. Personnel in these Centers will utilize on-line telecommunication techniques as a new tool for enhancing services.

Development of the Comprehensive Health Problem and Service System included compiling health problem subsystems, cataloging health service components, pretesting health problem and service subsystems, and constructing problem-service matrices. Based upon predetermined criteria, 13 referral agencies from a predominantly low-income, ethnic minority community were selected for testing the system. Also, based upon predetermined criteria a sample of cases was drawn from these agencies during the fall of 1970. The sample consisted of 471 consumers who were referred for health care on 6 days selected at random. Data were obtained and analyzed from both referral agencies and providers for 458 of the 471 consumers.

Provisional diagnoses were made by referral workers for 251 of the 271 medical problems and for 187 or all of the social problems. The medical problems represented 71 different types of problems and were categorized within 15 medical subsystems, whereas social problems represented 56 different types of problems and were categorized within 14 social subsystems. The greatest number of medical

\* In this context, health information is concerned with the communication of facts about medical and social services to consumers; whereas health education is concerned with motivating consumers to effectively utilize these services.

problems were classified within the Dermatology Subsystem and the greatest number of social problems were classified within the Employment Subsystem.

Three hundred two of the 458 consumers who were referred for care showed for care at providers' offices. The provisional diagnoses made by referral workers were validated by providers for 88 per cent of those who showed for care. Also, providers validated the fact that these same consumers received care on their first visits. Services were identified by the referral worker in only 134 of the cases. SEARCH staff validated the fact that 90 per cent of these received the same service that referral workers indicated they had sought. Services rendered represented 61 different types of medical services and 41 different types of social services.

Regardless of whether referral workers were professionals or nonprofessionals they were likely to make accurate provisional diagnoses and to identify accurately services sought. However, they were far more likely to make provisional diagnoses than they were to identify services sought.

Almost all services sought and received were for therapeutic measures rather than for preventive measures. The frequency distribution of services within the problem-service matrices revealed that the greatest number of medical services were categorized as first aid for superficial injuries and the greatest number of social services were categorized as employment counseling for unemployment.

Problems encountered in the development of the Comprehensive Health Problem and Service System were identified and further utilization of the System by SEARCH and others was discussed. In addition, implications for personnel selection and training in SEARCH Centers were discussed as were implications for future research by SEARCH and others.

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### III. A System for Tracking Referrals

#### Introduction

People everywhere are referred for health care and, in some instances, they are followed to determine the outcomes of these referrals. However, few systematic referral tracking methods have been developed and implemented.

This study of health referral patterns was conducted to develop a referral tracking system and other methodologies pertinent to an on-line telecommunications network of Health Education and Referral Centers which soon will be in operation within Los Angeles County. These Centers will be located within existing facilities of cooperating organizations and will be a part of the SEARCH: A Link to Services research and development project at the University of Southern California, School of Medicine.

While this report focuses upon the tracking system, other related reports in the series focus upon: (1) the construction and testing of a conceptual model for measuring referral outcomes, (2) the development of a system for classifying health problems and services, and (3) factors related to referral outcomes (Parts I, II, and IV).

A referral was defined as one consumer being sent by

an initial referring agency to a provider for a single health problem.\* The outcome of a referral was a function of the initial referring agency, the consumer, and the provider to whom the consumer was referred for health care.†

The tracking system that was developed for SEARCH needed to meet the following predetermined criteria: (1) would follow consumers having either medical or social problems, (2) would follow consumers when they were referred within the same organizations, (3) would follow consumers to either individual or organizational providers, (4) would follow consumers into their home, and (5) would permit comparisons among data collected from the three parties involved in the referral process (referral agencies, providers, and consumers). The tracking system that was ultimately developed met each of these criteria.

\* Initial referring agencies are those medical and social organizations which refer individuals to providers of health care. Consumers are patients, clients, or users of services, whereas providers are individuals or organizations which render health care.

† Health care includes medical and/or social services of a preventive, diagnostic, therapeutic, or rehabilitative nature.

## Method

Overall coordination for the development and implementation of the tracking system was guided by means of Program Evaluation and Review Technique (PERT). This systematic planning effort allowed major events and tasks involved in the tracking system to be projected prior to implementation. Major events involved development of data-gathering forms, pretesting of forms, sample selection, and implementation of the tracking system. These events are discussed in the following paragraphs.

### Development of Data-Gathering Forms

Three data-gathering forms were prepared to assist in implementing the tracking system and to link: (1) consumers with referral agencies, (2) referral agencies with providers of health care, and (3) consumers with providers of health care. These forms were identified as the Referral Agency Report Form (RARF),<sup>1</sup> the Provider Report Form (PRF),<sup>1</sup> and the Consumer Report Form (CRF).<sup>2</sup> They were developed by SEARCH staff with assistance from the SEARCH Advisory Board for Los Angeles County\* and special consultants.

### REFERRAL AGENCY REPORT FORM (RARF) AND PROVIDER REPORT FORM (PRF)

The RARF and PRF were developed as a single composite form, analogous to the multicopy receipts used with most credit cards. The composite form consisted of three pages. Each of these pages was easily detached from the others. The first page was the RARF, the second page was a duplication of the first page, and the third page was a combination of the RARF and the PRF.

