Capital and Operating Costs for Community Clinics

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Capital And Operating Costs For Community Clinics

by

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Introduction

Many concerned local leaders throughout rural America are attempting to recruit or retain physicians by providing community clinics. The degree of incentive ranges from providing physicians free space to charging them only a monthly fee to cover capital and operating costs. As community leaders consider whether or not to construct a clinic, information is needed about capital and operating costs and sources of financial assistance. The objective of this study is to provide such information so community leaders can make more informed decisions relative to clinic construction and operation.

It is important to note that the following related issues are not addressed in this study: (1) present and future conditions which warrant clinic construction; (2) criteria for exact location; (3) process of physician recruitment and retention; and (4) most appropriate initial size of structure and amount of land. These issues deserve careful consideration. For example, there are several strategies which might be used regarding size and land area. Leaders in a community where population is increasing may prefer to have an initial structure which accomodates two physicians, but purchase sufficient land to permit later expansion to accommodate four physicians when the changed population makes it justified. Alternatively, leaders in a community with a stable or declining population may prefer to refurbish an existing structure to

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accommodate only one physician. Assistance concerning these related issues may be obtained from the health systems agency, medical schools, or other agencies providing assistance in community health planning.

It is also important to consider when physician recruitment will begin. Involving physicians early in the design and construction process, may enhance recruitment, ensure early occupancy of the completed structure, increase physician retention, and be helpful in obtaining financial assistance.

The data used in this report are the results of data collected from eight community clinics in Oklahoma. Capital costs data relate to clinics under construction or in the planning phase. Operating costs data relate to clinics in operation for several years.

Capital Costs

Persons in a community considering the construction of a clinic, first need an estimate of costs. Construction costs are usually discussed in terms of costs per square foot. Costs for the facilities surveyed in mid 1977 ranged from $30.00 to $35.00. These estimates exclude the costs of land. These were one story buildings with brick exteriors. Elaborate design decisions which improve the appearance of the building will add further to the costs. Before a final design is adopted personnel at the State's medical center should be consulted.

The survey of clinics indicated that most facilities have four examination rooms per physician with about 100 to 120 square feet per examination room. In addition each physician had a small room which was his office and a medical preparation room. The reception room, bookkeeping and accounting offices may be shared with the other physicians in the complex. The most common rural clinic in the sample accommodated four physicians. Space per physician average 1,241 square feet.

Equipment per physician in mid 1977 was estimated to cost $10,000. This includes only basic equipment for exam rooms, physician's office, medical preparation room, reception area, and bookkeeping and accounting offices and does not include more sophisticated laboratory or X-ray equipment. Equipment for each examination room is expected to cost $1,450, or $5,800 per physician. Major items per room are an exam table, stool, lamps, instrument stand, cabinets, a scale, a sink, and miscellaneous equipment.

It is also important to consider when physician recruitment will begin. Involving physicians early in the design and construction process may enhance recruitment, ensure early occupancy of the completed structure, increase physician retention, and be helpful in obtaining financial assistance.

Operating Costs

Community leaders also need to know how much it will cost to operate the facility once it is completed. A summary of operating expenses is presented in Table 1. The data are presented such that they can be applied to any size clinic. However, if local costs data are available, such as monthly charge rate

Table 1 — Operating expenses for a rural community clinic[1].

Item	Cost
Water, sewer, and trash	$120.00 per physician per year
Electricity[2]	$1.12 per sq. ft. per year
Insurance	$2.20 per thousand dollars per year
Janitor	$840.00 per physician per year
Maintenance	$180.00 per physician per year

[1] If local costs data are available, it should be used in estimating local operating costs rather than the data in this table.

[2] Electricity is used for heating and air condition in this study. The local provider should be contacted to obtain best estimate of yearly electrical costs.

Source: Eight rural clinics in Oklahoma.

for trash pickup, these data should be used in estimating local operating costs rather than the data presented in Table 1. If a two - physician clinic is assumed with 1,241 square feet per physician, then total yearly operating costs are estimated at $5,267 or $2,633.50 per physician (includes $94,000 of insurance at 2.20 per thousand).

Utilization of Physician Services

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. These variables are beyond the scope of the analysis presented in this bulletin. However, some fairly simple computations can give community leaders a rough idea of the likely demand for physician services in their communities. Knowledge of this demand, in turn, can help to reduce the likelihood of spending too much on a clinic facility which is too large. The procedure involves estimating physician visits and referrals, and utilizing data on the number of patients a physician can see in a year.

