**ORIGINAL ABSTRACT**

**INTRODUCTION:** Patients with active cancer have complex care requirements that may result in an emergency department (ED) visit. The purpose of this study was to determine whether continuity of care or cancer care expertise impacts outcomes in cancer patients treated in the ED setting.

**METHODS:** This retrospective cohort study used Ontario health databases to identify adult patients (aged > 20 years) who received chemotherapy or radiation in the 30-days prior to a cancer-related ED visit made between 2006 and 2011. Patients treated in an ED at an alternative hospital (not where cancer treatment was given) were compared to patients who were treated at their original hospital (site where chemotherapy or radiation was administered). Next, to examine cancer expertise, patients treated at an ED associated with an alternative general hospital (not the site where cancer treatment was given and not a cancer centre) were compared to patients treated at their original hospital or a cancer centre. Both multivariable modeling and propensity score matching were utilized to examine the following outcomes: hospitalization on the index ED visit, 30-day mortality, return ED visits, CT imaging, and ED length-of-stay.

**RESULTS:** Among 42,820 qualifying patients, 16,532 (39%) visited an ED at an alternative hospital, while 14,691 (34%) visited an ED at an alternative hospital that was also a general hospital. In regression models, the odds of hospitalization were lower in patients treated at alternative EDs (OR 0.78; 95% CI, 0.74-0.82) compared to original EDs, but there was no difference in mortality, return ED visits or CT imaging. ED LOS was 35 minutes shorter (-35 min; 95% CI, -40 to -29) at alternative hospitals. For patients seen at an alternative general
hospital, the adjusted odds of hospitalization were again lower (OR 0.80; 95% CI, 0.76-0.83) when compared to patients seen at original hospitals/cancer centres, but 30-day mortality was higher (OR 1.14; 95% CI, 1.06-1.22), as were return ED visits (HR 1.07; 95% CI, 1.03-1.10). CT imaging was lower (OR 0.75; 95% CI: 0.70-0.80) and ED LOS was again shorter (-50 min; 95% CI, -55 to -44). Similar results were found using propensity score matching.

CONCLUSION: Patients with a cancer-related ED visit who were treated at alternative hospitals were less likely to be hospitalized but had no difference in 30-day mortality, return ED visits, or CT imaging compared to patients seen at their original hospitals. Patients seen at an alternative hospital that was not associated with a cancer centre were still less likely to be hospitalized than those seen at their original hospital or a cancer centre, but they had higher 30-day mortality and return ED visits, suggesting that the cancer expertise of an institution, rather than continuity of care, may be an important predictor of outcomes following emergency treatment of cancer patients.