

SHUFFSTALL AND HEMMAPLARDH

The Hospital Laboratory

MODERN CONCEPTS OF MANAGEMENT,
OPERATIONS, AND FINANCE



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OPERATIONS, AND FINANCE**

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PREFACE

The hospital laboratory has evolved from a service unit to a business entity. Unfortunately, this change has been brought about by circumstances more than by intentions. Gone are the days when its sole responsibility was to respond to the needs of physicians. The traditional role of producing laboratory data to aid in the diagnosis of diseases and to follow the progress of therapy has been greatly expanded. It is no longer sufficient to be technically competent and scientifically innovative.

Today the laboratory is more visible. It is forced to imagine itself as a business without sacrificing or compromising its traditional role. It must frequently justify its financial needs and account for its performance. Random pricing is under attack. The pooling of risks necessitates accountability to third parties.

Change is brought about by several social and political movements. Hospitals are no longer charitable institutions. Financial resources are limited while costs relentlessly increase. The rising expectation of health care as a right can no longer be ignored and has prompted the call for a more comprehensive system of delivery from the public sector. In addition, malpractice suits have generated much discontent from physicians.

The evolution of the modern hospital laboratory has

produced a chasm between technical competence and scientific innovation on the one hand and inadequate management skills on the other. This book is written to help bridge this chasm by presenting an understanding of the processes essential to cope with the laboratory's changing role. The presentation is divided into four parts. Part one will outline the historical development of the hospital laboratory leading to the current trends and alluding to future prospects. Part two deals with the fundamental concepts for planning, organizing, and directing the hospital laboratory. Part three elaborates on a series of basic operating concepts. A range of greatly needed modern financial concepts and techniques is discussed in Part four.

The most pressing issue in any organization is communication. Much effort was spent in designing and perfecting an inexpensive, simple, and effective request/report form system. These unique forms and accompanying instructions for their use are included in Chapter 5, Communication.

Finally, the highlight of all the controversies to come is anticipated in Chapter 13. It touches on the well-known practice of arbitrary pricing. For those in despair, we offer a systematic model that we hope will signal the beginning of some logic in the important matter of pricing laboratory protocols.

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PART ONE

Introduction

1

GROWTH AND DEVELOPMENT OF THE HOSPITAL LABORATORY

The American health care industry has an excellent growth record. According to the Department of Health, Education and Welfare, by 1980 health care delivery will contribute 9.7 percent of the gross national product, up from the current 8.6 percent. With a national health insurance program, the same health care cost could consume anywhere from 10.5 to 11.7 percent of the GNP by 1980, depending upon which program is legislated.

The Social Security Bulletin, July 1978, reports that the nation spent a total of \$162.6 billion for health care during fiscal year 1977—from July 1, 1976 through June 30, 1977. This figure represents an average of \$737 per person, an increase of 12 percent over the estimated \$145.1 billion spent in 1976 (Table 1-1).

Health care expenditures continue to increase at a greater rate than the GNP. Fiscal year 1977 spending levels for health care were 12 percent higher than those for the previous 12 months, while the GNP increased by 10.2 percent in the same period. Thus, the health care share of the GNP has grown from 8.7 percent for the year ending September 1976 to 8.8 percent in fiscal year 1977 (Fig. 1-1).

Since much of the health care provided in the United States is obtained in hospitals, the largest category of spending in 1977 (\$65.6 billion, or 40 percent of the total)