The RARF contained the following information about the referral agency, the consumer, and the provider:

- I. Referral Agency
  - A. Name of agency
  - B. Name of referral worker
  - C. Health occupation of referral worker
- II. Consumer
  - A. Name
  - B. Address
  - C. Telephone number
  - D. Age
  - E. Sex
  - F. Signature (for release of information requested on the PRF)
  - G. Description of problem (medical or social)
  - H. Kind of service sought
- III. Provider
  - A. Name
  - B. Address
  - C. Telephone number

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\* The Board represents a broad spectrum of major health providers in Los Angeles County and advises on policy for the development of the project.

- D. Person consumer to see at provider's office
- E. Consumer appointment time with provider or estimated date of appointment

The PRF contained all of the same information presented on the RARF with the exception of the kind of service sought, the name of the referral worker, and the health occupation of the referral worker. In addition, the PRF provided the following information about the disposition of the referral:

- I. Service provided
  - A. Date
  - B. Problem for which service was rendered
  - C. Kind of service rendered
- II. No service provided (reason(s) for no service)

The RARF and PRF were brief, concise, and easy to read. They contained terminology understandable to all three parties involved in the referral process. The RARF could be easily separated from the PRF and the PRF could be returned by mail to SEARCH as a postcard.

### CONSUMER REPORT FORM (CRF)

The CRF was developed as a separate three-page interview schedule. It contained information about the characteristics of the consumer, the problems he had in reaching care, and his perceptions regarding the disposition of his referral:

- I. Characteristics of consumer
  - A. Ethnicity
  - B. Occupation
  - C. Medicare card
  - D. Medical card
- II. Kinds of problems consumer had in reaching care
  - A. Transportation
  - B. Hours of service availability
  - C. Language
  - D. Child care
  - E. Parking
  - F. Financial
  - G. Waiting time at provider's office
- III. Disposition of referral
  - A. Whether or not the consumer went to the provider
  - B. If yes, when?
  - C. If no, reasons for not seeking care
  - D. Was service rendered by provider?
  - E. If no, reasons for not rendering care
  - F. Number of visits to other providers for referral problem

### Pretesting Data-Gathering Forms

Before the data collection forms could be finalized and implemented, they were pretested on a small number of referrals. One case was selected representing the first consumer from each of 13 diversified referral agencies (Appendix A, p. 356) who was referred on a designated pretest day. The three data-gathering forms were used to collect information on each of the referrals. Findings from the pretest were utilized to revise the forms.



## Sample Selection

Data collection was carried out in 13 referral agencies located in the East Los Angeles Health District,\* a predominantly low-income ethnic minority community. These agencies all met predetermined criteria:

- They were physically located within the East Los Angeles Health District;
- They were interested and willing to participate in the study;
- They had at least one part-time paid staff person who maintained a file of available health service resources within the community and who was formally designated to conduct information and referral services.

For a total of 6 randomly selected days,† health workers in the 13 initial referring agencies completed RARFs for all consumers who were referred on these days. A total of 528 RARFs were collected, but 21 were excluded for one of the following reasons: (1) consumer did not have a Los Angeles County address, (2) consumer refused to participate in a study, (3) consumer was not of a legal age to assume responsibility for himself or was not accompanied by a relative or legal guardian. Only one referral was considered for each consumer; therefore, for the 35 consumers with multiple referrals (34 double, one triple) one referral was chosen at random. Thus, the total sample population consisted of 471 consumer referrals.

## Implementation of Tracking System

A flow diagram of the tracking system developed and used in this study is presented in Figure 1. The system includes the entire sequence of events from the time a consumer first went to a referral agency to the time his case was closed and data were analyzed.

Once a consumer qualified for inclusion in the sample, two series of events took place concurrently. One series of events involved the determination of whether the consumer presented himself for care and the retrieval of the PRF from the provider. The second series of events was concerned with interviewing each consumer and the completion of his CRF. Both the PRF and the CRF were completed for almost all consumers in the sample.

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\* The East Los Angeles Health District is one of the 23 official health districts within the County of Los Angeles Health Department (now Department of Health Services, Community Health Services). It is comprised of areas of unincorporated County territory which includes City Terrace, Belvedere, and East Los Angeles, as well as the incorporated cities of Montebello and City of Commerce. In 1970, the District contained a population of 156,260 people<sup>3</sup> and covered an area of 22.7 square miles.<sup>4</sup> District boundaries included: Pomona Boulevard on the North; Slauson Avenue on the South; Indiana Avenue on the West; and Rio Hondo Channel on the East.

† The collection days were Wednesday, October 14; Wednesday, October 21; Thursday, October 29; Friday, November 6; Tuesday, November 10; and Monday, November 16, 1970.

## INITIAL REFERRAL AGENCIES

Since full cooperation of the 13 referral agencies was critical to the success of the study, all agency administrators were contacted by letter and visited by SEARCH staff. Several pertinent topics were discussed during these visits, including: (1) clarification of agency personnel who would coordinate activities with SEARCH; (2) plan for training of referral workers; and (3) times and places for delivering and for picking up data collection materials.

