This bibliography is designed to assist planners in the field of institutional health and health support services in gaining access to knowledge that will enhance their efforts to achieve new or expanded arrangements of service sharing. Entries are cross-referenced to as many categories as the material warrants. Case studies that are not annotated are followed by a brief descriptive phrase indicating the name of the shared services organization and/or the area of the country that is the focus of the study. (JD)
Health Planning Bibliography Series

Services Shared by Health Care Organizations: An Annotated Bibliography
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Services
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Developed by:
Health Services Research Center
of the Hospital Research and Educational Trust
and Northwestern University

Under Contract No.
HRA 230-75-0062

March 1977
There is an increasing interest in and concern with the sharing of institutional health and health support services in this country as a means to increase efficiency and to restrain cost increases. Public Law 93-641, the National Health Planning and Resources Development Act of 1974, established 10 National Health Priorities, of which two address the development of such sharing arrangements.

This bibliography was designed to assist planners at many levels in gaining access to knowledge which will enhance their efforts to achieve new or expanded arrangements of service sharing. While the primary audience is intended to be health planning agencies and institutional planners, other groups associated with shared services may find the bibliography useful.

This annotated bibliography covers the literature on shared services and closely related topics for 1970 to 1975. It was developed for the Bureau of Health Planning and Resources Development, Health Resources Administration, under Contract No. HRA 230-75-0062, by Health Services Research Center of the Hospital Research and Educational Trust and Northwestern University.

Frank A. Morrone, Jr.
Acting Director, Division of Planning Methods and Technology
Bureau of Health Planning and Resources Development
The concept of shared services represents a broad topic within the published literature. There are no clear boundaries to the concept, and semantic ambiguity abounds. There are many descriptions of ongoing shared services and many normative statements about ideal ways to share. The different types of arrangements possible within any one given definition of shared services are numerous, and various attempts at surveying the frequency of sharing in different geographic areas have been made. The breadth of the topic of shared services is evident from even a cursory reading of the proceedings of conferences on shared services.

The basic organizing principle of this bibliography is utility to the reader. Entries have been cross-referenced to as many categories as the material warrants. The annotation for an entry is placed in that section where, in the reviewer's judgment, the main focus of the publication lies. The decision may seem arbitrary at times, but the cross-referencing of entries serves to correct potential errors of judgment. Not all entries in the bibliography are annotated. There are two reasons for this: the material in many of the documents may already be covered by other references, or the substance may be tangential to the topic and of limited, specialized interest. It is hoped that the annotations in and of themselves will be educational, but there is no substitute for reading the original documents.

Case studies which are not annotated are followed by a brief descriptive phrase indicating the name of the shared services organization and/or the area of the country which is the focus of the study.

With few exceptions, the references selected for this bibliography have been published in the United States since January 1970. For additional material on shared services, the reader is advised to consult the bibliographies listed on page 15 of the present work.
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GENERAL AND OVERVIEW TOPICS

SEMANTICS: DEFINITIONS AND CLASSIFICATIONS

Shared services in the health delivery arena occupy a middle ground between institutional autonomy and total merger. This section of the bibliography provides a variety of definitions and classification schemes which demonstrate the complexity of the concept of sharing and the lack of consensus concerning the boundaries of shared services.


(Annotation, 17)


Multihospital relationships may be differentiated by geographic pattern or by organizational structure. Physical arrangement alternatives include distributed networks, neighborhoods, campuses, and condominiums. Organizational alternatives include associations, consortiums, federations, and mergers. Certain combinations of organization and physical arrangement are seen as intuitively more appropriate than others. Shared service functions can be replicated, assigned, pooled, or purchased. The organizational and physical implications of the various alternative shared service models are discussed.


The author reviews and describes alternative organizational structures for shared services (associations, consortiums, federations, and mergers) and alternative methods of providing services (replication, assignment, pooling and purchasing). He cites ten principles for developing cooperative programs: "The joint venture should perform services that the individual hospitals cannot do as well or as inexpensively on their own; the goal of the cooperative effort should be to produce increased income, to decrease expenses, and/or to increase the quality or scope of service provided to the community; participation in the project should not freeze hospitals into future conformity to past patterns; the shared service's board of directors must continually maintain meaningful control of the program; the shared service should be economically self-supporting; the project should not effect the sponsor's fiscal independence; participants should enter shared service programs on a voluntary basis only; the medical or other affected staffs of the individual hospitals should be involved as early in the development stage as possible; an organizational structure that best
fits the individual program should be designed; the financing mechanism should be suited to the individual project."


Five sharing formats are presented in order of approximate difficulty to achieve: ad hoc purchase, trading, endorsement, association service, and joint venture. Each model is described, the advantages and potential disadvantages of each are noted, and examples are provided.


(Annotation, 33)


(Annotation, 44)


(Annotation, 429)


Midtown Hospital Association of Denver, CO, is a voluntary, not-for-profit corporation currently providing 20 shared services for 17 hospitals. Four types of shared services offered by the Association are described: departmentalized shared services; contracted shared services; coordinated hospital resources; and "status quo services," or feasibility investigations of possible shared services even when existing services are found to be preferable.


The author uses a number of classification schemes to conceptualize health facility mergers and combinations. The first scheme identifies seven dimensions, each of which can be viewed as a spectrum from pluralism to fusion: organizational patterns, legal bonds, nature of combined services, stages and forms of production, geography of population served, facility location, and organizational impact. From five to eight points are identified for each dimension, representing actual or hypothetical health care facility arrangements. The second scheme emphasizes the dynamics of health facility combinations and the dimension of time. Seventy-two variables are arranged according to five stages of the merging process: pre-existing conditions, initiating forces, enabling factors, dynamics of execution, and stabilization. The schemes are intended to facilitate understanding of the dynamics of health facility inter-organizational relationships.
This section provides a broad overview of shared services including some case studies of shared services programs encompassing a multitude of activities as well as some attempts at synthesizing these experiences into some generally applicable principles. Many of the entries here could have been annotated in other sections. Empirical wisdom is not confined to these references.


In five parts: (1) "Introduction," including a brief discussion of existing pressures for the effective implementation of shared services and a review of the formation of the task force, (2) "Economic principles and the health care industry (with special reference to shared services)," addressing cost factors and economies of scale, considerations of status, prestige and autonomy, and the lack of incentives for lowering cost production, (3) "Answers to pertinent questions about shared services," examining the comparative efficiency of various kinds of shared services, the most effective administrative approaches to sharing, the possibility of defining cost saving expectations for particular types of services, and the comparative efficiency of contracts with investor-owned companies vs. interhospital arrangements, (4) "Case studies," focusing on printing, data processing, central laundry operations, and credit and collection, and (5) "Statement of principles underlying the successful operation of shared services.


"These guidelines are intended to provide the hospital with a perspective and a process by which it can examine its present service role and the alternatives to that role in relation to changing community needs.... Health delivery systems in the context of these guidelines can be defined from the narrow sense of a sharing of services between hospitals to the broad integration of patients or consumers and health care institutional and professional providers and managers into a single organizational structure providing comprehensive health care services."


A collection of selected articles and original papers focusing on major issues in shared services. Contents: Association serves 17 hospitals, F. D. Sabichi and T. L. Long; Wide range sharing for two hospitals, J. W. Owen; Legal and tax aspects of shared services, D. C. Holland; The changing anatomy of an academic health center, J. C. Donaher Jr.; Financing shared services programs in a multihospital system, J. A. Skarupa; Cost saving and other measures of shared service effectiveness, P. E. Ludwig.

16. American Hospital Association group to recommend voluntary chains! Mod.

Examines four activities through which administrators can enable hospitals to adapt to and influence imminent changes in the health care system: developing a planning process, meeting community health needs, coordinating regional services, and sharing services. The actions are interdependent and, taken together, form an integrated planning process. Four formal hospital groupings which facilitate regional coordination are described: associations, consortiums, federations and corporations.


The authors review existing incentive reimbursement plans and examine the cost effectiveness of each.


Four categories of hospitals based on cooperation level are described and evaluated in terms of comparative difficulty to achieve. They are: no cooperation hospitals, administrative cooperation hospitals, cooperatively planned hospitals, and merged hospitals. Catholic hospitals are at a disadvantage in implementing the more complicated types of cooperative arrangements because of their peculiar organizational structure. The distance of a Catholic hospital from its ownership base, the rotation and change of administrators in Catholic hospitals, questions of title to property, religious mission, and the practice of sharing certain services with order hospitals over a wide geographic area all may contribute to the difficulty of forming cooperative arrangements with local non-Catholic hospitals.


This report, which is based on a study conducted between July 1963 and June 1964, is one of the most comprehensive early reviews of the status of shared services in U.S. hospitals. Information for the study was obtained by surveys of selected organizations, personal interviews and a literature search. Particular emphasis is placed on defining shared services and on identifying a few specific illustrative examples of each, rather than on collecting and reporting statistical data on the availability of shared services. Shared services are considered in the broadest sense as "any service or product that a hospital purchases or obtains from an outside agency" although major emphasis is placed on shared services which have been established as cooperative ventures and which are not universal. Examples of shared service arrangements are organized in 12 major categories. The report includes a checklist of hospital activities subject to sharing by several hospitals and a 147-item bibliography covering the early literature on hospital shared services.


Case study and evaluation of services shared by several North and South Carolina
hospitals. Consideration is given to the philosophy behind sharing and its implementation in the areas of shared food services, group purchasing, joint departmental meetings, shared data processing services, and shared industrial engineering services.


Hennepin County General and the Metropolitan Medical Center in Minneapolis expect to consolidate over 30 services including pediatrics, obstetrics, newborn intensive care, and emergency services, as well as laundry, dietary, central supply, and power services. The impetus for this cooperative arrangement came at the suggestion of the Citizens League which was studying the proposed separate projects of the neighboring hospitals.


Nine hospitals in southeastern Oklahoma have formed the Southeastern Oklahoma Health Care Alliance to extend the use of health manpower in a rural area and to contain costs. The Alliance accomplished these goals by sharing a number of services including coronary care, blood bank, medical library, speech therapy, nurses aide training, and continuing education for all members of the hospitals' health care teams. The hospitals also cooperate with post-secondary schools in training health manpower. The article includes a detailed description of the use of a teleconference network which is used in continuing education programs for hospital personnel, in patient education, and in emergency assistance.


Case study of the 13-member West Suburban Hospital Association which serves communities west of Greater Boston. The study includes a list of goals of the association as incorporated in the bylaws and reviews the activities of the Consortium for Information and Training which was developed to serve nurses and allied health personnel of the member hospitals through both library information and continuing education programs. Eight projects currently underway are being coordinated by a part-time director. These projects include the implementation of some shared services, research and feasibility studies of others, and liaison with state and regional health agencies.


Shared services are defined as "those clinical or administrative functions that are common to two or more institutions, that are used jointly or cooperatively by them in some way for the purpose of improving service and/or effecting economies of scale, and that hold all participating parties at risk in the sharing venture." The foundation favors investments in shared services models for five major reasons: "these models may lead to new delivery forms; they may aid in the control and containment of costs; they may directly improve care to patients; Kellogg assistance may mean the difference between launching a project with federal aid or not; and, finally, new and experimental models might not be launched were it not for private philanthropy."


Examines health services consortiums, corporate consolidations and mergers, multihospital systems, and health maintenance organizations as responses to both internal and external pressure to control health care costs and to increase service capabilities. The author offers observations about the future of cooperative programs and lists ten principles useful for achieving cooperative programs.


