

Do NOT Remove

A GUIDEBOOK FOR RURAL PHYSICIAN SERVICES

A Systematic Approach
to Planning and Development



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AGRICULTURAL EXPERIMENT STATION
DIVISION OF AGRICULTURE
OKLAHOMA STATE UNIVERSITY

TABLE OF CONTENTS

Abstract	iii
Acknowledgements	v
I. Introduction	1
II. How to Begin the Planning Process	2
A. Need for a Committee	2
B. Committee Representation	3
C. Available Resources	4
III. Evaluating a Community's Potential for Supporting a Physician(s)	5
A. Procedure to Estimate the Number of Physician Visits	5
1. Supplemental Physician Utilization Data	7
2. Estimating Gross Income	17
B. Procedure to Estimate Total Costs	21
1. Capital Costs	21
2. Operating Costs	37
a. Building	37
b. Office	37
c. Medical	37
d. Personnel	37
3. Total Costs	43
C. Procedure to Estimate Net Income	43
D. Application of Forms	43
IV. Computer Services	49
V. Funding Sources	68
VI. Summary	71
Appendix A. Rate Structure	73
Appendix B. Floor Plans for Clinics	75
Appendix C. Amortization Factors	85
Appendix D. Indices Used to Adjust Construction and Operating Costs to Reflect Price Changes	86
Appendix E. Blank Forms For Do It Yourself Analysis	87

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Abstract

Many dynamic interrelated factors enter into an analysis of a community's ability to support a primary care physician(s). These include such things as rate schedules, labor costs, services provided, health care utilization, and proximity to regional health centers. The overall objective of this study is to develop methods which will allow community leaders to evaluate their community's ability to support a physician or to allow a prospective physician to analyze a community's medical economic potential. More specifically, the objectives are to (1) develop a procedure to estimate physician office visits for a community's service area and (2) develop a procedure to estimate annual capital costs, operating costs, and net income for a physician evaluating a given community.

The data were collected by taking a detailed primary survey of 16 rural Oklahoma physicians. Data collected included such items as office visits, emergency room visits, and hospital visits for the past year by month; all capital costs involved in the practice; all operating costs for the practice for the past year; and the rate structure. Eight physicians had operated only a year whereas the other eight had an established practice. The data are presented mainly as means and medians, but regression analysis was also used.

The results are extremely useful to community leaders and physicians evaluating a community. Each can estimate annual office visits for a prospective community. If the community has sufficient calls to support a physician(s), leaders may wish to construct a clinic and rent to the physician(s). The research allows for analysis of capital and operating costs for a community clinic. A prospective physician can also estimate capital needs, capital and operating costs, and the profit potential for alternative communities. The results also clearly indicate the difficulties a first year physician may have while establishing a practice.

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The authors' primary objective is to provide information to community leaders and physicians on the potential of a community to support a physician.

Special Acknowledgement

This publication is dedicated to June Parks, who devoted herself to physician placement and who was very instrumental in the research and development of this publication. June's death in 1983 was a great loss to physician placement in Oklahoma.

A GUIDEBOOK FOR
RURAL PHYSICIAN SERVICES
A Systematic Approach to Planning
and Development

Duane Williams, Terry Boucher, Gerald Doeksen,
June Parks and Lou Stackler*

I. INTRODUCTION

A major concern among many rural community leaders is that the local citizens have access to adequate physician health care services. In 1979, a study [1] by Gerald Doeksen, James Dunn, Louis Stackler and Robert Sheets established procedures by which community leaders could evaluate their community's need for a physician. Additionally, this study developed a set of procedures for conducting a feasibility study for rural community clinics.

Since 1979, there has been interest expressed in an updated and expanded study. Such interest was indicated not only by rural community leaders, but also by agencies connected with the medical profession. These agencies recognize that one of the most difficult decisions faced by a physician is evaluating alternative locations and selecting the location which best meets his financial and personal needs. Community leaders also must know the attractiveness of their community and develop their strategy for attracting a physician to their community.

Many dynamic factors enter into an analysis of a community's ability to support a physician(s): rate schedule; personnel costs; services provided; health care utilization; and location of hospital facilities. The overall objective of this study is to develop methods which will allow community leaders to evaluate their community's ability to support a physician or to allow a prospective physician to analyze a community's medical economic potential. More specifically the objectives are to develop:

1. a procedure to estimate physician visits for a community's service area;
2. a procedure to estimate the number of physicians the community's service area can support;
3. a procedure to estimate annual capital and operating costs for a physician; and
4. a method to determine physician office rental cost if community leaders construct a clinic and desire to "break even" financially.

To achieve these objectives, a survey of 16 rural Oklahoma physicians was completed, along with a review of physician utilization rates. Medical equipment dealers were also interviewed. The results of these efforts, as well as a discussion of the planning process, is reported in this study.

*Respectively, Research Assistant, Department of Agricultural Economics; Physician Placement Officer, Oklahoma College of Osteopathic Medicine and Surgery; Extension Economist and Professor, Department of Agricultural Economics; Physician Placement Officer, University of Oklahoma School of Medicine (deceased); Planner, Health Systems Agency.

II. HOW TO BEGIN THE PLANNING PROCESS

II. A. Need for a Committee

The most important step in using this guide begins before any data are collected. The community should organize a physician recruitment committee to get community leaders together to (1) discuss and analyze the health care needs of their town, (2) assess the situation to see if a problem truly does exist, and then, (3) to develop and promote a plan of action to solve any identified medical care needs or problems. Recruiting physicians for a rural community is too often pictured as a monumental task fraught with endless obstacles and frustrations. However, by distributing the responsibilities throughout the community, the task will be manageable.

For a physician recruitment committee to be successful, three essential items must be available:

1. time;
2. community support; and
3. financial support.

Time is an item that can be obtained free, but will be harder to get than financial donations. A great amount of time will be spent on the telephone talking to prospective physicians, keeping the local people informed and arranging tours of your community when the physician finally comes. It is generally believed that to place one physician, you must start with a base of 100 prospects. From this, only 10 will be sufficiently interested in a practice opportunity to visit the community. And of those 10, perhaps only 3 will be considered acceptable for the job. With this information, one can easily see the amount of time involved in recruiting a physician.

The most important consideration of the committee is community support. Although often present, rarely is this support adequately shown to the physician during the recruitment process. A well-attended public reception and an enthusiastic welcome will have a significant impact upon a physician's family when they are considering the potential for a successful practice in a community.

Financial support for the committee can be obtained in a variety of ways. Presently, the most common method is through donations made by local citizens and businesses. The committee can, through proper legal channels, be incorporated as a private, non-profit corporation with tax-exempt status. By doing this, all donations made to the committee can be deducted from the contributor's income tax. If there is a civic organization or local hospital that already has tax-exempt status, utilize them as the central collection point for donations. The money obtained from donations can be used to pay the expenses of interested physicians when they visit the community.

This guidebook is developed with the philosophy that ultimately, the decision regarding health care services rests with you and your community, and can be accomplished without special consultation. However, it does require the development of good information, a commitment to listen, analyze, and discuss various ideas and options among community members.

Form 4. Continued

Area in Clinic	Equipment	Number	Price Per Unit	Total Cost
			Dollars	Dollars
<u>Laboratory</u>	Alcohol Lamps or Bunsen Burner	_____ X	_____ =	_____
	Autoclave	_____ X	_____ =	_____
	Automatic Cell Counter	_____ X	_____ =	_____
	Centrifuge (blood and urine)	_____ X	_____ =	_____
	Centrifuge (blood)	_____ X	_____ =	_____
	Centrifuge (urine)	_____ X	_____ =	_____
	Chairs	_____ X	_____ =	_____
	Dop Tone (Minidop)	_____ X	_____ =	_____
	Elevated Counter Stool	_____ X	_____ =	_____
	Eye Tone	_____ X	_____ =	_____
	Fetoscope	_____ X	_____ =	_____
	Flashlight	_____ X	_____ =	_____
	Hemogramometer	_____ X	_____ =	_____
	Incubator	_____ X	_____ =	_____
	Microscope	_____ X	_____ =	_____
	Punch Biopsy	_____ X	_____ =	_____
	Refrigerator	_____ X	_____ =	_____
	Sink	_____ X	_____ =	_____
	Soap Dispenser	_____ X	_____ =	_____
	Substage Lamp	_____ X	_____ =	_____
	Tape Dispenser	_____ X	_____ =	_____
	Towel Dispenser	_____ X	_____ =	_____
	Urinometer	_____ X	_____ =	_____
	X-Ray View Box	_____ X	_____ =	_____
	Other:	_____ X	_____ =	_____
		_____ X	_____ =	_____
TOTAL (Without X-Ray Machine)				_____
	X-Ray Machine	_____ X	_____ =	_____
TOTAL (With X-Ray Machine)				_____

Form 4. Continued

Area in Clinic	Equipment	Number	Price Per Unit		Total Cost
			Dollars	Dollars	Dollars
<u>Examination/Treatment Room</u>					
	Anoscope	_____	X	_____	= _____
	Blood Pressure Cuff	_____	X	_____	= _____
	Bulletin Board	_____	X	_____	= _____
	Cabinet	_____	X	_____	= _____
	Cast Cutter	_____	X	_____	= _____
	Clothes Rack/ Hooks	_____	X	_____	= _____
	Compressor/ Suction	_____	X	_____	= _____
	Diathermy Unit	_____	X	_____	= _____
	Electrocardio- graph	_____	X	_____	= _____
	Examination Table	_____	X	_____	= _____
	Gooseneck Lamp	_____	X	_____	= _____
	Mirror	_____	X	_____	= _____
	Mayo Instrument Stand	_____	X	_____	= _____
	Ophthalmoscope- Otoscope	_____	X	_____	= _____
	Pediatric Scale/ Table	_____	X	_____	= _____
	Portable Oxygen Tank				
	Mask & Carrier	_____	X	_____	= _____
	Scales	_____	X	_____	= _____
	Side Chairs	_____	X	_____	= _____
	Sigmoidoscope	_____	X	_____	= _____
	Sink	_____	X	_____	= _____
	Soap Dispenser	_____	X	_____	= _____
	Snellen Eye Chart	_____	X	_____	= _____
	Stool	_____	X	_____	= _____
	Towel Dispenser	_____	X	_____	= _____
	Trays-Ear	_____	X	_____	= _____
	Trays-Eye	_____	X	_____	= _____
	Trays-Surgical	_____	X	_____	= _____
	Ultrasound Unit	_____	X	_____	= _____
	Utility Cart	_____	X	_____	= _____
	Waste Receptacle	_____	X	_____	= _____
	Other:				
		_____	X	_____	= _____
		_____	X	_____	= _____
TOTAL					_____

Form 4. Continued

TOTAL EQUIPMENT COSTS	TOTAL COST
	<u>Dollars</u>
Reception Area	_____
Business Office	_____
Physician's Office	_____
Conference Room	_____
Laboratory	_____
Examination/Treatment Room	_____
(With X-Ray)	_____
TOTAL	_____
(Without X-Ray)	_____

Form 5

Procedure to Estimate Annual Capital Costs

I. Capital Costs

A. Building

Number of Physicians _____

X sq. feet per physician (1200-1500) _____

X construction cost per sq.ft. (\$50-\$55) _____

X $\frac{(\quad) \text{ current construction cost index}}{(157.6) \text{ 1982 construction cost index}}$ _____

+ land cost (\$11,750 per acre) _____

TOTAL _____

B. Equipment

Total equipment costs (Form 4) _____

X $\frac{(\quad) \text{ current construction cost index}}{(157.6) \text{ 1982 construction cost index}}$ _____

TOTAL _____

II. Capital Charges

A. Capital Cost Building _____

X _____ amortization factor (number of years _____
X interest rate _____) (Appendix C)

TOTAL _____

B. Capital Cost Equipment _____

X _____ amortization factor (number of years _____
X interest rate _____) (Appendix C)

TOTAL _____

TOTAL CAPITAL CHARGES _____

Form 6. Procedure to Estimate Annual Operating Costs

I. Building

A. Electricity

1982 price per square foot per physician (\$0.17)

$$\frac{X (\quad) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ _____ estimated current price

[\$ _____ (cost per sq. ft.) X _____ number
of sq. ft.] \$ _____

B. Gas

1982 price per square foot per physician (\$0.17)

$$\frac{X (\quad) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ _____ estimated current price

[\$ _____ (cost per sq. ft.) X _____ number
of sq. ft.] \$ _____

C. Water

1982 price per year per physician (\$131.00)

$$\frac{X (\quad) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

D. Sewer

1982 price per year per physician (\$86.00)

$$\frac{X (\quad) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

E. Trash

1982 price per year per physician (\$150.00)

$$\frac{X (\quad) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

Form 6. Continued

F. Maintenance

1982 price per year per physician (\$799.00)

$$X \left(\frac{\quad}{158.5} \right) \frac{\text{Current Consumer Price Index}}{\text{1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

G. Janitor

1982 price per year per physician (\$1,968.00)

$$X \left(\frac{\quad}{158.5} \right) \frac{\text{Current Consumer Price Index}}{\text{1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

H. Taxes

1982 price per year per physician (\$1,881.00)

$$X \left(\frac{\quad}{158.5} \right) \frac{\text{Current Consumer Price Index}}{\text{1982 Consumer Price Index}}$$

\$ _____ estimated current price \$ _____

I. Insurance

1. Brick Veneer Building

a. \$ _____ value of building per physician
 X 1.293 insurance costs per \$100 value
 = _____

b. \$ _____ value of equipment per physician
 X 1.076 insurance cost per \$100 value
 = _____

Total Insurance (a + b) \$ _____

2. Frame Building

a. \$ _____ value of building per physician
 X 1.660 insurance costs per \$100 value
 = _____

b. \$ _____ value of equipment per physician
 X 1.450 insurance costs per \$100 value
 = _____

Total Insurance (a + b) \$ _____

Form 6. Continued

J. Total Building Expenses Per Physician
(A + B + C + D + E + F + G + H + I) \$ _____

K. Total Annual Building Expenses
 Total Building expenses per physician
X number of physicians \$ _____

II. Office

A. Supplies
1982 costs per office visit (\$0.44)
X () Current Consumer Price Index
 (158.5) 1982 Consumer Price Index
[\$ (estimated current price) X
 (number of office visits per physician)]
\$ estimated current price \$ _____

B. Telephone
1982 costs per office visit (\$2,297.00)
X () Current Consumer Price Index
 (158.5) 1982 Consumer Price Index
\$ estimated current price \$ _____

C. Office Equipment
1982 costs per office visit (\$200.00)
X () Current Consumer Price Index
 (158.5) 1982 Consumer Price Index
\$ estimated current price \$ _____

D. Billing
1982 costs per physician (\$941.00)
X () Current Consumer Price Index
 (158.5) 1982 Consumer Price Index
\$ estimated current price \$ _____

E. Retainer Fee
1982 costs per physician (\$1,086.00)

Form 6. Continued

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

\$ _____ estimated current price \$ _____

F. Convention

1982 costs per physician (\$1,825.00)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

\$ _____ estimated current price \$ _____

G. Auto Expenses

1982 costs per physician (\$4,800.00)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

\$ _____ estimated current price \$ _____

H. Professional Dues

1982 costs per physician (\$715.00)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

\$ _____ estimated current price \$ _____

I. Total Office Expenses Per Physician
(A + B + C + D + E + F + G + H)

\$ _____

J. Total Annual Office Expenses

_____ expenses per physician X _____ number
of physicians

\$ _____

III. Medical

A. Medical Supplies

1982 cost per office visit (\$0.71)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

[Estimated current price per visit X _____
(number of office visits per physician) _____] \$ _____

Form 6. Continued

B. Medical Equipment Maintenance

1982 cost per physician (\$1,033.00)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

\$ _____ estimated current price \$ _____

C. Malpractice

1982 cost per physician (\$2,917.00)

X () Current Consumer Price Index
(158.5) 1982 Consumer Price Index

_____ Estimated Current Price \$ _____

D. Total Annual Medical Costs per Physician
(A + B + C)

\$ _____

E. Total Annual Medical costs per physician

_____ total annual medical costs per physician
X _____ number of physicians \$ _____

IV. Personnel

Type	1982 Salary	Current* Salary	Number Employed	Total Cost
A. Medical Assistant	\$9,760	_____	_____	_____
B. Licensed Practical Nurse	9,630	_____	_____	_____
C. Registered Nurse	13,139	_____	_____	_____
D. Laboratory Technician	14,493	_____	_____	_____
E. X-Ray Technician	15,743	_____	_____	_____
F. Receptionist	9,961	_____	_____	_____
G. Bookkeeper	11,164	_____	_____	_____
H. Receptionist/Bookkeeper	11,760	_____	_____	_____
I. Medical Secretary	8,407	_____	_____	_____
J. Insurance Clerk	8,160	_____	_____	_____
K. Total Personnel Costs Without Fringe Benefits (A +B +C +D +E +F +G +H +I +J)			\$ _____	
L. Fringe Benefits				
_____ Personnel Costs Without Fringe Benefits X				
Percent fringe benefits (15%)			\$ _____	
M. Total Annual Personnel Costs (K + L)			\$ _____	

*If current salary is unknown use 1982 salary adjusted for change in price level (1982 Salary X Current Consumer Price Index / 1982 Consumer Price Index)

Form 7. Procedure to Estimate Total Annual Costs

- A. Capital Costs
(From Form 5) \$ _____
- B. Operating Costs
- 1. Building (Form 6, I K) \$ _____
 - 2. Office (Form 6, II K) \$ _____
 - 3. Medical (Form 6, III K) \$ _____
 - 4. Personnel (Form 6, IV K) \$ _____
- C. Total Operating Costs
(B1 + B2 + B3 + B4) \$ _____
- D. Total Annual Capital and Operating Cost
(A + C) \$ _____
-

While no guarantees are made that once this guidebook is completed the committee will succeed in attracting a physician, it will provide the committee with a better understanding of the medical care system. The committee will also have an increased ability to judge whether or not your community can support additional physicians. The information developed should also help you in making realistic choices about the financial feasibility of locally supported medical services.

II. B. Committee Representation

All too often when a community begins to organize and develop a physician recruitment committee, the main consideration is to get a committee that is large enough to represent all segments of the community. More important than the size of the committee is the amount of dedication and responsibility the members of the committee are willing to accept to achieve its goal of recruiting a physician.

The committee should be composed of men and women with a variety of backgrounds, ages and areas of expertise and it should strive to obtain input from as many people as possible. Ideally, the recruitment committee should have at least one person from each of the following groups involved in the physician recruitment process:

banker	physicians
newspaper publisher	pharmacist
business leaders	hospital administrator
city mayor & council	chamber of commerce president
locally elected officials	clergy
nursing home administrator	senior citizens representative
dentist	other health professionals
nurse	insurance representative
emergency medical personnel	county health dept. personnel
homemakers	school superintendent
realtor	civic club presidents
	interested community residents

Realistically, not all of these people will want or be willing to participate in the physician recruitment effort. Do not be discouraged if your initial group is small and unorganized. From this first group will come the commitment and leadership needed as the recruitment process develops. As interest grows within the community, the committee will slowly increase in size and status.

