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Building an information and referral resource for San Bernardino County

Samuel George Wilson

BUILDING AN INFORMATION AND REFERRAL RESOURCE FOR

SAN BERNARDINO COUNTY

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A Project

Presented to the

Faculty of

California State University,

San Bernardino

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In Partial Fulfillment

of the Requirements for the Degree

Master of Business Administration

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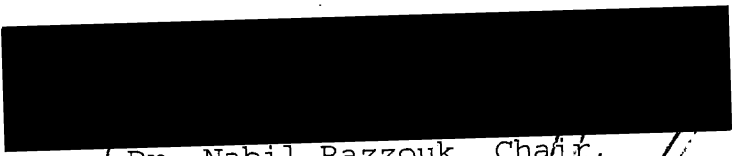by

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Samuel George Wilson

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ABSTRACT

This paper proposes the development and maintenance of a public website that identifies major medical resources in San Bernadino county. The demographic conditions in San Bernadino County and the unfulfilled health care needs and absence of coordination are outlined. The paper deals with Information and referral as a public service as well as implementation and public education about the resource. Finally the paper suggests that this resource can be used as a tool to track trend and plan for healthcare needs in the county.

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CHAPTER ONE

INTRODUCTION

The dissemination of information about the patchwork of health care resources available in San Bernardino County is an important public health education project worthy of the investment of financial and intellectual capital.

This is a proposal for the development of a web-based repository for health care information, to improve public access to health care within San Bernardino County. The repository will be named the San Bernardino County Medical Information Resource (SBCMIR). It will be a computerized database of available health care resources within the county of San Bernardino with a user-friendly interface accessible through the World-Wide Web. The identical database will also be available via a telephonic network for those citizens lacking access to the web.

It is the assumption of this proposal that people in need of Health and Human Services can be better served if they are provided with tools that allow them easy access to relevant information.

Already there are a number of resource directories available, but none like the one this paper proposes. The most popular resource directory currently available is "The Rainbow Resource Directory" which was developed by Glenda Riddick, Associate Professor at Orange Coast College. This directory, however, is not available online and has to be ordered periodically to ensure that the information provided is current. Unfortunately, like most printed directories, some of its information is already outdated by the time it is published. Its listings include major governmental agencies but do not include geographical data on pharmacies, physicians or dentists (Rainbow Resource Directory, 2002).

Having taken into account the shortcomings of the existing resource directories, the San Bernardino County Medical Information Resource is designed to meet the County's existing need for a centralized, easily accessible, affordable and comprehensive database to simplify the accessibility and delivery of health care services to the public. When it is made widely available, San Bernardino County Medical Information Resource will provide resource guidance as well as geographical directions not only to county residents, but also to

professional, business and governmental entities that are seeking resources to satisfy the unmet health and social service needs of their clients.

The concept of a comprehensive computer accessible health care resource directory is by no means a novel one. Residents of Georgia and Connecticut are already enjoying the benefits of using simple uniform telephone point of access technology to obtain health related information. In fact, the concept has already been contemplated by officials within San Bernardino County's Department of Public Health and this department has already identified target populations which would derive benefits from such a service (California Department of Public Health, 2000).

The San Bernardino County Medical Information Resource proposal has also received enthusiastic support from the San Bernardino County Medical Society, a county-wide physicians' organization. Additionally, CAIRS (California Alliance of Information and Referral Services) the statewide organization for information and referral has expressed interest in a county level development of an information and referral system (California Alliance of Information and Referral

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Services, 2002). Such large-scale support is evidence
that the time is ripe for the County of San Bernardino to
adopt San Bernardino County Medical Information Resource
thereby making this beneficial service available to its
citizens.

