

Downsizing Health Care in the Community

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Abstract

This study reviewed recent changes in health care utilization in the health care providers of Syracuse, New York. The data indicated the largest decline in the numbers of inpatient volumes involved adult surgery and orthopedics. Numbers of inpatient discharges for this service declined by more than 2900 discharges for the combined Syracuse hospitals. The data also indicated that adult medicine discharges declined by more than 2600 during this time. For Diagnosis Related Groups with discharge differences of 30 or more, adult medicine discharges declined by 451 in neurology, 943 in respiratory medicine, and 625 in circulatory medicine. It was estimated that the value of the inpatient discharges amounted to approximately \$1,740,000 in adult surgery and more than \$1,560,000 for adult medicine. The savings that were achieved in this process related to staffing, pharmaceuticals, and testing.

Keywords

Hospitals, Health Care, Health Care Costs

1. Introduction

Health care in the United States is changing. During the twentieth century, major providers and payors supported the utilization of care at the community and regional levels [1].

During the twentieth century, health planning programs were supported, in part, out of the need to limit the size of the health care sector. In the United States, the health care sector became a burden on the national economy. These issues led to the development of health planning programs at the national and local level [2] [3].

In the twenty-first century, changes in the delivery of care have altered these circumstances. Clinical issues, such as the coronavirus and other diagnoses, shifted interest in health care to other subjects. This resulted in greater attention

to clinical care and less on economics.

Many of these changes have involved inpatient care and related utilization. These included inpatient acute care in hospitals, long-term care in nursing homes and home health care, and ambulatory care in a variety of settings. Each of these levels of care was essential to the future of health care. Each of them also contributed to the national economy [4] [5].

Historically, inpatient acute care has been focused on acute hospitals. They have also included several levels of utilization and care, such as adult medicine, adult surgery, obstetrics, pediatrics, and mental health.

In the United States, increased attention has focused on downsizing components of health care systems. At the community level, providers and payors have found that they could no longer support large enough expenditures to support some levels of health care services or services in their current configurations.

This study summarizes recent efforts to downsize provider health care services in one community. It suggests that this approach could help support the outcomes and the efficiency of care [6].

2. Population

This study reviewed recent changes in the utilization of health care in the metropolitan area of Syracuse, New York. It focused on recent developments with respect to the downsizing of services.

The Syracuse hospitals include Crouse Hospital (17,309 inpatient discharges excluding well newborns 2023); St. Joseph's Hospital Health Center (17,715 inpatient discharges—2023), and Upstate University Hospital (29,967 inpatient discharges—2023) [7].

The combined Syracuse hospitals provide primary and secondary acute care services to a population of approximately 600,000. They also provide tertiary, referral center services to the Central New York Health Service Area with a population of approximately 1,400,000.

Historically, the Syracuse hospitals have worked cooperatively to address issues related to utilization and outcomes in the service area. A number of these efforts have involved the Hospital Executive Council.

3. Method

This study focused on recent changes in the utilization of care for the service area of the Syracuse hospitals. They involved the downsizing of major services, especially inpatient hospital care. The study involved major inpatient services such as adult medicine and adult surgery. Historically, they have been the largest areas of inpatient care. The study emphasized the impact of downsizing on the utilization process.

Hospital discharges for adult medicine and adult surgery have been the principal sources of inpatients since the middle of the twentieth century. These services have functioned in cooperation with smaller services such as pediatrics, obstetrics and mental health.

The study was related to changes in the utilization of inpatient acute care that occurred in the first decades of the twenty-first century. Some of these changes were related to the onset of the coronavirus in the United States and elsewhere.

These changes in health care utilization have implications for society and economics in the United States at the community level. They suggest that health care is a changing sector and will probably continue to do so.

This study used inpatient discharge data from the Syracuse hospitals to produce examples of this information. It employed data from adult medicine and adult surgery to generate this information at the community level.

The data were collected from the Syracuse hospitals by the Hospital Executive Council. The data were based on the most recent information that had completed the abstracting process in the hospitals.

The Hospital Executive Council has maintained an inpatient database that includes all major services. It includes inpatient services for the Council's threemember institutions.

This study focused on inpatient discharges for the Syracuse hospitals between January and July 2019 and 2024. This was the most recent period for which complete data were available. This period included the beginning and the conclusion of the coronavirus epidemic.

The study included downsizing of indicators related to inpatient care in the hospitals between 2019 and 2024. Changes in numbers of discharges were emphasized in the analysis of the data.

