



Snohomish County, WA

Human Services  
Research Division

## Frequent Utilizers Project

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### Results in Brief:

Frequent utilizers of emergency medical services in Snohomish County commonly have mental health conditions and/or alcohol and other drug use. While chronic illness is also common, much of EMS utilization is for other primary concerns.

The EMS system is designed to respond to medical emergencies, and as such is not best equipped to provide the care coordination necessary for managing these complex individuals.

Addressing the underlying mental health/alcohol and drug use contributions to high utilization may reduce the use of this costly service and provide more appropriate and complete care to these individuals.

Policy Brief No. 2-2013

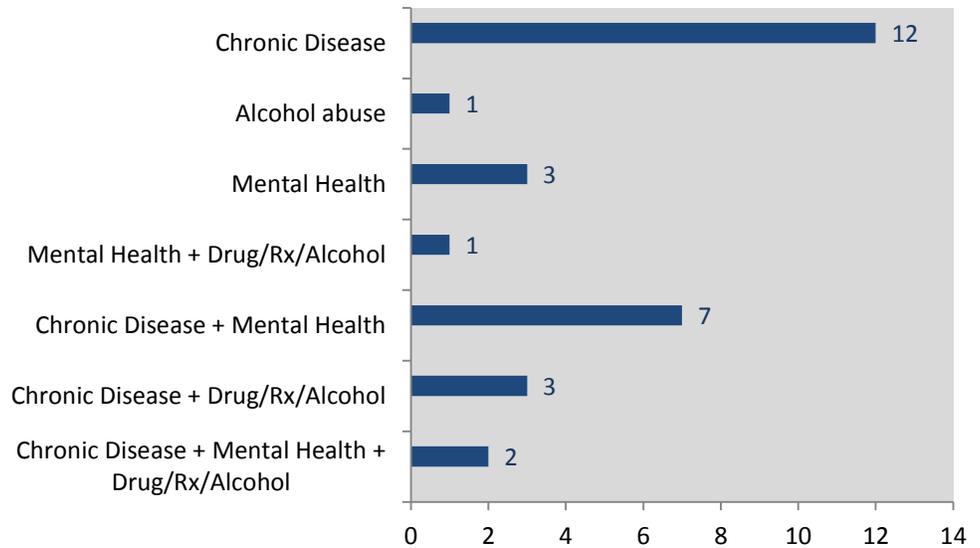
## Frequent Utilization of Emergency Medical Services Associated with Complex Needs for Health Services, Including Mental Health and Substance Abuse

Individuals who frequently contact emergency medical services (EMS) often have complex medical, mental health, substance abuse, and care coordination needs that the current model of EMS service delivery is not best equipped to provide.<sup>1</sup> This report focuses specifically on 29 individuals who had frequent contacts with EMS<sup>2</sup> during a 10-month period from January 1<sup>st</sup> to October 31<sup>st</sup> in 2012.

- The total number of EMS contacts for the 29 top utilizers was 553. The average number of EMS contacts for the top 29 utilizers during this period was 19, ranging from 11 to 42.
- The total number of transports<sup>3</sup> to an Emergency Department (ED) was 420 (average per individual = 14, ranging from 0 to 29). The total number of ED contacts<sup>4</sup> for these same individuals during this time was 575 (average 20, ranging from 0 to 55).

