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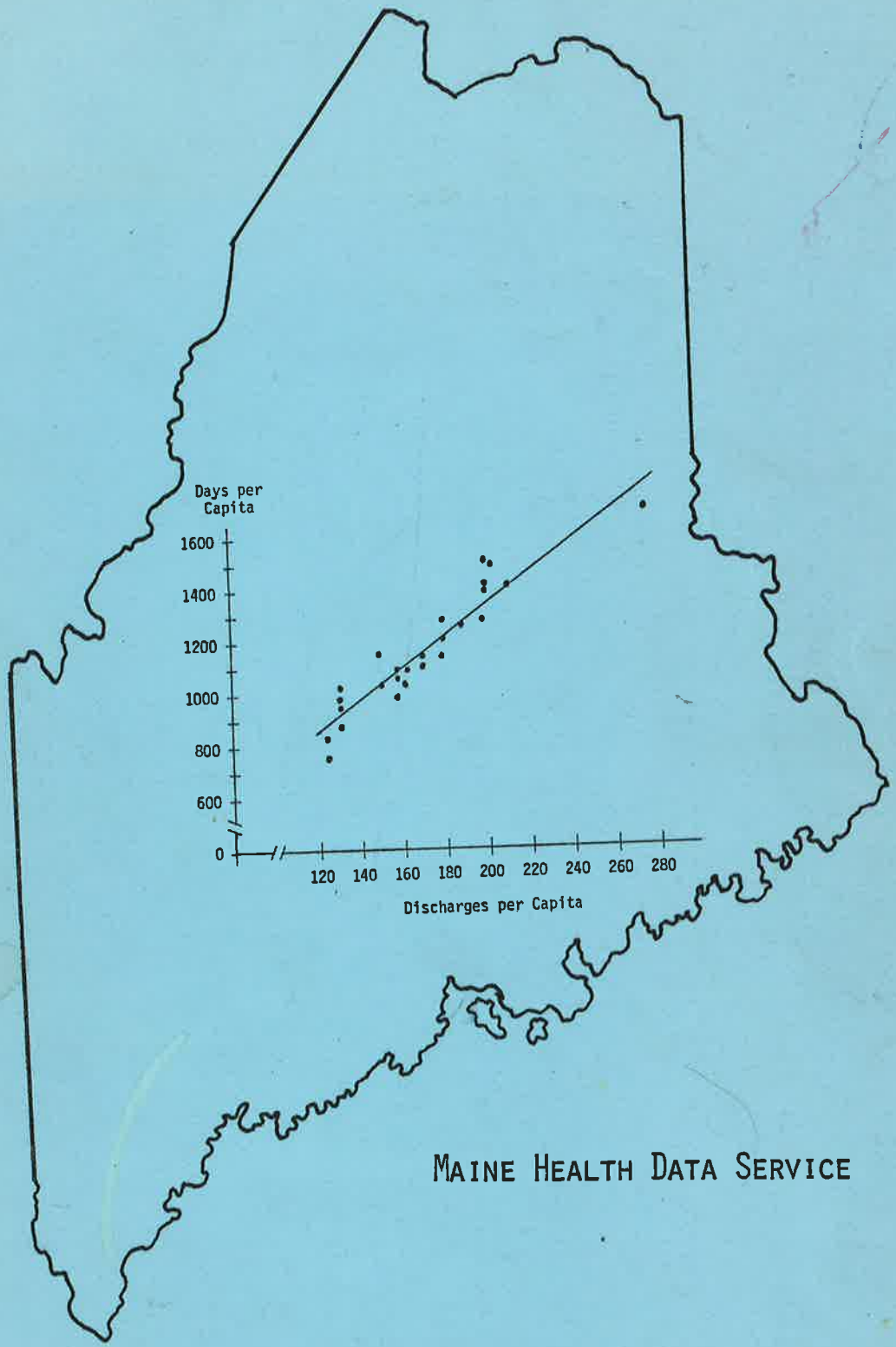
Population-Based Measurement of Hospital Use in Maine Areas, 1976

David Soule

POPULATION-BASED MEASUREMENT OF HOSPITAL USE IN MAINE AREAS, 1976



MAINE HEALTH DATA SERVICE

Population-Based Measurement of Hospital Use in Maine Areas, 1976

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The previous work of Jack Wennberg and Alan Gittelsohn, as originally published in the Journal of the Maine Medical Association, provided the inspiration for this report.

The basic input data for the report came from all Maine hospitals via MHDS. Without the voluntary participation of Maine hospitals in the 100% discharge data system, this report would not have been possible.

Barbara Morse at MHDS prepared most of the data displays and tables for this report, with assistance from Sally Pettit.

The production, publication, and distribution of the report were performed at the Bureau. David Studer compiled population data and prepared tables. Rachel Hoar produced the graphic displays. Special mention is due Helen Sue Whitley for the customary excellence of her typing of the report for publication. Beverly Johnson assisted in typing.

The efforts of all the above individuals is gratefully acknowledged here.

And special thanks are due Ellen Naor for her editorial assistance, her resource management, and her patient stewardship of the process of producing this report.

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Introduction

This report is the culmination of a series of analyses that began in 1968 with collection of patient origin data, definition of geographic areas for analysis of hospital use, computation of area admission rates to hospitals,and computation of distributions of admissions to local and non-local hospitals. The basic findings from the 1968 data are set forth in a 1969 report published by the Health Facilities Planning Council, "Patient Origin Study 1968: An Analysis of Data on Maine Towns, Populations, Hospitals and Admissions".[1]

The work that went into that first patient origin study was expanded to collection of 100% discharge data from all Maine hospitals,further applications of the area concept and definitions, and computation of population-based (epidemiologic) rates of hospital use by the residents of the various areas. Some of the data from the 100% file were published in an updated patient origin study, issued in 1977 by the Maine Health Data Service.[2] This study was a basic update of the original and contained much the same kinds of material. The study was based on 1974 data. It bears the same title as the previously cited study, except that the year changed from 1968 to 1974.

The existence in Maine of the 100% discharge data file makes it possible to compute hospital use statistics in far greater variety and detail than has been published in the two patient origin studies. The 100% file allows for greater accuracy via age adjustment and age-specific computations of use rates, greater detail in terms of specific diagnoses and surgical procedures, and greater utility via computation of additional indicators, namely average stay and patient day rate in addition to the basic discharge rate shown in the patient origin studies.

This report follows and builds upon material published in the more recent patient origin study. That study contains some material that is a natural part of the introduction to this report. It is quoted here.

"Discharge Rates

"One of the primary reasons for defining geographic service areas is to measure and compare the use of hospital services by residents of the various areas. Knowing from the patient origin data the total numbers of admissions to all hospitals by area residents, and knowing also the resident populations of the areas, it is possible to compute rates of hospital use per population. The rates thus computed vary widely around the state-wide mean of 164.6 discharges per thousand population in 1974. The highest was 286.6 and the lowest, 127.8; the highest is more than twice the lowest, and is 75% above the state rate. The ten percent of the state's population that live in the highest-use areas have a discharge rate of 230 per thousand and the ten percent in the lowest-use areas have a rate of 130 per thousand, a 75% difference.

"Among individual areas, there is no consistent pattern (Table 5). There are large, referral-type areas with high rates (Waterville, 226.9) and low rates (Bangor, 130.1). Mid-sized areas have high (Houlton, 203.3) and low rates (Farmington 131.4). Small areas have high (Van Buren, 286.6) and low (Camden, 127.8) rates. Adjacent areas of similar size have widely different rates (Farmington, 131.4, vs. Skowhegan, 184.4, and Rumford, 186.1; Machias, 147.8, vs. Calais, 260.5; Damariscotta, 141.6, vs. Boothbay Harbor, 220.2; and so on).

"In general,the Kennebec Valley Region and the Aroostook Region have higher rates than the rest of the state, but there are variations among rates even within those regions.

"These rates have already been adjusted to reflect migration patterns, i.e., border-crossing between areas. That is accomplished by computing the rates specific to all hospitalizations of area residents, with both local and out-of-area hospitalizations included in the rates. The effect of border-crossing is thus removed as a possible explanation of the variations in discharge rates.

(Reproduced from Patient Origin Study, 1974)

Table 5

UNADJUSTED DISCHARGE RATES
42 Maine Hospital Service Areas, 1974

Area	Discharge Rate*	Area	Discharge Rate *
Van Buren	286.6	Bridgton	176.5
Jackman	270.7	Belfast	174.9
Calais	260.5	Brunswick	174.7
Fort Fairfield	247.7	Caribou	173.7
Castine	237.2	Augusta	171.3
Waterville	226.9	Lincoln	167.7
Pittsfield	225.4		
Boothbay Harbor	220.2	Maine State-wide	164.6
Dexter	204.7		
Houlton	203.3	Lewiston	153.6
Eastport	202.6	Ellsworth	148.5
Bar Harbor	201.1	Machias	147.8
Bath	198.7	Portland	145.2
Milo	197.8	Rockland	144.1
Blue Hill	190.8	Damariscotta	141.6
Dover-Foxcroft	187.6	Biddeford	140.0
Rumford	186.1	Sanford	138.0
Skowhegan	184.4	Farmington	131.4
Norway	183.5	Bangor	130.1
Greenville	182.3	York**	128.0
Presque Isle	181.5	Camden	127.8
Fort Kent	180.1		
Millinocket	177.6		

*Discharges per thousand population, unadjusted:

$$\frac{\text{Total Discharges by Area Residents}}{\text{Area Population}} \times 1{,}000$$

**Not adjusted for out-migration to New Hampshire.

Note: Only 41 areas are in the table. Island Falls was indavertently omitted from the original table in the Patient Origin Study. The Island Falls discharge rate was 216.0.

"A factor that could help explain the variations is the age structure of the various area populations. The discharge rates displayed here are crude rates, i.e., they are not age-adjusted. Since older people use hospital care at higher rates than younger, it might be possible that some of the observed high discharge rates are the result of an older age structure in the area's population. Age-adjustment techniques would compensate for that effect. The techniques, and the data to which to apply them, are available for Maine hospitals.

"In fact, the definitive resource that the 100% discharge data file represents can and should be put to use to describe further, and to try to explain, some of the reasons for the wide variations among areas in their residents' consumption of hospital resources.

"This report has established that it is possible to define hospital-based geographic service areas in Maine; that area residents receive varying amounts of their hospital care locally; that hospitals are dependent in varying degrees on their local areas as sources of patients; that population-based measures of discharge rates yield widely varying results among areas; and that there are no readily apparent generalizations that account for the variations. The data are at hand with which to try to understand better at least some of the reasons for the variations. Work toward that end will be forthcoming in a research report subsequent to this one."[3]

This is that report.

The body of this report will define some of its terms, including data sources and definitions. The methodology is described including area definition and computational techniques. And the findings are presented, showing in sequence the area populations and age structures, the effect of age-adjustment on the hospital discharge rates, computation of state-wide measures of hospital use for specified diagnostic conditions, and the computation of area-specific measures for the same conditions.

Besides following through on the previous Patient Origin Study, this report is intended to update and enlarge upon some of the work by Wennberg, Gittelsohn, Soule, et.al. that appeared in a series of articles in the Journal of the Maine Medical Association in 1975.[4,5,6] The articles were the first exposition of the variations in hospital use that exist among small area populations in Maine. The articles were based on 1973 data. This report incorporates more recent data and includes user-oriented details on some of the data and methodologies employed by Wennberg et.al.

Data Sources

The input data for this study came from computerized hospital discharge records maintained by the Maine Health Data Service (MHDS) and the Professional Activity Study (PAS). All Maine hospitals participate in one or the other of the two discharge data services,* and reporting on all of the discharges in the state is thus 100% complete.

Maine's unique geography (it borders only one other state, New Hampshire) results in little out-migration of hospital patients across the state's borders for hospital care. Southern York County is the only area of the state with any appreciable out-migration. Except for several towns in that area, Maine hospitals' data may be regarded as providing an essentially complete accounting of Maine residents' hospitalizations.

Time Period

The data cover calendar year 1976, January through December, based on the date of discharge of individual patients. The time period is the same for all hospitals.

Hospitals

The hospitals in the study are all of Maine's short-term general hospitals. In 1976 there were fifty-one such hospitals. They are listed in Table 1, which also shows the areas in which they are located. A map of the areas is shown as Chart 1.

Not included among the hospitals are the following: state mental health institutes (or the acute care units thereof) in Augusta and Bangor; Pineland Hospital and its acute care unit; military installations; college informaries; private hospitals; and long-term care units (either skilled nursing facilities or intermediate care facilities).

*In 1977, one Maine Hospital enrolled in the MRII program of the McDonnell-Douglas Corporation, thus introducing a third data service into Maine. Coverage remained 100% complete.

Table 1

LOCAL HOSPITALS
42 Maine Hospital Service Areas, 1976

Area No.*	Area	Hospital
17	Augusta	Augusta General Gardiner General
22	Bangor	Eastern Maine Medical Center Saint Joseph James A. Taylor Osteopathic
23	Bar Harbor	Mount Desert Island
01	Bath	Bath Memorial
02	Belfast	Waldo County General
03	Biddeford	Webber
24	Blue Hill	Blue Hill Memorial
04	Boothbay Harbor	Saint Andrews
05	Bridgton	Northern Cumberland Memorial
06	Brunswick	Parkview Memorial Regional Memorial
25	Calais	Calais Regional
07	Camden	Camden Community
36	Caribou	Cary Memorial
26	Castine	Castine Community
08	Damariscotta	Miles Memorial
27	Dexter	Plummer Memorial
28	Dover Foxcroft	Mayo Regional
29	Eastport	Eastport Memorial
30	Ellsworth	Maine Coast Memorial
13	Farmington	Franklin County Memorial
37	Fort Fairfield	Community General

*Area numbers are from Chart 1, Map of Maine Hospital Areas.

Table 1

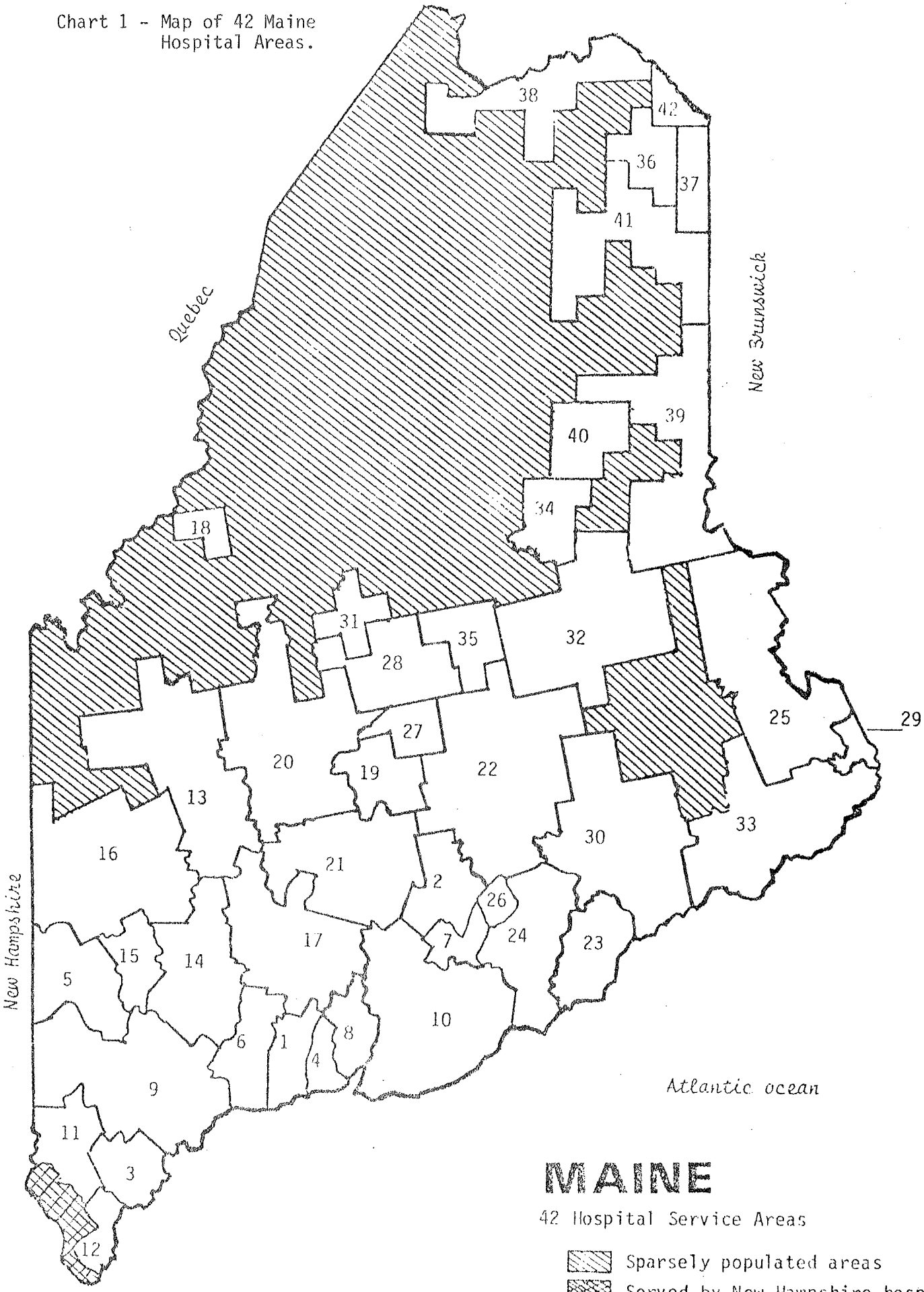
LOCAL HOSPITALS
42 Maine Hospital Service Areas, 197

Area No.*	Area	Hospital
38	Fort Kent	No. Maine Medical Center
31	Greenville	Charles A. Dean Memorial
39	Houlton	Houlton Regional
40	Island Falls	None**
18	Jackman	Marie Joseph
14	Lewiston	Central Maine General Saint Mary's General
32	Lincoln	Penobscot Valley
33	Machias	Down East Community
34	Millinocket	Millinocket Community
35	Milo	Milo Community
15	Norway	Stephens Memorial
19	Pittsfield	Sebasticook Valley
09	Portland	Maine Medical Center Mercy Osteopathic of Maine Westbrook Community
41	Presque Isle	Aroostook Health Center Arthur R. Gould Memorial
10	Rockland	Pen-Bay Medical Center
16	Rumford	Rumford Community
11	Sanford	Henrietta D. Goodall
20	Skowhegan	Redington-Fairview General
42	Van Buren	Van Buren Community
21	Waterville	Mid-Maine Medical Center Waterville Osteopathic
12	York	York Community

*Area numbers are from Chart 1, Map of Maine Hospital Areas.

**Milliken Memorial closed. Area retained for analysis.

Chart 1 - Map of 42 Maine Hospital Areas.



MAINE

42 Hospital Service Areas

Sparsely populated areas

Served by New Hampshire hospitals

Discharges

The basic unit in the study is the inpatient discharge, or an individual unit of uninterrupted hospitalization, counted on the day of discharge. Newborns are not included. If the same person is hospitalized on two different occasions, whether in the same hospital or in different hospitals, that counts as two discharges. Only short-term hospitalizations are counted. A patient discharged from short-term care into, for example, skilled nursing care and then transferred back into short-term care counts as two discharges, one for each short-term hospitalization.

Several data items are recorded for each hospital discharge. The ones used in this report are the patient's age, sex, residence, and principal diagnosis.

Populations

All populations used in the study are from 1976 estimates prepared by the Office of Research and Vital Records, Maine Department of Human Services. The estimates are made at the town level and aggregated to the hospital area level. Area total populations are shown in Table 2.

Areas

Based on hospital use patterns of local residents, the MHDS research staff has divided the state of Maine into forty-two geographic areas defined and created for analytical purposes. The areas are based on hospital data and have been constructed so as to aid in the analysis and interpretation of such data. Each geographic area contains one or more hospitals from which the area's residents receive the plurality of their hospital care.