Training sessions for referral workers were conducted by SEARCH staff, by agency management, or by both. Socratic and didactic methods were used, with emphasis being placed on demonstration and question-and-answer techniques. Training sessions centered around the RARF, the PRF, and a Manual of Procedures.<sup>5</sup> ‡ Thus, the basic content of these sessions was held constant.

Preferred times and places for deliveries of data collection materials varied with each agency. Most agencies requested that SEARCH deliver materials to the office of a coordinator the morning before each collection day. The coordinator then distributed materials to referral workers.

Following each collection day, referral workers returned completed RARFs to the coordinator in their agency. These forms were then picked up by SEARCH staff.

## PROVIDERS

SEARCH selected and employed 11 part-time interviewers to collect completed PRFs which were not returned by mail. These interviewers were undergraduate college students and medical students who had available transportation and telephones and who were recommended by their academic advisors.

SEARCH staff conducted a training program for these interviewers. The program focused on the nature of this study and on techniques to employ in following up selected providers of health care. At the time consumers were referred for care by health workers in initial referral agencies, they were asked to hand-carry PRFs to individual and/or organizational providers.

The PRF contained information regarding its purpose and instructions for completing and returning it to SEARCH. As with referral agencies, the cooperation of providers was critical to the success of this study. In those cases when PRFs were not returned to SEARCH within 1 week following the consumer's appointment date with the provider, an interviewer contacted the provider by phone or in person if necessary.

Often, the PRFs could not be obtained from providers because consumers had not presented themselves for care. In these instances, interviewers gave providers facsimiles of

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‡ The Manual consisted of general and specific instructions, including dialogs and illustrations, about how to complete the RARF and how to interpret the PRF to the consumer. In addition, data collection procedures were identified and described.