At this point in the recruitment planning process, the community leaders may decide to contact outside resource people to assist them in the organization and structuring of their recruitment committee. The next section of the guidebook contains a listing of organizations and agencies in Oklahoma that have expertise in community organization and physician recruitment. All are willing to come to your community at no cost and assist you in the development of a physician recruitment committee. Through their expertise and with your community's desire to recruit a physician, a plan of action can be developed and implemented so that your town can compete on an equal basis with other Oklahoma communities that are recruiting physicians.

Form 8. Estimated Net Income¹

	Rate Schedule		
	Low	Average Dollars	High
Gross Income (100% Collection Rate)	_____	_____	_____
Total Costs	_____	_____	_____
Net Income	_____	_____	_____
Number Physicians	_____	_____	_____
Net Income Per Physician	_____	_____	_____
Gross Income at Alternative Collection Rates			
Collection Rates			
95%	_____	_____	_____
90%	_____	_____	_____
85%	_____	_____	_____
80%	_____	_____	_____
Net Income at Alternative Collection Rates			
95%	_____	_____	_____
90%	_____	_____	_____

¹ Before Income Tax

		Rate Schedule		
		Low	Average	High
85%		_____	_____	_____
80%		_____	_____	_____
Number of Physicians		_____	_____	_____
Net Income Per Physician		_____	_____	_____
95%		_____	_____	_____
90%		_____	_____	_____
85%		_____	_____	_____
80%		_____	_____	_____

Form 9. Annual Revenue and Profit (Loss) from Renting
Clinic to Physician

I. Annual Cost

A. Capital Costs

Building and Land (From Form 5) _____

Equipment (From Form 5) _____

B. Operating Costs

Building (Maintenance, Taxes, Insurance)
(From Form 6) _____

Other _____

C. Total Annual Costs _____

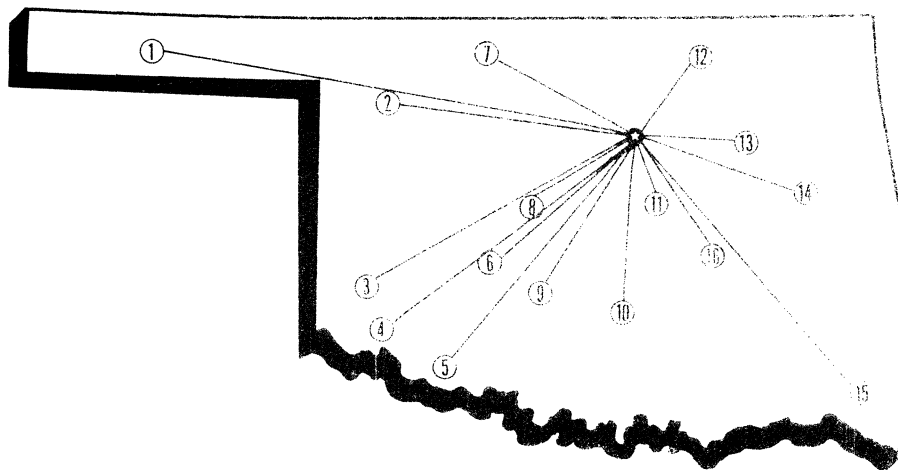
II. Annual Revenue Costs

Monthly Rental Charge Per Physician	Number of Physicians	Annual Revenue	Annual Capital and Operating Costs	Profit or Subsidy
_____ X 12	_____ X 12	_____ -	_____ =	_____
_____ X 12	_____ X 12	_____ -	_____ =	_____
_____ 12	_____ X 12	_____ -	_____ =	_____
_____ X 12	_____ X 12	_____ -	_____ =	_____
_____ X 12	_____ X 12	_____ -	_____ =	_____
_____ X 12	_____ X 12	_____ -	_____ =	_____

OKLAHOMA

Agricultural Experiment Station

System Covers the State



Main Station — Stillwater, Perkins and Lake Carl Blackwell

1. Panhandle Research Station — Goodwell
2. Southern Great Plains Field Station — Woodward
3. Sandyland Research Station — Mangum
4. Irrigation Research Station — Altus
5. Southwest Agronomy Research Station — Tipton
6. Caddo Research Station — Ft. Cobb
7. North Central Research Station — Lahoma
8. Southwestern Livestock and Forage
Research Station — El Reno
9. South Central Research Station — Chickasha
10. Agronomy Research Station — Stratford
11. Pecan Research Station — Sparks
12. Veterinary Research Station — Pawhuska
13. Vegetable Research Station — Bixby
14. Eastern Research Station — Haskell
15. Kiamichi Field Station — Idabel
16. Sarkeys Research and Demonstration Project — Lamar

II. C. Available Resources

Physician Placement Offices

Physician Placement Officer

The University of Oklahoma College of Medicine
P.O. Box 26901
Oklahoma City, OK 73190
405-271-2049

Physician Placement Officer

The University of Oklahoma Tulsa Medical College
2808 S. Sheridan Road
Tulsa, OK 74114
918-838-3464

Physician Placement Officer

Oklahoma College of Osteopathic Medicine and Surgery
P.O. Box 2280
Tulsa, OK 74101
918-582-1972

Physician Manpower Training Commission

Executive Director

P.O. Box 53551 Room 710
Oklahoma City, OK 73152
405-271-5848

National Health Service Corps

Oklahoma Coordinator

National Health Service Corps
P.O. Box 26901
Oklahoma City, OK 73190
405-271-2017

Oklahoma Health Systems Agency

Executive Director

4500 Lincoln Blvd.
Oklahoma City, OK 73105
405-424-5591 or 1-800-522-9030

Oklahoma Cooperative Extension Service

Division of Agriculture

Department of Agricultural Economics
Oklahoma State University
Stillwater, OK 74078
405-624-6081

III. EVALUATING A COMMUNITY'S POTENTIAL FOR SUPPORTING A PHYSICIAN(S)

Community leaders interested in attracting a physician or physicians interested in locating in a specific community primarily need to know three things:

- (1) What is the projected patient load for the service area;
- (2) Can the service area support a physician; and
- (3) What are the costs associated with the physician locating in the area?

To assist community leaders and physicians in answering these questions, a comprehensive survey and personal interview was conducted with 16 physicians. The goal of the survey was to collect data relevant for the construction of a set of procedures for conducting a feasibility study for any given community by community leaders or a physician. Selection of the physicians by the authors was based on their knowledge and contact with physicians in rural Oklahoma.

III. A. Procedure to Estimate the Number of Physician Visits

The process of attracting a physician to a community is a complicated one involving the availability of physicians, the demand for their services, and the characteristics of the community. Some fairly simple computations can give community leaders an estimate of potential demand for physician services in their community. A knowledge of this demand can also help in determining the size of a clinic. The procedure involves estimating physician visits and utilizing data on the number of patients a physician may see in a year.

Local data for Oklahoma were not available on physician office visits. The most recent information is from a 1980 study [2] for the entire United States. The study gives the number of physician office visits annually by age and sex (Table 1). This table can be used to estimate physician office visits for a given area. For example, each male under the age of 15 has an average of 2.3 physician office visits per year.

A visit is a direct personal exchange between an ambulatory patient and a physician or a staff member working under the physician's supervision, for the purpose of seeking care and rendering health services.^{1/} An ambulatory patient is defined as an individual presenting himself for personal health services who is neither bedridden nor admitted to any health care institution on the premises.

To obtain the number of physician office visits for a service area, the number of people in each category is multiplied by the utilization rate and summed across all age and sex categories, (as illustrated in Form 1). Some patients go directly to a specialist and their physician visits must be subtracted, if the primary care physician calls are going to be estimated.

^{1/} Definition taken [2].

TABLE 1. AVERAGE NUMBER OF PHYSICIAN OFFICE VISITS
PER PERSON BY AGE AND SEX, UNITED STATES, 1980

AGE Cohort	Sex	
	MALE	FEMALE
Under 15	2.3	2.1
15-24	1.4	2.7
25-44	1.8	3.3
45-64	2.6	3.4
65 and Over	4.0	4.3

Source [2]

The specialties generally considered to provide primary patient care are general and family practice, internal medicine, pediatrics, and obstetrics and gynecology. A national study [2] shows the number and percent distribution of office visits by physician specialty for 1980 (Table 2). By summing the four primary patient care specialties, it was determined that 66.2 percent of all office visits are handled by physicians active in primary patient care.

The remaining 33.8 percent of the office visits are handled by other specialists. As specialists tend to locate in urban areas, the number of cases handled locally will depend on the number of specialists in the area under analysis. Thus, if no specialists are located in the area, 66.2 percent of the utilization rate will be the estimated number of local physician visits.

A study [3] of the profile of medical practices shows the average number of physician office visits per week by location (Metropolitan and Nonmetropolitan areas) and specialty for 1980 (Table 3). Also shown is the average number of weeks practiced a year by specialty and census division (Oklahoma is within W.S. Central region) for 1979 (Table 4). The average number of physician office visits per week (115.1 physician office visits per week) and the average number of weeks practiced a year (47.4 weeks a year) were derived by summing the specialties involved in providing primary patient care (general and family practice, internal medicine, pediatrics and obstetrics and gynecology) and dividing by the number of specialties summed. The average number of physician office visits per year (5,455.7 physician office visits per year) was calculated by multiplying the average number of weekly office visits (115.1) times the average number of weeks practiced a year (47.4).

TABLE 2. NUMBER AND PERCENT DISTRIBUTION OF OFFICE VISITS BY PHYSICIAN SPECIALTY, UNITED STATES, 1980

PHYSICIAN SPECIALTY	NUMBER OF VISITS (THOUSANDS)	PERCENT DISTRIBUTION
GENERAL AND FAMILY PRACTICES*	191,744	33.3
MEDICAL SPECIALTIES	177,127	30.8
Internal Medicine*	69,481	12.1
Pediatrics*	64,223	11.2
Other	43,423	7.5
SURGICAL SPECIALTIES	172,524	30.0
General Surgery	28,315	4.9
Obstetrics & Gynecology*	55,123	9.6
Other	89,086	15.5
OTHER SPECIALTIES	34,350	6.0
Psychiatry	15,856	2.8
Other	18,494	3.2
ALL VISITS	575,745	100.0

*Physicians involved in primary patient care account for 66.2% of all office visits (derived by summing each specialty).

Source [1]

Thus, once the number of local physician office visits per year is estimated for a service area, a simple division yields the number of physicians the service area can theoretically support. The procedure is demonstrated in the application section.

III. A. 1. Supplemental Physician Utilization Data

Community leaders should be aware of additional factors involved in the development and continuity of a physician's practice. The major factor in both aspects is the ability of the physician to achieve an adequate income [4]. Physician income is earned by providing health services to patients. Such services are usually categorized by the location where they occur. The most common categories are:

- (1) physician office visits;
- (2) hospital visits;
- (3) emergency room visits; and
- (4) nursing home visits.

Physician office visits are typically the largest revenue source for primary patient care physicians in rural areas. However, visits to a hospital, emergency room and nursing home can, in some instances be a significant part of a physician's income. Because those visits are a function of the existence of such facilities in the service area, they will be discussed in a later portion of the study.

TABLE 3. AVERAGE NUMBER OF OFFICE VISITS PER WEEK
BY SPECIALTY AND LOCATION, 1980.

SPECIALTY	LOCATION			
	ALL	NONMETROPOLITAN	METROPOLITAN	
			LESS THAN 1,000,00 ^b	1,000,000 AND OVER ^c
	78.7	103.1	79.8	70.5
General Practice*	116.5	133.5	113.6	104.5
Internal Medicine*	66.3	85.6	68.7	61.4
Surgery	69.9	80.4	73.7	63.9
Pediatrics ^{1/}	125.2	132.7	133.2	118.7
Obstetrics and Gynecology ^{1/}	96.4	108.6	101.5	89.9
Radiology	45.6	59.2	35.5	49.8
Psychiatry	33.2	35.7	33.8	32.7
Total ^a				

^aTotal includes Anesthesiology and "Other" categories. ^bIncludes counties in SMSAs with 50,000 to 999,999 inhabitants and counties considered potential SMSAs. ^cIncludes counties in SMSAs with 1,000,000 or more inhabitants.

*Physicians involved in primary patient care. Average number of weekly physician office visits in nonmetropolitan areas of the United States for Physicians involved in primary patient care equals 115.1, (derived by summing each weekly average and dividing by the number of specialties).

Source [3]

TABLE 4. AVERAGE NUMBER OF WEEKS PRACTICED PER YEAR
BY CENSUS DIVISION AND SPECIALTY, 1979.

CENSUS DIVISION	Total	SPECIALTY							
		General ^{1/} Practice	Internal ^{1/} Medicine	Surgery	Pediatrics	Obstetrics & Gynecology	Radiology	Psychiatry	Anesthesiology
Weeks									
New England	46.5	45.8	46.5	47.3	44.7	48.3	47.8	45.5	41.2
Mid Atlantic	46.7	47.5	46.3	46.8	46.8	47.1	44.9	46.8	46.8
E.N. Central	46.4	46.3	46.9	46.7	45.4	46.4	46.6	46.7	45.8
W.N. Central	47.3	47.4	46.6	46.6	49.2	50.3	46.8	49.0	47.1
South Atlantic	47.5	47.5	47.7	47.1	48.6	47.7	46.6	47.2	47.0
E.S. Central ^b	47.5	48.9	45.9	47.6	49.1	47.5	45.1	47.2	46.9
W.S. Central ^b	47.4	47.8	46.6	46.7	46.6	48.5	48.2	48.4	47.9
Mountain	47.2	46.7	47.4	46.5	49.2	48.1	47.0	47.4	47.2
Pacific ^a	46.5	47.3	46.3	45.8	45.0	47.1	46.7	46.9	46.3
TOTAL ^a	46.9	47.3	46.7	46.7	46.8	47.5	46.5	47.0	46.5

^aTotal includes "Other" category.

^bCensus division containing Oklahoma.

^{1/}Physicians involved in primary patient care. Average number of weeks practiced in W.S. Central census division for physicians involved in primary patient care equals 47.4, (derived by summing each yearly average and dividing by number of specialties).

Source [2]

Physician office visits, which are both a key source of physician income and the method by which estimates are made on the number of physicians an area can support, can also serve as a method by which to examine additional factors a community should consider in assessing its physician health service needs. The two main factors to be examined are:

1. the possible need of the community to subsidize a new physician during the initial phase of developing a practice; and
2. the need for the acceptance by local physicians in the service area.

For most new physician practices it is unrealistic to expect the practice to begin with a full patient load equal to the average for all primary care physicians (5455.7 office visits a year). In a survey of 16 physicians in rural Oklahoma, it was found that the average number of office visits for the first year of practice was 3,739 (Table 5). The number of visits generally increased each month during the first year as seen in Table 5. The range of office visits was from 1,670 to 6,619 visits a year, the latter being above the average for all physicians that was obtained from the national study [3]. The average number of office visits for both the second year of practice and for an established physician practicing in rural Oklahoma is given in Table 6. The average for the second year (5,615 office visits) is very close to the estimated average. The range for the second year of practice was 4,000 to 8,085 visits a year. The established physician had an average of 8,030 office visits and the range of yearly office visits was 5,400 to 10,290.

From these figures it should be noted that during the first few years of a practice the number of physician office visits may be below the rate necessary for the medical practice to survive on its own. Therefore, a community wishing to explore the establishment of a medical practice in its area may need to consider some form of subsidy to support the practice during this time. Three examples of the form this support may take are: (1) providing the clinical space either free or at a low rental charge; (2) paying the physician on a salary basis, for the period of time necessary for the practice to become self-sufficient; and (3) negotiating a low interest loan or a line of credit with the local bank.

Another point to consider is the fact that the survey indicated that an established physician providing primary patient care in rural Oklahoma had an average number of office visits that was significantly larger than the national data [3] had predicted (8,030 in Oklahoma vs. 5,513 for the rural U.S. as a whole). Therefore, in estimating the number of physicians an area can support, it would be desirable for the community to contact physicians practicing in the service area to determine the actual number of yearly office visits.

In addition to this contact with established physicians of the area, it is advisable for the community to solicit participation, advice, and support from these physicians. Many of the physicians surveyed listed cooperation of established physicians as the key to the success of a new physician practice. Such support may take several forms, one of which is the formation or enlargement of a group practice with the new physician.

TABLE 5. AVERAGE NUMBER AND RANGE OF MONTHLY PHYSICIAN OFFICE VISITS

FIRST YEAR OF PRACTICE, RURAL OKLAHOMA

Statistic	Months in Practice												Annual Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Average	190	224	254	268	299	331	333	339	332	337	420	412	3,739
Range													
Low	50	77	102	118	104	103	116	163	184	165	240	248	1,670
High	330	400	440	484	660	765	649	550	550	575	616	600	6,619

Source: Survey Data (eight observations)

TABLE 6. AVERAGE NUMBER AND RANGE OF PHYSICIAN OFFICE VISITS, SECOND YEAR OF PRACTICE AND SEVERAL YEARS OF PRACTICE, RURAL OKLAHOMA

Statistic	2nd Year* of Practice	Several Years** in Practice
AVERAGE	5,615	8,030
RANGE		
Low	4,000	5,400
High	8,085	10,290

Source: Survey Data

*Four observations

**Three observations

It should be noted that a possible benefit of a group practice is the increase in the average number of office visits for the first year of practice of a new physician. The average number of office visits for a new physician joining a group practice is 4,652 with a range of 2,304 to 7,122 visits a year (Table 7). This is significantly higher than the average for all first year practices discussed earlier (3,739 office visits a year, Table 5).

The main emphasis of this section is to provide a methodology by which a community can determine the number of physicians its service area can theoretically support. Physician office visits are used because of the availability of data to estimate demand for such visits and the importance they play in physician income. Before summarizing this section, other types of visits should be considered.

The major categories of other visits are hospital, emergency room, and nursing home. As mentioned earlier, these types of visits are largely a function of the existence of hospitals and nursing homes in the service area under consideration. Therefore, if a community has such facilities it may wish to include an estimate of the number of such visits. Averages and ranges for hospital and emergency room visits for the physicians' first year of practice are presented in Table 8. Total annual visits and the ranges for these visits for established physicians are shown in Table 9. The wide variation shown in these tables indicate the need for a community to contact local practicing physicians and hospital and nursing home administrators for a more precise estimate of new physician visits in these categories.