Describes the functions and activities of the Division of Health Delivery Systems which was established by the American Hospital Association within the Bureau of Management and Planning Services in October 1972.


Examines the role of state hospital associations as facilitators of cooperative arrangements, particularly among small and rural hospitals. Examples of shared services arrangements conducted or sponsored by state hospital associations.
associations include joint purchasing, collective insurance programs, shared management engineering, centralized accounting, central data collection, insurance programs, manpower recruitment, collective legal services, public relations efforts, and so forth. The authors review various programs of the Iowa Hospital Association.


An experimental approach to rationalizing shared and consolidated services is proposed. In accordance with the theory of group incentives, providers implementing cost-effective shared or consolidated services programs would be entitled to receive incentive payments from the federal government that are stipulated in reimbursement contracts for federally financed health care services. The basic structure of the program and its implementation, from initiation of an individual project through project evaluation, is outlined. Primary advantages of the proposed approach are increased possibility of realizing sharing objectives, lucrative return on capital invested by the government, provision of improved and extended services, facilitation of planned growth on a national level, and stimulation of a cooperative union between public and private resources.


The Iroquois Hospital Consortium, Inc. was formed to "foster and encourage cooperation and consultation among hospitals and to improve the quality of hospital service provided for patients." The Consortium plans to sponsor cooperative programs, explore and develop new concepts in health care, and develop new techniques in hospital procedures, administration, and service.


The author uses four kinds of costs—excess capacity, unit labor, transportation, and change-over—in formulating a decision rule which can be used along with non-monetary criteria to determine the desirability of sharing services.


(Detroit-area shared services arrangements)


A set of monitoring criteria is proposed for use by administrators of individual institutions to assure effective and meaningful involvement in shared service programs. The criteria include drawing up articles of association, designating an operating or management committee, establishing a chart of accounts, preparing an annual budget projection, a monthly financial statement, and an activity report, establishing personnel policies and a personnel budget, deciding on a meeting schedule for the operating committee.
and a formal communication procedure, arranging for periodic site visits, and preparing an audio-visual presentation for use in explaining the program's operation to appropriate groups in the hospital. Important factors to be considered in implementing each of the criteria are noted.


Describes various governmental incentives for sharing services which were created to promote health services management effectiveness: experimental incentive reimbursement programs, Section 402 of the Social Security Amendments of 1967; Regional Medical Programs, Public Law 89-239; tax-exempt status for shared services organizations, Section 501(e) of the Internal Revenue Code; and the authority of the Medicare Program to limit cost reimbursement to reasonable levels.

(North Suburban Association for Health Resources, Chicago's northern suburbs)


These technical guidelines are based on a review of current information on shared services and are intended primarily for use by institutions which are interested in initiating or joining a shared service project. Four general categories of shared service organizations are identified including referred, purchased, multiple-sponsored, and regional services; the possible impacts of a shared service on both the institution and the environment are enumerated; and the advantages and disadvantages of shared services programs are examined. The activities involved in developing a shared service are described in detail from the preliminary through the focused analysis and into the implementation stage. A final section of the guidelines is devoted to the evaluation of shared services and includes recommended procedures for evaluation based on financial characteristics and on the comprehensiveness, availability, and acceptance of care.


(Kansas City (KS) Area Hospital Association)

(Seattle-area shared services arrangements)


Eight hospitals in the Greater Hartford, Connecticut area have formed the Capital Area Health Consortium "to coordinate and further the healthcare
delivery, medical, educational, research, administrative and other activities of its members." The objective of the Consortium and the obligations of its member hospitals are described and the author notes external environmental factors and events which preceded and promoted the consortium arrangement. The Consortium is in some ways a natural outgrowth of close working relationships which had existed earlier among several of the hospitals in such areas as ambulatory care planning, fund raising, purchasing, and the development of special programs. The Consortium is presently considering exchange of medical staff privileges.


(Shared Services System, Omaha)


The author recommends regionalization of more than 25 functions associated with 5 hospital divisions—nursing, professional services, nonprofessional services, fiscal services, and personnel—as a means of saving money while maintaining institutional identity.


Booklet briefly describes the following shared service programs which are available through the Massachusetts Hospital Association: shared computer program, utilization information service, shared microfilming program, manpower information service, systems engineering program, wage and salary program, management development and education program, labor relations program, group tax-deferred annuity program, group life and accidental death and dismemberment program, group long-term disability program, and group liability/workmen's compensation and safety program.


The author proposes cooperative efforts by governmental and private institutions as a partial solution to solving the problems of high costs, mal-distribution of services, uneven quality of services, and increasing demand for services. Ten examples of cooperative working relationships which have been established between the Veteran's Administration health care system and community health care services and facilities are described.

(Federated West Shore Hospital System)

56. Oakland (CA) hospitals save with shared services. Hosp. Forum (Western).
Case study of the New Jersey Hospital Service Corporation which coordinates group purchasing, printing, and credit and collection for two urban New Jersey hospitals. Shared warehousing, medical record activities, and laundry services may be instituted in the future and the feasibility of several other shared services including a day care center, daily menu planning and food purchasing, a combined security force and motor pool, and shared transportation for faculty and students of the schools of nursing affiliated with each institution are presently under investigation. The purchasing program is described in some detail and steps taken to preserve autonomy, quality, and cost control are outlined. A 120-bed suburban hospital recently joined the program and is participating on an ad hoc basis. A network of such programs is envisioned, with each program serving hospitals on a regional basis.


The hospital holding company is an organizational form modeled after the bank holding company with its characteristic advantages of local board autonomy, centralized/decentralized management, and economies of scale. The hospital holding company provides a central locus of control while maintaining community integrity through local directors and managers. Its advantages include economies of scale resulting from superior management and from the centralization of specialized activities, a broadened range of services and facilities for the local health institution resulting from centralized service management and research, and improved capital resources which protect the stability of each local unit. The ownership, local management, board, and central management of the hospital holding company are described and the author notes a variety of expensive or previously unavailable services which the holding company could provide to its member institutions.


Describes "the concept and practice of regional sharing among health care institutions as developed and utilized by the health care institutions comprising Project RAISE--what such a regional sharing venture can accomplish, for whom it is intended, why it is a viable alternative to the present health delivery system of independently operated health care facilities in many small communities, and finally how other interested health care institutions may establish their own regional sharing ventures."


This review of the 1972 literature on mergers and shared services identifies an underlying theme of conflict between fundamental organizational identity and efforts to share services or merge institutions. Other trends in the literature include a return to basic definitions and simple classifications of shared services, a continued questioning of the true value of mergers, a general lack of sound empirical articles, and increased interest in the creation of corporations which span but do not replace existing institutions.


Explores the advantages and disadvantages of shared services, their current and future status, and the implications of shared services for financial managers. Briefly describes the various organizational structures which have developed for providing shared services as well as those factors which have combined to bring pressure on hospitals to share. The author also reviews the progress of a current American Hospital Association project which involves the development of methodologies for health planners to evaluate services shared by health care organizations.


The Tennessee Hospital Association reports briefly on shared services programs which it has sponsored in dietary, medical records, social services, and management engineering. The report also outlines two special
projects: a cooperative effort by 17 hospitals to explore shared group purchasing, educational programs, and other services; and a shared computer project through which 28 hospitals have purchased computer time from Blue Cross to handle patient billing, payroll, inventory control, accounts payable, and several other projects.


A general discussion in question and answer format which examines the advantages and disadvantages of shared services and mergers, problems of implementation, factors contributing to successful programs, and the role of the trustee.


(CINDAY Shared Services Committee, southwestern Ohio and northern Kentucky)


Examines the concept of a multiservice health facility association as a means of coordinating a full range of community health services without the loss of institutional identity which can result from mergers and satellite programs with similar objectives. Characteristics of effective programs achieved through such associations are noted and the necessary formal arrangements are identified. The Multiservice Health Facility Association concept is seen as sufficiently flexible to allow for various kinds of association based on physical proximity, provision of complementary services, uniform standards of care based on comprehensive plan, and so forth.

**SURVEYS**


Shared services organizations are identified in the 1974 Guide in the listing of "State and Provincial Organizations and Agencies," pp. 436-453. The organizations identified include "freestanding shared services organizations sponsored by hospitals or by a hospital association that operates shared services programs for hospitals, shared services programs that are part of a state or metropolitan hospital association, health services consortia that are formed by several hospitals to plan and facilitate the sharing of services, the consolidation and coordination of clinical-medical services, and the joint planning for future development of services within an identified area." The shared or consolidated programs listed are coded according to 63 shared service categories.

This article reports the results of a national questionnarie survey of shared services which was submitted to 5,727 short-term community hospitals in the United States in the summer of 1971. Survey results (82.5 percent of the respondents completed the questionnarie) indicate the extent of present sharing arrangements (29,419 instances of sharing reported), satisfaction with these arrangements (70 percent of respondents reporting satisfaction), assessment of the potential for expansion of existing cooperative arrangements (10,111 instances of services considered expandable), and interest in joining with other hospitals to share services (29,890 instances of interest expressed in sharing a service). Responses to each of the questions regarding use, satisfaction, potential, and interest are tabulated by four major service categories: medical facilities and care, manpower resources, administrative and other services, and continuing education and inservice training programs. Tabulated data include a summary of overall responses to the survey, a listing of shared services reported in each of the service categories, a comparison of shared purchasing activities for New York State in 1970 and 1971, and listings of the 10 most frequently shared services and the services eliciting the highest interest in sharing. Survey results strongly suggest the potential of sharing as a major method of delivery of health care services.

77. Blumberg, M. S. *Shared Services for Hospitals*. Chicago: AHA, 1966. (Annotation, 20)


Ninety-four of 96 short-term general hospitals surveyed by the Delaware Regional Medical Program in late 1969 reported having developed some kind of affiliation either to obtain or provide services. Respondents were queried concerning 29 services. Of these services, each hospital had an average of 12 services within the hospital, supplied four services to other hospitals or organizations, was equipped to supply up to six services to other hospitals, obtained six services, and wished to obtain 10 services. The survey covered the Delaware Valley Region but excluded Philadelphia.


This brief report of the Midtown Hospital Association shared services conference includes a list of services shared by organizations reporting to the conference and a profile of 24 shared service organizations represented at the conference. The profile is broken down by number of hospitals participating in the shared services organization, proximity of participating hospitals (close, rural, entire state, two or more states), age of shared service organization, number of employees, source of initial funding, and types of programs shared.


Study examines the extent and origin of sharing agreements among seven short-term general hospitals in the Passaic Valley Region of New Jersey.
Although sharing was not found to be common in the area, the sharing agreements which were in effect were found to have been initiated more often by councils of local administrators than by the Health Facilities Planning Council.


Brief report of results of a May 1970 survey of members of the Hospital Association of New York State regarding shared services. Nine-hundred and ten instances of sharing were reported; 733 sharing arrangements were regarded as satisfactory; hospitals indicated interest in sharing arrangements in 985 instances; and 159 hospitals indicated that current in-house capabilities could be expanded to share with others. A list of possible sharing arrangements is provided.

**CONFERENCE PROCEEDINGS**

Published proceedings often provide a reader with a broad exposure to a multitude of issues. While some survey the whole field of shared services, others focus on a narrower subsumed topic. Frequently the presenters at these conferences represent different disciplines—sociology, economics, health care research—as well as operational experience.


