

# Addressing Non-Urgent Emergency Department Visits and Coordination of Care for High Utilizer Patients: Evaluation of a Pilot Program



Yasmine Adem DNP, MPH, RN, CHES®  
 University of Colorado, Denver College of Nursing Anschutz Medical Campus  
 13120 East 19th Avenue  
 Aurora, CO 80045  
 (775) 830-5361  
[yasmine.adem@ucdenver.edu](mailto:yasmine.adem@ucdenver.edu)

## OVERVIEW

- A pilot program was developed to address the care needs of emergency department (ED) high utilizer patients.
- The key interventions of the program were care coordination and individualized care plans.
- Individualized care plans were created by an interprofessional project team led by a Doctor of Nursing Practice (DNP) student

## LITERATURE REVIEW

High utilizer programs have demonstrated<sup>1, 2</sup> :

- Improved health outcomes
- Increased use of appropriate healthcare services
- Reduced ED visits & inpatient admissions
- Decreased hospital charges
- Improved social outcomes such as housing stability.
- Common interventions within high utilizer programs are care planning, care coordination, case management, and outreach.

### Individualized care planning interventions:

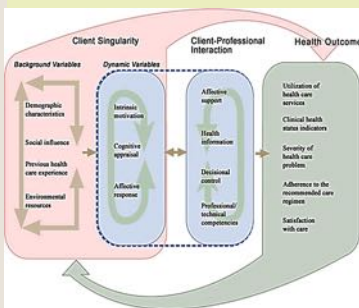
- Decreased number of ED visits<sup>4</sup>
- Long-term impact on decreasing frequent use of the ED<sup>5</sup>
- Decreased exposure to ionizing radiation<sup>6</sup>
- Decreased number of prescribed opioids<sup>6</sup>
- Decreased inpatient hospitalizations<sup>7</sup>

### Care coordination interventions:

- Improved connections for patients with their primary care providers<sup>8</sup>
- Demonstrated success connecting high utilizer patients with a range of community-based resources<sup>9</sup>

## SCIENTIFIC UNDERPINNINGS

The Interaction Model of Client Health Behavior (IMCHB)<sup>10, 11</sup> served as the nursing-based framework to guide the components of the high utilizer pilot program.



## INTERVENTIONS

### Care Plans:

Four pathways:

- Medically complex
- Psychiatric
- Substance abuse/opioid dependence
- No primary care provider/ access to care concerns

### Care Coordination:

- Connecting patients to community resources
- Assisting to make follow up appointments prior to discharge from the ED.

## METHODS

### Design

- Program development, implementation, & evaluation.

### Evaluation Question

- "Will the implementation of a high utilizer program reduce the number of non-urgent ED visits and improve the continuity of care by March 1, 2018?"

### Setting

- 108-bed acute care hospital with an average ED census of 26,000 visits per year.
- 18 bed ED, no trauma designation – similar to level 4. Located in Sparks, NV Washoe County

### Sample

- Convenience sampling
- All patients who visited the ED April '16-March '17 (N=17,972)
- Visits compiled and ranked from highest to lowest.

### Inclusion Criteria

- ≥ 18 years of age
- ≥12 visits to ED in a 12-month timeframe Live in a zip code located in Washoe County or bordering counties
- N=27

### Measures

- Outcome measures:** 1) Non-urgent ED visits 2) Total ED visits 3) Continuity of care (Follow up appointments made and attended) 4) Patient experience and satisfaction with the program & 5) Provider experience and satisfaction with the program.
- Process measures:** 1) Care plan development 2) Care plan implementation 3) Staff education 4) References to the care plan by ED provider 5) Care plan revisions.
- Balancing measures:** 1) Patients will seek emergency care at other EDs at higher rates due to program implementation & 2) Patients will leave the ED without being seen by a provider.

### Analyses

- Wilcoxon signed-rank test : Non-parametric matched data.
- Compared 8 months pre (July '16 to February '17) to 8 months post (July '17 to February '18).
- Control charts
- Sample for analysis (N=24)

## RESULTS

FIGURE 1. TOTAL ED VISITS

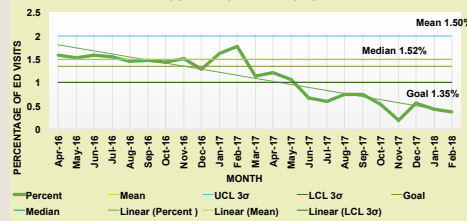


Figure 1. The change in total ED visits represented a 67% decrease (W= 0.000, p=0.012).