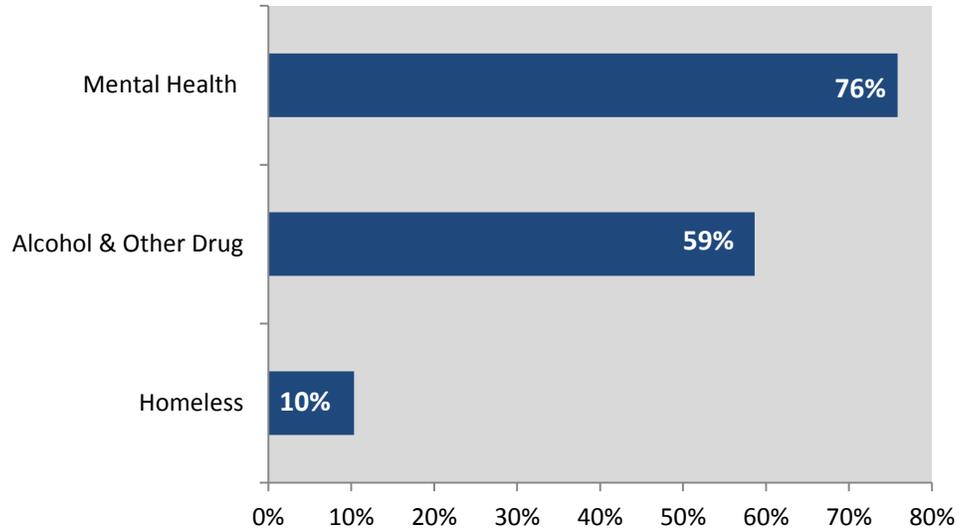
### Frequent Utilizers Reasons for Seeking EMS and ED Attention are Varied and Complex

Researchers categorized the leading causes for contacting EMS:



Notes: Of a total of 29 individuals

## Illicit Drug Use, Alcohol Abuse, Mental Health Conditions, and Homelessness Exacerbate the Problem of High EMS Utilization

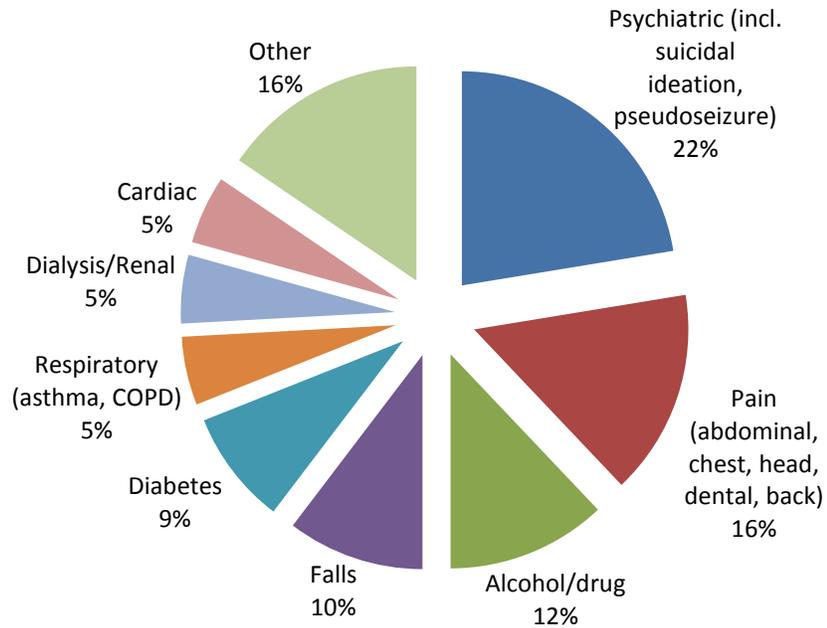


Notes: Of a total 29 individuals.<sup>5,6</sup>

- Of the 29 individuals, 15 (52%) engaged the outpatient services of the North Sound Regional Support Network (mental health service providers) for a total of 951 service days.
- Five individuals received inpatient psychiatric treatment for a total of 98 inpatient days.
- 59% of the 29 individuals had at least one mention of alcohol or drug abuse concerns<sup>6</sup> in their clinical chart notes, yet only one individual received County-funded inpatient detoxification treatment and none received community-based alcohol and drug treatment services during our study period.
- None of these individuals received County housing services.