The initial component of the study focused on numbers of discharges for adult medicine and adult surgery, the services with the highest numbers of discharges. The analysis involved numbers of discharges for the combined Syracuse hospitals between January and July 2019 and 2024. The numbers of discharges reflected downsizing in the hospitals.

The second component of the study focused on changes in severity of illness during the same five-year period. This component reflected differences in levels of inpatient and outpatient care for the combined Syracuse hospitals. The severity of illness was based on a number of utilization and clinical indicators.

This information was evaluated in relation to health care in the Syracuse hospitals. Both the clinical and the financial indicators were included in this process.

4. Results

The initial component of the study focused on numbers of adult medicine inpatient discharges for the combined Syracuse hospitals. This information included Diagnosis Related Groups with discharge differences of 30 patients or more between January and July 2019 and 2024. This information was summarized in **Table 1**.

This information identified reductions in the numbers of discharges by Major Diagnostic Category. It focused on adult medicine and adult surgery, the hospital services with the largest numbers of patients for individual Diagnosis Related

APR DRG/Description		Number of Discharges				
		2019	2024	Difference		
Adul	t Medicine					
MDC	C1—Nervous System					
52	Alteration in Consciousness	244	124	-120		
45	CVA & Precerebral Occlusion W Infarct	708	638	-70		
47	Transient Ischemia	110	41	-69		
55	HEAD Trauma W Coma >1 hr or Hemorrhage	189	123	-66		
53	Seizure	365	316	-49		
58	Other Disorders of Nervous System	157	112	-45		
54	Migraine & Other Headaches	82	50	-32		
MDC	24—Respiratory System					
140	Chronic Obstructive Pulmonary Disease	786	407	-379		
139	Other Pneumonia	905	567	-338		
133	Respiratory Failure	527	423	-104		
145	Acute Bronchitis and Related Symptoms	64	21	-43		
141	Asthma	102	60	-42		
143	Oth Resp Dx Ex Signs, Symptoms & Minor Dx	153	116	-37		
MDC 5—Circulatory System						
194	Heart Failure	1,255	951	-304		
201	Cardiac Arrhythmia & Conduction Dis	535	362	-173		
207	Other Circulatory System Dx	140	77	-63		
198	Ang Pectoris & Coronary Atherosclerosis	115	67	-48		
197	Peripheral & Other Vascular Dis	176	139	-37		
MDC	C6—Digestive System					
249	Other Gastroenteritis, Nausea & Vomiting	356	244	-112		
253	Other & Unspecified GI Hemorrhage	245	182	-63		
241	Peptic Ulcer & Gastritis	252	191	-61		
251	Abdominal Pain	96	44	-52		
254	Other Digestive System Diagnoses	369	324	-45		
247	Intestinal Obstruction	278	240	-38		
248	Maj Gastrointestinal & Peritoneal Infect	193	155	-38		
244	Diverticulitis & Diverticulosis	277	244	-33		

 Table 1. Hospital inpatient discharges by APR diagnosis related group, selected adult medicine and adult surgery major diagnostic categories, Syracuse hospitals, January-July 2019, 2024.

Continued					
MDO	C 7—Hepatobiliary System & Pancreas				
282	Disorders of Pancreas Except Malignancy	310	205	-105	
279	Hepatic Coma & Oth Major Acute Liver Dis	103	34	-69	
284	Disorders of Gallbladder & Biliary Tract	241	183	-58	
MDO	29—Skin, Subcutaneous Tissue & Breast				
383	Cellulitis and Other Skin Infections	598	467	-131	
385	Other Skin, Subcutaneous Tiss & Breast Dis	74	41	-33	
MDO	C10—Endocrine, Nutritional & Metabolic				
420	Diabetes	442	383	-59	
422	Hypovolemia And Related Electrolyte Dis	196	144	-52	
425	Other Non-Hypovolemic Electrolyte Dis	196	158	-38	
MDO	C 11—Kidney & Urinary Tract				
469	Acute Kidney Injury	500	449	-51	
465	Urin Stones & ACQ Upper Ut Obstruction	120	85	-35	
Adul	t Surgery				
MDO	28—Musculoskeletal System & Connective Tissue				
302	Knee Joint Replacement	1,035	301	-734	
301	Hip Joint Replacement	1,130	397	-733	
322	Shoulder & Elbow Joint Replacement	268	65	-203	
313	Knee & Lower Leg Proc Excluding Foot	275	208	-67	
321	Cerv Spinal Fusion/Oth Back & Neck Procs	313	252	-61	
304	Dors/Lumb Fusion Excl Curvature of Back	514	461	-53	
309	Other Significant Hip & Femur Surgery	69	33	-36	
315	Shoulder, Up Arm, Forearm Procedures	119	83	-36	
308	Hip & Femur Fracture Repair	337	303	-34	
MDC 10—Endocrine, Nutritional & Metabolic					
403	Procedures for Obesity	537	309	-228	
MDC 11—Kidney & Urinary Tract					
443	Kidney & UT Procs for Non-Malignancy	107	53	-54	
442	Kidney & UT Procs for Malignancy	131	83	-48	

Data includes patients aged 18 years and over. Source: Hospital Executive Council.

