San Francisco Department of Public Health

High Users of Multiple Systems

Who are HUMS patients?

Data systems have enabled plan administrators to identify "outliers," those people whose healthcare costs and health risk put them far outside the vast majority of other patients. In most systems nationwide, steps are being taken to try to maximize outcomes and minimize avoidable costs by identifying their outliers, also referred to as "hot spotters," those who overly rely on acute care services due to poorly managed chronic conditions.

However in 2007, the San Francisco Department of Public Health (SFDPH) took a different approach to understand how individuals use services within their $1.5 billion network, a safety net that includes medical, mental health, and substance abuse treatment systems of care. Instead of looking for outliers within one system, SFDPH tracks those people who bounce across systems using urgent/emergent care at very high rates.

High users of multiple systems (HUMS) not only denotes individuals struggling with multiple disorders, it also describes individuals who are less visible because they are often not the highest user of a single system. Once identified, they are more difficult to engage in health services, as they tend to rely only on urgent/emergent care instead of coordinated care that stabilizes them in the community. HUMS patients have a higher burden of chronic disease due to multiple factors such as chronic intoxication, significant cognitive impairment, mental illness, and behavioral issues. To identify these people, the safety net was divided into three categories of health systems: medical, mental health, and substance abuse. Table 1 notes the urgent/emergent services that are included in each system.

Table 1: SFDPH Systems of Care and Urgent/Emergent Services (Unit of Service)

Medical System	Mental Health System	Substance Abuse System
• Inpatient (Days) • Emergency Department (Visits) • Urgent Care Clinic (Visits) • Medical Respite (Days) • Ambulance (Transports)	• Inpatient (Days) • Psych Emergency (Visits) • Psych Urgent Care Clinic (Days) • Dore Urgent Care Clinic (Days) • Acute Diversion Unit (Days) • Outpatient Crisis (Visits)	• Sobering Center (Encounters) • Residential Medical Detox (Days) • Residential Social Detox (Days)

SFDPH users of urgent/emergent services are identified by merging records via the integration of multiple stand-alone datasets into the SFDPH Coordinated Case Management System (CCMS). Individuals are ranked by the number of their total count of services utilized during the fiscal year, not by their total cost. This is because some systems are significantly less expensive than others (substance abuse versus medical for example) and the frequency of use is a more useful indicator of high risk than is cost alone.

Once the top 1% users of urgent/emergent services are identified, those utilizing two or three systems are categorized as HUMS patients. Keep in mind that these patients are not already identified as "outliers" and that many of the services they receive are relatively inexpensive. Please refer to Table 2, appendix and as follows:

- Over 50,000 unique individuals receive at least one urgent/emergent service annually, totaling nearly $200 million of estimated costs per year
- The Top 1% (511 people) account for 25% of the costs ($49,793,566 per year)
- Those engaged in two or three systems (312) are identified as HUMS patients and they average nearly $100,000 each, or over $300 million per year in total.
- Despite receiving an average of 91 separate urgent/emergent services a year at very high costs, HUMS patients are not known as outliers to a single system, are not sticking to any stabilizing services, have no care coordination, and have very poor health outcomes including high mortality rates.

Why are HUMS patients so hard to help?

HUMS patients are individuals who are unable to navigate our traditional systems of care. Data analysis shows that these patients are more likely to be white and middle aged and to have a combination of severe medical, mental health, and substance use (predominantly alcohol) problems. As noted in Table 3, nearly two-thirds of the top 1% users (312) crossover two or three systems of care (primarily Mental Health and Medical systems) and nearly half of those (137) utilize all three systems (Substance Abuse, Medical and Mental Health). However, when you look at the diagnoses associated with these urgent/emergent services, as noted in Table 4, an additional 45 patients, for a total of 232, are struggling with all three disorders.

HUMS individuals are almost universally chronically homeless and often suffer persistently from severe alcohol disorders, brutal living conditions, chronic medical problems, and serious mental illnesses. They have extremely high rates of premature mortality, create adverse effects on certain geographic areas of the city, and result in high costs to the health system. As such, the San Francisco Department of Public Health has taken an innovative, multi-pronged approach to addressing this pressing issue.

What is being done about HUMS patients?

An Engagement Specialist Team (EST) of the San Francisco Homeless Outreach Team was created to perform targeted street outreach that will strategically focus on (1) locating and engaging or reengaging HUMS clients into care according to their community care plan, (2) coordinating with their care managers, and (3) transporting them with warm hand-offs into safer housing and/or treatment programs that will stabilize the progression of their chronic diseases. Transportation services will be provided within the SFHOT-EST model, available 24 hours a day, seven days a week.

Community Care Plans include whom to contact when the patient presents to an ED. Hospitals are encouraged to call EST to inquiry about patients who present at their EDs and fit the profile of HUMS. EST will remain engaged with the patient until he or she agrees to case management services. Careful tracking, coordination, and follow-through with their care, no matter where they appear for services, will enable us to proactively intervene and help them to improve the quality of their lives.

SFDPH is applying for approval to begin a comprehensive pilot program to treat ten HUMS volunteer patients with Naltrexone, which has been shown to help individuals reduce their craving for alcohol. Along with this treatment, the SF FIRST Intensive Case Management team will provide outreach, temporary beds, benefits advocacy, assistance with permanent housing applications, and wrap-around services. If the pilot is successful, the department will consider applying for grants to widen the scope of availability of this potentially life-saving intervention.