TABLE 7. AVERAGE NUMBER AND RANGE OF MONTHLY PHYSICIAN OFFICE VISITS,
FIRST YEAR OF GROUP PRACTICE, RURAL OKLAHOMA

Statistic	Months in Practice												Annual Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Average	282	310	322	333	374	425	448	443	384	427	450	454	4,652
Range													
Low	77	139	156	155	198	216	214	229	193	239	240	248	2,304
High	532	559	453	484	660	765	649	653	550	601	616	600	7,122

Source: Survey Data (Six Observations)

TABLE 8. AVERAGE NUMBER AND RANGE OF PHYSICIAN HOSPITAL AND EMERGENCY ROOM VISITS

FIRST YEAR OF PRACTICE IN A RURAL OKLAHOMA COMMUNITY WITH A HOSPITAL*

Statistic	Months												Annual Total
	1	2	3	4	5	6	7	8	9	10	11	12	
<u>Hospital Visit</u>													
Average	41	52	49	53	57	57	64	64	60	56	66	65	684
Range													
Low	0	6	3	11	10	12	20	30	21	18	30	30	191
High	112	143	138	141	176	169	137	132	121	99	134	127	1,629
<u>Emergency Room Visit</u>													
Average	52	61	65	62	66	63	57	55	54	55	57	61	708
Range													
Low	17	18	20	9	21	17	16	19	11	25	25	25	233
High	120	120	132	127	136	121	120	120	120	120	120	120	1,476

*Insufficient data to analyze Nursing Home Visits

Source: Survey Data (Seven Observations)

TABLE 9. AVERAGE NUMBER AND RANGE OF PHYSICIAN HOSPITAL,
 EMERGENCY ROOM, AND NURSING HOME VISITS FOR ESTABLISHED
 PHYSICIANS IN COMMUNITY WITH A HOSPITAL IN RURAL OKLAHOMA

Statistic	Hospital	Emergency Room	Nursing Home
Average	2,305	1,067	247
Range			
Low	1,350	500	0
High	3,840	1,500	540

Source: Survey Data (Three Observations)

If such information is unavailable, an estimate of hospital, emergency room and nursing home visits can be formulated from the number of office visits projected. Data in Table 10 shows the average, range and the number of hospital, emergency room and nursing home visits per office visit. For each physician office visit there occurred an average of 0.25 hospital, 0.16 emergency room and 0.04 nursing home visits. Therefore, if annual office visits are projected to be 4,000, you could estimate an average of 1,000 hospital (4,000 office visits X 0.25 hospital visits per office visit), 640 emergency room (4,000 office visits X 0.16 emergency room visits per office visit) and 160 nursing home visits (4,000 office visits X 0.04 nursing home visits per office visit).

TABLE 10. AVERAGE NUMBER AND RANGE OF PHYSICIAN VISITS,
COMMUNITIES WITH HOSPITAL

Statistic	OFFICE	HOSPITAL	EMERGENCY ROOM	NURSING HOME*
AVERAGE	5,260	1,340	850	216
RANGE				
Low	2,570	253	269	0
High	8,400	3,840	1,500	720
NUMBER OF HOSPITAL & EMERGENCY ROOM VISITS PER OFFICE VISIT				
AVERAGE	--	0.25	0.16	0.04
RANGE				
Low	--	0.10	0.10	0.0
High	--	0.46	0.18	0.12

*Nursing Home visits include all locations.

Source: Survey Data (Eleven observations)

This section has outlined the procedures by which a community can estimate its physician health service needs. The question of concern at this point in the decision process is whether there is a need to establish additional physician practices in the service area. If there appears to be enough physicians to meet the needs of the area, the community may wish to focus attention on other areas of the total health care picture. On the other hand, if it has been determined that additional physicians are desired and needed, then the decision process continues as other questions arise. These questions basically relate to the feasibility of developing a new medical practice. The fundamental questions are:

1. Can the practice be self-sufficient and if not, what is an estimate of additional support needed?
2. What is the estimated level of support needed until the clinic becomes self-sufficient?

A self-sufficient practice may be defined here as a practice that returns a net income adequate to sustain the average primary care physician.

A previously mentioned national study [3] gives the average net income from medical practice by specialty and location (Table 11) and by age of physician and specialty (Table 12). The average yearly net income of primary care physicians in nonmetropolitan locations in 1979 was \$74,750 and physicians under the age of 35 for all locations was \$62,500.

Given that net income is the difference between gross income and total costs, it may be necessary to develop procedures by which gross income and total costs can be estimated before expected net income can be determined. In the following sections of this report, methods by which total revenue and total costs can be projected are developed. The final section will exemplify how all the procedures developed can be used to determine the feasibility of establishing a new medical practice.

III. A. 2. Estimating Gross Income

Gross income equals the amount of physician services provided multiplied by the price charged for such services. Consequently, the data needed to predict gross income for a medical practice are:

- (1) physician health care categorized by type of services rendered; and
- (2) an estimate of rates charged for different types of health services.

Although there exists a multitude of services that a physician may render, gross income can be estimated by categorizing such services by the location of where they are provided (i.e. office visits, hospital visits, emergency room visits, and nursing home visits). In the previous section a method for estimating these visits was presented. Therefore, the remaining data needed to calculate gross income are estimates of the charges for services.^{2/} Averages and ranges for such charges obtained in the survey of primary care physicians in rural Oklahoma are presented in Table 13. From Table 13 it can be seen that office visit charges are usually divided into initial and routine visits. For this reason, it will be necessary to calculate the number of office visits that occur in each category. The previously mentioned national study [2], stated that office visits were 14.9 percent initial and 85.1 percent routine visits for all U.S. physicians in 1980. In addition, the survey of rural physicians in Oklahoma reported that a charge for additional services was made on 41 percent of the office visits. The average rate charged for additional services was \$10 for a practice without X-Ray facilities and \$15 for clinics with X-Ray equipment.

Using the projection of physician visits and the values in Table 13 an estimate of total revenue can be derived. Data in Figure 1 illustrates such a calculation. The projected values of physician visits are shown to be 4,000 office visits comprised of 596 initial

^{2/} A more detailed presentation of charges for physician services is given in Appendix A.

TABLE 11. AVERAGE NET INCOME FROM MEDICAL PRACTICE
BY SPECIALTY AND LOCATION, 1979.

Specialty	Total	Location		
		Nonmetropolitan	Metropolitan	
			Less than 1,000,000 ^b	1,000,000 and over ^c
			<u>Dollars</u>	
General Practice*	62,000	69,200	59,600	57,700
Internal Medicine*	76,200	75,800	75,800	76,500
Surgery	96,000	91,400	96,200	97,300
Pediatrics*	60,400	59,200	69,900	60,200
Obstetrics and Gynecology*	91,800	94,800	91,400	91,400
Radiology	98,000	94,100	100,000	97,700
Psychiatry	62,600	58,400	60,300	63,900
Anesthesiology	91,400	70,700	93,400	93,200
TOTAL ^a	78,400	76,400	78,700	78,800

^aTotal includes "Other" category. ^bAll Counties in SMSAs with 50,000 to 999,999 inhabitants and all counties considered potential SMSAs. ^cAll counties in SMSAs with 1,000,000 or more inhabitants.

*Physicians involved in primary patient care. Average net income for nonmetropolitan physicians involved in primary patient care equals \$74,750, (derived by summing each yearly average and dividing by the number of specialties).

Source [3]

TABLE 12. AVERAGE NET INCOME FROM MEDICAL PRACTICE
BY AGE OF PHYSICIAN AND SPECIALTY, 1979.

Specialty	AGE OF PHYSICIAN						All Ages
	Less than 35	36-40	41-45	46-50	51-60	61 and over	
General Practice*	56,200	69,500	77,200	70,500	64,700	53,500	62,000
Internal Medicine*	60,100	86,300	84,100	84,100	81,600	64,500	76,200
Surgery	77,800	99,700	112,400	102,600	101,900	74,200	96,000
Pediatrics*	45,100	58,700	71,100	69,000	65,900	49,600	60,400
Obstetrics and Gynecology*	88,600	103,800	94,800	109,900	94,700	65,900	91,800
Radiology	75,200	92,600	102,800	109,900	115,400	77,700	98,000
Psychiatry	51,500	64,900	69,400	68,300	65,000	53,600	62,600
Anesthesiology	86,000	87,500	94,100	96,000	93,800	84,900	91,400

*Physicians involved in primary patient care. Average net income for physicians involved in primary patient care under the age of 35 equals \$62,500, (derived by summing each yearly average and dividing by the number of specialties).

Source [3]

TABLE 13. AVERAGE RATES AND RANGES CHARGED FOR MAJOR CATEGORIES

OF PHYSICIAN VISITS

Statistic	Office Visit (Initial)	Office Visit (Routine)	Charge for Medication and Treatment per Office Visit	Hospital Visit*	Emergency Room Visit	Nursing Home Visit
Average	21.19	16.13	<u>Dollars</u> 10.00 or 15.00**	23.31	26.38	20.13
Range						
Low	15.00	12.00		17.00	20.00	12.00
High	30.00	21.00		30.00	40.00	40.00

Source: Survey Data (Sixteen Observations)

*A possible refinement of this procedure to estimate total income would be to segregate hospital visits into admissions and visits. Because of the lack of data on the number of admissions it is not attempted in this study. Values for rates charged hospital admissions is given in Appendix A for communities which are able to make this distinction.

**\$10 if no X-Ray machine, \$15 if X-Ray machine is available.

and 3,404 routine office visits, 1,000 hospital visits, 640 emergency room visits, 1,640 office visits with additional services, and 160 nursing home visits. Multiplying these categories of visits times the rate schedule (Table 13), produces a gross income estimate for low, average and high rate charges (\$97,908.00, \$127,349.04, and \$167,764.00 respectively).

These figures, when applied against an estimate of total cost, will provide a projection of the medical practice's net income. The following section will detail a procedure by which costs can be projected.

III. B. Procedure to Estimate Total Costs

Total cost is composed of capital costs and operating costs. Capital costs are the investments in nonhuman resources that contribute to the delivery of physician health services, such as land, buildings, and equipment. Operating costs are those costs incurred as health services are provided.

III. B. 1. Capital Costs

The major components of capital costs in a rural medical practice are building, land and equipment costs. Building costs are the expenditures made in the physical development of the structure which will house the medical practice. Several possible approaches to facility development are: (1) conventional architectural design and competitive bid; (2) design and construction by the same firm; (3) modular construction; (4) mobile home; (5) renovation of existing structure; and (6) lease.^{3/}

^{3/} For a discussion of advantages and disadvantages of different types of structures see [5].

FIGURE 1
ESTIMATE OF GROSS INCOME

Projected Physician Health Service Demand	Visits
A. Estimation of Types of Physician Visits	
OFFICE VISITS	4,000
Initial	X 14.9%* = 596
Routine	X 85.1%* = 3,404
With Additional Services	X 41.0%** = 1,640
HOSPITAL VISITS	
(4,000 office visits X 0.25 Hospital visits per office visit)**	1,000
EMERGENCY ROOM VISITS	
(4,000 office visits X 0.16 Emergency Room visits per office visit)**	640
NURSING HOME VISITS	
(4,000 office visits X 0.04 Nursing Home visits per office visit)	160

*Source: [2]

**Source: Survey Data (Sixteen observations)

FIGURE 1. Continued

B. Estimation of Gross Revenue				Rate Schedule				
Category of Service	# of Visits		Average Charge	Average Revenue	Low Charge	Low Revenue	High Charge	High Revenue
Office Visits (Initial)	596	X	\$21.19	\$ 12,629.24	\$15	\$ 8,940.00	\$30	\$ 17,880.00
Office Visits (Routine)	3,404	X	16.13	54,906.52	12	40,848.00	21	71,484.00
Charge for Additional								
Services per Office Visit	1,640	X	10.00	16,400.00	10	16,400.00	10	16,400.00
Hospital Visits	1,000	X	23.31	23,310.00	17	17,000.00	30	30,000.00
Emergency Room Visits	640	X	26.38	16,883.20	20	12,800.00	40	25,600.00
Nursing Home Visits	160	X	20.13	<u>3,220.08</u>	12	<u>1,920.00</u>	40	<u>6,400.00</u>
TOTAL				\$127,349.04		\$97,908.00		\$167,764.00

The most common type of development found in the survey of rural Oklahoma medical practices was that of conventional construction of a permanent structure. Construction costs are usually discussed in terms of costs per square foot. The cost per square foot in November 1982 ranged from \$50 to \$55.^{4/} These estimates exclude the costs of land. Land costs averaged \$11,750 an acre, with the typical size lot being one acre.^{5/}

The survey of clinics indicated that each physician had an average of four exam rooms with an average total space of 1,947 square feet. This was larger than expected and could be an indication of under staffed facilities (clinics built for two or more physicians, with only one currently practicing). The normal square footage utilized per physician ranged from 1,125 to 1,500. This space included the exam rooms, business office, reception area, laboratory, and conference room. The reception area, business office, conference room and laboratory are often shared in group practices. Examples of possible floor plans are shown in Appendix B.

Data in Table 14 present the survey results on equipment found in rural clinics by location in the clinic and the percent of respondents having such equipment. For example, data in Table 14 shows, that of the clinics surveyed, 100 percent had chairs, a desk, and a phone in the physician's office, between 25 to 50 percent had a clock and credenza in their office. Using these tables, a community could develop a list of equipment suitable for their clinic. As an example, a community could decide to investigate the cost of equipping a clinic with only the equipment found in at least 50 percent of the responses.

While this procedure will identify the type of equipment, it is also necessary to determine the amount of such equipment to provide. Data in Table 15 and Table 16 provide a listing of the average equipment found in solo and group practices (two or three physicians), respectively. These tables were derived by choosing the most frequent type and amount of equipment that were given as a response for clinics of these sizes in the survey of rural medical practices in Oklahoma.

Once a community has determined the equipment needed, this information may be integrated with the price of the equipment (Table 17) to estimate the equipment cost. Dealers of medical equipment were interviewed in 1982 to arrive at average, low, and high price estimates. Using price data and equipment needs, an estimate of equipment cost can be obtained. This is illustrated in Figure 2. The costs of equipment in a solo practice with average equipment is \$31,238.07. An X-ray machine was not found in a typical solo practice.

Combining an estimate of land and building cost with the value of equipment cost will provide a calculation of total capital cost. This is illustrated in Figure 3. Using the survey average for a solo practice, the cost of the building and land equals \$82,500.00 and

^{4/} Cost of facility usually includes formation of a parking lot.

^{5/} If local data are available, they should be used in estimation construction and land cost.

TABLE 14. EQUIPMENT FOUND IN CLINICS, BY ROOM AND PERCENT
OF RESPONDENTS INDICATING ITS PRESENCE

0 to 25%	25% to 50%	50% to 75%	75% to 100%	100%
RECEPTION ROOM				
Triple chairs Toy box	Double chairs Lamps Waste receptacle Toys	Pediatric chair	Single Chairs Magazine Rack Tables	
BUSINESS OFFICE				
Computer Safe Stool Telephone answering service	Bulletin board Lamps Rolodex	Vertical file	Clock Dictaphone Filing cabinet Medical records filing system with pegboard	Adding machine Secretarial chairs Copying machine Desks Medical dictionary Telephone Typewriter Waste Receptacle
PHYSICIAN OFFICE				
	Clock Credenza	Lateral desk file Dictaphone Lamps		Chairs Desk Telephone
CONFERENCE ROOM				
Sofa	Audio/Video equipment Clock Fire extinguisher	Heating plate Vacuum sweeper	Table Coat rack/hooks Refrigerator Chairs	Cabinets Kitchen utensils

TABLE 14. Continued

0 to 25%	25% to 50%	50% to 75%	75% to 100%	100%
EXAMINATION/TREATMENT ROOM				
Bulletin board	Ultra Sound	Gooseneck lamp	Blood pres-	
Mirror	Anoscope	Pediatric scale	sure Cuff	
Diathermy unit	Cast cutter	Table	Cabinets	
Sigmoidoscope	Compressor/	Side Chairs	Examination	
Utility Cart	suction	Soap Dispenser	table	
	Portable	Clothes rack/	Ophthalmo-	
	oxygen tanks	hooks	scope	
	mask and	Electrocardio-	Otoscope	
	carrier	graph	Scales	
	Trays-ear	Mayo instrument	Waste	
		stand	receptacle	
		Sinks		
		Snellen Eye		
		chart		
		Trays-eye		
		Trays-surgical		
LABORATORY				
Alcohol lamp	Centrifuge	Autoclave	Refrigerator	
or Bunsen	(blood and	Fetoscope		
Burner	urine)	Microscope		
Centrifuge	Flashlights	Sink		
(urine)	Hemogramometer	Soap dispenser		
Centrifuge	Incubator	Towel Dispenser		
(blood)	Substage lamp	X-Ray View Box		
Chairs	Elevated			
Dop Tone	counter stool			
(minidop)	Tape dispenser			
Eye tone	Urinometer			
Punch Biopsy	X-Ray machine			
Automatic cell				
counter				

Source: Survey Data (Sixteen observations)

TABLE 15. TYPICAL EQUIPMENT FOUND IN A SOLO PRACTICE

RECEPTION ROOM	BUSINESS OFFICE	PHYSICIAN OFFICE
15 single chairs	1 bulletin board	3 chairs
1 magazine rack	1 calculator	1 credenza
2 tables	3 secretarial chairs	1 desk
1 waste receptacle	1 clock	1 lamp
	1 copying machine	1 telephone
	2 desks	
	1 dictaphone	
	3 filing cabinets	
	1 medical dictionary	
	1 medical records file system with pegboard	
	1 rolodex	
	2 telephones	
	1 typewriter	
	1 vertical file	
	2 waste receptacles	
CONFERENCE ROOM	EXAMINATION/TREATMENT Rms	LABORATORY
1 cabinet	4 rooms	1 autoclave
2 chairs	4 blood pressure cuffs	1 centrifuge
1 coat rack/hooks	4 cabinets	(blood & urine)
1 set of kitchen utensils	4 examination tables	1 fetoscope
1 vacuum sweeper	3 gooseneck lamps	1 microscope
	4 ophthalmoscope/otoscope	1 refrigerator
	1 pediatric scale/table	1 sink
	1 scale	1 soap dispenser
	4 side chairs	1 X-Ray view box
	4 soap dispensers	1 flashlight
	4 stools	1 elevated counter stool
	4 towel dispensers	1 towel dispenser
	4 waste receptacles	
	1 ultrasound unit	
	1 diathermy unit	
	1 anoscope	
	1 cast cutter	
	4 clothes rack/hooks	
	1 electrocardiograph	
	1 mayo instrument stand	
	1 portable oxygen tank, with mask & carrier	
	4 sinks	
	1 snellen eye chart	
	1 tray-eye	
	1 tray-ear	
	1 tray-surgical	

Sixteen observations

TABLE 16. TYPICAL EQUIPMENT FOUND IN GROUP PRACTICE

(2-3 PHYSICIANS)

RECEPTION ROOM	BUSINESS OFFICE
10 Single Chairs	2 Calculators
5 Double Chairs	3 Secretarial Chairs
1 Magazine Rack	1 Clock
3 Tables	1 Copying Machine
	4 Desks
	1 Dictaphone
	4 Filing Cabinets
	2 Lamps
	2 Medical Dictionaries
	1 Medical Records File System with Pegboard
	2 Telephones
	2 Typewriters
	2 Vertical Files
	3 Waste Receptacles
PHYSICIAN'S OFFICE	CONFERENCE ROOM
3 Chairs	3 Cabinets
1 Desk	5 Chairs
1 Lateral Desk File	1 Clock
1 Dictaphone	1 Table
1 Lamp	1 Coat Rack/Hooks
1 Telephone	1 Heating Plate
	1 Set of Kitchen Utensils
	1 Refrigerator
	1 Fire Extinguisher

