As part of Alliance’s mission to use data-driven approaches that improve outcomes, we are pioneering the application of predictive analytics to behavioral healthcare in North Carolina. The project, a partnership with Duke University researchers, uses early intervention with community-based mental health services to help young people avoid the need for crisis services, such as emergency and inpatient psychiatric care.

The initiative is to develop a statistical model using health insurance claims to generate real-time identification of youth at risk for admission to emergency departments or inpatient psychiatric facilities within the subsequent three months. Through early detection, Alliance can leverage care coordination and resources to address social determinants, helping children and families engage in community-based behavioral health services. Through engagement with these community-based services, youth may avoid crises and remain with their families and in their communities while receiving care. Helping youth remain with their families and in their communities of origin is a priority for all, and may support higher quality care and cost savings for the system. The resulting predictive model and associated data analysis will be re-used in a number of applications that will help identify and intervene with youth at risk for needing treatment in a variety of out-of-home settings.

The application of predictive modeling to behavioral health care has the potential to dramatically change the way services are delivered. Prior to the transition of public service agencies to electronic record keeping, it has been relatively difficult to identify individuals across the population with risk factors for poor behavioral health outcomes. Thus, individuals often present when they are in crisis, at a time when expensive and restrictive services such as inpatient psychiatric treatment are the only options. Given that we now have access to large datasets across our public systems, we can apply advanced statistics to identify patterns predicting negative outcomes that we want to prevent (or positive outcomes that we want to support). Data from these public systems are updated continually, and the statistical models can be automated and applied repeatedly as the public data systems are updated. Thus, we can survey our population to identify risk on a much larger scale, and these efforts require fewer resources compared to before.

“Most importantly, predictive models may support earlier intervention, at a time when behavioral health services are most likely to be effective and community-based,” said Dr. Katherine Hobbs Knutson, Alliance CMO. “Through these methods, we may improve efficiency of population-based service delivery, as effective treatments – at the right ‘dose’ – can be targeted according to the identified risk.”

At Alliance, these predictive models are applied to our entire Medicaid and state-funding eligible population, representing approximately 400,000 individuals across our four counties. By replacing treatment in emergency departments and inpatient settings with evidence-based services in the community, we may realize substantial savings for our public system. These dollars may be reinvested, thus continuing to expand access to care across our region.