Groups. Through analysis of these Diagnosis Related Groups, the impact of downsizing on the hospital utilization were evaluated at the specific level.

The largest number of reductions in discharges included adult medicine diagnoses. These included the nervous system (451 discharges including CVA), respiratory system (943 discharges including pneumonia and COPD), the digestive system (674 discharges including the stomach and gastrointestinal system), and the circulatory system (625 discharges including heart failure). It also included categories with smaller discharge differences such as the skin and breast (164 discharges), endocrine, nutritional & metabolic system (149 discharges), and the kidney & urinary tract system (86 discharges).

In addition to these categories, the largest numbers of discharge differences for adult surgery included orthopedics (1957 discharges), endocrine, nutritional & metabolic system (228 discharges), and the kidney & urinary tract system (102 discharges).

At the aggregate level, the total reduction in discharges that occurred during the five-year period for the combined hospitals was 2681 for adult medicine and 2938 for adult surgery.

Based on an estimate of \$600 for a late stay hospital inpatient day, these numbers would translate into \$1,560,000 for adult medicine and \$1,740,000 for adult surgery. This reduction would amount to approximately 28 percent of utilization for adult medicine and adult surgery between January and July 2024.

The size of the differences in numbers of discharges reflected the downsizing that occurred among the Syracuse hospitals and other communities during the five year period. This downsizing resulted from the movement of hundreds of inpatients from inpatient hospitalization to ambulatory care and other services. This population included ambulatory surgery and a number of diagnoses and procedures outside inpatient care.

The impact of these changes was considerable. It occurred on different levels. Within the hospital shift, it included variable cost reductions in resources related to staffing, pharmaceuticals, and testing in the hospitals. The changes in the distribution of care were also related to reductions in capital resources of the hospitals. This process was associated with lower amounts of capital and related resources. This process resulted in savings for both providers and payors.

The second component of the study focused on changes in severity of illness in the Syracuse hospitals between January and July 2019 and 2024 for Diagnosis Related Groups with discharge differences of 30 or more. Related data are summarized in **Table 2**.

This information is identified by individual Diagnosis Related Groups and severity of illness. Through this process, the changes in hospital utilization were evaluated through the downsizing process.

This information indicated that for this population, there were substantial differences in the utilization of care in the severity of illness for the combined Syracuse hospitals between January and July 2019 and 2024. These variations related to the impact of downsizing and related subjects.

The data in **Table 2** indicated that a number of adult medicine and adult surgery discharges declined between January and July 2019 and 2024. These reduction appear to have been associated with declines in discharges with Minor and

	Severity of Illness				
	Minor	Moderate	Major	Extreme	Total
Adult Medicine					
MDC 1—Nervous System					
(APR DRGs 45, 47, 52, 53, 54, 55, 58)					
2019	337	702	598	218	1,855
2024	219	502	475	208	1,404
Difference 2024 vs 2019	-118	-200	-123	-10	-451
MDC 4—Respiratory System					
(APR DRGs 133, 139, 140, 141, 143, 145)					
2019	158	685	1,216	478	2,537
2024	70	318	801	405	1,594
Difference 2024 vs 2019	-88	-367	-415	-73	-943
MDC 5—Circulatory System					
(APR DRGs 194, 197, 198, 201, 207)					
2019	209	811	896	305	2,221
2024	156	477	617	346	1,596
Difference 2024 vs 2019	-53	-334	-279	41	-625
MDC 6—Digestive System					
(APR DRGs 241, 244, 247, 248, 249, 251, 253, 254)					
2019	517	783	656	110	2,066
2024	317	574	632	101	1,624
Difference 2024 vs 2019	-200	-209	-24	-9	-442
MDC 7—Hepatobiliary System & Pancreas					
(APR DRGs 279, 282, 284)					
2019	136	257	207	54	654
2024	82	170	131	39	422
Difference 2024 vs 2019	-54	-87	-76	-15	-232
MDC 9—Skin, Subcutaneous Tissue & Breast					
(APR DRGs 383, 385)					
2019	192	297	168	15	672
2024	94	227	169	18	508
Difference 2024 vs 2019	-98	-70	1	3	-164

Table 2. Inpatient adult medicine and adult surgery discharges, selected major diagnostic categories with the largest discharge differences for diagnosis related groups with discharge differences of 30 or greater by severity of illness, Syracuse hospitals, January-July 2019, 2024.

