THE OPTIMUM SYSTEM FOR PROVIDING PRINTED FORMS AT PRESBYTERIAN HOSPITAL, DALLAS, TEXAS

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B.S. June 9, 1957

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A PROJECT REPORT SUBMITTED TO THE FACULTY OF THE U.S. ARMY-BAYLOR UNIVERSITY PROGRAM IN HOSPITAL ADMINISTRATION, BAYLOR UNIVERSITY, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF HOSPITAL ADMINISTRATION

August, 1968

APPROVED BY THE MEDICAL FIELD SERVICE SCHOOL:

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APPROVED BY THE GRADUATE SCHOOL, BAYLOR UNIVERSITY:

DATE: August 14, 1968

Dean of the Graduate School

ACKNOWLEDGMENTS

The author wishes to express his sincere appreciation to Mr. Rod Bell, administrator of Presbyterian Hospital, who encouraged all members of his staff to cooperate with the investigator; Mr. Howard Hayes, assistant administrator, who provided historical information about the hospital; and Mr. R. G. L'Hommedieu, director of purchasing, who provided information about the present purchasing procedures.

Special acknowledgment is due to Mr. Howard McKeon, Addressograph-Multigraph Corporation, and Mr. Dan R. Donica, A. B. Dick Company, for their assistance in providing data on equipment and forms used in this study.

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CHAPTER I

INTRODUCTION

General Information

According to Knox, business operates on paper.[1] Paper, technically referred to as forms or reports, is the communication link between various departments. Uses range from daily report forms completed by the secretary to financial statements prepared by the accountant. In a hospital, forms are made out by the administrator, his assistants, nurses, doctors, and other hospital personnel. Because medical and nursing personnel rely on forms for drug orders, food orders, and the like, safety as well as efficiency of operation would be impaired by the absence of forms.

> No business operation can be established, maintained, changed or even closed out without the use of forms. No operating procedure can be devised, no meeting can be held, no account can be paid or collected, no system can be mechanized or computerized -- in fact, hardly a conceivable business operation can be carried on -- without some use of paper or business forms.[2]

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[1]Frank M. Knox, The Knox Standard Guide to Design and Control of Business Forms (New York: McGraw-Hill Book Company, 1965), p. 1.

[2]Ibid.

The hospital is no exception. From the time a patient is admitted until he is discharged, all his movements and experiences are noted and recorded on various forms. Admission papers are filled out; requests for laboratory procedures, x-rays, and drugs are submitted; and lastly he is discharged and billed by means of printed forms.[3]

> With the growth of a hospital, paper work increases. More patients mean more paper work. New records will be required for modern equipment and procedures. As more physicians specialize, more specialized forms for the recording of their results will be required.[4]

The constant flow of forms can be very expensive for a hospital, not only in the purchase price, but also in the wages and salaries paid to people who use them in every-day work. In addition, there are costs involved in storage, retrieval, and destruction of forms.

Because of the increasing emphasis being placed on hospitals by third party payors to control rising costs, each institution must review the available systems together with their own printing requirements to determine the most economical method or methods for obtaining printed forms.

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[3]R. B. Glesne, "The Case for Do-It-Yourself Printing," Hospitals, XXXII (April 16, 1958), 61.

[4]Ibid.

The Hospital Setting and History

Presbyterian Hospital, Dallas, Texas, is a short-term, voluntary, nonprofit general hospital. It was officially opened to receive patients on May 3, 1966, with a total of 310 constructed beds. Of the 310 beds, 155 were initially used. The 155 beds included 62 for surgery and related specialties, 62 for internal medicine and related specialties, and 31 for obstetrics and gynecology. In addition, 16 bassinets were also available.

In July, 1966, a nursing unit consisting of 31 beds was opened. In September, 1966, work was completed on a 14-bed intensive care unit, of which 6 beds were initially put into service. The remainder of the beds in this unit were made operational in May, 1967.

Under construction is a 26-bed psychiatric unit, which is part of a community health project. Upon completion of this unit, Presbyterian Hospital will have 350 beds. As the need arises, beds will be added until the designed capacity of 500 beds is reached.

The hospital was accredited by the Joint Commission on Accreditation of Hospitals on December 20, 1966. In January, 1967, it was approved for intern training by the American Medical Association. In addition to the intern training program, the hospital conducts an associate degree program in nursing for students at El Centro Junior College, Dallas, Texas.