Partial contents: Marketing research and development: problems posed by the health services market; Hospital associations and economies of scale; Shared services—their production and coordination by hospital associations and their effect on economies of scale; Health systems development and economies of scale; Health services planning and economies of scale; RMP role in the development of economies of scale.


General presentations: State of the art—Canadian; State of the art—American; Summary of the project—seminar on evaluation methodologies for shared services in the health care field; Feasibility studies for shared and consolidated services; Concepts and strategies of evaluation; Evaluation and economic analysis; Environment for evaluation; Experiences with shared services and approaches to their evaluation. Evaluation methodologies: Laundry; Generalized model; Group purchasing; Inservice education; Management engineering. Reference data: Administrative review of shared and consolidated services, 1973.

84. Midtown Hospital Association. *Health Organizations Shared Services*; pro-
Contents include: Shared health services--their role and direction, by Robert DeVries and presentations by officials of the following organizations: North Suburban Association for Health Resources, Northbrook, IL; Hospital Shared Services Association, Seattle; New Jersey Hospital Service Corporation, Princeton, NJ; Ohio Hospital Association, Columbus, OH; South Carolina Hospital Association, Columbia, SC; Centralized Hospital Services, Greensburg, PA; Connecticut Hospital Association, New Haven, CT; Midtown Hospital Association, Denver; American Hospital Association, Chicago; Massachusetts Hospital Association, Burlington, MA; Northwest Allegheny Hospital Corporation, Pittsburgh; Western Kentucky Hospital Services, Inc., Madisonville, KY; Idaho Hospital Research and Education Foundation, Inc., Boise, ID; Hospital Association of New York State, Albany, NY; Affiliated Hospital Services, Inc., Minneapolis. Four task force reports examine the future of shared services, the exchange of information among shared service organizations, the legal and legislative considerations facing shared service organizations, and the role of shared service organizations in relation to health care corporations and health maintenance organizations.


Major papers include: Health facility merger and integration: a typology and some hypotheses, D. B. Starkweather; Coordination and inter-organizational relations in health, by B. J. F. Mott; Inter-organizational cooperation: a review and critique of current theory, by W. J. Reid; Alternative strategies of inter-agency planning, by R. L. Warren.

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86. Blumberg, M. S. Shared Services for Hospitals. Chicago: AHA, 1966. (Annotation, 20)


SPECIFIC SERVICES AND FACILITIES

The services, facilities, and resources that have been and can be shared among health care institutions have been divided into four basic categories: (1) medical/clinical services, (2) manpower services, (3) administrative/supportive services, and (4) education and training programs. The reader is reminded that these categories are not rigorous. A shared education program frequently involves the use of some shared manpower, administrative/supportive services generally also contain an educational component, and so forth. The references here have been organized on the basis of the primary emphasis of subject matter. No reference should be viewed as belonging absolutely or exclusively in any one section.

MEDICAL/CLINICAL

   (Community Associated Blood Banks of Rhode Island)

   (Quadrangle of Metropolitan Northwest and Detroit Hospitals)


This article describes a regionalized system of hospital pharmacy service. Background information is given on Appalachian Regional Hospitals, a system of nine hospitals with a total of 1,026 beds in the mountain areas of West Virginia, Kentucky, and Virginia. Overall administration and organization of the hospital system is described with particular emphasis placed on pharmaceutical services. The scope and standards of pharmaceutical services and communications among the several hospital pharmacy departments are described. Group purchasing, administration, the prescription division, and warehousing (all functions of Central Pharmaceutical Services) are discussed. The clinical implications of this regionalized system of pharmacy services are explored. (Journal summary)


Case study of Memorial Hospital in Springfield, Illinois which established five satellite hemodialysis centers, each contractually part of the main unit at Memorial Hospital, in private medical buildings and small community hospitals in southern Illinois. Ten specific advantages of the program are listed including care for an increased patient load, reduced travel time, and significant cost savings. Cost-accounting data is provided.

94. Bloom, B. S., and others. Radiation therapy in New Hampshire, Massachusetts
Jane Phillips Episcopal-Memorial Medical Center in Bartlesville, Oklahoma shares pharmacy services with a small general hospital in Nowata, Oklahoma. Although the smaller hospital had some token consultation in the past, it had no pharmacy of its own, no routine inspection of drugs, and no established control over drug abuse items other than narcotics. Inventory prepacking and drug distribution in the shared service program are described. The recipient hospital pays an established fee to the service hospital including the various expenses involved in prepacking and delivery of drugs. A separate fee is paid to the pharmacist, who is director of pharmacy at the recipient hospital. Advantages to the smaller hospital include a controlled drug and intravenous solutions inventory with a hospital pharmacist on call at all times for consultations, a precise breakdown of pharmacy operations, dollar saving resulting from reduction in inventory, and a reduction in drug costs resulting from volume purchasing.


Pending the development of comprehensive mental health programs at neighboring Brooklyn hospitals, a custodial-type inpatient unit for private patients in one of the units was developed into an intensive treatment service to admit indigent patients as well. The program was combined with that of an outpatient clinic in another hospital. (Journal summary)


This paper describes a multi-hospital program whereby the staff of the Center for Pharmaceutical Practice, an arm of the School of Pharmacy of SUNY Buffalo, coordinates pharmaceutical services for three large urban hospitals. This activity has the characteristics of a group pharmacy practice. The Director of the Center serves as director of pharmaceutical services in the associated hospitals and the chiefs of each specialty area (manufacturing, control, drug information, and clinical practice) are responsible for that specialty area in each hospital. The advantages of this approach with respect to opportunities for shared services and for diversified education and training of pharmacy students and residents are discussed. (Journal summary)


The author describes a shared laboratory service which was in operation in Yonkers, New York as early as 1932. Three not-for-profit hospitals all utilized services which were provided under contract by the city health department laboratories and two full-time pathologists. Routine lab work such as blood counts and urinalyses were performed in each hospital, while bacteriological and more complicated services were supplied by the central laboratories. Sometime after 1934 the arrangement with the health department, although successful, was discontinued and each hospital developed its own services under a pathologist. If the example set by the Yonkers hospitals and others with comparable services had earlier stimulated widespread adoption of such plans, the hospital field would be much further ahead.

(American College of Radiology in cooperation with 55 regional medical programs throughout the country)

(western Pennsylvania)

(Florida Regional Medical Program at the University of Florida College of Medicine)

(Detroit Quadrangle)

(Detroit Medical Center)


Four neighboring hospitals on Chicago's north side have operated a joint laboratory program efficiently and to their mutual satisfaction since 1967. The idea for the shared facility was first discussed in 1964 and took nearly three years to implement. Geographical location and a combined size of about 600 beds were major factors in formulating the initial proposal. By combining forces, the four hospitals expected to reduce the cost of overhead and increase purchasing power. The plan resulted in segregation of responsibilities whereby
each hospital performed certain procedures for itself and all other members of the group. The benefits of this shared services program include stabilization of laboratory charges to patients, ability of the group to lease or buy modern automated equipment which could not normally be afforded by a small hospital, availability of the full-time services of a qualified bacteriologist and biochemist, and development and use of exact billing and cost allocation procedures.


In addition to a review of the experience of the in-common laboratory established at the Mount Sinai Hospital in Toronto, the author provides a literature review and detailed account of the joint laboratory with special attention to the concept and functions, organization, personnel, physical facilities, tests and equipment, communications, research and development, finances, opposition to and future of the in-common laboratory.


The community core laboratory can help to resolve many of the problems which afflict medicine in general including shortage of manpower, maldistribution of services, lack of uniformity in the quality of services, and spiraling costs. The core laboratory can achieve these ends by creating adequate volume to permit intelligent use of automation and electronic equipment, by conserving manpower, by providing a complete service which allows the exploration of a given patient's specimen to the totality of its useful medical information, and by creating a mechanism for interconvertibility of laboratory information. By supervising the quality control programs of the peripheral facilities and by conducting continuing education programs for their technical and medical staffs, the core laboratory can also insure that the laboratory results found in these facilities are reliable and provide useful information. The economic impact of such a laboratory on the total cost of health care and the problem of acceptance by the medical community are considered.


116. Health Services Research Center. Consolidation of Clinical Laboratory


The Detroit Medical Center Corporation has developed a long-range program for coordination and consolidation of clinical/medical services among several hospitals in the Detroit area. Under the program, "centers of excellence" would be established at participating institutions and patients would be referred to these for specialized services. Pediatric services have already been consolidated and consolidation of general medical and surgical services, emergency and trauma services, and outpatient and rehabilitation services is planned. The goals of the Corporation as set forth in the report to the planning committee of the Greater Detroit Area Hospital Council are:

- to provide the highest quality health services within the present and future capabilities of the center institutions;
- to engage in joint planning to design an over-all service program for the center;
- to concentrate like services in order to avoid unnecessary duplication of facilities and personnel and to maximize utilization of available resources;
- to coordinate the planning and service capabilities of the center with other outside institutions in cooperation with the appropriate public and private health planning agencies; and
- to be committed to the concept that the center will become a coordinated health care system which includes specialized, primary and preventive health services to meet the health care needs of the greater Detroit area.


The San Diego Institute of Pathology is a private commercial enterprise which currently serves more than 19 hospitals as well as walk-in patients. Pathologists at the Institute are responsible for general pathology work at one area hospital, but also use their special expertise by troubleshooting problems in their particular field for all hospitals. The Institute has its own centrally located laboratories with modern laboratory equipment and full time staff, including a number of pathologists who work only at the central facilities. The organization plans to standardize prices for all users in order not to be in competition with the hospitals.


(Hunterdon Medical Center satellite--Phillips Barber Family Health Center, NJ)

(University of Missouri Medical Center, Bone Tumor Referral Center)


(Blood Bank Survey and Supporting Services Program)

(Harvard Joint Center for Radiation Therapy)

(New Jersey Blood Exchange)

A description of the Charette planning technique which was used by planners and architects of a proposed medical center to be shared by two large hospitals, one public and one private, in Minneapolis. The hospitals wished to maintain their separate identities, medical staffs, and programs, but were committed to architectural integration of their institutions and the cooperative use of approximately 30 treatment services. The week long Charette planning sessions included the administrators of each hospital, selected staff members from each institution, and the architects of the proposed center. The program also provided for input from physicians, community groups, and public officials. Marathon meetings were combined with the purposeful elimination of comfort in order to force planning decisions regarding the services to be shared, their design, and their location in the medical center.


(Chicago)

This paper describes the use of pharmacists from multiple institutions to help staff a drug information service supported by the SUNY Buffalo School of Pharmacy. The Service is operated 24 hours each day, seven days a week, and the volunteer pharmacists respond to about 15 percent
of the total calls received. The implementation of the program is described and the methods used by participating institutions to allow pharmacist participation are outlined. (Journal summary)


Provides an analysis of utilization patterns of a shared emergency unit in order to determine a method for providing physician staffing. Findings of the study are reported and implications for adequate physician staffing are discussed.


Two neighboring Colorado hospitals (Swedish Medical Center, Englewood, CO, and Porter Memorial Hospital, Denver) merged medical staffs following consolidation of their pediatrics and obstetrics services. Pediatric consolidation resulted in a single first-class unit, with the patient volume necessary to support the skilled personnel essential to high-quality care. The same is expected of obstetrics consolidation. The merger was effected because the medical staffs of the two hospitals comprised essentially the same physicians and because the quality of care did not seem to be influenced by the repetitive and duplicative organizations and activities. The reorganized combined medical staff formed an executive committee, a professional activities committee, a credentials committee, and a sub-committee on utilization review. The activities of each of these committees and the organizational efficiencies achieved through the merger are described.