Source: Survey Data (Eleven observations)

TABLE 16 Continued

	EXAMINATION/TREATMENT ROOM		LABORATORY
	Two Physicians	Three Physicians	
Rooms	8	12	1 Alcohol Lamp or Bunsen Burner
Blood Pressure Cuffs	8	12	1 Autoclave
Cabinets	8	12	1 Centrifuge Unit
Examination Tables	8	12	(Blood & Urine)
Gooseneck Lamps	4	6	1 Fetoscope
Mirrors	8	12	1 Flashlight
Ophthalmoscope-			1 Hemogramometer
Otoscope	8	12	1 Incubator
Pediatric Scale/Table	2	3	1 Microscope
Scales	4	6	1 Substage Lamp
Side Chairs	8	12	1 Refrigerator
Soap Dispensers	8	12	1 Sink
Stools	8	12	1 Soap Dispenser
Towel Dispensers	8	12	2 Elevated Counter Stools
Waste Receptacles	8	12	1 Tape Dispenser
Ultrasound Unit	1	1	1 Towel Dispenser
Cast Cutter	1	1	1 Urinometer
Clothes Rack/Hooks	8	12	2 X-Ray View Boxes
Electrocardiograph	1	1	1 X-Ray Machine
Compressor/Suction	1	1	
Mayo Instrument Stands	2	3	
Portable Oxygen Tank, Mask and Carrier	1	1	
Sinks	8	12	
Snellen Eye Chart	2	3	
Trays-Eye	1	1	
Trays-Ear	1	1	
Trays-Surgical	1	1	

Source: Survey Data (Eleven observations)

TABLE 17
 COST OF EQUIPMENT TYPICALLY FOUND IN
 SOLO AND GROUP PRACTICE, 1982 PRICES

EQUIPMENT TYPE	AVERAGE PRICE	RANGE	
		Low	High
<u>RECEPTION AREA</u>			
		<u>DOLLARS</u>	
Chairs, Single	91.31	50.00	125.00
Chairs, Double**	134.35	--	--
Magazine Rack	48.46	10.20	82.55
Tables*	70.00	--	--
Waste Receptacle	15.50	14.00	17.50
<u>BUSINESS OFFICE</u>			
Adding Machine/ Calculator	155.75	79.00	270.00
Bulletin Board	27.90	13.00	55.10
Clock	43.70	20.62	80.95
Copying Machine	186.62	129.95	249.95
Desk	316.65	228.55	441.85
Dictaphone*	313.45	--	--
Filing Cabinet	157.66	98.90	304.50
Lamp	53.13	23.50	89.00
Medical Dictionary	45.00	--	--
Medical Records filing system with pegboard*	1,500.00	--	--
Rolodex	37.12	15.00	75.86
Secretarial Chair	109.13	74.95	141.75
Telephone***	--	--	--
Typewriter**	570.00	--	--
Vertical File*	400.00	--	--
Waste Receptacle	15.50	14.00	17.50
<u>PHYSICIAN'S OFFICE</u>			
Chair	214.92	125.00	379.50
Credenza	308.51	239.40	445.50
Desk	321.18	185.25	489.50
Dictaphone****	--	--	--
Lateral Desk File*	200.00	--	--
Lamp	53.13	23.50	89.00
Telephone***	--	--	--

TABLE 17. Continued

EQUIPMENT TYPE	AVERAGE PRICE	RANGE	
		Low	High
<u>CONFERENCE ROOM</u>		<u>DOLLARS</u>	
Cabinet*	300.00	--	--
Chairs*	90.00	--	--
Clock	43.70	20.62	80.95
Coat Rack/Hooks	75.00	44.20	151.70
Fire Extinguisher	43.20	--	--
Heating Plate	20.99	12.99	29.99
Kitchen Utensils*	25.00	--	--
Refrigerator**	302.88	--	--
Table	333.00	69.40	629.60
Vacuum Sweeper*	150.00	--	--
<u>LABORATORY</u>			
Alcohol Lamp or Bunsen Burner**	29.32	--	--
Autoclave	858.64	169.50	1,500.00
Centrifuge (Blood and Urine)**	470.00	--	--
Elevated Counter Stool*	125.00	--	--
Fetoscope*	80.00	--	--
Flashlight*	3.00	--	--
Hemogramometer*	150.00	--	--
Incubator**	150.00	--	--
Microscope	2,917.00	1,200.00	5,823.00
Refrigerator**	374.00	--	--
Sink*	175.00	--	--
Soap Dispenser**	17.50	--	--
Substage Lamp*	40.00	--	--
Tape Dispenser*	30.00	--	--
Towel Dispenser**	22.50	--	--
Urinometer	6.25	4.25	10.00
X-Ray Machine with processor*	40,000.00	--	--
X-Ray View Box	135.00	--	--
<u>EXAMINATION/TREATMENT ROOM</u>			
Anoscope	111.00	60.00	142.50
Blood Pressure Cuff	88.25	50.00	120.00
Cabinet**	415.00	--	--
Cast Cutter**	255.00	--	--
Clothes Rack/Hooks	31.00	--	--
Compressor/Suction	325.00	--	--
Diathermy Unit*	2,500.00	--	--

TABLE 17. Continued

EQUIPMENT TYPE	AVERAGE PRICE	RANGE	
		Low	High
<u>EXAMINATION/TREATMENT ROOM</u>		<u>DOLLARS</u>	
Electrocardiograph	2,091.67	1,875.00	2,400.00
Examination Table	722.83	230.00	1,035.00
Gooseneck Lamp*	60.00	--	--
Mirror*	10.00	--	--
Mayo Instrument Stand	122.72	90.00	178.15
Ophthalmoscope- Otoscope	197.00	65.75	365.00
Pediatric Scale/ Table**	219.00	--	--
Scales	214.68	180.00	264.00
Side Chairs**	140.00	--	--
Sink	150.00	100.00	200.00
Soap Dispenser**	17.50	--	--
Snellen Eye Chart*	5.00	--	--
Stool	22.50	--	--
Towel Dispenser**	22.50	--	--
Trays-Ear*	29.00	10.00	43.00
Trays-Eye*	10.00	--	--
Trays-Surgical**	23.55	--	--
Ultrasound**** *****	3,250.00	--	--
Waste Receptacle	128.67	40.00	175.00
Portable Oxygen Tank Mask and Carrier**	205.00	--	--

Source: Survey Data

*One Observation on equipment cost

**Two Observations on equipment cost

***Telephone is usually a rental item, included directly in operational expenses.

****Dictaphone in physician's office is part of unit found in business office.

*****Physical Therapy ultrasound, not a diagnostic ultrasound.

FIGURE 2.

CALCULATION OF EQUIPMENT COST
 AVERAGE SOLO PRACTICE, 1982 PRICES

EQUIPMENT TYPE	PRICE PER UNIT	TOTAL COST
<u>DOLLARS</u>		
RECEPTION ROOM		
15 single chairs	91.31	1,369.65
1 magazine rack	48.46	48.46
2 tables	70.00	140.00
1 waste receptacle	15.50	15.50
TABLE		<u>\$1,573.61</u>
BUSINESS OFFICE		
1 bulletin board	27.90	27.90
1 calculator	155.75	155.75
3 secretarial chairs	109.13	327.39
1 clock	43.70	43.70
1 copy machine	186.62	186.62
2 desks	316.65	633.30
1 dictaphone	313.45	313.45
3 filing cabinets	157.66	472.98
1 medical dictionary	45.00	45.00
1 medical records file system with pegboard	1,500.00	1,500.00
1 rolodex	37.12	37.12
2 telephones*	---	---
1 typewriter	570.00	570.00
1 vertical file	400.00	400.00
2 waste receptacles	15.50	31.00
TOTAL		<u>4,744.21</u>
PHYSICIAN'S OFFICE		
3 chairs	214.92	644.76
1 credenza	308.51	308.51
1 desk	321.18	321.18
1 lamp	53.13	53.13
1 telephone*	---	---
TOTAL		<u>\$1,327.58</u>
CONFERENCE ROOM		
1 cabinet	300.00	300.00
2 chairs	90.00	180.00
1 coat rack/hooks	75.00	75.00
1 set of kitchen utensils	25.00	25.00
1 vacuum sweeper	150.00	150.00
TOTAL		<u>730.00</u>

FIGURE 2. Continued

EQUIPMENT TYPE	PRICE PER UNIT	TOTAL COST
<u>DOLLARS</u>		
LABORATORY		
1 autoclave	858.64	858.64
1 centrifuge (blood & urine)	470.00	470.00
1 fetoscope	80.00	80.00
1 flashlight	3.00	3.00
1 microscope	2,917.67	2,917.67
1 refrigerator	374.00	374.00
1 sink	175.00	175.00
1 soap dispenser	17.50	17.50
1 elevated counter stool	125.00	125.00
1 towel dispenser	22.50	22.50
1 X-Ray view box	135.00	135.00
TOTAL		<u>5,178.31</u>
EXAMINATION/TREATMENT ROOM		
4 blood pressure cuffs	88.25	353.00
4 cabinets	415.00	1,660.00
4 exam tables	722.83	2,891.32
3 gooseneck lamps	60.00	180.00
4 ophthalmoscope-otoscope	197.00	788.00
1 pediatric scale/table	219.00	219.00
1 scale	214.68	214.68
4 side chairs	140.00	560.00
4 soap dispensers	17.50	70.00
4 stools	203.33	813.32
4 towel dispensers	22.50	90.00
4 waste receptacles	128.67	514.68
1 ultrasound unit	3,250.00	3,250.00
1 diathermy unit	2,500.00	2,500.00
1 anoscope	114.42	114.42
1 cast cutter	255.00	255.00
4 clothes rack/hooks	31.00	124.00
1 electrocardiograph	2,091.67	2,091.67
1 mayo instrument stand	122.72	122.72
1 portable oxygen tank mask and carrier	205.00	205.00
4 sinks	150.00	600.00
1 snellen eye chart	5.00	5.00
1 tray-eye	10.00	10.00
1 tray-ear	29.00	29.00
1 tray-surgical	23.55	23.55
TOTAL		<u>17,684.36</u>

FIGURE 2. Continued

EQUIPMENT TYPE	TOTAL COST
	<u>DOLLARS</u>
COST SUMMARY BY AREA	COST
Reception Room	1,573.61
Business Office	4,744.21
Physician's Office	1,327.58
Conference Room	730.00
Laboratory	5,178.31
Examination/Treatment Room	<u>17,684.36</u>
TOTAL EQUIPMENT COST	31,238.07

FIGURE 3. CALCULATION OF CAPITAL COSTS

BUILDING COSTS	
Number of Physicians	<u>1</u> physician
times	
Square Feet per Physician	<u>1,500</u> sq. ft.
times	
Cost of Construction per Sq. Ft. (44.87)*	<u>\$55.00</u>
EQUALS	<u>\$82,500.00</u>
LAND COSTS	
Size of Lot (1 acre)*	<u>1</u> acre
times	
Price per acre (\$11,750)*	<u>\$11,750</u> per acre
EQUALS	<u>\$11,750</u>
EQUIPMENT COSTS (from Figure 2)	<u>\$31,238.07</u>
TOTAL CAPITAL COSTS	<u>\$125,488.07</u>

*Survey average; if local data are available it should be used in estimation.

\$11,750.00 respectively. Cost of equipment from Figure 2 is estimated at \$31,238.07. Total capital needs for a solo practice is \$125,488.07.

The community should keep in mind that land and construction costs vary among locations and that using local data is preferred. Actual construction design and equipment selection should involve the physicians at an early phase of physician recruitment. In addition, the price listed for equipment has been averaged among suppliers. A comparison among dealers in your area for final equipment selection is advisable.

III. B. 2. Operating Costs

Operating costs in a medical practice are expenditures incurred in the generation of physician services. For a typical rural practice such costs are grouped into building, office, medical and personnel.

III. B. 2. a. Building The major components of building operating costs are utilities, maintenance, janitorial services, and taxes. Based on the survey of rural Oklahoma practices, the average response for such costs per year are presented in Table 18.

Electricity and gas costs were found to be a function of the size of the clinic and averaged \$0.74 and \$0.17 per square foot respectively. Insurance, at replacement cost, is given for the building and contents of a per \$100 value and type of structure (Concrete and Frame). The remaining building costs are given on a per physician basis. For example, maintenance costs averaged \$799 per physician per year.

III. B. 2. b. Office Office expenses are incurred in the operation of the clinic's business office. Average expenses, as determined in the survey of physicians, are given per physician per year in Table 19. It should be noted that expenses for office supplies are a function of the number of office visits. The survey average is \$0.44 per visit.

III. B. 2. c. Medical Medical costs can be categorized by medical equipment maintenance, medical supplies and malpractice insurance expense. Table 20 is a presentation of the average costs of such outlays on per physician per year basis. Medical supplies, similar to office supplies, are a function of the volume of office visits and are \$0.71 per visit.

III. B. 2. d. Personnel While labor in a medical practice can typically be divided into other medical personnel besides the physician and support personnel, there exists some variation in the types of personnel employed in these categories. Table 21 details these personnel by job title and/or qualifications and gives the average and range of salaries found in the survey of rural clinics. An examination of this table shows, for example, that the yearly salary of a registered nurse averages \$13,139 and ranged from a low \$10,314 to a high of \$16,800. In some categories, the number of observation was low and the resulting averages may appear large. For example, there was one receptionist/bookkeeper making \$11,760 per year. By comparison, this salary is higher than the LPN's. Years of experience, size of practice, and so forth are not accounted for in this analysis. Local wage rates should be used to calculate specific annual personnel costs if available. Fringe benefits were found to average approximately 15 percent of total salary.

TABLE 18
AVERAGE BUILDING OPERATING COSTS PER YEAR

COST CATEGORY	COST PER UNIT	
	<u>Dollars</u>	
Electricity	0.74 per sq. ft. per year	
Gas	0.17 per sq. ft. per year	
Water	131.00 per year per physician	
Sewer	86.00 per year per physician	
Trash	150.00 per year per physician	
Maintenance	799.00 per year per physician	
Janitor	1,968.00 per year per physician	
Taxes	1,881.00 per year per physician*	
Insurance		
<u>Type of Building</u>	<u>Cost per \$100 Value</u> <u>(replacement cost)</u>	
	<u>Building</u>	<u>Contents</u>
Concrete-Brick Veneer	1.293	1.076
Frame	1.66	1.45

Source: Survey Data (Sixteen Observations)

*If actual millage rate is known, it should be applied to value of structure to determine tax payment per year.

TABLE 19
AVERAGE ANNUAL OFFICE OPERATING COSTS

COST CATEGORY	ANNUAL COST PER PHYSICIAN	
	DOLLARS	
Telephone	2,297	
Office Supplies	2,515	(\$0.44 per office visit)
Office Equipment	200	
Billing	941	
Retainer Fee*	1,086	
Auto Expenses	4,800	
Convention (CME)	1,825	
Professional Dues	715	

Source: Survey Data (Sixteen Observations)

*Lawyer, Accountant, CPA, Practice Management Consultant, etc.

TABLE 20
AVERAGE ANNUAL MEDICAL OPERATING COSTS

COST CATEGORY	ANNUAL COST PER PHYSICIAN	
	<u>Dollars</u>	
Medical Equipment Maintenance	1,033	
Medical Supplies	2,330	(\$0.71 per office visit)
Malpractice Insurance	2,917	

Source: Survey Data (Sixteen Observations)

TABLE 21
ANNUAL MEDICAL AND SUPPORT PERSONNEL COST (1982)

TYPE OF EMPLOYEE	AVERAGE ANNUAL SALARY	RANGE	
		Low	High
<u>DOLLARS</u>			
<u>Other Medical Personnel</u>			
Medical Assistant	9,760	7,800	10,680
Licensed Practical Nurse	9,630	7,500	14,400
Registered Nurse	13,139	10,314	16,800
Laboratory Technician	14,493	10,260	19,800
X-Ray Technician	15,743	--	--
<u>Support Personnel</u>			
Receptionist	9,961	7,200	12,300
Bookkeeper	11,164	9,360	15,322
Receptionist/Bookkeeper	11,760	---	---
Medical Secretary	8,407	7,200	8,832
Insurance Clerk	8,160	---	---
FRINGE BENEFITS			
15% of Total Salary			

Source: Survey Data (Sixteen Observations)

To calculate personnel costs it is first necessary to determine the usual type of personnel employed in a rural clinic. This information is summarized for solo and group practices of two to three physicians in Table 22. This table was developed by choosing the most frequent survey response from medical practices in the survey.

Using the average salary of the personnel (Table 21) and the most common type of personnel employed (Table 22), it is possible to estimate labor costs for solo and group practices (2-3 physicians). These estimates of labor costs are presented in Table 23. The typical solo practice was found to have one other medical personnel besides the physician, and this person is generally a Licensed Practical Nurse (LPN). The support personnel duties of a solo practice are usually performed by one receptionist/bookkeeper. Total labor costs for a solo practice are estimated at \$24,598 a year. An average clinic of two to three physicians will have three other medical personnel (Medical assistant, Licensed Practical Nurse, and Laboratory Technician) and two support personnel (receptionist and receptionist/bookkeeper) and the total labor costs are approximately \$63,944 a year.

TABLE 22
 MOST FREQUENT TYPES OF PERSONAL, SOLO
 AND GROUP PRACTICES (2-3 Physicians)

TYPE OF PRACTICE	OTHER MEDICAL PERSONNEL		SUPPORT PERSONNEL	
	Type	Number	Type	Number
Solo*	Licensed Practical Nurse	1	Receptionist/Bookkeeper	1
Group (2-3 Physicians)**	Licensed Practical Nurse	1	Receptionist/Bookkeeper	1
	Medical Assistant	1	Receptionist	1
	Laboratory Technician***	1		

Source: Survey Data

*Five Observations

**Nine Observations

***It was common in the survey to find that the Laboratory Technician performed X-Ray Technician duties also.

TABLE 23
 CALCULATION OF ANNUAL LABOR COSTS
 BY TYPE OF PRACTICE
 1982

Type of Practice	Number Employed	Average Annual Salary	Total Cost
			<u>Dollars</u>
<u>Solo Practice</u>			
Other Medical Personnel			
Licensed Practical Nurse	1	9,630	9,630
Support Personnel			
Receptionist/Bookkeeper	1	11,760	<u>11,760</u>
TOTAL	2		<u>21,390</u>
FRINGE BENEFITS	15% of Total Salary		<u>3,208</u>
TOTAL			<u>24,598</u>
<u>Group Practice (2-3 Physicians)</u>			
Other Medical Personnel			
Medical Assistant	1	9,760	9,760
Licensed Practical Nurse	1	9,630	9,630
Laboratory Technician	1	14,493	14,493
Support Personnel			
Receptionist	1	9,961	9,961
Receptionist/Bookkeeper	1	11,760	<u>11,760</u>
TOTAL	5		<u>55,604</u>
FRINGE BENEFITS	15% of Total Salary		<u>8,340</u>
TOTAL			<u>63,944</u>

From these estimates of the elements of operating costs, it is possible to derive total operating costs. Data in Figure 4 is an example of such calculations for a solo medical practice. A figure of \$52,795.35 is an estimate of total operating cost for a solo practice, calculated by summing building (\$7,782.85), office (\$13,624.00), medical (\$6,790.00) and personnel (\$24,598.50) costs.

