Using administrative data on high system users to call for deeper health system interventions

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In *Characteristics of frequent users of emergency departments in Alberta and Ontario, Canada: an administrative data study*, Rosychuk et al. [1] conducted a broad, thorough and impressive population-based study of individuals who are high-frequency ED users in two Canadian provinces, which are home to approximately 20 million Canadians. Their paper characterizes important demographic and clinical information, which may inform localized interventions and policy creation by provincial ministries, health systems and community providers. This macrosystem view of the population is an essential piece of work in solving the phenomenon of ED recidivism in the country. Many of the discussion elements raised within the paper lead to further questions around the differences between provinces (those within and outside of the analyzed data), access to care and other social determinants of health of the population under study.

The question of ED recidivism becomes more complex when we begin to devise interventions to reduce visit frequency by individuals who are High System Users (HSUs).

Previous high-quality studies have examined the effectiveness of intensive case management interventions among this group and determined that they were not statistically significant in reducing ED use when compared to outcomes among matched controls [2]. Moreover, systematic reviews assessing interventions geared towards lowering ED use among individuals who are HSUs have yielded mixed results [3]. Although it was demonstrated that there was a trend of reducing the frequency of ED visits by individuals who are HSUs across all studies, there was considerable population heterogeneity within the included samples and some included studies had a high risk of bias. Moreover, the implemented interventions differed between studies. This heterogeneity among populations and interventions is an important finding and a recurrent theme in the literature, which further complicates the determination of the best approach to providing patient-centered care to individuals who are HSUs. Looking beyond ED attendance, health system resource consumption has also been addressed with multimodal social interventions and demonstrated, in one large trial, to have no effect [4].

And perhaps this should be of no surprise. Many of these trials include a myriad of patients with the same symptom but not the same root cause. Not all patients with chest pain have the same underlying pathology. Much as we would avoid doing interventional studies on a poorly defined population, we should apply this same logic to interventions directed at individuals who are HSUs. It is very likely that heterogeneous solutions applied in a targeted fashion will be most beneficial for this heterogeneous group of individuals. This leads to a further question—are the causes of frequent ED use much more fundamental than their downstream ED visit?

Studies based on administrative data such as this one by Rosychuk et al. are valuable for identifying patient characteristics and healthcare utilization patterns at the population level. They also present further avenues for research, which often need to be tailored to specific geographical

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regions to understand the needs of local populations. The studies are not granular enough to offer us “user stories” to identify phenotypes of individuals who are HSUs. In doing so, administrative studies tell us little about how we might help these patients, where we might best intervene and how we might reduce high-frequency ED use. Moreover, the necessary granularity lives in datasets that are not readily associated with healthcare administrative databases (e.g., patient-specific economic data from tax returns, individual demographic information from the Census) or in data elements that we cannot easily collect or are not currently measuring (e.g., loneliness, cultural and racial information, housing vulnerability and social supports). Only by exploring these elements and understanding our patients at a deeper level might we then identify the root causes for the heterogeneous groups that make up this population and are hidden behind the HSU label. These solutions must also acknowledge local contexts (rural vs. urban), resource availability, community supports, data accessibility and improvement sciences. The interventions should be tailored to these realities and be co-designed with the patients. Quantitative data need to be shared broadly, perhaps as a quality metric of regional healthcare performance. Furthermore, qualitative data are needed to enrich the quantitative data.

Information on individuals who are HSUs should be viewed as part of a larger family of measures that are proxies for inequity in all of its forms (racial, economic, age, housing, mental health, substance use and social supports). This impressive study by Rosychuck et al. should not be limited to the quantification of individuals who are HSUs but instead should be amplified to be a call for the use of HSUs as a health system indicator at the provincial and federal levels. The phenomenon of high-frequency use of the ED also speaks directly to health system sustainability and might factor deeply in the economic analyses of social interventions in a publicly funded system [5].

It is almost certain that the solution to limit the number of individuals who are HSUs is a social one rather than a medical one. The emergency medicine population must acknowledge two fundamental tenets: 1) we have a role to play in

social interventions as much as medical ones and 2) it is likely that the ED is the only place in the community where patients may be able to reliably access social and medical help at all times of the day. EDs should perhaps explore how to better integrate social care within the department and identify these needs earlier in the patient visit rather than seek to keep these individuals away from the ED. Our models should acknowledge our role in the social security net rather than shirk it and recognize that the best place for interventions for these patients may actually be in our “back yard”. We should keep in mind that this work should not be used to support our internal stereotypes of these individuals but instead act as a call for social action—whereby ED docs look for a seat at the table to help solve these complex humanitarian issues.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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