CHAPTER TWO

THE ENVIRONMENTAL CONTEXT

San Bernardino County's Health and
Welfare Status

Demographics

San Bernardino County is located in the inland portion of Southern California and covers 20,164 square miles. It is larger than the combined landmasses of New Jersey, Massachusetts, Delaware, and Rhode Island. There are 58 counties in the state of California of which San Bernardino County is the largest. In fact, San Bernardino County is the largest county in the United States. The 2000 Census records a population of approximately 1,709,434 people, which translates into a population density of approximately 81 persons per square mile. Together with neighboring Riverside County, this service region is often referred to as the "Inland Empire" of Southern California.

The Inland Empire is located 60 miles east of Los Angeles, and offers deserts, mountains, and valleys. Once sparsely populated, the Inland Empire is today the 10th largest Statistical Metropolitan area in the nation. In the past two decades there has been a population

explosion, with some areas experiencing population increases of over 50%. If this region were a state, it would rank 30th in terms of population, and 32nd largest in terms of total income ($52 billion). It grows daily as a choice location for business and industry with lower costs of living than neighboring counties (US Department of Health and Human Services, 2000).

It has many small rural communities although the majority of its population lives close to its urban and suburban cities. Housing in rural communities is cheaper than in urban areas. Nonworking families will often migrate to these areas because of the inexpensive housing and then find that because of no insurance or underinsurance with state sponsored health care plans they do not afford reliable access to medical care. In many communities nonworking individuals and those who are working for low wages have no access to specialty medical care. They also have difficulty gaining access to primary health care. Furthermore, those who have access often are dissatisfied with the level of personal clinical attention. Very often simple problems are ignored or postponed because there are no alternatives. This inevitably leads to expensive curative solutions.

Today, one of every five San Bernardino County residents lacks health care insurance (Wyn, Teleki, & Brown, 2000). The rate of local residents who are uninsured is one of the highest in the nation and results in large portions of the local populace losing access to vital health care services.

Table 1. Demonstrating Demographic Data for San Bernardino County

Demographic Data	San Bernardino County
Population	1,669,934
Population Under 18 Years	32%
Population 18-54 Years	59%
Population Over 65 Years	9%
Ethnicity:	
African American	8%
Asian/Pacific Islander	6%
Hispanic	34%
Native American	1%
White	49%
Persons below poverty	18%
Children below poverty	26%
Median household income	$38,876
Persons per Household	2.97
Square Miles	20,062
Persons per Square Mile	83.2
Persons uninsured	25%

Source: 2000 Census Data

Recent government surveys show that the percentage of San Bernardino County residents living below the federal poverty level is approximately 16 percent (US Department of Health and Human Services, 2000).

Thirty-three percent of the population does not have access to affordable health care. Twenty-two percent, or one of every four San Bernardino County residents, lacks health care insurance (Wyn, Teleki, & Brown, 2000).

The State Department of Health Services issues an annual report, Profiles, which ranks each county within the state with respect to health risk outcomes and compares this ranking with the National HealthyPeopleGoals (California Department of Health Services, 2000).

The following picture emerges from the 2001 report, which shows San Bernardino County's ranking relative to the other fifty-eight counties in the state of California.

Table 2. San Bernardino County's Ranking Relative to the Other Fifty-Eight Counties in the State of California

Rank	Health risk
54	All Causes (1997 - 1999 Average)
58 (last)	Coronary Heart Disease
56	Breastfeeding Initiation
53	Diabetes
50	Homicide
50	Births To Mothers Aged 15-19
48	Chlamydia Incidence
48	Low Birth weight Infants
46	Firearm Injuries
46	Infant Deaths: All Races
46	Infant Deaths: Hispanic
45	Hepatitis C Incidence (1999 Data Only)
45	Infant Deaths: Black

Upon close inspection of the data tabulated above three identifiable categories of health risks emerge, giving rise to three major areas of concern. Namely, Cardiovascular Health, Homicide and Firearms Injuries, and Infant Health. It is primarily in these areas that San Bernardino consistently falls within the lowest quartile for the state.

