Present and Projected Drug System Services in a Highly Developed HMO Structure

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THE HEALTH MAINTENANCE organization strategy has been proposed as an alternative which can improve both efficiency and effectiveness of health care in American society. This strategy is applicable within a variety of resource combinations that can achieve the requisite attributes of an HMO. As a result, the HMO strategy as presently conceptualized can encompass various types of existing health care delivery systems. These systems, identified as HMO prototypes, can be described along several dimensions. Basically, these dimensions are (*a*) the extent of functional integration and coordination of manpower and facilities, (*b*) the extent of centralization of manpower and facilities, and (*c*) the extent of service commitment to the enrolled population (*1*).

With these dimensions as a basis, contemporary health care delivery systems can be categorized as highly developed, moderately developed, or minimally developed HMOs. The highly developed HMO has a high degree of functional integration and coordination, a high degree of centralization of manpower and facilities, and an extensive commitment to the enrolled population. (The system attempts to serve the enrolled population on an exclusive, perhaps compulsory, full-time basis.)

The various Kaiser Foundation health plans and the Group Health Cooperative of Puget Sound, Wash., are considered to be systems which are closely identified with the highly developed approach. Within these systems, one subsystem that is related to the larger medical care system in some manner is the drug system. There is, however, a limited amount of information available to identify and analyze the characteristics of such drug systems—their services, activities, costs, and organization within the HMO prototype.

It is apparent, however, that if an alternative form of medical care organization is to offer the potential for improved health care, the optimum mix of resources for a drug system must be identified and implemented. These resources should be used to create a drug system that is a component of comprehensive health care. Further, since the health maintenance strategy establishes a priority for providing preventive care rather than episodic care, the focus of care must be outpatient rather than inpatient drug services. Therefore, the objectives of this paper are (*a*) to describe and attempt to analyze the nature of outpatient drug services within the highly developed HMO prototype and (*b*) to project the impact of the highly developed

HMO on the future organization and provision of outpatient drug services.

Initially, it must be recognized that drug systems within highly developed HMO prototypes may not include the requisite organizational attributes ascribed to an HMO. Even when the drug system includes these requisite attributes, they may be less fully developed than in other service subsystems. The analysis notes this feature of contemporary drug systems in HMO settings and indicates implications of more fully developed organizational characteristics for these subsystems.

Drug System Services

A recent report presented a profile of basic drug services provided by highly developed HMO prototypes (*2*). The authors determined that the basic service of a drug system is the traditional production and provision of prescriptions. Services that facilitate patients' getting and using the prescription product are primarily mail-order prescription drug services and informative labels added to the legally required prescription labeling. Hours of drug system operation closely follow hours of clinic operation, with central (hospital located) pharmacies open longer than pharmacies in satellite clinics. After-hours and emergency drug services are provided by the emergency room of the central hospital facility.

The number of nonprescription drugs available for outpatients is limited. The selection processes used for such drugs produce no standard assortment of products, even between pharmacies within multipharmacy drug systems. The nondrug health-related products provided, when and where available, are basic first-aid supplies, insulin supplies, and various "ostomy" appliances. Generally, health-related appliances and devices are not the province of the drug system.

The most rapidly developing drug system service within highly developed HMO prototypes is a prepaid prescription benefit. This service is presently being made available, if not already institutionalized, as a supplemental benefit in such drug systems. A prepaid prescription drug service is presently provided as an integrated benefit to the enrolled population in the Group Health Cooperative of Puget Sound. Fewer than half of the enrolled populations in the Kaiser health plans are currently covered by such a benefit.

Control of drug distribution beyond established legal standards rests with the individual pharmacist's judgment concerning the advisability of dispensing new or renewal prescriptions. Direct procedures to control drug use, such as patient consultation at point of service or drug-related health education programs for the enrolled population, as well as indirect control procedures, such as dissemination of general drug information to other health practitioners, are not systematically organized or provided.

The drug system services in highly developed HMOs are similar in composition to drug services provided by most alternative drug systems, including community pharmacies. The similarities include the primary emphasis on producing prescriptions and supplemental services that facilitate patients' accessibility to prescription drugs. In addition, distributive controls are based upon legal criteria, and the application of professional controls is a highly individualized practice among pharmacists.

Given these fundamental similarities, contemporary drug services provided by existing highly developed HMO prototypes appear to offer no distinct functional benefits or qualitative advantages to the enrolled populations. Beyond the benefit of implementing prepaid drug services, there is some evidence to indicate that the costs of providing drug services in highly developed HMOs may be lower than those in alternative systems.

McCaffree and Newman (*3*) suggested that the approach of the Group Health Cooperative to organizing drug services could have reduced annual drug expenditures by $800 million in 1968. They indicated that the factors which contributed to lower per capita prescription drug costs were (*a*) bulk purchase and handling of drugs and (*b*) administrative controls over drug use, for example, development of and adherence to a drug formulary and control through the pharmacy committee and central administration. They also indicated that specialization of tasks in the pharmacy and employment of pharmacy clerks in lieu of additional licensed pharmacists helped to reduce costs and increase pharmacist productivity.