In its first year of operation, Presbyterian Hospital had 587 employees, of which 192 were nurses. Some workload data for the period May, 1966, to April, 1967, are given in Table 1.

TABLE 1

WORKLOAD PERFORMED BY PRESBYTERIAN HOSPITAL, MAY, 1966 - APRIL, 1967

Admissions	5,878
Patient days	38,310
Deliveries	424
Laboratory (examinations)	100,998
Pharmacy (prescriptions)	71,236
Physical therapy (treatments)	7,253
X-ray (examinations)	10,538

Source: Business Office Records, Presbyterian Hospital.

Reason for the Study

The administrator of Presbyterian Hospital, Dallas, Texas, was concerned with the increasing cost of printed forms used by the hospital. He was interested in determining whether it would be economically feasible to establish an in-plant printship or to continue the existing procedures of purchasing forms from commercial sources.

Statement of the Problem

To determine the optimum system for providing printed forms for Presbyterian Hospital, Dallas, Texas.

Facts Bearing on the Problem

1. The cost for any system adopted must be within budgetary limitations established by the board of directors.

2. The hospital does not have a printshop.

3. There is sufficient space to establish a limited printshop.

4. Approximately 80% of all forms used are purchased from commercial printers. The other 20% are printed on the hospital's mimeograph machine.

5. The hospital does not have a stock control system for printed forms.

Assumptions

1. The present trend of increasing admissions will continue.

2. The hospital will continue to expand until it reaches its designed capacity of 500 beds.

3. There will be an increase in forms due to legislative acts and legal decision.

Definitions of Unusual Terms

Aluminum plate

A master made of aluminum which is prepared from a negative.

Collator

A mechanical device which gathers sheets of paper into sets or books.[5]

Cut forms

Forms made on plain printed paper, cut into sheets and frequently bound into pads for easy use.[6]

Exposure frame

An electric device which makes a plate from a negative.

In-plant printshop

A printshop operated by an organization within its own facility.

Master

An item used in printing which bears the image to be reproduced. It can be made of paper or other materials.

Offset

A printing method whereby an image is transferred from a master to a cylinder and then to paper. The transfer occurs as a result of the principle that oil and water do not mix.[7]

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[5]Glen U. Cleeton, Charles W. Pitkin, and Raymond L. Cornwell, General Printing (3d ed.; Bloomington, Illinois: McKnight and McKnight Publishing Company, 1963), p. 183.

[6]Daniel Peck, "Business Forms and Their Control," Administrative Management, XXVII (October, 1966), 70.

[7]Mary D. Lyons, "Tools of the Office: Copying and Duplicating Equipment," Office Management, XXI (March, 1960), 76.

Rotary press

A press in which paper carried by an impression cylinder is printed by rotation in contact with a curved printing surface attached to a plate cylinder.[8]

Specialty or unit-set form

A form which incorporates several sheets of carbon paper preinserted, to be "snapped" apart from the form after preparation is complete.[9]

Spirit (also called "fluid" or "liquid")

A duplicating process using a master made of special paper which involves the gradual dissolving of color off a master while on press and the transferral of it to moistened copy paper.[10]

Stencil

A duplicating process which uses a master made of paper or other material in which holes or slits have been made corresponding to the lines and letters to be reproduced. These holes allow ink or other printing substances to pass through, thus creating a copy of the original on the paper or other material beneath the master.[11]

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[8]Cleeton, Pitkin, and Cornwell, op. cit., p. 1.

[9]Peck, op. cit., p. 70

[10]Joseph A. Montana, "Duplicators Do More Conveniently," Administrative Management, XXVII (December, 1966), 51.

[11]Lyons, op. cit., p. 73.

Criteria for the Study

1. The recommended system should be capable of being implemented and operated with minimal expense.

2. The recommended system allows for growth of the facility requirements.

3. The recommended system provides quality-finished products.

Limitations of the Study

1. No attempt was made to reduce the number of forms presently used.

2. No attempt was made to determine a cost factor for the forms duplicated in the hospital's mimeograph machine.

3. A 10% sample of "cut" forms was analyzed. The 10% sample did not include specialty forms.

Review of Literature

The literature on methods used by hospitals for procuring printed forms is limited. Particularly limited are articles comparing in-house printing of forms versus the purchasing of forms. The articles which deal with the printing of forms, for instance, do not describe what printing methods are available but describe a particular method used by a specific hospital. An example of this is an article, "The Printshop at Niagara Falls Memorial Hospital" (Today's Hospital, November-December, 1965). This article discussed

the system of printing used at Niagara Falls Memorial Hospital and what it has done for the hospital. The article did not mention what other printing processes or alternatives were considered when they established their printshop. Another article, "Hospital Printing Department Cuts Cost, Adds Convenience" by Donald R. Bergstedt (Hospitals, January 1, 1951) described the printshop at Rochester General Hospital. This article also failed to mention how the hospital had planned for their printshop, but discussed how the printshop functioned after it was established.