San Bernardino County Needs Assessment

Soon after the State Department of Health Services, published these dismal results, Loma Linda University Medical Center conducted a Key Informant Survey, which included a county-wide Community Needs Assessment using a combination of survey tools, including an on-line survey for the public, and interviews with over 50 key community leaders in government, education, social service, health, and community based organizations. The results of the survey highlighted the community's interests in the following:

- Access to immunizations and Childcare

- Affordable healthcare

- Awareness of services

- Better transportation

- Parent education

- Support system

- Preventive care

- Health education programs.

These results suggests that San Bernardino County has a number of barriers to access, including an

inadequately funded health-care delivery system, absence of transportation, language barriers and poorly accessible healthcare information.

The lack of access to health care endangers the public's health and welfare because communicable disease spreads when illness among the uninsured goes untreated. Lack of access to health care is costly to all residents of the County as the costs of health care are ultimately shared by all. The inescapable health care costs of the uninsured can be decreased if they have access to information and preventive care. The existing health care safety net is stretched to the breaking point partly because available resources are inefficiently used. To educate the community information has to be transmitted en masse in the hope that a significant number of community members will encounter it and be positively affected.

Healthcare Finance Issues in San Bernardino County

California's Welfare and Institutions Code §17000 creates a county-based system to provide public health and other health care services to the indigent. This law establishes that counties are the health care providers

of last resort. To help meet this mandate, counties receive substantial financial support from the state. Actually, almost all of the programs that support health care to low-income or uninsured persons, while administered locally, are funded primarily with state and federal funds. These programs function well in some cases but in other cases are unable to meet existing demand, some services are far from their service population or unknown to them.

Many private community organizations have attempted to fill gaps in the safety net by providing services focused on one or several areas of need. There has been some duplication of effort and minimal attempt to coordinate both the community organizations, government agencies, and faith based initiatives operating many times in the same communities. Making information easily available should increase the efficient use of available resources and lessen the burdens on the publicly funded health and social services. And decrease if not eliminate duplication.

It is in this social, financial and economic context that San Bernardino County Medical Information Resource would be implemented. I believe if it is utilized the

next census should reflect significant improvements in the problems which currently plague San Bernardino County.

CHAPTER THREE

INFORMATION AND REFERRAL

San Bernardino County Medical
Information Resource: An Information
and Referral Resource

It is axiomatic that free access to information is necessary in order for people to live productive and effective lives. San Bernardino County Medical Information Resource is by definition an information and referral resource. Information and referral is a relatively new social service field which originated at the beginning of the century in the U.S.A. for the purpose of helping social agencies distinguish between the "deserving poor" and the "undeserving poor" (California Alliance of Information and Referral Services, 2002).

Information and referral was initially a gatekeeper service that benefited the broader social service community by ensuring the poor did not get more assistance than they deserved. Information and referral was intended then, to block the delivery of superfluous and duplicative benefits by better tracking what services the poor received.

There was a dramatic shift in the purpose of

Information and referral after World War II, when these

methods were employed in efforts to assist former

military personnel with their adjustment to civilian

life. Gradually, the U.S. government began to transform

Information and Referral from its previous "gatekeeper"

function to a "gateway" function. Information and

referral became the means by which people were linked to

the information and services they needed to lead more

effective lives. This functional shift has been proven

beneficial to the larger society and remains the

fundamental purpose of Information and referral services

(Katz & Aspden, 1997).

Existing Information and Referral Resources

Historically, narrowly focused service directories

targeted specific groups such as the elderly, the

disabled, or Native Americans. There was no comprehensive

directory. Nor is there an easy way to combine the

available directories. These directories were developed

by agencies that service these special populations. It is

tedious to research many different directories to find a

listing.

