**Evaluation of Outpatient Oral Chemotherapy Monitoring in Neuro Oncology Patients**

**Authors**: Nicole Scott, PharmD and Kathy DeGregory, PharmD

**Practice Site**: University of Virginia (UVA) Health, Charlottesville, VA

**Background**: Oral chemotherapy has an expanding role in oncology treatment and represents a fundamental change in contemporary oncology practice. Oral chemotherapy has many of the same side effects as traditional intravenous chemotherapy and requires weekly laboratory testing and monitoring. With the increase in use of oral chemotherapy comes a unique set of challenges, as patients may not be seen by a physician as frequently as those receiving intravenous medications. Patients may travel hours from home to receive care at the UVA Health Emily Couric Clinical Cancer Center neuro-oncology clinic. Due to traveling distance, some patients have their weekly complete blood count (CBC) with differential done at a local clinic, and see a UVA Health provider every six to eight weeks. This can pose challenges, as offsite laboratory tests do not document directly into the UVA Health electronic medical record (EMR). Neuro-oncology patients at the Emily Couric Clinical Cancer started on treatment with lomustine or temozolamide between January 2021 and September 2021, on average had their weekly CBC consistently documented in their EMR approximately 50% of the timeduring the six-week period following treatment initiation. Inconsistent reporting of laboratory results delays monitoring, puts patients at risk of adverse events and hospital admissions, and leads to insufficient use of nurses and pharmacist time by having to track down patients’ laboratory results.

**Objective**: The objective of this quality improvement project is to optimize laboratory testing and monitoring of neuro-oncology patients at the UVA Health Emily Couric Clinical Cancer Center. The aim for this project is to have patient laboratory results documented in their EMR within seven days of the date the blood sample was drawn, at least 70% of the time.

**Methods**: An interdisciplinary team of stakeholders involved in the entire process of initiating and monitoring neuro-oncology patients on oral chemotherapy was formed. Plan-Do-Study-Act (PDSA) cycle methodology is being utilized, and quality improvement (QI) tools including process mapping, cause and effect diagram, Pareto chart, priority matrix, and statistical process control (SPC) charts will be used.

**Preliminary Results**: The interdisciplinary team was able to meet and map out the process of what happens when a patient is initiated on oral chemo. Process mapping was a tool used to help visualize the workflow. The process map allowed the team to identify potential areas where interventions could be made to optimize laboratory testing and monitoring of neuro-oncology patients. A cause and effect diagram was used for brain storming potential causes of inconsistent laboratory result documentation in the EMR. Categories were established based on what the team thought may be contributing to inconsistent laboratory result documentation and monitoring. A Pareto chart, which indicates the frequency of problems as well as their cumulative impact, was used to examine the most frequent reasons for inconsistencies in laboratory result documentation and monitoring. From the Pareto chart we determined that CBC results not being in the EMR within seven days of the date of collection was the most frequent problem. The next PDSA tool used was a run chart, which is a type of line graph used to show data plotted over time and help identify any trends or patterns in data. The run chart was used in this project to establish baseline data by conducting an EMR chart review of 23 neuro-oncology patients at the Emily Couric Cancer Center started on lomustine or temozolamide between January 2021 and September 2021. For the 23 patients included in baseline data collection, CBC results were documented in the EMR within seven days of the date the blood sample was collected, an average of 3 out of the 6 weeks (50%) from the day treatment was initiated.

**Conclusion**: When the interdisciplinary team met to review baseline data and work on moving to the Do phase of the PDSA methodology, we realized that there were some discrepancies in the baseline data and that it may not be an accurate representation of the problem. Because of this, our team has decided to go back through the Plan phase of the PDSA methodology. Going through the planning phase helped our team better understand the best way to use PDSA methodology and QI tools as a way to analyze the baseline data and use it to assess the current problem. Having a better understanding of the current process will help the team strategize the best way to go about collecting new baseline data. The team will continue to use PDSA methodology to identify potential causes and determine interventions to address the inconsistencies in laboratory result documentation and monitoring of neuro-oncology patients at the UVA Health Emily Couric Cancer Center.