The article, "Do Hospitals 'Farm Out' Too Many Jobs?" by D. D. Kramer (Hospitals, April, 1959) described Elkhart General Hospital's success at reducing the cost of printed forms by changing from commercial printing to printing forms in their own printshop.

Before a hospital considers an in-plant printshop, it would be helpful to read "The Case for Do-It-Yourself Printing" by R. B. Glesne (Hospitals, April 16, 1958), and "Three Printing Processes to Serve the Hospital" by Edwin F. Ross (Hospitals, March 16, 1961). Both of these articles reviewed the criteria and equipment available for hospitals interested in establishing a printshop. A most informative article was "Duplicators Do More Conveniently" by Joseph A. Montana (Administrative Management, December, 1966). This article discussed various printing processes, capabilities of different machines, and cost of printing equipment.

One of the best books that discussed forms and forms control was The Knox Standard Guide to Design and Control of Business Forms by Frank M. Knox.

Research Methodology

A 10% sample of "cut" forms purchased from a commercial printer was compared with the cost of producing the same forms with a hospital operated printshop. The various means of providing printed forms were also studied in order to determine the optimum system.

The available hospital and business literature was researched in an attempt to determine the normal or most frequently used system of procuring printed forms.

Interviews were conducted with commercial printers, form salesmen, printing equipment salesmen, and purchasing agents of three other hospitals located in Dallas, Texas.

The administrator, assistant administrator, and personnel director of Presbyterian Hospital were also interviewed to obtain facts and information which could have a bearing on any system considered.

CHAPTER II

DISCUSSION

Duplicating Processes

There are three major duplicating processes available for hospitals desiring to produce their own forms: spirit, stencil, and offset.[1] A review of the literature and interviews with printing equipment salesmen revealed that these three processes were the most commonly recommended and universally used. Each was found to be capable, in varying degrees, of producing acceptable forms for a hospital.

Spirit

The spirit process, considered the least expensive, produces a lower quality of reproduction than the other two processes and is unable to reproduce photographs, although it can make multicolored copies.[2] Spirit duplicating machines require minimum maintenance and operation is relatively easy.[3] Life of forms

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[1]Edwin F. Ross, "Three Printing Processes to Serve the Hospital," Hospitals, XXV (March 16, 1961), 70.

[2]Joseph A. Montana, "Duplicators Do More Conveniently," Administrative Management, XXVII (December, 1966), 51.

[3]Ibid., p. 54.

produced by the spirit process is limited, and exposure to light causes fading.

Stencil

The stencil process, sometimes referred to as the mimeograph process, is the most versatile of the three processes considered.[4] It has a higher quality of reproduction than the spirit process but is of lower quality than the offset process. Stencil machines are more difficult to operate than the spirit duplicator but are easier to operate than the offset machine.[5] Life of form produced by this process is permanent.

Offset

Offset duplicators are designed for higher quality of reproduction and longer runs than either the spirit or stencil machines and are capable of printing in a variety of colors.[6] Offset equipment is more expensive in terms of initial cost and is more difficult to operate than the other duplicators considered. Life of offset produced form is also permanent.

Before a hospital considers a duplicating machine, some knowledge of the basic differences should be reviewed. Each machine, whether manual or electric, is available in various models and at varying costs. Prices vary not only in initial equipment purchase and maintenance, but also in the cost of masters used.

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[4]Ibid., p. 54.

[5]Ross, op. cit., p. 74.

[6]Montana, op. cit., p. 56.

A comparison of machine, master costs, and workload capacity is given in Table 2.

