

Evaluating referral patterns from Health Link to the emergency departments in Alberta

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Background: In Alberta, Health Link (811) provides a 24-hour, nurse staffed, phone resource to the public for health care advice. Health Link nurses use decision pathway protocols to guide patients to seek further care in the emergency department (ED), follow up with a primary care provider (PCP) or provide self-care (SC) at home. Many healthcare providers working in the ED have predefined beliefs regarding the appropriateness of these referrals. Therefore, the aim of the present work is to provide a descriptive analysis of Health Link referral patterns to the ED, including the identification of geographic trends.

Methods: Using administrative health data from January 1, 2018-December 31, 2019, we categorized Health Link calls as likely appropriate referrals (ED referral with a Canadian Triage and Acuity Scale (CTAS) of ≤ 3), less-likely appropriate referrals (ED referral with CTAS of >3) or a patient over-ride referral (referred to PCP/SC but then then presented to the ED within 24 hours with a CTAS of ≤ 3). The primary outcome was the percentage of likely appropriate and less-likely appropriate referrals from the calls received by Health Link that presented to the ED, and the percentage of patient override referrals from the calls referred to PCP or SC. Geographic trend analysis included age, self-identified gender, postal code, location of ED attended, and Canadian Triage Acuity Scale (CTAS) score assigned at ED.

Results: In this period, 900,196 individuals called Health Link, 241,103 were referred to the ED, and 140,614 presented to the ED. This is a 58.3% follow through rate, with Health Link callers constituting 3.4% of the total ED population (4,194,735). Of the Health-Link patients presenting to the ED, 77.3% were determined to be likely appropriate referrals, while 22.7% were determined to be less-likely appropriate referrals. Of the patients sent to the ED, the admission rate was similar to that of the general ED population (8.01% and 9.16% respectively). 86,783 patients presented as patient over-ride referrals, representing 13.2% of all calls referred to PCP or SC.

While there is a greater density of ED usage in rural locations (101.61 visits/100/year) than in urban centers (41.16), there is a greater density of Health Link callers from urban centers (2.48 calls/100/year) than rural locations (2.09). Also, callers advised to present to the ED and assigned a CTAS of ≤ 3 were concentrated in urban rather than rural locations (1.21 vs. 0.85), while the general ED population presenting with a CTAS ≤ 3 was denser rurally (35.01) than urban (24.93). A higher density of callers presenting with a CTAS > 3 in rural (0.58) than urban (0.42) regions, with the general ED population CTAS > 3 being denser in rural regions (59.96) than urban (16.01).

Advice and Lessons Learned:

1. Health Link referral population to the ED is similar to the general ED population in respect to admission and CTAS score.
2. A greater density of patients utilize Health Link in urban centers, while rurally a greater density of patients present directly to the ED.