

## Original Research

### Use of Emergency Department for Care Access by Refugees Resettling in Kentucky, 2015: Findings from the University of Louisville Global Health Center

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#### Abstract

**Background:** Kentucky is one of the largest rural resettlement areas for refugees in the US welcoming more than 3,000 refugees and other entrants during 2015. Refugees arrive with a number of chronic health conditions that require ongoing management in a healthcare system where they lack knowledge and ability to navigate. This may encourage them to seek care that is easy to access but episodic and fragmented. The objective of this study was to determine the frequency and reasons for accessing care via a local emergency department by resettling refugees during their first twelve months of resettlement.

**Methods:** Using data from domestic health screening, crossmatching was done with the Emergency Department (ED) database of a local university medical center. Records were reviewed to determine if the ED was accessed for care, day and time care was accessed, chief complaint at the time of ED arrival, discharge diagnosis and final disposition.

**Results:** Of 2616 refugees seen for health screening during 2011-2015, 77 (3%) sought care in the ED at least one time during the twelve months following their arrival, encompassing a total of 96 unique ED visits. Of the 96 ED visits, 83 (86%) were seen and discharged with the remaining 13 (14%) being admitted to ULH or referred for admission to another facility (e.g., mental health). Of the 83 discharged visits, 51 (61%) were determined to be preventable ED visits. Care was accessed more frequently on Monday (19%), Sunday (18%) and Thursday (17%). 57 of the 83 discharged visits (69%) occurred during hours that reflect those common for routine business in a clinic setting (8 AM - 4 PM). Of ED visits during those routine business hours, 34 (60%) were determined to be preventable ED visits.

**Discussion:** This study represents the first published data regarding ED use by refugees resettling into a single community. These data provide insight into the use of an ED as a point of care access and the role that access plays in refugee healthcare, especially during the earliest phase of resettlement.

**Conclusions:** These data may serve to inform development of a refugee-centered medical home with the objective to improve access to coordinated and comprehensive care.

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## Background

Kentucky is currently one of the largest rural resettlement areas for refugees in the US, welcoming more than 3,000 refugees and other entrants during 2015 (ORR 2016). Since 2012, the University of Louisville Global Health Center (UL-GHC) has been working in partnership with the Kentucky Office for Refugees (KOR) in provision of care for newly arriving refugees and providing an annual report that outlines the current state of health of those populations. The annual reports including data from domestic health screens are maintained and available for review, and illustrate the broad scope of health conditions that are present among

these newly arriving members to Kentucky communities (UofL Division of Infectious Diseases 2017).

Early in resettlement, refugees are provided with health orientation that seeks to inform them about access to healthcare, use of insurance, transportation methods that facilitate reliable movement within the community, and general operations of the US healthcare system. Refugees are introduced to the US healthcare system through provision of an initial domestic health screen, ideally performed within 90 days of arrival, by providers designated by the resettlement agencies. However, refugees may need to access healthcare prior to that domestic health screen and their abilities to identify a provider outside of an emergency or urgent care setting may be non-existent. This supports episodic and fragmented care coupled with an already overburdened healthcare system. Further, a refugee seeking care may be unable to express their healthcare needs and understand or adhere to the recommended interventions. In order to provide quality care that begins at the time of resettlement, there is a need to understand care access among this population. At present, there is a paucity of information in the literature regarding reasons refugees access care in emergency and urgent care settings. This is a piece of information that is necessary to inform a care model beneficial to the refugee population.

The goal of this study was to determine the use of a local Emergency Department (ED) for care by refugees newly resettled in Louisville, Kentucky. The aims included: 1) determination of reasons for care access; 2) days of the week and time care was accessed; and 3) if the reasons for ED care access could have been provided in a primary care setting.

## Methods

This was an ancillary study including data maintained in the Arriving Refugee Informatics Surveillance and Epidemiology (ARIVE) database in the UL-GHC as well as data collected from the University of Louisville Hospital (ULH) ED. Refugees eighteen years of age and older resettled in Louisville between September 1, 2011 through November 30, 2014 who received a domestic health screen were included in the study. There were no exclusion criteria. The ED site chosen for this study was a major medical center, centrally located in Louisville, and a common site of care for vulnerable populations. The study was reviewed and approved by the study site's Institutional Review Board.