138. ______. This 20-bed hospital has 500 specialists. Med. Econ. 47:160, June 8, 1970. (Grand Canyon (AZ) Hospital)


Case study of Centralized Laboratory Services, a central laboratory facility serving 30 medical groups and one hospital affiliated with the Health Insurance Plan of Greater New York. Through automation of laboratory procedures and electronic data processing, the central laboratory facility has achieved substantial reductions in costs and greatly increased laboratory work load while maintaining high standards of quality.
and responsiveness of service. The study demonstrates the principle of economies of scale as a rationale for centralizing high-volume ancillary or supporting services.


A two-million electron volt linear accelerator used in the treatment of cancer patients is owned and housed by Chicago Wesley Memorial Hospital and used regularly for patients of three other institutions which are parts of the Northwestern University-McGaw Medical Center. In addition, some other patients are referred from other area hospitals.


Notwithstanding inherent constraints, sharing or consolidation of professional services offers greater potential for hospitals than sharing of administrative and supporting services. Improvement in professional care to patients, conservation and allocation of professional personnel, and dollar savings are likely outcomes. Reduction of capital construction costs and expensive operating costs is also possible when institutions share or consolidate professional services. Resistance to the sharing of professional services on the part of hospital administrators, trustees, and medical staffs is discussed and the most common arguments against sharing professional services and their counter arguments are set forth.

145. Weimer, W. C. Group activity among hospitals, an analysis of the paramedical service center. Master's thesis, Xavier University, Cincinnati, 1970. (Ohio Department of Medical Hygiene and Correction, Paramedical Service Center)

146. West, J. W. How community pharmacists provide Rx services for two hospitals' outpatients. Pharm. Times. 41:50-52, Feb. 1975. (Pharmacy-Shared Services Program, Holland City (MI) Hospital and North Ottawa Community Hospital, Grand Haven, MI)

147. Two hospitals share unit-dose service. Hospitals, J.A.H.A. 48:112-114, June 16, 1974. (Holland City (MI) Hospital and North Ottawa Community Hospital, Grand Haven, MI)


MANPOWER

150. Administrator loaned to rural hospital. Hospitals, J.A.H.A. 46:59, July 16, 1972. (University of Wisconsin Hospitals and Community Memorial Hospital, WI)


The author presents data on current practices regarding cooperation and competition among Cooperative Multihospital Management Engineering Programs (CMMEPs). Data were gathered through a survey of 11 individuals representing CMMEPs in 21 states and the District of Columbia. The survey questions are provided and the replies are interpreted.


Case study of the development and operation of a shared security system planned by the Midtown Hospital Association, Denver, CO. Deployment and communications systems are described and new preventive components of the central system and a training program are outlined. Central investigation and safety engineering have recently been added as functions of the system. The new system has resulted in increased efficiency as well as dollar savings for the five hospitals involved.


The Social Work Resource Center of Hawaii was formed to provide social work services from a centralized agency on a contractual basis to hospitals and skilled nursing facilities in Hawaii. The Center provides both general and technical services to participating institutions and recruits, orients, assigns, and supervises social work staff. This article describes the proposed organization of the program and includes a general discussion of the growing trend toward shared social work services.

This article discusses the use of a management analyst in the Texas Hospital Association Shared Management Systems Program. The analyst, a full-time employee of the participating hospital, provides program continuity in the time lapse between visits of the shared management engineer by assisting in the implementation of management improvement programs. Through working with the engineer and dealing with department heads within the hospital, the analyst gains valuable training experience in the use of current management engineering tools and techniques. The authors consider how to select a management analyst and how to develop an effective management improvement program. The advantages of such a program include more timely completion of projects, improvement in the level of quality, better methods, improved patient care, and dollar savings.


The nature and level of the engineering support available to the staff of an average hospital is far from optimum. In order to help correct this problem the W. K. Kellogg Foundation has awarded a grant to the Hospital Educational Foundation of the Hospital Council of Southern California to establish a shared service program in biomedical engineering. The aim of the program is to develop the logistics system needed by hospitals to support technological demands placed upon them by the practice of modern medicine. The authors consider the dimensions of the problem and describe in some detail the proposed program of the Hospital Council including organizational structure, establishment of satellite laboratories, and relationship of the program to existing hospital staffs and to local biomedical engineering resources.


A total hospital electrical program is available on an annual contractual basis through the Texas Hospital Association Health Services Corporation's Shared Hospital Electrical Safety Services (SHESS) Program. The program eliminates the need for an institution to purchase and maintain specialized test equipment or to assign staff to conduct tests and maintain records. Services available through the SHESS Program are described.


(Fort Worth area)


St. Joseph's Hospital, a 103-bed acute care facility in Lewiston, ID, shares the services of its trained social worker with two nearby rural hospitals. The social worker makes monthly on-site consultations with the smaller hospitals and directs training sessions for individuals who have been selected to deal with problems of social dysfunction in their respective hospitals.


This article describes the establishment of an in-house biomedical engineering group and a comprehensive program for maintenance and certification of medical electronics equipment in the Dallas County Hospital District. The author, who is director of engineering service in the District, describes in detail the decisions involved in defining which instruments are to be covered, the procedures for setting goals and inventorying instruments, the procurement of technical manuals and laboratory test equipment, and the general operating procedures which apply to the program. The article provides the following: a schedule for implementation of instrument calibration and certification, a typical test procedure for a piece of monitoring equipment, and a certification record sheet for an instrument. The shared program reduced fragmentation of effort, reduced duplication of personnel, and improved quality control.


Case study of the planning and development of a shared service program between two rural hospitals in separate districts of Washington's Puget Sound area. Initially, the hospitals began by sharing the services of an administrator as well as other selected hospital personnel. Later, maintenance services and selected fiscal services were shared, but attempts to share direct patient care services were unsuccessful because of time lost in travel and difficulty in coordinating schedules. The hospitals strengthened their complement of medical staff members through a recruitment drive. Equipment is transferred frequently between the facilities. Although the most suitable organizational structure for the program continues to be a matter of concern, the boards of the two hospitals are considering...
a merger of districts which would resolve some of these problems. Results include a broadened base of operations and a wider variety of health care services, as well as cost containment.


Two therapeutic dietitians from Wausau Hospital in Wausau, WI, consult with a nearby 162-bed rural hospital and nursing home. The cost to the smaller institution includes the dietitians' traveling expenses, salaries, and fringe benefits for the time spent in direct service. The duties performed by the dietitians for the smaller institution are itemized.


(Carolinas Hospital Improvement Program)


(southwest Minnesota)


(Shared Services Systems, Omaha, NE)


(southern California)


(Lutheran Hospitals and Homes Society of America)


This article presents examples of 11 management engineering programs, many making use of grants or separate corporations to bring about administrative innovations. The services provided by each of the programs are briefly described. They include training supervisors in management techniques, conducting feasibility studies for additional combined services, assigning engineers to individual institutions to analyze and implement various improvement techniques, developing programs to effect cost reductions, providing continuing education programs and conferences on work simplification, and sharing personnel, administrators, and boards of trustees.

177. The multiple hospital is the only way to go. Mod. Hosp. 121:7,10,14-16, Nov. 1973.

The state hospital associations of Washington, Oregon, and Idaho have developed a "Systems Program for Hospitals" which is designed to provide hospital administrators with the information necessary to make better management decisions about internal hospital operations. The program, which is financed by the Kellogg Foundation and the Blue Cross Plans in each of the states, has brought about cost reductions, improved patient care and staff morale, and greater efficiency for the 40 participating hospitals. Specific examples of program results and a brief description of organizational goals and structure are given.


183. ______. This 20-bed hospital has 500 specialists. Med. Econ. 47:160, June 8, 1970. (Grand Canyon (AZ) Hospital)


Because of the difficulties involved in evaluating, installing and maintaining biomedical equipment, and in training staff to operate such equipment effectively, individual hospitals may be expected increasingly to turn to shared or cooperative ventures in this field. Three such regional programs which are now in operation are noted: the University of Wisconsin Advisory Center for Medical Technology Systems, the Health Planning Association of Northwest Ohio, and the Phelps Memorial Hospital Shared Clinical Engineering Center.

(Texas Hospital Association, Shared Management Systems Program)

The recently implemented Tennessee Effective Management Program (TEMP) is a shared management engineering program designed to help hospitals control rising costs while providing improved patient care. Services offered by TEMP to participating hospitals are briefly described.

(New Jersey Hospital Association Biomedical and Engineering Shared Technology)

Nebraska Methodist Hospital, Omaha, has offered general and specialized management services to area health care institutions on an affiliation basis since 1968. The hospital provides either total management through contractual affiliation or temporary service through managerial and professional sharing for specific projects. The role of the shared food service manager under both the general and specific managerial plans is described.

This article describes the Texas Hospital Association's Shared Management Systems (SMS) Program which provides Texas hospitals with the consultation required to develop more effective management systems at minimum cost. This program, which now provides service to about 45 hospitals, was made possible by a grant of $99,000 over a three year period from the W. K. Kellogg Foundation. The SMS offers assistance to participating hospitals by arranging consultation visits by an area management systems specialist to advise the hospital's systems coordinator on the development of management engineering techniques and procedures, by disseminating to participating hospitals the results of projects in other hospitals throughout the nation, by developing standards for measurement of departmental performance, and by teaching scientific management techniques to administrators and supervisors.

(St. Peter's General Hospital and Middlesex General Hospital, New Brunswick, NJ)

(Holland City (MI) Hospital and North Ottawa Community Hospital, Grand Haven, MI)


Twelve Wisconsin hospitals are receiving accounting and control services from a shared computer operated by Medistat, a cooperative project of the Wisconsin Blue Cross Plan and Wisconsin hospitals. Five basic master files are set up for each hospital before the hospital goes on-line to the shared system: a hospital profile, a charge description master file, a room and bed master file, a doctor's master file, and a file with coded details of the hospital's approved medical insurance plan. After the hospital begins to participate in the system, a patient master file and an accounts receivable file are developed and maintained. The author describes the data input into each of these files, the records produced by the system, and the economies effected in various hospital procedures from admitting to discharge.


199. ______. How to tell the correct time-sharing. Mod. Hosp. 117:113-114, Nov. 1971. (Annotation, 533)


205. Carter, B. J. Credit and collections with Medical Information System.  
   (Lutheran General Hospital, San Antonio, and Medical Information, Inc.)

206. Chicago hospital cuts EDP costs 50-66 percent through time-sharing.  
   Chicago's Northwest Hospital became the 100th hospital to automate accounting procedures by linking data transmission terminals to the McDonnell Douglas Automation Company's shared computer system in Peoria. Northwest now receives patient billing, accounts receivable, accounts payable, general ledger and payroll services through the system while keeping its data processing costs down to one dollar per patient day.

207. Computer helps hospitals maintain records on dangerous drugs. Hosp. Top.  
   Six hospitals operated by the Franciscan Sisters of the Poor are utilizing a computer system which provides daily lists of amount of medication administered by patient and by type of drug. The hospitals relay information about patient billing, medications, tests, and internal hospital accounting to the central computer which provides summary reports, including a narcotics control list.