The development of a comprehensive list of local resources involves several evolutionary steps. The first evolutionary step was the print directory. The difficulty with these is that print directories are outdated almost as soon as they are printed. A second evolution is a centralized directory on a computer, which can be updated regularly. This method can be bundled with an information operator service whereby all known information can be provided to a caller by accessing a single phone number. Usefulness could be limited by volume of calls and operator availability. The third evolution is cooperative data sharing or data linkages which would allow all those who provide information and referral services to share the same information in their offices through networking. Community members would be instructed on the use of the community database so that they can find information anytime they want without consulting a specialist. They would go directly to the database online or call the information operator. Community empowerment is the key and it begins with the power of knowledge. To date, there is no similar project in the county of San Bernardino.

Local Information and Referral providers typically disseminate information through published directories

and/or telephone help lines. Increasingly, both general and specialized providers are taking advantage of electronic methods of access and dissemination such as the Internet and World Wide Web and distribution of directories by compact disk. The most prominent provider of general Information and referral services is the The Rainbow Book Information and Referral Network. As one might expect, in this information age, there are numerous Information and referral services. However, of the numerous information and referral services available, none provides a centralized databank of information specifically tailored to address the already identified needs of San Bernardino County residents. There is no information and referral service that can be easily and freely accessed by all San Bernardino County residents. This is the promise that San Bernardino County Medical Information Resource holds SBCMIR is a web-based interface that requests from the user his or her location (that is their zip: or address). It also requests the kind of medical service he or she is seeking; such as a clinic visit with a doctor, a pharmacy or nursing home care. The interface returns to the user a list of the closest available services of the type they are seeking.

The interface would also include the ability to view location maps as well as information about required insurance and service hours. The San Bernardino County Medical Information Resource software product will provide six main functions:

1. Provide the closest healthcare resource to users, according to the user zip code location/address,

2. Provide the healthcare service list, according to the specialties and the type of healthcare services they select from our web page,

3. Provide the health insurance types accepted by each healthcare provider,

4. Provide the office hours and street address and directions to healthcare providers,

5. Enable emergency providers to choose the health care facilities closest to their clients for follow-up,

6. Provide health care information in multiple languages, through an automated language translation process on the Internet and through bilingual operators on the telephone.

Repository Content

The proposed resources would provide information on offices and clinics for primary and specialty care, hospitals and health care facilities, nursing and convalescent home for residential care, outpatient mental health and drug rehabilitation clinics, Inpatient hospitals for mental health care, childcare facilities and the locations of pharmacies. These services are closely linked with other human service issues. We plan to expand our service listings (see future plans, Chapter 5) to meet community demands.

The nonprofit agency involved would provide personnel to collect and catalog information on agencies, programs, and existing services and make it available through publications, telephone and internet databases.

Project Goals and Objectives

The goal of San Bernardino County Medical Information Resource is to develop, coordinate, and implement a centralized information and referral database that contains information about health and human services provided by public and private entities throughout the

county of San Bernardino and is accessible to the public via the Internet.

This project will achieve the following objectives:

1. Development and promote a new approach to access of resources and make resource access easier;

2. A single point of access to locate information about health and human services in San Bernardino;

3. Enable timely access to accurate, current and comprehensive information about service availability and eligibility;

4. An efficient means of maintaining a comprehensive resource list;

5. Ability to search for resources by geographic regions and type of services through a standard internet browser;

6. Reduce duplication of effort to collect Information & Referral data;

7. Make appropriate data available to professionals and consumers at any time;

8.   Develop a home page that provides a base for
     evaluating health promotion information as well
     as pointing to other related health database
     services;

9.   Reduce duplication of services and identify
     communities with legitimate service needs.

               Prototype Development and Building an
                         Early Database

1.   Our first task was to secure reliable databases
     of physicians, dentists, pharmacies, nursing
     homes, childcare agencies and homes. We
     initially obtained in databases from
     professional societies (like the county medical
     society for Physicians as well as the dental
     society). We also accessed databases through
     OSHPD, The Office of Statewide Health Planning
     and Development http://www.oshpd.cahwnet.gov.
     and through the social services department at
     University of California Riverside campus. We
     then placed this data, which generally was in a
     spreadsheet format into an accessible
     interface.