III. B. 3. Total Costs

The last calculations necessary to an estimate total yearly cost is: (1) determine the payments per year made on the capital investments; and (2) add this to annual operating costs. Yearly capital charges are determined by amortizing the amount of money borrowed for capital investments. A table of amortization factors are presented in Appendix C. By applying the amortization factors (based on interest rate and length of loan) times the amount borrowed, a yearly cost can be determined. Data in Figure 5 are an example of such calculations for a solo practice assuming a 25 year loan at 10.625 percent interest in the building and a ten year loan at 13 percent interest on equipment.^{6/} The annual charge for capital is \$16,638.42. This includes \$10,886.16 for the building and land, and \$5,752.26 for the equipment.

Combining the total operating costs of \$52,795.35 and annual capital costs of \$16,638.42, the average total cost of a solo practice is estimated at \$69,433.77.

III. C. Procedure to Estimate Net Income

A calculation of physician net income is now possible by subtracting the estimate of total costs from the projection of gross income. Data in Figure 6 presents an example of such calculations for a typical solo practice. Total revenue (estimated in Figure 1) averaged \$127,349.04 and ranged from a low of \$97,908.00 and a high of \$167,764.00. Total cost is the addition of the capital costs (\$16,638.42) and operating costs (\$52,795.35) which equals \$69,433.77.

With a 95 percent collection rate the solo practice physician will receive a net income of \$51,548 if the physician charges the average rate. Figure 6 also shows the net income with alternative collection rates. Based on a study [6], the average collection rate is 85 percent. With this collection rate the physician will earn \$38,813.

III. D. Application of Forms

To aid community leaders or physicians in the evaluation procedure, several forms have been created. These forms allow local decision makers to complete their own analyses. Computer assistance for completion of forms is available by contacting your County Extension office. The forms simply require local decision makers to provide local data and are quite easy to follow. Included in the calculations used in the forms are indexing methods to adjust for changing price levels. For example, if the current estimate of \$55 per square foot for construction cost is used in an analysis three years from now it could be adjusted for any changes in the price level by multiplying \$55 times the 1985 current construction cost index

^{6/}October 1, 1982 rate for Farmers Home Community Facility Loans.

FIGURE 4. CALCULATION OF ANNUAL OPERATING COSTS
FOR A SOLO PRACTICE

Type of Building Cost		Total Cost	
Building		Number of Physicians	Dollars
Electricity	\$0.74 sq. ft. X 1,500 sq. ft.*	X	1 \$1,110.00
Gas	0.17 sq. ft. X 1,500 sq. ft.*	X	1 255.00
Water	\$ 131.00 per physician	X	1 131.00
Sewer	86.00 per physician	X	1 86.00
Trash	150.00 per physician	X	1 150.00
Maintenance	799.00 per physician	X	1 799.00
Janitor	1,968.00 per physician	X	1 1,968.00
Taxes	1,881.00 per physician	X	1 1,881.00
	Dollar Value	Cost per \$100 Value	
Insurance			
Concrete - Brick Vaneer			
	Buliding	\$82,500.00	1.293 1,066.73
	Equipment	31,238.07	1.076 336.12
	TOTAL		7,782.85

FIGURE 4. Continued

Type of Operating Cost		Total Cost		
	Per Physician		Number of Physicians	Dollars
Telephone	2,297.00	X	1	\$2,297.00
Office Supplies	1,760.00**	X	1	1,760.00
Office Equipment	200.00	X	1	200.00
Billing	941.00	X	1	941.00
Retainer Fee	1,086.00	X	1	1,086.00
Auto Expenses	4,800.00	X	1	4,800.00
Convention(CME)	1,825.00	X	1	1,825.00
Professional Dues	715.00	X	1	715.00
TOTAL				<u>13,624.00</u>
Medical				
Medical Equipment Maintenance	1,033.00	X	1	1,033.00
Medical Supplies	2,840.00***	X	1	2,840.00
Malpractice	2,917.00	X	1	<u>2,917.00</u>
TOTAL				<u>6,790.00</u>

FIGURE 4. Continued

Type of Operating Cost				Total Cost
Personnel				
LPN	9,600.00	X	1	\$9,630.00
Receptionist/Bookkeeper	11,760.00	X	1	11,760.00
TOTAL				<u>21,390.00</u>
Fringe Benefits	15%	X	Total Salary	3,208.50
		TOTAL		<u>24,598.50</u>
Total Operating Costs				
Building				7,782.85
Office				13,624.00
Medical				6,790.00
Labor				24,598.50
	TOTAL			<u>52,795.35</u>

*Estimate of average square feet per physician.

**4,000 office visits times \$0.44 cost of office supplies per visit equals \$1,760.00

***4,000 office visits times \$0.71 cost of medical supplies per visit equals \$2,840.00

FIGURE 5. CALCULATION OF YEARLY
CAPITAL CHARGE

Solo Practice	
Building Investment	\$82,500.00
Land	11,750.00
Amortization Factor (25 Yrs.; 10.625)	0.115503
	\$10,886.16
Equipment	\$31,213.07
Amortization Factor (10 Yrs.; 13%)	0.184290
	<u>\$5,752.26</u>
TOTAL	\$16,638.42

FIGURE 6.
PROJECTION OF NET INCOME

RATE SCHEDULE

Gross Income*	Low	Average	High
(100% collection rate)	97,908.00	127,349.04	167,764.00
minus			
Total Cost	69,433.77	69,433.77	69,433.77
equals			
Net Income	28,474.23	57,915.27	98,330.23

*Source: [2]

FIGURE 6. Continued

Alternative Collection Rates				
Rate Schedule	95%	90%	85%	80%
LOW	93,012.60	88,117.20	83,221.80	78,326.40
AVERAGE	120,981.59	114,614.14	108,246.68	101,879.23
HIGH	<u>159,375.80</u>	<u>150,987.60</u>	<u>142,599.40</u>	<u>134,211.20</u>
MINUS TOTAL COST	69,433.77	69,433.77	69,433.77	69,433.77
	23,578.83	18,683.43	13,788.03	8,892.63
NET INCOME	51,547.82	45,180.37	38,812.91	32,445.46
	89,942.03	81,553.83	73,165.63	64,777.43

divided by the 1982 construction cost index, Appendix D contains the construction and consumer price indexes from 1977 to 1982, with a base year of 1977. These forms are applied to Garber, Oklahoma below to illustrate their usefulness and ease of completion. Blank forms are available in Appendix E.

Garber is a community of 1,200, located in northcentral Oklahoma. A local civic organization explored the feasibility of recruiting another physician for their community. The present physician is currently nearing retirement age. The local committee contacted one of the authors of this report and a study was completed for them with the forms. Form 1 was used to estimate the number of office visits the service area would generate. After completing the form using local population estimates, the number of physician visits equalled 10,807. Completion of Form 2, determined that the service area can generate enough calls for 1.98 physicians. Assuming no X-Ray facilities and using a \$10 charge for additional services, Form 3 shows that total revenue is projected from \$178,824.00 to \$285,747.00 depending upon charges per call. Form 4 identifies capital equipment items, while Form 5 summarizes building and equipment costs. For the example, total annual capital costs were estimated at \$27,259.24. In Form 6, operating costs by item are estimated. Forms 7 and 8 summarize total costs and revenue. Total costs equal \$139,078.89, whereas net income per physician with a 100 percent collection rate ranges from \$19,872.56 to \$73,334.06 depending upon fee structure. With a collection rate of 85 percent net income per physician ranged from \$6,460.76 to \$44,759.36. Form 9 can be used by community leaders if they are considering building a clinic and renting it to a physician. For example, if citizens in Garber build a clinic with 1,400 square feet per physician, on city land, do not equip it, pay only taxes, insurance and maintenance, yearly annual costs are \$25,138.68. If they charge a monthly rent of \$1,100 per month per physician, they will net \$1,261.32 per year.

IV. Computer Services

Recent advances in computer technology have made the price and capabilities of computers very attractive in primary health care. The computer hardware price is economically feasible and the software is a great aid for patient records, billing, and other functions. Computer costs and use were not included in the above survey but may be considered.

The personal computer is providing a timely tool to aid the individual, and various professions such as accountants, engineers, and planners are leading the way. Recently, the use of the computer has been introduced to the attorney and the physician and will become, by 1990, a necessity in these types of businesses. The need to educate these professionals as to purchase decisions, best use, and control has been addressed by only a handful of experts in the field. Such items as appointment scheduling, claims preparation, medical records, supplies, inventory and payroll are a few of the programs available to a physician.

There is currently a program that assists the physician in patient assessment and treatment with the potential of remote usage

Form 1. Estimated Number of Annual Physician Office Visits

by Age and Sex for Clinic Service Area

Age Cohort	Male			Female			Total Visits
	Utilization Rate	Population	Total Visits	Utilization Rate	Population	Total Visits	
Under 15	2.3	X <u>685</u>	= <u>1,576</u>	2.1	X <u>677</u>	= <u>1,422</u>	<u>2,998</u>
15 - 24	1.4	X <u>518</u>	= <u>725</u>	2.7	X <u>532</u>	= <u>1,436</u>	<u>2,161</u>
25 - 44	1.8	X <u>771</u>	= <u>1,388</u>	3.3	X <u>801</u>	= <u>2,643</u>	<u>4,031</u>
45 - 64	2.6	X <u>569</u>	= <u>1,479</u>	3.4	X <u>646</u>	= <u>2,193</u>	<u>3,675</u>
65 and Over	4.0	X <u>319</u>	= <u>1,276</u>	4.3	X <u>508</u>	= <u>2,184</u>	<u>3,460</u>
TOTAL			<u>6,444</u>			<u>9,881</u>	<u>16,325</u>

Estimate of local physician office visits = $66.2 \times \underline{16,325}$ total visits = 10,807

Form 2. Estimation of Number of
Physicians an Area Can Support

Estimated Total Office Visits for Area (From Form 1)		<u>10,807</u>
Subtract Office Visits to Practicing Physicians in Area	-	<u>0</u>
Divided by Average Number of Physician Office Visits (5455.7)*		<u>5.455.7</u>
Equals Number of Additional Physicians Area could Theoretically support	=	<u>1.98</u>

*If not known use national average of 5455.

Form 3. Procedure to Estimate Gross Income

Category of Service	Number of Visits	Rate Schedule					
		High	Average	Low	High	Average	Low
Office Visit (Initial) .149 x total office Visits <u>10,807</u> (Form 1)	<u>1610</u> X	30.00	21.19	15.00	<u>48,300.00</u>	<u>34,115.90</u>	<u>24,150.00</u>
Office Visit (Routine) .851 x total office Visits <u>10,807</u> (Form 1)	<u>9197</u> X	21.00	16.13	12.00	<u>193,137.00</u>	<u>148,347.61</u>	<u>110,364.00</u>
Charge for additional services per office visit .41 x total office visits <u>10,807</u> (Form 1)	<u>4431</u> X			15.00 with x-ray or 10.00 without	<u>44,310.00</u>	<u>44,310.00</u>	<u>44,310.00</u>
Hospital Visits* .25 x total office Visits <u>0</u> (Form 1)	<u>0</u> X	30.00	23.31	30.00	_____	_____	_____
Emergency Room Visits* .16 x total office Visits <u>0</u> (Form 1)	<u>0</u> X	40.00	26.38	20.00	_____	_____	_____
Nursing Home Visits* .04 x total office Visits <u>0</u> (Form 1)	<u>0</u> X	40.00	20.13	12.00	_____	_____	_____
TOTAL					<u>285,747.00</u>	<u>226,773.51</u>	<u>178,824.00</u>

*Use locally determined number if available.

Form 4. Procedure to Estimate Equipment Cost

Area in Clinic	Equipment	Number		Price Per Unit		Total Cost
				Dollars		Dollars
<u>Reception Area</u>						
	Chairs, Single	<u>10</u>	X	<u>91.31</u>	=	<u>913.10</u>
	Chairs, Double	<u>5</u>	X	<u>134.35</u>	=	<u>671.75</u>
	Chairs, Triple		X		=	
	Chairs, Pediatric		X		=	
	Lamps		X		=	
	Magazine Rack	<u>1</u>	X	<u>48.46</u>	=	<u>48.46</u>
	Tables	<u>3</u>	X	<u>70.00</u>	=	<u>210.00</u>
	Toy Box		X		=	
	Waste Receptacle		X		=	
	Other:		X		=	
			X		=	
			X		=	
			X		=	
TOTAL						<u>1,843.31</u>
<u>Business Office</u>						
	Adding Machine	<u>2</u>	X	<u>155.75</u>	=	<u>311.50</u>
	Bulletin Board		X		=	
	Clock	<u>1</u>	X	<u>43.70</u>	=	<u>43.70</u>
	Computer		X		=	
	Copying Machine	<u>1</u>	X	<u>186.62</u>	=	<u>186.62</u>
	Desk	<u>4</u>	X	<u>316.65</u>	=	<u>1,226.60</u>
	Dictaphone	<u>1</u>	X	<u>313.45</u>	=	<u>313.45</u>
	Filing Cabinets	<u>4</u>	X	<u>157.66</u>	=	<u>630.64</u>
	Lamps	<u>2</u>	X	<u>53.13</u>	=	<u>106.26</u>
	Medical					
	Dictionary	<u>2</u>	X	<u>45.00</u>	=	<u>90.00</u>
	Medical Records					
	Filing System with pegboard	<u>1</u>	X	<u>1,500.00</u>	=	<u>1,500.00</u>
	Rolodex		X		=	
	Safe		X		=	
	Stool		X		=	
	Secretarial					
	Chair	<u>3</u>	X	<u>109.13</u>	=	<u>327.39</u>
	Telephone*	<u>2</u>	X	<u>—</u>	=	<u>—</u>
	Telephone Answering Device		X		=	
	Typewriter	<u>2</u>	X	<u>570.00</u>	=	<u>1,140.00</u>
	Vertical File	<u>2</u>	X	<u>400.00</u>	=	<u>800.00</u>
	Waste Receptacle	<u>3</u>	X	<u>15.50</u>	=	<u>46.50</u>
	Other:		X		=	
			X		=	
TOTAL						<u>6,722.66</u>

Form 4. Continued

Area in Clinic	Equipment	Number		Price Per Unit		Total Cost
				Dollars		Dollars
<u>Physician Office(s)</u>						
	Chair	<u>6</u>	X	<u>214.92</u>	=	<u>1,289.52</u>
	Clock		X		=	
	Credenza		X		=	
	Desk	<u>2</u>	X	<u>321.18</u>	=	<u>642.36</u>
	Dictaphone**	<u>2</u>	X	<u>-</u>	=	<u>-</u>
	Lateral Desk File	<u>2</u>	X	<u>200.00</u>	=	<u>400.00</u>
	Lamp	<u>2</u>	X	<u>53.13</u>	=	<u>106.26</u>
	Telephone*	<u>2</u>	X	<u>-</u>	=	<u>-</u>
	Other:					
			X		=	
			X		=	
TOTAL						<u>2,438.14</u>
<u>Conference Room</u>						
	Audio/Visual Equipment		X		=	
	Cabinet	<u>3</u>	X	<u>300.00</u>	=	<u>900.00</u>
	Chairs	<u>5</u>	X	<u>90.00</u>	=	<u>450.00</u>
	Clock	<u>1</u>	X	<u>43.70</u>	=	<u>43.70</u>
	Coat Rack/Hooks	<u>1</u>	X	<u>75.00</u>	=	<u>75.00</u>
	Fire Extinguisher	<u>1</u>	X	<u>43.20</u>	=	<u>43.20</u>
	Heating Plate	<u>1</u>	X	<u>20.99</u>	=	<u>20.99</u>
	Kitchen Utensils	<u>1</u>	X	<u>25.00</u>	=	<u>25.00</u>
	Micro-Wave		X		=	
	Refrigerator	<u>1</u>	X	<u>302.88</u>	=	<u>302.88</u>
	Sofa		X		=	
	Table	<u>1</u>	X	<u>333.00</u>	=	<u>333.00</u>
	Vacuum Sweeper		X		=	
	Other:					
			X		=	
			X		=	
TOTAL						<u>2,193.77</u>

*Rental, included directly into operating costs.

