

P113**Presentations for hypoglycemia associated with diabetes mellitus to emergency departments in a Canadian province: a database and cost analysis**

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Introduction: Diabetes mellitus (DM) is a common chronic disease. The Canadian Diabetes Association (CDA) estimated that the national direct cost of DM accounts for approximately 3.5% of public healthcare spending. The economic burden has been estimated to be \$12.2 billion in 2010 and projected to increase by \$4.7 billion (38%) by 2020. For the province of Alberta, the estimated cost was \$1.3 billion in 2015 and \$1.7 billion for 2025. The cost of lesser complications of DM like hypoglycemia is not as well understood. The objective of this study was to estimate the health system cost of presentations by adults to Alberta emergency departments (ED) for hypoglycemia associated with type 1 (T1DM) or type 2 (T2DM) diabetes. **Methods:** A retrospective cohort study was conducted using administrative data for Alberta for a five-year period (fiscal years 2010/11-2014/15). Data were sourced from an administrative database: National Ambulatory Care Reporting System (NACRS). Records of interest were those for ED patients with an ICD-10-CA diagnosis of DM-associated hypoglycemia. A top-down approach was used to estimate costs, excluding physician and ambulance fees. This involved resource intensity weight (RIW), cost of a standard hospital stay (CSHS), and adjustment for inflation (to average value of Canadian dollar for Alberta for January-September 2015). A descriptive analysis was conducted. **Results:** Data extraction yielded 7,835 presentations by 5,884 patients. The median RIW was 0.0547. RIWs are centered at 1, thus the resource-use/cost of these presentations is well below that of the “average” case. Estimated costs per episode ranged from \$108.63 to \$4,136.59 with median of \$431.11 (IQR: 369.40-639.50). Median episodic subgrouped costs were as follows: sex: \$427.72 for males, \$439.20 for females; DM type: \$411.61 for T1DM, \$511.63 for T2DM; date period: \$835,862.09/year, \$69,655.17/month, \$16,030.23/week, and \$2,288.78/day. **Conclusion:** Using population-based administrative data, we identified median costs for DM-associated hypoglycemia of approximately \$430/case. Given the frequency, this condition incurs significant healthcare resource use and costs; continued efforts to reduce these ED visits seem worthwhile.

Keywords: diabetes, hypoglycemia, cost

P114**Considering perceptions of patients and knowledge users in the design of an emergency-based acute asthma educational trial**

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Introduction: Educational interventions driven by the needs of users can help move evidence into practice. This study considered the perceptions of patients and knowledge users in the design of an educational intervention in acute asthma directed from Emergency Departments (EDs). **Methods:** A mixed methods design with two phases was used. In phase I, convenience samples of asthmatics presenting to the University of Alberta Hospital ED and primary care providers (PCPs) from Edmonton were invited to participate in a survey. Perceptions with respect to: a) an ideal local opinion leader (OL) in ambulatory asthma care; and b) content, style and delivery methods of OL educational interventions in acute asthma were collected. In phase II, focus-group

discussions were conducted to further explore preferences and expectations for such interventions; self-perceived barriers and facilitators for implementation were assessed. **Results:** Overall, 54 patients completed the survey; 39% preferred receiving guidance from a Respiriologist, 44% during their ED visit and 56% through individual discussions. In addition, 55% expressed interest in having PCP follow-up within a week of discharge. A Respiriologist was identified as an OL in ambulatory asthma by 59% of the 39 responding PCPs. All expressed interest in receiving notification of their patients' ED presentation, most within a week and including diagnosis and ED/post ED-treatment. Personalized and guideline-based recommendations were considered to be the ideal content by the majority; 39% requested this guidance through an educational pamphlet faxed to their offices. In the focus groups, patients and PCPs recognized the importance of health professional liaisons in the ED to PCP transition of care; patient anxiety and time constraints were identified as potential barriers for ED-educational information uptake and proper post-ED follow-up, respectively. **Conclusion:** Messages arising from patients and PCPs help tailoring study interventions to meet local needs and expectations. Overall, patients and physicians are seeking ways to mitigate problems with transitions in care. This contact with the practice environment also facilitates the identification of potential determinants to implementation and knowledge uptake.

Keywords: respiratory, education, knowledge translation

P115**An analysis of current and forecasted patient visits to Ontario's emergency departments and its effect on hospital admissions**

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Introduction: The number of emergency department (ED) visits across Ontario has increased annually over the past two decades leading to overcrowding and longer wait times. ED volume forecasting may provide insight to strategic planners regarding future patient volumes and the effects on health care resources. We investigated the pattern of ED use at the local health integration network (LHIN) level and developed forecasts using historical data. The forecasts were then used to examine the effect on acute care hospital bed requirements and the number of full time equivalent physicians needed. **Methods:** Aggregated data from the Canadian Institute for Health Information for the period 2003 to 2013 was obtained for each of Ontario's LHINs. The total number of ED visits per year was first quantified by LHIN and then simple linear regression was used to forecast patient volumes in 2018 and 2023. The rate of hospital admission by LHIN was also calculated. We then used the forecasted volume, admission rate and the total number of acute care hospital beds by LHIN to predict the total number of beds needed by LHIN. Based on the forecasted patient volumes and the hours of coverage model, the total number of full-time equivalent physicians needed was calculated. **Results:** Over the study period, the number of patients increased from 4 to 37% among LHINs. Admission rates generally decreased from 2003 to 2013. Based on historical trends, all EDs across Ontario are expected to experience increased patient visits in the future but at different rates of growth. Depending on the rate of growth in ED visits, the number of acute care beds needed by LHIN is somewhat variable and affected by the proportion of alternate level of care patients. Given, the forecasted increase in patient volume, the hours of coverage model suggests that approximately 320 additional full-time equivalent ED physicians are needed across the province by 2023. **Conclusion:** Although all forecasts inherently have a degree of error associated with their estimates, strategic planners require some