2. This site was made accessible through a web
    site http://www.chemgonline.web66.com

3. Some information, like information about the
    kinds of insurance that a particular doctor
    accepted was not available publicly. Additional
    information about hours of operation and
    satellite offices, which doctors sometimes
    rented from each other, would not be available
    without making personal contact. This
    information had to be collected through
    telephone contact with the doctor's offices.
    Updating this information required a plan for
    ongoing maintenance of the site. Additionally
    some of the databases we used listed the
    personal addresses of the doctors and this
    information had to be removed.

Through the nonprofit organization we hope to find
volunteers as well as the paid staff to make the
necessary calls and keep the database current.

Positive Characteristics of Internet
Based Health

Positive characteristics of Internet based health
communication includes the fact that access to the

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Internet costs less than $20 per month and is free in many instances furthermore the cost of a Internet capable personal computer is below $500. Internet access is increasingly common in libraries and schools. In 1999 President Clinton said that 50 percent of America's schools and more than 80 percent of its classrooms are wired for the Internet. Hunt, T. (1999). Clinton wants every American connected to the Internet [Associated Press wire story] According to International Data Corporation (IDC), 53% of U.S. house-holds have PCs, 41% with Internet access and 17% of the population has shopped on line from home (McIntosh, 2001).

Computerized databases have the potential to offer more effective and efficient management of large amounts of information about community resources. These databases can make current information immediately available to service providers and residents. The ability to quickly access information may aid in shifting telephone information and referral services to a "call/ response" from a "call back" approach. In the former, the caller is assisted during their original call. In a "call back" approach, the caller's name and phone number are taken and the call is assigned to a staff person or volunteer

who calls the person back on a triage basis.

Technological improvements may allow for more use of the call response approach but only if sufficient staffing resources are available to handle calls when they arrive. Electronic bulletin boards, the Internet and the World Wide Web are being used to make information and referral databases directly accessible to residents with computer/internet access recent advances in browser technology has made finding ones way through complex information channels much simpler through point-and-click interfaces.

The Internet lowers the barriers for modestly talented and funded organizations like ours to spread their message and transforms the delivery of health-care services that has been an inherently a local phenomenon to an inherently global phenomenon. This means it is possible to get medical information, and even medical advice, from geographically dispersed sources. A telephone operator service (Call Center) from a low cost labor pool such as the Caribbean or India could be trained service our populations service requests. From the point of view of information seekers it is possible

to get a broad diversity of viewpoints on any health
issue.

Disadvantages of a Computerized
Information and Referral

Internet users are still a minority of the general
public, with certain groups over-represented as compared
to the general population. The share of US households
that have access to the internet is only 42% though
rising rapidly. In rural areas only 38.9%have internet
access. Blacks and Hispanics homes though showing
significant gains have only 23% 24% respectively
(National Telecommunications and Infromation
Administration, 2000).

Internet users are more likely to be younger, more
affluent, better educated, and white (Katz & Aspden,
1997). From the health care perspective, many of the most
vulnerable-the elderly and low-income families-are
underrepresented among the population of Internet users.
Ways need to be found to extend Internet access to these
needy groups. Katz and Aspden (1997). Barriers to and
motivations for using the Internet: Results of a national
opinion survey.

For those with access there are still limitations. Many families that have access have low bandwidth links to their homes (National Telecommunications and Infromation Administration, 2000).

Administrators and users have security concerns and want reliable assurances that any communication is private and confidential. They have a common interest in the protection of servers and databases from unauthorized intrusion or modification. Authenticating the identity of senders and recipients of data for publication must be addressed.

CHAPTER FOUR

IMPLEMENTATION STRATEGY

Implementation Strategy and
Functionality of the Site

San Bernardino County Medical Information Resource will be launched by Inland Wellness Information Network (IWIN) a nonprofit organization created by San Bernardino County Medical Society to address the most pressing public health needs in our County, as have been identified by the most recent U.S. Census as well as the LLUMC's Needs Assessment (see Ch. 2.).