Each town is assigned to the area that contains the hospital that has the plurality of discharges by the town's residents. When there are two or more hospitals located in the same city or town, one area is defined for the hospitals together. In some instances (Westbrook, Gardiner, Mars Hill) the local hospital does not have a plurality of the discharges from any town, even the one in which it is located. In those instances, a single area is defined for the local

hospital and the nearby ones which also provide service to local residents (Westbrook-Portland, Gardiner-Augusta, Mars Hill-Presque Isle).

The plurality approach was taken because it enables all towns to be assigned to those areas with no gaps between them for unassigned towns. Other studies have defined areas requiring that a given percentage of a town's hospitalizations (typically 50% or 60%) be in-area before a town can be assigned to an area. But since many towns do not have 60% or even 50%, of their hospitalizations in a single area, those towns remain unassigned, leaving gaps between and within the areas. If the 60% rule, for example, were applied to the 1976 Maine data, there would be 150 towns not assigned to areas, including eleven towns that have hospitals in them.

In some instances, especially those of towns with small numbers of discharges, the plurality rule was waived in the interest of consistency with geography and with hospital use patterns of nearby towns.

Another technical consideration regarding area definitions is whether to hold them constant over time or to change them from year to year to reflect any changes that might occur in hospital use patterns. The former approach allows accurate, consistent trend analysis and the latter emphasizes currency of findings. We have decided here in the interest of trend analysis and expendiency, and have held the areas constant for data covering 1973 through 1976.*

The forty-two areas that resulted from this process may be regarded as "associated" with the local hospitals within them, that is, associated in the

*That is why there is an area defined for Island Falls with no hospital in it. The local hospital closed in 1974, and area residents now are hospitalized in two other nearby hospitals (and, interestingly, in numbers equal to those observed when there was a hospital within the area).

statistical sense of closely related. That is not to say that an area represents all of the people served by the local hospitals, or that the local people receive hospital care only as provided by the local hospitals, or that there is a one-to-one causal link between areas and hospitals, or any other such hypothetical extreme. At another extreme, however, it is not acceptable to think of hospitalizations as random events that descend with equal probabilities upon populations without regard to the differing locations, types, amounts, and utilization practices of hospital resources brought to bear on the populations. These hypothetical extremes represent the poles on the association-causation continuum with truth no doubt lying somewhere between. The classic problem of the distinction between association and causation is not one that will be solved by examination of Maine hospital data. We can, however, use the data and such constructs as areas made from them to understand better some of the links that do exist between populations and the hospitals that serve them.

Area Size

Because of the detailed nature of the data used in this report (area by diagnosis by age is the lowest level of detail), some of the 42 areas produced numbers so small as to defy analysis. For that reason, only the 26 largest areas have been used in this report. They are all the areas of 10,000 population or more in 1976 (see Table 2). The 26 larger areas have more than 90% of the State's population. State totals, when shown, represent the sum of all 42 areas.

Age Adjustment

The area discharge rates and patient day rates shown in this report have been adjusted via the indirect method. Populations are computed for each area in nine age groups at ten-year intervals: 0-4, 5-14, ..., 65-74, 75+. State-wide discharge rates are computed for each age group. The area's population in each age group is multiplied by the state discharge rate to compute the "expected" number of discharges for that area and age group. The sums of expecteds for all age groups equal an area's total expected discharges. That expected number is divided by the

Table 2

Area Populations 1976
Designation of 26 Areas Detailed in Report

Area No.	Area	Population	Area No.	Area	Population
01	*Bath	17,684	22	*Bangor	108,678
02	*Belfast	14,123	23	Bar Harbor	9,603
03	*Biddeford	49,473	24	Blue Hill	8,063
04	Boothbay Harbor	5,477	25	*Calais	11,348
05	*Bridgton	10,498	26	Castine	1,412
06	*Brunswick	34,685	27	Dexter	7,660
07	Camden	6,268	28	Dover-Foxcroft	8,893
08	Damariscotta	6,812	29	Eastport	3,164
09	*Portland	181,375	30	*Ellsworth	15,088
10	*Rockland	31,591	31	Greenville	2,806
11	*Sanford	24,195	32	*Lincoln	12,992
12	York[a]	9,728	33	*Machias	15,588
13	*Farmington	23,444	34	*Millinocket	12,208
14	*Lewiston	100,453	35	Milo	4,463
15	*Norway	12,454	36	*Caribou	13,865
16	*Rumford	24,738	37	Fort Fairfield[b]	8,952
17	*Augusta	67,475	38	*Fort Kent	17,219
18	Jackman	1,326	39	*Houlton	15,601
19	*Pittsfield	12,190	40	Island Falls	4,957
20	*Skowhegan	26,169	41	*Presque Isle	26,929
21	*Waterville	54,822	42	Van Buren	4,501

*Denotes 26 areas of 10,000 population or more included in detailed sections of this report.

[a]2,600 deducted as estimated population served by New Hampshire hospitals.

[b]6,266 deducted as estimated population served by Loring Air Force Base Hospital.

Source: "July 1, 1976, Town and County Population Estimate Summary", State of Maine Department of Human Services Office of Research and Vital Records: Augusta, Maine, April, 1978.

area's observed number of discharges (known from the discharge data) to produce the ratio of observed to expected. Finally, that ratio is multiplied by the state discharge rate to obtain a single figure that represents the area's age-adjusted discharge rate.

The same technique is followed to produce a similar figure for patient days and patient day rate. And the area figures for average length of stay are obtained by dividing the area's age-adjusted patient day rate by the area's age-adjusted discharge rate.

Diagnosis Groups

For this study, the hospital discharges have been classified into fourteen diagnosis groups which cover the full range of the ICDA-8[7] coding system, with one exception. The exception is the ICDA-8 grouping known as "Special Conditions and Examinations without Sickness", codes YØØ through Y13.

Because these codes begin with an alphabetic "Y", while all other ICDA-8 codes for principal diagnosis are completely numeric, the "Y" codes caused certain difficulties in computerized routines. For that reason, they were excluded from the data in this report. They represent between three and four percent of all hospital discharges in Maine. State totals shown in this report therefore understate hospital use by that amount. Data for individual diagnosis groups, however, are complete.

The fourteen groups were those used in the Maine Medical Association Journal articles cited earlier.[8] They were originally selected in a compromise between clinical detail and statistical requirements. The groups are small enough to provide clinical differentiation and large enough to provide numbers for statistical analysis. They are based on the seventeen main sections into which ICDA-8 is conventionally divided.

The diagnosis groups and their ICDA-8 codes are shown in Table 3, below.

Table 3

Fourteen Diagnosis Groups

ICDA-8 Codes	Diagnosis Group
000-136	Infective and Parasitic
140-239	Neoplasms
240-289	Endocrine, etc.
290-315	Mental Conditions
320-389	Nervous System
390-458	Circulatory System
460-519	Respiratory System
520-577	Digestive System
580-629	Genito-urinary System
630-678	Pregnancy-related Conditions
680-738	Musculo-skeletal, Tissue, etc.
740-779	Congenital and Perinatal
780-796	Ill-defined Conditions
800-999	Injuries

Hospital Use Indicators

The basic measures of hospital use that occur throughout this report are discharge rate, average length of stay, and patient day rate. The discharge rate is expressed as discharges per thousand population, and the patient day rate, as patient days per thousand population. Average length of stay is expressed in days.

The patient day rate includes the other two indicators. It is the product of the two, as expressed in the equation:

$$\text{Patient Day Rate} = \text{Discharge Rate} \times \text{Average Length of Stay}$$

or

$$\frac{\text{Patient Days}}{\text{Population}} = \frac{\text{Discharges}}{\text{Population}} \times \frac{\text{Patient Days}}{\text{Discharges}}$$

The patient day rate is the preferred measure of total hospital use, since it includes the other two. The Maine data show, however, that in producing the overall patient day rate, the discharge rate is a much more important factor than the average stay. That is, in determining overall levels of hospital use, it is more important how many people are admitted in the first place than it is how long they stay once admitted. This finding is supported later in this report.

Crude Discharge Rates, 1974 and 1976

The introduction to this report reproduced the area discharge rates from the 1974 Patient Origin Study. The 1976 rates were similar to the 1974 rates, as Table 4 shows. The same areas are high, the same areas are low, and the rates themselves changed little over the two years. Bear in mind that the 1976 rates do not include the ICDA-8 "Y" codes and therefore are three to four percent lower than the true totals (see page 14).

Only the 26 areas with 10,000 population or more are in Table 4. The areas are listed in order of their discharge rates in 1976, from highest to lowest. The rates shown here are not to provide comparison between the two years, although such comparisons may be made within the limits imposed by the Y code exclusions in 1976. Rather, the main purpose in showing the two years' rates is to establish continuity from the 1974 data to the 1976 data. This report from this point on discusses 1976 data only.

Age Specific Discharge Rates

Age is one of the most important variables in determining levels of hospital use by populations. The discharge rates in the previous section were crude rates and not adjusted to reflect the varying age distributions of the areas' populations.

The effect of age on hospital discharge rates is shown in Table 5 and Chart 2. The data are Maine state-wide discharge rates for nine specific age groups in 1976. In general, the older the population, the higher is the discharge rate. By far the highest rates are exhibited by persons in the age groups 65-74 and 75+.

Youths age 5-14 have a lower discharge rate than infants age 0-4, and above age 15 the rates rise steadily with age. There is an apparently sharp drop in total discharge rates at age 35; that is due to the predominance of pregnancy-related conditions in discharges for the age groups 15-24 and 25-34. To give an idea of the effect of those conditions, the rates have been shown with pregnancies both included and excluded. With pregnancies excluded, the increase in discharge rates with age may be seen to be more regular than when pregnancies are included.

Table 4

Unadjusted (Crude) Discharge Rates
Twenty-six Maine Hospital Service Areas

1974 and 1976

Area	Discharge Rate 1974[a]	1976[b]	Area	Discharge Rate 1974[a]	1976[b]
Calais	261	279	Bridgton	177	164
Pittsfield	225	213	Lincoln	168	161
Houlton	203	210	Belfast	175	159
Waterville	227	197	Brunswick	175	158
Rumford	186	190	Augusta	171	155
Machias	148	190	Lewiston	154	153
Skowhegan	184	181	Presque Isle	182	152
Caribou	174	181	Sanford	138	136
Bath	199	180	Portland	145	134
Millinocket	178	171	Biddeford	140	134
Fort Kent	180	170	Rockland	144	133
Norway	184	167	Bangor	130	125
Ellsworth	149	166	Farmington	131	122

[a]Source: Patient Origin Study, 1974. All discharges, all diagnoses included.

[b]ICDA-8 codes Y00-Y13 not included. Rates shown are three to four percent less than total for all discharges, all diagnoses.

Rates are per thousand population.

Chart 2. Age-Specific Discharge Rates
Maine 1976

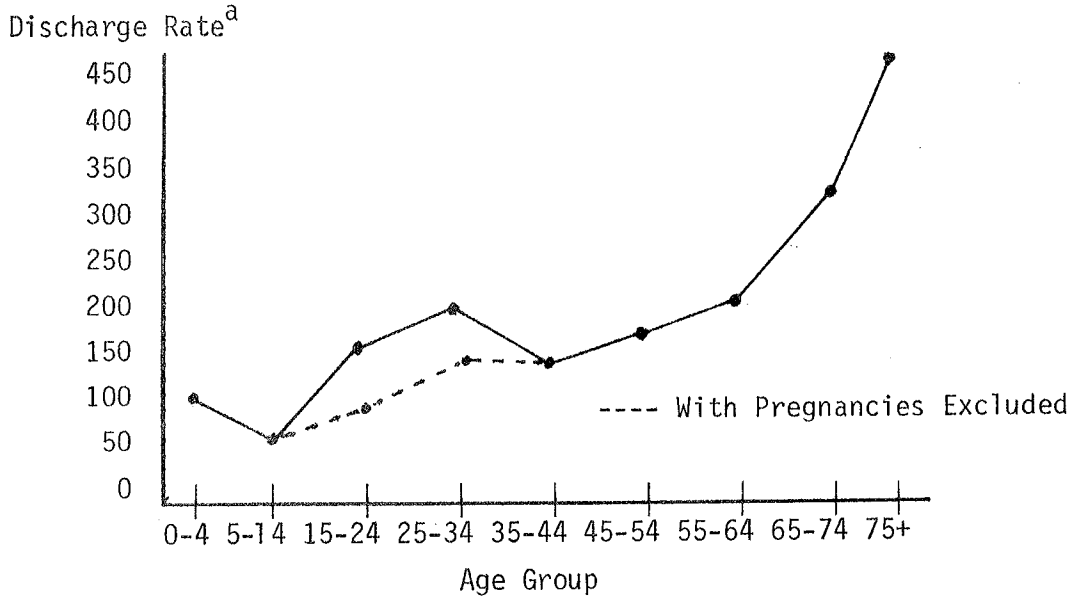


Table 5
Age-Specific Discharge Rates
Maine 1976

Age Group	Population	Number of Discharges	Discharge Rate[a]
Total, All Ages	1,023,500	159,635	156
0-4	87,100	9,333	96
5-14	207,700	10,248	49
15-24	172,700	25,026 (15,050)[b]	145 (87)[b]
25-34	112,700	21,450 (14,471)[b]	190 (128)[b]
35-44	112,600	13,887	123
45-54	113,400	17,936	158
55-64	98,000	19,261	197
65-74	71,500	21,468	300
75+	47,800	21,026	440

[a]Discharges per thousand population.

[b]With pregnancies excluded.

Age Distributions of Area Populations

Since discharge rates differ among age groups, an area's age structure is important in determining its discharge rates. Areas with relatively young populations are expected to have low discharge rates and areas with older populations, higher discharge rates. Both age-specific and age-adjusted rates have been computed in different parts of this report.

Series A of Appendix tables shows the numbers of persons and the percentages of total population in each of nine age groups, male, female and total, for each of the 26 Maine areas with 10,000 or more population.

From Table 5 and Chart 2 it is evident that the greatest differences from the overall discharge rates occur in the age groups 0-14 and 65+. When the age groups are pooled as below, the differences are apparent.

Table 6

Discharge Rates for Combined Age Groups

Age Group	Discharge Rate
Total, All Ages	156
0-14	66
15-64	160
65+	356

It follows then that the areas where age structure will have the most effect on hospital use are those with relatively high or low proportions of population in the age groups below 15 years and above 65 years.

One other age group which occasionally affects the discharge rates is age 15-24, when it represents military or college populations. Such populations are often disproportionately male or female, use local hospitals infrequently, have few pregnancy-related hospitalizations, and are not present in the local area year-round; they have low discharge rates.

Table 7 shows the effect of age adjustment on Maine areas' discharge rates. The table shows crude discharge rates (directly from Table 4), age-adjusted rates, the effect of age adjustment on the rates (expressed in percentage terms), and indicators of the statistical significance of the adjustment.

Eleven of the 26 areas had discharge rates after age adjustment that were statistically significant from their crude rates. Three areas had older populations that resulted in a significant adjustment and eight, younger. (This finding is somewhat surprising in Maine. Most hospital representatives regard their areas as having significantly old population distributions. And Maine does have an older population than the nation as a whole. But within Maine, only three of the 26 largest areas had older populations with significant effect on their discharge rates. Some of the smaller areas not among the 26 also had such effects.)

The three areas with significant adjustments for older populations were Machias, Ellsworth, and Rockland. The eight with younger were Brunswick, Bangor, Rumford, Lincoln, Millinocket, Presque Isle, Caribou, and Fort Kent.

The effect on the rates of younger populations is to adjust an apparently low crude rate upward; older populations adjust an apparently high crude rate downward. (Age adjustment is via the indirect method. See page 12 for discussion.)

Millinocket, for example, had a crude rate of 171 discharges per thousand population. But adjusted for the area's younger age structure, the discharge rate becomes 195 per thousand, an upward adjustment of 14%. This is statistically significant at a confidence level exceeding 99.9%. Machias, on the other hand, has a rate adjusted downward from 190 per thousand to 179, a 6% adjustment. That, too, is significant at 99.9%.

From Table 7 on, all statistics cited in this report are age-adjusted.

Table 7 is in order of the age-adjusted discharge rates, from highest to lowest.

Table 7

Crude Discharge Rates, Age-Adjusted Rates, and the Effect of Age Adjustment 26 Maine Areas, 1976

Area	Crude Discharge Rate[a]	Age-Adjusted Discharge Rate[a]	Effect of Age Adjustment[b]	Significance[c]
Maine	156	156		
Calais	279	274	-2%	
Pittsfield	213	215	+1%	
Houlton	210	211	Ø	
Waterville	197	200	+2%	
Caribou	181	200	+10%	***
Rumford	190	195	+3%	*
Millinocket	171	195	+14%	***
Fort Kent	170	187	+10%	***
Skowhegan	181	181	Ø	
Bath	180	179	-1%	
Machias	190	179	-6%	***
Lincoln	161	170	+6%	**
Brunswick	158	167	+6%	***
Presque Isle	152	164	+8%	***
Norway	167	163	-2%	
Ellsworth	166	158	-5%	**
Belfast	159	158	-1%	
Bridgton	164	158	-4%	
Augusta	155	154	-1%	
Lewiston	153	153	Ø	
Portland	134	133	-1%	
Biddeford	134	133	-1%	
Sanford	136	133	-2%	
Bangor	125	129	+3%	***
Rockland	133	126	-5%	***
Farmington	122	125	+2%	

[a] Discharges per thousand population.

[b] As percentage of crude rate.

[c] * indicates significance at 95% confidence level ($P < .05$).
** indicates significance at 99% confidence level ($P < .01$).
*** indicates significance at 99.9% confidence level ($< .001$).

No indicator means 95% confidence level not attained.

Hospital Use Indicators: Discharge Rate, Average Length of Stay,and Patient Day Rate

Table 8 shows for the 26 areas the age-adjusted discharge rates, average length of stay, and patient day rates. These three indicators are interdependent. The patient day rate measures total days of hospital care used by a given population. It includes both discharge rate and average length of stay as factors within it. The patient day rate equals the product of discharge rate and average stay, as expressed in the equation

Patient Day Rate = Discharge Rate X Average Length of Stay

By looking at all three indicators at once, it is possible to describe their inter-relationship. The last three columns of Table 8 show the ratio of the area indicators to state-wide values. Calais, for example, has a patient day rate of 1,700 per thousand population. That is 1.56 times the state rate. That overall rate is produced by the combined effect of a discharge rate that is 1.76 times the state rate and an average stay .89 times the state rate. Rockland, on the low end of Table 8, has a patient day rate that is .70 times the state rate, or 30% below. That rate is the product of a discharge rate .81 times the state and an average stay .86 times the state. Other areas have indicators that are within the wide range established by Calais and Rockland.

It is worth repeating here that the rates are geography-based and reflect completely the hospital experience of area residents. Most of that experience occurs in local hospitals within the area. The effect of border-crossing is removed by counting all hospitalizations of area residents, whether the hospitalization be within area or outside of area. Age adjustment is performed and removes the effect of differing age structures among areas. The computations are, in effect, adjusted to remove the effects of both border-crossing (referral admissions) and age structure, and are not subject to equivocation on either of those counts.

Table 8 is in sequence from highest patient day rate to lowest. (The ratio of the patient day rates are also in sequence.)