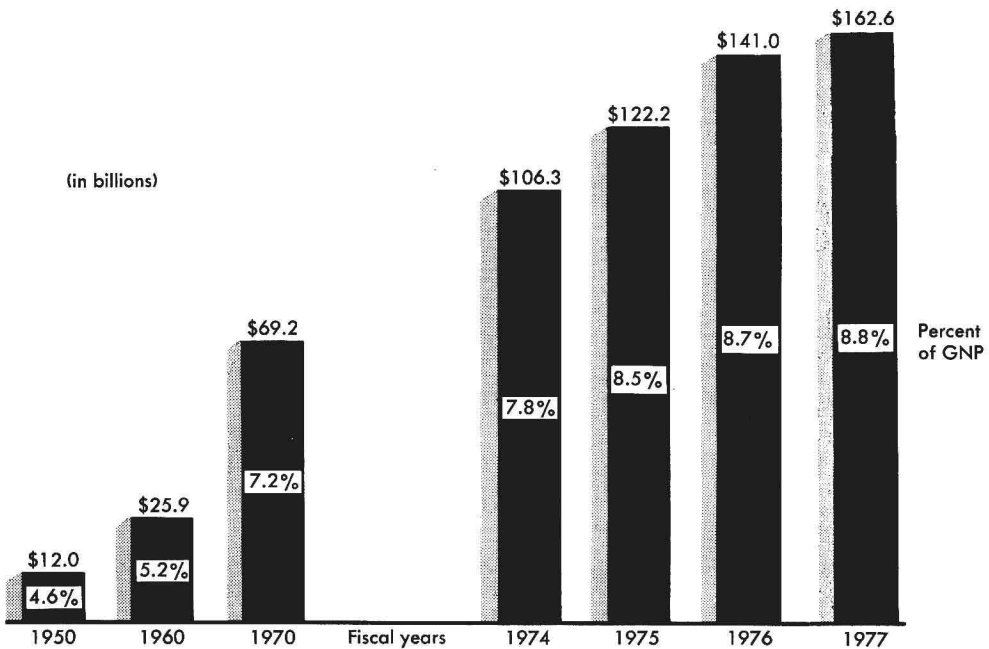
TABLE 1-1

Aggregate and per capita national health expenditures, by source of funds, and percent of gross national product, selected fiscal years 1929-1977

Fiscal year (ending June)	Gross national product (in billions)	Health expenditures							
		Total			Private			Public	
		Amount (in millions)	Per capita	Percent of GNP	Amount (in millions)	Per capita	Percent of total	Amount (in millions)	Percent of total
1929	\$ 101.3	\$ 3,589	\$ 29.16	3.5	\$ 3,112	\$ 25.28	86.7	\$ 477	13.3
1935	68.9	2,846	22.04	4.1	2,303	17.84	80.9	543	19.1
1940	95.4	3,883	28.98	4.1	3,101	23.14	79.9	782	20.1
1950	264.8	12,027	78.35	4.5	8,962	58.38	74.5	3,065	25.5
1955	381.0	17,330	103.76	4.5	12,909	77.29	74.5	4,421	25.5
1960	498.3	25,836	141.63	5.2	19,461	106.60	75.3	6,395	24.7
1965	658.0	38,892	197.75	5.9	29,357	149.27	75.5	9,535	24.5
1966	722.4	42,109	211.56	5.8	31,279	157.15	74.3	10,830	25.7
1967	773.5	47,879	237.93	6.2	32,026	159.15	66.9	15,853	33.1
1968	830.2	53,765	264.37	6.5	33,725	165.83	62.7	20,040	37.3
1969	904.2	60,617	295.20	6.7	37,680	183.50	62.2	22,937	37.8
1970	960.2	69,201	333.57	7.2	43,810	211.18	63.3	25,391	36.7
1971	1,019.8	77,162	368.25	7.6	48,387	230.92	62.7	28,775	37.3
1972	1,111.8	89,687	409.71	7.8	53,214	251.50	61.4	33,473	38.6
1973	1,238.6	95,383	447.31	7.7	58,715	275.35	61.6	36,668	38.4
1974 ¹	1,361.2	106,321	495.01	7.8	64,809	301.74	61.0	41,512	39.0
1975 ¹	1,454.5	122,716	571.21	8.5	71,348	329.42	57.7	52,368	42.3
1976 ¹	1,625.4	141,013	645.76	8.7	80,831	370.16	57.3	60,182	42.7
1977 ²	1,838.0	162,627	736.92	8.8	94,185	426.78	57.9	68,442	42.1

¹Revised estimates.

²New federal fiscal year.

**FIG. 1-1**

National health expenditures and percent of gross national product, selected fiscal years 1950-1977.

was for hospital care (see Table 1-2). The American Hospital Association estimates that approximately 11 percent (\$7.2 billion for 1977) of the total hospital revenues are attributed to payments for laboratory services.

What are the factors accounting for such phenomenal growth? Few astute observers would offer any single reason. In the case of the hospital laboratory, it seems clear the explanation lies with a variety of scientific, technical, professional, political, and of late, medicolegal developments.