TABLE 2

COMPARISON OF DUPLICATION MACHINES

Process	Mach. Type	Mach. Cost	Master Type	Master Cost	Max. Copies Per Master
Spirit	Man.	$ 76.50-695[a]	Paper	$0.05-0.08[b]	150
	Elec.	$ 249-1425[a]	Metal	n.a.	n.a.
Stencil	Man.	$ 34.50-535[a]	Paper	$0.10-0.20[a]	5,000[a]
	Elec.	$ 174-1525[a]	Metal	n.a.	n.a.
Offset	Elec.	$1412-8710[a]	Paper	$0.30[a]	5,000[a]
			Metal	$1.50[a]	25,000[a]

[a]Joseph A. Montana, "Duplicators Do More Conveniently," Administrative Management, XXVII (December, 1966), 50+.

[b]Interview with Dan R. Donica, Sales Representative, A. B. Dick Company, Dallas, Texas, May 5, 1967.

Systems Available

There are three ways for a hospital to obtain printed forms: (1) purchasing all forms, (2) printing all forms, and (3) buying unit-set forms and printing only "cut" forms in a hospital printshop.

Commercial Printshop

Presbyterian Hospital purchases approximately 80% of its forms. The remaining 20% of the forms are produced on a mimeograph machine.

On May 1, 1967, a survey was conducted to determine the total number of different forms purchased. This survey revealed the total number to be 232, supplied by five individual printers. Of this total, 97 were specialty forms and 135 were "cut" forms. During the period April, 1966, to March, 1967, a total of $18,133.38 was spent for specialty forms and $12,820.31 was spent for "cut" forms. See Table 3 for a monthly cost breakdown.

TABLE 3

COST FOR SPECIALTY FORMS AND "CUT" FORMS PURCHASED, APRIL, 1966 - MARCH, 1967

Month	UARCO, Inc.	Briggs	Steck	Amer. Hosp. Supply	Haughton
1966					
April	$ 8,909.53	$ ---	$ 45.65	$507.50	$ 2,586.53
May	2,301.14	74.25	---	---	898.71
June	320.83	---	58.85	---	705.25
July	---	17.30	---	---	815.30
August	---	---	---	---	---
September	1,327.52	30.58	47.22	---	915.48
October	---	---	---	---	741.85
November	221.20	---	---	---	1,600.15
December	1,664.13	89.47	41.50	---	814.25
1967					
January	---	---	17.10	---	1,172.49
February	221.00	30.55	---	---	1,064.47
March	2,175.91	---	32.15	---	1,505.83
Total	$17,141.46	$242.15	$242.47	$507.50	$12,820.31

Source: Business Office Records, Presbyterian Hospital.

The hospital used forty-five different forms which were made on a mimeograph machine. This machine was purchased on

May 2, 1961, when a planning office for the construction of the hospital was established. The cost of the machine, with stand, was $459.00.

Because the hospital did not record the number of mimeographed forms produced or amount of labor expended, no attempt was made to determine their cost. However, some cost data concerning supplies, such as paper, stencils, and ink purchased was obtained. A total of $1,675 was spent during the period April, 1966, to March, 1967. See Table 4 for a monthly breakdown of these costs.

TABLE 4

COST FOR SUPPLIES TO PRODUCE FORMS ON MIMEOGRAPH MACHINE, APRIL, 1966 - MARCH, 1967[a]

Month	Paper	Stencil	Ink
April, 1966	$ 127.60	$ 123.85	$ 37.55
May	130.10	---	---
June	118.20	---	---
July	127.20	78.00	---
August	193.20	---	27.70
September	37.70	---	1.70
October	111.00	---	26.00
November	173.00	---	---
December	109.40	41.50	---
January, 1967	136.41	---	---
February	---	8.60	---
March	24.00	43.00	---
Total	$1,288.01	$ 294.95	$ 92.95
Average Monthly	$ 107.33	$ 24.58	$ 7.77

[a]Does not include labor costs.

Source: Business Office Records, Presbyterian Hospital.

Personnel

Because the hospital had 90% of its printing done commercially, no additional personnel had to be hired to operate a printshop.

Equipment

Purchase from commercial printers eliminated the need for printing equipment allocations in the hospital budget. In addition to the initial cost of a duplicating machine (which ranged from $34.50 for the most simple stencil machine to $8,710 for the most complex offset) other costs must be considered, such as a paper cutter, paper drill, and exposure frame. With heavy budgetary demands being made by the need to have additional beds, funds for printing equipment might be difficult to justify.

Space

Minimal storage space was required because the printers gave promt service: all forms were ordered close to the time of need, and only a minimum reserve was kept on hand. Space for a printshop was not required as long as Presbyterian Hospital relied on commercial printers, and space for printing paper storage was likewise unnecessary.

