commercial aircraft operations. A public education campaign in remote Denmark improved absolute cardiac arrest survival by 5.4% (95% CI 2-12). Lay trauma training (12 papers) reduced absolute injury mortality and improved community capacity in Iraq, Cambodia, Iran and Indigenous New Zealand communities. A trauma care program in Iraq and Cambodia reduced absolute mortality by 25% (95% CI 17.2-33). Education for mothers on paediatric fevers in Ethiopia was associated with 40% relative reductions in under-5 mortality (95% CI 29.2-50.6). Similar training improved access to care for paediatric malnutrition, malaria, pneumonia, and gastrointestinal disease in Nigeria, Kenya, Senegal, Burkina Faso, Mali, and India (13 papers). Overdose education and naloxone distribution was associated with reductions in opioid overdose deaths (3 papers), including in Massachusetts where high-uptake communities for overdose education had significantly lower overdose fatality rates than no-uptake communities (rate ratio 0.54, 95% CI 0.39-0.76). Community education improved measures of access to emergency care for remote Indigenous populations in Canada, Alaska and Nepal (3 papers) and adolescent mental health capacity in Australia (1 paper). Studies were of low or medium quality. **Conclusion:** In addition to established interventions for injury and cardiac arrest, emergency care training can improve community capacity in underserviced populations, and save lives in opioid overdose, paediatric infectious disease and malnutrition.
Keywords: task shifting, first aid, low-resource settings

LO05

A statistical analysis to estimate the spatial dynamics of opioid-related emergency medical services responses in the city of Calgary 2017
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Introduction: Understanding the spatial distribution of opioid abuse at the local level may facilitate community intervention strategies. The purpose of this analysis was to apply spatial analytical methods to determine clustering of opioid-related emergency medical services (EMS) responses in the City of Calgary. **Methods:** Using opioid-related EMS responses in the City of Calgary between January 1st through October 31st, 2017, we estimated the dissemination area (DA) specific spatial randomness effects by incorporating the spatial autocorrelation using intrinsic Gaussian conditional autoregressive model and generalized linear mixed models (GLMM). Global spatial autocorrelation was evaluated by Morans I index. Both Getis-Ord Gi and the LISA function in Geoda were used to estimate the local spatial autocorrelation. Two models were applied: 1) Poisson regression with DA-specific non-spatial random effects; 2) Poisson regression with DA-specific G-side spatial random effects. A pseudolikelihood approach was used for model comparison. Two types of cluster analysis were used to identify the spatial clustering. **Results:** There were 1488 opioid-related EMS responses available for analysis. Of the responses, 74% of the individuals were males. The median age was 33 years (IQR: 26-42 years) with 65% of individuals between 20 and 39 years, and 27% between 40 and 64 years. In 62% of EMS responses, poisoning/overdose was the chief complaint. The global Morans Index implied the presence of global spatial autocorrelation. Comparing the two models applied suggested that the spatial model provided a better fit for the adjusted opioid-related EMS response rate. Calgary Center and East were identified as hot spots by both types of cluster analysis. **Conclusion:** Spatial modeling has a better predictability to assess potential high risk areas and identify locations for community intervention strategies. The clusters identified in Calgarys Center and East may have implications for future response strategies.
Keywords: spatial analysis, autocorrelation, opioid crisis

LO06

Effects of emergency department system transformation (EDST) on patient experience of emergency department visits
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Introduction: Emergency Department Systems Transformation (EDST) is a bundle of Toyota Production System based interventions partially implemented in two Canadian tertiary care Emergency Departments (ED) between June 2014- July 2016 with the goal to improve patient care by increasing value and reducing waste. Some of the 17 primary interventions included computerized physician order entry optimization, staff schedule realignment, physician scorecards and a novel initial assessment process. Some interventions have only been partially implemented due to persistent access block. This project was designed to examine the effect of partial EDST implementation on patient experience of emergency department visits. Patient satisfaction has been linked to improved patient outcomes, improved adherence to physician instruction, and improved provider satisfaction. **Methods:** Semi structured interviews were conducted over three distinct time periods (summer 2015, 2016 and 2017) to encompass progressive levels of EDST implementation. The interviews focused on the patients perceptions in each of 4 stages of their ED visit - Check-in, assessment, reassessment, and disposition. Patients were asked a list of positive (respected, listened to, supported, safe) and negative (in pain, worried, confused, frustrated) emotions frequently experienced and asked if they felt any of these emotions during their ED stay. Open ended questions were also asked about their overall visit. Descriptive statistics were calculated as differences in the proportion of patients feeling each emotion across timeframes. The open-ended question was coded by two reviewers as positive, negative or mixed. A kappa score was calculated to determine reviewer agreement. **Results:** 987 interviews were completed. In general, the proportion of patients feeling negative emotions remained consistent while positive emotions increased as EDST implementation progressed. For open-ended responses, the percentage of overtly positive experiences increased significantly from 2015 to 2017 (p = 0.006), while overtly negative experiences did not significantly change. Reviewers agreed in the coding of the open-ended responses in 97.6% of surveys. The kappa score for reviewer agreement was 0.96 (95% CI 0.94-0.98) indicating almost perfect agreement. **Conclusion:** Partial implementation of EDST positively impacted patients experience of emergency department visits.
Keywords: emergency department, patient satisfaction

LO07

Developing a culture of quality across Ontario's emergency departments: the return visit quality program
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Introduction: In 2016, the Emergency Department (ED) Return Visit Quality Program (RVQP) was developed to promote a culture of quality in Ontario EDs, by mandating large-volume EDs to audit charts of patients who had a return visit leading to hospital admission (RV). This program provides an opportunity to identify possible adverse events (AEs) and quality issues, which can then be addressed to improve patient care. **Methods:** The RVQP requires EDs to audit a set number of 72-hour RVs for potential AEs/quality issues, as well as all 7-day RVs for one of three key paired sentinel diagnoses (acute myocardial