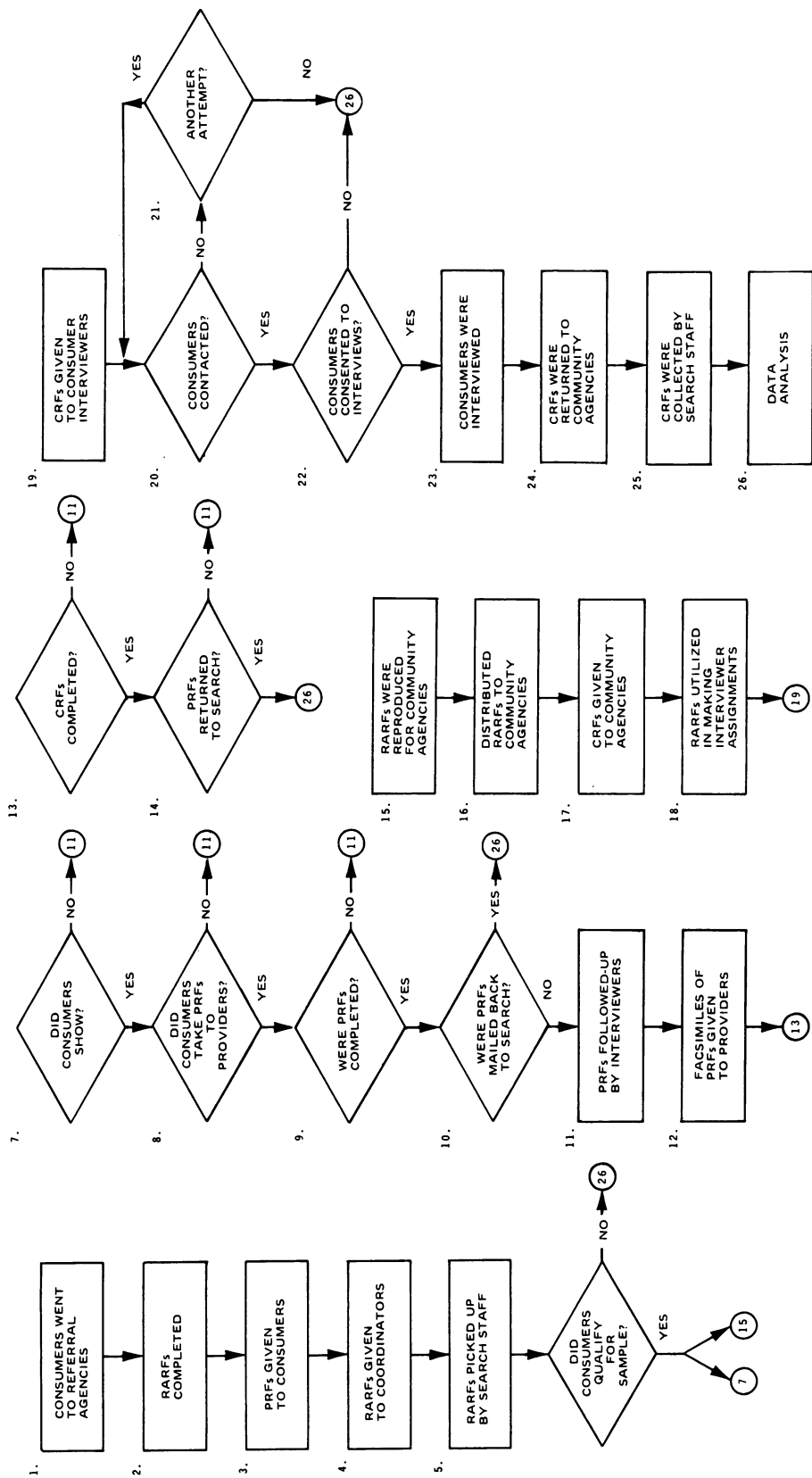


FIGURE 1 Flow diagram of tracking system.

the PRFs at the time of the interviews. If providers were unable to complete facsimiles of the PRFs at that time, interviewers also gave providers reply envelopes and asked them to complete the forms and return them to SEARCH at their earliest convenience. These providers usually returned the forms, but in those few instances when providers still did not return their forms within a week, they were again contacted. Interviewers made every possible and reasonable effort to complete every case.

The SEARCH staff randomly verified 10 per cent of the PRFs which were completed by the interviewers. They found that these forms had been accurately completed.

## CONSUMERS

SEARCH selected a community agency to utilize the CRF in administering consumer interviews. In cooperation with SEARCH the agency assumed responsibility for selecting, recruiting, and training a group of interviewers and supervisors from the local community. It should be noted that these consumer interviewers were a separate and distinct group from provider interviewers.

Criteria for selecting interviewers and supervisors included such factors as concern with the health problems of the people of the East Los Angeles area; interpersonal, bilingual, and leadership competencies; and availability of transportation and telephone. Based upon predetermined criteria 12 interviewers and two supervisors were selected and employed.

Supervisors were oriented by community agency personnel and SEARCH staff to this study and to their training and supervisory responsibilities. Training of interviewers by SEARCH staff included an orientation to this study and to the CRF through discussion, demonstration, and role-playing activities.

The community agency was provided with a supply of CRFs by SEARCH. After each data collection day, RARFs that had been completed by initial referring agencies were reproduced by SEARCH staff and delivered to the community agency. Information from the RARFs was then used by supervisors to identify and locate consumers to be interviewed. Completed CRFs were picked up each week from the community agency by SEARCH staff.

Supervisors, in cooperation with SEARCH staff, delegated, routed, and followed up interviewer assignments each day. They also were responsible for evaluating the work of interviewers. Supervisors periodically observed interviewers to measure their performance. In addition, 10 per cent of the interviews were verified and all CRFs were reviewed for completeness and accuracy by supervisors and SEARCH staff. All consumers that could be located were contacted and, if they were willing, they were interviewed. Interviews for the most part were conducted in the consumers' homes at times convenient to them, during either day or evening hours.

When interviewers had repeated difficulty completing certain CRFs, they discussed these cases with their supervisors. Sometimes, additional information helped interviewers to locate consumers, or at other times,

supervisors reassigned cases to other interviewers. Before cases were "closed," multiple attempts, sometimes as many as 12, were made in an effort to complete consumer interviews.

## Results

### Sample Statistics

A total of 528 RARFs were collected from the 13 agencies on the 6 data collection days. In all, 57 referrals were excluded: 21 because consumers did not qualify and 36 because individual consumers had more than one referral. Thus 471 referrals, each representing a different consumer, were tracked to determine referral outcomes. Of this number, 458 PRFs (97 per cent) were completed by providers. Slightly more than a third of these (158) were returned by mail, whereas approximately two-thirds (300) were completed through personal contacts by interviewers. Concurrently, CRFs were completed for 424 of the 471 consumers (90 per cent).

### Referral Statistics

Initial referring agencies sent 175 referrals to individual providers, whereas they sent 283 referrals to organizational providers. As would be expected, each referral was not sent to a different provider. In fact, the 283 referrals to organizational providers were sent to 77 different organizations and the 175 referrals to individual practitioners were sent to 61 different practitioners.

Initial referring agencies also were providers of health care. Those referring agencies providing predominantly medical services were most likely to refer to private practitioners. These practitioners were almost always physicians (rather than psychologists, social workers, or nurses). Those referring agencies providing predominantly social services were more likely to send consumers to organizational providers.

Referring agencies often made referrals within their own organizations. In fact, the organization receiving the greatest number of referrals received over 70 per cent of those referrals from health workers within their own organization.

### Correlations among Sources of Information

Since the tracking system provided a linkage between all three parties involved in the referral process, it permitted comparisons to be made between initial referring agencies and providers and between providers and consumers. Comparisons among variables common between the three data-gathering forms showed a high degree of correlation. The RARF permitted an identification of the health problem for which the consumer was referred to the provider for care. The PRF also permitted an identification of the health problem for which care was sought. When these two variables were compared, the health problem

initially identified by the referral agent was confirmed by the provider of care.