Advantages

Commercial printing has built-in quality control: the hospital has a legal right to expect the quality of paper and

workmanship for which it has contracted.[7] Many commercial printers employ a form design expert, enabling the hospital to have forms designed especially for its needs.

Specialty forms, because of their complex nature, are much easier for a printing company to produce, and can be less expensively produced by an established printer than by an in-plant printshop.[8] These forms require additional expensive equipment, such as a rotary press and collator for their production.

Disadvantages

Unit cost is an obvious disadvantage of commercial printing. Commercial duplicating concerns add, on the average, a flat percentage charge of 30% for overhead and profit to their time and material costs.[9] One study found that printing costs can be cut in half by doing even a limited amount of printing in one's own shop. "Cost per patient day for purchased forms was 9.31 cents. For twelve months of using our offset equipment. . .the cost per patient day for printing our own forms amounted to 4.78 cents."[10]

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[7]D. D. Kramer, "Do Hospitals 'Farm Out' Too Many Jobs?," Hospitals, XXXII (April 1, 1959), 76.

[8]Ken Wares, "Does Your Hospital Need a Printshop?," Hospital Administration and Construction, III (March, 1961), 42.

[9]J. C. Aspley (ed.), The Dartnell Office Manager's Handbook (3d ed.; Chicago: The Dartnell Corporation, Publisher, 1964), p. 903.

[10]Kramer, op. cit., p. 78.

If, in an attempt to save money on printed forms, a hospital used pre-printed standard forms, they might run into difficulties. On standard forms there could be a lack of extra entries which the hospitals and/or the doctors needed; conversely, there could be extra entries which did not apply to the hospital. The hospital would be paying for this extraneous material.

Hospital Printshop

Another method available to a hospital for obtaining forms is for the hospital to purchase its own equipment and print all forms. A hospital should consider the following factors prior to establishing a printshop: personnel, equipment, and space.

Personnel

An important aspect of professional in-plant printing is personnel. To operate such expensive and complex equipment, especially the rotary press, a journeyman printer is needed.[11] The average wage in the Dallas area for such a trained printer is approximately $125 a week, based on a 37-1/2 hour week, or $7,020 annually.[12]

Equipment

The primary equipment required for a hospital printshop which would produce all printed matter for the plant would be as

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[11]Interview with William Dorsee, Assistant to the President, Walraven Brothers Printing Company, Dallas, Texas, May 9, 1967.

[12]Interview with Paul Wilson, Secretary-Treasurer, Printing and Pressman Union, Local 46, Dallas, Texas, May 11, 1967.

follows: one rotary press, one offset press, one paper drill, one collator, one paper cutter, and one exposure frame.[13] The cost for this basic equipment would be approximately $84,660.[14]

Space

In order to accommodate all the required equipment a total of 620.8 square feet would be needed.[15] However, the working area necessary for the equipment would be approximately three times this amount.[16] In addition to the space required for the equipment and work area, space is also needed to store printing supplies such as paper, ink, etc.

The only area that is available for a printshop in Presbyterian Hospital is located on the lower level of the hospital. This area had been established for a printshop when the hospital was planned. Well situated, this room is at the rear of the building, close to the loading ramp, and between the purchasing office and the main supply area. The room contains 383 square feet, more than half the required space, and is used for storage of forms and office supplies. (See Appendix for diagram of this room.)

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[13]Dorsee, op. cit.

[14]Dorsee, op. cit.

[15]Dorsee, op. cit.

[16]Kramer, op. cit., p. 78.

Advantages

Convenience is one important reason for a hospital to do all of its own printing. Any printing job that a hospital wanted done could be printed, usually in a very short time, and then distributed right from the premises. This would include every unit-set form and special jobs, such as annual financial reports, fund raising brochures, and recruitment brochures for interns and nurses.

With a printshop in the hospital, the supply of forms could be kept to a minimum, thus reducing considerably the quantities of obsolete forms on hand.

Disadvantages

The major disadvantages in having a complete printshop would be equipment cost and space requirements.

In order to establish a completely self-sustaining printshop, the initial capital expenditure would be $84,660, just for equipment alone. This does not include supplies, such as paper, ink, and other incidental expenses. Because of the expensive and complicated equipment, a professional printer would have to be hired, thus greatly increasing the cost of the printshop.

