A Profile of Indian Health Service Emergency Departments

Kenneth Bernard, MD, MBA*; Kohei Hasegawa, MD, MPH; Ashley Sullivan, MPH, MS; Carlos Camargo, MD, DrPH

*Corresponding Author. E-mail: kenneth.bernard@tchealth.org.

Study objective: The Indian Health Service provides health care to eligible American Indians and Alaskan Natives. No published data exist on emergency services offered by this unique health care system. We seek to determine the characteristics and capabilities of Indian Health Service emergency departments (EDs).

Methods: All Indian Health Service EDs were surveyed about demographics and operational characteristics for 2014 with the National Emergency Department Inventory survey (available at http://www.emnet-nedi.org/).

Results: Of the forty eligible sites, there were 34 respondents (85% response rate). Respondents reported a total of 637,523 ED encounters, ranging from 521 to 63,200 visits per site. Overall, 85% (95% confidence interval 70% to 94%) had continuous physician coverage. Of all physicians staffing the ED, a median of 13% (interquartile range 0% to 50%) were board certified or board prepared in emergency medicine. Overall, 50% (95% confidence interval 34% to 66%) of respondents reported that their ED was operating over capacity.

Conclusion: Indian Health Service EDs varied widely in visit volume, with many operating over capacity. Most were not staffed by board-certified or -prepared emergency physicians. Most lacked access to specialty consultation and telemedicine capabilities. [Ann Emerg Med. 2017;69:705-710.]

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INTRODUCTION

American Indians and Alaskan Natives experience higher mortality, a disproportional burden of chronic and mental illness, poor access to health care services, and substantial unmet medical needs compared with the general US population.[1,2] Contributing to the issue are several factors, including increasing disparities in social determinants of health such as poverty, education, and substance abuse.[2] The Indian Health Service, a division of the Department of Health and Human Services, is bound by trust to provide health care services to American Indians and Alaskan Natives, eg, primary care, prescription drugs, mental health, and emergency care.[1,2] Emergency departments (EDs) are an integral part of any health care system, including the Indian Health Service, which is the only source of care for many American Indians and Alaskan Natives. However, to date, to our knowledge there are no published data on EDs operating within the Indian Health Service.

To address this knowledge gap, we surveyed all Indian Health Service EDs in regard to operational characteristics, staffing, use and availability of electronic resources, ED capabilities, and crowding and capacity. Given the historical and persistent health disparities, as well as well-researched barriers to primary and subspecialty care, these data are vital to understanding the context within which emergency care is delivered to American Indians and Alaskan Natives.[1,2]

MATERIALS AND METHODS

Study Design and Data Collection and Processing

We performed a cross-sectional study surveying all EDs operating within the Indian Health Service with the National Emergency Department Inventory survey instrument (Appendix E1, available online at http://www.annemergmed.com). Consistent with previous National Emergency Department Inventory studies, EDs defined as emergency care facilities were open at least 24 hours per day, 7 days per week, and available for use by the general public.[3,4] The survey instrument was made available to ED directors or knowledgeable proxies (eg, chief medical officer, nurse manager) by hard copy and e-mail.[5] Data

Editor's Capsule Summary

What is already known on this topic

The Indian Health Service is a national system to provide health care for Native Americans.

What question this study addressed

The state of emergency services offered within the Indian Health Service is defined from survey responses in 2014.

What this study adds to our knowledge

The 34 of 40 emergency departments who responded handle between 500 and 63,000 visits per year, with 85% having continuous physician coverage, although a median of only 13% of physicians were board certified in the specialty.

How this is relevant to clinical practice

This study provides a current assessment of the state of care to help identify gaps in care at a national level.

were collected during a 6-month period starting in November 2015 in regard to the 2014 calendar year. Contact initiated by e-mail and follow-up e-mails or telephone calls was continued until a target of greater than or equal to an 80% response rate was reached. If participation was declined at any time, no further contact was attempted. Completed survey data were entered and managed with REDCap secure electronic data management and capture tools hosted by Partners Healthcare (Boston, MA).[6] Approval was obtained from the institutional review boards of the Massachusetts General Hospital (Boston, MA) and the Indian Health Services (Rockville, MD).

We surveyed variables divided into 5 categories: ED basic characteristics; ED staffing, including availability of specialists; electronic resources in the ED; ED capabilities, eg, timing of consultations, tests, transfers; and ED crowding and capacity. Basic characteristics included annual ED volume and hospitalization rates. Staffing variables included the number of full-time equivalent physicians and advance practice clinicians (ie, physician assistant and nurse practitioners) and continuous in-house physician coverage. We assessed use of electronic resources and ED capabilities such as telemedicine, availability of clinical laboratory, and access to a dedicated computed tomography (CT) or magnetic resonance imaging (MRI) scanner in the ED. Finally, correlates of ED crowding, such as boarding in the ED greater than 2 hours or patient care in hallways, was also assessed.

Primary Data Analysis

Continuous variables with a non-normal distribution are presented as medians with interquartile ranges (IQRs). Categorical variables are presented as proportions with confidence intervals (CIs). For ease of analysis and comparison, we categorized sites by annual visit volume into 3 groups: small (<10,000), midsized (10,000 to 19,999), and large (≥20,000). Next, we compared ED characteristics and capabilities by ED volume status, using χ^2, Fisher's exact, or Kruskal-Wallis tests as appropriate. Statistical analyses were performed with Stata (version 12.0; StataCorp, College Station, TX).

RESULTS

Characteristics of Study Subjects

Of the 40 Indian Health Service EDs, most densely clustered in Alaska, the Upper Northwest, and the Southwest United States, there were 34 respondents (response rate 85%) (Figure 1). When compared with respondents, nonrespondents had similar geographic distribution and were contiguous with hospitals. All respondent EDs treated both children and adults. In 2014, there were a total of 637,523 ED encounters, of which 172,214 (27%) were by children (Figure 2). The median annual ED visit volume was 15,234 (IQR 10,347 to 23,618). Approximately one third (32%) of respondents reported annual ED volume greater than or equal to 20,000 patient visits, and these sites accounted for 59% of the total visits.

Of the 34 respondents, 29 (85%; 95% CI 70% to 94%) reported continuous physician coverage. Of all physicians staffing Indian Health Service EDs, a median of 13% (IQR 0% to 50%) were board certified or board prepared in emergency medicine. Compared with small (50%; 95% CI 17% to 83%) and midsized (93%; 95% CI 66% to 100%) EDs, large (100%; 95% CI 68% to 100%) EDs were more likely to have continuous physician coverage. A median of 63% (IQR 0% to 46%) of physicians at large EDs were board certified or board prepared in emergency medicine compared with medians 5% (IQR 0% to 46%) and 0% (IQR 0% to 18%) at small and midsized EDs, respectively. Advanced practice clinicians were staffed at 50% (95% CI 17% to 83%), 53% (95% CI 27% to 78%), and 82% (95% CI 48% to 97%), of small, midsized, and large EDs, respectively (Table). Overall, the most widely available specialists were pediatricians (71%), obstetricians (41%), and general surgeons (35%). In contrast, few EDs reported access to cardiologist (6%) or neurologists (3%), and 0% had access to plastic or hand surgery (Table). Overall, large EDs had higher access to specialty consultation. For example, compared with small (0% and 13%) and