Further, the PRF revealed whether or not the consumer showed for care at the provider's office. The CRF elicited the same information from the consumer's point of view. A high correlation was found between whether consumers reported that they showed for care and whether providers reported that consumers came for care. If the consumer showed for care at the provider's office, he was most likely to receive care for the problem for which he was referred. Reasons stated by providers on PRFs for rendering or not rendering care were confirmed by reasons given by consumers on CRFs for receiving or not receiving care. Agreements among these variables pointed up the consistency of data reported among referral agents, providers, and consumers and demonstrated that the information collected via the tracking system was reliable.

### *Discussion*

The tracking system which has been described in this report was considered successful because the vast majority of consumers were followed through the referral process, and the system met predetermined criteria (see Introduction).

Two elements of major importance which were integrally associated with the tracking system will be discussed in this section. These elements include forms and procedures and community organization and involvement. In addition, implications for extended usage of the tracking system will be discussed.

#### **Forms and Procedures**

The nature of the forms and their interrelationships contributed to the operational feasibility of the tracking system. The forms were concise, were easy to read, utilized terminology understandable to the users, and allowed for the identification of important variables associated with the three parties involved in the referral process. The signature of the consumer on the RARF, obtained at the time of the referral, permitted the release of information by the provider and represented a tacit commitment on the part of the consumer to participate in follow-up interviews. The PRF was easy to mail since it was detachable from the RARF, and once detached became a postcard.

Each referral was given an individual identification number. This number appeared on all three forms associated with the referral and simplified the logistics of data handling and processing. This allowed information about the consumer which was collected at different points in time, at different locations, and from different parties to be interrelated. The ability to interrelate the parties in the referral process was enhanced by the use of multiple copies of two of the forms. Because multiple copies were used, it was possible to provide parties with facsimiles in cases where further duplication was necessary.

#### **Community Organization and Involvement**

The tracking system would not have been successful without the cooperation and involvement of many groups of individuals in the community. These included consumers seeking care, the initial referring agencies and their referral agents, the providers of care, the community agency responsible for consumer interviewers, and provider and consumer interviewers.

The involvement with the community required many hours of individual and group contacts. These contacts included orientation and commitment to participate as well as training sessions and daily visits with those who were providing and collecting data.

After referrals had been made, the immediacy of following up contacts appeared to be a critical element in the success of the tracking system. Within 1 week following a consumer's estimated or actual appointment for care, both providers and consumers were contacted. When the first contact was unsuccessful, repeated contacts were made. Thus, the tracking system required continuing vigilance on the part of SEARCH staff.

#### **Implication for Further Utilization of the Tracking System by SEARCH and Others**

The tracking system developed and implemented in this study will be replicated for walk-in clients within SEARCH Health Education and Referral Centers. The system will be modified to accommodate those clients who call SEARCH Centers for services. A periodic random sample of consumers who are referred for care from SEARCH Centers will be followed. The purpose of this follow-up will be to determine the disposition of referrals and to provide an important measure of the effectiveness of Referral Center services.

The total tracking system, or selected elements of the system, also should have applicability for other referral systems throughout the country. This seems particularly important at this time in history since federal and state governments are mandating that many agencies provide information and referral services. Further, these services must be monitored to determine the proportion of appropriate referrals and the quality of services rendered. The tracking system described here would provide a method for achieving these goals.

### *Summary*

This report focused upon the development and implementation of a health referral tracking system. Methods included preparation and pretesting of data-gathering forms, sample selection, and actual tracking. Three forms were used to collect data from those parties involved in the referral process: the initial referring agency, the provider, and the consumer. The total sample consisted of 471 consumers who were referred for health care from 13

diversified agencies within a low-income ethnic minority community. The tracking system was applied to this sample to determine the disposition of consumer referrals.

Referrals involving both medical and social problems were followed. These referrals were tracked both within and between organizations and both to individual and to organizational providers.

Provider Report Forms were obtained for 97 per cent of the total sample and Consumer Report Forms were completed for 90 per cent of the total sample. Data obtained from referring agencies, providers, and consumers showed a high degree of agreement. These results, in addition to the fact that the system met predetermined criteria, point toward the overall effectiveness of the tracking system.

#### ACKNOWLEDGMENTS

*Special recognition is given to Mr. John Nulton for his outstanding leadership in managing field operations. Also, an expression of appreciation is extended to Mrs. Armida*

*K. Soria and Mrs. Petra St. Marie for their exceptional work in supervising consumer interviewers.*

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## IV. Factors Related to Referral Outcomes

### Introduction

Each year an untold number of Americans need health care,\* but never seek help for their problems. Others seek help through health information and referral services. Yet, after having obtained these services they never follow through by utilizing the health care services to which they were referred. At the time information and referral services are rendered, what factors have an impact upon subsequent utilization behavior? After being referred for health care what factors intervene to determine whether or not persons present themselves for care? If consumers present themselves for care, do they receive care? These are some of the questions addressed in this report. Answers to these questions were sought to assist SEARCH: A Link to Services, a research and development project, at the University of Southern California, School of Medicine, in the design of an information and referral service which will enhance the outcomes of referral within Los Angeles County.