Table 8

Hospital Use Indicators

26 Maine Areas, 1976

Area	Area Indicators: Discharge Rate[a]	Area Indicators: Average Length of Stay[b]	Area Indicators: Patient Day Rate[a]	Ratios of Area to State Indicators: Discharge Rate	Ratios of Area to State Indicators: Average Length of Stay	Ratios of Area to State Indicators: Patient Day Rate
Maine	156	7.0	1090	1.00	1.00	1.00
Calais	274	6.2	1700	1.76	.89	1.56
Waterville	200	7.6	1513	1.28	1.08	1.39
Pittsfield	215	6.9	1486	1.38	.99	1.36
Houlton	211	6.7	1402	1.35	.96	1.29
Caribou	200	7.0	1394	1.28	1.00	1.28
Rumford	195	6.9	1347	1.25	.99	1.24
Skowhegan	181	7.1	1278	1.16	1.01	1.17
Millinocket	195	6.5	1266	1.25	.93	1.16
Fort Kent	187	6.7	1254	1.20	.96	1.15
Bath	179	6.7	1204	1.15	.96	1.10
Lewiston	153	7.6	1154	.98	1.08	1.06
Lincoln	170	6.7	1146	1.09	.96	1.05
Machias	179	6.4	1141	1.15	.91	1.05
Brunswick	167	6.7	1110	1.07	.95	1.02
Presque Isle	164	6.7	1098	1.05	.96	1.01
Ellsworth	158	6.9	1095	1.01	.99	1.00
Belfast	158	6.8	1068	1.01	.97	.98
Norway	163	6.4	1036	1.04	.91	.95
Augusta	154	6.6	1020	.99	.95	.94
Portland	133	7.6	1013	.85	1.09	.93
Bangor	129	7.7	988	.83	1.10	.91
Bridgton	158	6.3	988	1.01	.90	.91
Biddeford	133	7.2	956	.85	1.04	.88
Sanford	133	6.6	872	.85	.94	.80
Farmington	125	6.6	824	.80	.95	.76
Rockland	126	6.0	758	.81	.86	.70

[a] Per thousand population.

[b] In days.

The Importance of Discharge Rate

The data in Table 8 show a range in patient day rates from 758 per thousand population to 1,700, a range of 2.2 times. The residents of the highest-rate area consume 2.2 times as many days of hospital care per capita as do the residents of the lowest-rate area.

Discharge rates show a range from 125 per thousand to 274 per thousand, again a difference of 2.2 times.

Average length of stay shows a much tighter range, from 6.0 days to 7.7 days, a difference of 1.3 times.

This combination suggests strongly that discharge rate is more closely related to total days of care than is average stay. There is a range of 120% between the highest and lowest discharge rates and patient day rates, but a range of only 30% between highest and lowest average stays. In explaining the variations in use rates for total patient days, discharge rate is a more important factor than average stay. This finding is important for calling into question the utility of average stay as a measure of hospital use. Discharge rate is a more sensitive indicator.

A look at Table 8 shows that, generally, areas with high patient day rates have high discharge rates and areas with low patient day rates have low discharge rates. No such clear relationship exists between patient day rate and average stay. The three areas with the highest patient day rates have average stays that are roughly 10% below, 10% above, and equal to, the state average.

In determining overall levels of hospital use (as measured by patient day rate), discharge rate is more important than average stay. It is more important to know how many patients (per capita) are hospitalized in the first place than it is to know how long they are hospitalized once admitted.

This finding is substantiated by the regressions represented in Charts 3A, 3B, and 3C.

The Charts display the correlations (or lack thereof) between each of the possible combinations of two indicators: 3A, patient day rate and average stay; 3B, patient day rate and discharge rate; 3C, discharge rate and average length of stay.

The correlation between patient day rate and average length of stay (Chart 3A) is small; no linear relationship is evident to the eye, and the correlation coefficient (r) is so low as to fail tests of statistical significance. (With data for 26 areas, a correlation coefficient of .4 indicates statistical significance at a 95% confidence level, .5 at 99%.) The r value of .094 indicates no significant correlation between total patient days and average length of stay. Average stay is a poor predictor of overall hospital use.

Between discharge rate and patient day rate, however, (Chart 3B) there is a correlation that is clear to the eye and significant at a confidence level exceeding 99.9%. The correlation coefficient is .947, well above the level required to indicate significance. There is a clear, direct relationship between patient day rate and discharge rate: high discharge rates predict high patient day rates and low discharge rates, low patient day rates.

And there is no appreciable correlation between discharge rate and average stay, as is evident from Chart 3C. There is a slight negative correlation that produces a coefficient of -.221 and fails to attain a significant level.

Table 9 summarizes the results of the three sets of calculations to determine correlation.

Table 9

SUMMARY OF CORRELATION CALCULATIONS
BETWEEN HOSPITAL USE INDICATORS

Chart	Variable (x)	Variable (y)	Coefficient (r)	Significant	Confidence Level
3A	Average Stay	Patient Day Rate	.094	No	-
3B	Discharge Rate	Patient Day Rate	.947	Yes	99.9%
3C	Average Stay	Discharge Rate	-.221	No	-

Chart 3A

CORRELATION BETWEEN PATIENT DAY RATE AND AVERAGE STAY

26 Maine Areas, 1976

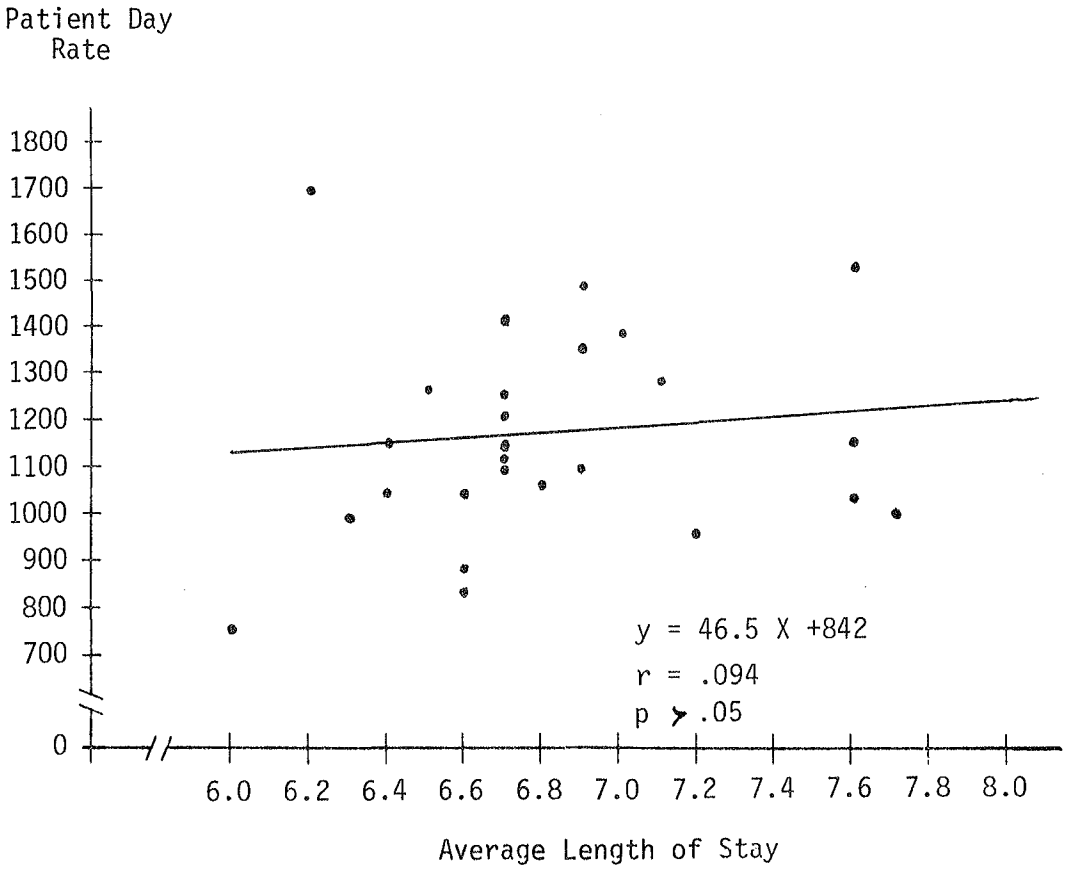


Chart 3B

CORRELATION BETWEEN PATIENT DAY RATE AND DISCHARGE RATE

26 Maine Areas, 1976

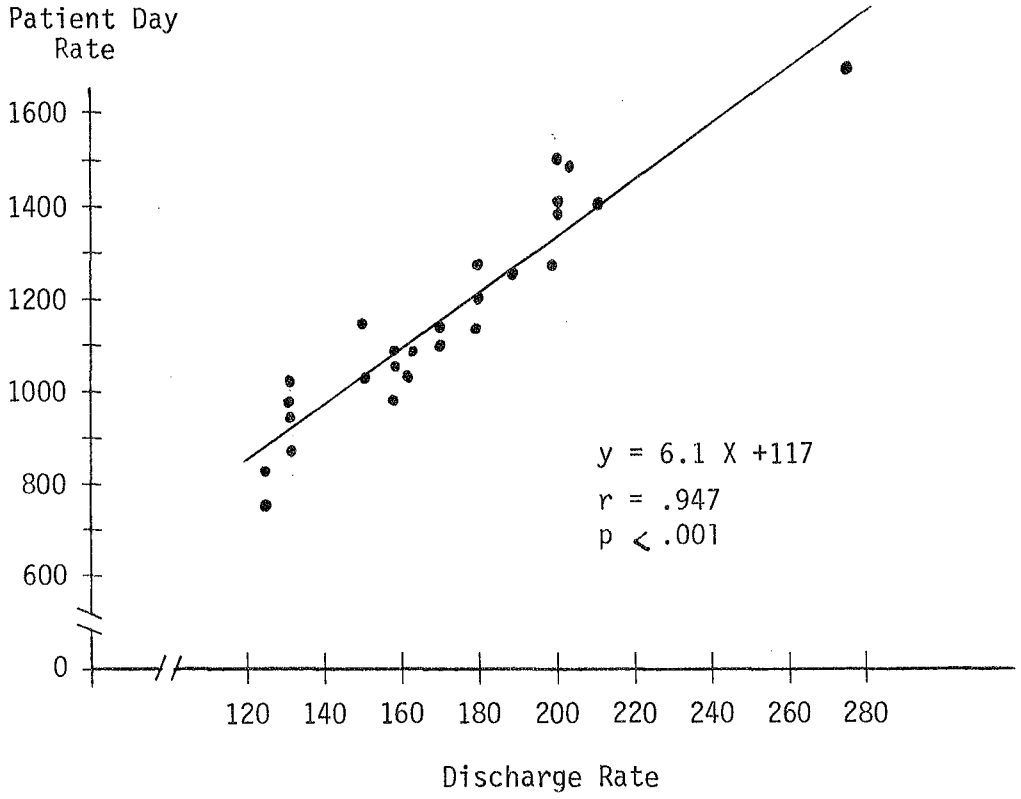
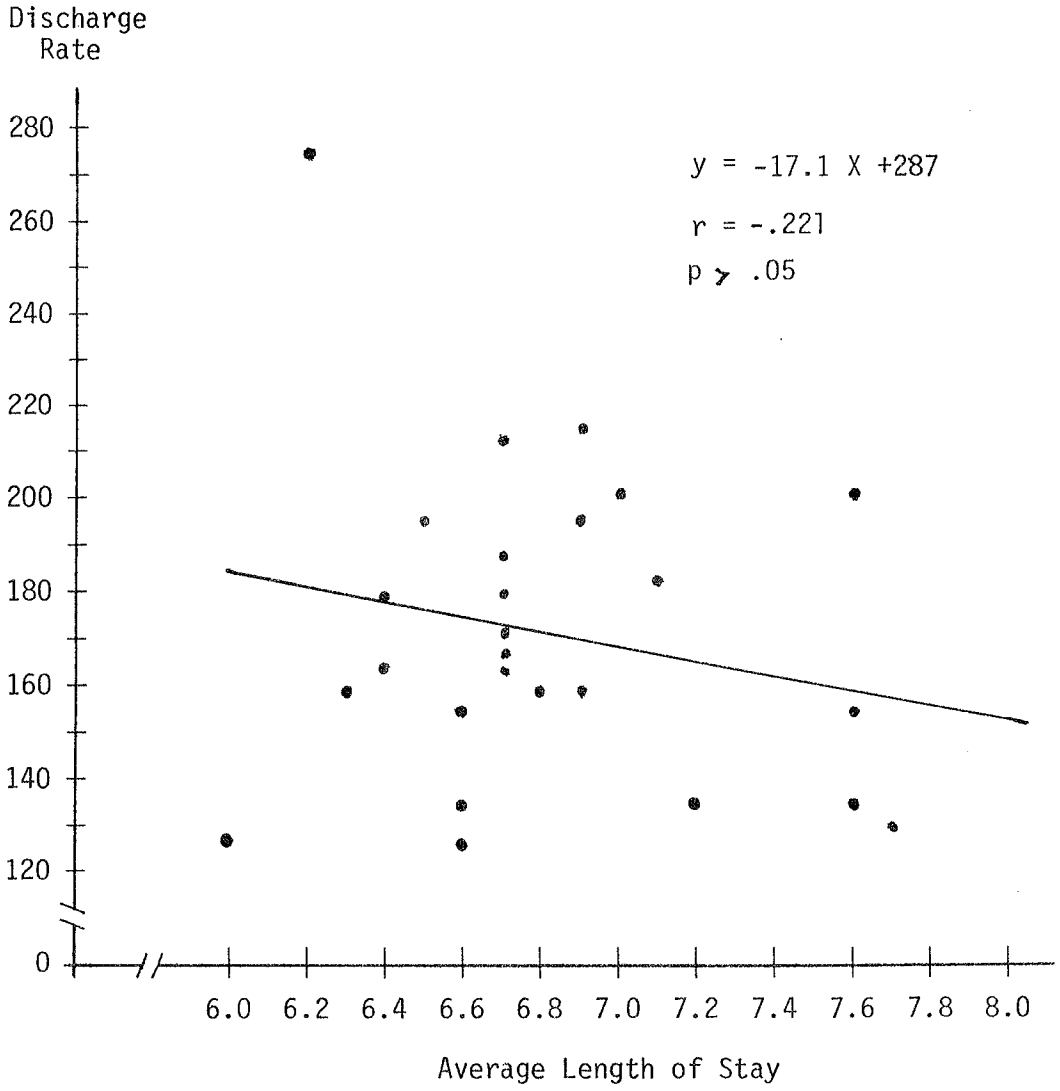


Chart 3C

CORRELATION BETWEEN DISCHARGE RATE AND AVERAGE STAY

26 Maine Areas, 1976



The importance of these findings relates to the use of average stay as a measure of hospital use. Average stay is a poor measure of the total amount of hospitalization used by a given population. In measuring levels of hospital use, total patient days per population is the indicator to be preferred. And in determining total patient days, discharge rate is far more important than average length of stay. Discharge rate is so strongly correlated with total patient day rate that the one is virtually a surrogate for the other. Discharge rates are in themselves good indicators of variations in hospital use. Average length of stay figures are not.

Those assertions are further supported by the diagnosis group data of the next section of this report.

Hospital Use Indicators by Diagnosis Group

Since the principal diagnosis of the patient is one of the data items in the 100% discharge data file, diagnosis-specific hospital use indicators can be computed for Maine areas in just the same manner as overall statistics have been computed earlier in this report.

The diagnoses have been classified into 14 groups which together cover the whole range of ICDA-8 codes from 000 through 999*. The groups were defined to provide both clinical detail and numbers sufficient for analysis.

Some of the groups contain far more discharges and patient days than others. Among the 14 groups, circulatory conditions accounted for the most hospital discharges in Maine, followed by digestive conditions, pregnancy, respiratory conditions, and injuries. These five diagnosis groups comprised more than half (56.7%) of all discharges state-wide in 1976. The figures are shown in Table 10.

Table 10 also shows that the diagnosis groups did not rank in the same positions when the quantity involved was patient days. Pregnancy ranked ninth, for example, in patient days as opposed to third in discharges. Patient days were more concentrated in a few diagnosis groups than were discharges. The top five groups accounted for 62% of patient days whereas the top five groups in discharges had only 57% of all discharges.

Sixty-two percent of all hospital days consumed in Maine are concentrated in five diagnosis groups. On a given day, 62% of all Maine hospital patients have diagnoses in one of five groups: circulatory, digestive, neoplasms, injuries, and respiratory. As will be shown later in this report, at least two of these groups have use rates of high variability among areas of the state. The presence of highly variable conditions among those most commonly hospitalized is a circumstance the recommends itself to the attention of those responsible for planning, providing, financing and evaluating hospital care in Maine.

*Codes in the group Y00-Y19 are not included in this report. See page 14.

Table 10

Distribution of Discharges and Patient Days
by 14 Diagnosis Groups
Maine State-wide, 1976

Diagnosis Group	Discharges		Discharges		Percent of State Total	
	Rate	Number	Rate	Number	Discharges	Patient Days
Total, all Diagnoses	-	159,635	-	1,116,032	100%	100%
Circulatory	1	21,223	1	210,817	13.3	18.9
Digestive	2	18,832	2	139,787	11.8	12.5
Pregnancy-related	3	17,741	9	61,179	11.1	5.5
Respiratory	4	16,631	5	94,450	10.4	8.5
Injuries	5	16,121	4	120,592	10.1	10.8
Genito-urinary	6	14,549	6	79,392	9.1	7.1
Neoplasms	7	12,183	3	123,590	7.6	11.1
Muscle & Tissue	8	9,798	7	75,996	6.1	6.8
Ill-defined	9	8,798	10	44,820	5.5	4.0
Mental	10	7,037	8	64,257	4.4	5.8
Nervous System	11	6,615	11	32,567	4.1	2.9
Endocrine, etc.	12	4,097	12	31,706	2.6	2.8
Infective & Parasitic	13	3,924	13	21,583	2.5	1.9
Congenital & Perinatal	14	2,086	14	15,296	1.3	1.4

Many more females than males are hospitalized in Maine. One diagnosis, not surprisingly pregnancy, has all females. But even among the remaining thirteen diagnosis groups, eight have more females than males. Only four diagnosis groups have more males than females.

Females accounted for 70% of all genito-urinary discharges, 62% of all endocrine (etc.) conditions, and 61% of all neoplasms (including benign as well as malignant). Males did not reach 60% of the discharges in any diagnosis group, the highest proportion being 58% of all congenital and perinatal discharges.

The predominance of females among hospital patients is partly a byproduct of life expectancy. Females live longer than males, and older people are hospitalized more often than younger. The pattern is like this: under age fourteen, males have a higher discharge rate per population than females; then from ages fifteen through forty-five, females (even with pregnancies excluded) have higher rates; by age fifty-five, the male discharge rates again exceed the female rates, and this remains true at all ages above fifty-five.

Females thus constitute the majority of hospital discharges because (1) for ages 15 through 54, females have a higher discharge rate per population, and (2) above age 55, females comprise the majority of the population (even though at those ages the discharge rate is higher for males).

Table 12 shows the population-based statistics for state-wide hospital use by diagnosis group. The discharge rates and patient day rates show, of course, the same relative levels as did the numbers of discharges and patient days shown earlier. Average length of stay by diagnosis group provides some new information. While the state-wide average was virtually equal to seven days, the range among diagnosis groups was from three and one-half days (pregnancy) to ten days (neoplasms, circulatory system).

