

# Evaluation of a Super Utilizer Case Management Program with Baccalaureate Nursing Students

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## Introduction

### What's the Problem?

- There are many patients who use the emergency department as it was intended
- A small number of patients, or Super Utilizers, make numerous visits to and incur high charges at the ED for issues that could be addressed elsewhere

### Why is it important to reduce ED visits?

- Non-emergent ED visits cause high costs to the hospital which cannot be recuperated
- Increases stress to staff
- Creates longer lines in the department

### What happens if we do nothing?

- Not addressing the issue behind these inappropriate visits perpetuates the problem and contributes to poor health outcomes

### The Intervention – The Super Utilizer Program

- Joint effort at Stormont-Vail HealthCare Continuum of Care & Emergency Departments
- Baker University School of Nursing
- Pairs of senior level nursing students are assigned to a patient for 2 months

## Review of Literature

### Emergent vs. Non-Emergent Visits

- ED visits are not always emergent in nature
- Many times people come in for shelter, convenience, or socialization
- Many patients prefer the ED because they receive better care and respect from HCPs
- If relationship built with care management team at PCP, outcomes increased (Breen & McCann, 2013; Mautner et al., 2013; Michelen, Martinez, Lee, & Wheeler, 2006)

### Case Management in the ED

- Camden Coalition case management program reduced costs by 56% and ED visits by 40% as well as enrolling patients in insurance programs (Green et al., 2010).
- Case managers who developed an individualized plan of care for ED patients significantly reduced the number of ED visits by "frequent flyers" and the number of radiological studies reviewed (Grover, Close, Villarreal, & Goldman, 2010).
- The University of Michigan's Complex Care Management Program focusing on ED patients with complex medical and psychosocial needs found that the number of ED visits was reduced after enrollment in the program (Williams, 2012; Williams, Paik, Haley, & Grammatico, 2014).
- Through continuity of care, those patients who made multiple visits to their primary care provider were less likely to visit the ED (Gill, Mainous, & Nsereko, 2000).
- Case management programs which found housing for homeless individuals with chronic illness reduced ED visits by 24% (Sandowski, Kee, VanderWeele, & Buchanan, 2009).

### Conflicting Data

- One study revealed no difference in ED visits with intensive case management (Horwitz, Busch, Balestracci, Ellingson, & Rawlings, 2005).

## Objectives

### Purpose of the Study

The purpose of this study is to evaluate the effectiveness of the Super Utilizer Program using baccalaureate nursing students as health care coaches. A secondary purpose is to discover and understand the underlying issue(s) for high ED use. Only then can we make recommendations in bettering the program or ways to improve the ED.

### Research Questions

- Does the Student Coaching Model reduce the number of non-emergent emergency department visits by Super Utilizers?
- After enrollment in the program, does the Super Utilizer population have improved access to and utilization of primary care and insurance coverage?
- Is there an increase in the number of community resources used by the Super Utilizers after enrollment in the program?

## Methods

### IRB Approval

### Research Design

- This is an observational retrospective study designed to assess the effectiveness of the Super Utilizer case management program in decreasing the number of emergency department visits.

### Validity & Reliability Testing

- Our data collection sheet was tested with three case studies for inter-rater reliability prior to data collection.

### Subjects

- Selected based on highest charges and highest # of ED visits in a year's time
- Exclusion criteria for the program
  - Homeless without a physical address to receive mail
  - Known violent history
  - Patients who were not responsive to communication attempts
- Patients enrolled in the Super Utilizer Program during the Fall of 2013 and Spring of 2014 academic semesters were examined in this study:
  - 32 total, with 7 repeating the program in the spring semester

### Procedure

- Electronic chart audit of 32 enrollees between the Fall 2013 and Spring 2014 semesters
- Data was collected 6 months prior to and 6 months after enrollment date
- All data was kept confidential and secure in a locked file in the School of Nursing on site. A master list containing each subject's name and assigned study number was kept in a separate locked file to remain confidential at the Baker School of Nursing facility.

