HOT SPOTTING MEDICALLY COMPLEX AT-RISK PATIENTS: DOES IT DECREASE HOSPITAL AND ED ADMISSIONS?

Melissa Grube, MD1, Glenda Sundberg, FNP-CS1,2, Dane Olsen, MD1,3, Jessica J. F. Kram, MPH1

‘Department of Family Medicine, Milwaukee WI, Aurora St. Luke’s Medical Center, Milwaukee, WI, Aurora UW Medical Group, Center for Urban Population Health, Milwaukee, WI

PROBLEM
Medically complex at-risk patients are often overlooked in our current health care model. They often present for frequent hospitalizations and emergency department visits. Our health care system is not designed to meet the needs of the outliers.

OBJECTIVE
To create a sustainable, multidisciplinary hot spotting model that improves clinical, and financial outcomes.
To establish a model for hot spotting that is easily reproducible at other clinical sites.

METHODS
• New at-risk patients were identified and tracked at two sites (Aurora St. Luke’s Family Practice Center and Aurora Sinai Family Care Center).
• Each patient selected for the hot spotting program received:
  • A discussion and extensive chart review at a 2 hour interdisciplinary interactive team meeting 3 times per year
  • A comprehensive care plan that is documented in the EMR
  • At least 1 home visit
  • More frequent calls from nursing and social work
• Interdisciplinary team included at least a nurse practitioner, social worker, nurse, pharmacist, resident and faculty physician
• We compared number of hospital admissions, emergency department visits, and estimated cost savings before and after a nine month intervention period (intervention start date 3/1/19).
• Basic descriptive statistics were conducted to describe the overall population. Paired t-tests were used as appropriate.
• A control population was identified and matched to our cohort 2:1.
  • They were made up of similar patients and both sites
  • Additional analyses were conducted

BACKGROUND
• 5% of patients incur 50% of health care costs
  • Many of these patients fall into either over-utilizers or under-utilizers of the health care system
  • Hot spotting may be used to identify and better meet these patients’ needs
  • Hot spotting, as defined as the collaborative care approach that is put into place as an intervention to best meet the needs of the identified patients in order to improve outcomes.
  • Hot spotting has been shown to decrease emergency department visits.
  • It also works to increase face to face encounters with familiar caregivers, as is suggestive of how our greatest impact can be made.

RESULTS
• 35 new hot spots were identified.
• Population:
  • Mean age 56 years
  • Predominately female, 69%
  • Proximity to Luke’s clinic 3.8 miles
  • Proximity to Sinai’s clinic 6.1 miles
• Through our interventions we identified:
  • Decrease of mean total emergency department visits (3.6 vs 2.7 visits; p=0.002) and hospital admissions (1.3 vs 0.8; p=0.087)
  • Cost reduction savings of a total of $87,000 ($2,485/patient)
  • 2.09 return on investment
• Control group findings:
  • Despite an evident reduction in emergency department visits and hospital admissions within our cohort, the changes were not statistically significant when compared.

CONCLUSIONS
Extending our hot spotting intervention to an additional clinic site showed similar decreases in hospital and ED utilization, previously reported. Even so, these differences were not evident when using a matched control group. Potentially this difference is because of insufficient power, and because both groups are higher utilization cohorts that have a tendency to regress towards the mean (their norm) after a period of time.

Within our cohort there continued to be cost savings at both sites. Ultimately, our pilot efforts will be extended to a third non-residency clinic site in 2019 to improve and further our care of patients.

ACKNOWLEDGEMENTS
We would like to acknowledge all of those who helped with our hot spotting efforts. We would also like to acknowledge: Dennis Baumgardner, MD, for statistical analysis, and Sandy Winter, for financial data, and Daniel Lutter, MS, and team, for control analyses.