The state-wide figures by themselves demonstrate the various levels of use attributable to the respective diagnosis groups and not much more. The state-wide

Table 11

Distribution of Discharges and Patient Days in 14 Diagnosis Groups by Males and Females

Maine State-wide, 1976

Diagnosis Group	Number of Discharges		% Male	% Female
	Male	Female		
Total, All Diagnoses	66,015	93,620	41.4%	58.6%
Infective and Parasitic	1,776	2,148	45.3	54.7
Neoplasms	4,765	7,418	39.1	60.9
Endocrine, etc.	1,573	2,524	38.4	61.6
Mental	3,128	3,909	44.5	55.5
Nervous System	3,006	3,609	45.4	54.6
Circulatory	10,736	10,487	50.6	49.4
Respiratory	8,664	7,967	52.1	47.9
Digestive	9,272	9,560	49.2	50.8
Genito-urinary	4,421	10,128	30.4	69.6
Pregnancy	0	17,741	0	100.0
Muscle & Tissue, etc.	4,758	5,040	48.6	51.4
Congenital & Perinatal	1,218	868	58.4	41.6
Ill-defined	3,922	4,876	44.6	55.4
Injuries	8,776	7,345	54.4	45.6

Table 12

Discharge Rates, Average Lengths of Stay,
and Patient Day Rates
by 14 Diagnosis Groups

Maine State-wide, 1976

Diagnosis Group	Discharge Rate[a]	Average Stay[b]	Patient Day Rate[a]
Total, All Diagnoses	155.9	6.99	1,090.2
Infective and Parasitic	3.8	5.50	21.1
Neoplasms	11.9	10.14	120.7
Endocrine, etc.	4.0	7.74	31.0
Mental	6.9	9.13	62.8
Nervous System	6.5	4.92	31.8
Circulatory	20.7	9.93	205.9
Respiratory	16.3	5.68	92.3
Digestive	18.4	7.42	136.5
Genito-urinary	14.2	5.46	77.6
Pregnancy	17.3	3.45	59.8
Muscle & Tissue, etc.	9.6	7.76	74.2
Congenital & Perinatal	2.0	7.33	14.9
Ill-defined	8.6	5.09	43.8
Injuries	15.7	7.48	117.8

[a]per thousand population

[b]in days

figures are useful in comparisons: Maine versus other states and the U.S., Maine small areas versus the Maine state-wide figures.

This section has established that utilization statistics are different among diagnosis groups and between males and females. For persons interested in detailed statistics on hospital use by diagnosis by sex, Series B of Appendix tables contains 1976 state-wide figures for males, females and total population, by 14 diagnosis groups, for discharge rates, average lengths of stay, and patient day rates. The figures can be used in comparison to national figures compiled by the National Center for Health Statistics from the National Hospital Discharge Survey[9]; and they can be applied to area population figures in Maine to produce expected rates of hospital use. Planners for hospital use will find the latter application particularly useful.

More interesting and more useful than state-wide figures are the details of small area statistics within Maine. The rest of this report computes and compares diagnosis-specific hospital use statistics at the small area level within Maine.

Variations in Diagnosis-Specific Hospital Use

This report has shown that overall hospital use rates vary widely among populations of different areas in Maine. Hospital discharge rates ranged in 1976 from a low of 126 to a high of 274. The highest rate was 2.2 times as great as the lowest. Average length of stay ranged 1.3 times from high to low, and patient day rate, 2.2 times. Average stay was much less variable than the other two indicators. Variations in overall use, as measured by patient day rate, were predicted more by discharge rates than by average stay. Discharge rates were the determinant factor in variations in overall use rates.

Those generalizations are derived from observations of overall hospital use for all conditions combined. The same generalizations apply to specific diagnosis groups within the total. Use rates for specific diagnostic conditions (neoplasms, respiratory, etc.) vary among areas, discharge rates and patient day rates vary more widely than average stay, and discharge rate is the more important determinant of overall levels of use.

There is an important distinction, however, among the various diagnosis groups: some of them vary much less, and some much more, than others. Furthermore, there is a definite predictability to the conditions that vary the most and the least. Wennberg and Gittelsohn were the first to articulate this predictability as it pertains to diagnostic conditions in Maine.[10] The conditions that vary the least are those for which there appears to be a high degree of consensus among physicians as to the detection and definition of the condition and as to the appropriateness of hospital admission as part of the treatment. Good examples of such conditions among the diagnosis groups are neoplasms, pregnancy, and congenital and perinatal conditions.

Table 13 shows some statistics describing the variability of diagnosis-specific hospital use among the 26 larger areas in Maine. The table confirms that neoplasms, pregnancy, and congenital and perinatal conditions are the least

variable. The discharge rates for those conditions exhibit the three lowest coefficients of variation* among the fourteen diagnosis groups, and the ratios of highest to lowest discharge rates are also the three lowest. The table further confirms that average stay varies the least, that is, has the lowest coefficients of variation and ratios of high to low. The discharge rate variability measures are far higher than those for average stay and are strongly correlated with the measures for patient day rate.

Table 13

Summary of Variations Among 26 Areas
in Utilization Indicators by Diagnosis Group
Maine, 1976

Diagnosis Groups	Coefficients of Variation			Ratios from Highest to Lowest		
	Discharge Rate	Average Stay	Patient Day Rate	Discharge Rate	Average Stay	Patient Day Rate
Infective & parasitic	.410	.179	.407	5.6	2.1	4.0
Neoplasms	.173	.106	.204	1.7	1.6	2.3
Endocrine, etc.	.287	.172	.280	2.9	2.2	2.9
Mental	.334	.209	.344	4.4	1.9	3.9
Nervous system	.200	.212	.344	2.5	2.3	5.0
Circulatory	.255	.097	.213	2.4	1.4	2.1
Respiratory	.370	.134	.378	3.6	1.9	4.4
Digestive	.237	.113	.245	2.3	1.6	2.5
Genito-urinary	.266	.127	.314	3.1	1.7	4.4
Pregnancy-related	.177	.094	.212	2.2	1.4	2.3
Muscle & Tissue, etc.	.244	.105	.284	2.3	1.5	3.2
Congenital & perinatal	.200	.171	.211	2.2	2.1	2.3
Ill-defined	.354	.131	.367	3.6	1.7	3.5
Injuries	.289	.151	.255	3.1	1.8	2.5

*Coefficient of variation (c.v) is a statistical measure of the degree of variability within a set of quantities, such as several discharge rates for the same condition. It is equal to the standard deviation of the quantities divided by the mean. The c.v. is a dimension-less quantity conventionally expressed as a decimal, sometimes as a percentage. It is useful only in relative terms; thus, the c.v. of .370 for respiratory conditions reflects more variability than the .173 c.v. for neoplasms.

In contrast to the three low-variability conditions just cited, such conditions as respiratory, infective and parasitic, ill-defined, and mental conditions exhibit especially high variability. They have high coefficients of variation for discharge rates (all greater than .300, as opposed to the low-variability conditions at .200 or less), and they have high ratios of highest to lowest (5.6, 4.4, 3.6, and 3.6, as opposed to 1.7, 2.2, and 2.2 for the low conditions).

Two selected conditions, one each in the high-variability and low-variability ranges, illustrate the situation. Respiratory conditions comprise a high-variability disgnosis group. Among the 26 Maine areas under study, one has a discharge rate for respiratory conditions that is 2.2 times the state norm and 3.6 times the lowest area's rate. The coefficient of variation for discharge rates in the 26 areas is .370, or 37%.

Neoplasms, on the other hand, represent a low-variability diagnosis group. The highest discharge rate is 1.4 times the state norm and 1.7 times the lowest area's rate. The coefficient of variation of the 26 area discharge rates is only .173, or 17.3%. Clearly, the variability in hospital use around the state is lower for neoplasms than for respiratory conditions. The other diagnostic conditions exhibit differing levels of variability within the range typified by neoplasms and respiratory conditions.

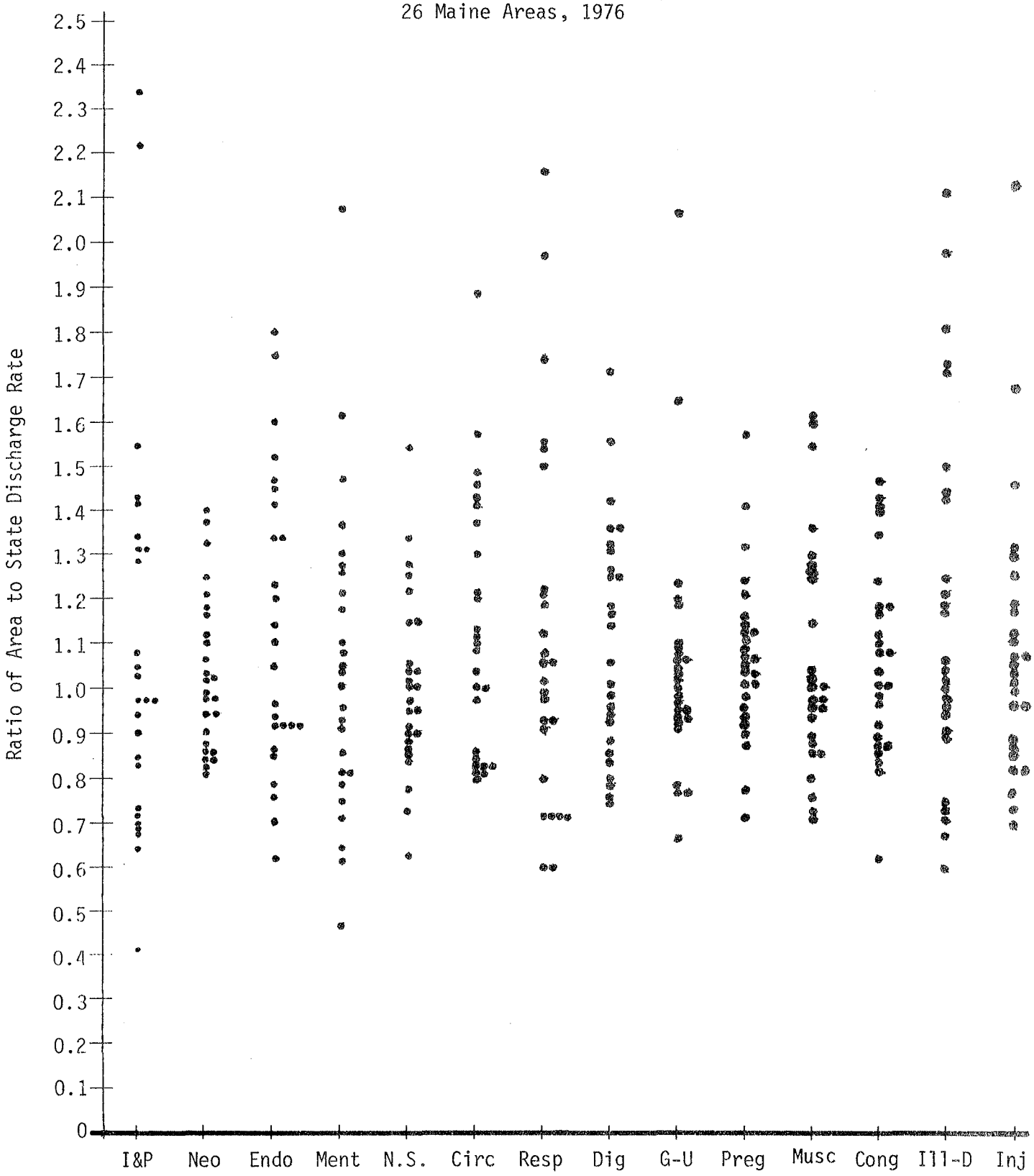
The different levels of variability are displayed graphically in Chart 4. The chart renders explicitly some of the wide and narrow spreads among the discharge rates for the diagnosis groups.

The chart shows the ratio of each area's diagnosis-specific discharge rate to the state discharge rate for the diagnosis. There is one column in the chart for each of the fourteen diagnosis groups, and each column shows 26 ratios, one for each area.

Chart 4

VARIATIONS IN DISCHARGE RATES BY DIAGNOSIS

26 Maine Areas, 1976



Each mark represents the discharge rate for one of 26 areas. The vertical scale shows the ratio of the area's discharge rate to the state discharge rate. The fourteen diagnosis groups are those shown in Table 3 , page 15.

The first (left-most) column in the chart, for example, is for infective and parasitic conditions. The highest area has a discharge rate that is between 2.3 and 2.4 times the state rate, and the lowest area has a rate about .4 times the state rate. Most of the areas have rates from .6 times to 1.5 times the state rate, and three areas are clear outliers with one very low ratio (.4 times the state rate) and two very high ratios (2.2 and 2.3 times).

The second column is for neoplasms and shows a much tighter spread among the areas. The range here is from .8 times to 1.4 times the state rate; all the rates are clustered closely together, and there are no evident outliers.

The conditions with high levels of variability appear in the chart with wide ranges and clear outliers, while the conditions with low variability have narrow ranges and few outliers. Once again, the highly variable conditions are infective and parasitic, respiratory, ill-defined, and mental; the least variable conditions are nervous system, congenital and perinatal, pregnancy, and neoplasms.

In Table 14, the conditions are ranked in order of their variability. The ranking is in order of the first column in the table, the coefficient of variation, from highest to lowest. Also shown in the table are the numbers of discharges in each condition, the percentages of all cases represented by the condition, and the cumulative numbers and percentages moving down the table. At any point in the table, it is thus possible to describe the variability of an accumulated number of diagnostic groups.

For example, the first four diagnosis groups are the most variable. They all have coefficients of variation of 30% or more. Those four groups together represent 36,390 hospital discharges, or 22.8% of the state total in the year under study. The first seven groups have close to half of the discharges in the state, 71,157 discharges for 44.6% of the total.

This information can be used to examine some of the relationships between levels of hospital use overall and for the various diagnosis groups.

Table 14

Ranking of Diagnosis Groups in Order of Variability
Cumulative Statistics
Maine, 1976

Rank	Diagnosis Group	Coefficient of Variation	Number of Discharges	Cumulative Number	% of all Discharges	Cumulative %
1	Infective & Parasitic	41.0%	3,924	3,924	2.5	2.5
2	Respiratory	37.0%	16,631	20,555	10.4	12.9
3	Ill-defined	35.4%	8,798	29,353	5.5	18.4
4	Mental	33.4%	7,037	36,390	4.4	22.8
5	Injuries	28.9%	16,121	52,511	10.1	32.9
6	Endocrine, etc.	28.7%	4,097	56,608	2.6	35.5
7	Genito-urinary	26.6%	14,549	71,157	9.1	44.6
8	Circulatory	25.5%	21,223	92,380	13.3	57.9
9	Muscle & tissue, etc.	24.4%	9,798	102,178	6.1	64.0
10	Digestive	23.7%	18,832	121,010	11.8	75.8
11	Nervous system	20.0%	6,615	127,625	4.1	79.9
12	Congenital & perinatal	20.0%	2,086	129,711	1.3	81.2
13	Pregnancy-related	17.7%	17,741	147,452	11.1	92.4
14	Neoplasms	17.3%	12,183	159,635	7.6	100.0

Relationship Between Variable Diagnoses and Overall Hospital Use

We have thus seen that there are wide variations in rates of overall hospital use and that certain diagnosis groups vary more, and certain groups less, than the overall rates. Wennberg and Gittelsohn were cited earlier as contending that the variations within diagnosis groups are associated with physician consensus, or lack of consensus, regarding treatment of the diagnosis. Where there is consensus, the variability is low; where there is lack of consensus, and more individual discretion among physicians, variability is higher. It would follow, if this contention is correct, that the variations in use rates would be associated with the presence or absence of the "discretionary" diagnosis groups among an area's case mix. Where there is a high overall use rate, it would be not because of high use for neoplasms or pregnancies or congenital conditions (low-variability conditions all), but because of high use for respiratory or ill-defined or other relatively "discretionary" conditions. We will call this the discretionary hypothesis.

The hypothesis as summarized above is true. The data confirm it.

To test it, we classified the diagnostic conditions into two groups each comprising about half of total hospital discharges. One-half of the conditions were those of relatively high variability and one-half of low variability. (The criterion of one-half high and one-half low was chosen arbitrarily.) Using the ranking of variability in Table 14, the point where the number of cases was closest to half and half was determined to fall between the seventh and eighth groups on the list. The most variable diagnosis groups were the first seven on the list, and those groups had a total of 71,157 discharges, nearly 45% of all discharges.

If the discretionary hypothesis as stated above is correct, then the seven diagnosis groups would be highly associated with overall use levels. That is, those areas with a high proportion of the seven diagnosis groups among their case

mixes would be the areas with high overall use rates. The areas with low incidence of the seven diagnoses would have low use rates.

The individual areas ranged from 39% to 52% in the proportions of their discharges that were in the seven most variable diagnosis groups. The statewide proportion was 45%. As stated earlier, the discharge rates ranged from 125 per thousand population to 274, with a state rate of 156.

To test the discretionary hypothesis, we computed the correlation between the two indicators: (1) percentage of discharges in seven variable diagnosis groups and (2) overall discharge rate. No association between the two would refute the hypothesis.

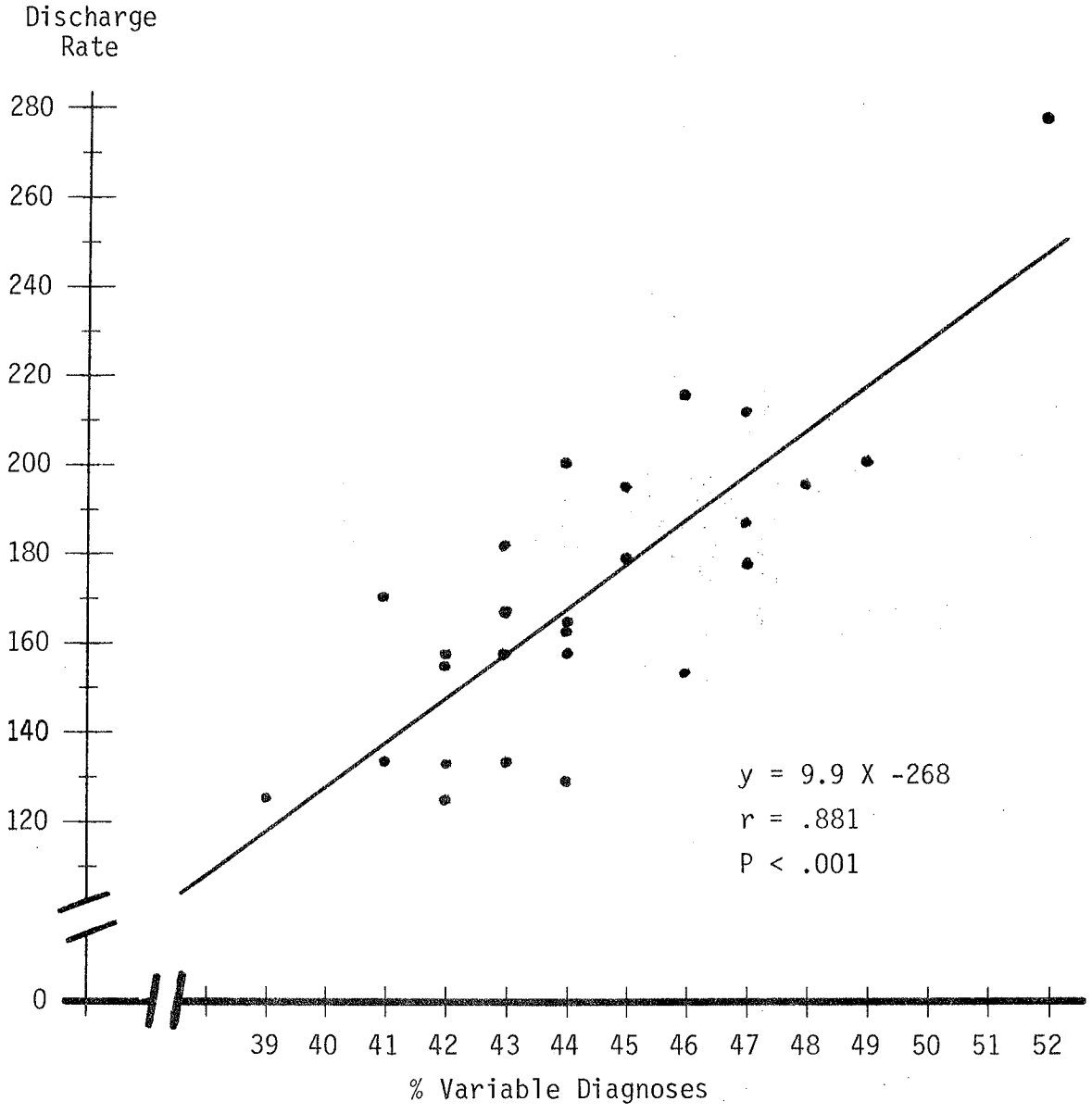
Chart 5 displays the data and the resulting correlation. The hypothesis is confirmed by a positive correlation between the two variables that is significant at a confidence level exceeding 99.9%. The correlation coefficient is .811, far above the coefficient of .4 that would be sufficient to establish correlation at an acceptable confidence level of 95%.