   (Multi-State Information System, New England states)

209. Cotner, W., and Schoolar, S. Revenue increase by Medical Information System.  

   Describes the development of AHA's Hospital Administration Services Program which marked its 15th anniversary in 1974. The main objective of the HAS program, which began serving six hospitals in 1959 and now serves nearly 3,000 institutions, is to provide comparative financial statistical data on hospitals and to compare individual institution performances to those of the entire hospital field. Some of the services initiated by the program over the past 15 years include: a cost allocation program; a budget analysis program; specialized programs for nursing homes, psychiatric hospitals, and university health centers; special educational services for managers; publications, and so forth. Services related to HMO's and other innovative delivery systems are now under study.


   The author explores the evolution of data processing in hospitals and weighs the advantages and disadvantages of several type of hospital computer networks. He concludes that shared computer networks offer special advantages and are a viable computer service alternative for hospitals.


Affiliated Hospital Services (AHS), a hospital-owned, not-for-profit, tax-exempt, cooperative association, was incorporated in 1969 to effect better and less expensive credit and collections. The management structure and staffing of AHS, the collection agreement made with participating hospitals, the procedure for classification and collection of accounts, and the charge formula are outlined. Six elements of program success are identified: "(1) a well-defined and mutually agreed upon need, pinpointed well in advance of implementation (2) total commitment and support from hospitals (3) a sound organizational base (4) becoming incorporated as a separate legal entity not coming under the wing of hospital (5) an interested and involved board and (6) building a reputation on its own merits and accomplishments."


A detailed study of the establishment of a shared hospital modular information system (SHMIS) utilizing computer applications based on the Massachusetts General Hospital Utility Multipurpose Programming System (MUMPS) language in a consortium of hospitals. The research methodology includes the testing, monitoring, analysis, and evaluation with respect to the implementation, demonstration, evaluation, and application performance of the SHMIS approach. The evaluation is concerned with manpower utilization, quality of care, acceptance of the system, and generalizability.


Examines the decision-making process which led Midtown Hospital Association to contract with National Accounting Systems, Inc. for collection of delinquent accounts rather than to establish an in-house agency. A criteria chart used in examining each of the alternatives is provided. The services offered by NAS and the savings gained through the contractual arrangement are described. Cost accounting data is provided.


233. Picha, N. A study to determine the effectiveness of a shared (off-line) computer service in the management of accounts receivable in small Texas hospitals. Master's thesis, Baylor University, Waco, TX, 1972. (Texas Hospital Association, Shared Hospital Accounts Receivable System)

Central Service

246. Hospitals buy downtown buildings to house central services. Hosp. Top. 49:22, June 1971. (Baptist Medical Centers, Birmingham, AL)


Following a brief review of shared service arrangements in the United States and in other countries, the author discusses the concept of area industrial zones, which provide for the separation of non-clinical support functions from the hospital and the grouping of these functions on industrial sites. The possibility of implementing this concept in the
United States, where hospital ownership and control are diverse and sometimes competitive, are the inherent problems—standardization, large initial investments, and administrative reorganization—are discussed. In addition to reduced costs and increased quality control, benefits of the area industrial zone concept include reduction of the expansion problem in urban areas, increased design flexibility for both patient-related services and non-clinical support functions, and alleviation of maintenance problems through joint support of a trained maintenance staff.


Dietary


The Division of Management Services of the Rhode Island State Department of Mental Health, Retardation and Hospitals operates a centralized food processing plant at the medical center in Cranston. The Center, which serves 15 state facilities, has reduced labor costs and increased productivity. Meat processing, kitchen, and bakery operations at the central facility are described.


Shared food services can be divided roughly into shared professional and management expertise, shared food purchasing functions, and shared food production systems. Various types of arrangements within each of these categories are described and the present extent of sharing in each category is reported from a survey of members of the American Society for Hospital Food Service Administrators. The author examines resistance to sharing and notes that increasing emphasis on regional and area planning may create a better environment for the utilization of shared dietary services. Elements of success in shared dietary service plans are noted.


35
255. Houston hospitals plan 'superkitchen.' *Mod. Hosp.* 119:42, Oct. 1972. (University of Texas Medical School System and affiliated institutions)


Contents: Shared personnel, purchasing, and production, M. T. Banner; Group food purchasing: a status report, L. H. Farevaag and B. D. David; The technology for improved service, G. Glew; Central source for statewide sharing, D. T. Bailey and M. M. Bonvicin; An automatic, electronic food system, B. D. Brown and P. R. Doyon; Council programs group purchasing, H. H. Hogan; A shared dietitian consulting program, S. W. Laird; Specific or total management through affiliation, L. Tripp; Maintaining menu identity, B. B. Hutchings.


Equipment


The Maryland Hospital Cost Containment Program has developed a program for sharing infrequently used equipment and thereby avoids the expense of separate purchases. In order to formalize such a sharing program hospitals must overcome reluctance of hospital administrators to allow hospital assets to leave their control, determine what equipment is to be shared, establish a policy governing loss or damage of loaned equipment, determine legal aspects of equipment exchange, set up a system for
keeping track of equipment, decide how to deal with one-sided exchanges or reluctance to list sharable items, and deal with changes in depart-
ments or administrations and policy revisions. Loan procedures of the
Maryland program are outlined and the authors provide a listing of some
of the items which are included under each of the five main headings of
their shared equipment list: tools; generators, compressors, and pumps;
communications equipment; test equipment; and vehicles.


Laundry

265. Answers to questions involving the tax exempt status of hospitals that
establish cooperative laundry service; and a hospital which establishes
its own laundry facilities and sells the service to other hospitals.
(Annotation, 423)


Case study of Hospital Cooperative Services, Inc., a not-for-profit, non-
stock corporation which supplies linen and laundry services to five
Connecticut hospitals. Before joining the coop, three member hospitals
were in need of expansion for their in-plant facilities and the other
two were using the services of a commercial laundry. When the idea of
a cooperative was conceived, each of the member hospitals raised $6,000
for a feasibility study, agreed to standardize linen, and agreed to supply
a portion of the linen for the new operation. The planning process and
the laundry production system are described, and some attention is paid
to provisions for expansion, employee transfer, and pollution control.

267. Bash, R. R. Feasibility of Consolidating Durham County (NC) Hospital
(Duke Medical Center and Durham County (NC) Hospital Corp.)


Case study of the development of Hospital Linen Services, Inc., which
serves member hospitals near Kansas City, KS. Reasons given for joining
the central laundry included dissatisfaction with commercial laundry
service, pressing needs to expand in-plant laundry facilities, and steadily
increasing costs. In order to gather incidental start-up expenses, each
interested hospital was assessed on the basis of $10 per bed. Committees
were formed to handle various details and a number of central laundries
were visited so that committee members could observe and study their
performance. A consultant was called in to analyze individual hospital
laundry needs and operational costs and to develop a common plan, projecting savings and benefits. Complications which arose in the planning stages are described in some detail and the advantages of the central laundry facility are noted.

(Central Dakota Hospital Laundry, Inc.)


The authors describe the planning and decision-making process which led to the establishment of a hospital-based regional laundry at the Crozer-Chester Medical Center in Chester, PA. The most important single factor influencing the final decision was the high cost of having the laundry done commercially. The problem of high cost was compounded by long-term contracts which stipulated that charges be renegotiated annually. Other contract details which posed potential problems of control involved linen ownership and replacement, quantity of linens used, sterilization of isolation linen, and management of laundry personnel in the hospitals. The authors describe the preliminary investigation which included an inquiry into the possible use of disposables as well as on-site visits to operating commercial and hospital laundry facilities and to manufacturers of laundry equipment. The work flow, processing costs, inventory procedure, and equipment of the new regional laundry are described. In addition to the possibility of using modern automated techniques, advantages of the present facility include management by hospital-based personnel and the use of services and facilities already available at the Medical Center such as maintenance service, boiler plant, cafeteria, and employee health services.

(Hospital Services Corporation, Columbia, SC area)


This overview of the status of central laundry services examines some 20 locations throughout the United States in which hospitals are participating in, are planning, or have decided against entering shared laundry service agreements.

(Chicago-area shared services arrangements)

(Hospitals Laundry Association, Inc., Boston, MA area)


The author demonstrates that charges of high costs which are the basis
of much criticism of the cooperative laundry are largely unwarranted. A method which may be used to calculate the direct labor cost and productivity index for any hospital laundry operation is described. The cooperative laundry is shown to process laundry at an efficiently high productivity rate and a low direct labor cost. In addition, the cooperative laundry must absorb all operating costs and cannot lean on participating member hospitals for services such as utilities, maintenance, personnel, and space. Each of these services entails expenses which are not necessarily reflected in the in-plant laundry's cost. Today, many co-ops are multi-service organizations which frequently provide services likely to effect economies of scale for participating member hospitals, such as mending or operating room linen pack service. A number of central laundries are making available services which have nothing to do with laundry and linens such as data processing, group purchasing, blood and drug supply, warehousing, and other services which are resulting in dollar savings.


Through cost reduction and the elimination of large investments, central laundry facilities can make funds available for purposes more closely related to patient care. The author describes how the advantages of centralization are achieved and examines the trend toward hospital shared services which has encouraged the adoption of the central laundry concept.

(Annotation, 425)


(Virginia Hospital Laundry, Inc., Richmond, VA)

(Cooperative Hospital Services, Inc., Milford, CT)

(Association of Cooperative Hospital Laundries)

(Hospital Linen Services, Inc., Kansas City, KS area)

(Richmond, VA)

(Hospital Linens, San Carlos, CA)


The author describes the stages in the development of the Newark Central Hospital Laundry from the time of the original consultant study through the planning and design stage and then into construction, equipment purchase, and personnel projections. The laundry serves and is administered by 10 New Jersey hospitals which formed a not-for-profit corporation known as the Central Services Corporation of Metropolitan New Jersey. Notable features of the central laundry include: complete linen supply service with mending, operating room linen pack service and retail delivery of the linen, the use of tunnel washing systems and continuous flow processing, and the use of pneumatic conveyor systems. The laundry's processing flow, sorting process, finishing procedures, and equipment are described in detail. An architectural model of the laundry and pictures of laundry equipment are provided.


Following a brief overview of the development of the central laundry concept the author discusses some of the advantages of the central laundry concept: payment of only a few pennies per pound laundered for capital funds, savings on investment for individual expansion and modernization, space savings within the hospital, flexibility and capacity for further growth, lower laundry costs, high quality, adequate quantity, regular deliveries, protection against cross-infection, relief for management, a combination of internal control with external production, and ability to expand linen services to the extent desired. The advantages of the central laundry service are compared with the advantages of in-plant laundry service, commercial-contract laundry service, and linen supply service.


Using his own in-plant laundry (St. Luke's Hospital, Kansas City, KS) as a model, the author challenges seven common claims made for central laundry facilities: that they increase savings for individual hospitals, that they reduce laundry and linen costs, that they provide better service and quality, that they allow use of space for other purposes, that they save money on linen replacement costs, that they relieve hospital administrative staff, and finally that they are unable to find competent managers for in-plant operations. Hess shows that his in-plant facility
saves more than $250,000 compared to what the local central would charge.