Any inquiry into these forces would certainly acknowledge the major role of the researchers and the abilities of the equipment and product manufacturers who efficiently

TABLE 1-2
National health expenditure, by type of expenditure and source of funds, fiscal years 1974-1977
(in millions)

Type of expenditure	Source of funds						
	Total	Private			Public		
		Total	Con- sumers	Other ¹	Total	Federal	
							State and local
1977 ²							
Total	\$162,627	\$94,185	\$87,807	\$6,378	\$68,442	\$46,563	\$21,879
Health services and supplies	153,887	91,294	87,807	3,487	62,594	42,542	20,051
Personal health care	142,586	85,465	82,574	2,891	57,121	39,823	17,299
Hospital care	65,627	29,427	27,887	1,540	36,199	25,715	10,484
Physicians' services	32,184	24,360	24,318	42	7,824	5,808	2,016
Dentists' services	10,020	9,520	9,520	0	500	310	190
Other professional services	3,212	2,288	2,175	113	924	683	241
Drugs and drug sundries	12,516	11,373	11,373	0	1,143	614	529
Eyeglasses and appliances	2,086	1,956	1,956	0	130	66	64
Nursing-home care	12,618	5,434	5,343	91	7,184	4,204	2,980
Other health services	4,322	1,105	0	1,105	3,217	2,424	793
Expenses for prepayment and administration	7,572	5,829	5,233	596	1,743	1,430	313
Government public health activities	3,729	—	—	—	3,729	1,289	2,440
Research and medical-facilities construction	8,739	2,891	—	2,891	5,848	4,020	1,828
Research ³	3,684	284	—	284	3,400	3,139	261
Construction	5,055	2,607	—	2,607	2,448	881	1,567
1976							
Total	\$145,102	\$83,560	\$77,470	\$6,090	\$61,542	\$41,648	\$19,894
Health services and supplies	136,368	80,726	77,470	3,256	55,642	37,669	17,973
Personal health care	126,217	75,740	73,043	2,698	50,477	34,990	15,488
Hospital care	57,497	25,470	24,013	1,457	32,028	22,538	9,490

Physicians' services	28,504	21,628	21,588	40	6,876	5,059	1,817
Dentists' services	8,987	8,519	8,519	0	468	290	177
Other professional services	2,849	2,136	2,029	107	713	508	204
Drugs and drug sundries	11,472	10,396	10,396	0	1,076	585	491
Eyeglasses and appliances	1,986	1,864	1,864	0	121	65	56
Nursing-home care	10,834	4,718	4,633	86	6,115	3,615	2,500
Other health services	4,088	1,007	0	1,007	3,081	2,329	752
Expenses for prepayment and administration	6,628	4,986	4,427	558	1,643	1,378	265
Government public health activities	3,522	—	—	—	3,522	1,301	2,221
Research and medical-facilities construction	8,734	2,834	—	2,834	5,900	3,979	1,921
Research ³	3,623	274	—	274	3,348	3,096	252
Construction	5,111	2,559	—	2,559	2,551	883	1,669
1975							
Total	\$127,719	\$73,238	\$67,375	\$5,862	\$54,481	\$35,899	\$18,583
Health services and supplies	119,771	70,300	67,375	2,924	49,472	32,589	16,883
Personal health care	110,665	65,630	63,211	2,419	45,035	30,290	14,745
Hospital care	49,973	21,348	20,035	1,313	28,626	19,534	9,092
Physicians' services	24,553	18,382	18,346	36	6,171	4,427	1,745
Dentists' services	8,034	7,587	7,587	0	447	270	177
Other professional services	2,463	1,913	1,817	97	550	378	172
Drugs and drug sundries	10,582	9,609	9,609	0	973	510	463
Eyeglasses and appliances	1,822	1,710	1,710	0	112	63	49
Nursing-home care	9,620	4,185	4,107	77	5,436	3,100	2,336
Other health services	3,616	896	0	896	2,720	2,009	711
Expenses for prepayment and administration	6,016	4,670	4,164	506	1,346	1,108	238
Government public health activities	3,091	—	—	—	3,091	1,191	1,900
Research and medical-facilities construction	7,947	2,938	—	2,938	5,009	3,310	1,700
Research ³	3,132	278	—	278	2,854	2,612	242
Construction	4,815	2,660	—	2,660	2,155	697	1,458

¹Includes spending by philanthropic organizations and for industrial in-plant health services.

²Preliminary estimates.

³Research and development expenditures of drug companies and other manufacturers and providers of medical equipment and suppliers excluded from "research expenditures" but included in the expenditure class in which the product falls.

⁴Revised estimates.

Continued