The data confirm that the high and low use rates around the state are strongly associated with certain identifiable diagnosis groups. Variations in use rates are not associated with high or low incidence of cancer, or birth rates, or birth defects. They are associated with high or low incidence of hospitalization for infective and parasitic, respiratory, ill-defined, and other conditions. The conditions that have been characterized as "discretionary" are indeed the conditions that produce variations in hospital use among Maine communities.

Chart 5

CORRELATION BETWEEN DISCHARGE RATE AND PERCENTAGE OF DISCHARGES IN VARIABLE DIAGNOSIS GROUPS

26 Maine Areas, 1976



Detailed Tables of Utilization Indicators by Area and Diagnosis

The theme of this report throughout has been that of the widespread variations in hospital use that exist among Maine areas. Details of the variations at the levels of area and diagnosis are presented in full in Series C of Appendix tables.

The tables show, for each possible combination of 26 areas and 14 diagnosis groups, the discharge rate, average length of stay, and patient day rate, together with the ratios of each to the comparable state-wide indicator. All indicators are age-adjusted. The data in the Series C tables look like these examples:

Diagnosis Group: Respiratory

	Indicators			Area-to-State Ratios		
Area	Disch.Rate	Av. L.O.S.	Day Rate	Disch.Rate	Av. L.O.S.	Day Rate
State	16.3	5.7	92.3	1.00	1.00	1.00
Area 9	9.7	4.8	47.4	.60	.85	.51
Area 12	24.9	5.4	134.1	1.53	.95	1.45

The data shown here are for the diagnosis group, respiratory conditions. The state-wide indicators show that Maine's discharge rate was 16.3 per thousand population, average length of stay 5.7 days and patient day rate 92.3 per thousand. Area 9 had utilization much lower than the state norm. Its discharge rate of 9.7 per thousand was .60 times, or 60% of, the state-wide discharge rate. Its average stay was also below the state level (ratio = .85), and its patient day rate just about half (ratio = .51) of the state rate. Area 12, on the other hand, had discharge rate and patient day rate each about half again as high as the state rates. Thus, two areas had utilization rates that were 50% below, and 50% above, the state rate. The higher of the two had three times as many people hospitalized for respiratory conditions as did the lower.

The two areas are similar in population size and characteristics, and they are right next to each other geographically.

Similar instances abound among the areas and diagnoses. Unfortunately, the ability to identify all such instances is severely restricted by confidentiality constraints. Because the area data may by implication identify the local hospital located in the area, the policy is that area level data are confidential, just as hospital-specific data are. The areas are identified in the tables by code numbers only.

Obviously, this limits the uses to which the data may be put. In the distribution of this report, arrangements have been made to identify areas to representatives of the hospitals in the areas. This is intended to allow at least some use of the data by concerned parties. Other parties needing to know area identities will have to obtain them from the various individual hospitals, if at all.

Even the indicators without area identifiers are useful. They document the ranges within which the indicators fall, they show the number and extent of statistical outliers for the various diagnoses, and they demonstrate the consistency of some of the relationships featured in this report (most notably the consistent similarity between the ratios for discharge rates and patient day rates as opposed to the dissimilarity of average stay ratios from the other two).

Summary of Findings

This report was written to follow through on a previous report which used 1974 data to define hospital-based geographic areas for analysis and to compute population-based hospital discharge rates for the areas, and which observed widespread variations in the rates across areas.

This report is based on 1976 data from a state-wide 100% discharge data file as reported by all Maine hospitals. Findings are based on state total data and on data for 26 geographic areas of 10,000 or more population. The findings are supported by extensive computations of area indicators, ratios of area indicators to state-wide ones, and correlations among sets of indicators.

The 1976 discharge rates by area were consistently like the rates reported for 1974. The range was wide between high and low rates, and the individual areas retained the same levels of rates.

The earlier rates had been computed so as to adjust for border-crossing between areas, and the effect of referral hospitalizations was thus accounted for. In the current report, the rates were further adjusted for the age structure of the areas' populations, and some areas showed significant changes in their rates. The widespread variations among areas, however, persisted. Both age structure and referral hospitalizations were removed as possible determinants of the variations in hospital use.

Additional indicators were computed for the areas' average length of stay and patient day rates per thousand population. Patient day rate was posited as the preferred measure of overall hospital use. Patient day rate subsumes discharge rate and average stay as expressed in the equation,

$$\frac{\text{Patient Days}}{\text{Population}} = \frac{\text{Discharges}}{\text{Population}} \times \frac{\text{Patient Days}}{\text{Discharges}}$$

or $$\text{Patient Day Rate} = \text{Discharge Rate} \times \text{Average Stay}$$

Patient day rates for 26 Maine areas ranged 2.2 times from the highest area to the lowest; that is, the highest area rate was 2.2 times the lowest. Discharge rates also ranged 2.2 times, and average stay only 1.3 times.

In determining overall levels of hospital use as measured by patient day rate, discharge rate is more important than average stay. That is, average stay is of little worth in explaining variations in hospital use. In explaining the variations, it is more important to know how many people are hospitalized in the first place than it is to know how long they stay once hospitalized.

The same basic indicators - discharge rate, average stay, and patient day rate - were computed for fourteen diagnostic groupings which together cover all hospitalized conditions. The data for diagnosis groups confirmed the overall finding that variations in discharge rate are more important than variations in average stay.

And with a few exceptions, the variations in use for diagnostic conditions were even wider than the variations in overall use. The exceptions were conditions such as neoplasms, pregnancies, and congenital and perinatal conditions, which showed relatively low variation. Other groups including respiratory, infective and parasitic, mental, and ill-defined conditions showed far wider variations.

These latter conditions have been characterized elsewhere as "discretionary" or as relying on individual physician judgment rather than on consensus among physicians with regard to the decision to hospitalitize or not to hospitalize. The data show that it is just these "discretionary" conditions that produce the variations in hospital use among Maine communities. Where there are high use rates, there are high incidences of respiratory, infective and parasitic, mental, ill-defined, or other highly variable conditions. Where there are low use rates, there are low incidences of these conditions. And other conditions such as neoplasms, pregnancies, and birth defects are more nearly constant around the state and have little to do with determining the extent of variations.

The findings set forth above have far-reaching implications, some of them obvious and some not so obvious, for those agencies and organizations responsible for planning, providing, financing, and regulating hospital care in Maine. Illumination of all those implications is left to other contexts.

There is one question, however, that stands out above others in interpreting this report's findings: How much hospital care is enough?

The findings show twice as much hospital care being consumed by residents of some Maine areas as of others. Does this mean that some areas are getting too much hospital care? That some are getting not enough? Or are all areas getting just the right amounts? And if all the amounts are right, why are they so different?

Public policy in Maine would seem to be well served by debate on the above, and related, questions. This report is proferred as reference material, and as stimulus, to that debate.

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9. National Center for Health Statistics, "Utilization of Short-Stay Hospitals: Annual Summary for the United States, 1976": DHEW Publication No. (PHS) 78-1788, NCHS Series 13, No. 37, Hyattsville, Maryland, June, 1978.

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APPENDIX: TABLES

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 1 : Age Group 0-4

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	44,300	42,800	87,100	4.3	4.2	8.5
Augusta	2,900	2,600	5,500	4.4	4.1	8.5
Bangor	4,500	4,200	8,700	4.2	3.9	8.1
Bath	800	800	1,600	4.3	4.4	8.7
Belfast	600	500	1,100	4.2	3.8	8.0
Biddeford	2,300	2,100	4,400	4.5	4.2	8.7
Bridgton	400	400	800	4.0	3.8	7.8
Brunswick	1,700	1,600	3,300	4.8	4.6	9.4
Calais	500	400	900	4.3	3.9	8.2
Caribou	700	600	1,300	4.9	4.6	9.5
Ellsworth	600	600	1,200	4.0	4.0	8.0
Farmington	1,100	1,000	2,100	4.8	4.4	9.2
Fort Kent	900	900	1,800	4.8	4.8	9.6
Houlton	700	600	1,300	4.2	4.0	8.2
Lewiston	4,400	4,400	8,800	4.4	4.4	8.8
Lincoln	500	600	1,100	4.1	4.6	8.7
Machias	500	600	1,100	3.7	3.9	7.6
Millinocket	600	600	1,200	4.9	4.9	9.8
Norway	500	500	1,000	4.2	4.2	8.4
Pittsfield	600	600	1,200	4.7	4.7	9.4
Portland	7,500	7,300	14,800	4.2	4.1	8.3
Presque Isle	1,300	1,200	2,500	4.8	4.5	9.3
Rockland	1,200	1,200	2,400	3.8	3.8	7.6
Rumford	1,000	1,000	2,000	4.1	4.1	8.2
Sanford	900	1,000	1,900	4.0	4.4	8.4
Skowhegan	1,200	1,100	2,300	4.6	4.4	9.0
Waterville	2,500	2,400	4,900	4.5	4.3	8.8

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 2 : Age Group 5-14

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	106,100	101,600	207,700	10.4%	9.9 %	20.3%
Augusta	6,600	6,400	13,000	10.2	9.8	20.0
Bangor	10,800	10,400	21,200	10.0	9.6	19.6
Bath	1,900	1,700	3,600	10.4	9.6	20.0
Belfast	1,400	1,400	2,800	10.4	10.4	20.8
Biddeford	5,100	4,700	9,800	10.3	9.4	19.7
Bridgton	1,000	900	1,900	10.1	8.8	18.9
Brunswick	3,500	3,400	6,900	10.1	9.9	20.0
Calais	1,100	1,000	2,100	10.3	9.5	19.8
Caribou	1,600	1,500	3,100	11.9	11.3	23.2
Ellsworth	1,500	1,400	2,900	10.3	9.6	19.9
Farmington	2,500	2,400	4,900	10.5	10.0	20.5
Fort Kent	2,300	2,200	4,500	13.0	12.4	25.4
Houlton	1,800	1,700	3,500	11.0	10.5	21.5
Lewiston	10,000	9,800	19,800	10.1	9.9	20.0
Lincoln	1,500	1,400	2,900	11.8	11.5	23.3
Machias	1,400	1,400	2,800	9.2	9.2	18.4
Millinocket	1,600	1,500	3,100	12.8	12.0	24.8
Norway	1,300	1,200	2,500	10.2	10.1	20.3
Pittsfield	1,300	1,200	2,500	11.0	9.9	20.9
Portland	18,300	17,500	35,800	10.2	9.7	19.9
Presque Isle	3,000	2,800	5,800	11.4	10.6	22.0
Rockland	3,000	2,900	5,900	9.7	9.3	19.0
Rumford	2,900	2,700	5,600	11.8	11.1	22.9
Sanford	2,200	2,200	4,400	9.5	9.5	19.0
Skowhegan	2,800	2,600	5,400	10.9	10.1	21.0
Waterville	5,700	5,600	11,300	10.4	10.1	20.5

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 3 : Age Group 15-24

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	85,300	87,400	172,700	8.3%	8.5%	16.8%
Augusta	4,400	5,100	9,500	6.9	7.8	14.7
Bangor	12,100	11,600	23,700	11.2	10.8	22.0
Bath	1,300	1,400	2,700	6.9	7.7	14.6
Belfast	1,000	1,100	2,100	7.7	8.3	16.0
Biddeford	4,100	4,100	8,200	8.2	8.2	16.4
Bridgton	800	800	1,600	7.7	7.7	15.4
Brunswick	4,100	2,800	6,900	11.7	8.0	19.7
Calais	700	800	1,500	6.9	7.2	14.1
Caribou	1,100	1,200	2,300	8.2	9.2	17.4
Ellsworth	1,200	1,100	2,300	7.7	7.1	14.8
Farmington	1,900	2,400	4,300	8.1	10.3	18.4
Fort Kent	1,700	1,600	3,300	8.2	9.2	17.4
Houlton	1,400	1,300	2,700	9.1	8.4	17.5
Lewiston	7,900	8,700	16,600	7.9	8.8	16.7
Lincoln	900	900	1,800	7.2	7.2	14.4
Machias	1,100	1,200	2,300	7.8	8.5	16.3
Millinocket	1,000	900	1,900	8.4	7.8	16.2
Norway	900	900	1,800	7.0	7.0	14.0
Pittsfield	900	900	1,800	7.6	7.6	15.2
Portland	13,900	15,500	29,400	7.8	8.6	15.4
Presque Isle	2,300	2,400	4,700	8.7	9.3	18.0
Rockland	2,300	2,300	4,600	7.4	7.4	14.8
Rumford	1,800	1,900	3,700	7.3	7.9	15.2
Sanford	2,100	1,900	4,000	9.2	8.4	17.6
Skowhegan	1,700	2,000	3,700	6.7	7.6	14.3
Waterville	5,100	5,100	10,200	9.1	9.1	18.2

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 4 : Age Group 25-34

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	55,600	57,100	112,700	5.4%	5.6%	11.0%
Augusta	3,600	3,600	7,200	5.6	5.6	11.2
Bangor	6,100	6,100	12,200	5.6	5.6	11.2
Bath	1,100	1,100	2,200	6.0	6.0	12.0
Belfast	700	700	1,400	5.5	5.5	11.0
Biddeford	2,600	2,800	5,400	5.2	5.5	10.7
Bridgton	600	600	1,200	5.4	5.4	10.8
Brunswick	2,400	2,300	4,700	6.8	6.6	13.4
Calais	500	500	1,000	5.0	5.0	10.0
Caribou	700	800	1,500	5.2	5.6	10.8
Ellsworth	800	800	1,600	5.6	5.6	11.2
Farmington	1,300	1,300	2,600	5.6	5.6	11.2
Fort Kent	900	1,000	1,900	4.9	5.3	10.2
Houlton	800	800	1,600	4.9	4.9	9.8
Lewiston	5,300	5,500	10,800	5.4	5.6	11.0
Lincoln	700	800	1,500	5.6	6.1	11.7
Machias	700	700	1,400	4.8	4.8	9.6
Millinocket	700	700	1,400	6.0	6.0	12.0
Norway	600	700	1,300	5.3	5.7	11.0
Pittsfield	700	700	1,400	5.8	5.8	11.6
Portland	9,700	10,300	20,000	5.4	5.7	11.1
Presque Isle	1,500	1,500	3,000	5.7	5.7	11.4
Rockland	1,700	1,600	3,300	5.4	5.1	10.5
Rumford	1,200	1,200	2,400	4.8	4.8	9.6
Sanford	1,100	1,100	2,200	4.9	4.9	9.8
Skowhegan	1,400	1,500	2,900	5.6	5.7	11.3
Waterville	2,800	2,900	5,700	5.1	5.3	10.4

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 5 : Age Group 35-44

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	54,600	58,000	112,600	5.3%	5.7%	11.0%
Augusta	3,500	3,700	7,200	5.4	5.7	11.1
Bangor	5,600	5,900	11,500	5.2	5.5	10.7
Bath	900	1,000	1,900	5.2	5.3	10.5
Belfast	700	800	1,500	5.3	5.6	10.9
Biddeford	2,600	2,900	5,500	5.2	5.7	10.9
Bridgton	500	600	1,100	5.2	5.7	10.9
Brunswick	1,800	1,900	3,700	5.2	5.4	10.6
Calais	600	700	1,300	6.0	6.5	12.5
Caribou	800	800	1,600	5.8	6.0	11.8
Ellsworth	800	900	1,700	5.3	5.7	11.0
Farmington	1,200	1,300	2,500	5.1	5.5	10.6
Fort Kent	900	1,000	1,900	5.2	5.5	10.7
Houlton	900	900	1,800	5.4	5.4	10.8
Lewiston	5,100	5,600	10,700	5.2	5.6	10.8
Lincoln	700	700	1,400	5.9	5.9	11.8
Machias	800	800	1,600	5.3	5.3	10.6
Millinocket	800	800	1,600	6.3	6.3	12.6
Norway	700	700	1,400	5.4	5.4	10.8
Pittsfield	700	700	1,400	5.7	5.7	11.4
Portland	9,600	10,400	20,000	5.4	5.8	11.2
Presque Isle	1,400	1,500	2,900	5.5	5.8	11.3
Rockland	1,700	1,800	3,500	5.6	5.7	11.3
Rumford	1,400	1,400	2,800	5.6	5.9	11.5
Sanford	1,100	1,200	2,300	4.9	5.4	10.3
Skowhegan	1,400	1,500	2,900	5.4	5.8	11.2
Waterville	2,900	3,200	6,100	5.2	5.7	10.9

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 6 : Age Group 45-54

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	55,000	58,400	113,400	5.4%	5.7%	11.1%
Augusta	3,800	3,900	7,700	5.9	6.0	11.9
Bangor	5,300	5,500	10,800	4.9	5.1	10.0
Bath	1,000	1,200	2,200	5.7	6.4	12.1
Belfast	800	800	1,600	5.7	5.7	11.4
Biddeford	2,800	3,000	5,800	5.5	6.1	11.6
Bridgton	600	600	1,200	5.8	5.8	11.6
Brunswick	1,600	1,800	3,400	4.6	5.2	9.8
Calais	600	600	1,200	5.7	5.7	11.4
Caribou	700	700	1,400	5.5	5.5	11.0
Ellsworth	800	800	1,600	5.4	5.4	10.8
Farmington	1,200	1,300	2,500	5.0	5.4	10.4
Fort Kent	800	800	1,600	4.5	4.7	9.2
Houlton	800	900	1,700	5.1	5.5	10.6
Lewiston	5,300	5,800	11,100	5.3	5.9	11.2
Lincoln	700	700	1,400	5.7	5.7	11.4
Machias	900	800	1,700	5.8	5.7	11.5
Millinocket	600	600	1,200	5.2	5.2	10.4
Norway	600	700	1,300	5.1	6.0	11.1
Pittsfield	600	700	1,300	5.3	5.4	10.7
Portland	9,900	10,900	20,800	5.5	6.1	11.6
Presque Isle	1,400	1,400	2,800	5.2	5.2	10.4
Rockland	1,800	1,800	3,600	5.9	5.9	11.8
Rumford	1,500	1,500	3,000	6.0	6.0	12.0
Sanford	1,300	1,300	2,600	5.8	5.8	11.6
Skowhegan	1,400	1,500	2,900	5.4	5.7	11.1
Waterville	3,000	3,200	6,200	5.4	5.7	11.1

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 7 : Age Group 55-64

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	46,400	51,600	98,000	4.5%	5.1%	9.6%
Augusta	3,100	3,400	6,500	4.8	5.3	10.1
Bangor	4,300	5,000	9,300	3.9	4.6	8.5
Bath	900	1,000	1,900	5.1	5.3	10.4
Belfast	700	700	1,400	4.9	4.9	9.8
Biddeford	2,200	2,700	4,900	4.5	5.4	9.9
Bridgton	500	600	1,100	5.0	5.6	10.6
Brunswick	1,400	1,400	2,800	4.0	4.0	8.0
Calais	600	600	1,200	5.4	5.4	10.8
Caribou	500	600	1,100	4.0	4.5	8.5
Ellsworth	700	800	1,500	4.9	5.5	10.4
Farmington	1,000	1,100	2,100	4.4	4.5	8.9
Fort Kent	700	700	1,400	4.2	4.2	8.4
Houlton	800	800	1,600	4.7	4.7	9.4
Lewiston	4,400	5,100	9,500	4.4	5.2	9.6
Lincoln	500	500	1,000	4.3	4.3	8.6
Machias	800	800	1,600	5.3	5.3	10.6
Millinocket	500	500	1,000	3.8	3.8	7.6
Norway	700	700	1,400	5.5	5.5	11.0
Pittsfield	500	500	1,000	4.6	4.6	9.2
Portland	8,200	9,500	17,700	4.6	5.3	9.9
Presque Isle	1,100	1,100	2,200	4.3	4.3	8.6
Rockland	1,500	1,700	3,200	4.7	5.3	10.0
Rumford	1,100	1,200	2,300	4.6	4.8	9.4
Sanford	1,000	1,300	2,300	4.5	5.5	10.0
Skowhegan	1,300	1,400	2,700	5.0	5.3	10.3
Waterville	2,400	2,700	5,100	4.3	4.8	9.1