The executive director of the Central Services Corporation of Metropolitan New Jersey discusses the need for careful study of statistics upon which the design of a prospective laundry plant is based. He also addresses the problem of unused or idle capacity in a central facility which is built to process a larger volume of linen than is initially needed for member hospitals. The continuous flow production plant at the New Jersey central laundry facility and the systems devised to control the distribution of linens to member hospitals, measure productive efficiencies, and control inventories, are described.


(Annexation, Hospital Linen Services, Inc., Toronto)


(Central Services Corporation of Metropolitan New Jersey)


(Annotation, 561)


(Hospital and Health Planning Council of Metropolitan New Jersey)

298. Lauzen, E. If the laundry won't come to the carts the carts will go to the laundry. Mod. Hosp. 114:134, Feb. 1970.

Specially built laundry carts used both for transport and storage of soiled linens have lowered laundry rates for two hospitals sharing a laundry. In addition, 9,500 square feet of space was freed at one of the hospitals for future expansion of services.


(Shared Services Systems, Omaha, NE)


(Metropolitan Detroit Area Hospital Services, Inc.)
(Hospital Laundry Association, Inc., Greater Boston area)


The provision of a full and complete linen service together with exact control of that service can solve many of the deficiencies in central laundry operations. If the linen processing and control system is correctly designed and implemented a full range of services including linen purchasing, inventory control, linen repair, use area delivery, daily delivery requirement calculations, and accounting and control information may be furnished at a comparatively low price. The authors note the reasons for failure of traditional linen control systems and describe a central laundry soiled linen count and even exchange control system which can solve the problem of balancing supply and demand and curb linen misuse in member hospitals. The soiled linen count system they describe, which is used by the Hospital Services Laundry of Columbia, SC, allows production of the following report data: a daily production report, daily delivery requirements, bimonthly or weekly billing reports, and numerous linen utilization and work load analysis reports.


Case study of the development of the Madison United Hospital Laundry, Ltd., a cooperative central laundry which was built to serve three Madison, WI hospitals. The three participating hospitals formed a not-for-profit corporation which assumed the responsibility for the planning, design, and construction of a building. The selection of the construction site and the early work of a linen standardization committee are described. The author also describes the management structure and administrative operation of the laundry and explains the detailed record keeping and billing systems which solved problems of underestimation of linen needs by member hospitals and hoarding of linen.

(Western Kentucky Hospital Services, Inc.)

(Hospital Cooperative Services, Connecticut)


The Association of Cooperative Hospital Laundries was formed in September 1970 to provide a vehicle for the exchange of operational data by its members. Association membership now includes 20 central laundries in the United States and Canada which represent nearly 200 hospitals with a total of over 50,000 beds. The Association offers its members information packets on subjects such as employee incentive programs, linen cart services, and financing options as well as sample documents pertinent to the formation of a cooperative central laundry corporation. In addition, member laundries may take advantage of a comparative data system which has been developed with the cooperation of AHA's Hospital Administrative Services (HAS) program. The Association encourages visits among member institutions and arranges the exchange of research and survey information resulting from studies engaged in by member institutions.


Hospital Laundry Services (HLS) serves 16 Chicago hospitals with a total of 5,525 beds. The two plants which handle the laundry are equipped to serve additional hospitals if the need arises. Savings for the participating hospitals are estimated at $1 million annually.


322. Warm, B. How we meet four merged hospitals' laundry and linen requirements. Amer. Laund. Digest. 35:65-66,68, Sept. 15, 1970. (Wilmington (DE) Medical Center)


Library


The library system of the Jacksonville Hospitals Education Program (JHEP) is made up of nine community hospital libraries which pool resources, coordinate acquisitions, and share the services of a medical librarian who coordinates the system from a central facility. The librarian maintains a union catalog which duplicates the holdings of the nine libraries, catalogs all acquisitions, supervises the library assistants in the hospitals, answers reference questions, and furnishes bibliographic data. All loan requests are coordinated at the central facility. When requests can not be filled from the circulating collections of the participating libraries, the central facility provides photocopies from its own non-circulating collection which contains back up materials not found in any of the system's libraries. The central facility also joins a national network through a teletype unit which can send requests to any of the libraries in the southeastern group of medical school libraries which participate in the Regional Medical Library system of the National Library of Medicine. Thus, the small community hospital library has rapid access to materials which are collected in local, regional, and national libraries. The author offers suggestions for improvement of the program and notes additional services which are planned.


The Catholic Medical Center of Brooklyn and Queens, Inc. (CMC) developed a three-phase program which involved drawing together nine small hospital libraries into a cooperative, functional unit. The three phases described include: the decision to centralize; the implementation of housing for the new centralized library and the development of plans for the organizational structure; and the formulation of long range goals including the continued exploration of available resources. Elements of good planning and errors made in each of the developmental phases are described.

Medical Audit and Medical Records


Author describes a regional medical audit program established by the University of Minnesota's Area Health Education Center to serve 14 counties in east central Minnesota. The conceptual and operational problems of medical audit programs are described in some detail with particular reference to the situation of rural and smaller hospitals. Methodology, standard setting, committee formation, audit criteria, and data retrieval for the regional program are described.


Includes a cost-benefit analysis of a proposed unitary computerized medical record data base as well as a discussion of areas of potential but non-quantifiable savings.

Purchasing


Hospital involvement in group purchasing offers the opportunity to reduce purchasing costs by 10 to 15 percent. The buying power of a strong purchasing group can force suppliers to compete and thereby bring prices down. Changes in the price structure affect members of the group as well as nonmembers in the same marketing area. Future prospects for group purchasing are bright--nearly 2/3 of voluntary group purchasing organizations are less than 10 years old and the volume of purchases made by these groups is growing at an accelerated rate. In addition, the prudent buyer concept, which is a criterion for reimbursement under federally financed health insurance programs, is likely to be a potent force in encouraging the development of group purchasing.


343. _____. Hospitals find group purchasing results in big savings. *Hosp. Purchasing.* 16:2, Oct. 1972. (Hospital Association of Metropolitan St. Louis, Shared Services Division)


349. Group buying--bonanza or disaster for medical products distributors? 


351. Group purchasing is big and getting bigger, but slowly.  Mod. Hosp. 

352. Group purchasing units hit new peaks in volume, savings.  Health Inst. 
   (New Jersey Hospital Association)

353. Hahn, C. K., and Hardy, S. T. Factors affecting acceptance of a hospital 

   (Chicago Hospital Council)


356. Holmgren, J. H. Buy together, buy for less.  Mod. Healthcare. 3:62, 

357. _____. How purchasing groups are organized, who uses them, and how 

358. _____. These are the arguments for and against group buying.  Mod. Hosp. 

   (Hospital Service and Supply Center, Inc., Baltimore)

   to determine the advantages of group purchasing.  Master's thesis, 
   Xavier University, Cincinnati, 1971.

Study provides a detailed overview of group purchasing including the 
   development of group purchasing agencies, types of group purchasing 
   agencies and their distinguishing characteristics, advantages, disadvan-
   tages and inherent limitations of group purchasing, reported savings 
   and growth rates, and the prerequisites for establishing a group pur-
   chasing program. The feasibility analysis focuses on problems of 
   standardization and centralization, determination of groups to involve, 
   data gathering and analysis and the estimation of savings which could 
   be realized through the formation of a group purchasing agency. Includes 
   a 41-item bibliography.

361. Kansas City (KS) area hospitals form group purchasing service to combat 
   (Kansas City Area Hospital Association)


Hospital group purchasing has come to be a widely accepted means of sharing to keep down costs. The author reviews the various types of group purchasing arrangements now in operation in terms of their organizational structure, their administrative arrangements, their financial mechanisms, and in terms of the kinds of commodities obtained. Includes a table of purchases and savings realized in 1971 as reported by 24 selected group purchasing organizations.

375. Standardization, contract buying cut costs $250,000. Health Inst. Purchasing. 1:43-44, June 1970. (Medical Supply Corporation, California)


EDUCATION AND TRAINING


Case study of the Association for Continuing Education (ACE) in Great Bend, KS, an educational consortium which offers more than 40 education and training programs to 12 institutions separated by as much as 120 miles. The planning process is described and possible pitfalls in the planning stage are noted. The author describes ACE staff organization and policies and lists approximately 20 of the 40 programs offered by the consortium in its first year of operation.


The membership of the South Florida Consortium for Health Manpower Continuing Education in Dade County, Florida, is made up of representatives from a wide variety of community organizations including hospitals and voluntary associations, the Regional Medical Program, the local Health Planning Council, the State Board of Nursing, the Florida Nurses' Association, the Veteran's Administration, the Public Health Department, the local University and Junior College Allied Health and Nursing Programs,
and other health agencies in the area. After pooling resources to produce a community-wide workshop on leadership as a first project, the Consortium formulated a list of long-range goals involving coordinated efforts toward joint programming, matching of needs and resources, data collection, and the development of a clearinghouse to serve as a personnel and material resource.


A recent evaluation of the Health Careers Training Program of Brooklyn by the Hospital Research and Educational Trust concludes that "shared training is an effective means of providing hospital employees with increased opportunity to advance to better and more responsible positions." Advantages of the Brooklyn program, which initiated both centralized and in-hospital programs, include improvement in skills and attitudes of trainees, improved employee relations, and greater employee loyalty. Eleven basic commitments and conditions necessary for shared training to be successful are noted.


Examines the need for formalized, centralized, and coordinated education and training programs. Five alternative models for organizing such programs are presented, including a consortium model within which education and training are shared by several institutions.

392. Gelsinger, J. L. Dial L for lecture. *In-Serv. Training and Educ.* 3:8-10, 12, (Lakes Area Regional Medical Program, Telephone Lecture Network, Buffalo)

Providence and Bethesda hospitals in Cincinnati developed a joint nursing aide training program which has resulted in dollar savings for both hospitals. The program allowed more efficient use of training personnel and facilities at Bethesda's educational division and filled a manpower need at Providence, a newly opened hospital with personnel shortages.


In January 1970 a group of small health care institutions in west central Minnesota joined together in Project RAISE (Regional Approach to Improved Services through Education), a cooperative association which attempts to solve some of the problems of continuing education resulting from insufficient local resources and lack of accessibility to sources of up-to-date educational programs. The Project and its director of education work closely with local vocational schools to develop courses which meet specific needs of personnel in participating hospitals. A number of programs sponsored by the association are capsulized in this report including hospital accounting, nursing aide and management training, medical library workshop, emergency rescue procedures, and problems of stroke patients. The Project is totally supported by participating institutions which pay a share of the operating expenses based on the number of full-time employees. The participating hospitals and nursing homes have not begun purchasing food as a group and are considering the use of a combined laundry service.


Case study of the Northeast Texas Council of Health Resources which was organized by 12 small rural hospitals and incorporated in 1971. The Coordinator of Health Services Education describes the implementation of the program which initially placed emphasis on upgrading nursing departments. Various workshops and seminars, many of which involved the cooperation of outside institutions, are briefly described and the benefits derived from the shared training program are noted.

398. Hospital group makes effective use of TV educational system. *Assn. Manage.* 27:11-12, Feb. 1975. (Greater Cleveland Hospital Association)


400. Supervisory Training: The University, the Community College and the Hospital. Chicago: HRET, 1971.
Reports the efforts of a project conducted by the University of Minnesota in collaboration with five community colleges to offer supervisory training to hospital personnel.