FIGURE 2. NON-URGENT ED VISITS (WEIGHTED)

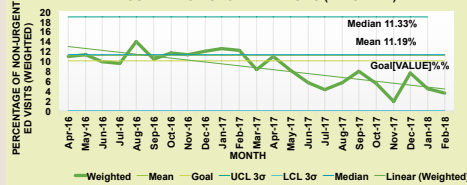


Figure 2. The change in non-urgent ED visits represented a 54% decrease (W= 0.00, p=0.008).

## RESULTS CONTINUED

### Continuity of Care

- Follow up appointments were scheduled for patients before they were discharged from ED for 46% of appointments. 77% of scheduled follow up appointments were attended by program participants.

### Satisfaction & Experience

- Patient:** No surveys were received from program participants by the end of the pilot program.
- Provider:** A response rate of 41%. 57% were either satisfied or very satisfied with the program. 54% were satisfied or very satisfied with their program experience.

### ED Use at Other Hospitals

- The Nevada Health Information Exchange (Nevada HealthIE) was used to track ED use at other local hospitals.
  - Pre-intervention:** 339 total ED visits at other hospitals (52% of patients used emergency services at other hospitals).
  - Post-intervention:** 237 total ED visits to other hospitals (44% of patients used emergency services at other hospitals).

## IMPLICATIONS

- An individualized and interprofessional approach to complex patient scenarios can be effective.
- Building community-based partnerships when developing a care planning program for high utilizers of the ED is essential for successful outcomes.
- Connected data sources such as a health information exchange can be an effective method to improve coordination of care among this patient population.

### Limitations

- Small sample size (n=24)
- Lack of data on patient satisfaction and experience outcomes
- No outcomes measures related to cost (ED charges, uncompensated care) or social factors (housing stability, employment).

## CONCLUSIONS

- The NMMC high utilizer program reduced non-urgent and total ED visits for patients with complex medical and psychosocial needs.
- The program established a process to improve continuity of care by connecting patients with community providers and scheduling primary and specialty care appointments prior to discharge from the ED.
- The combination of evidence based interventions were a primary driver of successful outcomes for this pilot program.

## ACKNOWLEDGEMENTS

- The Versant Center for the Advancement of Nursing (VCAN®) provided grant funding for this project.

## REFERENCES

- Slamy, C. D., & MacKinney, C. A. (2013). *Emergency department super utilizer programs rural health systems analysis and technical assistance project*. Retrieved from <https://cph.uowa.edu/ruralhealth/iles/SuperUtilizers.pdf>
- Walsh, A., Raven, M., Lazar, D., & Pines, J. (2014, April). *Redefining frequent emergency department users* (Issue Brief No. 1). Retrieved from <https://nimsa.gwu.edu/journal/matter/issuebriefs/>
- Sorli, L. J., Leggett, L. E., Lorenzetti, D. L., Noseworthy, T. W., & Clement, F. M. (2015). Reducing frequent visits to the emergency department: A systematic review of interventions. *PLoS One*, 10(4), 1-18.
- Pope, D., Fernandes, C. M., Bouhillelle, F., & Elherington, J. (2000). Frequent users of the emergency department: A program to improve care and reduce visits. *Canadian Medical Association Journal*, 162(7), 1017-1020.
- Grover, C. A., Crawford, E., & Cloos, R. J. (2016). The efficacy of case management on emergency department frequent users: An eight-year observational study. *The Journal of Emergency Medicine*, 51(5), 595-604.
- Abtashed, L., Barruelo, F., Pimentel, L., Comer, A., Browne, B. J., & Hishon, J. M. (2014). High risk care plans effectively decrease emergency department resource utilization. *Annals of Emergency Medicine*, 64(4), S4
- Mercer, T., Bae, J., Kipnes, J., Velazquez, M., Thomas, S., & Seif, N. (2015). The highest utilizers of care: Individualized care plans to coordinate care, improve healthcare service utilization, and reduce costs at an academic tertiary care center. *Journal of Hospital Medicine*, 10(7), 419-424.
- Olkin, R. L., Boccellari, A., Azzar, F., Shumway, M., O'Brien, K., Gels, A., ... & Wachsmuth, C. (2000). The effects of clinical case management on hospital service use among ED frequent users. *The American Journal of Emergency Medicine*, 18(5), 603-608.
- Poremski, D., Harris, D. W., Kahana, D., Pavy, D., Leszcz, M., O'Campo, P., ... & Stergiopoulos, V. (2016). Improving continuity of care for frequent users of emergency departments: Service user and provider perspectives. *General Hospital Psychiatry*, 40, 55-59.
- Cox, C. L. (1982). An interaction model of client health behavior: Theoretical prescription for nursing. *Advances in Nursing Science*, 5(1), 41-66.
- Mathews, S., Seest, J., & Muirhead, L. (2008). The interaction model of client health behavior: A model for advanced practice nurses. *Journal of the American Academy of Nurse Practitioners*, 20(8), 415-422.