SEARCH will consist of a network of Health Education and Referral Center linked to a central time-sharing computer facility. A data bank will be maintained at the central computer facility which will contain a description of services in the county. These will be comprehensive in

nature and will include (1) public and private services, (2) preventive, diagnostic, therapeutic, and rehabilitative services, (3) medical and social services, and (4) organizational and individual providers who render services.

Health workers in SEARCH Referral Centers will query the data bank for information. It is expected that the SEARCH System will enhance the referral process, thereby enabling more consumers† who have health problems and who need help to reach appropriate sources of health care. The information in the data bank also will support the planning efforts of other community organizations, particularly those provider groups represented on the SEARCH Advisory Board for Los Angeles County.‡

In designing the SEARCH System, it was necessary to (1) construct and implement a conceptual model for measuring the outcomes of referrals, (2) develop and implement a system for classifying consumer health problems and services, (3) devise and implement a system for tracking consumers who were referred for health care, and (4) evaluate the significance of a number of variables related to outcomes of referrals. Results of the first three developmental components have been reported elsewhere (Parts I to III). This report focuses upon the significance of independent and intervening variables associated with referral outcomes.

\* Health care includes medical and/or social services of a preventive, diagnostic, therapeutic, and rehabilitative nature.

† Consumers are patients, clients, or users of services.  
‡ The Board represents a broad spectrum of major health providers in Los Angeles County and advises on policy for the development of the project.

## Method

### Selection of Referral Agencies

Knowing that people, particularly those in low-income, ethnic minority communities, have difficulty obtaining health services we decided to conduct this study in such a setting. Thirteen initial referral agencies\* (see Appendix A, p. 356) from which consumers were referred for care were selected from the East Los Angeles Health District.† These agencies met the following criteria:

- They had a health facility which was physically located within the East Los Angeles Health District.
- They were interested and willing to participate in the study.
- They had at least one part-time paid staff person who maintained a file of available health service resources within the community and who was formally designated to conduct information and referral services.

Details concerning the selection of the 13 agencies and the fact that they compared favorably with "typical" health information and referral services within Los Angeles County are described elsewhere (Part I and Reference 3).

### Selection of Sample

Data were collected from the 13 referral agencies on 6 days.‡ On each of these days, health workers in the agencies gathered information pertaining to individuals whom they interviewed in person and referred elsewhere for care. (Telephone referrals were not included.) These 6 days yielded a total of 528 referrals. From this total, 21 consumers were excluded. Sixteen of these refused to give their name and address or were unwilling to participate in the study, one did not have a Los Angeles County address, and four were not of legal age to assume responsibility for themselves or were not accompanied by a relative or legal guardian. In addition, 36 referrals were excluded in those cases in which consumers received more than one referral. For those consumers who were referred to more than one

\* Initial referral agencies are those agencies which refer consumers to providers for health care.

† The East Los Angeles Health District is one of the 23 official health districts within the County of Los Angeles Health Department (now Department of Health Services, Community Health Services). It is comprised of areas of unincorporated County territory which include City Terrace, Belvedere, and East Los Angeles, as well as the incorporated cities of Montebello and the City of Commerce. In 1970, the District contained a population of 156,260 people<sup>1</sup> and covered an area of 22.7 square miles.<sup>2</sup> District boundaries included: Pomona Boulevard on the North; Slauson Avenue on the South; Indiana Avenue on the West; and Rio Hondo Channel on the East.

‡ One day during each of 6 weeks was selected. Each day of the week was represented and was randomly assigned to one of the 6 weeks. The actual collection days were Wednesday, October 14; Wednesday, October 21; Thursday, October 29; Friday, November 6; Tuesday, November 10; and Monday, November 16, 1970.

source of care, only one of the referrals was chosen at random to remain in the sample. Thus, the final sample consisted of 471 consumers who were referred for health care. A referral was defined as one consumer being referred to one source of care for a single health problem.§

### Referral Follow-Up

Four hundred seventy-one consumers were followed to determine the disposition of their referrals. Three forms, which were an integral part of the referral tracking system, were utilized for data-gathering purposes. These forms and the types of data which they were structured to obtain are identified as follows:

- Referral Agency Report Form—identification of referral agencies and health workers making referrals, the characteristics of consumers, a description of health problems and services sought, and identification of providers and appointment particulars.
- Provider Report Form—services either rendered or not rendered by providers.
- Consumer Report Form—additional characteristics of consumers, the kinds of problems they had in reaching care, and the disposition of their referrals.

### Selection of Variables

Three types of variables were employed in this study. These included independent, intervening, and dependent variables. Independent variables were those which were related to the consumer and which existed at the time the consumer presented himself at the referral agency. The dependent variable was concerned strictly with the outcomes of the referrals, whereas the intervening variables were those arising from the referral process which might influence the referral outcome. Each of the independent and intervening variables was selected as a result of findings from other studies.<sup>4-21</sup> These variables, in addition to the dependent variable, are listed in Table 1.