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 8 : Age Group 65-74

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	31,300	40,200	71,500	3.1%	3.9%	7.0%
Augusta	2,200	2,700	4,900	3.4	4.2	7.6
Bangor	2,700	3,600	6,300	2.5	3.4	5.9
Bath	600	700	1,300	3.1	3.7	6.8
Belfast	400	500	900	3.1	3.6	6.7
Biddeford	1,600	2,200	3,800	3.1	4.5	7.6
Bridgton	400	400	800	4.1	4.1	8.2
Brunswick	900	1,000	1,900	2.5	2.9	5.4
Calais	400	500	900	4.0	4.5	8.5
Caribou	300	300	600	2.4	2.4	4.8
Ellsworth	600	700	1,300	3.8	4.5	8.3
Farmington	700	800	1,500	3.0	3.5	6.5
Fort Kent	400	400	800	2.4	2.4	4.8
Houlton	600	600	1,200	3.5	3.5	7.0
Lewiston	3,000	4,200	7,200	3.0	4.3	7.3
Lincoln	300	400	700	2.7	3.3	6.0
Machias	600	700	1,300	3.8	4.5	8.3
Millinocket	200	300	500	2.0	2.5	4.5
Norway	400	500	900	3.5	4.2	7.7
Pittsfield	400	500	900	3.1	3.9	7.0
Portland	5,200	7,300	12,500	2.9	4.1	7.0
Presque Isle	700	800	1,500	2.6	3.0	5.6
Rockland	1,200	1,400	2,600	3.8	4.7	8.5
Rumford	700	900	1,600	2.9	3.6	6.5
Sanford	800	1,100	1,900	3.6	4.7	8.3
Skowhegan	800	1,000	1,800	3.2	3.8	7.0
Waterville	1,600	2,100	3,700	2.9	3.8	6.7

Series A

Estimated Hospital Service Area Populations by Age and Sex
26 Maine Areas, 1976

Table 9 : Age Group 75+

Hospital Service Area	Number of Persons			% of Area's Total Population		
	Males	Females	Total	Males	Females	Total
MAINE	18,200	29,600	47,800	1.8%	2.9%	4.7%
Augusta	1,300	1,900	3,200	2.0	3.0	5.0
Bangor	1,600	2,800	4,400	1.5	2.5	4.0
Bath	300	500	800	1.7	3.0	4.7
Belfast	300	500	800	1.9	3.5	5.4
Biddeford	800	1,400	2,200	1.6	2.9	4.5
Bridgton	200	400	600	1.9	3.8	5.7
Brunswick	500	800	1,300	1.4	2.2	3.6
Calais	200	300	500	1.9	2.8	4.7
Caribou	200	200	400	1.5	1.5	3.0
Ellsworth	300	500	800	2.2	3.4	5.6
Farmington	400	600	1,000	1.8	2.6	4.4
Fort Kent	300	300	600	1.7	1.7	3.4
Houlton	400	500	900	2.2	2.9	5.1
Lewiston	1,600	2,800	4,400	1.7	2.8	4.5
Lincoln	200	300	500	1.7	2.5	4.2
Machias	400	600	1,000	2.7	4.0	6.7
Millinocket	100	100	200	1.1	1.1	2.2
Norway	300	400	700	2.1	3.5	5.6
Pittsfield	200	300	500	1.8	2.8	4.6
Portland	3,000	5,600	8,600	1.7	3.1	4.8
Presque Isle	400	500	900	1.4	1.9	3.3
Rockland	800	1,300	2,100	2.5	4.1	6.6
Rumford	500	600	1,100	1.9	2.6	4.5
Sanford	400	700	1,100	1.8	3.1	4.9
Skowhegan	500	800	1,300	1.9	2.9	4.8
Waterville	900	1,500	2,400	1.6	2.7	4.3

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 1

Indicator: Discharges

Sex: Total, Male & Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	159,635	9,333	10,248	25,026	21,450	13,887	17,936	19,261	21,468	21,026
Infective & Parasitic	3,924	1,016	482	551	396	219	254	273	338	395
Neoplasms	12,183	94	190	587	840	1,064	1,875	2,443	2,823	2,267
Endocrine,etc.	4,097	221	332	376	354	326	459	579	712	738
Mental	7,037	26	104	1,122	1,461	1,299	1,244	854	582	345
Nervous System	6,615	910	977	408	442	447	598	861	990	982
Circulation	21,223	27	74	268	577	1,299	2,810	4,215	5,689	6,264
Respiratory	16,631	3,566	2,985	1,538	954	718	1,128	1,579	2,068	2,095
Digestive	18,832	750	1,135	2,290	2,014	1,828	2,868	2,812	2,741	2,394
Genito-Urinary	14,549	283	471	1,969	2,789	2,186	2,351	1,626	1,618	1,256
Pregnancy	17,741	5	47	9,936	6,979	733	11	6	6	18
Musc. & Tissue	9,798	196	492	1,350	1,497	1,348	1,590	1,273	1,150	902
Congenital	2,086	897	452	253	136	88	99	70	59	32
Ill-Defined	8,798	566	687	969	883	894	1,180	1,229	1,182	1,208
Injuries	16,121	776	1,820	3,409	2,128	1,438	1,469	1,441	1,510	2,130

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 2

Indicator: Discharges

Sex: Male

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	66,015	5,601	5,693	6,689	5,833	5,470	7,981	9,560	10,430	8,758
Infective & Parasitic	1,776	569	239	231	174	87	103	107	126	140
Neoplasms	4,765	32	96	147	141	156	501	1,080	1,466	1,146
Endocrine,etc.	1,573	126	159	128	156	114	157	207	253	273
Mental	3,128	18	57	436	630	595	578	422	265	127
Nervous System	3,006	497	583	184	182	193	263	381	396	327
Circulation	10,736	15	52	110	240	729	1,689	2,486	2,841	2,574
Respiratory	8,664	2,197	1,525	611	403	327	533	909	1,117	1,042
Digestive	9,272	508	642	1,047	957	896	1,484	1,398	1,340	1,000
Genito-Urinary	4,421	179	235	282	363	375	535	699	993	760
Pregnancy	-	-	-	-	-	-	-	-	-	-
Musc. & Tissue	4,758	113	262	724	850	734	775	564	454	282
Congenital	1,218	590	301	108	62	38	40	39	29	11
Ill-Defined	3,922	338	363	330	320	381	531	584	559	516
Injuries	8,776	419	1,179	2,351	1,355	845	792	684	591	560

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 3

Indicator: Discharges

Sex: Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	93,620	3,732	4,555	18,337	15,617	8,417	9,955	9,701	11,038	12,268
Infective & Parasitic	2,148	447	243	320	222	132	151	166	212	255
Neoplasms	7,418	62	94	440	699	908	1,374	1,363	1,357	1,121
Endocrine,etc.	2,524	95	173	248	198	212	302	372	459	465
Mental	3,909	8	47	686	831	704	666	432	317	218
Nervous System	3,609	413	394	224	260	254	335	480	594	655
Circulation	10,487	12	22	158	337	570	1,121	1,729	2,848	3,690
Respiratory	7,967	1,369	1,460	927	551	391	595	670	951	1,053
Digestive	9,560	242	493	1,243	1,057	932	1,384	1,414	1,401	1,394
Genito-Urinary	10,128	104	236	1,687	2,426	1,811	1,816	927	625	496
Pregnancy	17,741	5	47	9,936	6,979	733	11	6	6	18
& Tissue	5,040	83	230	626	647	614	815	709	696	620
Congenital	868	307	151	145	74	50	59	31	30	21
Ill-Defined	4,876	228	324	639	563	513	649	645	623	692
Injuries	7,345	357	641	1,058	773	593	677	757	919	1,570

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 4

Indicator: Patient Days

Sex: Total, Male and Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	1,116,032	41,807	36,834	108,221	106,336	86,542	129,636	168,470	215,249	222,937
Infective & Parasitic	21,583	4,518	1,631	2,310	1,909	1,284	1,615	1,946	2,955	3,415
Neoplasms	123,590	570	990	2,648	4,309	7,414	16,406	26,982	35,456	28,815
Endocrine,etc.	31,706	1,459	1,556	1,872	2,199	2,243	3,573	4,904	6,931	6,969
Mental	64,257	171	587	10,164	13,435	11,394	10,903	8,434	5,750	3,419
Nervous System	32,567	2,604	2,279	1,949	2,075	2,308	3,122	5,153	6,331	6,746
Circulation	210,817	280	423	1,605	3,673	10,246	24,784	40,416	60,957	68,433
Respiratory	94,450	14,024	7,977	4,972	4,281	3,786	7,337	12,677	18,890	20,506
Digestive	139,787	2,679	4,862	10,193	11,455	12,358	21,311	24,787	26,963	25,179
Genito-Urinary	79,392	1,011	1,651	7,418	12,337	10,144	11,341	10,257	13,183	12,050
Pregnancy	61,179	12	134	33,154	25,091	2,571	40	18	94	65
Musc. & Tissue	75,996	872	2,702	7,099	9,414	9,478	11,577	11,931	12,572	10,351
Congenital	15,296	8,551	1,961	1,317	729	584	770	539	583	262
Ill-Defined	44,820	1,962	1,903	3,170	3,721	3,994	5,856	7,210	8,166	8,838
Injuries	120,592	3,094	8,178	20,350	11,708	8,738	11,001	13,216	16,418	27,889

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 5

Indicator: Patient Days
Sex: Male

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	488,537	25,598	20,477	36,023	33,123	35,853	58,705	83,348	104,142	91,268
Infective & Parasitic	9,335	2,592	770	943	727	605	712	711	1,121	1,154
Neoplasms	53,790	252	497	800	1,013	1,260	4,972	12,543	18,385	14,068
Endocrine,etc.	11,854	766	705	637	911	782	1,152	1,667	2,381	2,853
Mental	28,144	124	313	4,021	5,606	5,381	4,818	4,149	2,489	1,243
Nervous System	14,202	1,515	1,274	954	873	1,157	1,399	2,222	2,621	2,187
Circulation	104,948	203	296	554	1,283	5,706	14,743	24,023	30,424	27,716
Respiratory	48,639	8,596	4,105	2,022	1,755	1,692	3,355	7,223	10,066	9,825
Digestive	64,675	1,670	2,648	4,712	5,099	5,819	10,737	11,172	12,767	10,051
Genito-Urinary	29,508	607	872	1,136	1,368	1,563	2,770	4,862	8,577	7,753
Pregnancy	-	-	-	-	-	-	-	-	-	-
Musc.& Tissue	34,479	518	1,395	3,706	5,248	5,010	5,489	5,112	4,809	3,192
Congenital	9,110	5,676	1,209	630	351	288	303	283	293	77
Ill-Defined	19,465	1,227	985	1,081	1,433	1,540	2,609	3,109	3,732	3,749
Injuries	60,388	1,852	5,408	14,827	7,456	5,050	5,646	6,272	6,477	7,400

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 6

Indicator: Patient Days
Sex: Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	627,495	16,209	16,357	72,198	73,213	50,689	70,931	85,122	111,107	131,669
Infective & Parasitic	12,248	1,926	861	1,367	1,182	679	903	1,235	1,834	2,261
Neoplasms	69,800	318	493	1,848	3,296	6,154	11,434	14,439	17,071	14,747
Endocrine,etc.	19,852	693	851	1,235	1,288	1,461	2,421	3,237	4,550	4,116
Mental	36,113	47	274	6,143	7,829	6,013	6,085	4,285	3,261	2,176
Nervous System	18,365	1,089	1,005	995	1,202	1,151	1,723	2,931	3,710	4,559
Circulation	105,869	77	127	1,051	2,390	4,540	10,041	16,393	30,533	40,717
Respiratory	45,811	5,428	3,872	2,950	2,526	2,094	3,982	5,454	8,824	10,681
Digestive	75,112	1,009	2,214	5,481	6,356	6,539	10,574	13,615	14,196	15,128
Genito-Urinary	49,884	404	779	6,282	10,969	8,581	8,571	5,395	4,606	4,297
Pregnancy	61,179	12	134	33,154	25,091	2,571	40	18	94	65
Musc. & Tissue	41,517	354	1,307	3,393	4,166	4,468	6,088	6,819	7,763	7,159
Congenital	6,186	2,875	752	687	378	296	467	256	290	185
Ill-Defined	25,355	735	918	2,089	2,288	2,454	3,247	4,101	4,434	5,089
Injuries	60,204	1,242	2,770	5,523	4,252	3,688	5,355	6,944	9,941	20,489

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 7

Indicator: Discharge Rate = Discharges per Thousand Population
Sex: Total, Male and Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	155.9	107.2	49.3	144.9	190.3	123.3	158.1	196.6	300.2	439.4
Infective & Parasitic	3.8	11.7	2.3	3.2	3.5	1.9	2.2	2.8	4.7	8.3
Neoplasms	11.9	1.1	0.9	3.4	7.5	9.4	16.5	24.9	39.5	47.4
Endocrine,etc.	4.0	2.5	1.6	2.2	3.1	2.9	4.0	5.9	10.0	15.4
Mental	6.9	0.3	0.5	6.5	13.0	11.5	11.0	8.7	8.1	7.2
Nervous System	6.5	10.5	4.7	2.4	3.9	4.0	5.3	8.8	13.8	20.5
Circulation	20.7	0.3	0.4	1.6	5.1	11.5	24.8	43.0	79.6	130.9
Respiratory	16.3	40.9	14.4	8.9	8.5	6.4	9.9	16.1	28.9	43.8
Digestive	18.4	8.6	5.5	13.3	17.9	16.2	25.3	28.7	38.3	50.0
Genito-Urinary	14.2	3.3	2.3	11.4	24.7	19.4	20.7	16.6	22.6	26.3
Pregnancy	17.3	0.1	0.2	57.5	61.9	6.5	0.1	0.1	0.1	0.4
Musc.& Tissue	9.6	2.3	2.4	7.8	13.3	12.0	14.0	13.0	16.1	18.8
Congenital	2.0	10.3	2.2	1.5	1.2	0.8	0.9	0.7	0.8	0.7
Ill-Defined	8.6	6.5	3.3	5.6	7.8	7.9	10.4	12.6	16.5	25.2
Injuries	15.7	8.9	8.8	19.7	18.9	12.8	12.9	14.7	21.1	44.5

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 8

Indicator: Discharge Rate = Discharges per Thousand Population

Sex: Male

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	132.8	126.3	53.6	78.4	104.9	100.1	145.0	206.2	332.7	480.9
Infective & Parasitic	3.6	12.8	2.3	2.7	3.1	1.6	1.9	2.3	4.0	7.7
Neoplasms	9.6	0.7	0.9	1.7	2.5	2.9	9.1	23.3	46.8	62.9
Endocrine,etc.	3.2	2.8	1.5	1.5	2.8	2.1	2.9	4.5	8.1	15.0
Mental	6.3	0.4	0.5	5.1	11.3	10.9	10.5	9.1	8.5	7.0
Nervous System	6.0	11.2	5.5	2.2	3.3	3.5	4.8	8.2	12.6	18.0
Circulation	21.6	0.3	0.5	1.3	4.3	13.3	30.7	53.6	90.6	141.4
Respiratory	17.4	49.6	14.4	7.2	7.3	6.0	9.7	19.6	35.6	57.2
Digestive	18.7	11.5	6.1	12.3	17.2	16.4	27.0	30.2	42.8	54.9
Genito-Urinary	8.9	4.0	2.2	3.3	6.5	6.9	9.7	15.1	31.7	41.7
Pregnancy	-	-	-	-	-	-	-	-	-	-
Musc. & Tissue	9.6	2.6	2.5	8.5	15.3	13.4	14.1	12.2	14.5	15.5
Congenital	2.5	13.3	2.8	1.3	1.1	0.7	0.7	0.8	0.9	0.6
Ill-Defined	7.9	7.6	3.4	3.9	5.8	7.0	9.7	12.6	17.8	28.3
Injuries	17.7	9.5	11.1	27.6	24.4	15.5	14.4	14.8	18.9	30.8

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 9

Indicator: Discharge Rate = Discharges per Thousand Population

Sex: Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	177.7	87.3	44.8	209.7	273.5	145.2	170.4	188.0	274.8	413.9
Infective & Parasitic	4.1	10.5	2.4	3.7	3.9	2.3	2.6	3.2	5.3	8.6
Neoplasms	14.1	1.4	0.9	5.0	12.2	15.7	23.5	26.4	33.8	37.8
Endocrine,etc.	4.8	2.2	1.7	2.8	3.5	3.7	5.2	7.2	11.4	15.7
Mental	7.4	0.2	0.5	7.8	14.6	12.1	11.4	8.4	7.9	7.4
Nervous System	6.9	9.7	3.9	2.6	4.6	4.4	5.7	9.3	14.8	22.1
Circulation	19.9	0.3	0.2	1.8	5.9	9.8	19.2	33.5	70.9	124.5
Respiratory	15.1	32.0	14.4	10.6	9.7	6.7	10.2	13.0	23.7	35.5
Digestive	18.2	5.7	4.9	14.2	18.5	16.1	23.7	27.4	34.9	47.0
Genito-Urinary	19.2	2.4	2.3	19.3	42.5	31.2	31.1	18.0	15.6	16.7
Pregnancy	33.7	0.1	0.5	113.6	122.2	12.6	0.2	0.1	0.1	0.6
Musc.& Tissue	9.6	1.9	2.3	7.2	11.3	10.6	14.0	13.7	17.3	20.9
Congenital	1.7	7.2	1.5	1.7	1.3	0.9	1.0	0.6	0.8	0.7
Ill-Defined	9.3	5.3	3.2	7.3	9.9	8.9	11.1	12.5	15.5	23.4
Injuries	13.9	8.4	6.3	12.1	13.5	10.2	11.6	14.7	22.9	53.0

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 10

Indicator: Use Rate = Patient Days per Thousand Population

Sex: Total, Male and Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	1090.2	480.0	177.3	626.5	943.3	768.4	1142.8	1719.8	3009.7	4658.9
Infective & Parasitic	21.1	51.9	7.9	13.4	16.9	11.4	14.2	19.9	41.3	71.4
Neoplasms	120.7	6.5	4.8	15.3	38.2	65.8	144.6	275.4	495.8	602.2
Endocrine,etc.	31.0	16.8	7.5	10.8	19.5	19.9	31.5	50.1	96.9	145.6
Mental	62.8	2.0	2.8	58.8	119.2	101.2	96.1	86.1	80.4	71.4
Nervous System	31.8	29.9	11.0	11.3	18.4	20.5	27.5	52.6	88.5	141.0
Circulation	205.9	3.2	2.0	9.3	32.6	91.0	218.5	412.6	852.3	1430.1
Respiratory	92.3	161.0	38.4	28.8	38.0	33.6	64.7	129.4	264.1	428.5
Digestive	136.5	30.8	23.4	59.0	101.6	109.7	187.9	253.0	377.0	526.2
Genito-Urinary	77.6	11.6	7.9	42.9	109.4	90.1	100.0	104.7	184.3	251.8
Pregnancy	59.8	0.1	0.6	191.9	222.6	22.8	0.4	0.2	1.3	1.4
Musc. & Tissue	74.2	10.0	13.0	41.1	83.5	84.2	102.1	121.8	175.8	216.3
Congenital	14.9	98.2	9.4	7.6	6.5	5.2	6.8	5.5	8.2	5.5
Ill-Defined	43.8	22.5	9.2	18.4	33.0	35.5	51.6	73.6	114.2	184.7
Injuries	117.8	35.5	39.4	117.8	103.9	77.6	97.0	134.9	229.6	582.8