**Part of Unit Purchased in business office.

Form 4. Continued

Area in Clinic	Equipment	Number	Price Per Unit Dollars	Total Cost Dollars
<u>Examination/Treatment Room</u>				
	Anoscope		X	=
	Blood Pressure Cuff	<u>8</u>	X <u>88.25</u>	= <u>706.00</u>
	Bulletin Board		X	=
	Cabinet	<u>8</u>	X <u>415.00</u>	= <u>3,320.00</u>
	Cast Cutter	<u>1</u>	X <u>255.00</u>	= <u>255.00</u>
	Clothes Rack/ Hooks	<u>8</u>	X <u>31.00</u>	= <u>248.00</u>
	Compressor/ Suction	<u>1</u>	X <u>325.00</u>	= <u>325.00</u>
	Diathermy Unit		X	=
	Electrocardio- graph	<u>1</u>	X <u>2,091.67</u>	= <u>2,091.67</u>
	Examination Table	<u>8</u>	X <u>722.83</u>	= <u>5,782.64</u>
	Gooseneck Lamp	<u>4</u>	X <u>60.00</u>	= <u>240.00</u>
	Mirror	<u>8</u>	X <u>10.00</u>	= <u>80.00</u>
	Mayo Instrument Stand	<u>2</u>	X <u>122.72</u>	= <u>245.44</u>
	Ophthalmoscope- Otoscope	<u>8</u>	X <u>197.00</u>	= <u>1,576.00</u>
	Pediatric Scale/ Table	<u>2</u>	X <u>219.00</u>	= <u>438.00</u>
	Portable Oxygen Tank Mask & Carrier	<u>1</u>	X <u>205.00</u>	= <u>205.00</u>
	Scales	<u>4</u>	X <u>214.68</u>	= <u>858.72</u>
	Side Chairs	<u>8</u>	X <u>140.00</u>	= <u>1,120.00</u>
	Sigmoidoscope		X	=
	Sink	<u>8</u>	X <u>150.00</u>	= <u>1,200.00</u>
	Soap Dispenser	<u>8</u>	X <u>17.50</u>	= <u>140.00</u>
	Snellen Eye Chart	<u>2</u>	X <u>5.00</u>	= <u>10.00</u>
	Stool	<u>8</u>	X <u>203.33</u>	= <u>1,626.64</u>
	Towel Dispenser	<u>8</u>	X <u>22.50</u>	= <u>180.00</u>
	Trays-Ear	<u>1</u>	X <u>29.00</u>	= <u>29.00</u>
	Trays-Eye	<u>1</u>	X <u>10.00</u>	= <u>10.00</u>
	Trays-Surgical	<u>1</u>	X <u>23.55</u>	= <u>23.55</u>
	Ultrasound Unit	<u>1</u>	X <u>3,250.00</u>	= <u>3,250.00</u>
	Utility Cart		X	=
	Waste Receptacle	<u>8</u>	X <u>128.67</u>	= <u>1,029.36</u>
	Other:		X	=
			X	=
TOTAL				<u>24,990.02</u>

Form 4. Continued

Area in Clinic	Equipment	Number		Price Per Unit	=	Total Cost
				Dollars		Dollars
<u>Laboratory</u>	Alcohol Lamps or Bunsen Burner	<u>1</u>	X	<u>29.32</u>	=	<u>29.32</u>
	Autoclave	<u>1</u>	X	<u>858.64</u>	=	<u>858.64</u>
	Automatic Cell Counter		X		=	
	Centrifuge (blood and urine)	<u>1</u>	X	<u>470.00</u>	=	<u>470.00</u>
	Centrifuge (blood)		X		=	
	Centrifuge (urine)		X		=	
	Chairs		X		=	
	Dop Tone (Minidop)		X		=	
	Elevated Counter Stool	<u>2</u>	X	<u>125.00</u>	=	<u>250.00</u>
	Eye Tone		X		=	
	Fetoscope	<u>1</u>	X	<u>80.00</u>	=	<u>80.00</u>
	Flashlight	<u>1</u>	X	<u>3.00</u>	=	<u>3.00</u>
	Hemogramometer	<u>1</u>	X	<u>150.00</u>	=	<u>150.00</u>
	Incubator	<u>1</u>	X	<u>150.00</u>	=	<u>150.00</u>
	Microscope	<u>1</u>	X	<u>2,917.67</u>	=	<u>2,917.67</u>
	Punch Biopsy		X		=	
	Refrigerator	<u>1</u>	X	<u>374.00</u>	=	<u>374.00</u>
	Sink	<u>1</u>	X	<u>175.00</u>	=	<u>175.00</u>
	Soap Dispenser	<u>1</u>	X	<u>17.50</u>	=	<u>17.50</u>
	Substage Lamp	<u>1</u>	X	<u>40.00</u>	=	<u>40.00</u>
	Tape Dispenser	<u>1</u>	X	<u>30.00</u>	=	<u>30.00</u>
	Towel Dispenser	<u>1</u>	X	<u>22.50</u>	=	<u>22.50</u>
	Urinometer	<u>1</u>	X	<u>6.25</u>	=	<u>6.25</u>
	X-Ray View Box	<u>2</u>	X	<u>135.00</u>	=	<u>270.00</u>
	Other:		X		=	
			X		=	
TOTAL (Without X-Ray Machine)						<u>5,843.88</u>
	X-Ray Machine	<u>1</u>	X	<u>40,000.00</u>	=	<u>40,000.00</u>
TOTAL (With X-Ray Machine)						<u>45,843.88</u>

Form 4. Continued

TOTAL EQUIPMENT COSTS	TOTAL COST
	Dollars
Reception Area	<u>1,843.31</u>
Business Office	<u>6,722.66</u>
Physician's Office	<u>2,438.14</u>
Conference Room	<u>2,193.77</u>
Laboratory	<u>5,843.88</u>
Examination/Treatment Room	<u>24,990.02</u>
(With X-Ray)	<u>84,031.78</u>
TOTAL	
(Without X-Ray)	<u>44,031.78</u>

Form 5

Procedure to Estimate Annual Capital Costs

I. Capital Costs

A. Building

Number of Physicians 2
 X sq. feet per physician (1200-1500) 1,400
 X construction cost per sq.ft. (\$50-\$55) \$ 154,000.00
 X () current construction cost index
 (157.6) 1982 construction cost index \$ 154,000.00
 + land cost (\$11,750 per acre) \$ 11,750.00
 TOTAL \$ 165,750.00

B. Equipment

Total equipment costs (Form 4) \$ 44,031.78
 X (157.6) current construction cost index
 (157.6) 1982 construction cost index \$ 44,031.78
 TOTAL \$ 209,781.78

II. Capital Charges

A. Capital Cost Building

\$ 165,750.00
 X 0.115503 amortization factor (number of years 25
 X interest rate 10.625%) (Appendix C)
 TOTAL \$ 19,144.62

B. Capital Cost Equipment

\$ 44,031.78
 X 0.104290 amortization factor (number of years 10
 X interest rate 13%) (Appendix C)
 TOTAL \$ 8,114.62

TOTAL CAPITAL CHARGES

\$ 27,259.24

Form 6. Procedure to Estimate Annual Operating Costs

I. Building

A. Electricity

1982 price per square foot per physician (\$0.17)

$$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ 0.74 estimated current price

[\$ 0.74 (cost per sq. ft.) X 1,400 number
of sq. ft.]

\$ 1,036.00

B. Gas

1982 price per square foot per physician (\$0.17)

$$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ 0.17 estimated current price

[\$ 0.17 (cost per sq. ft.) X 1,400 number
of sq. ft.]

\$ 238.00

C. Water

1982 price per year per physician (\$131.00)

$$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ 131.00 estimated current price

\$ 131.00

D. Sewer

1982 price per year per physician (\$86.00)

$$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ 86.00 estimated current price

\$ 86.00

E. Trash

1982 price per year per physician (\$150.00)

$$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$$

\$ 150.00 estimated current price

\$ 150.00

Form 6. Continued

F. Maintenance

1982 price per year per physician (\$799.00)

$$\begin{array}{r} X \text{ (158.5) Current Consumer Price Index} \\ \text{(158.5) 1982 Consumer Price Index} \end{array}$$

\$ 799.00 estimated current price \$ 799.00

G. Janitor

1982 price per year per physician (\$1,968.00)

$$\begin{array}{r} X \text{ (158.5) Current Consumer Price Index} \\ \text{(158.5) 1982 Consumer Price Index} \end{array}$$

\$1,968.00 estimated current price \$ 1,968.00

H. Taxes

1982 price per year per physician (\$1,881.00)

$$\begin{array}{r} X \text{ (158.5) Current Consumer Price Index} \\ \text{(158.5) 1982 Consumer Price Index} \end{array}$$

\$1,881.00 estimated current price \$1,881.00

I. Insurance

1. Brick Veneer Building

$$\begin{array}{r} \text{a. } \$ \underline{77,000.00} \text{ value of building per physician} \\ X \underline{1.293} \text{ insurance costs per } \$100 \text{ value} \\ = \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} \text{b. } \$ \underline{22,015.89} \text{ value of equipment per physician} \\ X \underline{1.076} \text{ insurance cost per } \$100 \text{ value} \\ = \underline{\hspace{2cm}} \end{array}$$

Total Insurance (a + b) \$1,232.50

2. Frame Building

$$\begin{array}{r} \text{a. } \$ \underline{\hspace{2cm}} \text{ value of building per physician} \\ X \underline{1.660} \text{ insurance costs per } \$100 \text{ value} \\ = \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} \text{b. } \$ \underline{\hspace{2cm}} \text{ value of equipment per physician} \\ X \underline{1.450} \text{ insurance costs per } \$100 \text{ value} \\ = \underline{\hspace{2cm}} \end{array}$$

Total Insurance (a + b) \$ \underline{\hspace{2cm}}

Form 6. Continued

J.	Total Building Expenses Per Physician (A + B + C + D + E + F + G + H + I)	<u>\$7,521.50</u>
K.	Total Annual Building Expenses	
	# <u>7,521.50</u> Total Building expenses per physician X number of physicians	<u>\$15,043.00</u>

II. Office

A. Supplies

1982 costs per office visit (\$0.44)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

[\$ 0.44 (estimated current price) X
5,403.5 (number of office visits per physician)]

\$ 0.44 estimated current price \$2,377.54

B. Telephone

1982 costs per office visit (\$2,297.00)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

\$ 2,297.00 estimated current price \$2,297.00

C. Office Equipment

1982 costs per office visit (\$200.00)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

\$ 200.00 estimated current price \$ 200.00

D. Billing

1982 costs per physician (\$941.00)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

\$ 941.00 estimated current price \$ 941.00

E. Retainer Fee

1982 costs per physician (\$1,086.00)

Form 6. Continued

	$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$	
	\$ <u>4,086.00</u> estimated current price	\$ <u>1,086.00</u>
F.	Convention	
	1982 costs per physician (\$1,825.00)	
	$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$	
	\$ <u>1,825.00</u> estimated current price	\$ <u>1,825.00</u>
G.	Auto Expenses	
	1982 costs per physician (\$4,800.00)	
	$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$	
	\$ <u>4,800.00</u> estimated current price	\$ <u>4,800.00</u>
H.	Professional Dues	
	1982 costs per physician (\$715.00)	
	$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$	
	\$ <u>715.00</u> estimated current price	\$ <u>715.00</u>
I.	Total Office Expenses Per Physician (A + B + C + D + E + F + G + H)	\$ <u>14,241.54</u>
J.	Total Annual Office Expenses	
	<u>14,241.54</u> expenses per physician X <u>2</u> number of physicians	\$ <u>28,483.08</u>
III.	Medical	
A.	Medical Supplies	
	1982 cost per office visit (\$0.71)	
	$\frac{X (158.5) \text{ Current Consumer Price Index}}{(158.5) \text{ 1982 Consumer Price Index}}$	
	[Estimated current price per visit X <u>0.71</u> (number of office visits per physician) _____]	\$ <u>3,836.49</u>

Form 6. Continued

B. Medical Equipment Maintenance

1982 cost per physician (\$1,033.00)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

\$1,033.00 estimated current price \$1,033.00

C. Malpractice

1982 cost per physician (\$2,917.00)

X $\frac{(158.5)}{(158.5)}$ Current Consumer Price Index
1982 Consumer Price Index

\$ 2,917.00 Estimated Current Price \$ 2,917.00

D. Total Annual Medical Costs per Physician
(A + B + C)

\$ 7,786.49

E. Total Annual Medical costs per physician

7,786.49 total annual medical costs per physician
X 2 number of physicians \$15,572.98

IV. Personnel

Type	1982 Salary	Current* Salary	Number Employed	Total Cost
A. Medical Assistant	\$9,760			
B. Licensed Practical Nurse	9,630	<u>9,630.00</u>	<u>1</u>	<u>9,630.00</u>
C. Registered Nurse	13,139			
D. Laboratory Technician	14,493	<u>14,493.00</u>	<u>1</u>	<u>14,493.00</u>
E. X-Ray Technician	15,743			
F. Receptionist	9,961	<u>9,961.00</u>	<u>1</u>	<u>9,961.00</u>
G. Bookkeeper	11,164			
H. Receptionist/Bookkeeper	11,760	<u>11,760.00</u>	<u>1</u>	<u>11,760.00</u>
I. Medical Secretary	8,407			
J. Insurance Clerk	8,160			
K. Total Personnel Costs Without Fringe Benefits (A +B +C +D +E +F +G +H +I +J)				<u>\$45,844.00</u>
L. Fringe Benefits				
			Personnel Costs Without Fringe Benefits X <u>15%</u>	
			Percent fringe benefits (15%)	<u>\$6,876.60</u>
M. Total Annual Personnel Costs (K + L)				<u>\$52,720.60</u>

*If current salary is unknown use 1982 salary adjusted for change in price level ($1982 \text{ Salary} \times \frac{\text{Current Consumer Price Index}}{1982 \text{ Consumer Price Index}}$)

Form 7. Procedure to Estimate Total Annual Costs

A.	Capital Costs (From Form 5)	<u>\$ 27,259.24</u>
B.	Operating Costs	
	1. Building (Form 6, I K)	<u>\$ 15,043.00</u>
	2. Office (Form 6, II K)	<u>\$ 28,483.08</u>
	3. Medical (Form 6, III K)	<u>\$ 15,572.97</u>
	4. Personnel (Form 6, IV K)	<u>\$ 52,720.60</u>
C.	Total Operating Costs (B1 + B2 + B3 + B4)	<u>\$ 111,819.65</u>
D.	Total Annual Capital and Operating Cost (A + C)	<u>\$ 139,078.89</u>

Form 8. Estimated Net Income¹

	Rate Schedule		
	Low	Average Dollars	High
Gross Income (100% Collection Rate)	<u>178,824.00</u>	<u>226,733.51</u>	<u>285,747.00</u>
Total Costs	<u>139,078.89</u>	<u>139,078.89</u>	<u>139,078.89</u>
Net Income	<u>39,745.11</u>	<u>87,654.62</u>	<u>146,668.11</u>
Number Physicians	<u>2</u>	<u>2</u>	<u>2</u>
Net Income Per Physician	<u>19,872.56</u>	<u>43,827.31</u>	<u>73,334.06</u>
Gross Income at Alternative Collection Rates			
Collection Rates			
95%	<u>169,882.80</u>	<u>215,434.83</u>	<u>271,459.65</u>
90%	<u>160,941.60</u>	<u>204,096.16</u>	<u>257,172.30</u>
85%	<u>152,000.40</u>	<u>192,757.48</u>	<u>242,884.95</u>
80%	<u>143,059.20</u>	<u>181,418.81</u>	<u>228,597.60</u>
Net Income at Alternative Collection Rates			
95%	<u>30,803.91</u>	<u>76,355.94</u>	<u>132,380.76</u>
90%	<u>21,862.71</u>	<u>65,017.27</u>	<u>118,093.41</u>

¹ Before Income Tax

65

Form 8. Continued

		Rate Schedule		
		Low	Average	High
85%		<u>12,921.51</u>	<u>53,678.59</u>	<u>103,806.06</u>
80%		<u>3,980.31</u>	<u>42,339.92</u>	<u>89,518.71</u>
Number of Physicians		<u>2</u>	<u>2</u>	<u>2</u>
Net Income Per Physician		<u> </u>	<u> </u>	<u> </u>
95%		<u>15,401.96</u>	<u>38,177.97</u>	<u>66,190.38</u>
90%		<u>10,931.36</u>	<u>32,508.64</u>	<u>59,046.71</u>
85%		<u>6,460.76</u>	<u>26,839.30</u>	<u>51,903.03</u>
80%		<u>1,990.16</u>	<u>21,169.96</u>	<u>44,759.36</u>

Form 9. Annual Revenue and Profit (Loss) from Renting
Clinic to Physician

I. Annual Cost

A. Capital Costs

Building and Land (From Form 5) 17,787.46

Equipment (From Form 5) 0

B. Operating Costs

Building (Maintenance, Taxes, Insurance)
(From Form 6) 7,351.22

Other _____

C. Total Annual Costs 25,138.68

II. Annual Revenue Costs

Monthly Rental Charge Per Physician		Number of Physicians		Annual Revenue	Annual Capital and Operating Costs	Profit or Subsidy
<u>700</u>	X 12	<u>2</u>	X 12	<u>16,800.00</u>	- <u>25,138.68</u>	= <u>8,338.68</u>
<u>800</u>	X 12	<u>2</u>	X 12	<u>19,200.00</u>	- <u>25,138.68</u>	= <u>5,938.68</u>
<u>900</u>	12	<u>2</u>	X 12	<u>21,600.00</u>	- <u>25,138.68</u>	= <u>3,538.68</u>
<u>1,000</u>	X 12	<u>2</u>	X 12	<u>24,000.00</u>	- <u>25,138.68</u>	= <u>1,138.68</u>
<u>1,100</u>	X 12	<u>2</u>	X 12	<u>26,400.00</u>	- <u>25,138.68</u>	= <u>1,261.32</u>
<u>1,200</u>	X 12	<u>2</u>	X 12	<u>28,800.00</u>	- <u>25,138.68</u>	= <u>3,661.32</u>

providing interaction with another medical center hundreds of miles away. A solo practice or an interdisciplinary group will be given the added advantage of reduced cost and the ultimate need to provide increased time to the patient, while reducing the shuffle of paper.

Physicians who seek to computerize their practice in any manner, should review three (3) different practices that are currently utilizing a computer. Determine the best mode for your practice and seek competitive proposals with bids from various vendors to insure that the vendor meets your qualification of need. A training seminar for employees as well as adequate maintenance capability is needed as part of the contract. The major problem is gaining the confidence of fellow employees to adjust to the computerization of office tasks. This will be easier if everyone is involved in the decision of determining the proper hardware and software and the transition process.

The majority of computerized physician's offices are currently being developed in small group practices because the initial cost can be shared and the larger number of people needed to input the data and maintain the system which can be shared and reinforced by several clerical employees in a group practice.

A typical group practice of three (3) physicians would have two to three video display units with one or two printers and a storage capacity of 50-100 megabytes. The cost of such an example would be approximately \$20,000.00 to \$30,000.00. However, one could utilize a micro-computer for accounting and other data functions at a cost of \$2,000.00.

The most important need for personnel who use the system is a comfortable chair and an appropriate height for display of the information on the terminal. Working space near the terminal as well as an adjustable chair and table are prime considerations when installing a computer. Personnel should be trained before operating it.

In the future, the physician will have voice control of data input and medical records updating may exclude the need for dictation and transcription. A physician would have a video display unit in each exam room in the expanded use of the computer. This will reduce the time of paperwork completion and enable the physician to reach an ultimate objective of having increased time and discussion with the patient and increased capability for patient assessment and diagnosis.

V. Funding Sources

During the last ten years in Oklahoma, various mechanisms have been utilized in providing initial and continuous financial support for a health clinic. Traditional financing methods, such as bank loans, tax levies, and community fund drives have been joined by professionally developed grants from foundations and corporations. In addition, cooperative agreements among various community groups and between towns are emerging.

A discussion follows which may aid community decisionmakers in identifying the available financial resources. One of the most used sources is the Farmers Home Administration loan programs called the Community Facilities Loan. These loans are made to local governmental units with a population maximum of 20,000 people. However, a major

priority of the program is providing loan moneys to areas of 5,500 population or rural areas. The loan rate is based on the market rate which changes quarterly. The loan rate as of April 1, 1983 is 9 1/4. In certain cases such as an area with below average median income, the rate may be lower. Contact your district Farmers Home Office for exact details.

The types of facilities given preference are fire stations, general purpose community buildings, and health clinics. Funds are currently being allocated on a percentage of Fiscal Year 1982 money since the program is currently operating on a continuing resolution. This is likely to be the policy for all of Fiscal Year 1983 or until 1984. Loan applications are processed at the district office level but information can be received at the agency listed below:

Community Program Section
Farmers Home Administration
Agriculture Center Building
Stillwater, OK 74074
Phone: (405) 624-4307

The federal government through the Department of Health and Human Services has the capacity to guarantee loans made by Farmers Home Administration. This procedure has been completed in the town of Billings, Oklahoma. The State Farmers Home Administration office can provide assistance to interested communities.