Regional or local data representing the Great Plains were not available on physician visits. National data (*6*)[1] for nonmetropolitan areas were the best available and were used to estimate physician visits and derive utilization rates. It is assumed that factors affecting demand in other nonmetropolitan areas of the United States, such as age, sex, income, and race, are not significantly different than those in the Great Plains.

Table 2 provides the number of physician visits per person by sex and age, and includes those in the physician's office, and emergency room, a hospital ward, a home, or by telephone. Table 3 provides the number of physician office visits per person by sex and age. For instance, for each male under 15 years of age, 3.3 physician visits are generated per year (table 2) of which 2.2 visits occur in the physician's office (table 3).

[1] Underscored numbers in parentheses refer to literature cited at the end of this bulletin.

Table 2 — Number of annual physician visits per persons by sex and age cohort for manufacturing areas, United States, May 1973 - April 1974.

Age cohort	Rate	
	Male	Female
Under 15	3.3	2.8
15-44 years	2.3	4.1
45-64 years	3.3	4.2
65 + years	4.8	6.0

Source: (*6*, pp 245).

Table 3 — Number of annual physician office visits per person by sex and age cohort for nonmetropolitan areas, United States, May 1973 - April 1974.

	Rate	
Age cohort	Male	Female
Under 15	2.2	1.9
15-44 years	1.6	2.8
45-64 years	2.5	3.2
65 +	3.6	4.5

Source: (*6*, pp. 295, 407, 503, 505, 567).

A national study (*4*) indicates that 21.4 percent of all medical cases are handled by specialists. As specialists tend to locate their practices in urban areas, only 78.6% of the rural cases per year are handled locally. Thus, if no or few specialists are located inside the boundaries of the area under analysis, the number of specialist cases must be subtracted to determine the potential number of local physician visits.

Research by Radke and Nordblom (*2*) and Cordes (*1*) indicate physician capability is approximately 6,000 annual visits. Thus, once the number of physician visits is estimated for a service area, a simple division yields the number of physicians the service area can support.

Funding Sources For Rural Clinics

Community leaders also may desire to know about sources of financial assistance to build a clinic. The source of funds can be divided into two main categories; Federal and Local.

Federal Sources

In the public sector, the U.S. Department of Health, Education, and Welfare (HEW) is the foremost source of funding and technical assistance for medical care resources. Funding for the Health Underserved Rural Areas

(HURA) program is an integral part of the Rural Health Initiative (RHI) approach.[2] The RHI utilizes the primary health care capacity building programs (Community Health Centers, Migrant Health, National Health Service Corps) of the Bureau of Community Health Service, HEW, to establish integrated primary health care systems in medically underserved areas (*3*).

By the end of 1976, grants made possible 53 HURA[3] projects which serve 181 rural counties; 128 of them are designated as medically underserved areas, 96 as critical health manpower shortage areas, 57 as high infant mortality areas, and 4 as high migrant and high impact areas (not mutally exclusive). The HURA projects involve private group practices, community hospitals, State health and Medicaid departments, county health departments, and other to ensure a full range of ways to meet the special needs of rural people. The scope of the program is illustrated by the fact that professionals in the 53 projects have established 152 satellite sites to serve rural populations.

Competition for grants for HURA and related projects should, in most cases, be done under the auspices of professionals in substate or State health systems agencies, which were mandated in 1974 by P.L. 93-641 called the National Health Planning and Resources Development Act. There are estimated 208 health systems agencies in the United States. These agencies have an advisory board consisting of consumers and providers of health services. In addition, each has a professional staff who along with the advisory board make recommendations regarding area-wide planning for health services, manpower, and facilities.

A second source of funding for medical resources is the Farmers Home Administration (FmHA)[4]. This agency is authorized to make loans to develop community facilities for public use in rural areas and towns of up to 10,000 people (*5*). The funds can be used for such projects as clinics, hospitals, and fire stations, that provide essential services to rural residents. The maximum term on all such loans is 40 years, and the current interest rate is 5 percent on the unpaid principal.

Eligibility for these loans depends mainly on public entities (municipalities, counties, special purpose districts, and nonprofit corporations) (1) being unable to obtain needed funds from other sources at reasonable rates and terms, (2) having legal authority to borrow and repay loans, to pledge security for loans, and to construct, operate, and maintain the facilities or services, and (3) being financially sound and able to organize and manage the facility effectively. Guidance in applying for funds can be obtained from local county offices of the Farmers Home Administration in conjunction with the professional staff of the associated health systems agency.