### Outcomes of Referrals

Dispositions of referrals were categorized within a conceptual model, which had been constructed for this study (Part I). According to the model, one of three outcome statuses could result from a referral, that is:

<i>Status I</i>	<i>Status II</i>	<i>Status III</i>
Show Care	Show No care	No show No care
Appropriate	Inappropriate	Undetermined

§ When a consumer was sent from one unit (for example, department or division) within an agency to another unit within the same agency, this was treated as a single referral. Each transaction involving a referral for a different problem or a different provider was treated as a separate referral.

**TABLE 1—Variables**

Independent	Intervening	Dependent
Consumer's	Health occupation of referral worker	Outcome of referral
Sex	Size of referral agency	
Age	Kinds of problems consumer had in reaching care:	
Place of residency	Transportation	
Type of health problem	Hours of service availability	
Kind of service sought	Language	
Ethnicity	Child care	
Occupation	Parking	
Number of visits to other health facilities for referral problem	Financial	
Possession of a Medicare card	Waiting time at provider's office	
Possession of a MediCal card	Time lag between referral and appointment for care	
	Time lag between referral and receipt of care	
	Distance between consumer's home and provider's office	
	Type of provider	
	Person consumer to see at provider's office	
	Consumer appointment time with provider	

Status I would result when a consumer who was referred by an agency showed at the provider's office and received care for the problem for which he was referred. The outcome of this referral was defined as appropriate.

Status II would result when a consumer who was referred by an agency showed at the provider's office but did not receive care. This referral outcome was defined as inappropriate.

Status III would result when a consumer who was referred by an agency did not show at the provider's office and did not receive care from this provider on a given date. This referral outcome was defined as undetermined.

The data-gathering forms permitted the disposition of the referral to be assessed from both the provider's and the consumer's points-of-view. In the analysis of the data, the outcome of a referral as defined by the provider was utilized as the criterion variable. This decision was made for three major reasons:

- Providers obtained the information from patient records which were official documents;
- A high correlation ( $p < 0.01$ ) existed between provider and consumer reports of outcomes of referrals;
- A greater number of Provider Report Forms (97 per cent of the sample) were available than were Consumer Report Forms (90 per cent of the sample).

## Results

Of the 458 referrals, 266 were classified in outcome Status I, 36 were classified in outcome Status II, and 156

were classified in outcome Status III. Thus, if consumers showed for care, they were likely to receive care. The largest proportion of those who did not receive care did not show for care. Only a very small proportion of those who showed for care did not receive care.

Since it appeared that whether or not consumers received care depended largely upon whether consumers showed at the provider's place of service, factors related to outcomes of referrals were analyzed in terms of shows versus no shows.

### Factors Related to Shows Versus No Shows

Independent and intervening variables—focusing on initial referral agencies, providers, and consumers—were compared on the basis of shows versus no shows. None of the independent variables, as listed in Table 1, were significantly related to outcomes of referrals. Interestingly, most consumers (77 per cent of the total sample) reported that they had not been elsewhere to obtain help for their referral problems. In 23 per cent of the cases in which consumers had gone elsewhere prior to their contact with a referral agency, they usually had visited less than three other providers.

Intervening variables were correlated with outcomes of referrals. The first group of intervening variables pertained to the size of the referral agency and to the occupation of referral workers. Neither of these two variables was significantly related to whether consumers showed for care.

The second group of intervening variables were corollary problems which consumers had in reaching care. It should be made clear that these corollary problems—lack of transportation, no parking, inconvenient service hours,

waiting time at providers' places of service, no one to care for children, lack of financial resources, and limited English language competencies—were not the problems for which consumers were referred for care. Surprisingly, none of these corollary problems was significantly related to whether consumers showed for care. In fact, consumers showed for care in spite of corollary problems.

The third group of intervening variables, concerned with time and with distance, were not significantly associated with whether or not consumers showed for care. The mean time lag between the referral and the appointment was 3.5 days with a maximum of 39 days. Because the majority of consumers received care on their first appointment date, there was little difference in the time lag between referral and appointment and between referral and receipt of care. Further, the mean distance between the consumer's home and the provider's place of service was 4.5 miles, with the greatest distance being 35 miles.

Finally, the fourth group of intervening variables were those associated with the provider. The first of these variables, namely type of provider (organizational or individual), was not significantly related to shows versus no shows. The other two variables, whether or not the person the consumer was to see at the provider's office was named at the time of the referral and whether or not the consumer was given an appointment time with the provider, were significantly associated with outcomes of referrals.

As shown in Table 2, consumers who were referred for health care and who received appointments with providers were much more likely to show than were consumers who did not receive appointments ( $p < 0.01$ ). Also, as shown in Table 2, consumers who were referred for health care and who were given the name of a person to see were much more likely to show than were those who were not given the name of a person to see ( $p < 0.01$ ). The consumer's appointment time and the person he was to see were interrelated since when an appointment was made there was a greater likelihood that a contact person also would be named ( $p < 0.01$ ).