The Allied Health Task Force of the Council for Higher Education in Newark (CHEN) was formed to encourage faculty and staff at the four member teaching institutions to think and plan in terms of new and cooperative allied health offerings. The Allied Health Planner of the Council details the strengths and weaknesses of the present program and makes recommendations for its future operation. The report includes a checklist against which the task force examined allied health jobs and professions in relation to the special problems and needs of Newark. The author evaluates the New Jersey Health Professions Master Plan and examines its relationship to the CHEN Allied Health Task Force planning activities. Proposals include establishing more cooperative curricular offerings; focusing on an extended geographic area; establishing a clearinghouse for information on health careers, courses and licensure; focusing concern on problems on the periphery of allied health responsibilities such as the high incidence of alcoholism, rat bite, juvenile delinquency, lead poisoning, and so forth; and expanding the representative nature of the task force to include more consumer representatives, blacks, young people, aged, and representatives of business and industry. Guidelines for assuring optimum input of the expanded task force are provided.


An International Coronary Care Committee was organized in May 1966 in Jacksonville, FL "to establish similarity of equipment among hospitals and to organize interhospital teaching programs for physicians and nurses." The Committee, which was made up of representatives including the chief of medicine from each hospital, worked closely with nurse supervisors to develop a two-week training program for nurses interested in coronary care. The program now includes an ongoing basic course offered four times a year.


The Intermountain Regional Medical Program (IRMP) is cooperating with state hospital associations and individual hospitals in building a network of community health learning centers. The centers bring local focus to many of the continuing education activities of the IRMP by making available audiovisual materials and other resources useful for sponsoring workshops and seminars, in addition to traditional printed matter. In each of the communities a physician medical education coordinator guides the continuing education effort.


Case study of nine Kansas City (KS) hospitals which signed a one-year contract with the Kansas City Board of Education to use a local vocational-technical school for training nursing assistants. The program was initiated by a training and education subcommittee charged by the Kansas City Area Hospital Association to seek ways to coordinate the training efforts of hospitals, schools, and other agencies. The Committee developed a common curriculum, selected teaching materials, and established and evaluated a trial training program at the vocational-technical school before the hospitals signed the contract. The present program and plans for expansion are described. Advantages of the program include horizontal job mobility (all graduates are recognized as competent by all hospitals), vertical job mobility (the state nursing board has approved the course for credit toward
completion of the LPN course offered by the school), and a decrease in and leveling off of the turnover rate, which formerly approached 70 percent. In addition, advertising expenses formerly borne by individual hospitals have been significantly reduced. Savings of approximately $350 per student trainee were realized and nearly 4,500 hours of instruction time have been freed for more essential activities.


420. Training goes underground. *Mod. Healthcare.* 2:49-52, Oct. 1974. (Memorial Hospital Medical Center of Long Beach, CA and University of California at Irvine Center for Health Education)


The published information on tax and legal issues of shared services is not very extensive. It is expected that this situation will change as sharing increases and as health care regulations are promulgated. The following references represent discussions of the topic rather than legal resolutions of problems.


An examination of relevant sections of the Internal Revenue Code which concern tax exempt status and which describe or specify the kinds of services exempt from federal income tax. A question and answer format is used to illustrate the application of the code to various forms of cooperative and purchased laundry services.


Reviews recent litigation—Hospital Purchasing Service of Michigan v. City of Hasing, 161 N.W.2d 759 (MI App., 1968) and Children's Hospital Medical Center v. Board of Assessors of Boston, 227 N.E.2d 908 (MA, 1967)—concerning the tax exempt status of not-for-profit hospitals which create a not-for-profit organization to perform purchasing, laundry, and other functions.


Examines the tax-exempt status of a joint venture, shared laundry operation, when laundry services are sold to a third institution.


(Virginia Hospital Laundry, Inc., Richmond, VA)


(Richmond, VA)

Author reviews the legal forms of organization for shared service ventures--business corporation, not-for-profit corporation, cooperative, joint venture, and contractual arrangement--with particular attention to limitations of liability, tax consequences, Medicare reimbursement considerations, antitrust problems, and miscellaneous legal problems including control of the shared services organization, risk sharing, and distribution of assets in the event of liquidation.


Author provides a history, a summary, and a detailed analysis of section 501(e) of the Internal Revenue Code.


Recent Cases:


438. Cardinal Industrial Laundry Corporation v. Industrial Development Authority of the City of Richmond, Virginia, and Virginia Hospital Laundry, Inc., Civil No. 74-0413-R (ED.Va., filed Sept. 24, 1974)
The study of how organizations behave is an emerging discipline in sociology and in business administration. Its application to the health care field has been uneven to date, but it is expected that the discipline will in time make a significant contribution to health delivery. The references cited here are but a sampling, chosen for their immediate relevance to shared services.


A classic work which examines some of the key characteristics and organizational problems of the community general hospital.


Author examines the administrative problems which can result when managers or administrators of participating institutions form the board of a shared services organization.


Neuhauser, D. Organizational Behavior Literature in Health Administration Education: An Indexed and Annotated Bibliography of Books in Use by Graduate Programs in Hospital and Health Administration. Washington, DC: Association of University Programs in Hospital Administration, 1972.

The Relationship Between Administrative Activities and Hospital Performance. Chicago: Chicago Center for Health Administration Studies, University of Chicago, 1971.


Three types of hospitals that deliver short-term health care are discussed in terms of several difference models of hospital behavior. The structure-specialization model emphasized hospital control structure as a determinant of goal emphasis, while the exchange model stressed the interdependencies between the organization and essential resource suppliers in its environment. In so far as the models differed, the exchange model was supported by aggregate data (obtained from the American Hospital Association). Additionally, a competence model emphasizing the possibility that certain hospital types may perform relatively well on several dimensions was partially confirmed. Suggestions are forwarded for future research along these lines. (Journal summary)


Study investigates the shared-service model as a method for coordinating medical care throughout sparsely populated rural areas. Examines both environmental and institutional factors which lead either to interdependence or to autonomy. Discusses the organizational costs and benefits of regionalized hospital networks and examines the technical, managerial, and institutional ramifications of such arrangements. A number of evolutionary organizational patterns are proposed and alternative models for development of a shared service network are considered.


Elaboration or change in hospital services is examined as a function of three classes of variables: contextual (characteristics of the environment), structural (characteristics of the hospital itself), and characteristics of the administrator. Possible causal paths in the flow of change forces are posited and examined by a recursive technique to determine the model that most nearly approximates reality. It is concluded that elaboration of structure within a hospital is primarily a function of the context and structure, but a smaller independent force is a function of the context and the administrator himself. (Journal summary)


**ECONOMICS**

This brief section on hospital and health services economics is included in the bibliography in the hope that those readers with some training in economics can see the problems of applying this discipline to shared services. The less-trained reader could well benefit from a study of some of these source documents.


The primary purpose of this article is to investigate whether or not economies of scale exist in the production of hospital services. In previous studies the results have implied the existence of economies of scale, but the question has not been satisfactorily resolved. The factor most responsible for clouding the issue is the overwhelming prevalence of product differences in the outputs of hospitals. In this study a method which avoids the problem of product differentiation is developed. The analysis strongly supports the conclusion that hospital services are produced subject to economies of scale. (Journal summary)


Because the marketplace that ensures efficiency in a competitive industry is inoperative in the provision of hospital services, planning of the size and distribution of facilities by an external authority is developing as a substitute for competitive pressures. Planners must consider the potential effective demand for facilities and the costs of providing the services. Many of the costs are external to the hospital, but of major importance is the relation between hospital costs and the scale of output, called "returns to scale" or "economies of scale." This article reviews the progress that has been made in the study of economies of scale in hospitals, finding that historically the long-run average cost curve appears to be U-shaped, with minimum average costs at the level of 200-300 beds. Empirical studies however, do not exclude the possibility of an L-shaped curve, as in other industries. (Journal summary)


This paper is a survey of the ways that hospital costs have been measured and analyzed. Section one mentions two problems which face researchers: the inability to measure the hospital's product and data limitations. A classification of costs is introduced for use in later analysis. Section two enumerates the factors most often cited as important in causing the increase in hospital costs over time. Some of the methods that have been
used to determine the relative importance of each factor in contributing to the increase in costs are examined. Section three focuses on studies that have analyzed the variation in costs among hospitals. Particular attention is given to two studies in which a new measure of output is constructed. Section four summarizes the results and enumerates suggestions for further research. (Journal summary)


Most case studies cited in this bibliography include some discussion of the planning, implementation, or evaluation of a particular shared service. In many cases the information is anecdotal and little detail is given; in others, the specifics may have little applicability to other situations. This section of the bibliography is primarily a convenience; it attempts to bring together selected articles which emphasize one or more of these administrative processes and which are felt to be a useful starting point for those considering the initiation or evaluation of a shared service. The boundaries of these processes are not distinct in practice and the literature reflects this situation. For the purposes of this bibliography, articles which focus on analyzing needs or determining the potential for sharing are listed under planning. Articles which focus on a detailed analysis of alternative modes of sharing or which contain guidelines for analyzing sharing alternatives are listed under feasibility. Articles in the implementation section were chosen for their emphasis on procedures or problems involved in establishing a shared service or for their general applicability. The evaluation section consists of articles which are more rigorous than the usual case study in documentation of evaluation results or which emphasize the procedure of evaluation. The reader is urged to consult other sections of this bibliography—particularly the section on specific services or facilities—for information which may be relevant to a particular sharing situation.

PLANNING


In order to determine the cost and potential savings of a central laboratory, a study was undertaken in 1969 to review the operation of an on-site laboratory at the hospital of the Albert Einstein College of Medicine in New York. The study was concerned mainly with direct laboratory costs, such as labor, salaries, reagents and supplies, equipment repair, and educational expenses. Study results are described and presented in three tables which show the distribution of components of direct labor costs as a percentage of the total cost for each section of the laboratory, and the relation between direct cost components and some typical hematology and chemistry tests. Technician labor was found to account for almost 40 percent of the total direct cost of operating the laboratory. The utilization of this labor is less than optimal because of unpredictable work flow, small batch processing, and other similar reasons. Furthermore, much technician time is spent on clerical duties which could be performed by computers if large volumes of tests were available for processing. The authors discuss in detail the potential savings and other benefits of central laboratory facilities and conclude that even when the central laboratory does not produce any actual savings compared with present laboratory systems, it would substantially improve several aspects of laboratory work without additional investment.


This paper reports the results of a task force study of clinical laboratory testing in various Pennsylvania Department of Public Welfare institutions. "The task force found that currently most laboratories are small and lack sufficient equipment and overall standards of methodology, quality control, personnel training and cost analysis...and recommended that a regionalized laboratory system be established to service the institutional needs of four major geographic regions of Pennsylvania. Several organizational and implementation plans are discussed and projections are made on possible cost savings. Such a system would help solve the problems of quality, staffing, and equipment now apparent in many of the existing laboratories. In addition, a regionalized laboratory system could branch into other areas of delivery of health services while still reducing costs further and continuing to enhance the quality of services." (Journal summary)


The authors develop a model for use in determining potential cost savings of proposed hospital shared services or mergers. The model, which estimates only direct operating costs, is based on a five-step process which involves specifying the function or department to be merged or shared, identifying inputs, determining input capacity in terms of units of output, considering potential economies of scale, and determining estimated savings by pricing the inputs. The model is applied to pediatrics departments of two Jackson, MI hospitals.