### Many of These Individuals Need Medical Attention<sup>7</sup>

- 17 of 29 (59%) of the individuals have a serious chronic medical illness, whether it is a leading cause of calls to EMS or not
- 13 of 29 (45%) have diabetes mellitus, a chronic disease which can result in a high level of morbidity and disability
- 9 of 29 (31%) complain of chronic pain
- 11 of the 23 individuals (48%) for whom height and weight data were available<sup>8</sup> are obese (Body Mass Index  $\geq 30$ )



Note: Primary Diagnosis/Chief Complaint for Cause of EMS service call

*Policy Implications:*

- Allowing EMS transport to alternative facilities such as detoxification centers and mental health crisis centers may provide more appropriate and less costly health care to some individuals than transporting to Emergency Departments
- Transport of patients by EMS to alternate destinations will require examination of current reimbursement and risk management practices
- In some cases, re-directing individuals to alternative transport services (HopeLink, cab vouchers) reduced EMS utilization
- Addressing comorbid health conditions such as substance abuse and mental health concerns may reduce EMS utilization
- A small proportion of high EMS utilizers are homeless, but not seeking housing services
- A large proportion of high EMS utilizers have alcohol and drug use concerns, but are not seeking or are unable to access treatment services
- Pain is a primary reason for calling EMS, but pain treatment is complicated by prescription drug addiction and drug-seeking behavior
- Primary, preventive medicine is needed to address obesity, diabetes and asthma management, and falls before emergencies occur
- With multifaceted and complex needs, these individuals may be best served with active care coordination and case management
- Costs associated with services utilization will be presented in future policy briefs

*This project was funded by the Amerigroup Foundation and the Snohomish County Chemical Dependency/Mental Health Program Advisory Board.*

**Technical Notes:**

- <sup>1</sup> Tadros, A. S., Castillo, E. M., Chan, T. C., Jensen, A. M., Patel, E., Watts, K., & Dunford, J. V. (2012). Effects of an emergency medical services-based resource access program on frequent users of health services. *Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors*, 16(4), 541–7. doi:10.3109/10903127.2012.689927
- Weiss, S. J., Ernst, A. a., Ong, M., Jones, R., Morrow, D., Milch, R., O’Neil, K., et al. (2005). Effect of a social services intervention among 911 repeat users. *The American Journal of Emergency Medicine*, 23(4), 492–496. doi:10.1016/j.ajem.2004.11.003
- <sup>2</sup> Top 29 utilizers of Everett Fire Department and Snohomish County Fire District #1
- <sup>3</sup> *Transports* refers to both County EMS and private emergency transport agencies such as AMR.
- <sup>4</sup> EMS records of transport plus one hospital system’s data; no data for second hospital system contacts that were not delivered by EMS or private emergency transport.
- <sup>5</sup> Mental Health determined by mention of mental health diagnosis, use of psychiatric medication, or use of Medicaid’s North Sound Regional Support Network (mental health service provider) during the study window.
- <sup>6</sup> Alcohol and other drug use (AOD) was coded affirmative by mention of illicit drug use, alcohol abuse, or prescription drug abuse or drug seeking behavior in hospital records or EMS primary impression/chief complaint. If status was unknown, individual was not identified as having an AOD concern.
- <sup>7</sup> Assignment as having a serious chronic illness, diabetes, or chronic pain based on hospital records and EMS impressions.
- <sup>8</sup> No data available for one hospital system. BMI calculated from height and weight noted in medical records using an online calculator: <http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm>

**Data Notes**

Analyses performed on data available to Snohomish County Human Services Research Division as of August, 2013.

Age: Age at start of study window, January 1st, 2012

Insurance: from Provider One, EMS records, hospital records

DX/CC/1<sup>o</sup> Imp: Diagnosis where available from hospital; Chief Complaint where available from hospital, CC/1<sup>o</sup> Impression from EMS; only major diagnoses contributing to transport/ED presented here

Hospital: one system with available notes; otherwise counts come from EMS records

EMS: from ESO data, and one district’s legacy database

Homeless shelter and housing: HMIS assistance data from County services.

Mental Health: mention of treatment for mental health condition, or prescription with psychotropic medication in hospital records, or psychiatric/behavioral listed in EMS, or billing to RSN during study window

Alcohol and Other Drug use (AOD): mention of drug use or drug treatment in hospital records; none of these individuals had entries in the state TARGET database for outpatient services during the study period

Services: from Hospital notes, RSN data; compliance/usage not confirmed

Obesity: calculated BMI  $\geq 30$  (from height and weight in medical record) at any point during the study window

Groupings on reasons for seeking EMS care: From DX/CC/1<sup>o</sup> Imp plus case narratives, where available (see Tables for individual coding)