Additional data suggest that drug costs and operating costs per prescription are lower in the more highly developed HMOs. Lower drug and operating costs per prescription were associated with the more physically centralized, but not necessarily the largest, drug systems (*2*). Lower costs have also been reported for neighborhood health centers maintaining a central pharmacy than for neighborhood health centers using available com-

munity pharmacies (*4*). These findings suggest that physically centralized systems may use their available resources more efficiently in organizing drug services.

Thus, there is some evidence to suggest that contemporary drug systems in highly developed HMOs have lower total unit costs because of the physical centralization of facilities and resources and the cost-controlling techniques these systems can use as a result of this centralization.

On the other hand, there is presently no evidence that contemporary drug systems in highly developed HMOs provide appreciably better or appreciably worse drug services than alternative drug systems.

Implications

The acceptance and implementation of the HMO concept and its organizational attributes can have a significant impact on the organization and provision of drug services in the future. The requisite organizational attributes for an acceptable HMO mechanism are directed to achieving accessibility, quality, continuity, and efficiency of patient care. Therefore, if drug services and the drug system are to be a component of health care and the HMO mechanism, it follows that drug systems must move in these directions.

Short-Range Concerns

Drug systems within highly developed HMOs have a number of immediate concerns relating to accessibility, quality, and efficiency of services. These concerns are predicated upon existing organizational attributes of the drug systems and extent of centralization of facilities and manpower. Achievement of patients' accessibility to prescriptions has a high priority in these settings. This priority is manifested in attempts to insure an adequate supply of prescriptions where there is a high prescription demand at physically centralized facilities. Directly related to this is the concern about acceptability and quality of drug services. Measures of quality have been limited to an estimate of the time a patient must wait to receive a prescription at the pharmacy or at home. The approaches being investigated, and in many instances already implemented, to resolve these concerns involve the application of new technologies.

Various forms of counting machines, power files, and card veyors are now being used. A central computer and a variety of input and output devices, such as a cathode ray tube, data phones, closed-circuit television, and printers, are being used to prepare, display, retrieve, and disseminate information. These technologies reduce prescription processing time in a variety of ways, which include reducing the time spent in constituent activities, having certain activities done simultaneously, and performing certain activities in anticipation of need; they can also eliminate the mechanical activities of drug system personnel. Although these technologies have not yet been combined and employed in a systematic manner, it does seem that their continuing application will improve the accessibility and acceptability of drug services.

Adequate accessibility is also manifested in continuing concerns to reduce spatial and temporal barriers to patients' acquisition and use of prescription drugs. Although mail-order prescription services are the predominant supplemental method for reducing these barriers, a related factor is the potential limited accessibility to drug services when pharmacy operating hours conform to clinic operating hours. Alternatives being investigated or already being demonstrated include attempts to modify the behavior of patients in getting prescription drugs by modifying hours of central pharmacy operations, by modifying methods of providing after-hour pharmacy or emergency drug services, and by introducing a prescription delivery service. Each of these modifications also portends the application of available transporting, dispensing, and communications technologies. Ultimately, such approaches might include fully automated dispensing devices either centrally or remotely located but with central control, or perhaps mobile drug inventories that are centrally controlled.

Finally, financial barriers to acquisition and use of prescription drugs will continue to be reduced in these systems through the development, implementation, and evaluation of various forms of prepaid prescription drug programs and services. However, the impact on the nature of drug system services and activities will depend on the approach taken to organize prepaid prescription services. The greatest impact will occur if the prepaid prescription drug program is organized and offered only as an integrated service benefit, and if such prepaid benefit is available only through system-controlled pharmacies. This approach is characteristic of the Group Health Cooperative, but

not of the Kaiser health plans. The approach that integrates drug therapy as a benefit and facilitates access to complete utilization data realizes both the need and the potential means for evaluation and control of services, which are requisite to the HMO mechanism. This important capability can assume both professional and fiscal dimensions.

A concern with costs and the continuing need for improved efficiency was inherent in the preceding discussion. Concerns for efficiency are manifested through the application of machine and data processing technologies and through the use of a variety of supportive personnel within the drug systems. Current concerns are also manifested by the development and demonstration of drug selection procedures, as in the Group Health Cooperative where a drug formulary is maintained.

Resolution of the concerns without concurrent modification of organizational attributes of the drug systems will have the following impact upon these systems. The drug systems will continue to emphasize services which supply drugs and facilitate their distribution. However, the number of personnel physically dispensing drugs will be significantly reduced if not totally eliminated. Drug system personnel activities will evolve toward planning, evaluating, and controlling drug distribution services.

Long-Range Concerns

Short-range concerns relate to specific methods for improving accessibility, quality, and efficiency of prescription services. In addition, the short-range outlook assumes a future with no changes in the nature of services generated, minimal changes in the organizational attributes of the drug system, and no changes in the dimensions for categorization as "highly developed." However, complete acceptance and the resulting implementation of the health maintenance concept and its organizational requisites can significantly affect the nature and extent of future drug system services. In addition, further acceptance, implementation, and perhaps expansion of the criteria for "highly developed" can intensify the impact on drug system services.

