Super-High Utilizer Patients in an Urban Academic Emergency Department:
Characteristics, Early Identification and Impact of Strategic Care Management Interventions

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Background

"Super-high utilizers":
➢ Patients who use the healthcare system with extraordinary frequency and drive up healthcare costs.
➢ Patients with multiple chronic diseases along with substance abuse and psychiatric disorders.

Objective:
➢ Identify appropriate target patients to intervene.
➢ Develop individualized care plans.
➢ Activate care plan regardless of provider team or time of day.
➢ Provide these patients with links to outpatient and community resources.
➢ Decrease ED "boarding" and ED overcrowding.

Hypothesis:
➢ We hypothesize that there will be common variables among the super-high utilizers (SHU) that will allow us to propose a predictive model for early identification of this group.
➢ We further speculate that implementation of the High Utilizer Project will have a consequent beneficial impact on avoidable ED visits, hospitalization rates, hospital bed occupancy, and health system cost savings.

Methods

High Utilizer Program (NYP/WCM ED):
➢ Team of social workers and case managers in collaboration with emergency medicine physicians.

Retrospective chart review:
➢ Adult patients that have presented to NYP/WCM ED 01/01/2017 to 06/30/2020 (3.5 years).
➢ EHR data that has been recorded in these patients' charts.
➢ Length of stay, total cost of hospital stay, admission diagnosis, medical history, psychiatric history, substance abuse history, active medications list, number and rate of readmissions, social characteristics (including social determinants of health), and demographic information.

Main Findings

NYP/Weill Cornell Medical Center Emergency Department (ED):
➢ 10 ≤ Admissions/year
➢ 19 pts identified used 2% of inpatient beds
➢ 1,300 bed-days, 4 beds/day

Healthcare systems may benefit from focused multidisciplinary interventions for super-high-utilizer patients identified in the ED, including individualized care plans and early notification systems. Such targeted approaches to meeting this cohort's medical and psychosocial needs may reduce hospital overcrowding and avoidable hospitalizations while improving healthcare for this vulnerable population.

Results

Table 1: Super-High-Utilizer Emergency Department (ED) Visit, Hospital Admission, and Bed Day Counts before and after Care Plan Intervention (January 2017 to June 2020)

Super-High Utilizer	Pre-Intervention				Post-Intervention		
	ED Visits	Hospital Admissions	Inpatient Bed Days	Intervention Start Date	ED Visits	Hospital Admissions	Inpatient Bed Days
1	210	6	117	4/18/18	6	5	9
2	28	22	141	4/1/19	4	1	0
3	75	2	4	10/26/18	12	0	0
4	39	30	101	1/30/19	23	12	55
5	15	6	24	2/1/19	27	9	69
6	53	32	54	2/16/19	20	4	2
7	105	11	52	4/16/19	19	8	39
8	16	12	68	2/19/19	0	0	0
9	30	22	93	3/7/19	9	5	43
10	37	19	52	3/25/19	11	2	0
11	36	17	38	4/24/19	18	3	5
12	31	26	170	3/7/19	4	3	11
13	136	17	66	3/28/19	69	0	0
14	4	2	10	4/24/19	9	7	28
15	20	3	2	3/15/19	29	1	1
Total	835	227	992		260	60	262
M (SD)	55.67 (55.61)	15.33 (10.09)	66.13 (50.11)		17.33 (16.76)	4 (3.66)	17.47 (23.29)
Median (IQR)	36.0 (24, 64)	17 (6, 22)	54.0 (31, 97)		12.0 (7.5, 21.5)	3 (1, 6)	5.0 (0, 33.5)

Note: IQR = interquartile range.

Discussion

➢ Reduction in ED visits, hospital admissions, healthcare resources.
➢ Improvement in patient satisfaction and quality of life.
➢ Next steps include retiring, modifying, and generating new care plans at regular intervals, in addition to a cost savings analysis.
➢ We also aim to analyze and define common characteristics among SHUs to develop a predictive model of early identification in which to achieve earlier care interventions, reduce avoidable high resource utilization, and improve health outcomes.

References

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