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[2] RHI is a management approach to bring together several health programs which function in a more coordinated manner.

[3] The HURA Program was created in September 1974 with an initial appropriation of $10 million. It is authorized under Section 1110, Title XIX (Medicaid) of the Social Security Act. In fiscal year 1976, the appropriation was $10 million and was increased to $15 million in fiscal year 1977.

[4] Other important sources of technical assistance in the Department of Agriculture are the Rural Development Service and the Science and Education Administration.

Local Sources

Local sources used to raise funds include local fund raising activities, local sales tax, private foundations, and formation of a trust authority which may sell bonds. Local fund raising activities range from fish dinners to direct solicitation. These activities require dedication by many local residents and do indicate the amount of community commitment and pride. Some communities have earmarked part of their sales tax collections for support of a clinic or for repayment of a loan. This has been a popular means of funding clinics. Private foundations often fund clinics in underserved areas. Finally, another method used to raise funds is the formation of a trust authority which has authority to sell bonds.

Each community must evaluate its own options and decide the type of funding mechanism suited for its use.

Application Of Information

The information contained in this report is applied to Alfalfa County located in northwest Oklahoma. This is done to illustrate appropriate usage. The county had a population of 7,224 in 1970, with the town of Cherokee being the largest community and county seat with a population of 2,119. The number of persons by sex and age groups is listed in Form 1. By multiplying the number of visits per age group times the population in that age group, an estimate of the number of physician visits per year is derived. For males under 15 years of age, 3,115 physician visits are estimated to occur annually. In total, it is estimated that the residents of Alfalfa County would generate 27,664 physician visits per year. Furthermore, it is estimated that 21.4 percent of the visits would be to specialists located outside the county. Thus, with these utilization rates, and county population figures 21,744 general practitioner physician visits would be expected locally each year. If an estimate of the number of physician office visits is desired, the coefficients in Table 3 can be used and a similar procedure conducted as when data in Table 2 are used.

Ratke and Nordblom (2), Cordes (1), and others indicate physician capacity is approximately 6,000 annual visits. Based on this figure, Alfalfa County residents could support about 4 physicians. To calculate capital and operating expenses for this clinic Form 2 was used. For a four-physician office complex, the estimated costs would be $148,920 for the building and $40,000 for the equipment. The building is assumed to have an expected life of 25 years and be financed with FmHA loan at 5 percent interest.

It is assumed that the equipment has an expected life of 10 years and will be financed with an 8 percent conventionl loan. As in many cases, the land is presently owned by the community and used as the downpayment. Interest and principal would total $16,527.33 per year. Operating expenses according to the survey estimates (Table1) which include water, heating, air conditioning, insurance, janitor and maintenance would equal $10,533.28 per year. Again if local cost data for these items are available, they should be used in

Form 1 — Estimated number of annual physician visits by sex and age for clinic service area.

Age cohort	Male			Female			Total visits male and female
	Utilization rate	population	Total visits	Utilization rate	Population	Total visits	
Under 15	3.3	944	3,115	2.8	737	2,064	5,179
15-44	2.3	1,033	2,376	4.1	1,035	4,215	6,591
45-64	3.3	899	2967	4.2	987	4,145	7,112
65 and over	4.8	662	3,178	6.0	934	5,604	8,782
Total			11,636			16,028	27,664

Estimated number of local physician visits 78.6 x total visits (27,664) = 21,744.

Form 2 — Procedure to estimate capital and operating cost for a community clinic[1]

I. Capital Costs

A. Building (No. of Physicians 4 x sq. feet per physician 1,241 x construction per sq. ft. costs 30 x Present construction cost index[2] (152.6) + land 1977 construction cost index 152.6 cost $25,000) = $173,920

B. Equipment (No. of Physicians 4 x average equipment cost per doctor $10,000 = $40,000

Total $213,920

II. Capital Charges

A. Capital Costs building $148,920 x amortization factor[3] .070952 = $10,566.17

B. Capital Costs Equipment $40,000 x amortization factor[3] .149029 = $5,961.16

Total $16,527.33

III. Operating Expenses

A. Water (No. of Physicians 4 x yearly water, sewer and garbage charge 120 = $480.00

B. Heating and Air Conditioning (No. of Physician 4 x sq. ft. per physiciar 1,241 x cost per sq. ft. 1.12 $5,559.68

C. Insurance Capital Costs in thousands 188 x Insurance cost per thousand dollars coverage 2.20 = $413.60

D. Janitor

No. of Physicians 4 x yearly per physician cost 840 = $3,360.