Acceptance of the health maintenance concept will require an evaluation and a redefinition of which drug services should be provided and be accessible to the enrolled population. The evolving emphasis will be focused upon preventive drug care and maintenance or rehabilitative drug care. The total emphasis of the drug system may be described as comprehensive drug care. This emphasis should not diminish the continuing concern for curative or episodic drug care.

Thus, comprehensive drug care implies a focus and a commitment to the total enrolled population, whether sick or well. With such "people oriented" drug care, the responsibility of the drug system to the enrolled population does not begin and end with the dispensing of drugs to outpatients. It means that the activities of the system should extend beyond the pharmacy and into the community, with concern expressed for the health-related and health-directed drug seeking, acquisition, and use behaviors of the enrolled population. The possible role of the drug system in people oriented comprehensive drug care has not been adequately identified, researched, or evaluated.

Acceptance and implementation of organizational requisites to a HMO mechanism can have added impact upon the drug services. The functional integration of practitioners and service subsystems is a necessary but insufficient condition for continuous drug care. The HMO must provide uninterrupted comprehensive drug care for each enrollee. Drug system involvement in assuring continuous drug care will depend on the extent to which the system personnel, especially pharmacists, are functionally integrated into the entire process of patient care. An optimum situation would occur where (*a*) spatial proximity of drug system personnel and other health professionals allow effective interaction and communication and (*b*) the drug system assumes a share of the financial risk for serving the enrolled population.

Assumption of a share of the financial risk by the drug system could occur only if the following other previously-mentioned conditions are met: (*a*) drug services must be an integrated prepaid benefit in the total package of health services and (*b*) the drug system must serve the enrolled population on an exclusive full-time basis. In addition, the relationship of the physician and drug system personnel in drug-related decision making must be clearly defined and understood.

Any sharing of financial risk by the drug system will give impetus to the HMO staff and its administrative organization to implement qualitative criteria (beyond legal criteria) for determining the effectiveness of drug services. These criteria must provide a new and more adequate basis for practi-

tioners to evaluate the appropriateness of specific services.

Since the administrative organization is also responsible for controlling the fiscal and professional performance of the HMO, the administrative organization needs accurate and reliable information concerning drug use behavior of the enrolled population. This information must be in a form that is reasonably available and systematically ordered. The accessibility of such information and its systematic ordering provide the basis for an operative procedure for review and control of drug use. This procedure includes establishing voluntary or imposed methods of attempting to monitor or control the effectiveness of drug services. Thus, the drug system, and particularly pharmacists within that system, should be engaged in establishing and continuously evaluating quality standards for drug system services, as well as monitoring dispensing decisions of drug system participants, drug use decisions of patients, and perhaps the prescribing decisions of medical care system personnel. The completeness and sophistication of the monitoring activity and the resulting drug system involvement will be based on how committed the HMO is to serve its enrolled population on a compulsory and exclusive basis.

Whether the services and activities discussed will become part of the medical care process depends on the results of research efforts designed to evaluate their impact upon the quality and costs of comprehensive health care. In addition, whether the activities will be assigned to the drug system depends on comparative cost-effectiveness ratios of the drug system relative to other service subsystems or methods. For example, drug education programs and immunizations as elements of preventive drug care may be adequately performed at lesser costs by other service system personnel, such as community health workers, nurses of all types, or home health aides. Also, many aspects of the monitoring activities, such as the determination of significant drug incompatibilities, drug interactions, and adverse drug reactions are capable of being standardized and may be more efficiently performed at lesser costs through the substitution of computer technology. Thus, the possible extent of interaction and communication between drug system personnel and patients and drug system personnel and other health professionals may be necessarily limited.

A long-range outlook suggests expansion of drug system services and activities within highly developed HMOs. Their involvement may be identified with activities that implement continuity of drug care and improvement of the accessibility and quality of drug care. Drug utilization review and control, monitoring standards of pharmacy practice, and provision of comprehensive drug services are examples of qualitative criteria. Moreover, involvement of drug system personnel in these services and activities may be quantitatively limited but qualitatively significant in terms of complex and critical decision-making responsibilities.

Conclusions

Drug system services in highly developed HMOs are conventional and traditional. Drug system costs in such HMOs appear to be lower than costs in alternative systems because of physical centralization of facilities and more complete use of productive capacity.

Immediate concerns relate to improving patients' accessibility to and acceptability of drug system dispensing services and to improving the efficiency of these services. Major impacts of these improvements will be to reduce the numbers of drug system personnel who are dispensing drugs, the application of newer and more efficient technologies, and the management of these resources.

The acceptance and full implementation of the HMO concept within highly developed HMO prototypes can significantly alter the nature and extent of drug system services. Such services could include providing and managing various elements of comprehensive drug care and monitoring and managing various elements of drug-related decisions of providers and patients. For drug system personnel, the emphasis would be on performance of specialized activities and specialized decision-making activities.

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