Data regarding newly arriving refugees resettled in Kentucky are maintained in a secured database housed in the UL-GHC. REDCap (Research Electronic Data Capture) (Harris et al. 2009) serves as the platform for the ARIVE database and contains demographic and domestic health screen information for all refugees resettled in Kentucky. A list of adult refugees resettled in Louisville was parsed from ARIVE providing an ability to cross-reference with the ULH ED database. Using name and date of birth as identifiers, ULH ED records were reviewed to determine: 1) whether or not refugees were seen in the ED for care; 2) the day and time care was accessed; 3) the chief complaint at the time of arrival; 4) discharge diagnosis; and, 5) final disposition following care

access. Once data were gathered on those refugees who had received ED care, those refugees were back referenced to the ARIVE database to determine their language and countries of origin. All data collected as part of the initial health screen on arrival, as well as the ED information, were entered into ARIVE during the time period 2011-2015. This enabled following of refugees resettled in November 2014 and determine ED care access for the next twelve months.

In the analysis, descriptive and inferential statistics were performed. For comparisons of categorical data, Fisher's exact and chi-squared tests were used, as appropriate. Wilcoxon rank sum tests were performed for continuous data comparisons. Bar plots were produced for the day of week and the time of ED admission. A histogram was created to visualize the time between resettlement and the ED visit. All data analysis was performed using R version 3.3.2 (R Foundation for Statistical Computing, Vienna, Austria).

## Results

Using data from ARIVE, 2616 adult refugees were resettled in Louisville, KY from September 2011-November 2014 and received initial domestic health screening. Of 2616, 77 refugees (3%) sought care in the ULH ED at least one time during the twelve months following their resettlement. A comparison of the characteristics of refugees seeking care in the ED versus those not seeking care are shown in **Table 1**. Of the 77 refugees, 60 (78%) had initial domestic health screenings within 90 days of resettlement compared to 77% of refugees in the ARIVE database that did not visit the ED within 1 year of resettlement ( $p=0.919$ ). The 77 unique refugees seeking ED care arrived from 9 different countries of origin, with Iraqi and Cuban refugees representing the largest groups (31% and 27%, respectively). Women were more likely than men to access care (63% versus 37%, [ $p=0.003$ ]) in the ED. Adults aged 18-40 represented 74% of the visits.

If a refugee had multiple visits to the ED, each was counted as a separate event—a total of 17 refugees (22%) had multiple visits to the ED for a total of 96 visits. Of those 96 visits, 26 (27%) occurred within the first 90 days after arrival, and 22 (23%) occurred before the initial domestic health screening (**Figure 1**). Of the 96 ED visits, 83 (86%) were seen and discharged with the remaining 13 (14%) being admitted to ULH or referred for admission to another facility (e.g., mental health). Of the 83 discharged visits, 51 (61%) were determined to be preventable ED visits: the health concerns may have been handled in an office visit setting. For example, some women's health issues, myalgias and arthralgias. Of the total 96 visits, 19 (20%) involved trauma, 18 (19%) involved women's health, 18 (19%) cardiovascular health, and 12 (13%) involved arthralgias/myalgias.

Care was accessed more frequently on Monday (19%), Sunday (18%) and Thursday (17%) (**Figure 2**). 57 of the 83 discharged visits (69%) occurred during hours that reflect those common for routine business in a clinic setting (8 AM - 4 PM) (**Figure 3**). Of ED visits during those routine business hours, 34 (60%) were determined to be preventable ED visits.

Variable	Unique Patients Visiting ED within 1 Year (n=77)	Unique patients that did not visit ED within 1 year (n=2539)	p-value
Female gender, n (%)	48 (63)	1156 (46)	0.003
Age, Median (IQR)	33.2 (15)	34 (17.7)	0.337
18-40, n (%)	55 (74)	1642 (67)	0.21
41-64, n (%)	18 (24)	735 (30)	0.366
65, n (%)	1 (1)	88 (4)	0.518
Country of Origin			
Afghanistan, n (%)	2 (3)	35 (1)	0.298
Bhutan/Nepal, n (%)	6 (8)	285 (11)	0.461
Burma/Myanmar, n (%)	4 (5)	234 (9)	0.313
Burundi, n (%)	0 (0)	7 (0)	>0.999
Cameroon, n (%)	0 (0)	1 (0)	>0.999
Congo, n (%)	0 (0)	2 (0)	>0.999
Cote D'Ivoire, n (%)	0 (0)	3 (0)	>0.999
Cuba, n (%)	21 (27)	1148 (45)	0.002
Democratic Republic of the Congo, n (%)	3 (4)	120 (5)	>0.999
El Salvador, n (%)	0 (0)	2 (0)	>0.999
Eritrea, n (%)	1 (1)	4 (0)	0.139
Ethiopia, n (%)	0 (0)	10 (0)	>0.999
Guinea, n (%)	0 (0)	1 (0)	>0.999
Haiti, n (%)	0 (0)	1 (0)	>0.999
Honduras, n (%)	0 (0)	1 (0)	>0.999
Iran, n (%)	0 (0)	6 (0)	>0.999
Iraq, n (%)	24 (31)	404 (16)	0.001
Israel, n (%)	0 (0)	1 (0)	>0.999
Kuwait, n (%)	0 (0)	2 (0)	>0.999
Pakistan, n (%)	0 (0)	8 (0)	>0.999
Rwanda, n (%)	0 (0)	10 (0)	>0.999
Saudi Arabia, n (%)	1 (1)	1 (0)	0.058
Senegal, n (%)	0 (0)	4 (0)	>0.999
Sudan, n (%)	2 (3)	30 (1)	0.242
Tanzania, n (%)	0 (0)	1 (0)	>0.999
Ukraine, n (%)	0 (0)	3 (0)	>0.999
Unknown, n (%)	13 (17)	215 (9)	0.018

