

Evaluating Health Planning Issues at the Community Level

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Abstract

This study was a brief review of issues related to health planning in the metropolitan area of Syracuse, New York. It suggested that population demographics and health care utilization can have an impact on the use of services at the community level. The study suggested that the utilization of services can be associated with patient demographics. In this study, younger populations were associated with lower use of hospital inpatient care. The data have also suggested that larger numbers of younger populations are not necessarily related to opportunities for expanding local health care providers. Younger populations can be associated with lower per capita use of services. The data demonstrated that there were substantial reductions in hospital discharges for adult medicine. Total discharges declined by 3999 patients between the seven months in 2019 and 2023. The data also demonstrated that there were notable reductions in hospital discharges for adult surgery.

Keywords

Hospitals, Acute Care, Ambulatory Care, Health Planning

1. Introduction

In recent years, the expenses of health care have become a major challenge to the economy of the United States. Health care costs have increased substantially during the twentieth and twenty-first centuries [1] [2].

Health care expenses have been addressed by both the public and private sectors of the economy. The public sector has been challenged by public payors including Medicare and Medicaid. The private sector has been impacted by private insurance payors [3] [4].

An important component of this situation has been the relationship between

health care utilization and costs. Hospital expenses have emerged as a major component of these expenses. It appears that the need for health care is not always addressed by recognition of the amount of the related costs [4] [5].

One aspect of this situation has been the coronavirus and its impact. Both the public and private sectors have recognized the importance of addressing the virus for hospitals and other providers, however, this recognition has frequently not been accompanied by the need to use and manage health care efficiently.

As a result of this lack of recognition, the health care expenses and the impact on society and the economy have not been addressed. At both the national and community levels, this situation has not taken advantage of opportunities to address both the need for health care and opportunities to provide it in an efficient manner [6].

At the community level, these conditions have sometimes resulted in public interest in adding provider capacity, such as hospital inpatient beds, without addressing their economic impact. This condition can result in developing additional capacity without using the resources that already exist. This situation has been true of hospital beds and other services [5] [7] [8].

2. Population

This study evaluated the availability of hospital inpatient beds in the metropolitan area of Syracuse, New York. This area includes three large hospitals: Crouse Hospital (17,715 inpatient discharges, excluding well newborns, 2022), St. Joseph's Hospital Health Center (18,277 inpatient discharges), and Upstate University Hospital (28,106 inpatient discharges).

These hospitals provide primary and secondary acute care services to an immediate service area with a population of approximately 600,000. They also provide tertiary services to the eleven-county Central New York Health Service Area with a population of 1,400,000.

Historically, the Syracuse hospitals have addressed health planning issues at the community level. A number of these projects have included the Hospital Executive Council [9].

3. Method

This was a short study focusing on the need for inpatient hospital beds related to specific health planning issues at the community level. The first component involved bed need methodologies and the factors that have driven them. The second component focused on changes in the actual utilization of major inpatient services.

The study was based on the need for hospital inpatient beds for these two factors. It was not intended to analyze a full range of issues related to these subjects.

This study focused on the need for hospital inpatient beds. This need has been defined by theoretical terms, such as bed need methodologies. It has also been defined by changes in the actual utilization of services.

In the metropolitan area of the Syracuse hospitals, inpatient bed need methodologies have been developed to focus on the age-based demographics of populations and the related health care utilization. The demographics have been defined by the United States Census and the Cornell University Program on Applied Demographics.

The utilization of health care has been defined by existing health care services, especially inpatient hospital care. The reduction of inpatient care has been an important indicator of the efficiency or lack of efficiency of inpatient care.

The utilization of inpatient care has been based on standard indicators such as hospital admissions/discharges and inpatient lengths of stay. These indicators and related costs determine the efficiency of care at the community level.

The utilization of health care at the community level has also been defined by changes in the use of hospital care during the recent past, especially in the last five years. This utilization includes inpatient acute care such as medical and surgical services.

The study data concerning inpatient hospital care has been based on inpatient adult medicine and adult surgery, the two largest categories of inpatient acute care beds. These services have exerted the largest impact on health care efficiency during the past several years. They have also been the principal drivers of health care expenses.

The study design for the second component was based on data collected by the Hospital Executive Council related to adult medicine and adult surgery in the Syracuse hospitals. This information is collected and distributed on a daily and monthly basis by the Council as part of its planning activities.

4. Results

This study focused on the evaluation of specific aspects of hospital utilization at the community level in the metropolitan area of Syracuse, New York. The first component of the study involved hospital bed need at the community level. Relevant data are summarized in **Table 1**.

This information was based on the two most important indicators of the need for hospital inpatient services, hospital admissions and discharges per population and hospital lengths of stay. Both of these indicators have a major impact on the use of inpatient services per population.

The study data demonstrated the relationship between the utilization of inpatient services and community populations by age level. Beds per population and

Table 1. Hospital bed need indicators, Syracuse hospitals.