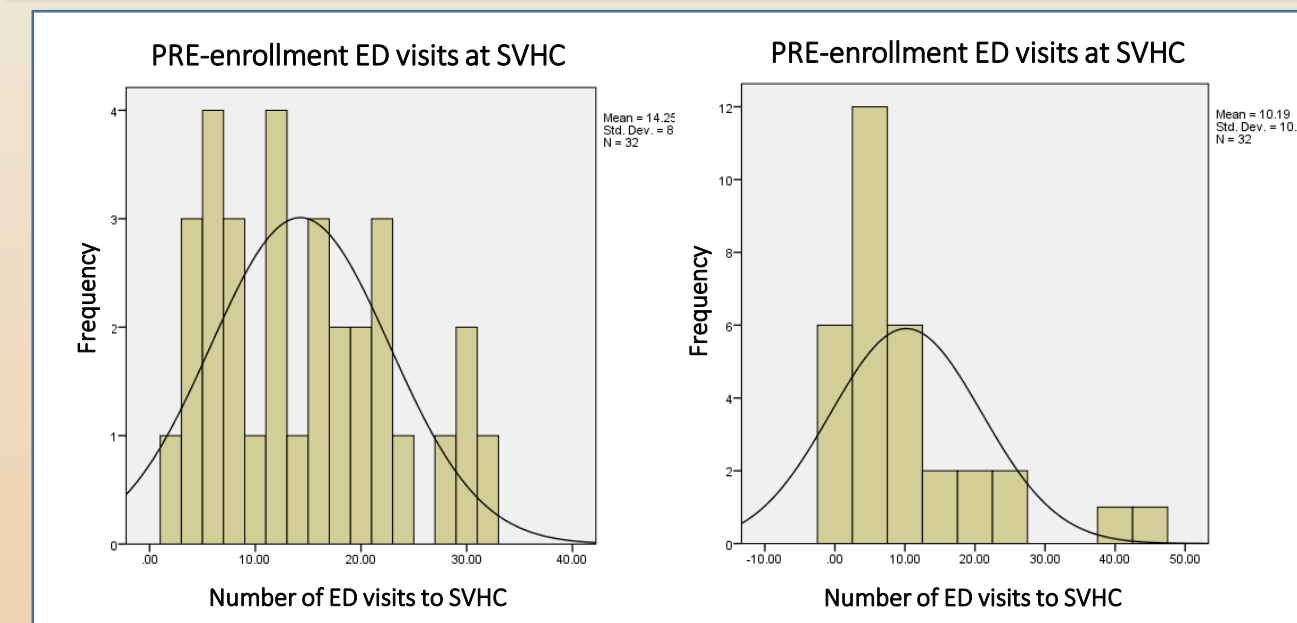
## Results

### 1. Does the program ↓ ED visits?

Table 3 - Paired T-test for number of ED visits

Number of visits	N	Before Program		After Program		df	t	p
		Mean	SD	Mean	SD			
ED visits, SVHC	32	14.12	8.48	10.19	10.81	31	2.14	0.041
Repeaters	7	12.57	4.69	14.71	12.63	7	-0.55	0.603
Non-repeaters	25	14.72	9.29	8.92	10.16	26	2.79	0.010

\* p < 0.05, SVHC = Stormont-Vail HealthCare



### 2. Does the program ↑ Primary Care & Insurance?

Table 4 – Paired T-test for number of other health care visits

Number of visits	N	Before Program		After Program		df	t	p
		Mean	SD	Mean	SD			
PCP visits	32	0.75	1.32	2.38	5.68	31	-1.76	0.088
Repeaters	7	0.86	1.21	6.57	10.42	6	-1.52	0.179
Non-repeaters	25	0.72	1.37	1.20	1.20	24	-1.15	0.261

\* p < 0.05

### INSURANCE

4 people gained insurance, 1 person lost insurance, and 1 person remained uninsured after enrollment. This is not statistically significant (Fisher Exact Test p=0.292)

### 3. Does the program ↑ Resource Use?

Table 5 - Resource usage before and after the program

Resources	Before Program	After Program	Change in use
Food	1 (3.1 %)	2 (6.3 %)	+3.2 %
Shelter	6 (18.8 %)	7 (21.9 %)	+3.1 %
Transportation	13 (40.6 %)	12 (37.5 %)	-3.1 %
Mental Health	16 (50 %)	19 (59.4 %)	+9.4 %
Disease Management	8 (25 %)	8 (25 %)	0.0 %
Pharmacy	2 (6.3 %)	3 (9.4%)	+3.1 %
Health Home or Case Mgmt.	9 (28.1 %)	8 (25 %)	-3.1 %
Rent or Utility Assistance	0 (0.0%)	1 (3.1 %)	+3.1 %
Clothing	1 (3.1 %)	0 (0.0%)	-3.1 %
Other	7 (18.8 %)	5 (15.6 %)	-3.2 %

Resources such as childcare, dental, and workforce not included due to no participant usage before or after program, N = 32, Mgmt. = Management

## Discussion

### Conclusions

- The Super Utilizer Program decreased ED visits for total group and non-repeaters subgroup
- The Super Utilizer Program had no affect on the number of ED visits at surrounding facilities
- Slight increase in insurance coverage for total group
- Slight increase in PCP & Specialist utilization for the total group
- Slight increase in connection to Mental Health resource utilization for the total group
- Chief Complaints showed a moderate decrease for Drug & Alcohol, Pain, & Psych after enrollment

### Limitations

- Small sample size
- Cost was not examined

### Recommendations for Further Research

- Qualitative study
- Cost analysis

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