Racial and Ethnic Health Disparities Due to Ambulance Diversion
Project Summary

In 2007, the Institute of Medicine (IOM) characterized ambulance diversion (AD), the practice by which Emergency Departments (EDs) are temporarily closed, as “antithetical to quality medical care” and called for its “elimination”. Nevertheless, AD persists, with 45% of EDs and 70% of urban EDs reporting AD in the last published survey in 2003. AD has been associated with higher mortality, delayed treatment, and other adverse outcomes. Not examined hitherto, AD has the potential to exacerbate disparities by race/ethnicity and income. AD may also increase healthcare costs. However, the current literature on the impact of AD is based on data from convenience sampling and is limited by a dearth of experimental evidence. On 1/1/2009, Massachusetts became the first, and to date only, state to ban AD. Treating the state-imposed ban as a natural experiment, we propose to estimate the *causal* impact of AD on access, outcomes, and cost, focusing on the potentially differential effects by race/ethnicity and income.

To better understand ambulance use and AD within the milieu of overall patient care, we will develop a national longitudinal database of ambulance use based on Medicare administrative data. Using longitudinal patient records, this data will be better suited to examine the determinants of ambulance use, outcomes, and the impact of AD across diverse patients.

We will focus on older adults with a chronic cardiovascular or pulmonary condition. We will identify a *national cohort* of a stratified random sample of all Medicare beneficiaries aged 66 or older (N=1,000,000), with an oversample from Massachusetts, and obtain data on all healthcare utilization, including ambulance and ED visits, from 2006-2012. Given the primacy of residential location in examining ambulance and ED use, this sample will be stratified by race/ethnicity and residence zip code to enable comparison of diverse patients from the same area. For the subset of Boston residents (*Boston cohort*) we will merge data from the Boston Emergency Medical Services (EMS) from 2006-2012 for EMS-specific outcome measures. Our specific aims are to evaluate: (1) incidence of ambulance use and reliance, (2) differences by race/ethnicity and income in ambulance transport outcomes, and (3) impact of Massachusetts AD ban on outcomes of ambulance transport and other ED patients not transported by ambulance.

The Institute of Medicine (IOM) has highlighted the "limited" research and knowledge base of EMS practices. Using novel data with national scope, this study will make significant contributions to this evidence base and inform public policy on AD regarding not only its impact on clinical outcomes, but also, its impact on disparities.