## Discussion

### Non-Impediments to Health Care

The results of the present study are noteworthy in that they contradict certain preconceived notions of why people

do not receive health care. For example, it is often said that people do not go for health care because of problems associated with transportation, hours of service availability, language, child care, parking, finances, and waiting time at the provider's office. In this study, these factors apparently did not impede consumers from obtaining health services—at least on the first visit—since consumers with these corollary problems were as likely to show for care as were consumers without these problems.

### Rogawski Study

Similarities between this study and the Rogawski study<sup>1,2</sup> merit special attention. Both studies were conducted in Los Angeles County and both studies examined factors affecting outcomes of interagency referrals. Results were highly compatible in that in neither study were consumer characteristics significantly associated with outcomes of referrals. Likewise, intervening variables pertaining to distance and to the occupation of referral workers were not related to referral outcomes in either study. Both studies found the success of a referral was highly associated with techniques utilized during the interaction between the referral agent and the consumer. This points out the referral agent's critical link between the consumer and the provider.

### Implications of Findings for SEARCH and Others

The significant findings from this study, relating to making appointments for consumers seeking care and designating contact persons for consumers to see, will affect the nature of training programs for personnel in SEARCH Health Education and Referral Centers. In addition, these findings point up the need for the programming of an appointments subsystem as an integral part of the on-line telecommunications system for SEARCH Centers.

If consumers are to receive care, they must be motivated to show for care. Part of this motivation may come from the commitment for follow-up action which is implicit in the process of setting up an appointment and of naming a person to contact. Part of this motivation also most likely will come from other effective follow-up patterns (such as a written notice and a telephone call to a

TABLE 2—Factors Related to Shows\*

Variables	Per Cent and Number of Cases Showing for Care				Level of Significance
	Per Cent	Number	Per Cent	Number	
Appointment	Yes		No		$p < 0.01$
	53.8	162	46.2	139	
Name of person to see	Yes		No		$p < 0.01$
	73.2	221	26.8	81	

\* All relationships are tested by means of chi-square analysis with one degree of freedom.



consumer between the initial referral and the subsequent appointment for care)<sup>17</sup> and from accompanying health education processes. These concepts should be further examined through controlled experimental research.

### Summary

This report examined factors affecting outcomes of referrals for health problems. Referrals were made by 13 diversified agencies located in the East Los Angeles Health District, each of which had at least one part-time paid person designated to perform information and referral services.

Data were collected on a total of 471 consumers each with a single referral. Three forms were used for data acquisition, namely (1) the Referral Agency Report Form (RARF), (2) the Provider Report Form (PRF), and (3) the Consumer Report Form (CRF). A RARF was completed for all consumers while PRFs were obtained for 97 per cent of the sample, and CRFs were completed for 90 per cent of the sample.

Analysis of the data revealed that only a small percentage of those consumers that showed for care did not receive care. Since approximately 34 per cent of the sample did not show for care, factors related to outcomes of referrals were analyzed in terms of shows versus no shows.

None of the 11 independent variables were significantly related to outcomes of referrals. Similarly 13 of the 15 intervening variables were not significantly related to referral outcomes. The two intervening variables that were significantly associated with referral outcomes were: (1) whether the consumer was given a specific appointment with a provider and (2) whether the consumer was given the name of a person to see at the provider's office. Those consumers given appointments and/or the name of a person to contact were more likely to show than other consumers.

Primary findings from this report also involve the lack of association discovered between corollary problems of consumers, such as lack of transportation or finances, and whether they showed for care. The fact that corollary problems did not impede consumers from obtaining health services—at least on the first visit—came as a surprise.

Clearly it is necessary to show for care to receive care, and the greatest majority of those consumers who showed for care received care. Similarities between findings from this study and the Rogawski study as well as implications of findings for SEARCH and other information and referral services were discussed.

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**APPENDIX A  
EAST LOS ANGELES REFERRAL AGENCIES**

Beverly Community Hospital  
 Catholic Welfare Bureau of the Archdiocese of Los Angeles,  
 Catholic Community Services Project, East Los Angeles  
 Parish Service Division  
 Cleland House of Neighborly Service  
 County of Los Angeles, Health Department,\* East Los  
 Angeles District Health Center, Maravilla Sub-Center  
 County of Los Angeles, Hospitals Department,† Bureau of

\* Now Department of Health Services, Community Health Services.

† Now Department of Health Services, Hospitals and Clinics.

Medical Social Service: Belvedere Medical Aid District  
 County of Los Angeles, Hospitals Department,‡ East Los  
 Angeles Child and Youth Clinic  
 County of Los Angeles, Mental Health Department,‡  
 Regional Mental Health Service, East Los Angeles  
 County of Los Angeles, Public Social Services Department,  
 Belvedere District  
 Crippled Children's Society of Los Angeles County, Inc.,  
 Regional Center, East  
 Los Angeles Unified School District, Garfield High School  
 Montebello Unified School District  
 Eastmont Junior High School  
 Eastmont Elementary School  
 Plaza Community Center  
 Eastmont Center  
 Guadalupe-Maravilla Center  
 La Casa de Esperanza  
 State of California Service Center Program, East Los  
 Angeles Service Center

‡ Now Department of Health Services, Mental Health Services.

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