At its launching San Bernardino County Medical Information Resource will be made available first to those who have Internet access. The site will be promoted through Inland Wellness Information Network (IWIN) our organization to our first target audience: professionals and personnel in the helping service agencies. This audience was chosen primarily to provide us with feedback regarding the lay out and content of the web site.

The second step in our implementation strategy is to develop a relationship with a call center for those members of the public who do not have access to computers

or the necessary education or language skills required to utilize the computers available.

Thirdly, we will seek funding to set up computer kiosks with Internet access to churches, popular shopping areas and targeted public housing sites to promote public awareness and encourage public usage of this new resource tool.

San Bernardino County Medical Information Resource will adhere to the set of information and referral standards created by the alliance of information and referral systems and will align itself with the classification system based on their standard service terminology, enabling easy comprehension and integration with information from other databases. Funding will be sought to maintain an up-to-date database of available community resources as well as to collect and organize data about the inquirers in an effort to improve referrals and identify unfulfilled service needs.

Visitors to the San Bernardino County Medical Information Resource website will encounter a simple web design that will facilitate easy use even for users with little computer and technology skills. The opening page will ask for the user's zip code as well as how wide

ranging they would like the search for the needed

resource to be. The following pages present a schematic

representation of the proposed web site.

The user encounters this page when she logs onto the

site and enters the requested information.

Figure 1. Example of User Interface (Step 1)

The next question the user would have to answer is

what kind of resource he or she is seeking. San

Bernardino County Medical Information Resource

Figure 2. Example of User Interface (Step 2)

Once these information fields have been completed

the site will provide a list of available resources that

are close to the provided zip code. Or if the user

selects a wide-ranging search the site will provide a

broader range of resources within the county, such as the

data, which follows.

Your Street Address	Your City	Your Zip Code	How Close
		92307	Very Close ▼

Child Care	Clinics	Dentists	Home Health	Hospitals	Long-Term Care	Pharmacies	Physicians

Name	Phone	Address	City
Apple Valley Child Care Center	760-242-5437	18609 Corwin Road	Apple Valley
Apple Valley Christian Pre-School	760-247-8412	22434 Nisqually Road	Apple Valley
Apple Valley Creative Childcare Center	760-247-3904	21115 Highway 18	Apple Valley
Apple Valley Creative Childcare Center	760-247-3904	21115 Highway 18	Apple Valley
Apple Valley Village School	760-247-3786	21482 Yucca Loma	Apple Valley
Apple Valley Village School	760-247-3786	21482 Yucca Loma	Apple Valley
Baines Family Day Care	619-247-0661	14070 Winnemucca Trail	Apple Valley
Bird Family Day Care	619-247-8786	14342 Jicarilla Road	Apple Valley
Cameron Family Day Care	619-247-8786	12625 Iroquois Road	Apple Valley
Clawson Family Day Care	619-946-0444	18946 Siesta Drive	Apple Valley
Contreras Family Day Care	760-242-8449	16418 Menahka	Apple Valley

Figure 3. Example of Child Care Close to Zip 92307

Your Street Address	Your City	Your Zip Code	How Close
		92307	Very Close ▼

Child Care	Clinics	Dentists	Home Health	Hospitals	Long-Term Care	Pharmacies	Physicians