The Department of Housing and Urban Development may be contacted for application for funds available through a block grant program. Information is available from the following:

Department of Housing & Urban Development
200 N.W. 5th
Oklahoma City, OK 73102
Phone: (405) 231-4805 or (405) 231-4638

The Community Development Block Grant Program is not specifically a housing program but could be used in housing rehabilitation. A community facility could be rehabilitated for use as a clinic and nearby streets, sidewalks, water and sewer line expansion are a proper use of the Block Grant funds. The Community Development Block Grant is a 100% grant. However, many cities and towns in Oklahoma can not qualify due to the necessity of meeting low income and poverty requirements. Each town needs to make inquiry for a determination of eligibility.

As mentioned in this discussion, the use of foundation and corporate funding is an available alternative for communities especially if the project is critically needed and is unique. Corporations have a lot more to offer in support of charitable organizations than money. Matching gifts by employees, released staff time volunteering in kind gifts, and support of special programs are areas that should be strongly considered by a community.

For further information refer to:

- (1) The Grassroots Fundraising Book
(How to Raise Money in Your Community)
1977; \$5.75 from:
The Youth Project
1555 Connecticut Avenue N.S.
Washington, D.C. 20036
- (2) The Bread Game
(How Realities of Foundation Fundraising)
Herb Allen, Editor, 1974, \$7.70 from:
New Guide Publications
330 Ellis Street
San Francisco, CA 94102
- (3) The Foundation Directory
\$15 postpaid from:
Columbia University Press
Stock Department
1367 South Broadway
Irvington-On-Hudson, NY 10533
- (4) Foundation News
(Published by the Council on Foundations, Inc.)
1828 L. Street, N.W.
Washington, D.C. 20036
- (5) Tulsa City County Library,
Grantmanship Foundation Center
- (6) Oklahoma Metro Library System,
Grantmanship Foundation Center.

An additional source of funding is available to the physician through the Small Business Administration. These loans are made through local banks and guaranteed up to 90 percent by the Small Business Administration. Non-profit organizations are restricted from this type of loan.

VI. Summary

The community guidebook was developed for community decisionmakers and prospective physicians. The guidebook will aid community decisionmakers in their assessment of their community's primary health care needs. If the community decides to subsidize a physician, the feasibility study provides the decisionmakers with information as to costs and returns. In addition, the guidebook discusses the planning process and emphasizes the role of the committee. A physician considering a prospective community needs information as to the expected number of calls, estimated revenue, estimated costs and net income of a practice in that community.

The authors have gathered data from 16 rural physicians and prepared forms which allow analysis of each location. Form 1 reflects a procedure to estimate service area physician visits, while Form 2 estimates the number of physicians an area can support. Gross income for a service area is estimated on Form 3. Equipment costs are estimated in Form 4. Form 5 is used for deriving total annual capital costs. Procedures on Form 6 allow for an estimation of annual operating costs. Data on Form 7 summarizes annual capital and operating costs. Net annual income is estimated on Form 8. If community leaders desire to build a clinic and rent to a physician, Form 9 is used to estimate the "break even" rent level.

These forms are intended to help community decision-makers and physicians. Local information should be integrated so that each alternative closely reflects the community's conditions and needs. The forms have been computerized and if community leaders or physicians desire a computer analysis, community leaders or the physician should contact the Oklahoma Cooperative Extension Service, the Physician Manpower Training Commission, or the Oklahoma Health Systems Agency.

References

- [1] Doeksen, Gerald A., James W. Dunn, Louis Stackler and Robert Sheets. Capital and Operating Costs For Community Clinics. Oklahoma Agricultural Experiment Station Research Bulletin, B-742. (June 1979).
- [2] U.S. Department of Health and Human Services, National Center for Health Statistics. Advance Data, 1980 Summary: National Ambulatory Medical Care Survey. Series 13. Washington, U.S. Government Printing Office, Feb., 1982.
- [3] American Medical Association. Profile of Medical Practice, 1981. Monroe, WI, 1982.
- [4] Cordes, S.M., J.E. Geriveck and R.J. Blair. Rural Doctors Retained Where Income is Adequate. Sci. Agri. Pennsylvania Exp. Stn. 28, 1 (Fall, 1980).
- [5] Alford, Terry W. Facility Planning Design and Construction of Health Centers. The Rural Health Development Series. Cambridge: Ballinger, 1979.
- [6] Wallack, Stanley S. and Sandra E. Krey. Rural Medicine. Lexington Books, Massachusetts: Lexington, 1981.
- [7] U.S. Bureau of Domestic Commerce. Construction Review. Washington: U.S. Government Printing Office, 1982.
- [8] U.S. Bureau of Labor Statistics. Consumer Price Index. Washington: U.S. Government Printing Office, 1982.

Appendix A. Rate Schedule (1982)

Physician Services

Service	Average Price	Range	
		Low	High
<u>Physician</u>		<u>Dollars</u>	
Office Visit (Initial)	21.19	15.00	30.00
Office Visit (Routine)	16.13	12.00	21.00
Nursing Home Visit	20.13	12.00	40.00
Emergency Room Visit	26.38	20.00	40.00
Hospital Admission	54.69	0	90.00
Hospital Visit	23.31	17.00	30.00
Critical Care Unit/ Intensive Care Unit	62.77	21.00	115.00
Nurse Visit	4.75	2.00	8.00
Obstetric Care	561.67	425.00	750.00
Electrocardiogram	28.67	15.00	45.00
Osteopathic Manipulative Therapy	16.78	7.50	31.50
Physical Exam	33.34	23.00	48.00
Ultra Sound	15.92	5.00	75.00
Complete Pelvic Exam	37.75	16.00	50.00
Pap Smear Only	10.58	6.50	15.00
X-Ray	30.31	25.00	37.35

Lab Services

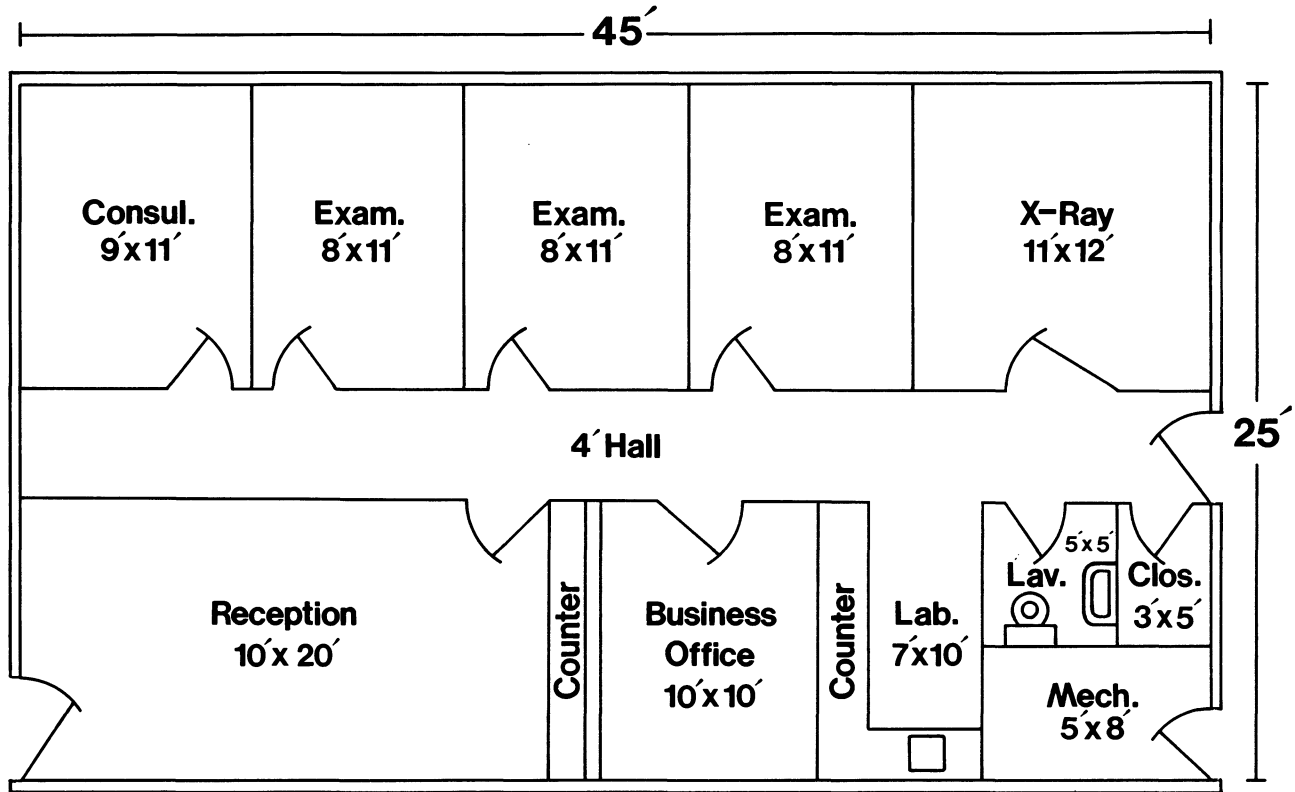
<u>Laboratory</u>			
Culture & Serum	18.64	10.00	37.00
Complete Blood Count	14.00	10.00	21.00
Blood Sugar	10.43	8.00	18.00
Blood Chemistry	33.52	15.00	50.00
Pregnancy Test	13.35	10.00	24.00
Urinalysis	8.04	6.00	15.50
Hemoglobin	5.39	4.00	10.00
Hematocrit	5.38	3.00	12.00

Appendix A. Continued

<u>Function</u>	Average Price	Range	
		Low	High
		<u>Dollars</u>	
White Blood Count with Differential	12.05	8.00	15.00
Venereal Disease Research Laboratory	12.09	8.00	29.00
Triiodothyronine Uptake	21.71	15.00	27.50
Pathology	31.50	8.00	66.00
Electrolytes	18.75	15.00	30.00
 <u>Injections</u>			
Antibiotics	9.64	6.00	15.00
Vitamins	7.25	3.00	10.00
Hormone	8.07	5.00	12.50
Allergy	3.87	2.00	8.00
Cortisone	10.27	6.00	17.50
Tetanus	7.37	5.00	10.00
Intravenous	20.00	7.00	35.00
Diphtheria, Pertussus, Tetanus	6.88	5.00	11.00
Oral Polio	6.59	5.00	10.00
Mumps, Measles, Rubella	10.65	6.00	20.50
Tine Test	6.50	4.00	10.00

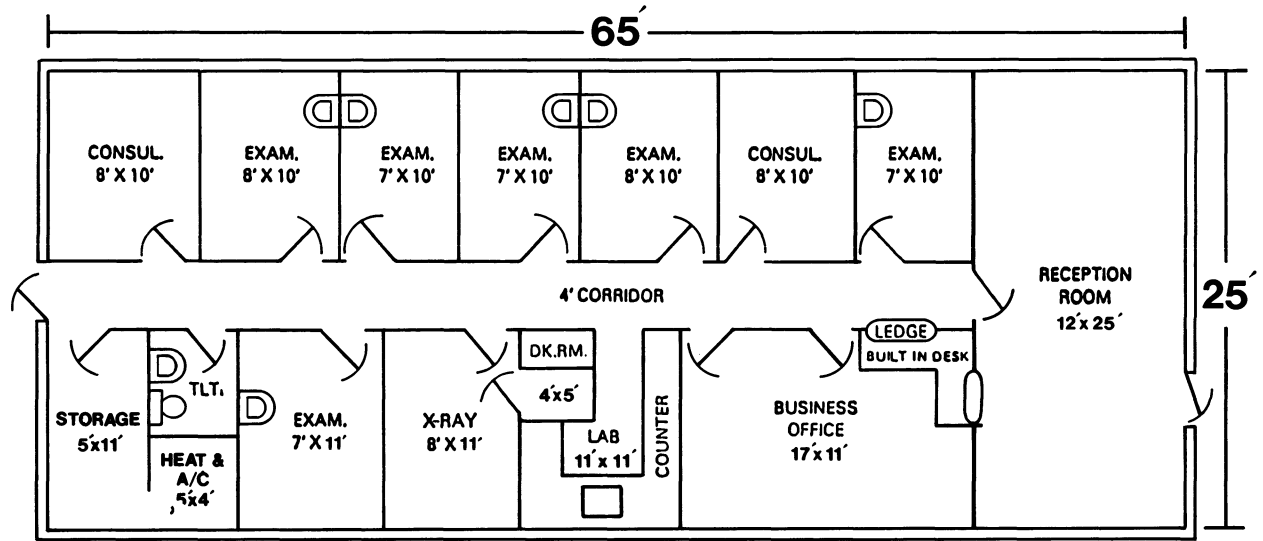
Source: Survey (Sixteen Observations)

APPENDIX B

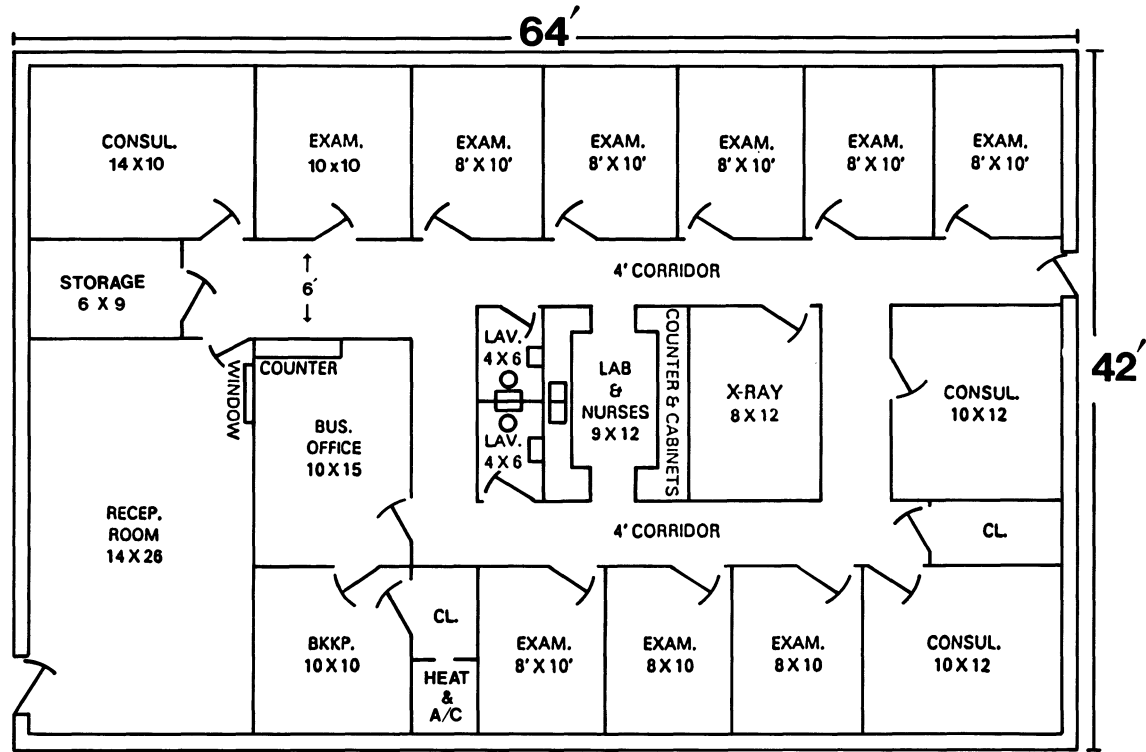


77

One Physician - Basic Design
 1125 Square Feet
 Expandable



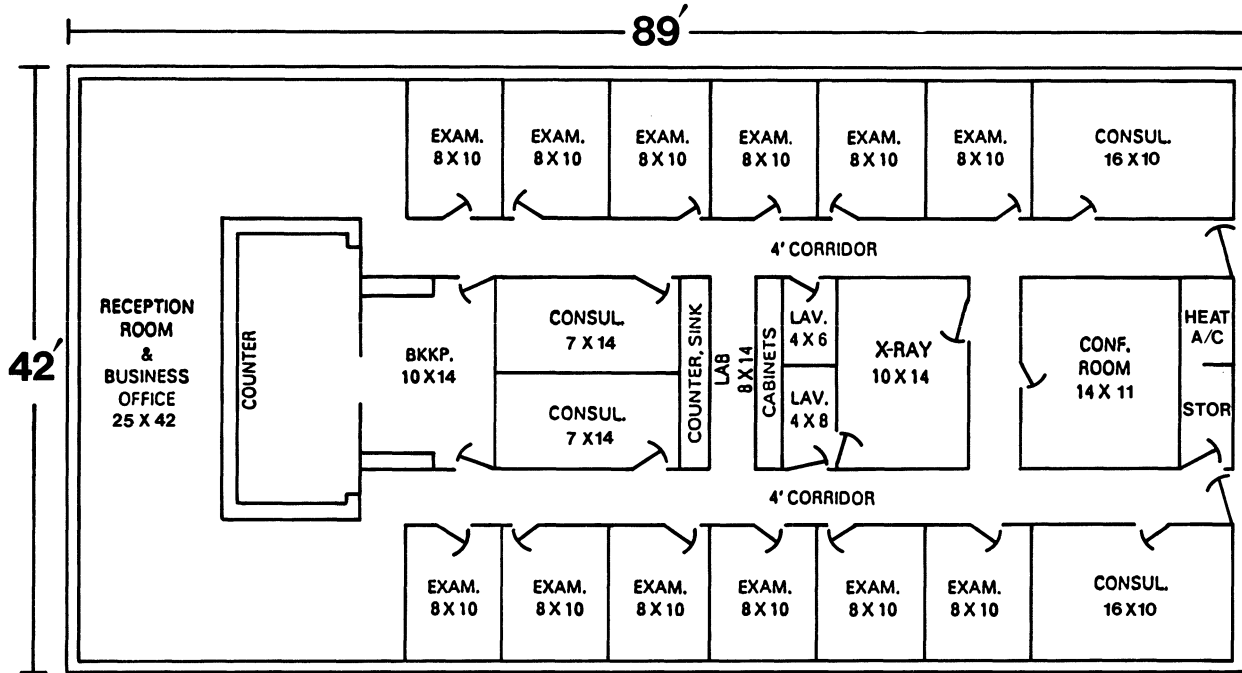
Two Doctors - Single Corridor
1625 Square Feet