The HUMS project is crucial in finding these patients, and remains essential for identifying areas for proactive measures. The HUMS project is also crucial in assessing which types of interventions are successful, and to what degree. SFDPH remains committed to creating and finding innovative ways to address the costs, suffering and premature deaths of a group of patients who represent some of the most intractable problems of our times.

Harry HUMS*

A person walking along Market Street sees someone lying on the sidewalk and calls 911. Paramedics arrive and find Harry Hums unconscious, with bruises on his head, and an infected scalp laceration. Harry is taken to San Francisco General Hospital emergency. He has a head scan which shows impressive amounts of old head trauma, and he gets a full evaluation for drug overdoses. His blood alcohol level is shockingly high. His medical records show he has HIV and diabetes. When Harry gradually comes around, he becomes combative and tells his doctor that he drank a fifth of vodka to help with the pain in his head, pain from hitting his head jumping off a balcony. Harry refuses to say if he was trying to kill himself, or if he was pushed, or fell. Harry is transferred to psych emergency. Harry, although clearly suffering from both long-standing cognitive deficits and poor impulse control, states that he's not going to do that again, he was simply drunk and jumped on a dare. Records show that after intensive efforts to find Harry and get him to hearings, Harry was legally conserved last year, but his conservation did not stop his use of urgent/emergent services, nor did it get him to his primary provider, whom he has never met. After his psych evaluation, Harry is beginning to withdraw from alcohol but refuses admission. He is given appointments and prescriptions for his HIV and diabetes, but leaves before picking up his meds. He has no phone, no address and no emergency contacts. Three hours later paramedics pick him up again, drunk, and this time take him to the sobering center. The EST team meets him at the sobering center and transports him to a shelter bed. EST returns to escort Harry to his first primary care visit in three years and finds Harry bathed and neatly dressed. (*for confidentiality reasons, Harry is a composite of many patients)

Table 2: Summary of FY10-11 Users of Urgent/Emergent Services

Category	# Pts	Total U/E Costs	% of Total Cost	Avg Costs/Pt	Avg # Svcs/Pt
Top 1%	511	$ 49,793,566	25%	$ 97,443	89.0
Top 1% who are HUMS	312	$ 31,012,996	16%	$ 99,401	91.0
Top 1% Non-HUMS	199	$ 18,780,570	10%	$ 94,375	86.0
Next 2-5%	2,078	$ 58,527,401	30%	$ 28,165	30.0
Total Top 5%	2,589	$ 108,320,967	55%	$ 41,839	41.6
Remaining 95%	49,207	$ 88,187,508	45%	$ 1,792	2.5
Total U/E Users	51,796	$ 196,508,475	100%		

Table 3: FY10-11 Top 1% Users of Urgent/Emergent Services and the Systems of Care They Used

Category			High Users of Single System				High Users of Multiple Systems (HUMS)				
							2 systems				3 systems
			SA	MH	Med	Total	SA-Med	SA-MH	MH-Med	Total	SA-Med-MH
Top 1%	511	100%	38.9%				34.2%				26.8%
			0%	11%	28%	39%	8.6%	1.2%	24.5%	34.2%	
Top 1% who are HUMS	312	61%	~	~	~	~	44	6	125	175	137
Top 1% Non-HUMS	199	39%	-	56	143	199	~	~	~		~

Table 4: FY10-11 Top 1% Users of Urgent/Emergent Services and Their Conditions (no matter which systems they used)

Category			Single Morbidity				Co-Morbidity				Tri-Morbidity
			SA	MH	Med	Total	SA-Med	SA-MH	MH-Med	Total	SA-Med-MH
Top 1%	511	100%	12.7%				39.5%				45.4%
			5	8	52	65	81	63	58	202	232
Top 1% who are HUMS	312	61%	2	5	2	9	47	49	25	121	182
Top 1% Non-HUMS	187	37%	3	3	50	56	34	14	33	81	50

Disorders tracked are chronic, progressive conditions defined by the Elixhauser Comorbidity Index. 12 people (2.3%) in this cohort had no Elixhauser morbidity noted, which typically reflects patients who received urgent care services for acute, resolving conditions; not chronic, progressive conditions.

A Care Coordination Section was also created to provide the necessary system navigation to facilitate the various entry and service points throughout SFHN that contribute to Recovery, Wellness and stability. Transitions Division Care Coordination differs from other Care Coordination models in the country because it focuses on both the High Users of Multiple Systems (HUMS) due to high Behavioral Health issues in conjunction with complex medical needs and High Users of Single Systems (HUSS) who are the more traditional medical complex population. Transitions Care Coordination works in close collaboration with the other Care Coordinators within SFHN and the Medi-Cal Managed Care Plans, SFHP and Anthem Blue Cross as well as Intensive Care Managers and Care Managers.

You could add from this as well:

Transitions Care Coordination has assigned the Top 400 HUMS clients to a Care Coordinator. A Crisis Care Plan identifying this contact person is created and accessible via a link in LCR and Avatar. When a HUMS client becomes known to a Provider, they are able to look at the Care Plan and contact the Care Coordinator so they can begin to try and engage the client in services.