Secondly, the establishment of a self-sustaining printshop would require many more machines. Each machine requires additional working space for its operation. Presbyterian Hospital did not have enough space for a self-sustaining printing operation.

Combination

A review of the literature and interviews with hospital officials showed a third method available to the hospital for securing printed forms. This method, printing all "cut" forms in their own printshop and purchasing all unit-set forms, was the one used by most hospitals.

In order to evaluate the economy of purchased "cut" forms versus the internal production of these forms, a 10% sample of such forms was compared. Two printing equipment firms were selected to do the cost comparison.

Initial percentage of savings by producing the 10% sample of "cut" forms internally was found to be between 62% and 67%. See Table 5 for the comparison. After deducting amortization of equipment, interest on loan, and maintenance, savings would amount to between 52% and 59%. Overhead was not considered in these costs because the hospital had not yet established this figure.

Both equipment firms were of the opinion that, based on the present yearly cost of "cut" forms and annual usage, establishing a printshop at this time would keep an operator busy for about 35% of the time or approximately 16 hours per week. They both stated that once the printing cost for "cut" forms amounted to over $25,000.00 a year, the printshop could then be economically established as a full-time operation.

TABLE 5

COST ANALYSIS OF 14 FORMS (10% OF FORMS)

	Form Name	Annual Use	No. of Runs	Present Cost	A. B. Dick Cost[a]	Savings	% of Savings	Addressograph Cost[b]	Savings	% of Savings
1.	Bus. 6	5,000	1	$ 77.00	$ 18.90	$ 58.10	75%	$ 20.40	$ 56.60	74%
2.	*Lab. 21	30,000	2	748.00	515.00	233.00	31%	520.40	227.60	30%
3.	Lab. 26	10,000	2	144.50	35.95	108.55	75%	40.80	103.70	72%
4.	Laund. 1	7,500	3	110.00	13.96	106.04	96%	22.35	87.65	80%
5.	MR. 8	5,000	2	89.00	18.19	70.81	80%	21.60	67.40	76%
6.	NS. 11	6,000	2	97.00	21.75	75.25	78%	26.40	70.60	73%
7.	NS. 16	9,000	3	139.20	31.60	107.60	77%	39.60	99.60	72%
8.	NS. 17	41,500	9	520.50	111.10	409.40	79%	149.00	371.50	71%
9.	NS. 22	16,000	4	192.00	56.45	135.55	71%	67.20	124.80	66%
10.	NS. 23	15,000	5	247.50	50.80	196.70	79%	66.00	181.50	73%
11.	NS. 25	30,000	6	360.10	119.40	240.70	67%	122.40	237.70	66%
12.	NS. 27	22,000	5	270.00	57.05	212.95	79%	92.40	177.60	66%
13.	NS. 48	5,000	3	101.75	16.95	84.80	83%	19.20	82.55	81%
14.	NS. 60	41,000	7	295.00	58.05	236.95	80%	67.24	227.76	77%
	TOTAL	243,000	54	$3,391.55	$1,125.15	$2,276.40	67%	$1,274.99	$2,116.56	62%

*$428.00 Cost for Special Gum Process (included in above costs) for 2 runs or $214.00 per run.

[a]Interview with Dan R. Donica, Sales Representative, A. B. Dick Company, Dallas, Texas, May 5, 1967.

[b]Interview with Edward McKeon, Sales Representative, Addressograph-Multigraph Corporation, Dallas, Texas, May 4, 1967.

Three Dallas area hospitals that operated their own printshops were also visited. These printshops produce their "cut" forms but, because it was more economical, purchased their specialty forms. Estimated percentage of savings realized by producing "cut" forms was between 50% and 75%. See Table 6 for this comparison.

TABLE 6

COMPARISON OF THREE DALLAS HOSPITALS THAT OPERATE THEIR OWN PRINTSHOP, 1966 DATA

	Hospital A	Hospital B	Hospital C
Operating Beds	794	410	830
Bassinets	108	50	88
Total Forms Stocked	462	359	679
Purchased	62	97	52
Printed	400	262	627
Personnel	2	1	2
Space (sq. ft.)	900	531	1,075
Total expenses (Salaries and supplies 1966)	$38,668.71	$12,390.30	$20,364.63
Estimated % of Savings	75	60	50

Source: Interviews with Hospital Purchasing Directors.