Continued					
MDC 10—Endocrine, Nutritional & Metabolic					
(APR DRGs 420, 422, 425)					
2019	56	354	347	77	834
2024	32	224	335	94	685
Difference 2024 vs 2019	-24	-130	-12	17	-149
MDC 11—Kidney & Urinary Tract					
(APR DRGs 465, 469)					
2019	25	278	264	53	620
2024	10	216	244	64	534
Difference 2024 vs 2019	-15	-62	-20	11	-86
Adult Surgery					
MDC 8—Musculoskeletal System & Connective Tis	sue				
(APR DRGs 301, 302, 304, 308, 309, 313, 315, 321, 3	22)				
2019	1,759	1,877	339	85	4,060
2024	641	988	370	104	2,103
Difference 2024 vs 2019	-1,118	-889	31	19	-1,957
MDC 9—Skin, Subcutaneous Tissue & Breast					
(APR DRG 364)					
2019	26	48	19	4	97
2024	17	32	20	6	75
Difference 2024 vs 2019	-9	-16	1	2	-22
MDC 10—Endocrine, Nutritional & Metabolic					
(APR DRG 403)					
2019	428	103	6	0	537
2024	244	60	2	3	309
Difference 2024 vs 2019	-184	-43	-4	3	-228
MDC 11—Kidney & Urinary Tract					
(APR DRGs 442, 443)					
2019	85	110	35	8	238
2024	56	53	23	4	136
Difference 2024 vs 2019	-29	-57	-12	-4	-102

Source: Hospital Executive Council.

Moderate severity of illness patients.

The data demonstrated that the largest number of patients at lower severity of illness were associated with orthopedic surgery. The number of patients at Minor

severity of illness declined by 1,118 discharges. Among adult surgery patients, orthopedics was associated with a substantial reduction of patients at lower severity of illness.

The study data also demonstrated that a number of adult medicine patients were associated with large numbers of Minor and Moderate severity of illness patients during the five-year period in the Syracuse hospitals. Substantial numbers of lower-severity of illness patients included the digestive system and pancreas (550 discharges), the respiratory system (455 discharges), the circulatory system (387 discharges), and the nervous system (318 discharges). These lower numbers of adult medicine patients were generally non elective patients.

The data in Table 2 indicated that large numbers of adult surgery and adult medicine discharges did not require admission to inpatient care in the Syracuse hospitals. They suggested that this could result in substantial financial savings through other approaches.

5. Discussion

This study reviewed recent changes in health care utilization in the health care providers of Syracuse, New York. It focused on the downsizing of adult medicine and adult surgery, the types of care with the highest inpatient volumes. The study was based on the differences in inpatient hospital discharges between January and July 2019 and 2024. These were the most recent data available at the community level.

The data indicated that the largest decline in the numbers of inpatient volumes involved adult surgery. For Diagnosis Related Groups with differences of 30 or more, numbers of inpatient discharges for this service declined by more than 1100 discharges for the combined Syracuse hospitals. The data also indicated that numbers of adult medicine discharges for Diagnosis Related Groups with differences of 30 or more declined by 451 in neurology, 943 in respiratory medicine, and 625 in circulatory medicine.

The reductions in numbers of hospital inpatient discharges amounted to 2287 in adult surgery and 3092 discharges for adult medicine. It was estimated that the value of the inpatient discharges amounted to approximately \$1,740,000 in adult surgery and more than \$1,560,000 for adult medicine. These components of the downsizing process made it worthwhile to evaluate and address or both providers and payors.

Most of the changes involved the movement of inpatients to ambulatory surgery. Additional patients, such as some injections and nerve blocks, were also moved to office settings.

The savings that were achieved in this process related to staffing, pharmaceuticals, and testing. Most of them were associated with lower use of resources for patients at Minor and Moderate severity of illness.

The study data suggested that the changes in hospital discharges that occurred in these hospitals had a favorable impact on these hospitals. The reduction of inpatient hospitalization generated considerable savings for the providers of care in the community. It also produced savings for local consumers of care.

Conflicts of Interest

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

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