Learners and locations: Use of administrative data and GIS technology to map birthplace, residence during high school years, and permanent residence of presently enrolled medical students at Memorial University

James Rourke, Dean of Medicine; Ann Ryan, Janelle Hippe, Montgomery Keough, Community Health and Humanities; Matthew Walsh, Geography

Background   In the past twenty years, there has been a growing recognition of both the shortage of doctors in rural areas as well as the social responsibility of medical schools to contribute to the recruitment and retention of rural physicians. In this vein, analyzing the lack of fit between where people live and where doctors practice is a priority in both medical education and health services research. **Objective(s)** The Learners and Locations pilot study, undertaken at the Health Research Unit at the Faculty of Medicine at Memorial University, was designed to develop a geographic database to track physicians during all stages of education and practice in Newfoundland and Labrador. This database will assist examination and analysis of the association between geographic origin, learning locations during medical education, and eventual practice locations following training. **Methods** (1) Surveys were administered to current undergraduate and post-graduate students at Memorial University to collect background and educational placement information. (2) An administrative database was developed to collect the required information in an ongoing and routine manner. (3) The survey data was used to show proof of concept, and results were presented using GIS technology. **Results** (1) There were 89/ 261 completed undergraduate surveys and 160/ 245 completed post-graduate surveys. (2) An Access Learners and Locations Database was created by linking data from the Admissions office and One45. (3) To explore eventual linkage with CAPER data, a recent de-identified cohort of Newfoundland and Labrador medical graduates was requested and downloaded from CAPER's database. It was cleaned and shown to be importable to the administrative database and Proof of Concept database. Maps were generated showing where students completed their undergraduate and post-graduate training. **Conclusions** The pilot study shows that as the Learners and Locations database grows, it will be possible

to import data from specific sources (One45 and CAPER) to examine patterns related to geographic origin, learning locations, and eventual practice locations.