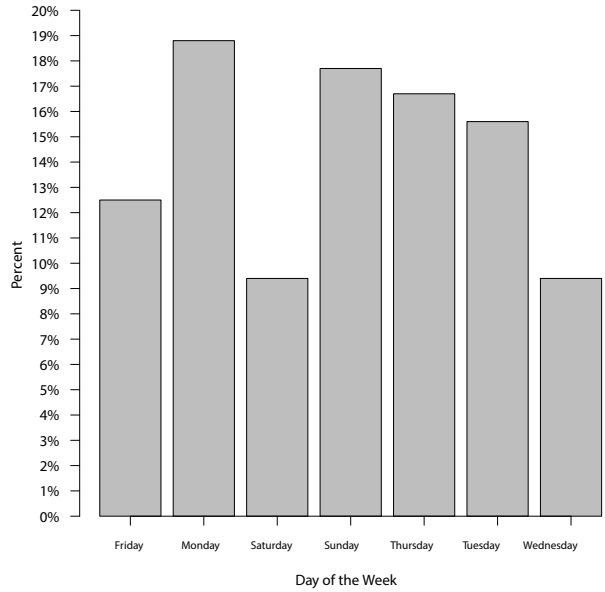


Fig. 2 Day of the Week Presenting to the Emergency Department

Table 1 Demographics of the Refugee Population Seen in the ED Versus Those Who Were Not