Name	Phone	Address	City
A A Alvin Dunn's Apple Valley	760-247-2224	20115 Us Highway 18 #C	Apple Valley
Apple Valley Dental Assoc	760-946-1466	20162 Us Highway 18 #L	Apple Valley
Aspen Dental Group	760-242-2620	15995 Tuscola Rd #201	Apple Valley
Baca, Phillip M DDS	760-946-1700	16127 Kasota Rd #106	Apple Valley
Blech, Steve M DDS	760-242-5033	16195 Siskiyou Rd #220	Apple Valley
Damiani, Perry J DDS	760-946-2168	16127 Kasota Rd #105	Apple Valley
Dental Group Of Apple Valley	760-242-2977	18245 Us Highway 18 #4	Apple Valley
Ebright, Craig DDS	760-242-3626	16127 Kasota Rd #101	Apple Valley
Hahn, Dennis J DDS	760-242-2338	18145 Us Highway 18 #C	Apple Valley
Kratofil, Steven E DDS	760-242-7744	18056 Wika Rd #C	Apple Valley
Marsden, J Phillip DDS	760-242-3666	16051 Kasota Rd #800	Apple Valley
Mc Adams, Gil C DDS	760-242-5300	16127 Kasota Rd #104	Apple Valley
Ong-Veloso, Glenn DDS	760-242-2620	15995 Tuscola Rd #201	Apple Valley
Pinkner Dental	760-242-3626	16127 Kasota Rd #101	Apple Valley
Robert W Casady Inc	760-242-3223	16127 Kasota Rd #103	Apple Valley

Figure 4. Example of Dentists Close to Zip 92307

Your Street Address	Your City	Your Zip Code	How Close
		92307	Close ▼

Child Care	Clinics	Dentists	Home Health		Long-Term Care	Pharmacies	Physicians

Name	Phone	Address	City
Desert Valley Hospital	760-242-8222	16850 Bear Valley Rd	Victorville
Victor Valley Community Hospital	760-245-8691	15248 Eleventh St	Victorville
St. Mary Regional Medical Center	760-242-2311	18300 Highway 18	Apple Valley

Figure 5. Example of Hospitals Close to Zip 92307

From this information listing the user can then click on a selected resource and obtain written directions and/or a map identifying the location of the resource. See below.

Search results

16850 Bear Valley Rd, Victorville, CA, 92392

Print this map   Save this map   E-mail this map

Figure 6. Example of Selected Resource

CHAPTER FIVE

PLANS FOR THE FUTURE

Plans for the Future

San Bernardino County Medical Information Resource when operational and funded will be the data bank where information is gathered, maintained, and updated. Paid staff will perform this function in collaboration with other agencies performing similar functions (for instance the department of public health). Anyone having access to the Internet will be able to search for the information using criteria such as service provided and geographical region served.

Our prototype of information services will list Hospitals; health clinics; licensed home health agencies; Intermediate, and skilled nursing facilities. Licensed adult and child day care centers, pharmacies, dentists and physicians by specialty.

However Information services are closely linked with other service issues. We plan to expand our service listings to include transportation services, self-help and mutual support groups, non-profit agencies that provide human services and private companies or

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organizations (such as churches and social clubs), which offer services to the community at large.

Long term plans include listing information about Elected representatives at the city, state, and federal levels professional organizations in the social services and health-related fields, advocacy groups and 1-800 lines which provide information for services that can be accessed by CA residents. Other services will be included depending on the community's needs so as to make our service a comprehensive resource.

Evaluating the Resource

The crucial task for this resource is obtaining, updating and disseminating accurate information about the medical assets and resources available in San Bernardino County.

Measuring the successful achievement of these goals is the task of the evaluation component of San Bernardino County Medical Information Resource.

There are six key criteria for evaluation that will be applied; accuracy, appropriateness, usability, maintainability, bias, and efficacy. (Developers and

evaluation of interactive telecommunication application (American journal of preventive medicine, 1999).

The site will be evaluated through

- Online surveys on the home page,

- Site traffic evaluation by automated web counters,

- Informal evaluation by the secretarial staff and physicians at the County Medical Society and

- Telephone surveys of the service providers and

- End users of the service.

In the table below are other indicators that will be used to measure the sites ability to provide effective and efficient information.

Service utilization is a key a measure of Information and Referral effectiveness. The ability of the service to correctly identify the location of available service providers is not as important as the providers ability to provide a service that meets the seekers needs.

