Standardizing Blood Pressure Measurement to Improve Renal Transplant Recipients' Cardiovascular Outcomes
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Introduction & Project Aim

- Pediatric kidney transplant recipients (KTRs) have a 15-20 year shortened life expectancy than their peers without a kidney transplant.
- Moreover, even though years of research have developed effective therapies, children with chronic illnesses, including KTRs, receive indicated care only 40-60% of the time. For example, uncontrolled hypertension is associated with decreased allograft survival and increased risk of death for children with a renal transplant, yet, in spite of numerous available treatments, 40-60% of these children have uncontrolled blood pressure (BP).
- The transplant clinic team at Children’s of Alabama formed an interprofessional collaborative to develop standardized, evidence-based procedures for reliably measuring KTRs’ BP during clinic visits; BP cannot be effectively managed, if it is not accurately measured.
- Baseline clinic data revealed only 54% of KTRs who had a high oscillometric BP reading in triage were getting a manual BP measured to verify the high reading.
- The team aimed to increase compliance to >80% prior to June 30, 2017.

Process Flowchart

![BP Monitoring Process for Post Kidney Transplant Patients – Clinic #7](image)

Results

Figure 2: Individuals chart of percent compliance with all seven elements of new BP measurement process of all patients seen in renal transplant clinic between January 1, 2017 and October 1, 2017.

Figure 3: Individuals chart of percent compliance with only the additional four elements of new BP measurement process that should be completed only for patients who are hypertensive in triage when seen in renal transplant clinic between January 1, 2017 and October 1, 2017.

Methods

- Interprofessional team of professional nursing assistants, nurses (RN), and physicians formed to discover barriers within current processes for accurately measuring BP based on standardized evidence based protocol.
- Education and resources for selecting correct BP cuff size based on current recommendation of arm circumference provided to frontline staff.
- Popup flag created in electronic medical record of all KTRs to notify care providers of patient’s ideal BP goal based on latest guidelines from the International Pediatric Hypertension Association1.
- Clinic staff empowered to recognize KTRs who have elevated BP in triage and initiate pathway for confirmation of hypertension via manual auscultatory BP measurement as well as to notify prescribers of their findings.
- Moving forward the team intends to work with prescribers to standardize their processes for managing KTRs with high BP now that our center is correctly measuring BP during clinic visits.

Conclusions

- Figure 2 shows the compliance for the entire new BP measurement process before and after implementation. All components of the new process were novel to the clinic workflow with the exception of checking a follow-up BP manually if a patient had a high BP reading in triage via oscillometric device. The team’s target was to achieve total process compliance >80%.
- Utilizing robust quality improvement methodologies, the team exceeded their goal.
- Figure 3 reveals compliance with the new process components for those patients who are hypertensive in triage; this segment of the process reveals greater variability which is expected as it has greater complexity.
- Attaining input from multidisciplinary frontline providers when applying evidence based practices locally is crucial for successful implementation as well as sustained improvement.
- Implementing work aids or check lists that fit into existing workflow helps alleviate the cognitive burden that accompanies caring for complex patients in a busy clinic setting.
- Standardizing processes authorizes frontline staff to advocate for individual patients and ensure every child gets recommended care consistently.
- Team prescribers rely on clinic staff to measure KTRs’ BP consistently per published guidelines in order to appropriately manage their BP and, thus, subsequent cardiovascular disease risk.

Acknowledgements

- Improving Renal Outcomes Collaborative (IROC) Network
- UAB Medicine and UAB School of Health Professions Quality and Patient Safety Academy

References:


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