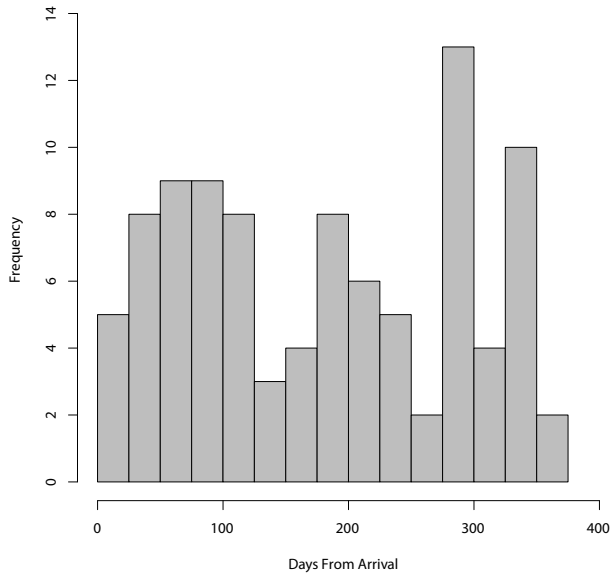


Fig. 1 Days Between Resettlement and Emergency Department Visit

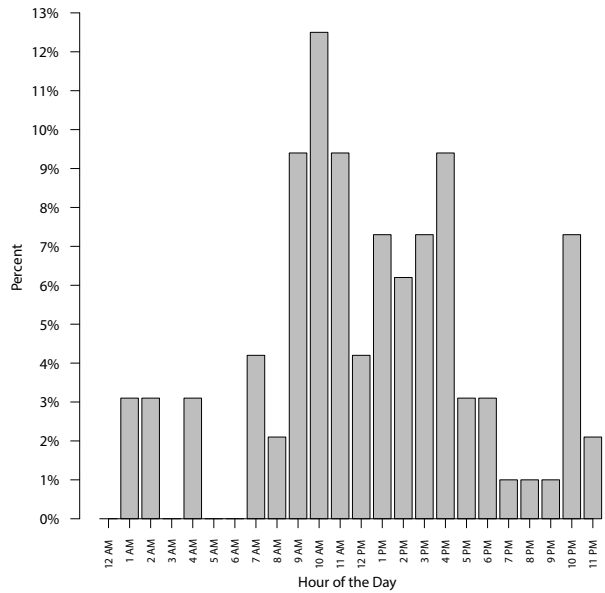


Fig. 3 Time of Day of Emergency Department Visit

## Discussion

This is the first study to evaluate care access through an ED among newly arriving refugees in a single US community. These findings indicated that refugees seek care through the ED, some prior to their domestic health screening. ED care was often sought during hours of operation typical for ambulatory care settings, although approximately one-third of the visits occurred outside routine business hours. Furthermore, weekend care access was common. A substantial number of ED visits involved health issues not necessitating emergent care. The results were a missing link in understanding where, why and when refugees seek health-care. Understanding the role the ED plays in provision of health-care can inform decisions regarding care provided in an office or clinic setting. Perhaps, provision of care using a more contemporary approach, such as a patient- or refugee-centered medical home, could address many of the issues identified in this study (Garg et al. 2012).

In a patient-centered medical home model, care revolves around the specific needs of the patient and includes elements identified by the Agency for Healthcare Research and Quality (AHRQ) such as access to care, coordinated care, and comprehensive care (Peikes et al. 2012). A refugee-centered medical home (RCMH) could assist the refugee in navigating through the US healthcare system and address the challenges faced in receiving timely care (Temu et al. 2011). Further, this could assist in offsetting unnecessary, expensive, and episodic care accessed through an ED instead of the medical home. Another benefit of a RCMH is that care can be provided by advanced practice nurses, healthcare providers with skill sets more closely aligned with the needs of the refugee as a vulnerable population (Schram 2012).

Some of the findings have direct clinical implications regarding care or access changes that should occur in order to provide healthcare in sites other than an ED. For example, preventable visits to the ED occurred seven days a week, with many occurring on weekends. Therefore, a RCMH should consider a 7 day a week operation. If located close to the ED, opportunity exists to facilitate patient movement from the ED to the RCMH. To avoid inappropriate discharge from the ED, this could be done at the time the refugee first presents to the ED when triaged. More than 60% of the ED visits in this study were deemed to be preventable. A RCMH could promote faster access to an appropriate level of care for the refugee and enable proper resource utilization in their care. Another clinical indication to this research involves the positive effect that results when care is provided in an appropriate setting. In this study, enabling non-emergent care to be provided in a primary care setting may result in benefit to that patient through prevention of episodic care. Further, it benefits all who are receiving care in the ED by reducing unnecessary resource utilization, including ED staff time, for situations best handled in a non-emergent setting. This may lead to a lightening of the burden present in many EDs today due to overcrowding and high patient volumes.

To be successful, the RCMH must be able to adequately communicate with the targeted population groups. In this instance, the

languages spoken most often by refugees seeking care in the ED were Arabic, Spanish and Somali. These are three of the top languages spoken by the resettled refugee population in Louisville, KY. Therefore, having staff able to speak the language of the refugee patients accessing care, regardless of the day of the week or time of day, serves to facilitate provision of care consistent with the RCMH care model objectives.

There are a number of limitations to this study. First, the community has eight acute care facilities where adult refugees might seek care in an ED and data for this report comes from one facility. Certain refugee groups may seek care in another local ED, introducing a selection bias. Next, the data involve only adults aged 18 and older which limits the generalizability. Records were matched using dates of birth and name, but there may be missed visits due to naming conventions used by the ULH ED. For example, a Cuban patient may have more than the traditional first, middle and last name. The facility may mix the order of those names resulting in an inability to identify or match the ED visit with data in ARIVE. Miscommunication between refugee and hospital personnel regarding month and date of birth could have also hampered identification of refugees as birthdate may be reported differently by some refugees (e.g., month/day/year versus day/month/year). Lastly, the accuracy of documentation and the influence of cultural competence and health literacy by the ULH ED provider and the refugee patient providing information is not known.

## Conclusions

These data provide insight into the use of an ED as a point of care access and the role that access plays in refugee healthcare, especially during the earliest phase of resettlement. These results provide insight as to how services provided in a medical home might be altered to better meet the healthcare needs of the newly arriving refugee as they become familiar with the US healthcare system and adjust to life in their new community. Providing care using a RCMH model requires that the needs of the population be continuously explored and improvements made in how and what services are provided, as well as how and when are they available. To accomplish this with the refugee population, information needs to be gathered that could inform decisions regarding when care could be accessed, what additional areas of care needs to be provided, including preventive initiatives (e.g., trauma prevention) that may have previously been unrecognized needs. Future research in the area of healthcare access is needed, including use of the ED by children. Validation of findings would also be useful to strengthen approaches for refugee-centered care that can be sustained through appropriate uses of available healthcare resources. Evidence that supports the effectiveness of a medical home when addressing health outcomes and disease self-management among refugees provides opportunities to translate into the care provided for other vulnerable populations and transform the way in which care is provided and delivered.

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