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 11

Indicator: Use Rate = Patient Days per Thousand Population

Sex: Male

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	983.0	577.4	192.9	422.4	595.6	655.9	1066.8	1798.0	3322.4	5012.0
Infective & Parasitic	18.8	58.5	7.3	11.1	13.1	11.1	12.9	15.3	35.8	63.4
Neoplasms	108.2	5.7	4.7	9.4	18.2	23.1	90.4	270.6	586.5	772.5
Endocrine,etc.	23.9	17.3	6.6	7.5	16.4	14.3	20.9	36.0	76.0	156.7
Mental	56.6	2.8	2.9	47.1	100.8	98.4	87.6	89.5	79.4	68.3
Nervous System	28.6	34.2	12.0	11.2	15.7	21.2	25.4	47.9	83.6	120.1
Circulation	211.2	4.6	2.8	6.5	23.1	104.4	267.9	518.2	970.6	1522.0
Respiratory	97.9	193.9	38.7	23.7	31.6	31.0	61.0	155.8	321.1	539.5
Digestive	130.1	37.7	24.9	55.2	91.7	106.5	195.1	241.0	407.3	551.9
Genito-Urinary	59.4	13.7	8.2	13.3	24.6	28.6	50.3	104.9	273.6	425.8
Pregnancy	-	-	-	-	-	-	-	-	-	-
Musc. & Tissue	69.4	11.7	13.1	43.5	94.4	91.7	99.8	110.3	153.4	175.3
Congenital	18.3	128.0	11.4	7.4	6.3	5.3	5.5	6.1	9.3	4.2
Ill-Defined	39.2	27.7	9.3	12.7	25.8	28.2	47.4	67.1	119.1	205.9
Injuries	121.5	41.8	51.0	173.9	134.1	92.4	102.6	135.3	206.6	406.4

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 12

Indicator: Use Rate = Patient Days per Thousand Population

Sex: Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	1191.3	379.0	160.9	825.6	1282.1	874.4	1214.4	1649.6	2765.6	4442.0
Infective & Parasitic	23.3	45.0	8.5	15.6	20.7	11.7	15.5	23.9	45.7	76.3
Neoplasms	132.5	7.4	4.9	21.1	57.7	106.2	195.8	279.8	424.9	497.5
Endocrine,etc.	37.7	16.2	8.4	14.1	22.6	25.2	41.4	62.7	113.3	138.9
Mental	68.6	1.1	2.7	70.2	137.1	103.7	104.2	83.0	81.2	73.4
Nervous System	34.9	25.5	9.9	11.4	21.0	19.9	29.5	56.8	92.3	153.8
Circulation	201.0	1.8	1.2	12.0	41.9	78.3	171.9	317.7	760.0	1373.6
Respiratory	87.0	126.9	38.1	33.7	44.2	36.1	68.2	105.7	219.6	360.3
Digestive	142.6	23.6	21.8	62.7	111.3	112.8	181.0	263.8	353.4	510.4
Genito-Urinary	94.7	9.4	7.7	71.8	192.1	148.0	146.7	104.5	114.7	145.0
Pregnancy	116.1	0.3	1.3	379.1	439.4	44.3	0.7	0.3	2.3	2.2
Musc. & Tissue	78.8	8.3	12.9	38.8	73.0	77.1	104.2	132.1	193.2	241.5
Congenital	11.7	67.2	7.4	7.9	6.6	5.1	8.0	5.0	7.2	6.2
Ill-Defined	48.1	17.2	9.0	23.9	40.1	42.3	55.6	79.5	110.4	171.7
Injuries	114.3	29.0	27.3	63.2	74.5	63.6	91.7	134.6	247.4	691.2

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 13

Indicator: Average Length of Stay

Sex:Total, Male and Female

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	6.99	4.48	3.59	4.32	4.96	6.23	7.23	8.75	10.03	10.60
Infective & Parasitic	5.50	4.45	3.38	4.19	4.82	5.86	6.36	7.13	8.74	8.65
Neoplasms	10.14	6.06	5.21	4.51	5.13	6.97	8.75	11.04	12.56	12.71
Endocrine,etc.	7.74	6.60	4.69	4.98	6.21	6.88	7.78	8.47	9.73	9.44
Mental	9.13	6.58	5.64	9.06	9.20	8.77	8.76	9.88	9.88	9.91
Nervous System	4.92	2.86	2.33	4.78	4.69	5.16	5.22	5.98	6.39	6.87
Circulation	9.93	10.37	5.72	5.99	6.37	7.89	8.82	9.59	10.71	10.92
Respiratory	5.68	3.93	2.67	3.23	4.49	5.27	6.50	8.03	9.13	9.79
Digestive	7.42	3.57	4.28	4.45	5.69	6.76	7.43	8.81	9.84	10.52
Genito-Urinary	5.46	3.57	3.51	3.77	4.42	4.64	4.82	6.31	8.15	9.59
Pregnancy	3.45	2.40	2.85	3.34	3.60	3.51	3.64	3.00	15.67	3.61
Musc. & Tissue	7.76	4.45	5.49	5.26	6.29	7.03	7.28	9.37	10.93	11.48
Congenital	7.33	9.53	4.34	5.21	5.36	6.64	7.78	7.70	9.88	8.19
Ill-Defined	5.09	3.47	2.77	3.27	4.21	4.47	4.96	5.87	6.91	7.32
Injuries	7.48	3.99	4.49	5.97	5.50	6.08	7.49	9.17	10.87	13.09

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 14

Indicator: Average Length of Stay

Sex: Males

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	7.40	4.57	3.60	5.39	5.68	6.55	7.36	8.72	9.98	10.42
Infective & Parasitic	5.26	4.56	3.22	4.08	4.18	6.95	6.91	6.64	8.90	8.24
Neoplasms	11.29	7.88	5.18	5.44	7.18	8.08	9.92	11.61	12.54	12.28
Endocrine,etc.	7.54	6.08	4.43	4.98	5.84	6.86	7.34	8.05	9.41	10.45
Mental	9.00	6.89	5.49	9.22	8.90	9.04	8.34	9.83	9.39	9.79
Nervous System	4.72	3.05	2.19	5.18	4.80	5.99	5.32	5.83	6.62	6.69
Circulation	9.78	13.53	5.69	5.04	5.35	7.83	8.73	9.66	10.71	10.77
Respiratory	5.61	3.91	2.69	3.31	4.35	5.17	6.29	7.95	9.01	9.43
Digestive	6.98	3.29	4.12	4.50	5.33	6.49	7.24	7.99	9.53	10.05
Genito-Urinary	6.67	3.39	3.71	4.03	3.77	4.17	5.18	6.96	8.64	10.20
Pregnancy	-	-	-	-	-	-	-	-	-	-
Musc. & Tissue	7.25	4.58	5.32	5.12	6.17	6.83	7.08	9.06	10.59	11.32
Congenital	7.48	9.62	4.02	5.83	5.66	7.58	7.57	7.26	10.10	7.00
Ill-Defined	4.96	3.63	2.71	3.28	4.48	4.04	4.91	5.32	6.68	7.27
Injuries	6.88	4.42	4.59	6.31	5.50	5.98	7.13	9.17	10.96	13.21

SERIES B

1976 Maine State-wide Age-Specific Hospital Statistics

Table 15

Indicator: Average Length of Stay

Sex: Females

Diagnosis Group	Age Group									
	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total All Discharges	6.70	4.34	3.59	3.94	4.69	6.02	7.13	8.77	10.07	10.7
Infective & Parasitic	5.70	4.31	3.54	4.27	5.32	5.14	5.98	7.44	8.65	8.8
Neoplasms	9.41	5.13	5.24	4.20	4.72	6.78	8.32	10.59	12.58	13.16
Endocrine,etc.	7.87	7.29	4.92	4.98	6.51	6.89	8.02	8.70	9.91	8.8
Mental	9.24	5.88	5.83	8.95	9.42	8.54	9.14	9.92	10.29	9.98
Nervous System	5.09	2.64	2.55	4.44	4.62	4.53	5.14	6.11	6.25	6.9
Circulation	10.10	6.42	5.77	6.65	7.09	7.96	8.96	9.48	10.72	11.03
Respiratory	5.75	3.96	2.65	3.18	4.58	5.36	6.69	8.14	9.28	10.1
Digestive	7.86	4.17	4.49	4.41	6.01	7.02	7.64	9.63	10.13	10.8
Genito-Urinary	4.93	3.88	3.30	3.72	4.52	4.74	4.72	5.82	7.37	8.66
Pregnancy	3.45	2.40	2.85	3.34	3.60	3.51	3.64	3.00	15.67	3.6
Musc. & Tissue	8.24	4.27	5.68	5.42	6.44	7.28	7.47	9.62	11.15	11.55
Congenital	7.13	9.36	4.98	4.74	5.11	5.92	7.92	8.26	9.67	8.8
Ill-Defined	5.20	3.22	2.83	3.27	4.06	4.78	5.00	6.36	7.12	7.3
Injuries	8.20	3.48	4.32	5.22	5.50	6.22	7.91	9.17	10.82	13.05

SERIES C

1976 Indicators

Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 1

Diagnosis Group: Infective and Parasitic

ICDA-8 Codes: 000-136

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	3.8	5.6	21.1	1.00	1.00	1.00
Area 1	4.9	5.9	28.8	1.29	1.05	1.36
Area 2	3.3	6.6	21.8	.85	1.18	1.01
Area 3	1.6	8.3	13.3	.41	1.48	.63
Area 4	3.8	5.3	20.0	.97	.95	.92
Area 5	3.3	5.7	18.9	.83	1.02	.83
Area 6	2.6	5.6	14.5	.68	1.00	.69
Area 7	2.6	4.6	11.9	.70	.82	.57
Area 8	2.8	5.2	14.6	.73	.93	.70
Area 9	2.9	4.6	13.2	.74	.82	.61
Area 10	4.0	6.4	25.6	1.05	1.14	1.21
Area 11	3.4	4.7	16.1	.90	.84	.78
Area 12	4.9	5.0	24.7	1.31	.89	1.19
Area 13	4.0	5.8	23.0	1.03	1.04	1.08
Area 14	8.9	4.4	39.4	2.34	.79	1.87
Area 15	3.7	5.8	21.4	.97	1.04	1.02
Area 16	8.4	5.7	48.1	2.21	1.02	2.27
Area 17	2.5	6.2	15.6	.65	1.11	.73
Area 18	5.7	4.5	25.6	1.43	.80	1.15
Area 19	3.6	4.6	16.5	.95	.82	.78
Area 20	2.7	5.5	14.8	.69	.98	.67
Area 21	4.1	4.1	16.8	1.08	.73	.80
Area 22	5.5	4.0	22.2	1.31	.71	.91
Area 23	5.1	7.1	36.3	1.34	1.27	1.70
Area 24	5.4	5.5	29.6	1.42	.98	1.40
Area 25	6.0	6.5	38.8	1.55	1.16	1.83
Area 26	3.7	5.8	21.4	.97	1.04	1.01

	Discharge Rate	Average L.O.S	Day Rate
Mean	4.2	5.5	22.8
Standard Deviation	1.72	.99	9.29
Coefficient of Variation	.410	.179	.407
Ratio: High/Low	5.6	2.1	4.0

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 2

Diagnosis Group: Neoplasms

ICDA-8 Codes: 140-239

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	11.9	10.1	120.7	1.00	1.00	1.00
Area 1	14.8	8.8	131.4	1.25	.87	1.09
Area 2	11.5	9.9	115.7	.97	.98	.95
Area 3	10.0	9.7	98.1	.84	.96	.81
Area 4	11.5	9.0	104.4	.97	.89	.86
Area 5	13.0	9.3	120.8	1.07	.93	.99
Area 6	12.1	10.4	127.1	1.02	1.03	1.05
Area 7	10.2	8.9	92.7	.87	.88	.77
Area 8	10.0	8.9	88.3	.84	.88	.74
Area 9	10.2	9.3	94.3	.86	.92	.79
Area 10	11.3	11.1	126.2	.95	1.09	1.04
Area 11	12.4	8.2	102.1	1.04	.81	.84
Area 12	14.0	9.8	138.4	1.18	.97	1.14
Area 13	14.6	8.8	129.5	1.21	.88	1.06
Area 14	15.7	12.6	199.8	1.32	1.25	1.65
Area 15	13.3	10.6	142.0	1.12	1.04	1.17
Area 16	12.3	11.2	137.6	1.03	1.11	1.14
Area 17	10.2	11.6	119.3	.85	1.15	.98
Area 18	13.3	10.6	139.6	1.10	1.04	1.15
Area 19	13.9	9.8	137.2	1.17	.97	1.14
Area 20	10.7	10.3	110.0	.90	1.02	.92
Area 21	11.8	10.5	125.6	.99	1.04	1.03
Area 22	16.9	9.4	158.1	1.37	.93	1.27
Area 23	16.7	8.7	148.3	1.40	.86	1.21
Area 24	9.8	10.7	105.0	.83	1.06	.88
Area 25	9.6	9.1	89.1	.81	.90	.74
Area 26	11.4	9.1	104.5	.95	.90	.86

	Discharge Rate	Average L.O.S	Day Rate
Mean	12.4	9.9	122.5
Standard Deviation	2.14	1.05	24.98
Coefficient of Variation	.173	.106	.204
Ratio: High/Low	1.7	1.6	2.3

*per 1,000 population

SERIES C

1976 Indicators

Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 3

Diagnosis Group: Endocrine, etc.

ICDA-8 Codes: 240-289

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	4.0	7.7	31.0	1.00	1.00	1.00
Area 1	5.5	7.5	41.1	1.34	.97	1.30
Area 2	6.3	7.3	46.1	1.60	.95	1.51
Area 3	3.4	9.0	30.7	.85	1.17	1.00
Area 4	3.8	6.3	24.0	.94	.82	.80
Area 5	3.1	7.3	22.6	.76	.95	.71
Area 6	3.4	9.0	30.7	.86	1.17	.99
Area 7	3.1	6.5	20.0	.79	.84	.65
Area 8	3.7	7.5	27.9	.92	.97	.90
Area 9	2.8	6.4	18.0	.70	.83	.59
Area 10	3.7	8.8	32.7	.92	1.14	1.05
Area 11	3.9	4.3	16.8	.96	.56	.53
Area 12	7.2	6.4	46.1	1.80	.83	1.48
Area 13	3.7	7.4	27.4	.92	.96	.87
Area 14	5.4	7.4	40.0	1.34	.96	1.29
Area 15	4.5	7.7	34.8	1.10	1.00	1.11
Area 16	6.1	8.1	49.3	1.52	1.05	1.60
Area 17	2.5	9.0	22.4	.62	1.17	.71
Area 18	7.3	6.1	44.7	1.75	.79	1.38
Area 19	4.4	7.3	32.1	1.14	.95	1.07
Area 20	5.0	5.2	25.9	1.23	.68	.84
Area 21	5.4	6.1	32.9	1.41	.79	1.09
Area 22	4.8	6.1	29.4	1.20	.79	.95
Area 23	4.0	9.4	37.5	.94	1.22	1.16
Area 24	4.0	7.3	29.2	1.05	.95	.99
Area 25	5.8	6.1	35.4	1.45	.79	1.15
Area 26	5.8	7.0	40.6	1.47	.91	1.34

	Discharge Rate	Average L.O.S	Day Rate
Mean	4.6	7.2	32.2
Standard Deviation	1.32	1.24	9.03
Coefficient of Variation	.287	.172	.280
Ratio: High/Low	2.9	2.2	2.9

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 4

Diagnosis Group: Mental

ICDA-8 Codes: 290-315

Area	Area Indicators: Discharge Rate*	Area Indicators: Average Length of Stay	Area Indicators: Patient Day Rate*	Area Ratios to State-Wide Indicators: Discharge Rate	Area Ratios to State-Wide Indicators: Average Length of Stay	Area Ratios to State-Wide Indicators: Patient Day Rate
State	6.9	9.1	62.8	1.00	1.00	1.00
Area 1	8.7	6.9	60.4	1.26	.76	.96
Area 2	4.2	8.4	35.4	.61	.92	.57
Area 3	5.5	8.2	45.3	.81	.90	.72
Area 4	7.6	8.6	65.6	1.10	.95	1.03
Area 5	9.3	6.2	57.3	1.30	.68	.86
Area 6	5.4	11.3	61.2	.79	1.24	.97
Area 7	4.4	8.0	35.0	.64	.88	.56
Area 8	4.8	6.8	32.7	.71	.75	.54
Area 9	5.1	10.6	54.2	.75	1.16	.87
Area 10	8.1	8.6	69.6	1.18	.95	1.11
Area 11	8.6	8.6	74.3	1.21	.95	1.14
Area 12	6.7	7.6	51.2	.96	.84	.81
Area 13	5.7	9.9	56.5	.81	1.09	.89
Area 14	6.4	10.4	66.3	.94	1.14	1.07
Area 15	7.5	8.8	66.1	1.09	.97	1.05
Area 16	11.1	11.3	125.9	1.61	1.24	2.00
Area 17	6.6	11.5	75.8	.92	1.26	1.15
Area 18	14.5	6.0	87.4	2.08	.66	1.36
Area 19	7.0	8.5	59.6	1.06	.93	.99
Area 20	3.3	11.7	38.6	.47	1.29	.60
Area 21	6.0	8.4	50.6	.86	.92	.80
Area 22	9.5	11.6	110.2	1.37	1.27	1.74
Area 23	8.8	7.6	66.5	1.27	.84	1.06
Area 24	7.3	6.7	49.1	1.05	.74	.79
Area 25	10.3	6.4	65.8	1.47	.70	1.02
Area 26	7.0	7.0	48.8	1.01	.77	.77

	Discharge Rate	Average L.O.S	Day Rate
Mean	7.3	8.7	61.9
Standard Deviation	2,44	1.82	21.32
Coefficient of Variation	.334	.209	.344
Ratio: High/Low	4.4	1.9	3.9

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 5

Diagnosis Group: Nervous System

ICDA-8 Codes: 320-389

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	6.5	4.9	31.8	1.00	1.00	1.00
Area 1	5.9	3.5	20.5	.91	.71	.65
Area 2	6.7	5.2	35.1	1.04	1.06	1.10
Area 3	6.1	4.0	24.4	.95	.82	.77
Area 4	4.0	3.4	13.7	.62	.69	.44
Area 5	8.2	3.9	31.8	1.25	.80	.98
Area 6	5.4	4.3	23.2	.84	.88	.73
Area 7	5.9	5.0	29.7	.90	1.02	.93
Area 8	5.5	3.7	20.1	.87	.76	.64
Area 9	5.9	5.7	33.4	.90	1.16	1.04
Area 10	6.6	4.9	32.3	1.02	1.00	1.02
Area 11	6.5	5.1	33.2	1.01	1.04	1.04
Area 12	7.6	5.6	42.6	1.15	1.14	1.31
Area 13	7.9	5.3	41.9	1.22	1.08	1.32
Area 14	8.7	7.9	69.0	1.34	1.61	2.13
Area 15	8.3	6.5	53.7	1.28	1.33	1.69
Area 16	9.9	5.5	54.5	1.54	1.12	1.70
Area 17	5.6	5.3	29.8	.86	1.08	.93
Area 18	5.1	4.8	24.7	.78	.98	.78
Area 19	6.7	5.4	36.4	1.05	1.10	1.14
Area 20	4.8	7.6	36.7	.73	1.55	1.13
Area 21	6.2	5.0	31.0	1.01	1.02	1.02
Area 22	5.8	4.2	24.3	.89	.86	.76
Area 23	7.1	5.5	39.3	1.15	1.12	1.26
Area 24	6.3	5.8	36.7	.98	1.18	1.17
Area 25	6.3	5.1	32.1	.96	1.04	.99
Area 26	6.7	5.3	35.2	1.04	1.08	1.11

	Discharge Rate	Average L.O.S	Day Rate
Mean	6.5	5.1	34.1
Standard Deviation	1.30	1.08	11.76
Coefficient of Variation	.200	.212	.344
Ratio: High/Low	2.5	2.3	5.0