Personnel

In an interview conducted with the personnel director of the hospital on May 14, 1967, it was determined that there was no one in the hospital available and capable of operating a printshop.[17]

An interview conducted with a representative of the Texas Employment Office, Dallas, Texas, on May 11, 1967, indicated that salaries for offset duplicator operators ranged from $230.00 to $450.00 a month, with the average being around $365.00 a month.[18]

Equipment

The basic equipment required to establish a limited printshop and produce "cut forms were: one offset press, one paper cutter, one paper drill, and one exposure frame. Cost of this equipment was between $5,010.00[19] and $5,750.00.[20] See Table 7 for breakdown of these costs.

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[17]Interview with Steve Hurley, Director of Personnel, Presbyterian Hospital, Dallas, Texas, May 6, 1967.

[18]Interview with Carter Melugin, Texas Employment Office, Dallas, Texas, May 11, 1967.

[19]Interview with Dan R. Donica, Sales Representative, A. B. Dick Company, Dallas, Texas, May 5, 1967.

[20]Interview with Edward McKeon, Sales Representative, Addressograph-Multigraph Corporation, Dallas, Texas, May 4, 1967.

TABLE 7

COMPARISON OF REQUIRED EQUIPMENT AND COST, 1967 DATA

	A. B. Dick[a]	Addressograph[b]
Press	$3,725.00	$3,900.00
Paper Cutter	605.00	800.00
Paper Drill	325.00	400.00
Exposure Frame	605.00	650.00
Total	$5,010.00	$5,750.00

[a]Interview with Dan R. Donica, Sales Representative, A. B. Dick Company, Dallas, Texas, May 5, 1967.

[b]Interview with Edward McKeon, Sales Representative, Addressograph-Multigraph Corporation, Dallas, Texas, May 4, 1967.

Space

The only room available in the hospital to accommodate a limited printshop had a total of 383 square feet. This room had sufficient space to accommodate all the basic equipment previously mentioned, plus room to store some supplies. However, there was not enough space to store the forms, once produced. They would have to be stored in the main supply area, which is located next to the room considered for the printshop.

Advantages

The main and most obvious advantage is that it would be less expensive for the hospital to print its own "cut" forms rather than to purchase them. Also, less space would be required to store forms since quantity could be held to an absolute minimum; then as the need arose, more forms could be produced. In addition, with a small stock level, less forms would have to be destroyed when they became obsolete.

Disadvantages

There are three major disadvantages to the combination method: equipment cost, personnel, and workload.

The initial purchase price to establish a limited printshop would be between $5,000.00 and $6,000.00. This money was not budgeted, nor were there sufficient funds to hire a printer to operate the printshop. In order to utilize a limited printshop to its fullest capacity both the equipment and the operator should have enough work to keep both busy for a full workweek. The printing requirements at Presbyterian Hospital for "cut" forms were not great enough to obtain maximum use of both the equipment and the operator.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The optimum system for providing printed forms at Presbyterian Hospital, Dallas, Texas, is to purchase all forms from commercial sources.

It was demonstrated that establishment of a limited printshop would result in an estimated savings of more than 50% in printing "cut" forms as opposed to purchasing them. However, because of low annual usage and low annual cost of "cut" forms, establishment of a printshop at this time would not be economical for the hospital. In addition, the printshop would not be a full-time operation.

When the printing cost of "cut" forms reaches approximately $25,000.00, then the optimum system for the hospital would be to establish a limited printshop, to produce "cut" forms and to continue to purchase specialty forms.

Recommendations for Implementation

It is recommended that Presbyterian Hospital take the following action:

1. Continue to purchase all forms from commercial sources.

2. Establish a system to record up-to-date cost on "cut" forms purchased in order to determine when the cost of these forms is $25,000.00.

3. Establish an in-plant printshop to produce "cut" forms when the cost of these forms exceeds $25,000.00 per year while continuing to purchase specialty forms.