Three Physicians

2688 Square Feet

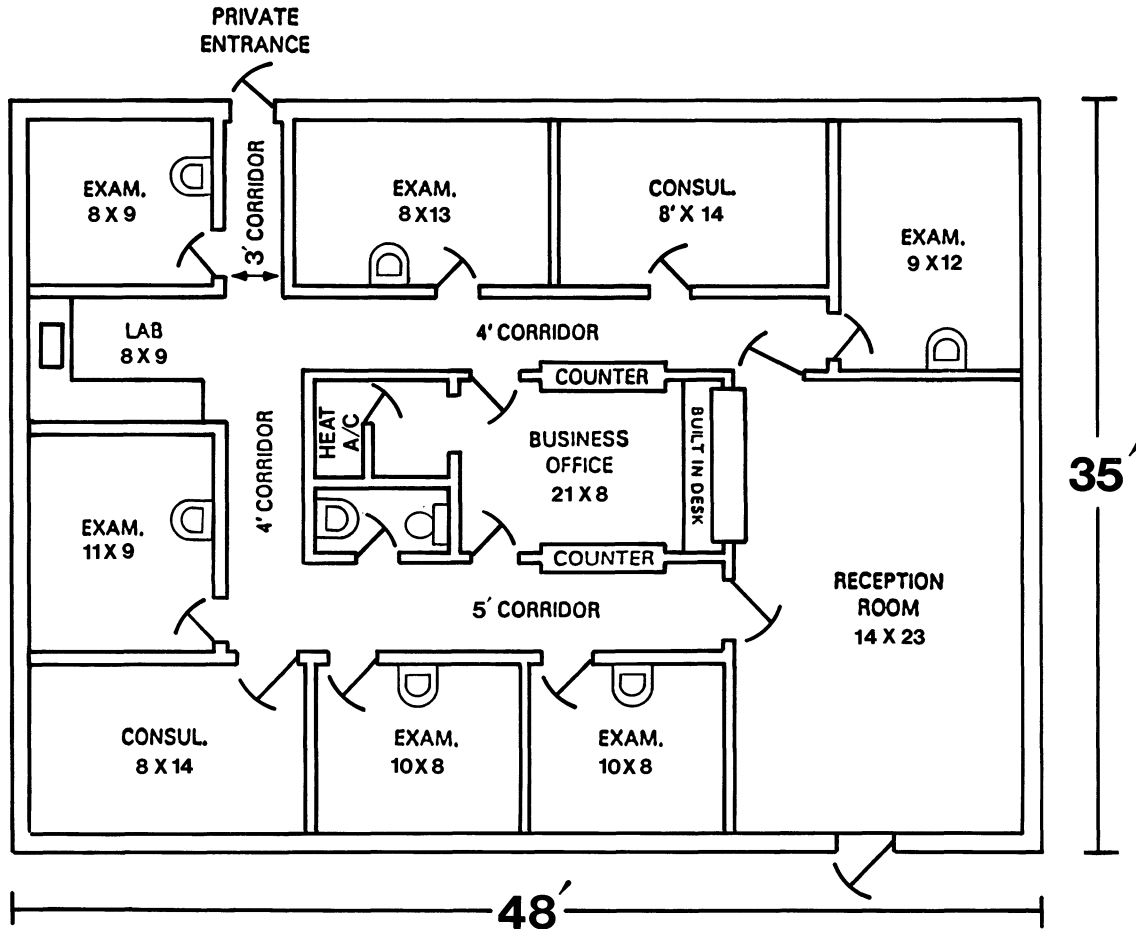
Design Features: Double Corridor, Separate Bookkeeping Office



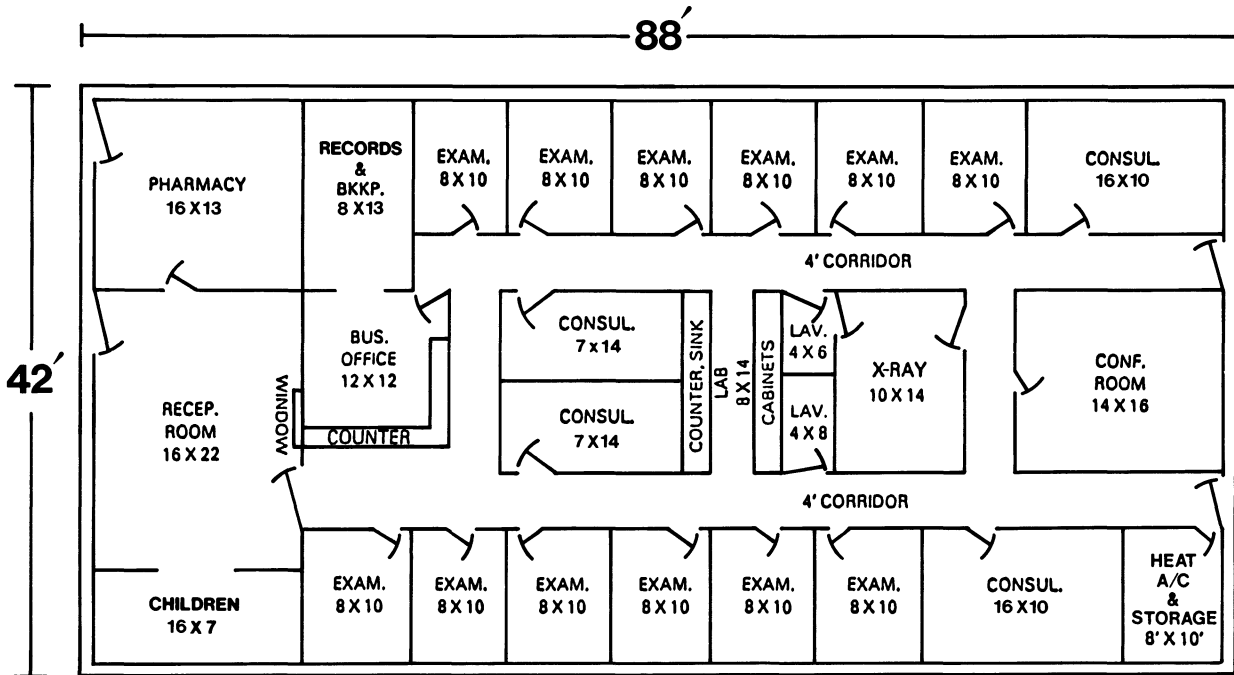
Three to Four Physicians

3738 Square Feet

Design Features: Separate Bookkeeping Area, Expandable, Conference Room

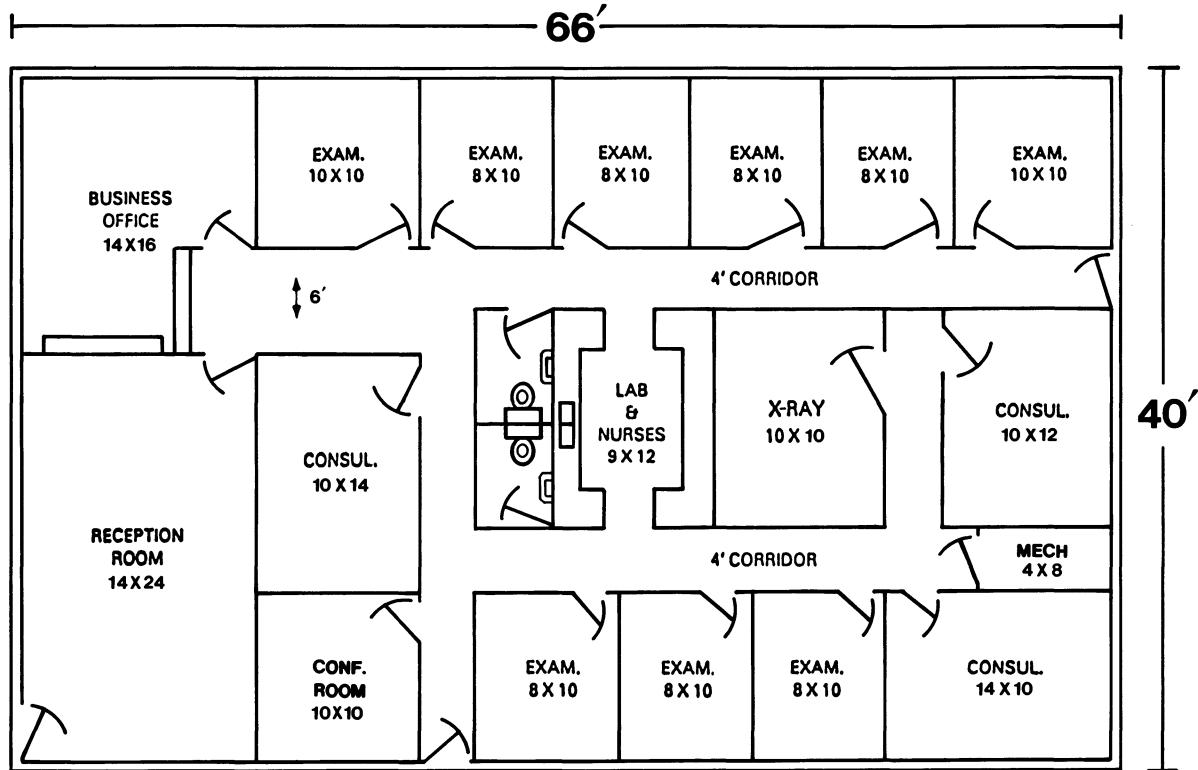


Two Physicians, Almost Square
1680 Square Feet

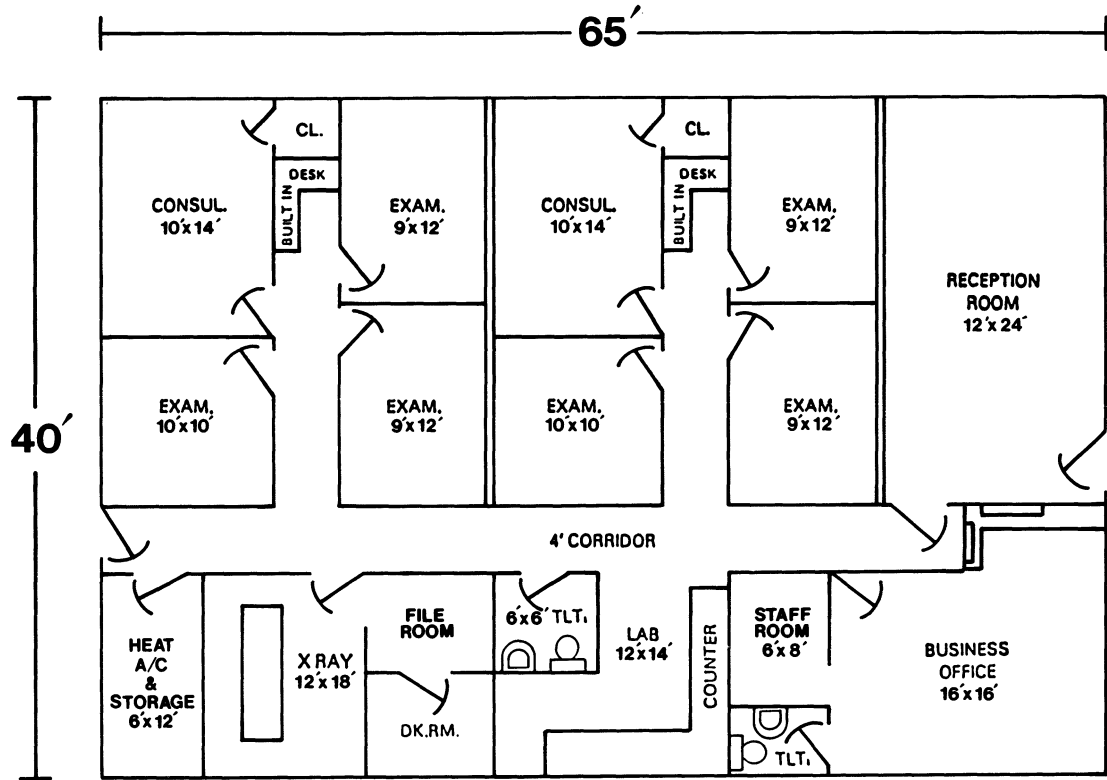


Four Physicians
3696 Square Feet

Design Features: Pharmacy, Children's Reception Area, Conference Room--
(can also be a staff lounge)



Three Physicians
 2640 Square Feet
 Expandable, Double Corridor



Two Physicians

2400 Square Feet

Design Features: Each physician has "clustered" exam rooms, nurse's desk, easily expandable

Appendix C.

Amortization Factors

Interest Rate Percent	Years for Repayment						
	10	15	20	25	30	35	40
8	0.149030	0.116830	0.101852	0.093679	0.088827	0.085803	0.083860
9	0.155820	0.124059	0.109546	0.101806	0.097336	0.094636	0.092960
10	0.162745	0.131474	0.117460	0.110168	0.106079	0.103690	0.102259
11	0.169801	0.139065	0.125576	0.118740	0.115025	0.112927	0.111719
12	0.176984	0.146824	0.133879	0.127500	0.124144	0.122317	0.121304
13	0.184290	0.154742	0.142354	0.136426	0.133411	0.131829	0.130986
14	0.191714	0.162809	0.150986	0.145498	0.142803	0.141442	0.140745
15	0.199252	0.171017	0.159761	0.154699	0.152300	0.151135	0.150562
16	0.206901	0.187822	0.168667	0.164013	0.161886	0.160892	0.160424
17	0.214657	0.187822	0.177690	0.173423	0.171545	0.170701	0.170319
18	0.222515	0.196403	0.186820	0.182919	0.180550	0.180550	0.180240
19	0.230471	0.205092	0.196045	0.192487	0.190432	0.190432	0.190181
20	0.238523	0.213882	0.205357	0.202119	0.200339	0.200339	0.200136

Calculated using the following formula:

$$\text{Amortization Factor} = \frac{i}{1-(1+i)^n}$$

where i = interest rate; n = number of years

Appendix D

Indices used to adjust construction
and operating costs to reflect price changes

Period	Construction Cost Index _{2/} 1977 = 0 _{2/}	Consumer Price Index _{3/} 1977 = 0 _{3/}
1977	100.0	100.0
1978	113.0	108.4
1979	128.7	125.1
1980	143.3	140.4
1981	152.2	154.5
1982 ^{1/}	157.6	158.5

^{1/} June 1982

_{2/} Source: [7]

_{3/} Source: [8]

Form 1. Estimated Number of Annual Physician Office Visits
by Age and Sex for Clinic Service Area

Age Cohort	Male			Female			Total Visits	
	Utilization Rate	Population	Total Visits	Utilization Rate	Population	Total Visits		
Under 15	2.3	X _____	= _____	2.1	X _____	= _____	_____	_____
15 - 24	1.4	X _____	= _____	2.7	X _____	= _____	_____	_____
25 - 44	1.8	X _____	= _____	3.3	X _____	= _____	_____	_____
45 - 64	2.6	X _____	= _____	3.4	X _____	= _____	_____	_____
65 and Over	4.0	X _____	= _____	4.3	X _____	= _____	_____	_____
TOTAL			_____				_____	_____

Estimate of local physician office visits = 66.2 X _____ total visits = _____

Form 2. Estimation of Number of
Physicians an Area Can Support

Estimated Total Office Visits for Area (From Form 1)		_____
Subtract Office Visits to Practicing Physicians in Area	-	_____
Divided by Average Number of Physician Office Visits (5455.7)*		_____
Equals Number of Additional Physicians Area could Theoretically support	=	_____

*If not known use national average of 5455.

Form 3. Procedure to Estimate Gross Income

Category of Service	Number of Visits	Rate Schedule					
		High	Average	Low	High	Average	Low
Office Visit (Initial) .149 x total office Visits _____ (Form 1)	_____ X	30.00	21.19	15.00	_____	_____	_____
Office Visit (Routine) .851 x total office Visits _____ (Form 1)	_____ X	21.00	16.13	12.00	_____	_____	_____
Charge for additional services per office visit .41 x total office visits _____ (Form 1)	_____ X		15.00 with x-ray or 10.00 without		_____	_____	_____
Hospital Visits* .25 x total office Visits _____ (Form 1)	_____ X	30.00	23.31	30.00	_____	_____	_____
Emergency Room Visits* .16 x total office Visits _____ (Form 1)	_____ X	40.00	26.38	20.00	_____	_____	_____
Nursing Home Visits* .04 x total office Visits _____ (Form 1)	_____ X	40.00	20.13	12.00	_____	_____	_____
TOTAL					_____	_____	_____

*Use locally determined number if available.

Form 4. Procedure to Estimate Equipment Cost

Area in Clinic	Equipment	Number	Price Per Unit	Total Cost
			Dollars	Dollars
<u>Reception Area</u>				
	Chairs, Single	_____ X	_____ =	_____
	Chairs, Double	_____ X	_____ =	_____
	Chairs, Triple	_____ X	_____ =	_____
	Chairs, Pediatric	_____ X	_____ =	_____
	Lamps	_____ X	_____ =	_____
	Magazine Rack	_____ X	_____ =	_____
	Tables	_____ X	_____ =	_____
	Toy Box	_____ X	_____ =	_____
	Waste Receptacle	_____ X	_____ =	_____
	Other:	_____ X	_____ =	_____
		_____ X	_____ =	_____
		_____ X	_____ =	_____
		_____ X	_____ =	_____
TOTAL				_____
<u>Business Office</u>				
	Adding Machine	_____ X	_____ =	_____
	Bulletin Board	_____ X	_____ =	_____
	Clock	_____ X	_____ =	_____
	Computer	_____ X	_____ =	_____
	Copying Machine	_____ X	_____ =	_____
	Desk	_____ X	_____ =	_____
	Dictaphone	_____ X	_____ =	_____
	Filing Cabinets	_____ X	_____ =	_____
	Lamps	_____ X	_____ =	_____
	Medical			
	Dictionary	_____ X	_____ =	_____
	Medical Records			
	Filing System			
	with pegboard	_____ X	_____ =	_____
	Rolodex	_____ X	_____ =	_____
	Safe	_____ X	_____ =	_____
	Stool	_____ X	_____ =	_____
	Secretarial			
	Chair	_____ X	_____ =	_____
	Telephone*	_____ X	_____ =	_____
	Telephone Answering			
	Device	_____ X	_____ =	_____
	Typewriter	_____ X	_____ =	_____
	Vertical File	_____ X	_____ =	_____
	Waste Receptacle	_____ X	_____ =	_____
	Other:	_____ X	_____ =	_____
		_____ X	_____ =	_____
		_____ X	_____ =	_____
TOTAL				_____

Form 4. Continued

Area in Clinic	Equipment	Number	Price Per Unit	Total Cost
			Dollars	Dollars
<u>Physician Office(s)</u>				
	Chair	_____ X	_____ =	_____
	Clock	_____ X	_____ =	_____
	Credenza	_____ X	_____ =	_____
	Desk	_____ X	_____ =	_____
	Dictaphone**	_____ X	_____ =	_____
	Lateral Desk File	_____ X	_____ =	_____
	Lamp	_____ X	_____ =	_____
	Telephone*	_____ X	_____ =	_____
	Other:	_____ X	_____ =	_____
		_____ X	_____ =	_____
TOTAL				
<u>Conference Room</u>				
	Audio/Visual Equipment	_____ X	_____ =	_____
	Cabinet	_____ X	_____ =	_____
	Chairs	_____ X	_____ =	_____
	Clock	_____ X	_____ =	_____
	Coat Rack/Hooks	_____ X	_____ =	_____
	Fire Extinguisher	_____ X	_____ =	_____
	Heating Plate	_____ X	_____ =	_____
	Kitchen Utensils	_____ X	_____ =	_____
	Micro-Wave	_____ X	_____ =	_____
	Refrigerator	_____ X	_____ =	_____
	Sofa	_____ X	_____ =	_____
	Table	_____ X	_____ =	_____
	Vacuum Sweeper	_____ X	_____ =	_____
	Other:	_____ X	_____ =	_____
		_____ X	_____ =	_____
TOTAL				

*Rental, included directly into operating costs.

**Part of Unit Purchased in business office.