Table 3. Indicators used to Measure Sites Effective

Indicator	Rationale
Number of requests for service.	Broad measure of overall demand for referral services.
Number of referrals	Provides indication of the demand and need for referral services.
Proportion of referrals leading to needed/desired services	Measures effectiveness of referral. services
Average response time to referral	Measures efficiency of referral services
Accuracy of referrals (i.e. correct and current)	Measures quality of referral services.

The failure of Information and Referral services to make a successful referral is often the result of the absence or under-capacity of needed services. From the consumer's perspective, the Information and Referral provider and the service provider are part of a single system that either helps them or does not. Even if a referral is correct, lack of transportation to the referred agency, long waiting lists, lack of adequate resources, restrictive eligibility criteria, or inappropriate treatment by service provider staff is interpreted by the consumer as failure of the system to meet their needs.

Beyond service utilization levels, we will employ
other methods of determining the effectiveness of
Information and Referral. We will make follow-up contacts
with as many consumers as possible to find out if the
information provided was accurate and if the referral
resulted in service. Such follow-ups will be carefully
framed to draw distinctions among reasons for failed
referrals so that poor referrals can be distinguished
from inadequacies in the human service delivery system.

Sophisticated and reliable tracking and reporting of
service use will be possible when more service seekers
use e-mail, and make service requests online, seeking
service and supplying the needed demographic and
eligibility information over the Internet. Greater
integration of information technologies will enhance the
capacities of information and service providers to
effectively manage their internal resources. The data
should provide community planners and program developers
with valuable information concerning trends in community
needs and service demand. Confidentiality issues must be
recognized and addressed in the collection and sharing of
information.

San Bernardino County Medical Information Resource's dissemination of information would involve two tracks. The first would be the posting of accurate information to a central database that would be available on the Internet (and through other media). The second would be a telephone-based operator run service that answers questions for those who don't have access to computers and Internet. Training for individuals providing telephone based information services would include acquiring questioning skills so that enough information can be gathered from consumers to make a well-informed referral. Presently the department of aging and adult services in San Bernardino County provides a telephone information service between the hours of eight and five Monday through Friday. The telephone number is 800-510-2020. Their service includes responding immediately with a referral as well as researching hard-to-find information and calling back their questioners with their findings. The expansion of telephone service hours to evenings and weekends, could be accomplished through coordination of their services with ours and other similar information providers.

Recognizing that access to information is more difficult for non- English speaking residents San Bernardino County Medical Information Resource will make Multi- language support available through a computer program that translates from English to other languages http://babel.altavista.com/tr.

It would be desirable for our county to have information services that are available in as many forms as possible both to individuals and to professionals and service providers who are trying to provide needed help for their clients. Ideally information should be accessible around the clock. A centralized and comprehensive database of information on the service assets in our county would decrease the need for duplicative supplemental information production.

For those without home computer access, we propose kiosks in public locations become a means of access to needed resource information. Such tools would serve as an adjunct to more personalized systems (such as an information desk or information operator) where a knowledgeable staff person or volunteer assists the information seeker match needs and services (by phone or in person).

Directories of community resources can also be distributed on diskettes and CD-ROM disks, helping those where Internet access is slow or unreliable. These methods allow for frequent and relatively inexpensive distribution of information. Direct consumer access to such databases may eventually reduce the level of telephone inquiries.

A successful launch OF this project would require a carefully planned publicity campaign at the start as well as ongoing public service announcements to keep the availability of the resource before the public. The campaign would promote the systems availability; accuracy and its potential for helping planners develop community assets.

The ultimate value of San Bernardino County Medical Information Resource depends on how much it is used and how the system evolves in response to community demand.

Key referral sources outside the usual social services delivery system should have special notice and training opportunities to increase their use of the system. These special audiences for notice and training would include: the medical/dental and mental health provider communities; the job training/placement

community; and churches and other social organizations engaged in related community service.

San Bernardino County Medical Information Resource is a simple way of it to increase the availability of health care information. It is time for a collaborative attempt to harness the available technology in service to our community.

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