Recommendation for Further Study

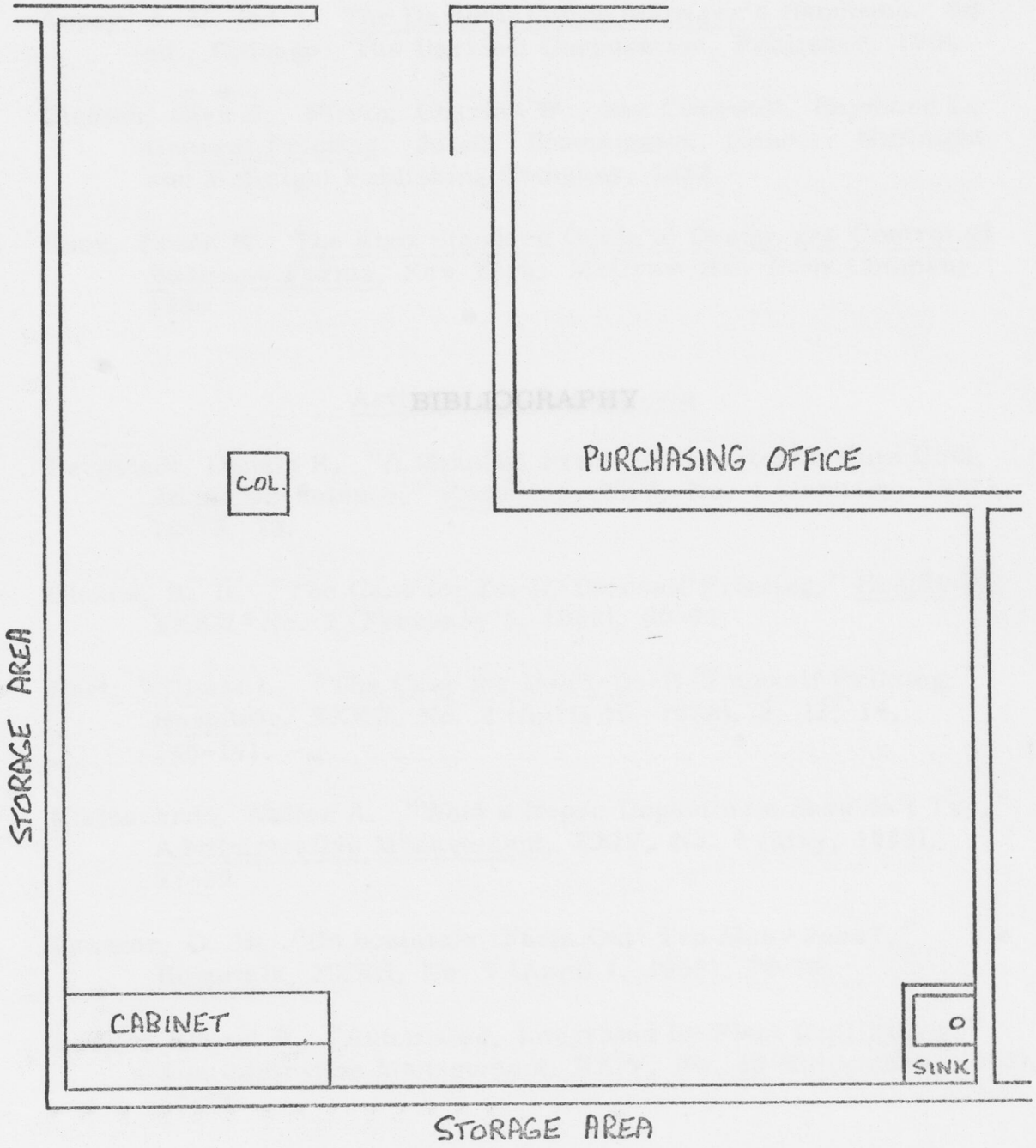
Conduct a study to reduce the total number of forms used.

APPENDIX

DIAGRAM OF PRINTSHOP

PLAN OF PRINT SHOP

SCALE: $\frac{1}{4}$" = 1'-0"



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ABSTRACT

The problem was to determine the optimum method for obtaining printed forms for Presbyterian Hospital, Dallas, Texas.

This study was based upon information obtained from records at Presbyterian Hospital; from interviews with printers and printing equipment salesmen; from interviews with hospital officials with a printshop; and from articles in various business and hospital publications.

The study revealed three basic methods by which the hospital could obtain printed forms: (1) purchasing all forms, (2) printing all forms, and (3) buying unit-set forms and printing only "cut" forms in a hospital printshop.

These three methods were compared with regard to requirements of equipment, personnel, and space. Advantages and disadvantages of each method were discussed.

The report recommends that Presbyterian Hospital continue the present policy of purchasing all forms. When the printing bill for "cut" forms reaches $25,000 annually, then consideration should be given to establishing a limited printshop which could print all "cut" forms.