526. Picha, N. A study to determine the effectiveness of a shared (off-line) computer service in the management of accounts receivable in small Texas hospitals. Master's thesis, Baylor University, Waco, TX, 1972. (Texas Hospital Association, Shared Hospital Accounts Receivable System)


FEASIBILITY


Description of the decision-making process which led the Lakeland General Hospital in Lakeland FL to choose a shared computer system over available alternatives. The hospital compared the advantages and disadvantages of its own data processing system with six alternatives: selecting a total hospital information system, sharing a large computer system with the city installing an in-house computer system, sharing a computer system with other hospitals, designing a computer system with consultant assistance, and sharing a computer system using a shared computer utility (time sharing). Lack of confidence in an in-house system, cost factors, time pressures, and interface requirements for the hospital's in-house laboratory information system were considerations which led to the decision to pursue investigation of time-shared computer systems. The evaluation of shared time computer systems involved further decisions centering around mode of data gathering, financial base of companies being considered, and comparison among available systems. The author describes the development and use of a comparison form which accommodated a detailed analysis of vendors by application.


The author identifies many of the areas which should be considered in evaluating a data processing system. A checklist for analysis and comparison of data processing applications offered by various vendors is outlined and a method of analyzing this information is described. A sample "shared
computer system evaluation sheet" and a list of "possible hospital data processing objectives" are provided.


The author offers checklists for use by hospitals which are considering the purchase of time on a vendor's centralized computer system. One checklist discriminates among vendors in the following areas: application costs; equipment; operating and miscellaneous costs; applications offered; equipment configuration; general considerations concerning the effects of a program on in-house needs of the hospital; and the content, frequency, and format of reports offered. The second checklist includes 10 general and more than 50 specific applications which should be available through a good shared hospital computer system. A spreadsheet checklist is provided and alternative rating systems are described. Finally, the author furnishes a number of final checks on the preliminary analysis and ratings.


This detailed analysis of shared computer systems provides an examination of the characteristics of and differences among various kinds of hospital computer systems with special attention to system ownership, methods of communication with the data center, and advantages and disadvantages of shared computer systems. The authors provide a detailed methodology for evaluating shared computer systems based on applications offered, importance of applications support to hospital needs, overall marginal costs and savings, and qualitative factors concerning the shared computer system and its relationship with participating hospitals.


(Annotation, 360)

(Annotation, 226)


Before purchasing a shared computer service, a hospital should develop a clear idea of what type of computer service is desired by specifying its needs in terms of output and by specifying its limitations in terms of cost. Specifications should be sent next to a broad distribution of vendors who may be able to meet the requirements. After the bidding is closed, a final task is to compare bids and vendors. The author advises comparison of the total cost of the various systems rather than charges quoted in the bids, close attention to the details of the system being offered, and close attention to the characteristics of the specific vendor.

(Annotation, 330)

(Idaho)

(Annotation, 68)


Using an accounts receivable operation as an example, the author illustrates the steps involved in making a comparison between in-house and service bureau computer systems. First, the current operation must be analyzed and broken into component tasks. For each task, the hospital must then determine: staffing requirements; work load peak, work flow, and volume statistics; facility and space requirements; files, reports, and forms used and prepared and the frequency of their use. From this assessment the hospital can define the proposed computer procedure in terms of input documents, output reports, computer master files, and work flow for each of the areas reviewed. If there is a service bureau package which meets the specifications of the
system, a further comparison must be made based on personnel and equipment requirements and other projected costs of in-house and service bureau systems such as space, supplies, utilities, and so forth. A preliminary decision can then be made based on the cost comparison but may be revised after consideration of external factors including the following: possible support from a service bureau in systems development and conversion, flexibility of either system for program modification and future growth, availability of skilled manpower, required speed of installation, possible loss of autonomy in establishing priorities if a shared system is selected, and the experience of other users with packages of service bureau systems.


Outlines a methodology for use in evaluating various options for a hospital laundry service. The methodology enables each hospital to use its own particular requirements as criteria for comparing and evaluating advantages and disadvantages of inplant laundries, cooperative central laundries, and commercial laundry services.

IMPLEMENTATION

(Regional Approach to Improved Service Through Education, west central Minnesota)

(Bay View Hospital, Bay Village, OH)

(Annotation, 34)

(Annotation, 387)

(Annotation, 329)

(Annotation, 41)

(Annotation, 44)


The author outlines basic steps in setting up a cooperative supervisory training program including initiating the concept; exploring the concept; formation of an advisory group; establishing the program content; arranging for facilities, financial support, and instructional staff; and performing continuing evaluation. Each step is illustrated by an example.


The author describes accounting records which should be established to divide shared laundry costs equitably.


Project RAISE. Regional Cooperation: A Design for Sharing Among Health Care Institutions. 1971. (Annotation, 61)


The author outlines the problems involved in financing a cooperative undertaking under the traditional approach embodied in the "service-at-cost"
principle. He proposes an alternative method of finance which is based on the revolving capital plan adopted by agricultural cooperatives. The proposed revolving capital method of finance is described in detail. Advantages of this method are that it keeps capital contributions in proportion to each member's use of the facilities, it makes provisions for additions and withdrawals of capital by individual hospitals, and it provides the incentives necessary to maintain the cooperative nature of the venture.

EVALUATION


This evaluation of the consolidation of clinical laboratories within the Northwestern Memorial Hospital is in two parts. Part 1 includes an organizational evaluation, a cost evaluation, and a quality evaluation, each with detailed explanations of evaluation research methodologies. Part 2, "Guidelines for Shared Laboratories," is intended to assist others who are considering some form of centralized laboratory service. It includes an examination of definitions of laboratory sharing, an enumeration of factors contributing to increased laboratory sharing, and a discussion of the advantage and disadvantages of laboratory sharing. The guidelines also include: a detailed outline of primary areas of deliberation which should precede an agreement to share; an examination of the elements of analysis in evaluating shared laboratory services in terms of cost, administrative effectiveness, and quality; and an outline of a plan of action for laboratory sharing which details the activities pertinent to the planning, feasibility, implementation, and evaluation phases of the program.


Five approaches to evaluation of shared services are presented: the feasibility study, use of standards of performance, use of objective criteria, use of a generalized model, and use of a revenue impact analysis.


Contains 35 articles in five sections: (1) Concepts and general issues (2) Research designs (3) Evaluation techniques and indexes (4) Examples of program evaluation and (5) Implementing research findings.


583. Weimer, W. C. Group activity among hospitals, an analysis of the paramedical service center. Master's thesis, Xavier University, Cincinnati, 1970. (Ohio Department of Medical Hygiene and Correction, Paramedical Service Center)
RURAL AND SMALL HOSPITALS

In recent years, the problems of rural and small hospitals have undergone national scrutiny. At the same time, the mechanism of shared services has been employed by enough of these hospitals to indicate that such linkages may offer real solutions to some of the problems of the small or rural institution.


609. Picha, N. A study to determine the effectiveness of a shared (off-line) computer service in the management of accounts receivable in small Texas hospitals. Master's thesis, Baylor University, Waco, Texas, 1972. (Texas Hospital Association, Shared Hospital Accounts Receivable System)


615. Simmons, J. C. Social work program meets hospitals' unique needs. Hospitals, J.A.H.A. 49:64-66, Feb. 16, 1975. (Hahnemann Medical College and Hospital, Philadelphia)


Most U.S. hospitals are members of the American Hospital Association. Among other things, the Association provides its membership with various guidelines and technical manuals. These documents are well accepted and in general use. The small listing here is intended to draw the reader's attention to some manuals that are basic to hospital operations and that give the hospitals' perspective on certain issues.


This manual presents the necessary procedures for developing a sound annual operating budget and supporting plans for cash management and capital asset acquisition. It includes detailed information on: the functions, objectives, and prerequisites of budgeting; the budgeting process, including work organization, budget coordination, and the selection of a budget period; statistical budget preparation, including the collection and reporting of data concerning the expected volume and scope of activities; expense budget preparation, including the conversion of work units into expected dollars of expense; revenue budget preparation, with revenue detailed according to the time period in which it will be earned; capital budget preparation, including the provision of formal criteria to be used for project evaluation; cash budget preparation, including estimation of cash receipts and disbursements and projections of estimated cash balances for the selected time interval; and budget-related reporting mechanisms, including financial statements prepared for submission as part of master budget documents, and periodic reports, including cost reporting to department management and financial reporting to top management.


This reference manual is intended for use by administrators of hospitals of any size or ownership base. It includes chapters on: capital management, including the nature of capital need, the functions of capital management, and the management of special purpose and endowment funds; sources and characteristics of permanent capital, including contributed capital, federal assistance programs, and internally generated capital; characteristics of debt financing, including construction financing, debt capacity, restrictions, and costs of borrowing; and methods of debt financing, including FHA-insured mortgages, taxable bonds, tax-exempt bonds, private placement, the borrowing process, and determination of requirements.


This manual, which is the basis for other manuals in the Financial Management Series, is a guide for establishing a uniform system for classification of accounts in the hospital field. A discussion of the prerequisites for effective management and an introduction to basic fund accounting concepts and conventions precede a detailed outline for a recommended chart of accounts. The chart is designed to permit expansion or contraction to meet specific requirements while maintaining a basic uniformity for recording and reporting.
financial information. Separate chapters include detailed discussions of the nature and content of each kind of account described—balance sheet accounts, revenue accounts, and expense accounts. The final chapter considers the determination of the estimated useful lives of depreciable assets used in the operation of a hospital. A number of checklists intended for use as guides to such estimates are provided.


This manual presents basic concepts and procedures of cost finding and rate setting which can be adjusted to fit specific situations in hospitals of any size or service mix. Cost finding is defined and its objectives and prerequisites are noted. Factors influencing costs and interpretation of these factors are discussed, bases for allocating costs are elaborated, and three methods of cost finding are outlined. An in-depth, step-by-step illustration of cost finding procedures and samples of statistical and accounting data are provided. Comparison of cost finding methods, statistical allocation bases for various functions and operations, and the use of special cost studies and other statistical studies are discussed. Rate setting usually follows policy decisions which may revolve around inflation and technological improvements, educational costs, research programs, free services, or retirement of loans or reserve funds. Policy decisions which may be involved in developing a rate structure are listed and the computation of specific rates for operating rooms, laboratories, pharmacy surcharges, and patient rooms is illustrated.


This reference manual covers virtually every area of hospital operation in which internal audit should be applied. It discusses the need for internal control and auditing, as well as the basic elements involved in internal control: a plan or organization establishing clear lines of authority and responsibility; adequate authorization and record procedures; sound practices to be followed in each of the organizational departments; and adequate personnel. Separate chapters are devoted to the applicability and implementation of internal audit in the areas of purchasing and inventories, payrolls, cash disbursements, revenues and receivables, plant and equipment, investments, and cash receipts. Checklists for reviewing internal control in each of these areas are provided.

624. **Quality Assurance Program for Medical Care in the Hospital.** Chicago: AHA, 1972.

This guide is intended to assist boards of trustees, administrators, and medical staff in developing a quality assurance program for medical services. The proposed five-step methodology is based on development of criteria, description of actual practice, judgment or evaluation, corrective action, and reassessment. The manual also suggests linkages of a hospital quality assurance program with external parallel programs, examines the legal aspects of a hospital quality assurance program, and deals with patient education.
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Montana hospitals are linked by seven learning centers. Mod. Healthcare. 3:84, June 1975.