E. Maintenance (No. of physicians 4 x yearly per physician cost 180 = $ 720.

Total Operating Costs in 1977 Dollars $10,533.28

Present Consumer Price Index[1] (181.8) / 1977 Consumer Price Index 181.8 x Operating Costs (10,533.28) $10,533.28

IV. Total Yearly Costs

A. Capital Charges = 16,527.33

B. Operating Charges = 10,533.28

Total $27,060.61

[1] If local cost data are available, they should be substantial for survey cost data.
[2] Appendix Table A.
[3] Appendix Table B.

Form 3 — Yearly revenue and profit (loss) for a community clinic.

Monthly physician rental charge	Number of physicians	Yearly revenue	Yearly capital and operating cost	Profit or subsidy
450	4	21,600	27,060.62	5,460.62
500	4	24,000	27,060.62	3,060.62
550	4	26,400	27,060.62	660.62
600	4	28,800	27,060.62	1,739.38
650	4	31,200	27,060.62	4,139.38
700	4	33,600	27,060.62	6,539.38

[1] $450 x 4 physicians x 12 months = $21,600.

estimating operating expense. In Form 3, yearly costs and revenue data from various central charges are presented. In order to break even, the physicians will have to be charged a monthly rental fee of about $565.

Summary

Local officials and health planners in the Great Plains may use the data provided in this community clinic guide to plan needed health service for their areas. By following the guide, rural planners can estimate the number of physician visits their area will generate, the number of physicians their area can support, the capital costs of a community clinic, the operating costs of a community clinic, and the monthly rental per physician necessary for the project to break even.

For a fast growing area, local decision makers can use population projections with this guide to estimate the services required over the next 10 to 15 years. When using this guide to estimate physician needs and costs, both local information, if available, and common sense must be used.

References

(1) Cordes, Sam, "Comparative Productivity Among Different Sized Physician Practices in Rural Washington." *Northeastern Agricultural Economics Council Journal, II (1973), 153-161.*

(2) Radtke, Hans and Tom Nordblom, *The Economics of a Small Rural Physician Practice in Nevada.* Agr. Exp. Sta. Bull. C167.

(3) Samuels, Michael E., "The Health Underserved Rural Areas Program Status Report as of December 31, 1976," *Rural Health Communications.* Vol. II, No. 3, Clearinghouse for Rural Health Services Research, College of Community Health Sciences, Univ. of Ala., P.O. Box 6291, University, Ala. 35486.

(4) Schonfeld, Frank K., F. Heston, and Isidone S. Falk. *Standards of Good Medical Care: Based on the Opinions of Clinicians Associated with the Yale-New Haven Medical Center With Respect To 242 Diseases.* Nat. Tech. Infor. Ser., U.S. Dept. of Comm., 4 Vols. PB-240 385-388.

(5) U.S. Department of Agriculture, Farmers Home Administration, "Community Facility Loans," Program Aid No. 1100, Feb. 1975.

(6) U.S. Department of Health Education and Welfare, Public Health Service, *Health, United States,* 1975. DHEW pub. No. (HRA 76-1232), U.S. Govt. Print. Off., 1976.

Appendix

Appendix Table I — Indices used to adjust construction and operating costs to reflect price changes.

Period	Construction cost index 1972=100.0	Consumer price index 1967=100.0
1972	100.0	125.3
1973	108.4	133.1
1974	126.1	147.9
1975	138.2	161.2
1976	143.5	170.5
1977[1]	152.6	181.8

[1] June 1977.

Source: Construction cost index compiled from U.S. Dept. Com. composite cost index, Construction Review, Domes. and Internat. Bus. Admin., Bur. of Domes. Comm., U.S. Dept. Com., Washington, D.C. Consumer price index from Bur. Labor Stat., U.S. Dept. Labor, Washington, D. C.

Appendix Table 2 — Amortization factors for various repayment periods and interest rates for the calculation of annual loan payment.