	Bed Need Ranges	Mean Lengths of Stay
Aged 18 - 44 Years	20 - 61	4.2 Days
Aged 45 - 64 Years	45 - 94	6.0 Days
Aged 65 - 84 Years	99 - 250	6.5 Days
Aged 85 Years & Over	180 - 615	6.2 Days

inpatient lengths of stay increased in direct proportion to the size of local populations.

The study data indicated that hospital admissions and discharges per population increased with rising age levels in the Syracuse hospitals. Admission rates ranged from 20 to 61 discharges per 1000 population for inpatients aged 18 - 44 years, to 45 - 94 discharges per population for patients aged 45 - 64 years, to 99 - 250 per 1000 population for patients aged 65 - 84 years, to 180 - 615 per 1000 population for patients aged 85 years and over. The highest use involved patients aged 85 years and over.

The study also demonstrated that hospital lengths of stay were associated with patient demographics. Older patients generated longer stays, although the changes were not as well defined as for admissions and discharges.

One of the most well-defined differences in the data was the low level of hospital discharges for younger adults. This group, which included the largest segment of the population, used hospital inpatient services at a rate of only two to six percent of the inpatient hospital population. Younger adults were not a major driver of the use of health care in the population.

The second component of the study included developments associated with inpatient hospital utilization and their impact. Examples from the metropolitan area of Syracuse, New York are summarized in **Table 2**.

This information identified changes in the use of hospital inpatient services during the most recent five year period. It was based on inpatient data for adult

Table 2. Inpatient hospital discharges, adult medicine and adult surgery, Syracuse hospitals, January-July 2019, 2021, 2023.

Adult Medicine	Jan.-Mar.	Apr.-Jun.	Jul.	Total
2019	9387	9544	3243	22,174
2021	8915	9384	3160	21,459
2023	7732	7826	2617	18,175
Difference 2019 vs. 2023	-1655	-1718	-626	-3999
Percent Difference 2019 vs. 2023	-17.63	-18.00	-19.30	-18.03
Adult Surgery	Jan.-Mar.	Apr.-Jun.	Jul.	Total
2019	5266	5363	1815	12,444
2021	3863	4823	1634	10,320
2023	3949	4075	1372	9396
Difference 2019 vs. 2023	-1317	-1288	-443	-3048
Percent Difference 2019 vs. 2023	-25.01	-24.02	-24.41	-24.49

Data definitions: Adult medicine data exclude Diagnosis Related Groups concerning surgery, obstetrics, psychiatry, alcohol/substance abuse treatment, rehabilitation, and all patients aged 0 - 17 years. Adult surgery data exclude Diagnosis Related Groups concerning medicine, obstetrics, psychiatry, alcohol/substance abuse treatment, and all patients aged 0 - 17 years.

medicine and adult surgery, the two inpatient services that have been most utilized and the most expensive. These services have also been the health care services with the highest costs for providers and payors. The data in **Table 2** were based on the most recent time periods for the past five years.

The data demonstrated that there were substantial reductions in hospital discharges for adult medicine. Total discharges declined by 3999 patients between the seven months in 2019 and 2023. This decline amounted to approximately 18 percent of the 2019 population for this service.

The data also demonstrated that there were notable reductions in hospital discharges for adult surgery. During the seven-month period, total discharges declined by 3048, a reduction of 24.49 percent when compared with the 2019 population for this service.

Additional information developed by the Syracuse hospitals has suggested that much of the decline in hospital discharges during the past two years has been produced by the movement of hospital utilization from inpatient to outpatient care. Data concerning the severity of illness of hospital care has suggested that much of the reductions in the use of inpatient hospital services have involved patients with low severity of illness.

These changes can be generated by the increased prevalence of physician-owned ambulatory surgery centers. They can also be produced by patients who are interested in greater access to outpatient care.

The information in **Table 2** shows that changes in health care utilization can occur at the community level. They can also be associated with efforts to reduce health care expenses.

5. Discussion

This study was a brief review of issues related to health planning in the metropolitan area of Syracuse, New York. It suggested that population demographics and health care utilization can have an impact on the use of services at the community level. The study was limited to these issues, rather than a wide range of subjects.

The study suggested that the utilization of services can be associated with patient demographics. In this study, younger populations were associated with lower use of hospital inpatient care. This relationship should be considered by economic development staff.

The data have also suggested that larger numbers of younger populations are not necessarily related to opportunities for expanding local health care providers. Younger populations can be associated with lower per capita use of services.

The study also demonstrated that changes in health care utilization and related costs cannot be predicted with a high degree of accuracy. The movement of large numbers of hospital inpatients to outpatient services in recent years probably could have been foreseen. The rate and volume of this migration can be market-specific and difficult to predict.

The results of this study contained examples of developments in hospital in-patient care and related issues in one community. These issues suggested that the need for health planning was associated with the needs of the business community including the demographics and efficiency of the local community. Additional developments concerning these subjects will probably emerge.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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