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 6

Diagnosis Group: Circulatory System

ICDA-8 Codes: 390-458

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	20.7	9.95	205.9	1.00	1.00	1.00
Area 1	20.3	10.1	205.0	.98	1.01	1.00
Area 2	22.9	9.6	218.7	1.10	.96	1.06
Area 3	17.3	10.3	178.4	.83	1.04	.87
Area 4	17.5	8.7	152.7	.84	.88	.74
Area 5	23.3	10.6	246.1	1.11	1.06	1.19
Area 6	17.1	11.2	190.7	.82	1.12	.93
Area 7	16.6	8.8	145.5	.80	.88	.71
Area 8	17.4	10.4	181.7	.83	1.05	.88
Area 9	17.9	9.6	172.3	.86	.97	.84
Area 10	20.6	11.2	229.8	.99	1.12	1.11
Area 11	21.7	8.4	182.8	1.04	.85	.89
Area 12	22.5	10.0	224.3	1.09	1.00	1.09
Area 13	17.3	9.8	169.9	.83	.99	.82
Area 14	30.9	10.0	309.4	1.49	1.01	1.50
Area 15	20.5	9.4	193.5	.99	.95	.94
Area 16	23.3	11.0	255.5	1.13	1.10	1.24
Area 17	17.1	10.7	182.6	.82	1.07	.88
Area 18	39.3	8.0	313.7	1.89	.80	1.52
Area 19	24.6	9.5	234.0	1.20	.96	1.15
Area 20	32.9	9.0	294.7	1.58	.90	1.42
Area 21	25.5	8.5	217.8	1.21	.86	1.04
Area 22	29.2	8.3	243.0	1.41	.84	1.18
Area 23	28.7	9.7	279.7	1.38	.98	1.36
Area 24	30.5	8.4	255.3	1.46	.84	1.23
Area 25	29.5	9.0	264.9	1.42	.90	1.28
Area 26	27.4	9.9	269.9	1.30	.99	1.29

	Discharge Rate	Average L.O.S	Day Rate
Mean	23.5	9.6	223.5
Standard Deviation	6.00	.93	47.65
Coefficient of Variation	.255	.097	.213
Ratio: High/Low	2.4	1.4	2.1

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 7

Diagnosis Group: Respiratory System

ICDA-8 Codes: 460-519

Area	Area Indicators			Area Ratios to State-Wide Indicators		
	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	16.3	5.7	92.3	1.00	1.00	1.00
Area 1	16.0	6.2	97.9	.98	1.08	1.06
Area 2	19.9	5.5	107.2	1.22	.97	1.18
Area 3	11.5	6.5	75.2	.71	1.14	.81
Area 4	11.5	8.7	99.8	.71	1.52	1.08
Area 5	16.1	5.8	92.6	.99	1.01	1.00
Area 6	11.5	6.1	69.7	.71	1.07	.76
Area 7	9.7	4.7	45.5	.60	.82	.49
Area 8	11.6	5.7	65.7	.71	1.00	.71
Area 9	9.7	4.8	47.4	.60	.85	.51
Area 10	16.4	5.9	96.6	1.01	1.04	1.05
Area 11	15.1	5.3	80.3	.93	.94	.87
Area 12	24.9	5.4	134.1	1.53	.95	1.45
Area 13	13.1	5.4	69.7	.80	.95	.76
Area 14	28.2	5.7	160.7	1.73	1.00	1.74
Area 15	17.6	5.8	100.7	1.08	1.01	1.09
Area 16	25.2	6.0	151.3	1.55	1.06	1.64
Area 17	14.8	5.3	78.5	.91	.93	.85
Area 18	3.2	5.5	191.0	2.16	.96	2.07
Area 19	15.1	6.6	98.9	.93	1.15	1.07
Area 20	17.3	6.2	105.9	1.06	1.08	1.15
Area 21	18.2	5.4	99.4	1.12	.96	1.07
Area 22	19.4	5.0	95.6	1.19	.87	1.04
Area 23	19.7	6.0	117.7	1.21	1.06	1.28
Area 24	24.4	6.7	162.5	1.50	1.17	1.76
Area 25	32.2	6.3	200.8	1.98	1.10	2.18
Area 26	17.2	5.6	96.7	1.06	.99	1.05

	Discharge Rate	Average L.O.S	Day Rate
Mean	18.1	5.8	105.4
Standard Deviation	6.69	.78	39.89
Coefficient of Variation	.370	.134	.378
Ratio: High/Low	3.6	1.9	4.4

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 8

Diagnosis Group: Digestive System

ICDA-8 Codes: 520-577

Area	Area Indicators			Area Ratios to State-Wide Indicators		
	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	18.4	7.42	136.6	1.00	1.00	1.00
Area 1	23.1	7.8	180.3	1.25	1.05	1.32
Area 2	15.2	7.0	106.0	.83	.94	.78
Area 3	18.3	7.6	138.7	.99	1.03	1.02
Area 4	22.1	6.0	133.3	1.19	.81	.98
Area 5	21.8	6.4	139.5	1.17	.86	.99
Area 6	15.6	8.0	124.8	.85	1.08	.91
Area 7	14.0	6.0	83.7	.76	.81	.61
Area 8	14.8	7.2	107.0	.80	.97	.77
Area 9	13.8	7.1	98.6	.75	.96	.72
Area 10	17.5	9.0	157.5	.95	1.21	1.15
Area 11	19.5	7.1	138.3	1.06	.96	1.01
Area 12	29.0	7.0	202.5	1.58	.94	1.49
Area 13	17.7	7.5	133.3	.96	1.01	.97
Area 14	24.1	5.5	133.6	1.32	.75	.98
Area 15	23.0	6.5	150.6	1.25	.88	1.10
Area 16	23.2	7.5	174.4	1.26	1.01	1.28
Area 17	14.6	8.0	117.5	.79	1.08	.86
Area 18	32.0	6.5	208.3	1.71	.88	1.50
Area 19	16.0	7.1	113.3	.88	.95	.84
Area 20	21.0	7.6	159.5	1.15	1.02	1.17
Area 21	18.4	6.7	124.1	1.01	.91	.92
Area 22	24.1	8.5	203.9	1.31	1.14	1.49
Area 23	25.3	8.4	212.1	1.36	1.13	1.54
Area 24	24.9	7.0	173.8	1.36	.94	1.27
Area 25	26.0	7.2	188.3	1.42	.98	1.38
Area 26	17.6	7.3	129.0	.94	.99	.93

	Discharge Rate	Average L.O.S	Day Rate
Mean	20.5	7.2	147.4
Standard Deviation	4.86	.81	36.11
Coefficient of Variation	.237	.113	.245
Ratio: High/Low	2.3	1.6	2.5

*per 1,000 population

SERIES C

1976 Indicators

Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 9

Diagnosis Group: Genito-Urinary System

ICDA-8 Codes: 580-629

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	14.2	5.46	77.6	1.00	1.00	1.00
Area 1	15.5	4.9	76.1	1.08	.90	.97
Area 2	12.9	7.1	91.1	.91	1.29	1.17
Area 3	13.4	5.4	72.8	.95	.99	.94
Area 4	17.0	6.1	103.1	1.20	1.11	1.33
Area 5	14.0	4.9	68.0	.96	.89	.85
Area 6	14.2	5.5	78.7	1.00	1.01	1.01
Area 7	9.5	4.2	40.0	.67	.77	.51
Area 8	10.9	5.0	54.5	.77	.92	.71
Area 9	13.5	5.2	69.7	.94	.95	.89
Area 10	16.9	5.7	95.5	1.19	1.03	1.23
Area 11	13.2	4.8	63.9	.93	.89	.82
Area 12	14.0	5.8	81.2	.98	1.06	1.04
Area 13	13.7	5.1	69.2	.96	.93	.89
Area 14	17.6	5.1	89.6	1.24	.93	1.15
Area 15	13.4	7.0	93.3	.94	1.28	1.19
Area 16	15.7	6.1	95.6	1.10	1.12	1.23
Area 17	11.1	5.7	63.8	.77	1.05	.81
Area 18	29.6	6.0	176.2	2.08	1.09	2.27
Area 19	11.0	5.2	56.9	.78	.95	.74
Area 20	15.1	5.9	89.6	1.05	1.09	1.14
Area 21	15.6	5.9	92.7	1.09	1.08	1.18
Area 22	14.5	4.1	60.0	1.02	.76	.77
Area 23	23.4	5.3	122.9	1.65	.96	1.58
Area 24	15.1	5.1	76.8	1.06	.93	.99
Area 25	15.1	5.3	79.6	1.07	.97	1.03
Area 26	14.7	5.3	77.8	1.04	.97	1.00

	Discharge Rate	Average L.O.S	Day Rate
Mean	15.0	5.5	82.3
Standard Deviation	3.99	.70	25.91
Coefficient of Variation	.266	.127	.314
Ratio: High/Low	3.1	1.7	4.4

*per 1,000 population

SERIES C

1976 Indicators

Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 10

Diagnosis Group: Pregnancy

ICDA-8 Codes: 630-678

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	17.33	3.5	59.8	1.00	1.00	1.00
Area 1	20.00	3.7	73.4	1.14	1.06	1.21
Area 2	23.00	2.8	63.7	1.32	.80	1.06
Area 3	15.9	3.7	58.0	.92	1.05	.97
Area 4	17.7	3.1	53.8	1.01	.89	.90
Area 5	16.1	3.7	59.0	.93	1.06	.99
Area 6	16.9	3.8	63.3	.97	1.09	1.06
Area 7	18.1	3.6	64.5	1.04	1.03	1.07
Area 8	19.6	3.3	63.7	1.13	.94	1.06
Area 9	15.3	3.0	45.6	.88	.86	.76
Area 10	18.1	3.4	61.4	1.05	.98	1.03
Area 11	21.3	3.0	62.4	1.21	.85	1.03
Area 12	15.5	3.5	54.0	.90	1.00	.90
Area 13	19.5	3.3	62.7	1.12	.94	1.05
Area 14	20.5	3.3	67.2	1.16	.95	1.10
Area 15	21.9	3.7	80.9	1.24	1.07	1.33
Area 16	16.5	3.6	59.5	.95	1.04	.99
Area 17	13.9	3.3	44.9	.78	.94	.73
Area 18	27.8	3.6	100.0	1.58	1.04	1.65
Area 19	18.6	3.7	68.5	1.06	1.07	1.13
Area 20	19.4	2.7	52.6	1.08	.79	.85
Area 21	24.3	3.9	93.7	1.41	1.12	1.58
Area 22	17.8	3.3	58.0	1.01	.95	.96
Area 23	19.5	3.2	62.3	1.13	.93	1.05
Area 24	12.4	3.3	40.3	.71	.94	.67
Area 25	16.8	3.7	62.4	.98	1.07	1.05
Area 26	17.7	3.0	51.9	1.02	.85	.87

	Discharge Rate	Average L.O.S	Day Rate
Mean	18.6	3.4	62.6
Standard Deviation	3.29	.32	13.28
Coefficient of Variation	.177	.094	.212
Ratio: High/Low	2.2	1.4	2.3

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 11

Diagnosis Group: Musculo-skeletal, Tissue, etc.

ICDA-8 Codes: 680-738

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	9.6	7.73	74.2	1.00	1.00	1.00
Area 1	8.4	7.7	64.6	.88	.99	.87
Area 2	9.3	8.8	81.8	.97	1.14	1.10
Area 3	8.2	7.1	58.1	.86	.92	.78
Area 4	8.6	7.2	61.6	.89	.93	.83
Area 5	9.8	7.9	77.8	1.02	1.03	1.05
Area 6	8.3	8.4	69.5	.86	1.08	.94
Area 7	10.6	6.4	63.9	1.01	.83	.84
Area 8	7.3	7.2	52.3	.76	.93	.71
Area 9	7.1	6.1	43.3	.74	.79	.58
Area 10	6.8	7.6	51.8	.71	.99	.70
Area 11	7.6	8.3	63.3	.80	1.08	.86
Area 12	11.9	7.5	89.8	1.25	.98	1.21
Area 13	9.7	7.2	69.8	1.01	.93	.94
Area 14	12.2	7.4	89.9	1.28	.95	1.21
Area 15	15.3	9.3	142.5	1.60	1.20	1.92
Area 16	15.4	7.9	121.5	1.61	1.02	1.64
Area 17	9.2	8.8	81.4	.96	1.14	1.09
Area 18	13.3	6.6	88.0	1.36	.86	1.16
Area 19	9.0	7.8	70.2	.94	1.01	.95
Area 20	9.8	6.9	67.8	1.03	.90	.93
Area 21	9.2	8.6	79.0	.96	1.11	1.06
Area 22	11.0	6.8	74.3	1.15	.87	1.02
Area 23	12.2	7.4	90.2	1.26	.96	1.20
Area 24	12.4	6.7	83.1	1.30	.87	1.12
Area 25	15.0	7.9	118.0	1.55	1.02	1.57
Area 26	9.5	8.1	77.1	.98	1.05	1.04

	Discharge Rate	Average L.O.S	Day Rate
Mean	10.3	7.6	78.1
Standard Deviation	2.51	.80	22.2
Coefficient of Variation	.244	.105	.284
Ratio: High/Low	2.3	1.5	3.2

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 12

Diagnosis Group: Congenital & Perinatal

ICDA-8 Codes: 740-779

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	2.0	7.32	14.9	1.00	1.00	1.00
Area 1	2.5	4.3	10.8	1.24	.59	.72
Area 2	1.8	7.6	13.7	.86	1.04	.90
Area 3	2.3	6.3	14.6	1.10	.87	.98
Area 4	7.0	7.0	13.3	.99	.96	.93
Area 5	2.4	5.6	13.5	1.19	.76	.91
Area 6	1.8	7.5	13.5	.87	1.02	.90
Area 7	1.9	7.6	14.4	.92	1.04	.98
Area 8	1.8	8.2	14.7	.89	1.11	.99
Area 9	1.7	6.2	10.6	.84	.85	.71
Area 10	2.1	7.8	16.4	1.04	1.07	1.10
Area 11	2.5	5.1	12.8	1.18	.70	.83
Area 12	1.3	7.9	10.3	.62	1.08	.69
Area 13	2.4	6.3	15.1	1.19	.86	1.02
Area 14	2.8	8.0	22.5	1.41	1.08	1.52
Area 15	2.1	7.2	15.1	1.01	.99	1.01
Area 16	2.3	8.7	20.0	1.12	1.19	1.35
Area 17	1.8	7.7	13.9	.87	1.07	.93
Area 18	3.0	5.6	16.9	1.42	.77	1.10
Area 19	2.1	5.9	12.4	1.01	.81	.82
Area 20	1.9	7.2	13.6	.97	.96	.93
Area 21	2.8	6.9	19.4	1.35	.95	1.27
Area 22	2.2	9.0	19.8	1.09	1.22	1.33
Area 23	2.9	5.7	16.6	1.47	.78	1.16
Area 24	2.8	6.3	17.6	1.40	.86	1.23
Area 25	2.3	6.3	14.6	1.09	.87	.96
Area 26	1.7	5.7	10.0	.82	.80	.67

	Discharge Rate	Average L.O.S	Day Rate
Mean	2.2	6.8	14.9
Standard Deviation	.44	1.16	3.14
Coefficient of Variation	.200	.171	.211
Ratio: High/Low	2.2	2.1	2.3

*per 1,000 population

SERIES C

1976 Indicators

Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 13

Diagnosis Group: Ill-Defined

ICDA-8 Codes: 780-796

Area	Area Indicators			Area Ratios to State-Wide Indicators		
	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient Day Rate
State	8.6	5.1	43.8	1.00	1.00	1.00
Area 1	14.9	4.8	71.6	1.73	.95	1.64
Area 2	8.1	4.6	36.9	.94	.90	.85
Area 3	7.8	5.7	44.3	.91	1.11	1.01
Area 4	8.3	5.1	41.2	.95	1.00	.95
Area 5	8.6	4.2	36.5	1.00	.83	.83
Area 6	5.2	5.5	8.4	.60	1.08	.65
Area 7	5.7	4.3	24.6	.68	.84	.57
Area 8	6.4	4.4	28.2	.75	.85	.64
Area 9	7.8	3.7	29.0	.90	.73	.66
Area 10	8.7	6.2	53.9	1.02	1.21	1.23
Area 11	10.0	4.7	46.8	1.17	.91	1.07
Area 12	12.5	4.8	59.8	1.45	.94	1.36
Area 13	8.4	5.2	43.5	.96	1.02	.98
Area 14	12.9	4.1	52.3	1.50	.80	1.20
Area 15	12.3	4.9	60.6	1.43	.94	1.38
Area 16	10.7	5.5	59.5	1.25	1.09	1.36
Area 17	6.4	5.9	37.8	.74	1.15	.85
Area 18	18.6	4.6	85.5	2.11	.91	1.92
Area 19	10.0	5.1	50.0	1.18	.99	1.17
Area 20	10.3	4.6	47.6	1.21	.90	1.09
Area 21	17.4	4.6	81.1	1.98	.89	1.77
Area 22	14.0	4.3	61.5	1.72	.84	1.44
Area 23	8.9	4.7	41.1	1.03	.92	.95
Area 24	15.8	5.4	86.2	1.81	1.06	1.91
Area 25	9.1	4.1	37.3	1.05	.80	.84
Area 26	6.5	3.9	24.6	.72	.76	.55

	Discharge Rate	Average L.O.S	Day Rate
Mean	10.2	4.8	48.8
Standard Deviation	3.61	.63	17.89
Coefficient of Variation	.354	.131	.367
Ratio: High/Low	3.6	1.7	3.5

*per 1,000 population

SERIES C

1976 Indicators
Discharge Rate, Average Length of Stay, and Patient Day Rate

Table 14

Diagnosis Group: Injuries

ICDA-8 Codes: 800-999

	Area Indicators			Area Ratios to State-Wide Indicators		
Area	Discharge Rate*	Average Length of Stay	Patient Day Rate*	Discharge Rate	Average Length of Stay	Patient D Rate
State	15.8	7.46	117.8	1.00	1.00	1.00
Area 1	18.7	7.6	142.7	1.18	1.02	1.19
Area 2	13.0	7.3	94.6	.82	.98	.79
Area 3	11.6	9.0	104.4	.74	1.21	.89
Area 4	17.1	6.0	101.8	1.08	.80	.86
Area 5	17.7	7.1	125.5	1.09	.95	1.02
Area 6	13.4	8.8	117.9	.85	1.18	1.00
Area 7	14.3	6.1	87.1	.89	.82	.73
Area 8	16.6	7.3	120.6	1.05	.97	1.02
Area 9	11.0	8.6	94.3	.70	1.15	.80
Area 10	12.2	8.6	104.7	.77	1.15	.89
Area 11	17.3	8.3	142.9	1.09	1.11	1.19
Area 12	23.2	8.1	187.4	1.47	1.08	1.59
Area 13	16.6	6.5	108.7	1.04	.88	.91
Area 14	20.4	7.2	146.9	1.30	.97	1.25
Area 15	18.0	6.8	122.9	1.13	.92	1.03
Area 16	19.9	8.0	159.8	1.26	1.08	1.35
Area 17	13.1	8.0	104.6	.82	1.07	.87
Area 18	34.3	5.8	198.3	2.13	.77	1.65
Area 19	16.0	6.8	109.5	1.02	.92	.93
Area 20	15.4	5.6	86.0	.97	.75	.73
Area 21	13.8	5.7	78.1	.87	.76	.66
Area 22	20.6	5.1	105.3	1.31	.68	.89
Area 23	17.4	7.1	123.5	1.11	.95	1.05
Area 24	15.5	7.0	108.8	.97	.94	.90
Area 25	26.8	6.5	175.0	1.69	.87	1.47
Area 26	16.8	6.6	111.0	1.06	.89	.94

	Discharge Rate	Average L.O.S	Day Rate
Mean	17.3	7.1	121.6
Standard Deviation	5.00	1.07	31.00
Coefficient of Variation	.289	.151	.255
Ratio: High/Low	3.1	1.8	2.5

*per 1,000 population