Percent interest	Repayment Period (years)						
	10	15	20	25	30	35	40
				Amortization factors			
5	.129505	.096342	.080243	.070952	.065051	.061072	.058278
6	.135868	.102963	.087185	.078227	.072649	.068974	.066462
7	.142378	.109795	.094393	.085811	.080586	.077234	.075009
7½	.145686	.113287	.098092	.089711	.084671	.081483	.079400
8	.149029	.116830	.101852	.093679	.088827	.085803	.083860
8½	.152408	.120420	.105671	.097712	.093051	.090189	.088382
9	.155820	.124059	.109546	.101806	.097336	.094636	.092960
9½	.159266	.127744	.113477	.105959	.101681	.099138	.097587

Calculated using the following formula:

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

where i = interest rate
n = number of years

Form 1 — Estimated number of annual physician visits by sex and age for clinic service area.

Age cohort	Male			Female			Total visits male and female
	Utilization rate	population	Total visits	Utilization rate	Population	Total visits	
Under 15	3.3	_____	_____	2.8	_____	_____	_____
15-44	2.3	_____	_____	4.1	_____	_____	_____
45-64	3.3	_____	_____	4.2	_____	_____	_____
65 and over	4.8	_____	_____	6.0	_____	_____	_____
Total			_____			_____	_____

Estimated number of local physician visits 78.6 x total visits (_____) = _____.

Form 2 — Procedure to estimate capital and operating cost for a community clinic[1]

I. Capital Costs

A. Building (No. of Physicians _____ x sq. feet per physician

_____ x construction per sq. ft. costs _____ x

Present construction cost index[2] (_____) + land

1977 construction cost index 152.6

cost _____) = $_____

B. Equipment (No. of Physicians _____ x average equipment cost

per doctor _____ = }_____

Total $_____

II. Capital Charges

A. Capital Costs building _____ x amortization factor[3]

_____ = $_____

B. Capital Costs Equipment _____ x amortization factor[3]

_____ = $_____

Total $_____

III. Operating Expenses

A. Water (No. of Physicians _____ x yearly water, sewer

and garbage charge _____ = $_____

B. Heating and Air Conditioning (No. of Physician _____ x

sq. ft. per physician _____ x cost per sq. ft. _____ $_____

C. Insurance

Capital Costs in thousands _____ x Insurance cost per

thousand dollars coverage _____ = $_____

D. Janitor

No. of Physicians _____ x yearly per physician cost

_____ = $_____

E. Maintenance (No. of physicians _____ x yearly per

physician cost _____ = $_____

Total Operating Costs in 1977 Dollars $_____

Present Consumer Price Index[1] (_____) x Operating
1977 Consumer Price Index 181.8

Costs (_____) = $_____

IV. Total Yearly Costs

A. Capital Charges = _____

B. Operating Charges = _____

Total $_____

[1] If local cost data are available, they should be substantial for survey cost data.
[2] Appendix Table A.
[3] Appendix Table B.

Form 3 — Yearly revenue and profit (loss) for a community clinic.

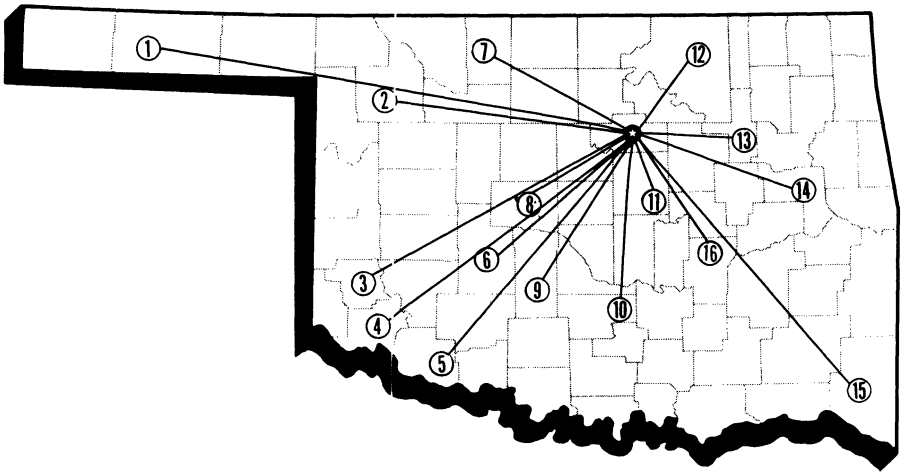
Monthly physician rental charge	Number of physicians	Yearly[1] revenue	Yearly capital and operating cost	Profit or subsidy

[1] $450 x 4 physicians x 12 months = $21,600.

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***
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